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AERODYNAMIC VENTING CHARACTERISTICS TESTS OF FULL-SCALE SPACE SHUTTLE MODEL 81-0 HRSI TPS TILES UNDER A SIMULATED LAUNCH ENVIRONMENT IN THE NASA/ARC 9x7-FOOT WIND TUNNEL (OS55/57)

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SPACE SHUTTLE AEROTHERMODYNAMIC DATA REPORT

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by

R. B. Kingsland

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Prepared under NASA Contract Number NAS9-16283

by

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for

Systems Engineering Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:	464-1-97	508-1-97
NASA Series Number:	OS55	OS57
Model Number:	81-Ø	81-Ø
Test Start Date:	2/27/81	8/26/81
Test Completion Date:	3/2/81	8/27/81
Occupancy Hours:	8	56

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Chrysler Corporation Michoud Engineering Office assumes no responsibility for the data presented other than dataset display characteristics.

AERODYNAMIC VENTING CHARACTERISTICS TESTS OF FULL-SCALE SPACE SHUTTLE MODEL 81-0 HRSI TPS FILES UNDER A SIMULATED LAUNCH ENVIRONMENT IN THE NASA/ARC 9x7-FOOT WIND TUNNEL (OS55/57)

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ABSTRACT

Two large-scale test articles containing Space Shuttle undensified and densified HRSI (High Temperature Reusable Surface Insulation) tile configurations were tested in the 9x7-foot leg of the Unitary Plan Wind Tunnel at Ames Research Center. These two tests were successfully accomplished during the period from February to August, 1981. Tests were conducted at freestream Mach numbers from 1.8 to 2.5 and dynamic pressures from 427 to 862 PSF. The objective of these tests was to expose TPS (Thermal Protection System) tiles to a known aerodynamic shock pressure gradient environment and to measure loads and venting characteristics of these tiles. These loads were measured using two methods. One method was to measure the loads directly using transducers applied to the tile at its' bond line. The other method was by measuring the tile internal, SIP (Strain Isolator Pad), and surface pressure distributions.

The resultant air loads measured on the tiles show acceptable agreement with the theoretically derived tile loads math model. The SIP pressures followed the internal tile pressures for the undensified tile. However, for the densified tile, there was a large pressure lag between the SIP and internal tile pressures when the shock was over the tile. This pressure lag is, however, within the tolerance band of the tile loads math model.

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INTRODUCTION

OV 102 Ferry Flight Operations revealed unanticipated sensitivity of thermal protection system (TPS) elements to airstream effects such as gap filler migration, loosening of small-footprint tiles, and lifting of mini-tile segments. Inasmuch as the ferry-flight speed (200 kn) was substantially less than mission speed, further assessments of TPS sensitivities to airstream effects were undertaken. A TPS flow test program was initiated to obtain additional performance data on various reusable surface insulation (RSI) tile configurations, components and installations in high dynamic pressure environments. The wind tunnel tests described in this report are part of this program.

Wind Tunnel Test OS55 was conducted to define and improve the understanding of undensified tile venting characteristics and resultant tile loads. Two approaches were used to measure the loads; one was by static pressures, and the other was with a special strain-gage transducer tile balance ("COE Tile Balance"). Test OS57 was conducted to investigate the venting characteristics of densified tiles.

The aerodynamic environment used to obtain the tile venting characteristics was a compression shock/pressure gradient. Both tests were conducted in the Ames Research Center (ARC) 9x7-ft. Supersonic Wind Tunnel using the wind tunnel ceiling-panel fixture, 81-Ø. Test OS55 was conducted on February 27 and March 2, 1983 and Test OS57 was conducted on August 26 and 27, 1981.

INTRODUCTION (Concluded)

This report presents information on the conduct of the tests, details of the test article, test facility, and instrumentation, and plotted and tabulated data. Tabulated pressure data from OS55 are presented in Appendix A while the OS57 tunnel data are presented in Appendix B. Plotted data from the COE Tile Balance along with balance construction and calibration details are presented in Appendix C which is the final report from COE Engineering Incorporated.

NOMENCLATURE

SYMBOL	MNEMONIC	DEFINITION
C_p	CP	Local Pressure Coefficient
	DATE	Date on which Data were Recorded, M/DD/Y
HRSI		High-Temperature Reusable Surface Insulation
ID		Inside Diameter
IML		Inner Mold Line
kn		Knots
Mach	M, MACH	Mach Number
OML		Outer Mold Line
OV102		Orbiter Vehicle 102
P	P	Freestream Static Pressure, psi
PCF		Pounds per Cubic Foot
P_ℓ		Local Static Pressure
P_T	PT	Freestream Total Pressure, in. Hg. or psi
q	Q(PSF), Q Q(psi)	Freestream Dynamic Pressure, PSF in parameter block and psi in tunnel conditions
R_e		Freestream Reynolds Number, per foot x 10^{-6}
RMS		Root Mean Square
RSI		Reusable Surface Insulation
RTV		Room-Temperature Vulcanizing Silicon Rubber
	RUN	Tunnel Run Number
SIP		Strain Isolation Pad
	TIME	Time at which Data were Recorded, HMM

NOMENCLATURE (Concluded)

SYMBOL	MNEMONIC	DEFINITION
T		Freestream Static Temperature, ^{o}R
TPS		Thermal Protection System
T_T	TTF	Freestream Total Temperature, ^{o}R or ^{o}F
X_o, X	XO,X	Longitudinal Distance - Positive Aft of Panel Leading Edge, inches
Y_o	YO	Lateral Distance - Positive to the Right of the Panel Centerline, inches
X_T		Longitudinal Distance - Positive Aft of Individual Tile Leading Edge, inches
Y_T		Lateral Distance - Positive to the Right of the Individual Tile Centerline, inches
δ_F, θ	THETA	Fixture Flap Deflection Angle, degrees
ρ		Freestream Density, Slugs/ft^3

INSTRUMENTATION CODE:

W = wall or surface

I = internal

G = side or gap

S = SIP

F = filler bar

REMARKS

During test OS55 the pressure data from tile No. 48 was acquired using individual transducers. The output from these transducers is questionable and should not be used.

The data from the special strain gage transducer ("COE TILE BALANCE") on tile No. 47 is also not usable from test OS55.

CONFIGURATIONS INVESTIGATED

The test article was not designed to duplicate any particular portion of the space shuttle orbiter, but was intended solely to investigate the aerodynamic forces and moments on HRSI tiles.

The test articles consist of 24 by 40 inch arrays of TPS tiles, bonded to an aluminum base plate (27.5 by 43 by 0.95-inches). The tile arrays were aligned 45 degrees to the flow as shown in figure 2. Tile Nos. 41 through 55, 60, and 61 are 6 by 6 by 1-inch thick, 9 PCF (pounds per cubic foot) HRSI tiles bonded on 0.160 inch thick SIP. Tile Nos. 56, 57, 58 and 65 are 9 PCF polyurethane foam bonded on 0.160-inch thick SIP. The remaining tiles, Nos. 59, 62, 63 and 66 through 71, are 9 PCF polyurethane foam bonded directly on the base plate.

The test fixture, 81-0, was in the same configuration for both tests. The fixture included a hatch, which replaces the ceiling of the ARC 9x7-foot wind tunnel, a remotely controlled hydraulic actuated flap used to produce and position a detached compression shock wave, and hardware needed to close in the plenum behind the test specimen and mount the test panel flush in the ceiling.

INSTRUMENTATION

Instrumentation for these tests consisted of static pressures, dynamic pressures, and the "COE Tile Balance". The locations of the static pressure taps for tiles 45 and 48 are given in Tables III and IV, respectively. The peripheral static and dynamic orifice locations are given in Table V and VI, respectively. The positions of the transducers of the "COE Tile Balance" are shown in Figure 3a.

The sensor concept employed for direct tile load and stress measurements is based on the deformation of a diaphragm by the relatively compliant tile material when loaded. Semi-conductor strain gages bonded to the diaphragm sense the deformation. THe diaphragm of such a sensor is responsive to pressure, so pneumatic pressures across the diaphragm must be equalized to obtain a pressure response due only to the loading of the compliant material.

For OS55 and OS57, twelve commercially available semi-conductor strain gage type pressure transducers were bonded into tile 47. The transducers, which were 0.030-0.040-inch thick flat type transducers, were bonded with RTV into small recesses at the IML. Thin transducers were desired to obtain load measurements as close to the tile bondline as possible. The diaphragms faced into the tile, and the back side was flush with the tile IML. The installations for OS55 and OS57 were the same except that different transducers were used. Photographs of the transducer installations for OS55 and OS57 are in Figure 3.

The transducers used on tile 47 for test OS55 were 10-year-old Kulite pressure transducers. The Kulites were the desired flat-pack 0.125 inch diameter, but they could not be adapted for pressure equalization. Also the temperature compensation of such old transducers was known to be inadequate for long term steady-state measurements.

New Entran "Flatline" pressure transducers modified for pressure equalization were used on tile 47 during test OS57. The Entran transducers are 0.040 inch thick and have a 0.200 inch diameter stainless steel diaphragm with bonded semi-conductor strain gages. The modification of pressure equalization consisted of a very small stainless steel right-angle tube (0.008-inch ID) that penetrated the sidewall of the transducer and extended 0.050-inch above the diaphragm.

Tile Nos. 45 and 48 were instrumented with 40 pressure taps each (Figure 2b) per Engineering Order M-927720 to measure the tile surface, internal, gap, and SIP pressures. The upper 0.120-inch of each tile was removed so that the surface and internal taps could be installed. The tiles were then resurfaced with Epoxy. Tile Nos. 42 and 46 were used to route the tubing from the surface and internal pressures taps of tiles 45 and 48 to under the base plate. Material was removed from the tile upper surface and a hole made through these tiles and base plate. A pressure tight box with bulkhead fittings for the tubes was attached to the underside of the base plate (Figure 3b). After all tubing was in place (Figure 3c), an aluminum plate was installed as the tile upper surface (Figure 3d).

During test OS55 the Epoxy top of tile 48 became partially unbonded. In preparation for test OS57 tile 47 and its associate tile 46 were removed and replaced. The new tile 48 was prepared using densified 9 PCF (LI-900) material. The instrumentation locations were the same as those of test OS55.

The only other change was that RTV was used to build up the OML of tile 48 in place of Epoxy.

TEST FACILITY DESCRIPTION

The Ames 9x7-foot Supersonic Wind Tunnel is a variable-density, continuous flow wind tunnel with an adjustable nozzle to permit supersonic testing over a Mach number range continuously variable from 1.5 to 2.5. The nozzle is of the asymmetric, sliding-block type in which the variation of the test section Mach number is achieved by translating, in the streamwise direction, the fixed-contour block that forms the floor of the nozzle. The temperature is controlled by aftercooling. Dry air for use in the circuit is supplied from four 30,000 cubic-foot spherical tanks. The tunnel drive motors and compressor also serve the 8 by 7-foot tunnel. The motors have a combined output of 180,000 horsepower for continuous operations or 216,000 horsepower for one hour of operation.

TEST PROCEDURE

Two types of runs were used during these tests; one was a shock sweep and the other, a Mach sweep. In both cases, the tunnel supersonic flow was established at a low total pressure (less than 10 inches of mercury), then the desired Mach was established, after which the dynamic pressure was set. Next the trailing edge flap was deflected to the desired starting position. For a shock sweep, the flap would be deflected while the real time signals from the Kulites were monitored to place the shock at the desired position on the test article (Figure 4). For a Mach sweep, the tunnel total pressure or the dynamic pressure was held constant with the flap angle while the Mach number was changed (Figure 5).

DATA REDUCTION

Standard tunnel equations were used to compute all wind tunnel test conditions.

Local static pressure data was calculated using the following equation:

$$C_P = \frac{(P_\ell - P) \times 144}{q}$$

The forces, moments, and corresponding stresses measured by COE Engineering, Inc. are detailed in Appendix C.

DISCUSSION OF RESULTS

Figure 6 presents the tile surface pressure comparison for the varying flap conditions of run series No. 4,OS55 (Table II).

The loads on tile No. 45 are presented for the three shock postions - forward of the tile, on the tile, and aft of the tile.

Figure 7 presents the pressures on the surface and inside the tile for the case of a shock forward of the tile. The shock position in this case is approximately three inches forward of the tile.

Figure 8 presents the pressure on the tile surface and inside the tile for the case of the shock on the tile. The shock position is approximately 2.8 inches aft of the tile leading edge.

Figure 9 presents the pressures on the tile surface and inside the tile for the case of the shock aft of the tile. The shock position is approximately one inch aft of the tile trailing edge.

The pressures measured in the gaps and filler bar around the tile are illustrated on Figures 7, 8, and 9. It is noted that these pressures track the SIP pressure very closely and that the pressures up the tile along the gaps are approximately constant and equal to the local SIP pressures.

A comparison of the panel edge pressures and tile surface pressures for test OS57 is shown in Figure 10 for varying flap angles. Differences between the tile surface pressures and the shock pressures are due to the shock box across the panel.

Figure 11 presents surface pressures, SIP pressures, internal pressures and the present internal pressure design value for tile No. 45 (the undensified tile). For all shock locations the SIP pressure followed the internal pressure.

Figure 12 presents surface pressures, SIP pressures, internal pressure, and the current design value for tile No. 48, (the densified tile). These figures show a vent lag between the internal tile pressures and the SIP pressures. This is due to the densification of the tile.

All data from the "COE Tile Balance" are presented in Appendix C of this report.

REFERENCES

1. STS81-0330, "Pretest Report for the 81-Ø HRSI Tile Panel Test OS55 in the NASA/Ames Research Center (ARC) 9x7-Ft. UPWT," by R. B. Kingsland, February 1981.

2. STS81-0532, "Pretest Report for the 81-Ø HRSI Tile Panel Test OS57 in the NASA/Ames Research Center (ARC) 9x7-Ft. UPWT," by K. P. Chan, August 1981.

3. STS81-0398, "TPS Flow Test Program Final Report," by D. H. Cade, G. R. Lindekugel, and E. A. Zadorozny, May 1981.

TABLE I

TEST : OS55/57

DATE : POST TEST

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
OS55:			
1.8	16.7	464	
1.8	23.8	656	
1.8	31.0	862	
1.72 → 2.5	23.8	678 → 427	
OS57:			
1.8	23.7	660	
1.8	30.9	860	
2.4	40.6	790	

BALANCE UTILIZED: _____

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF			
SF			
AF			
PM			
RM			
YM			

COMMENTS:

TABLE II

TEST: OS55 (ARC 464-1-97) DATA SET/RUN NUMBER COLLATION SUMMARY DATE: 26 May 1981

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β																			
				RUN	M	Q	FLAP ANGLE, δF (deg.)															
RAJ*01	Model 81-ϕ			4	1.8	660	32.8	34.7	37.2	41.0	41.7	46.6	49.5	52.3	55.7	59.7						
				RUN	Θ	Q	MACH															
RAJ*02	Model 81-ϕ			6	52.0		1.72	1.76	1.81	1.90	2.00	2.10	2.20	2.30	2.40	2.50						
				RUN	M	Q	FLAP ANGLE, δF (deg.)															
RAJ*03	Model 81-ϕ			7	1.8	862	32.8	34.7	38.0	38.2	41.1	44.7	44.8	46.6	48.9	49.2	50.4	52.0	52.1	54.9	55.3	

COEFFICIENT SCHEDULES

IDVAR (1) IDVAR (2) NDV

TYPE OF DATA

α OR β SCHEDULES

*: (A) TILE 45 SURFACE
(B) TILE 45 INTERNAL
(C) TILE 45 SIDE (GAP)
(D) TILE 45 SIP
(E) TILE 45 FILLER BAR
(F) TILE 48 SURFACE
(G) TILE 48 INTERNAL
(H) TILE 48 SIDE (GAP)
(I) TILE 49 SIP
(J) TILE 45 FILLER BAR
(K) TILE 48 DIFFERENTIAL
(L) PANEL EDGE

NASA-MSFC-MAF

MS 033,

TABLE II (Concluded)

TEST: OS57 (ARC 508-1-97)

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: 28 August 1981

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	M	Q	FLAP ANGLE, δ_F (deg.)								
	RUN #2			1.8	860	33.6	37.0	41.0	44.1	45.7	49.1	55.1		
	RUN #3			1.8	660	31.7	37.3	41.0	46.7	49.1	53.3	56.9		
	RUN #4			2.4	790	35.5	39.3	42.0	45.9	49.1	54.9	59.7	64.2	70.4

TYPE OF DATA

α OR β SCHEDULES

COEFFICIENT SCHEDULES

IDVAR (1) IDVAR (2) NDV

NASA-MSFC-MAF

TABLE III

TILE 45 ORIFICE LOCATIONS

	X_D	10.65	11.31	11.35	12.37	12.49	12.85	13.43	13.73	14.49	15.23	15.55	16.13	16.49	16.61	17.63	17.67	18.33
Y_D	Y_T \ X_T	0.40	1.06	1.10	2.12	2.24	2.60	3.18	3.48	4.24	4.98	5.30	5.88	6.24	6.36	7.38	7.42	8.08
4.24	3.19									(I) 528								
4.23	3.18							(F) 536				(G) 530						
3.44	2.39								(S) 513		(S) 514							
3.17	2.12				(G) 529										(F) 537			
2.55	1.50						(I) 525			(I) 526			(I) 527					
2.11	1.06		(F) 535														(G) 531	
1.00	0.75					(S) 509			(S) 510		(S) 511			(S) 512				
1.05	0.00	(W) 501		(W) 502		(W) 503			(W) 504		(W) 505			(W) 506		(W) 507		(W) 508
0.30	-0.75					(I) 519			(I) 520		(I) 521			(I) 522				
-0.01	-1.06		(F) 540														(G) 532	
-0.45	-1.50						(S) 515			(S) 516			(S) 517					
-1.07	-2.12				(G) 534										(F) 538			
-1.34	-2.39								(I) 523		(I) 524							
-2.13	-3.18							(F) 539				(G) 533						
-2.14	-3.19									(S) 518								

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Hughes International

TABLE IV

TILE 48 ORIFICE LOCATIONS

	X_D	17.28	17.94	17.98	19.00	19.12	19.48	20.06	20.36	21.12	21.86	22.18	22.76	23.12	23.24	24.26	24.38	24.86
Y_D	X_T / Y_T	0.40	1.06	1.10	2.12	2.24	2.60	3.18	3.48	4.24	4.98	5.30	5.88	6.24	6.36	7.38	7.42	8.08
2.12	3.19									(I) 828								
2.11	3.18							(F) 836				(G) 830						
1.32	2.39								(S) 813		(S) 814							
1.06	2.12				(G) 829										(F) 837			
0.40	1.50						(I) 825			(I) 826			(I) 827					
-0.01	1.06		(F) 835														(G) 831	
-0.32	0.75					(S) 809			(S) 810		(S) 811			(S) 812				
-1.07	0.00	(W) 801		(W) 802		(W) 803			(W) 804		(W) 805			(W) 806		(W) 807		(W) 808
-1.02	-0.75					(I) 819			(I) 820		(I) 821			(I) 822				
-2.13	-1.06		(F) 840														(G) 832	
-2.57	-1.50						(S) 815			(S) 816			(S) 817					
-3.19	-2.12				(G) 834										(F) 838			
-3.46	-2.39								(I) 823		(I) 824							
-4.26	-3.18							(F) 839				(G) 833						
-4.26	-3.19									(S) 818								

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TABLE V

PERIPHERAL STATIC TAP LOCATIONS - FIXTURE 81-Ø

Xo \ Yo	-14.62	14.62
2	101	201
6	103	203
10	105	205
12	-	207
14	107	209
16	-	211
18	110	213
20	-	215
22	113	217
24	-	219
26	115	221
28	-	222
30	-	224
32	-	225
34	-	227
36	116	228

TABLE VI

PERIPHERAL KULITE ORIFICE LOCATIONS - FIXTURE 81-Ø

Xo \ Yo	-14.62	14.62
5	102	202
9	104	204
11	106	206
13	-	208
15	108	210
17	109	212
19	111	214
21	112	216
23	-	218
25	114	220
29	-	223
33	-	226

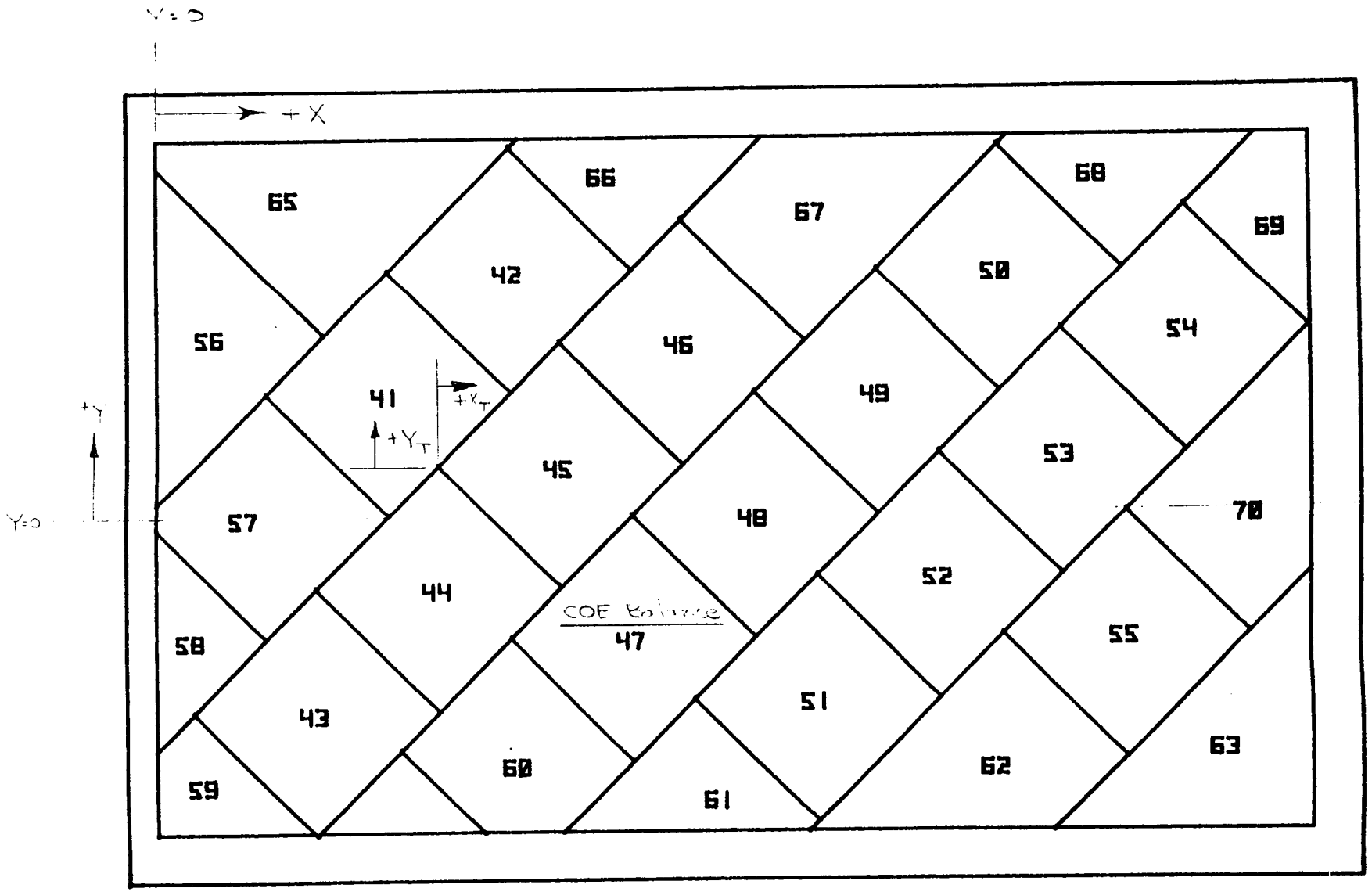

Figure 1. Tile Axis Systems

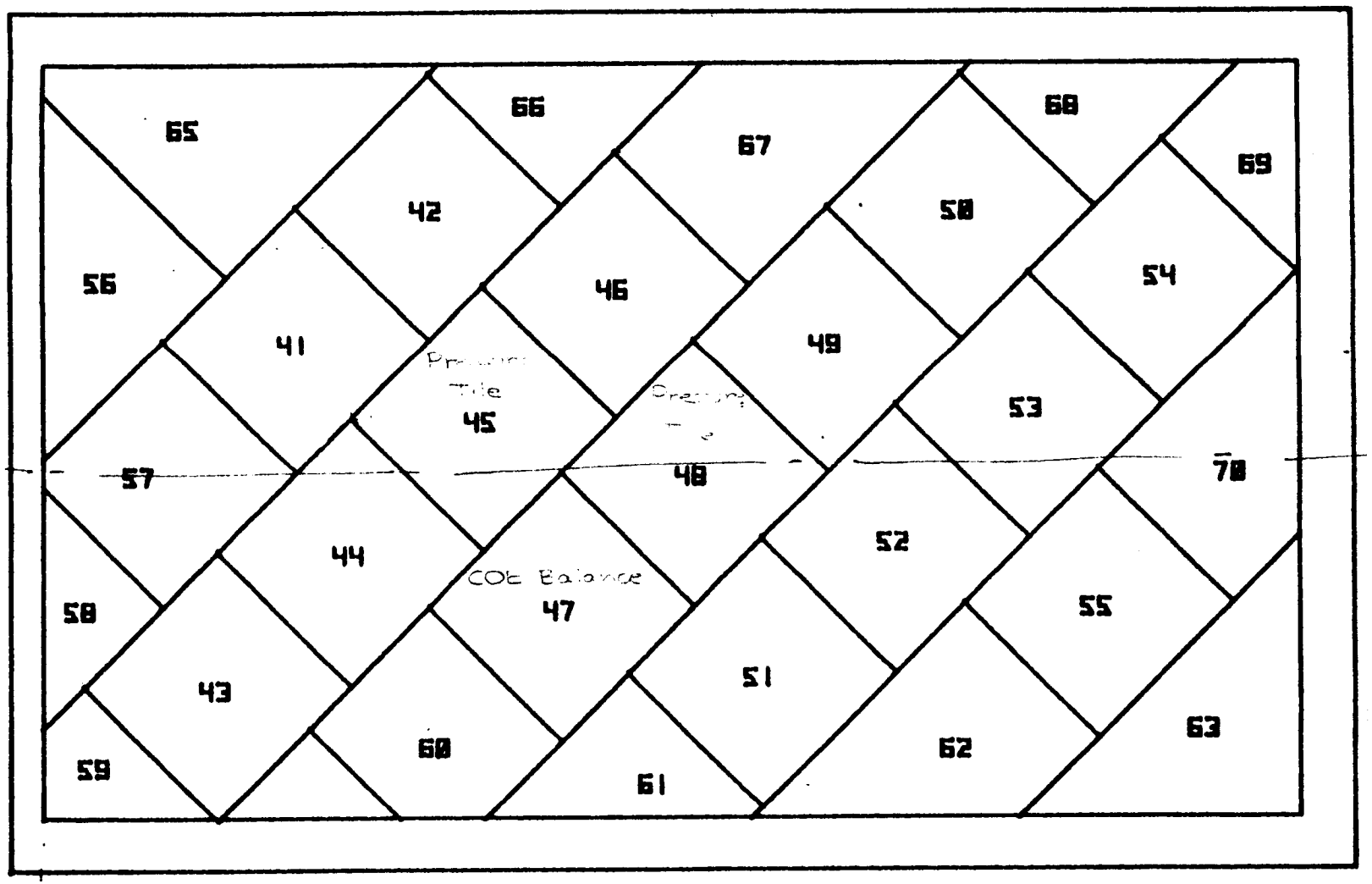

Figure 2. Model Sketches

a. Tile Locations

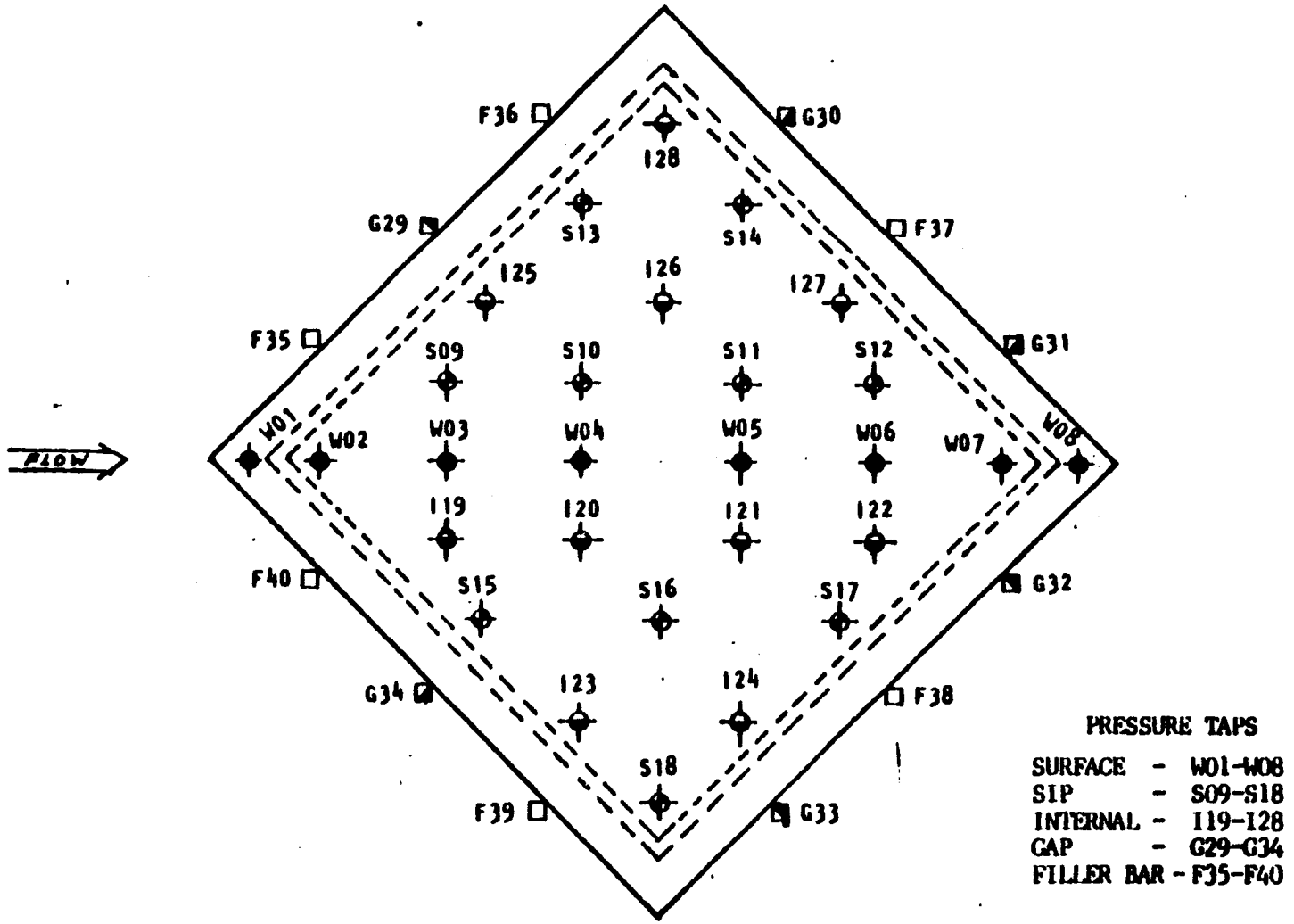

Figure 2. (Concluded)

b. Pressure Tap Locations - Tiles 45 & 48

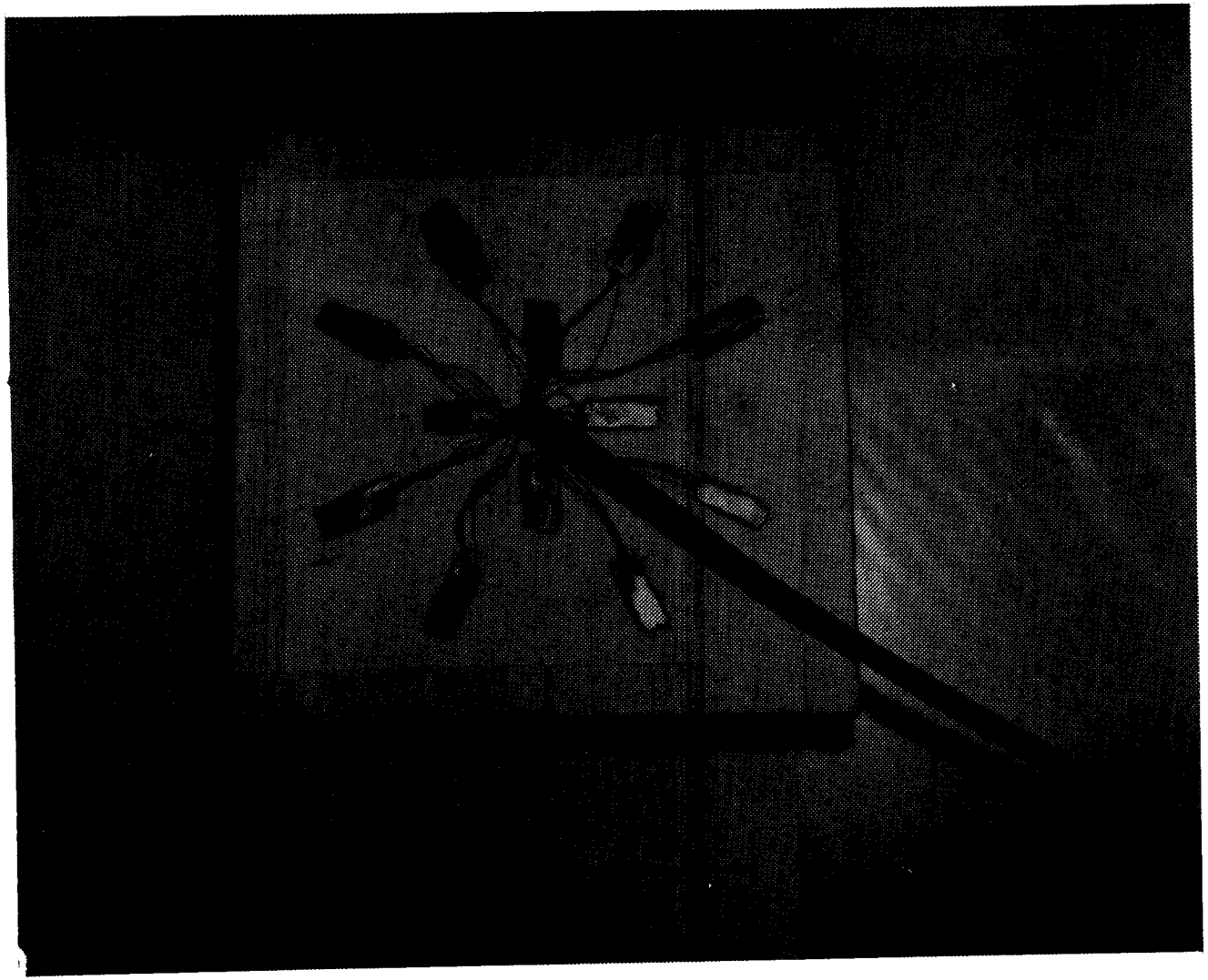

Figure 3. Model Photographs

a. Tile 47 Instrumentation

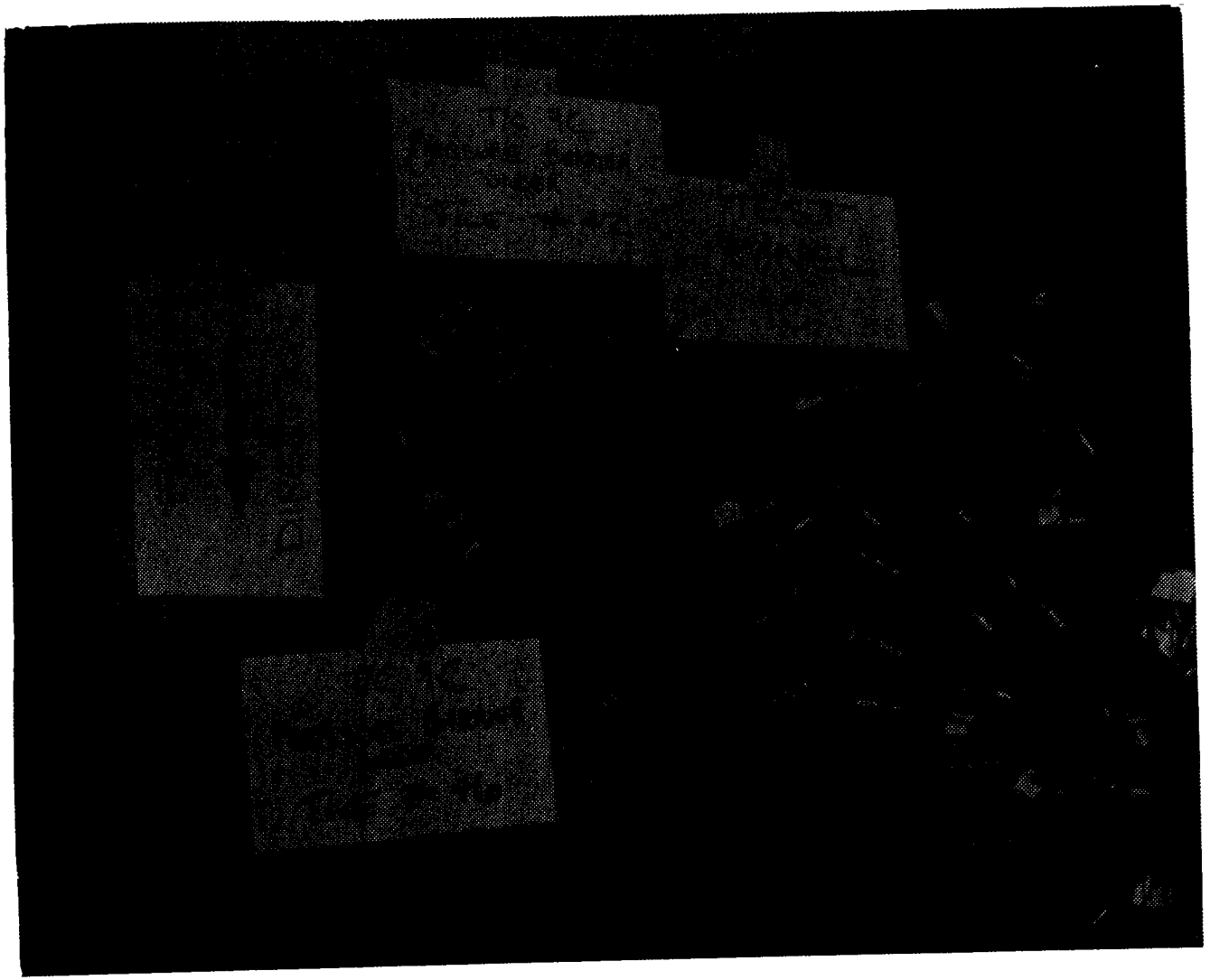

Figure 3. (Continued)

b. Tiles 42 & 46 Pressure Sealing Boxes

Figure 3. (Continued)

c. Tiles 42 & 46 Without Covers

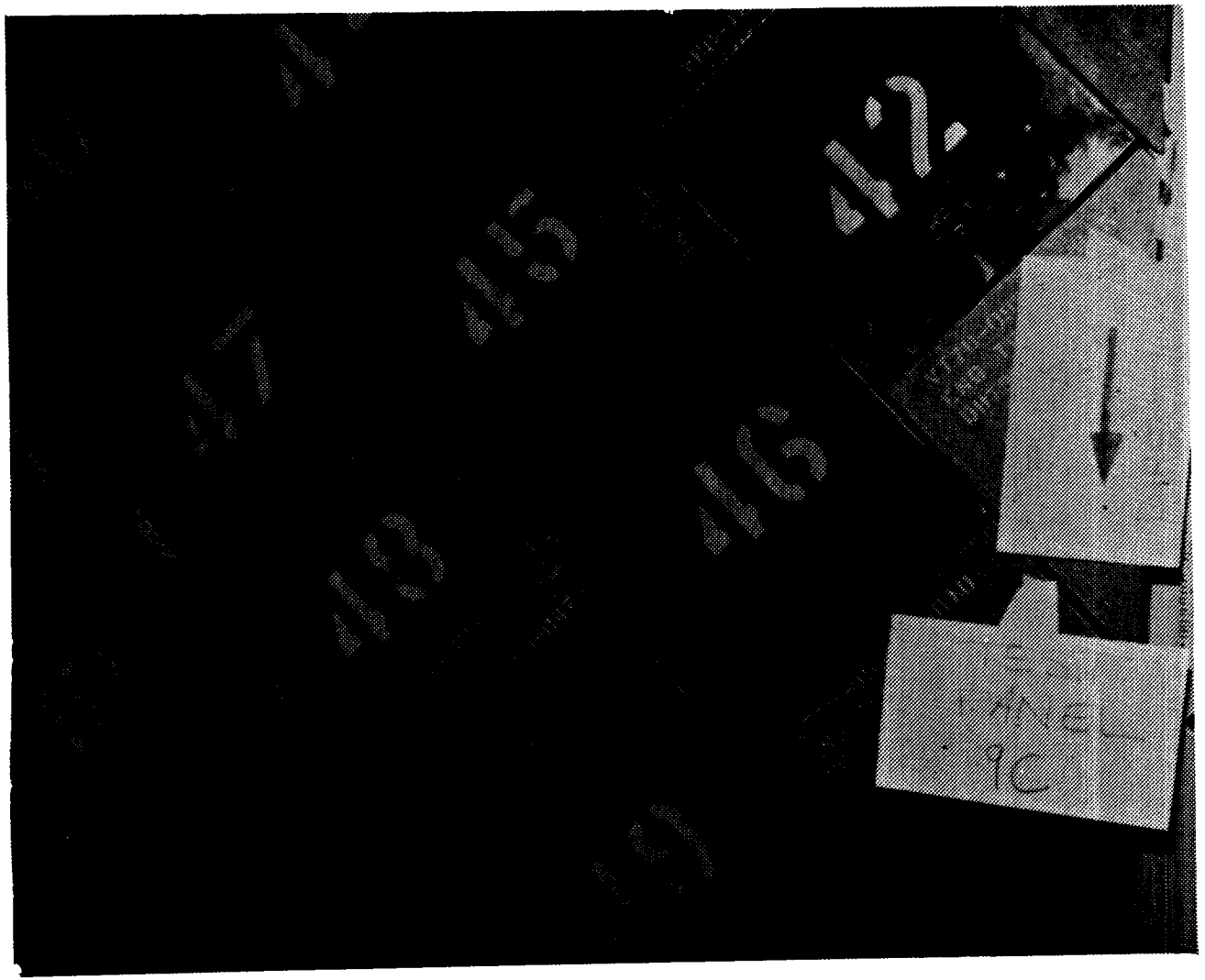

Figure 3. (Continued)

d. Completed Static Pressure Installation

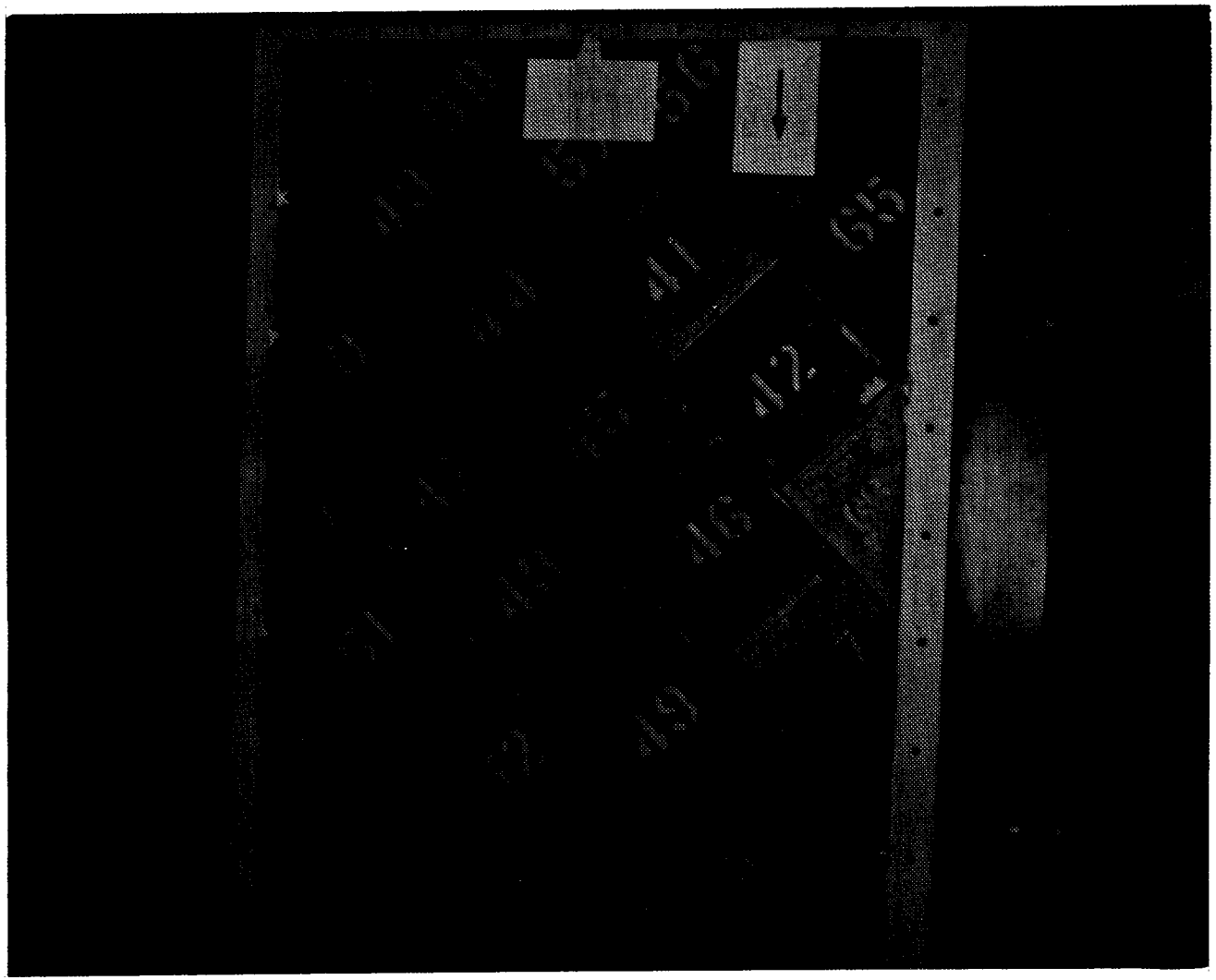

Figure 3. (Concluded)

e. Complete Test Panel

DATA FIGURES

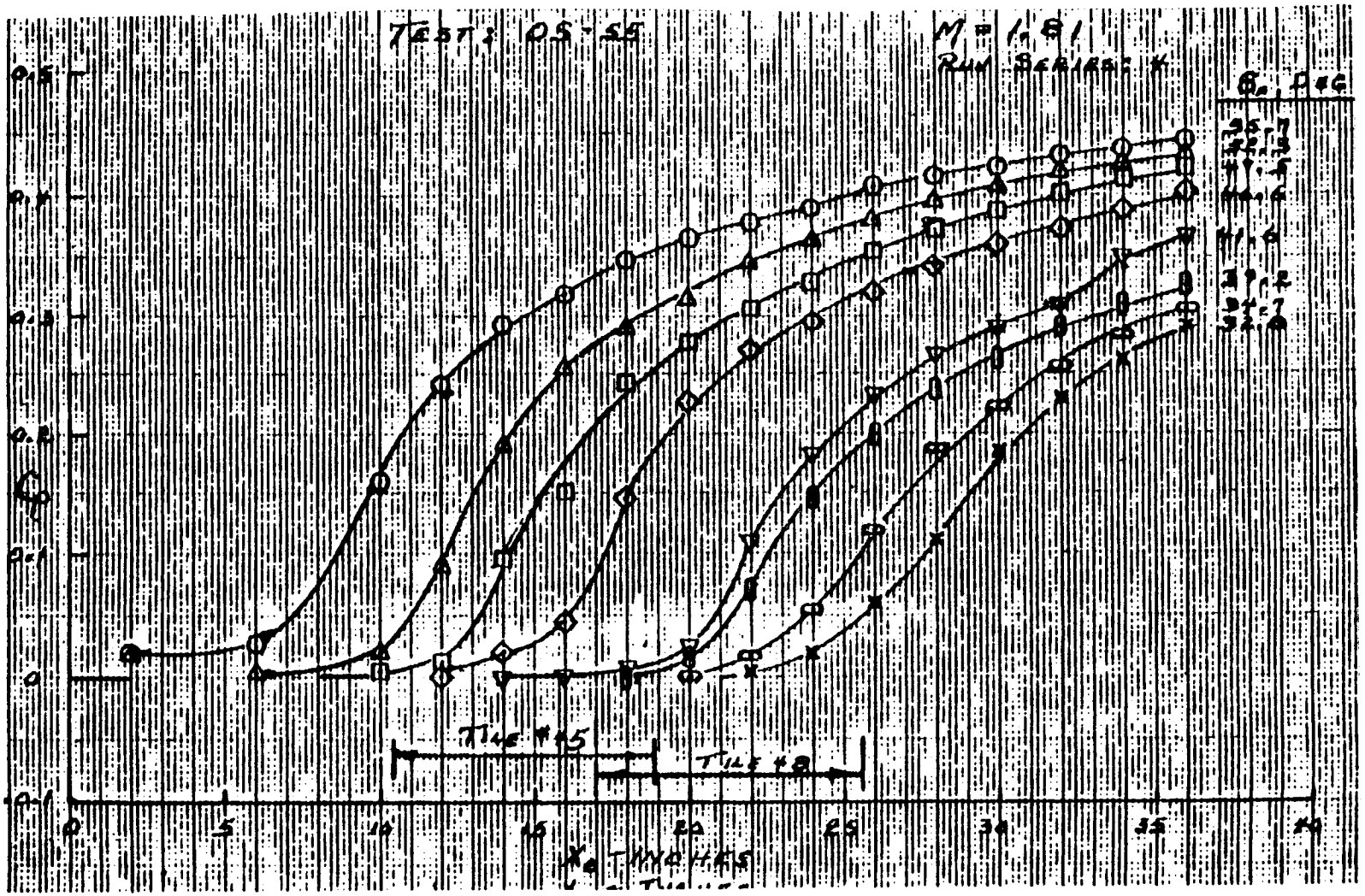

Figure 4a. Shock Position vs Flap Deflection, M = 1.8, q = 464 PSF, Run 4, OS55

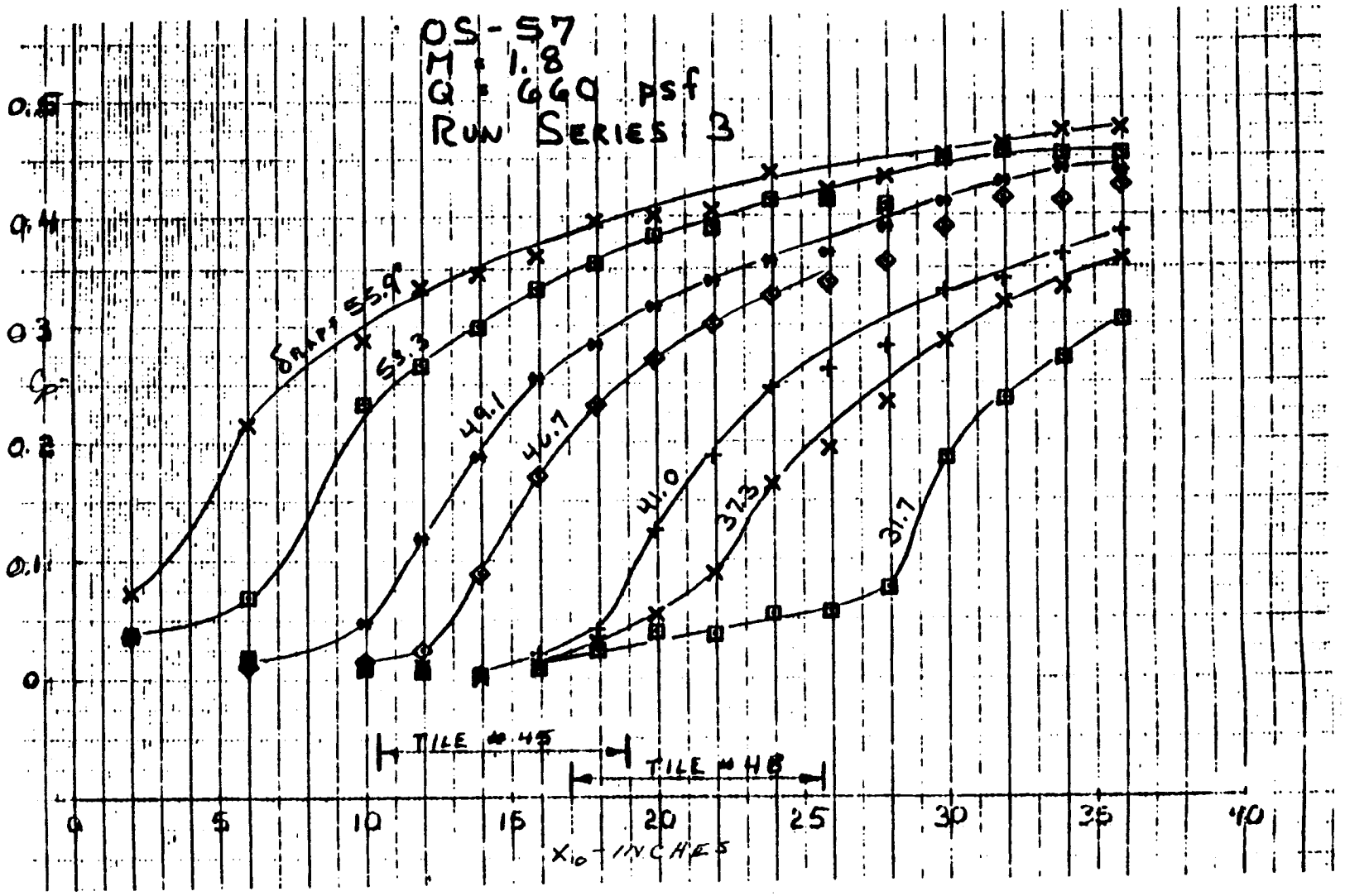

Figure 4b. Shock Position vs Flap Deflection, M = 1.8, q = 660 PSF, Run 3, OS57

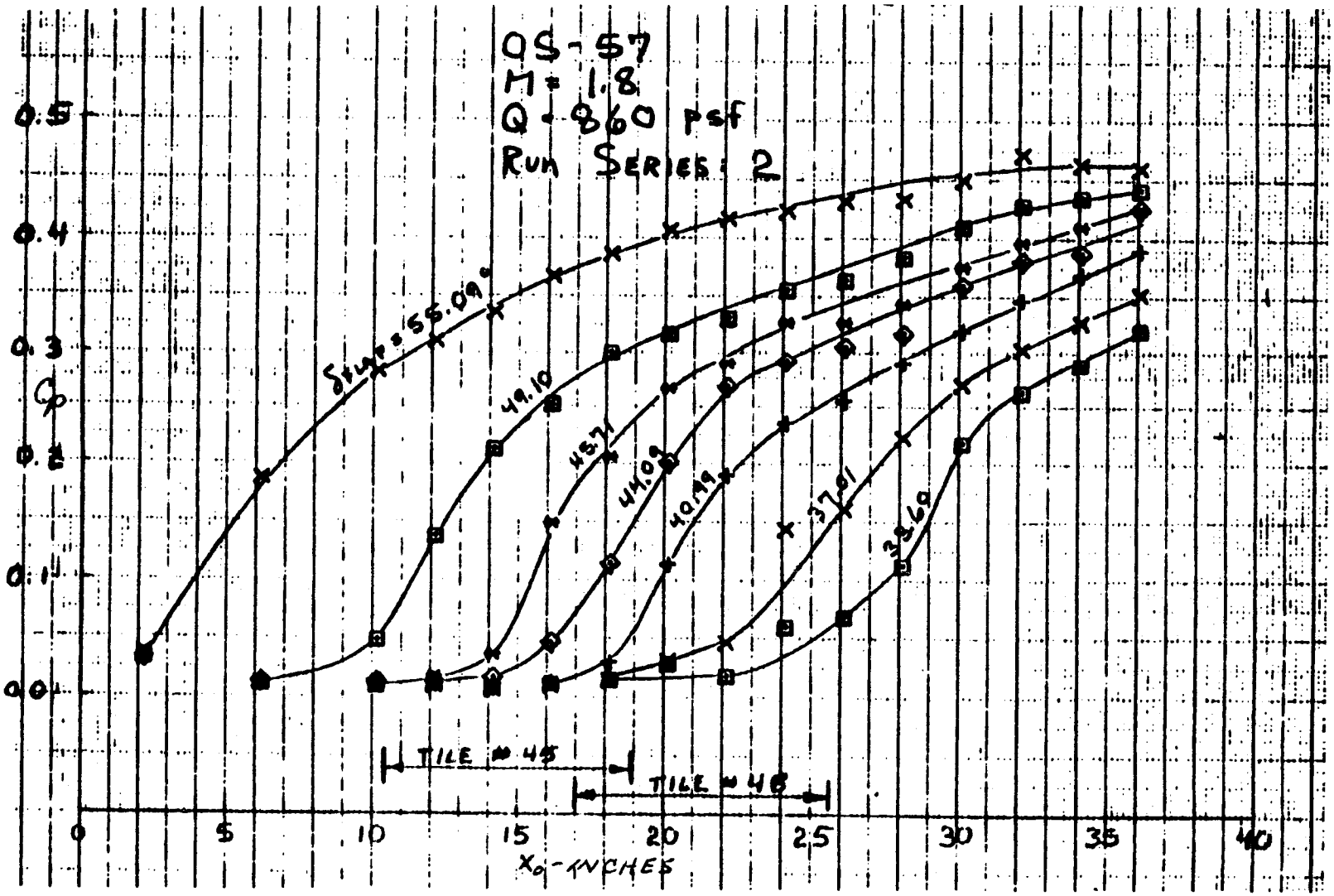

Figure 4c. Shock Position vs Flap Deflection, M = 1.8, q = 860 PSF, Run 2, OS57

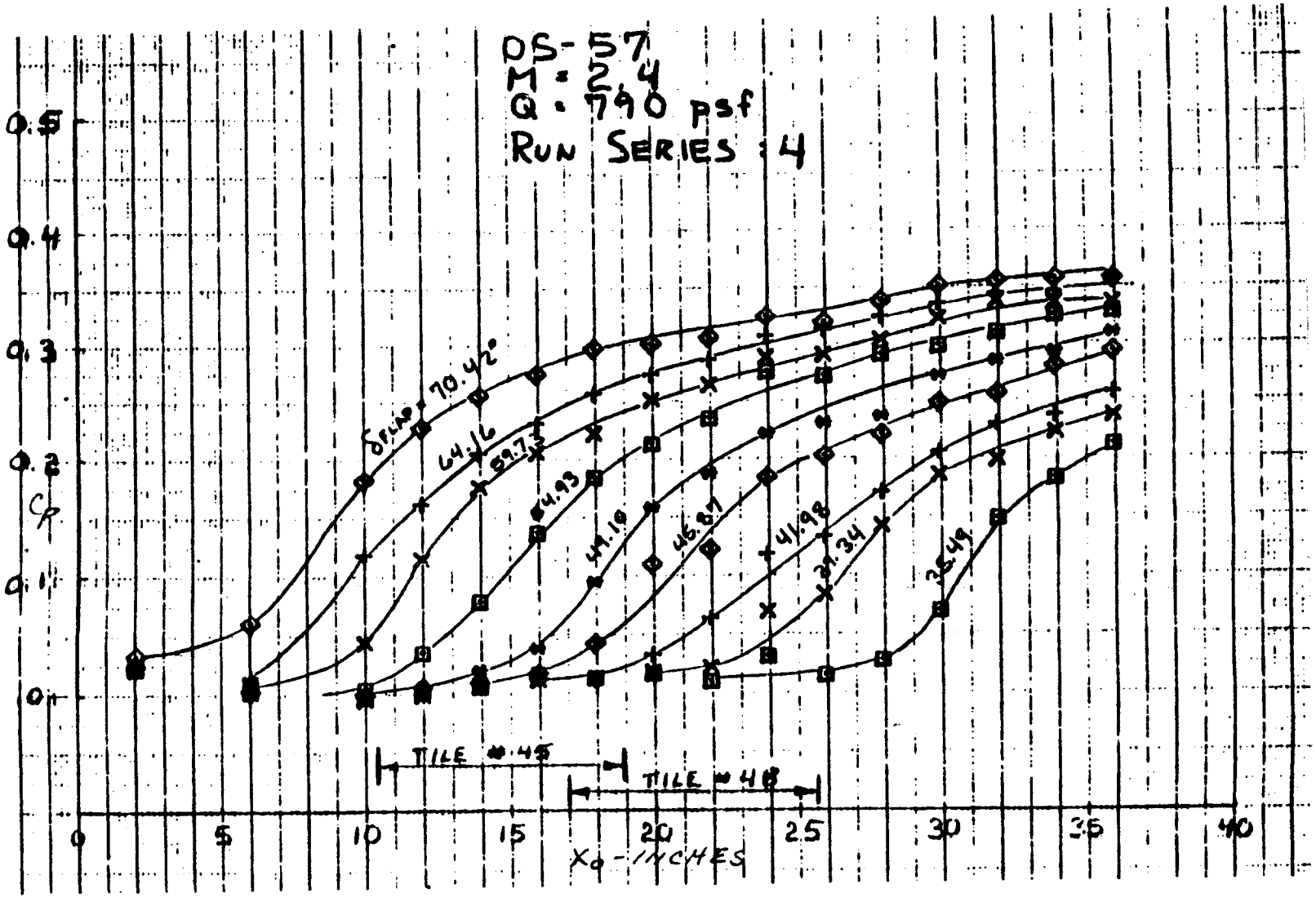

Figure 4d. Shock Position vs Flap Deflection, M = 2.4, q = 790 PSF, Run 4, OS57

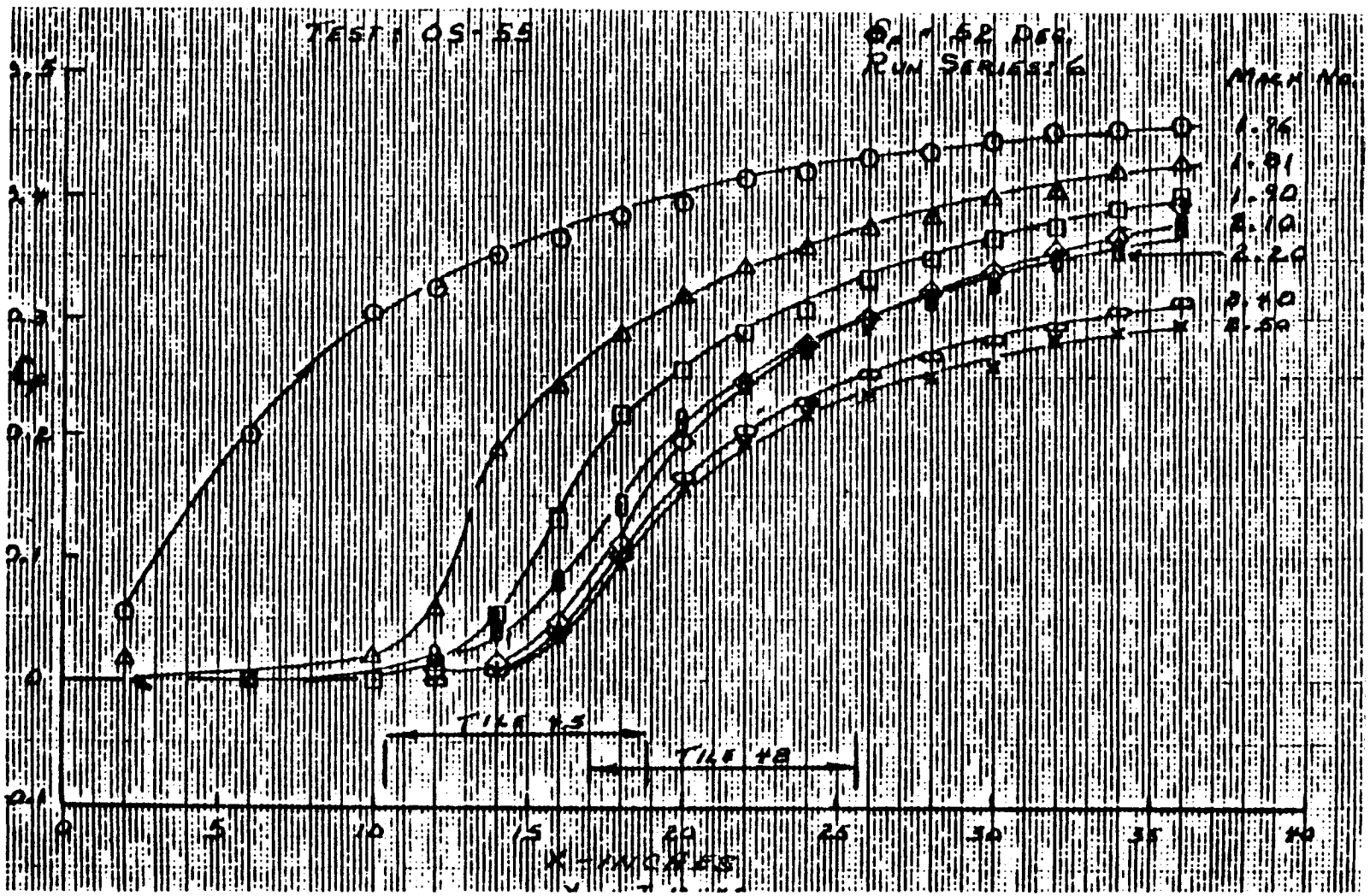

Figure 5. Shock Position vs Mach Number, $\delta_F = 52^{\circ}$, Run 6, OS55

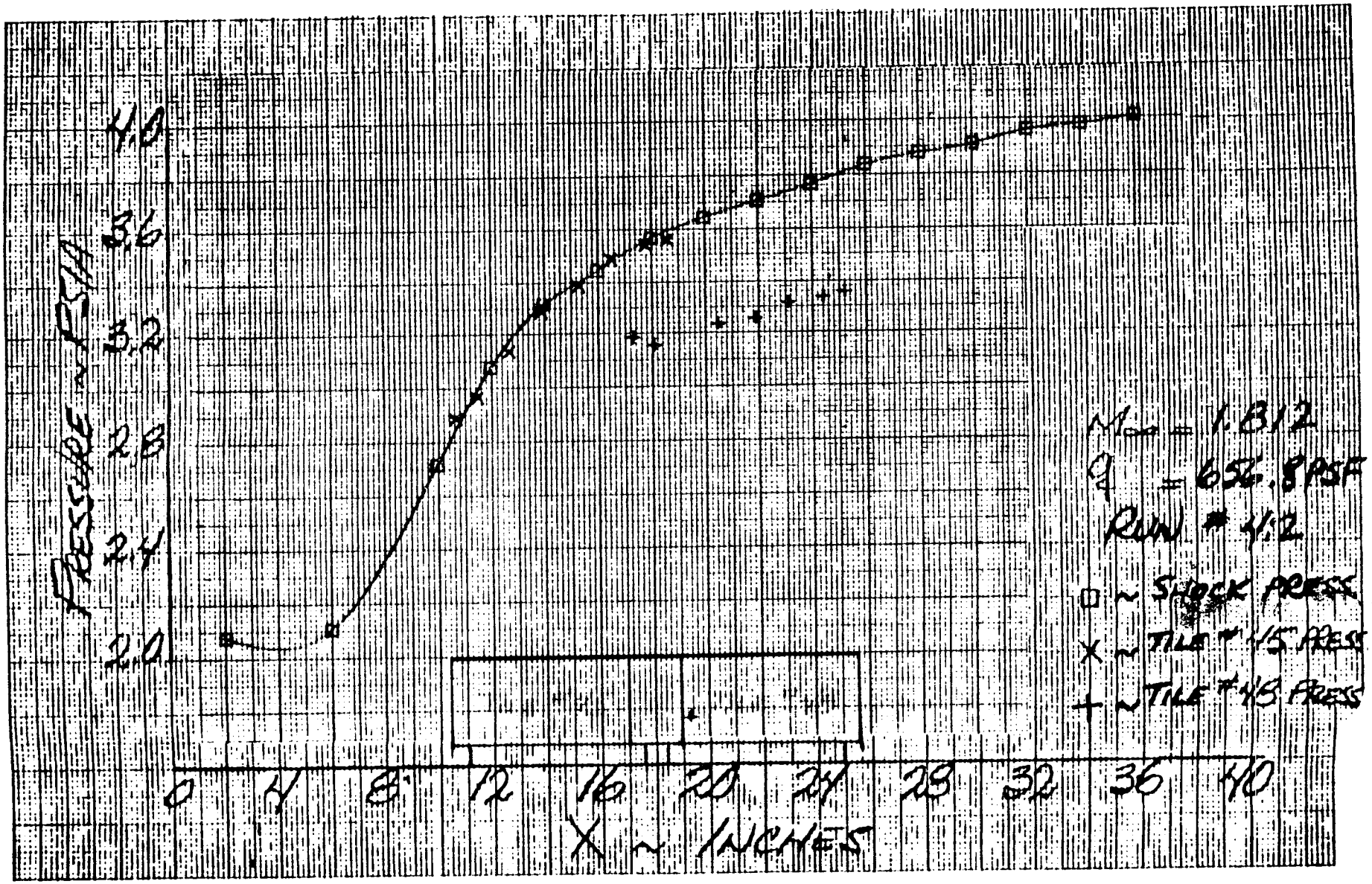

Figure 6a. Shock and Surface Pressures, δ_p = 55.7, M = 1.8, q = 657 PSF, Run 4:2, OS55

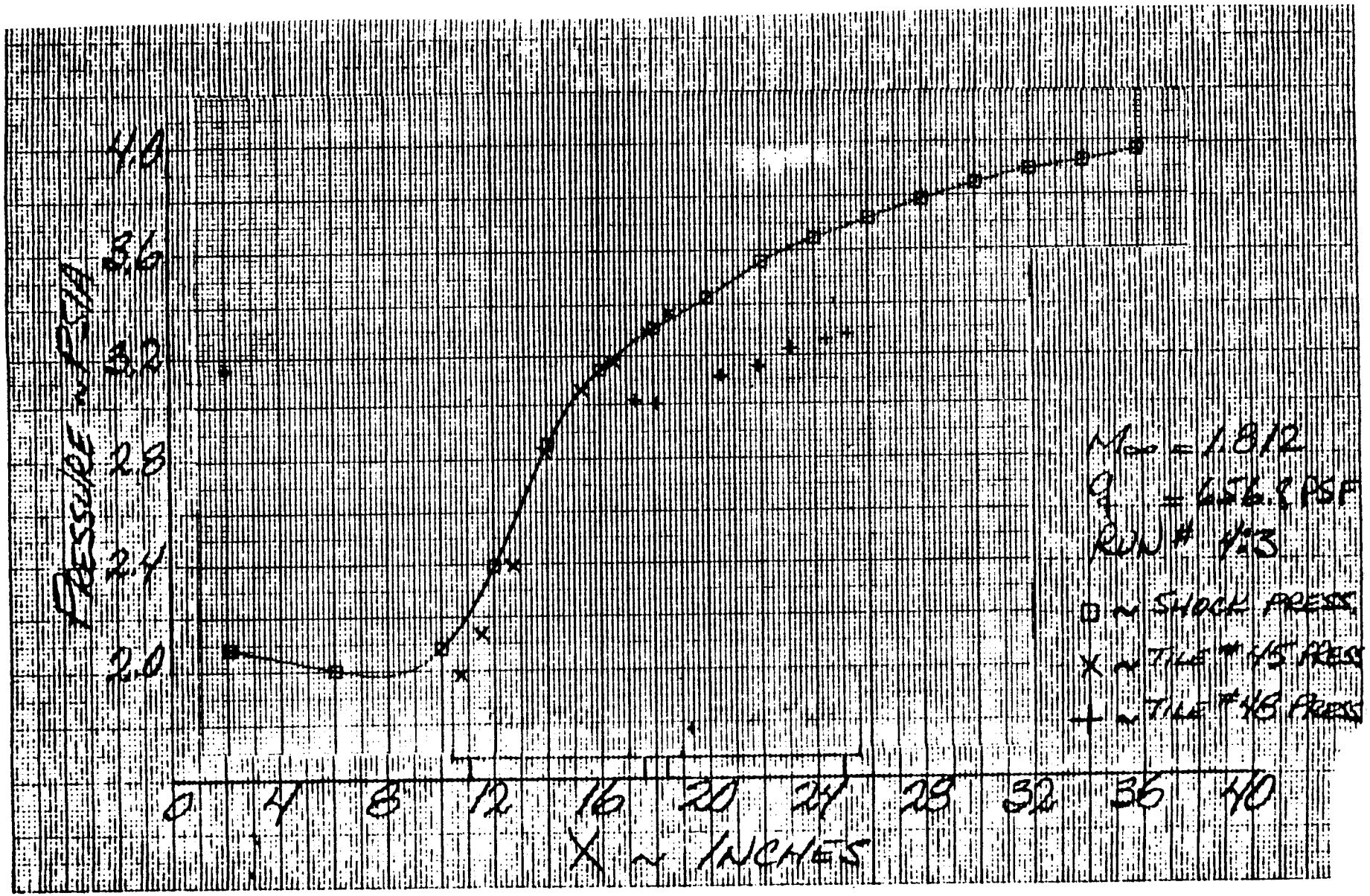

Figure 6b. Shock and Surface Pressures, δ_f = 52.3, M = 1.8, q = 657 PSF, Run 4:3, 0555

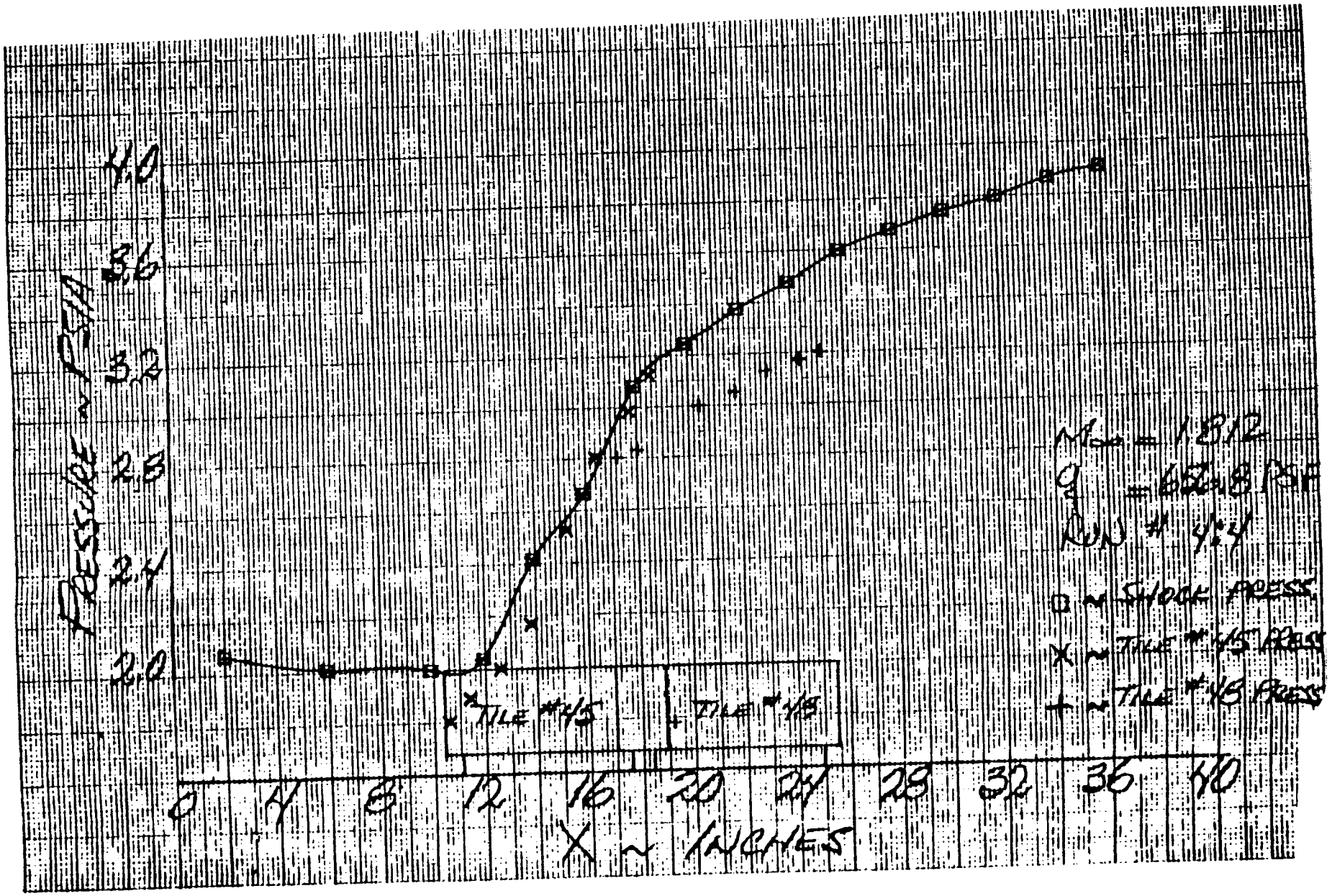

Figure 6c. Shock and Surface Pressures, δ_F = 49.5, M = 1.8, q = 657 PSF, Run 4:4, OS55

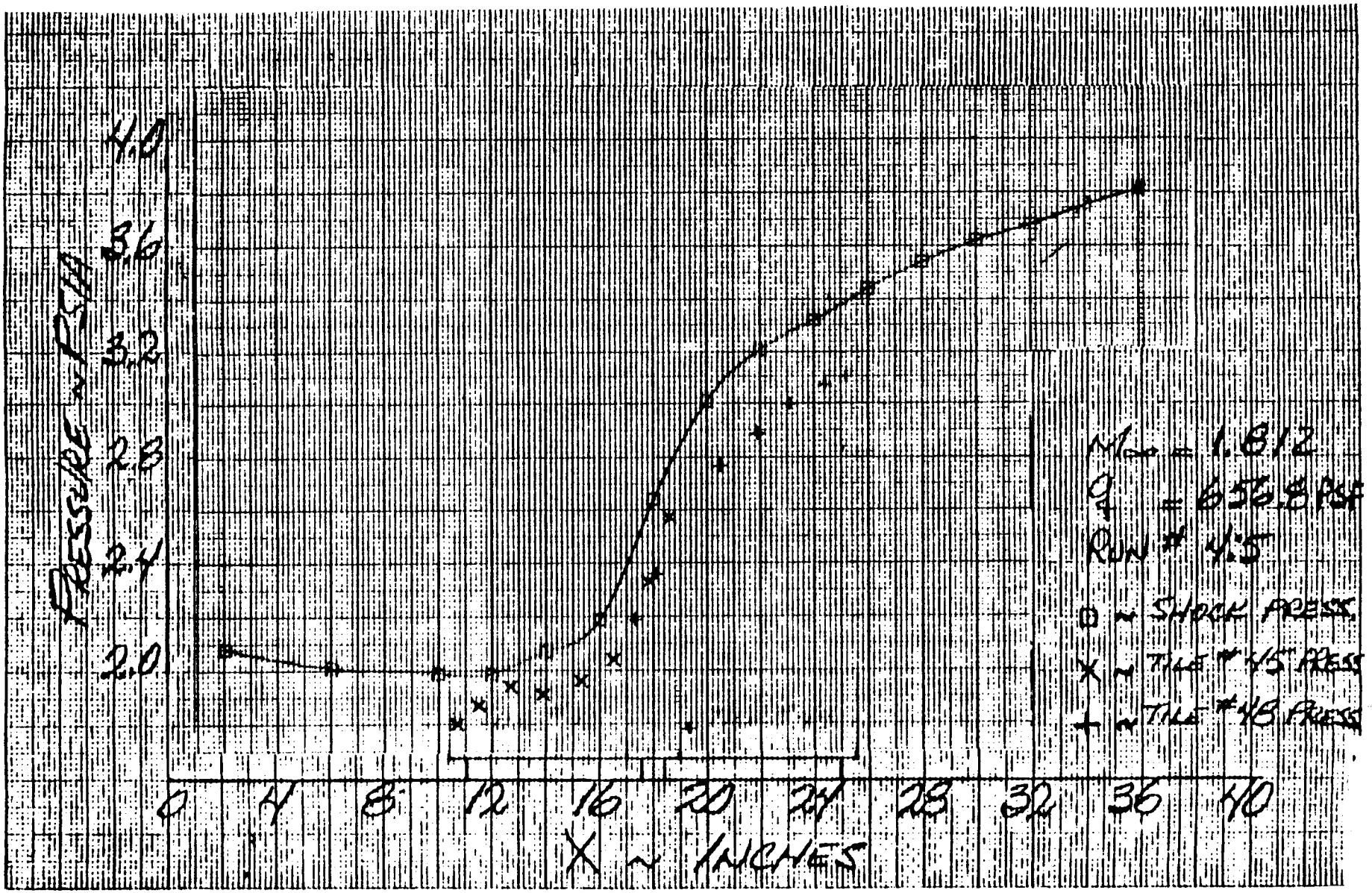

Figure 6d. Shock and Surface Pressures, δ_F = 46.6, M = 1.8, q = 657 PSF, Run 4:5, OSS5

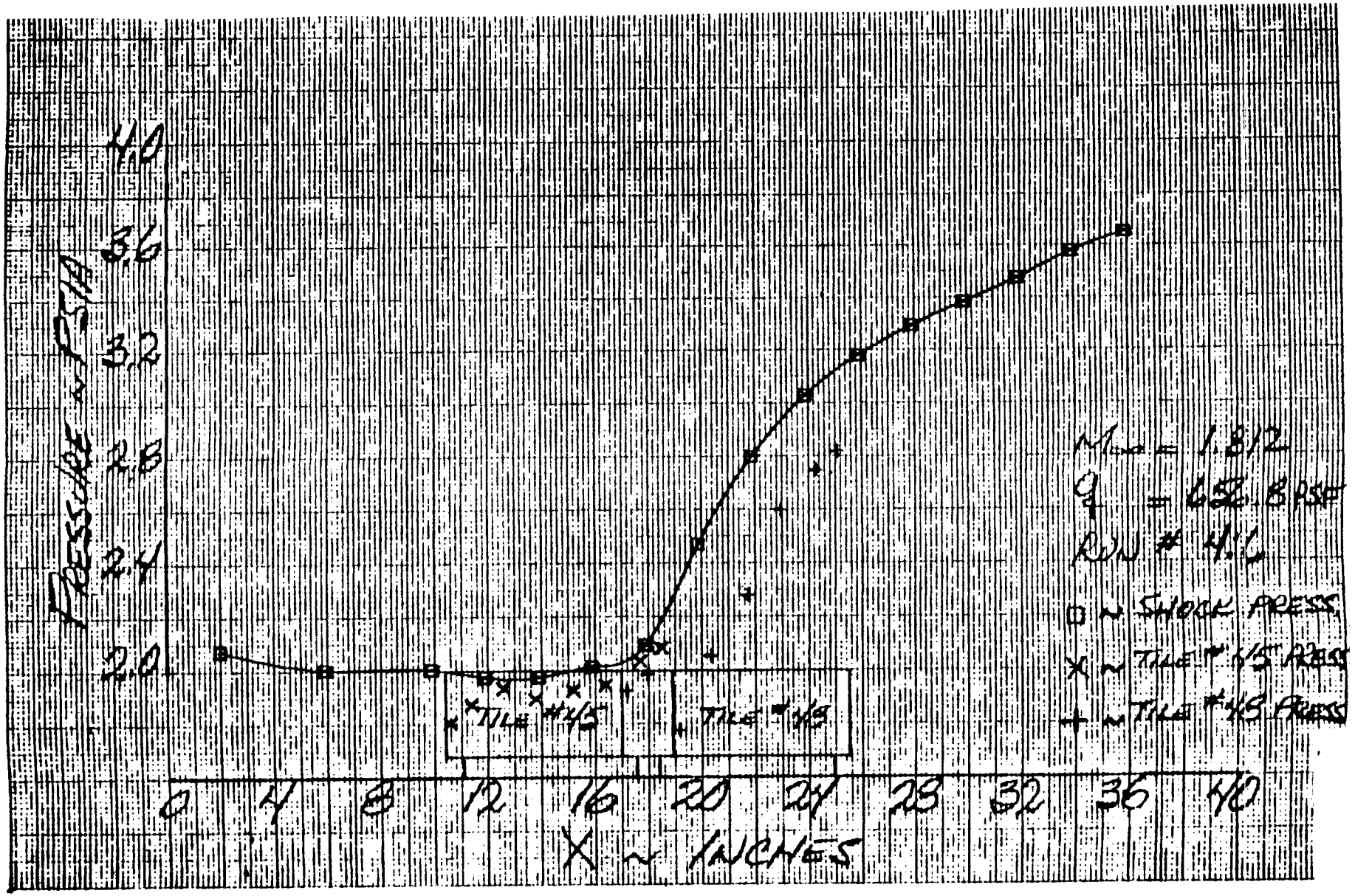

Figure 6e. Shock and Surface Pressures, δ_F = 41.6, M = 1.8, q = 657 PSF, Run 4:6, OS55

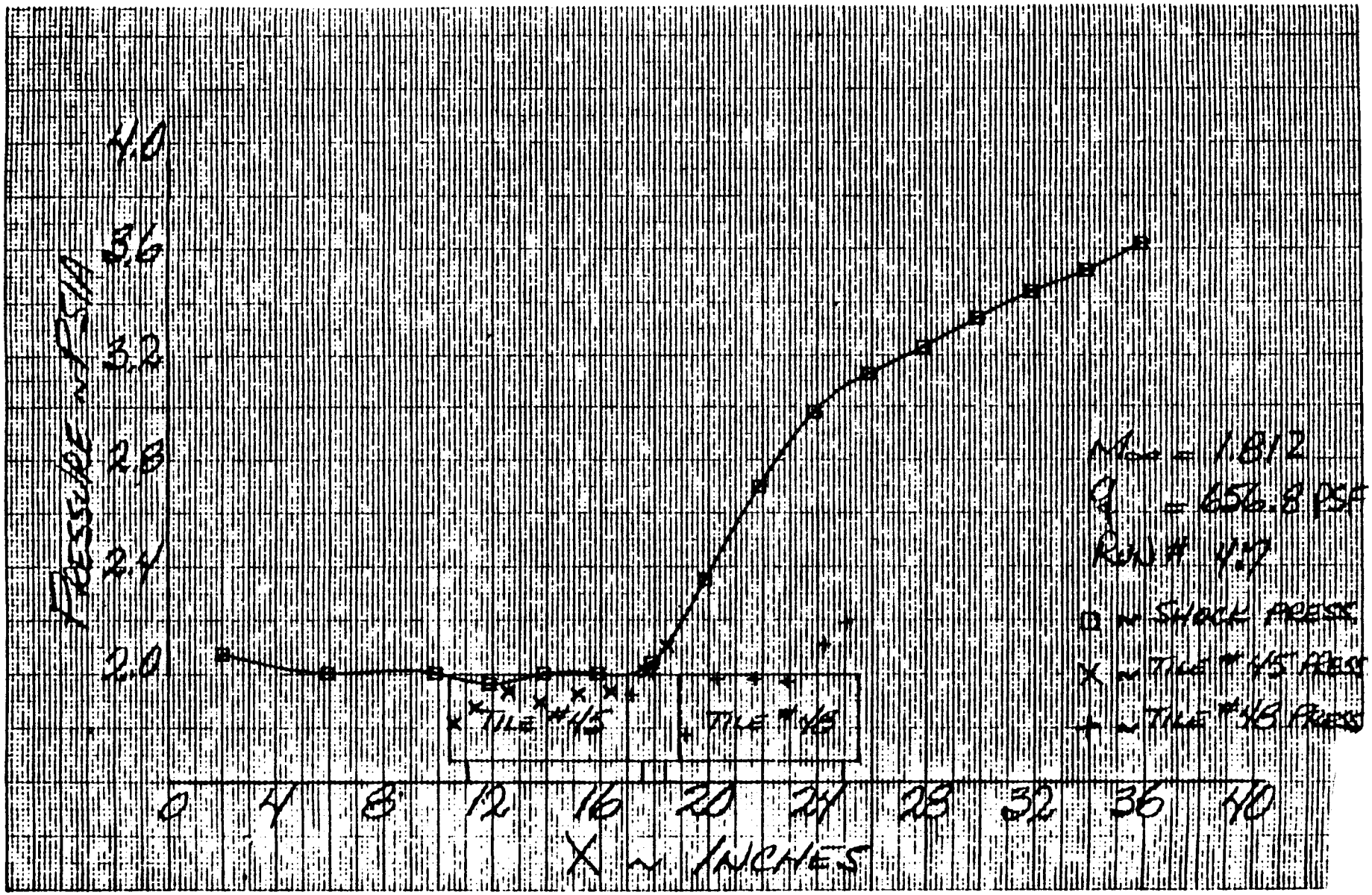

Figure 6f. Shock and Surface Pressures, δ_F = 37.2, M = 1.8, q = 657 PSF, Run 4:7, OS55

Figure 6g. Shock and Surface Pressures, δ_F = 34.7, M = 1.8, q = 657 PSF, Run 4:8, OS55

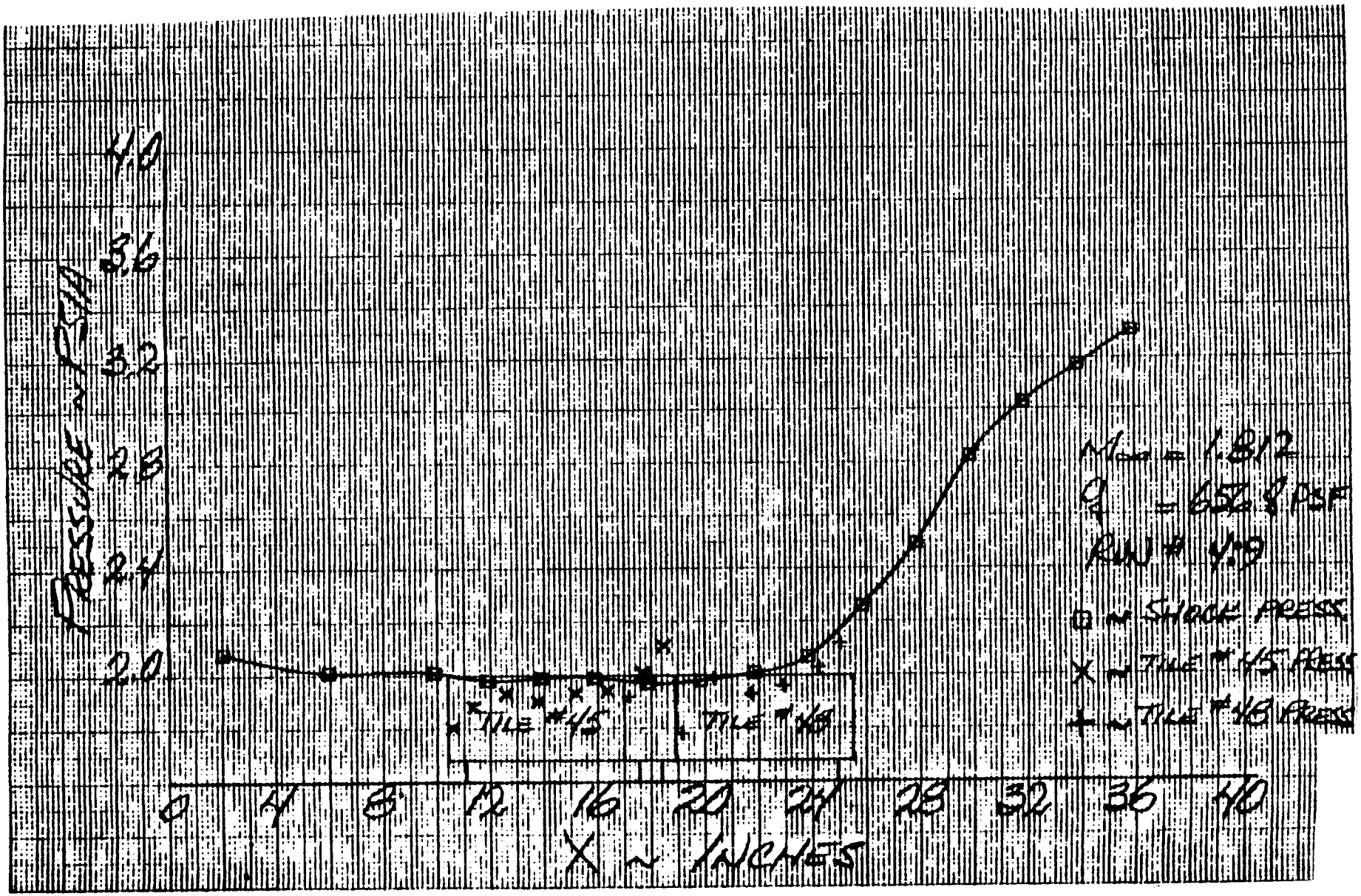

Figure 6h. Shock and Surface Pressures, δ_f = 32.8, M = 1.8, q = 657 PSF, Run 4:9, 0555

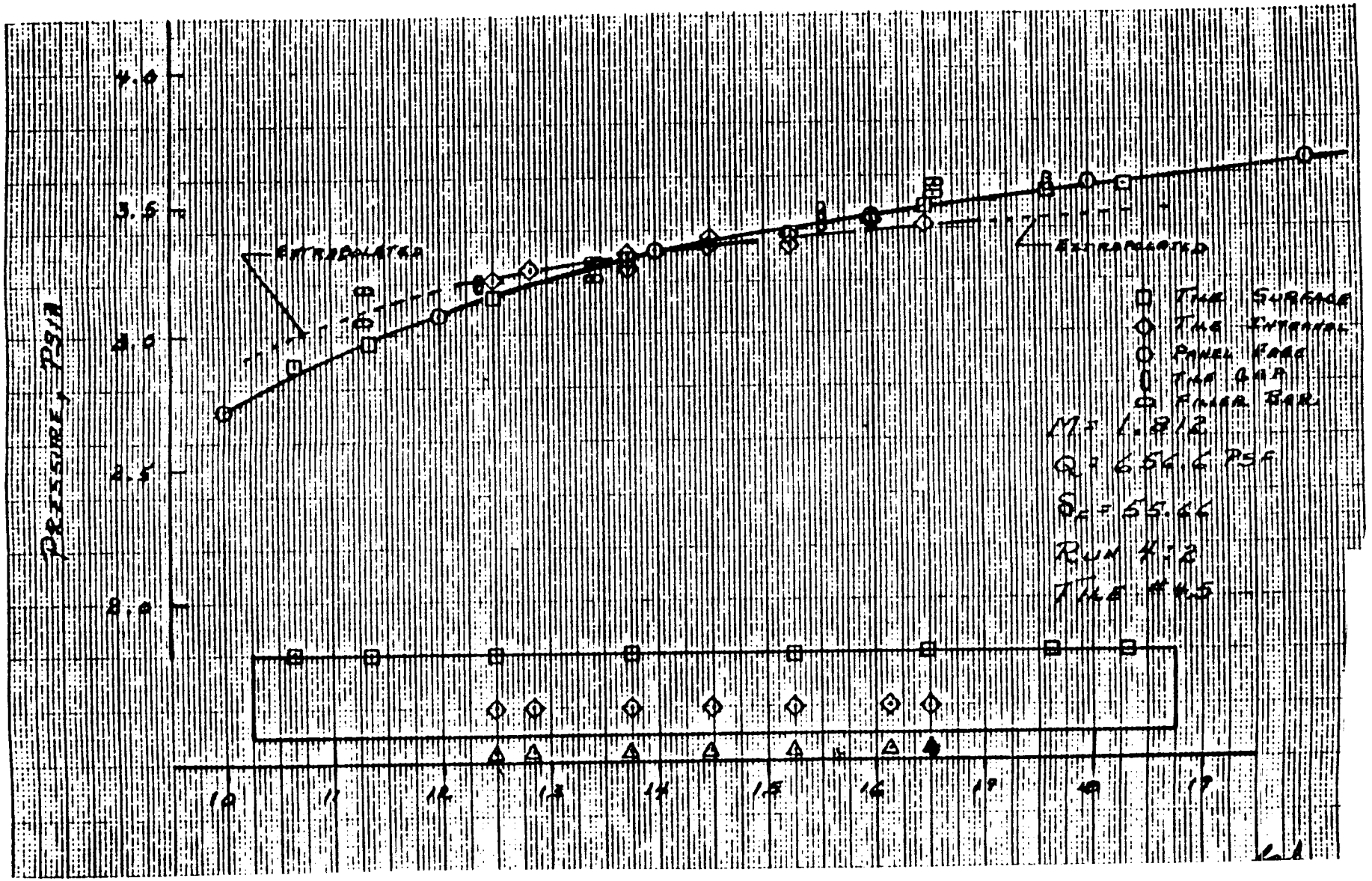

Figure 7. Surface and Internal Pressures - Tile #45, δ_F = 55.7, M = 1.8, q = 657 PSF, Run 4:2, 0855

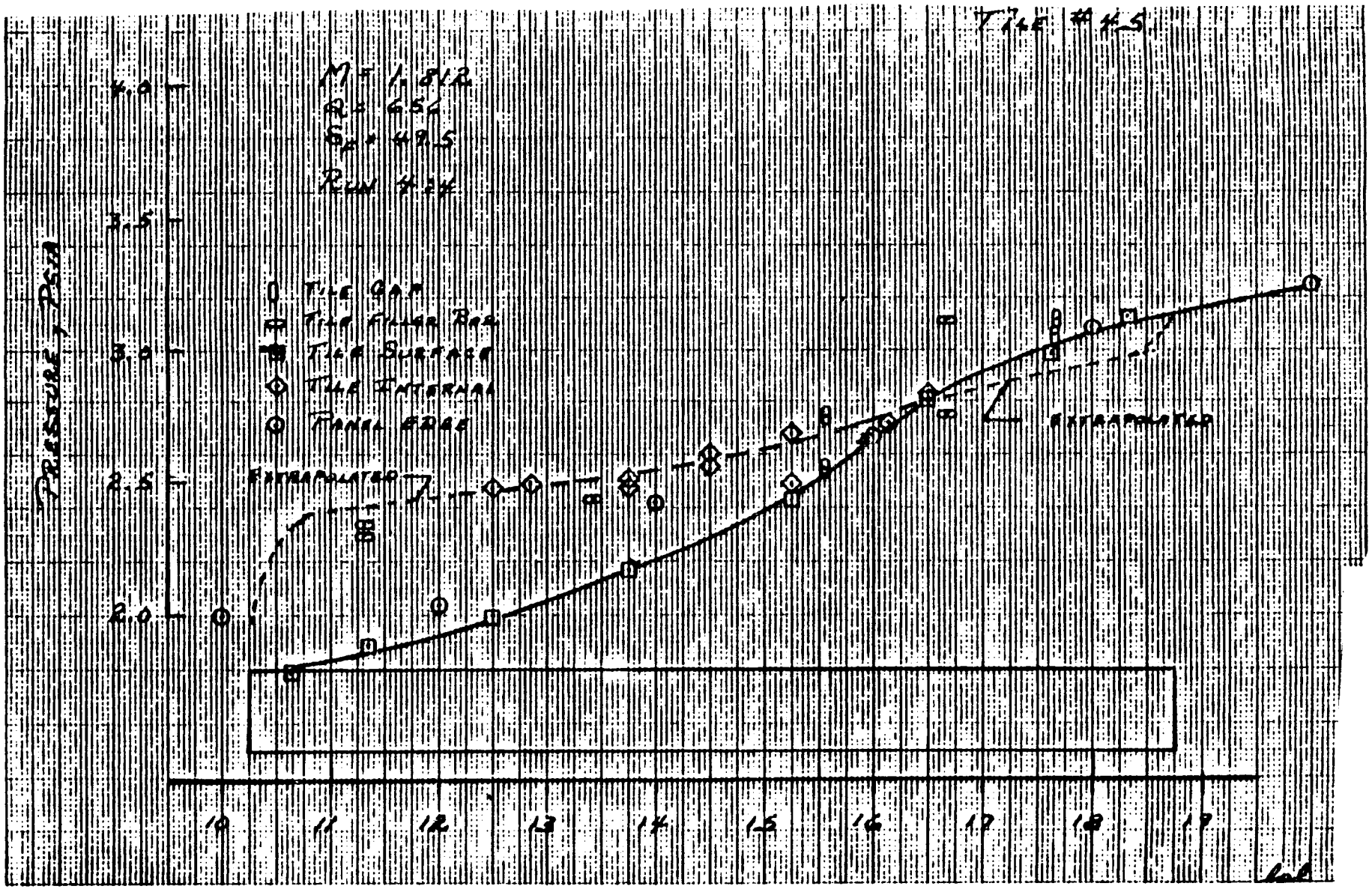

Figure 8. Surface and Internal Pressures - Tile #45, δ_p = 49.5, M = 1.8, q = 657 PSF, Run 4:4, OS55

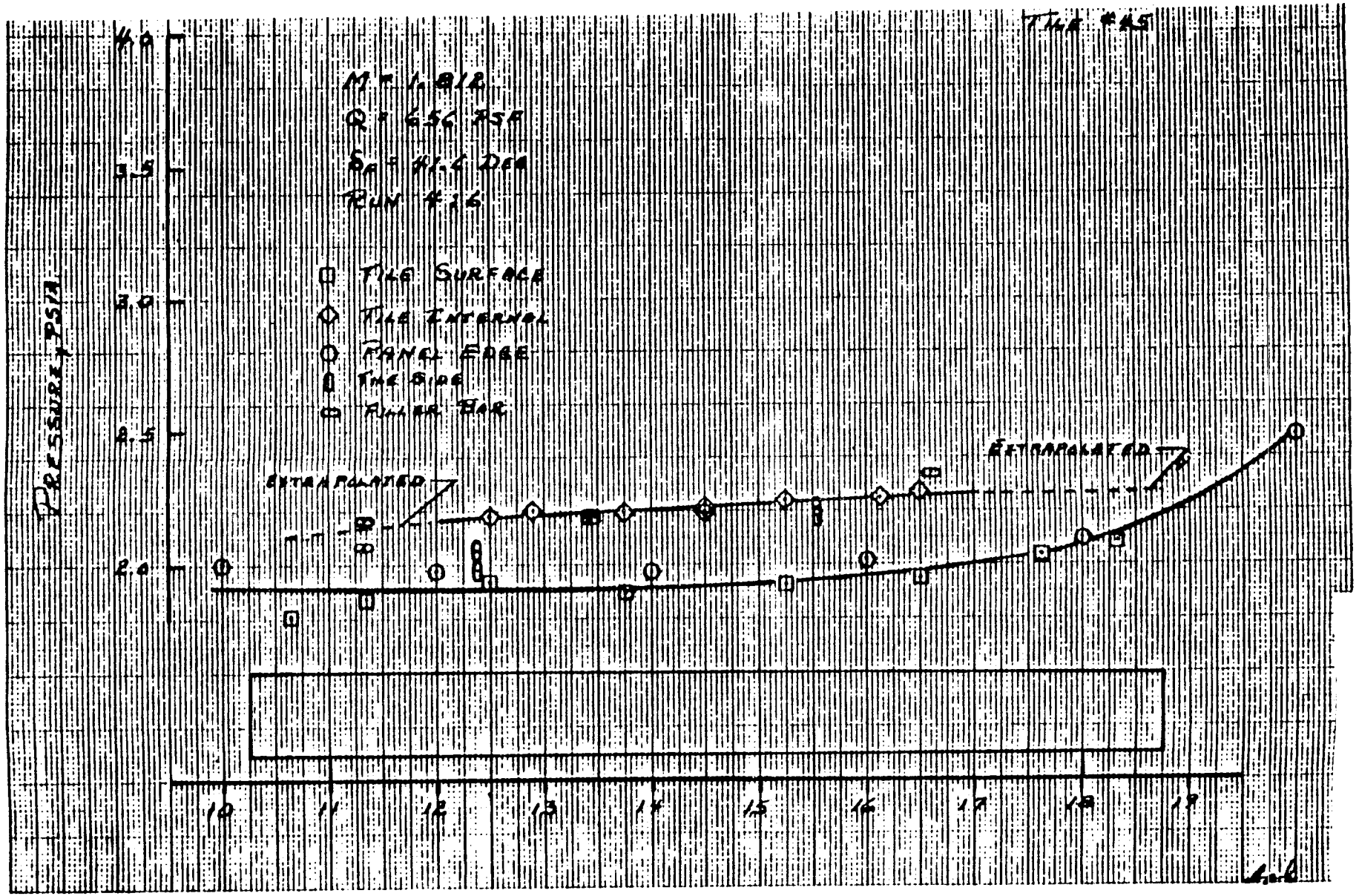

Figure 9. Surface and Interna Pressures - Tile #45, δ_F = 41.6, M = 1.8, q = 657 PSF, Run 4:6, OS55

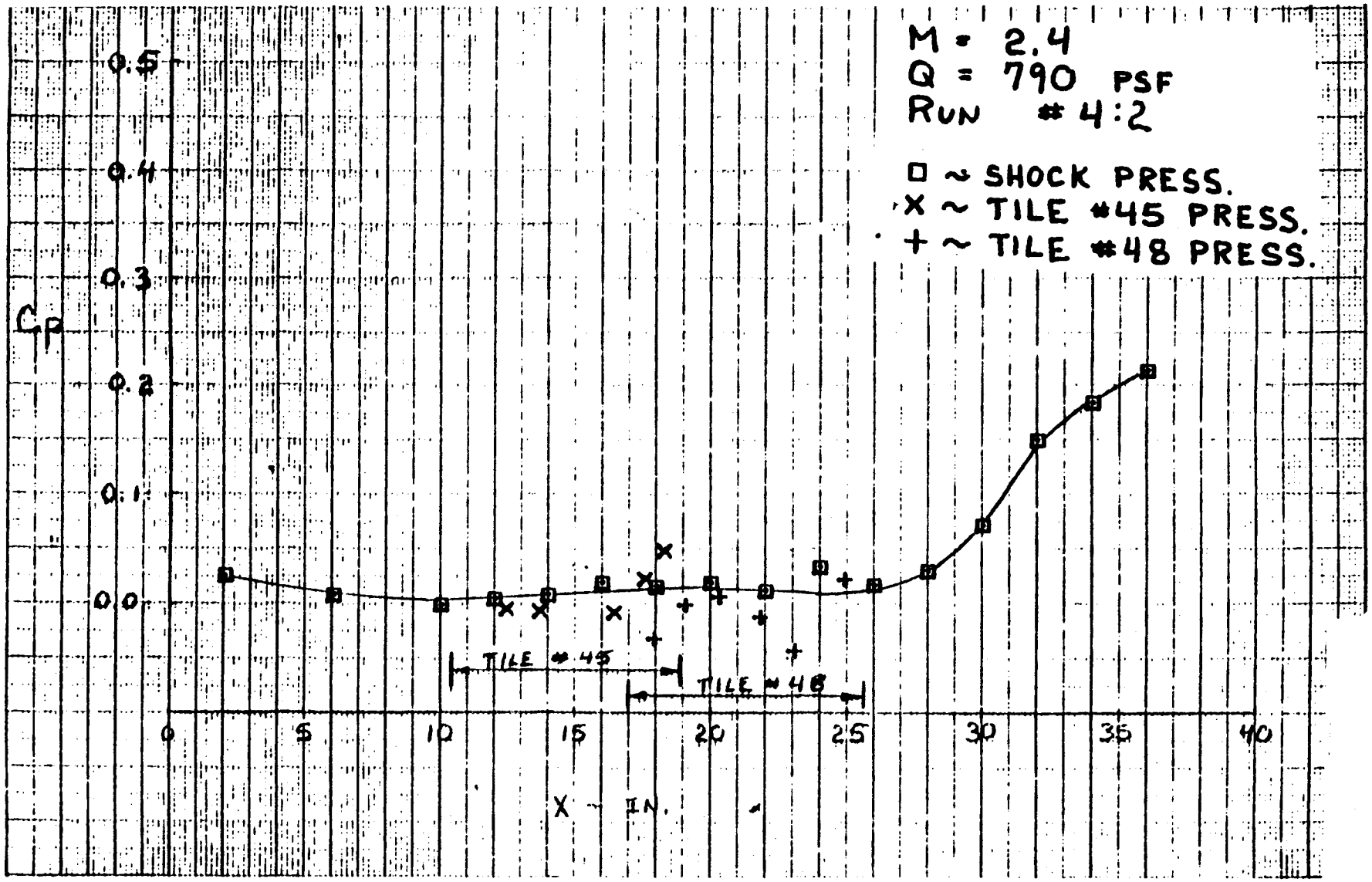

Figure 10a. Shock and Surface Pressures, δ_F = 36, M = 2.4, q = 790 PSF, Run 4:2, OS57

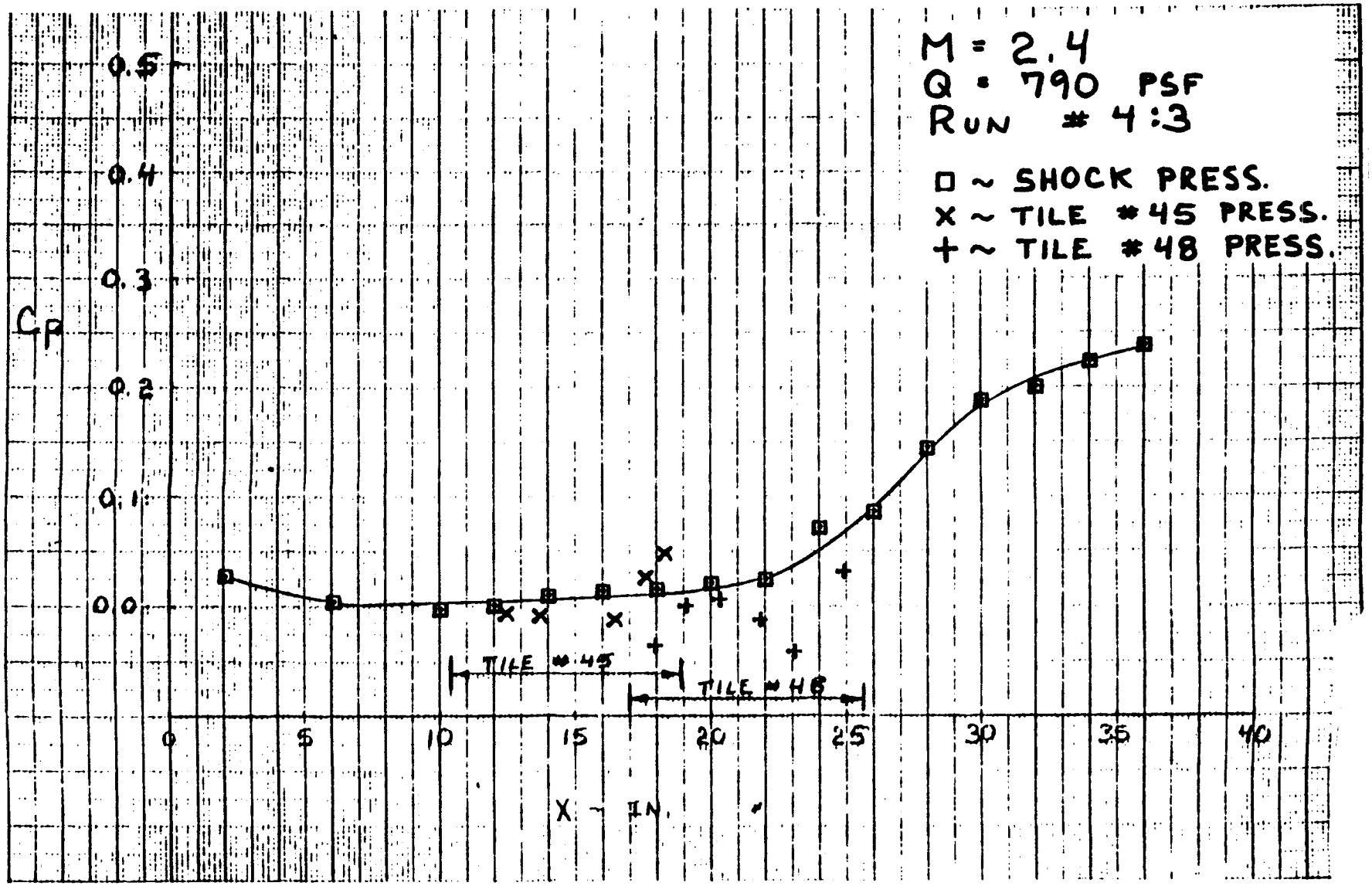

Figure 10b. Shock and Surface Pressures, δ_F = 39, M = 2.4, q = 790 PSF, Run 4:3, OS57

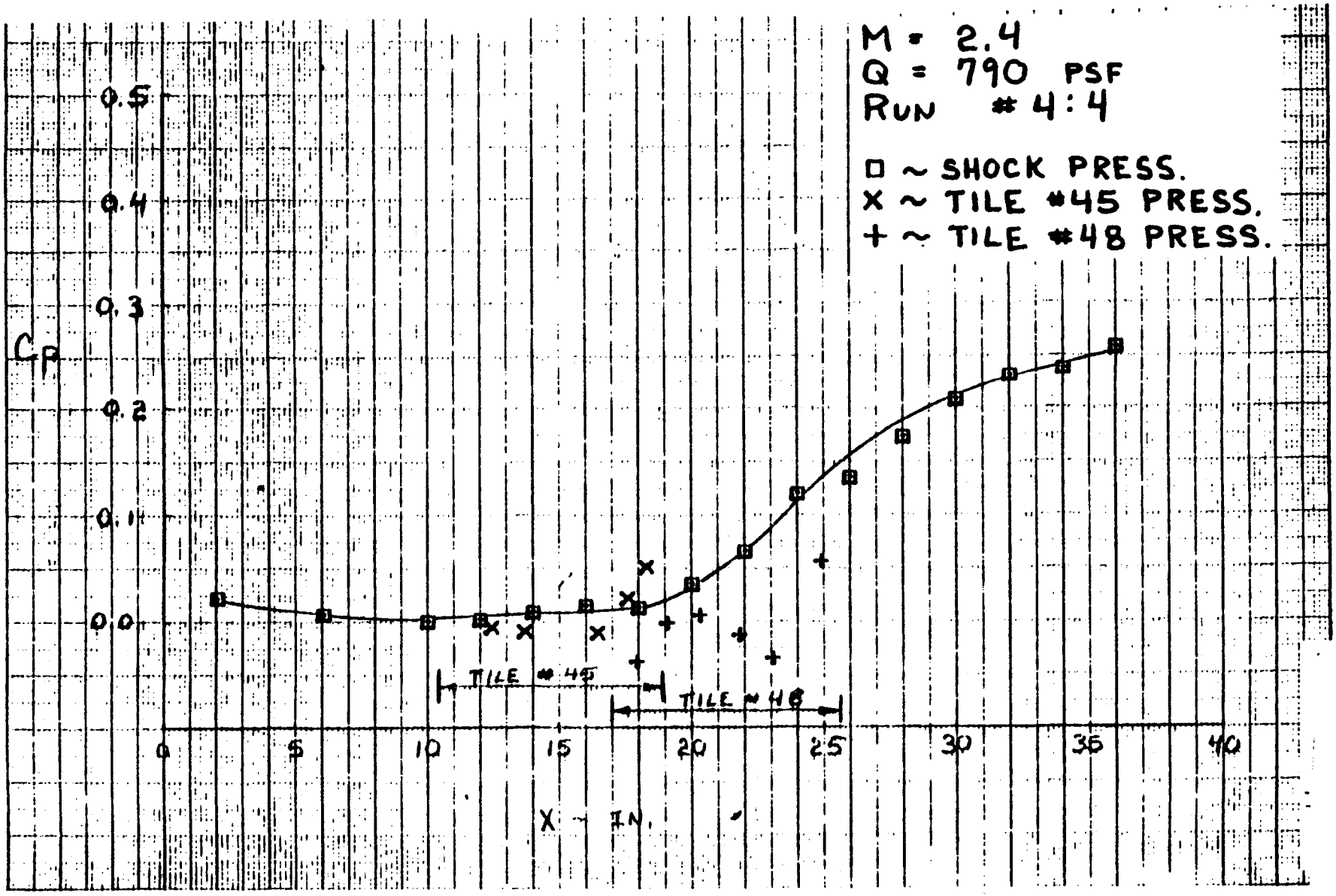

Figure 10c. Shock and Surface Pressures, δ_F = 42, M = 2.4, q = 790 PSF, Run 4:4, OS57

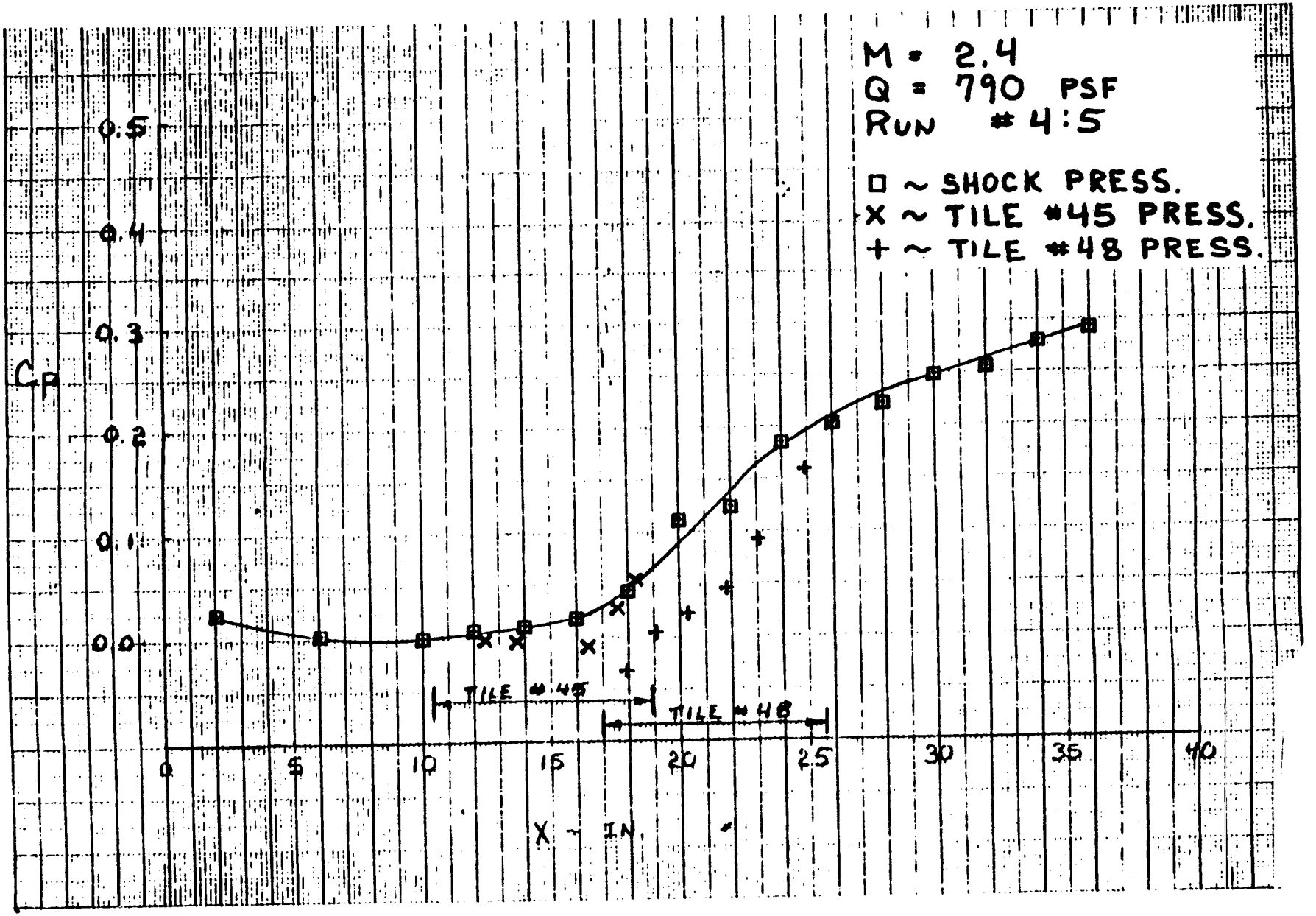

Figure 10d. Shock and Surface Pressures, δ_p = 46, M = 2.4, q = 790 PSF, Run 4:5, OS57

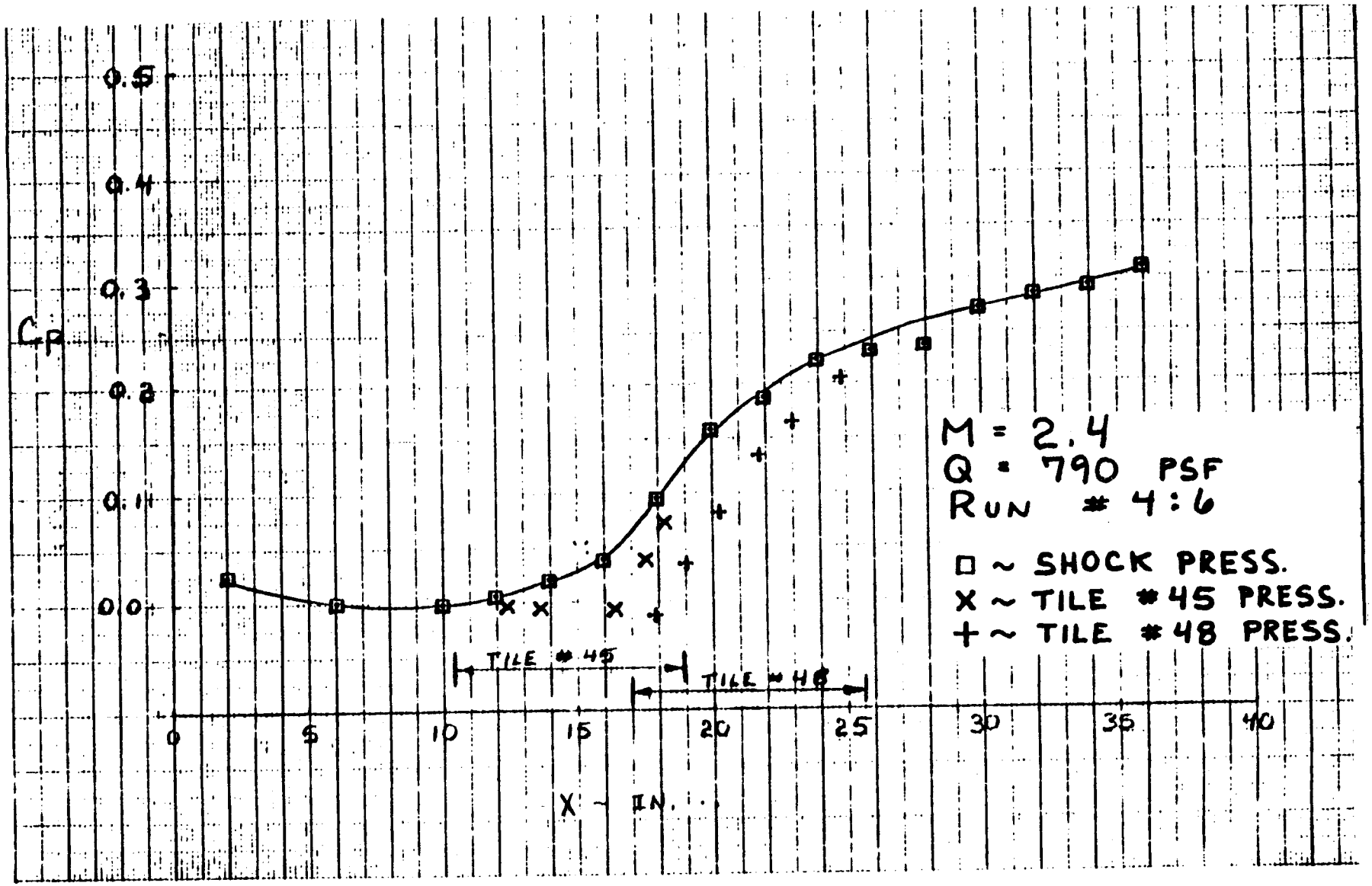

Figure 10e. Shock and Surface Pressures, δ_F = 50, M = 2.4, q = 790 PSF, Run 4:6, OS57

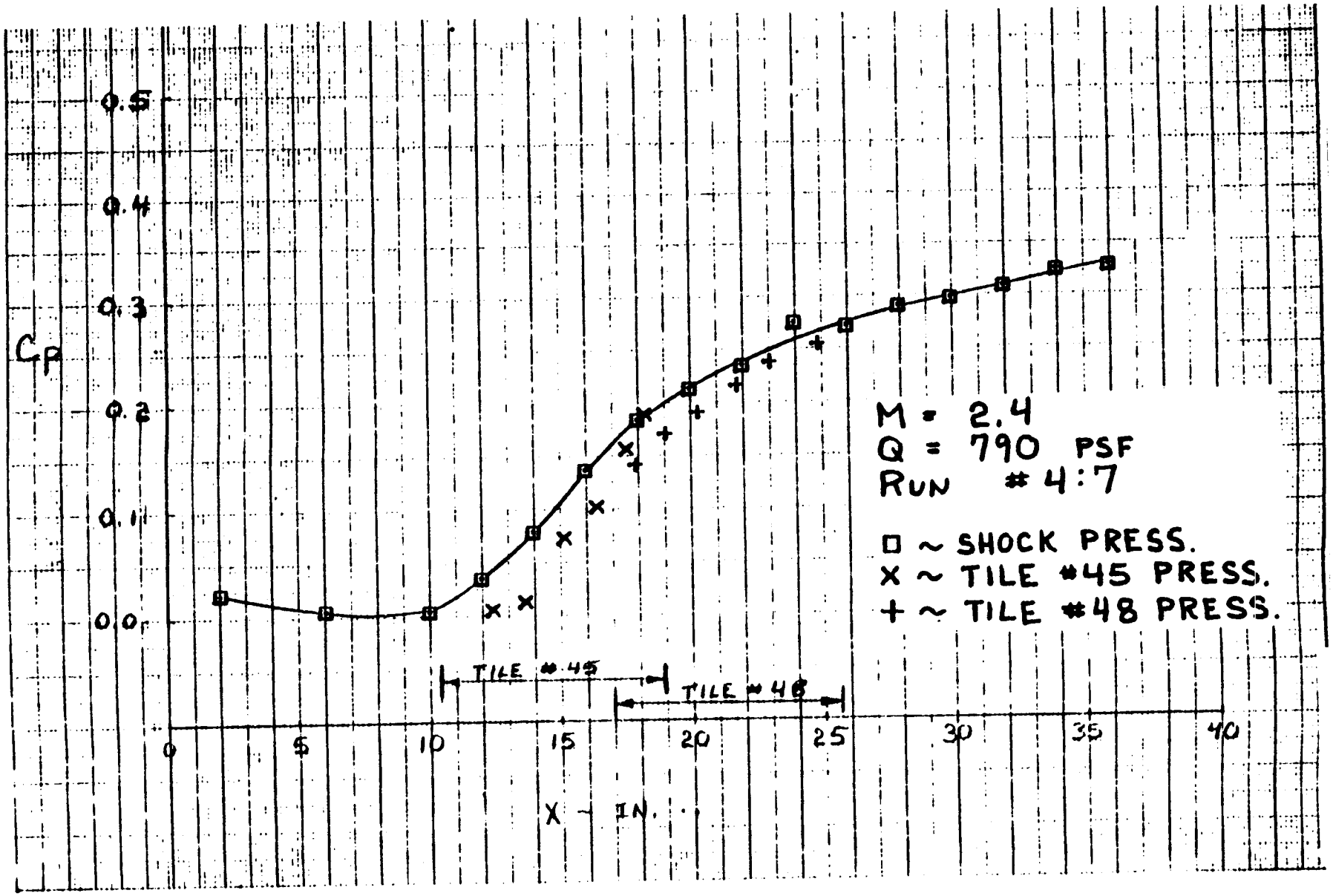

Figure 10f. Shock and Surface Pressures, δ_F = 55, M = 2.4, q = 790 PSF, Run 4:7, OS57

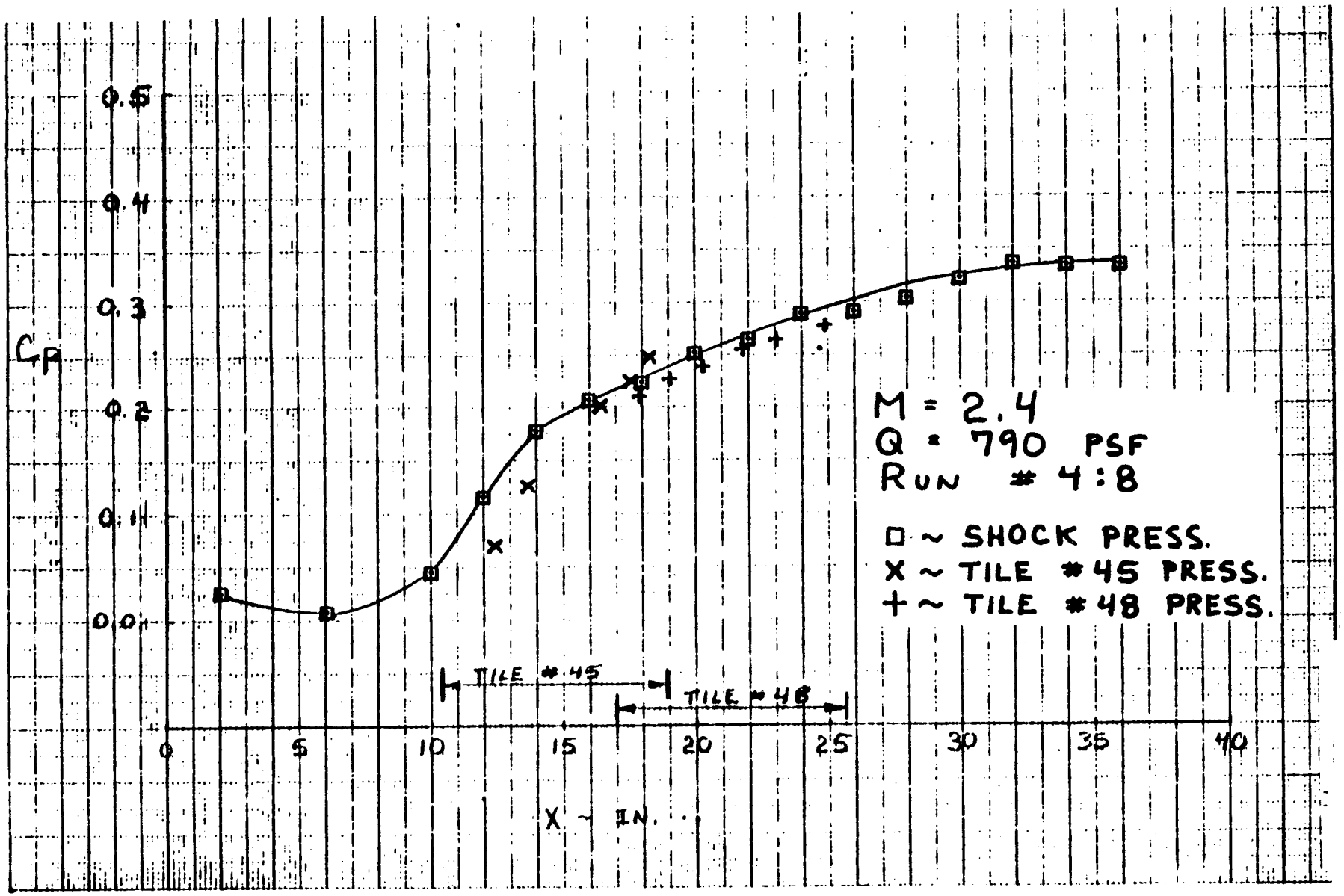

Figure 10g. Shock and Surface Pressures, δ_F = 60, M = 2.4, q = 790 PSF, Run 4:8, OS57

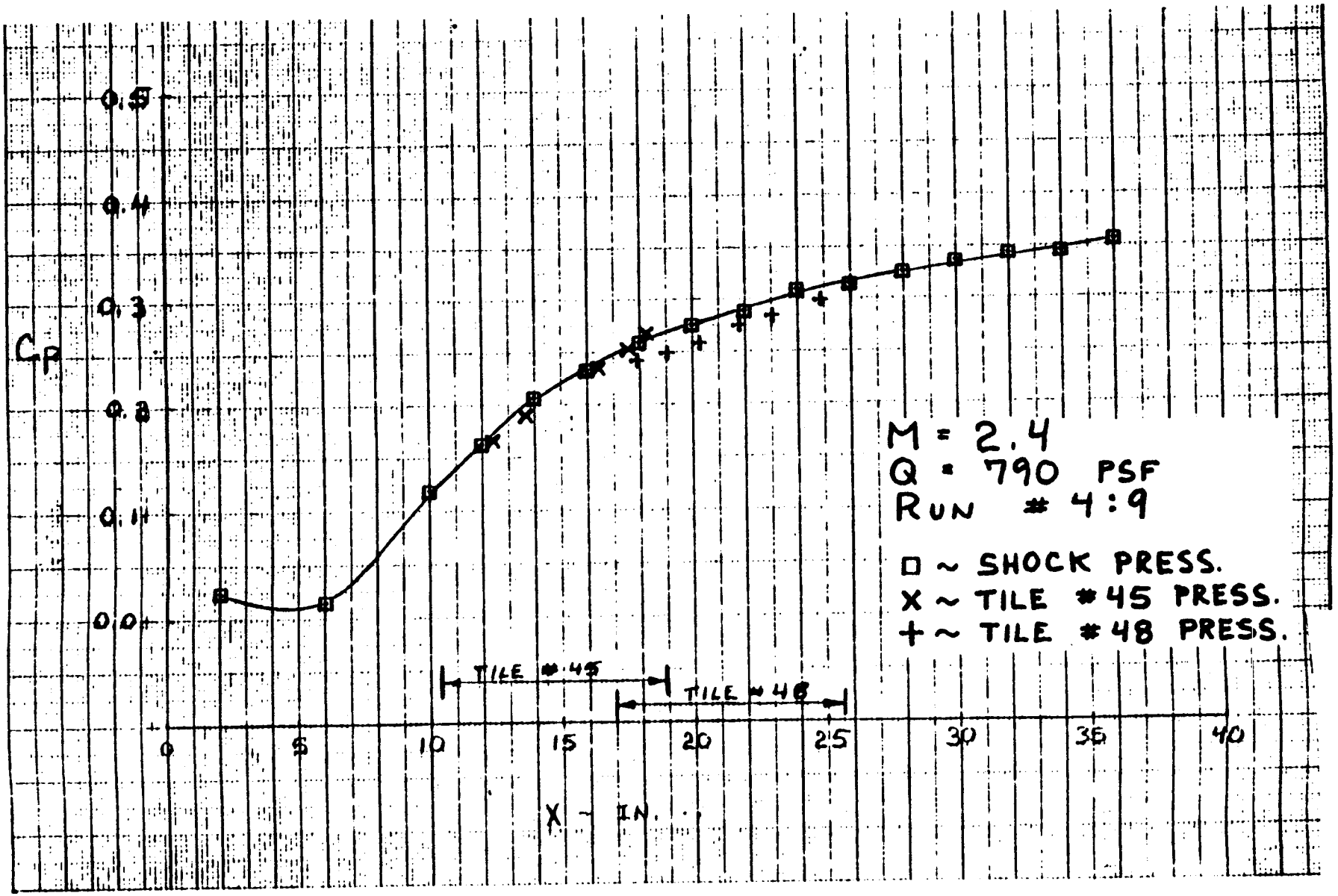

Figure 10h. Shock and Surface Pressures, δ_F = 64, M = 2.4, q = 790 PSF, Run 4:9, OS57

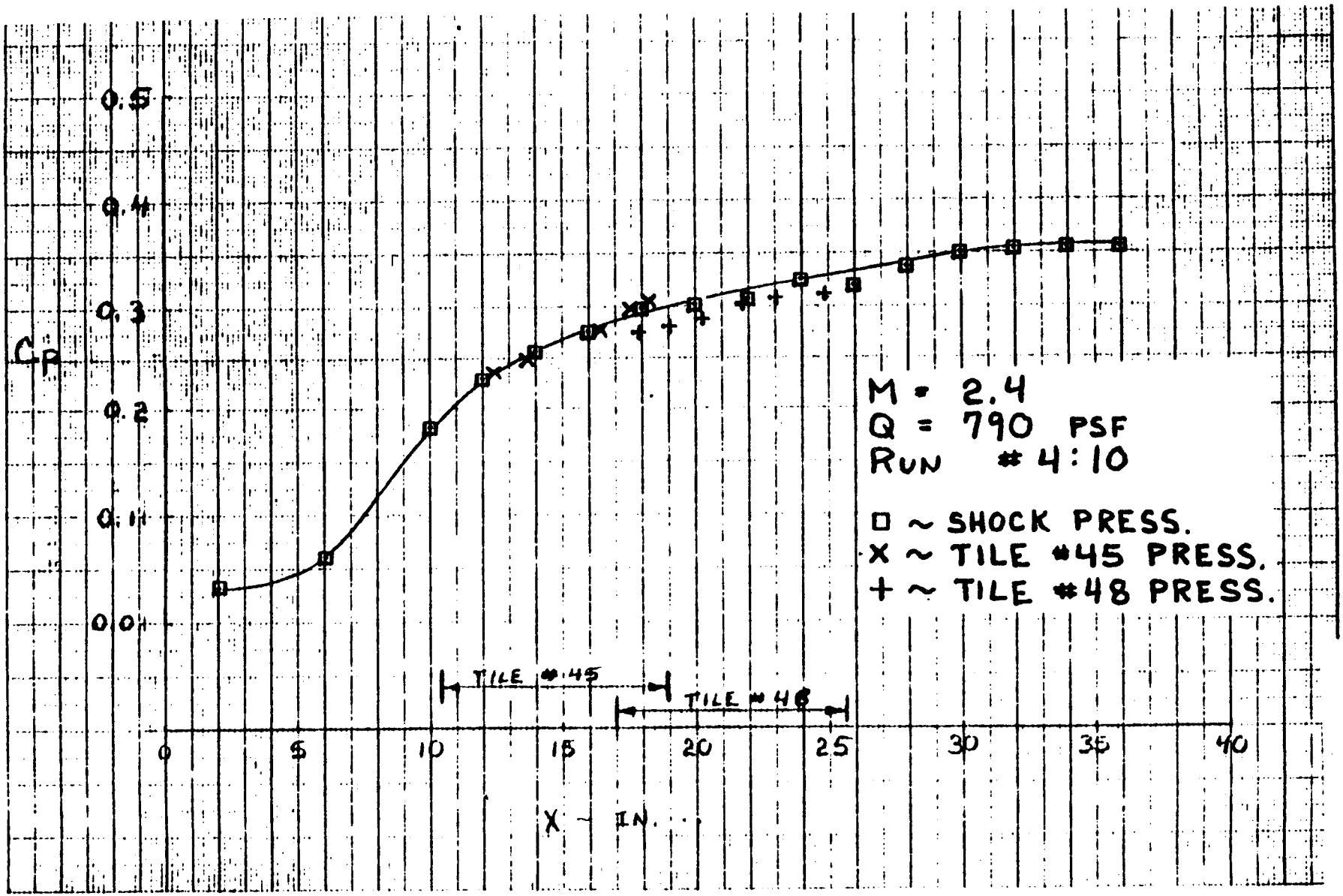

Figure 10i. Shock and Surface Pressures, δ_F = 70, M = 2.4, q = 790 PSF, Run 4:10, OS57

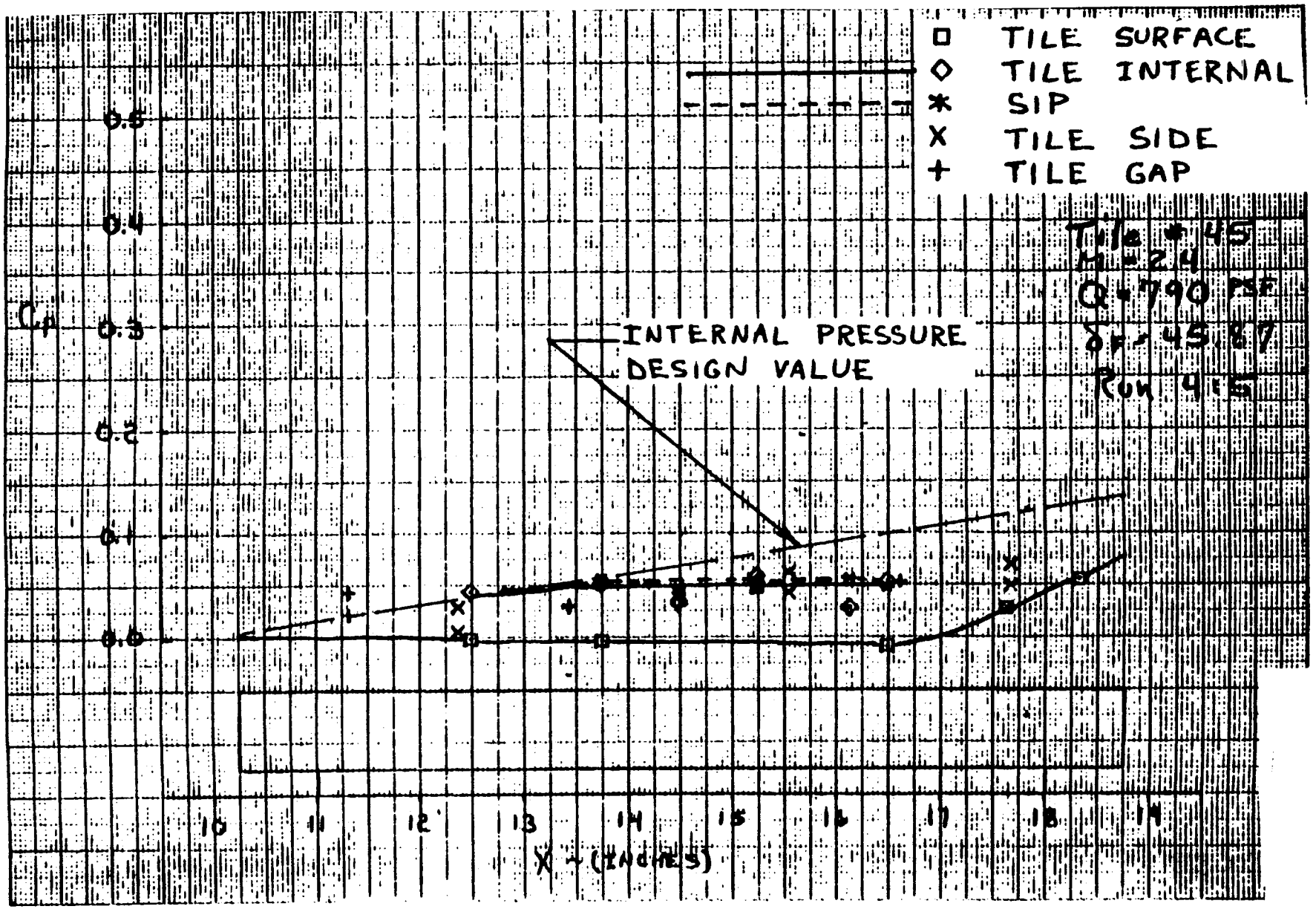

Figure 11a. Surface and Internal Pressures - Tile #45, $\delta_F = 46^o$, M = 2.4, q = 790 PSF, Run 4:5, OS57

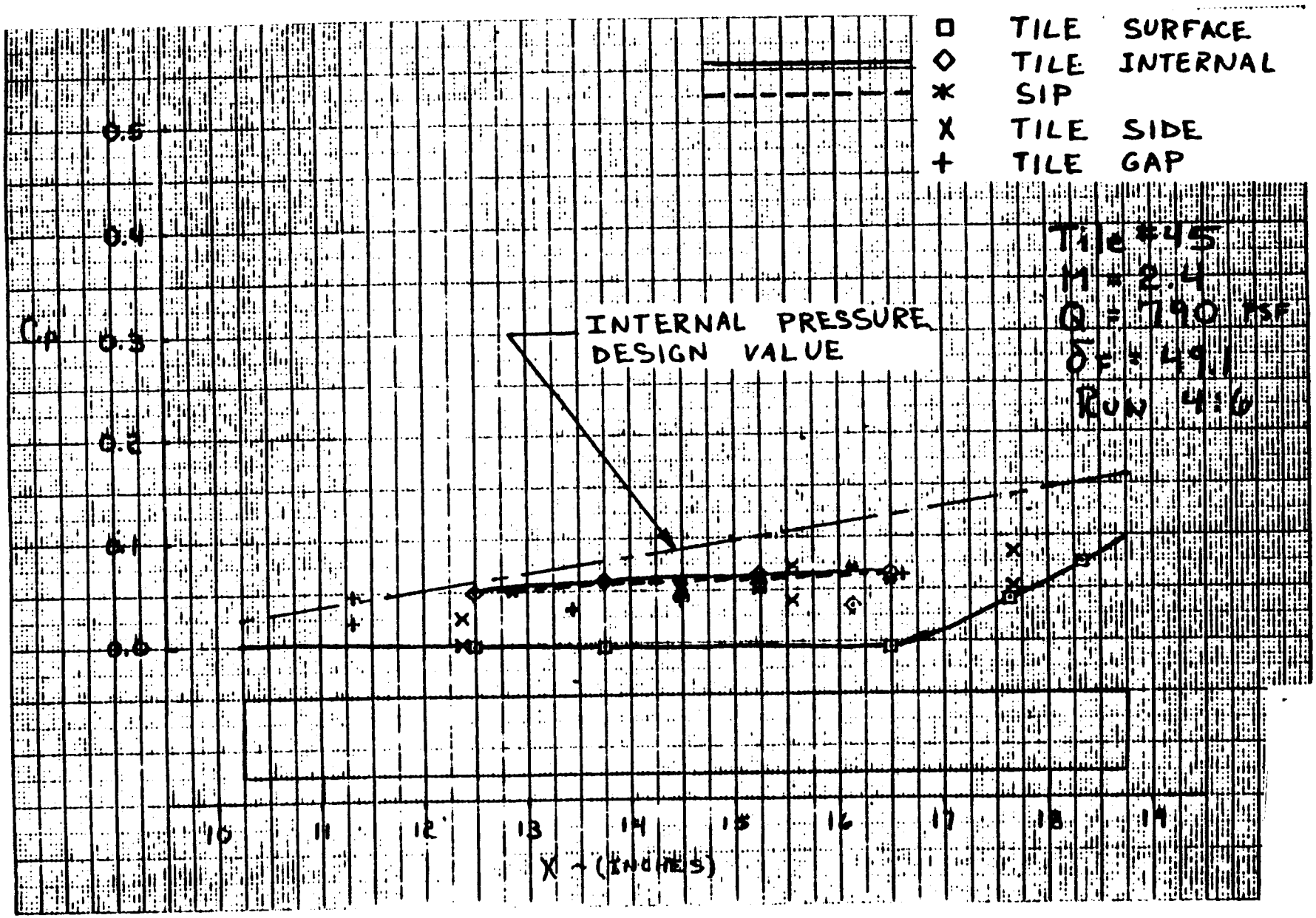

Figure 11b. Surface and Internal Pressures - Tile #45, $\delta_F = 49^{\circ}$, M = 2.4, q = 790 PSF, Run 4:6, OS57

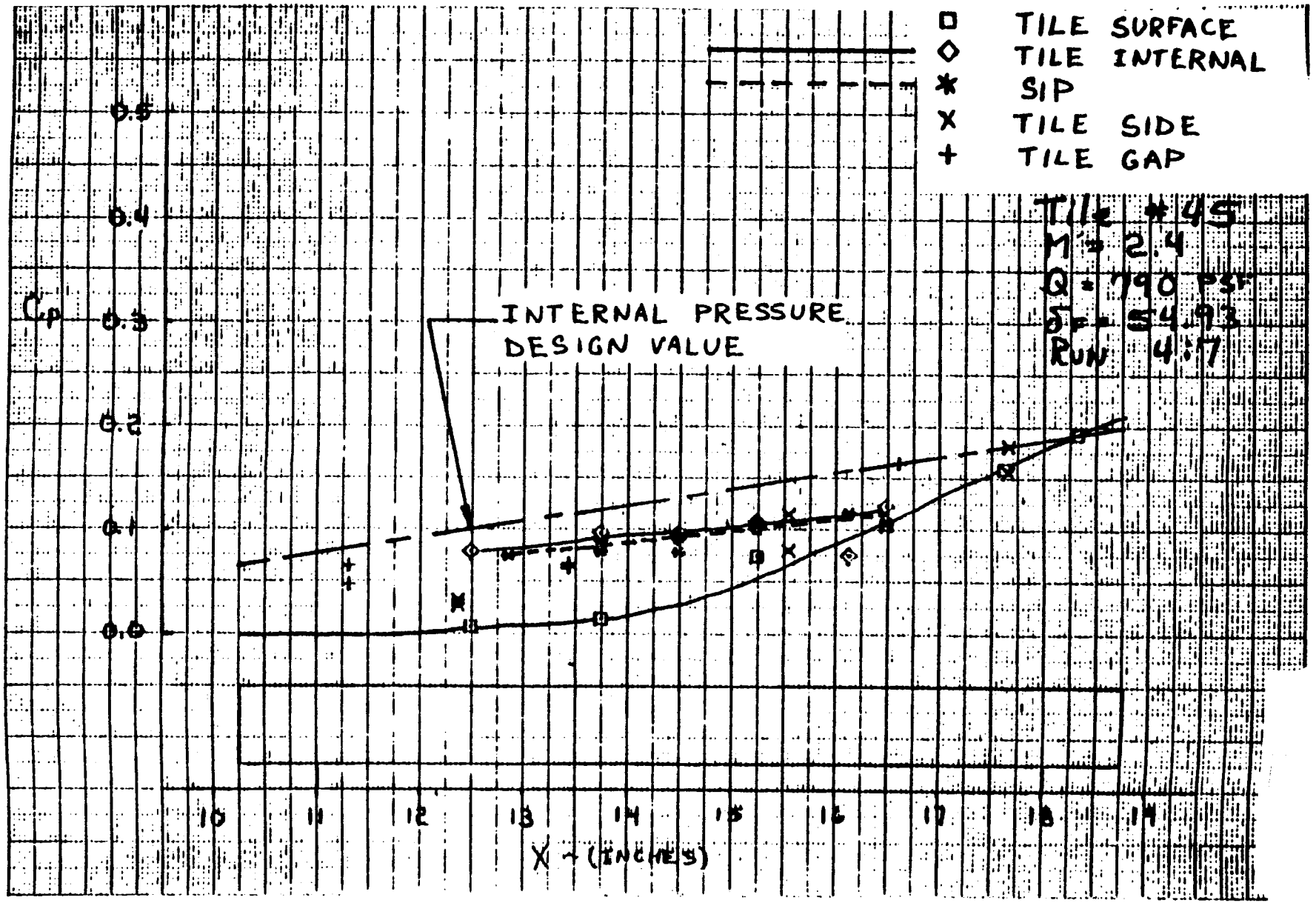

Figure 11c. Surface and Internal Pressures - Tile #45, $\delta_F = 55^{\circ}$, M = 2.4, q = 790 PSF, Run 4:7, OS57

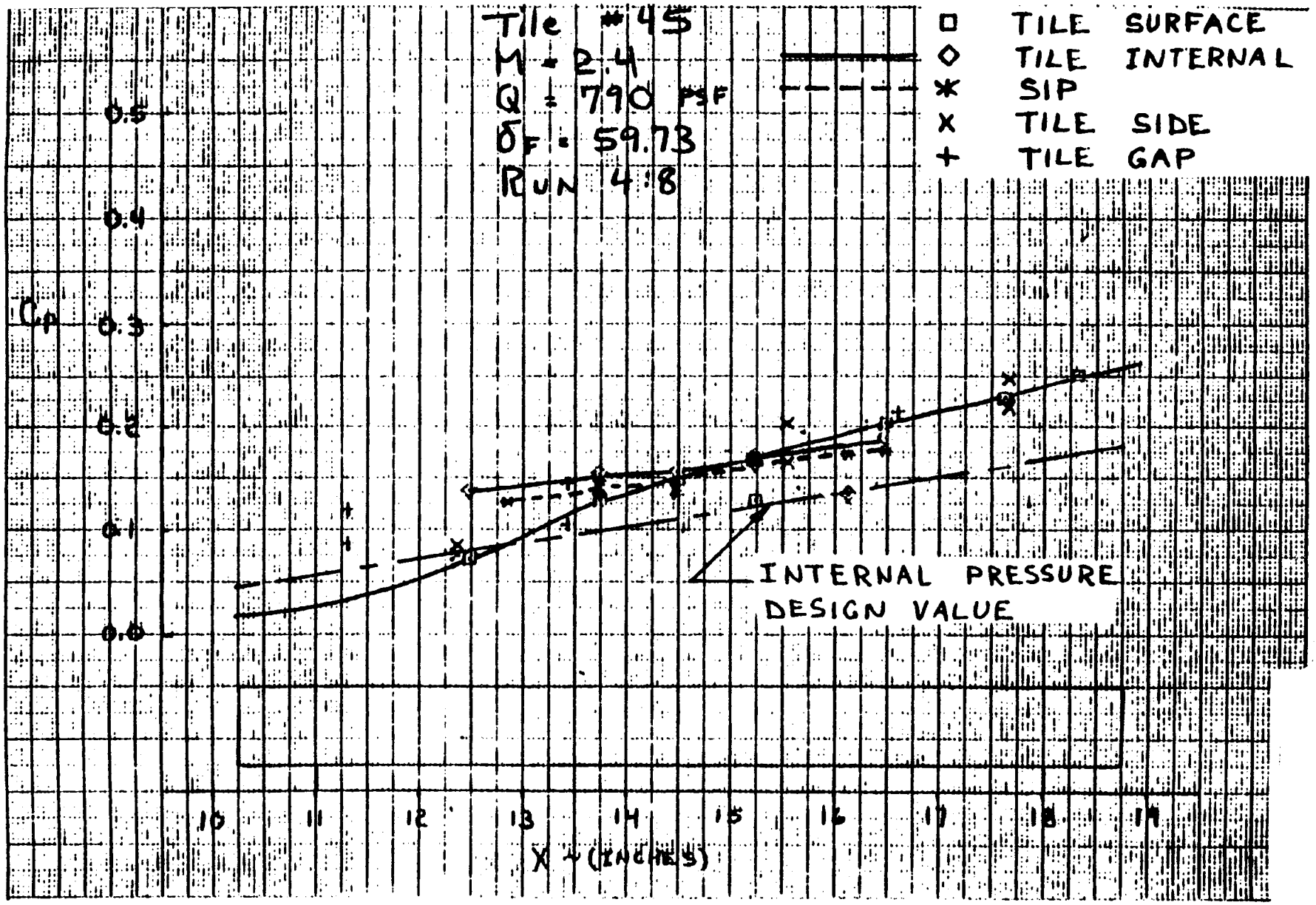

Figure 11d. Surface and Internal Pressures - Tile #45, $\delta_F = 60^\circ$, M = 2.4, q = 790 PSF, Run 4:8, OS57

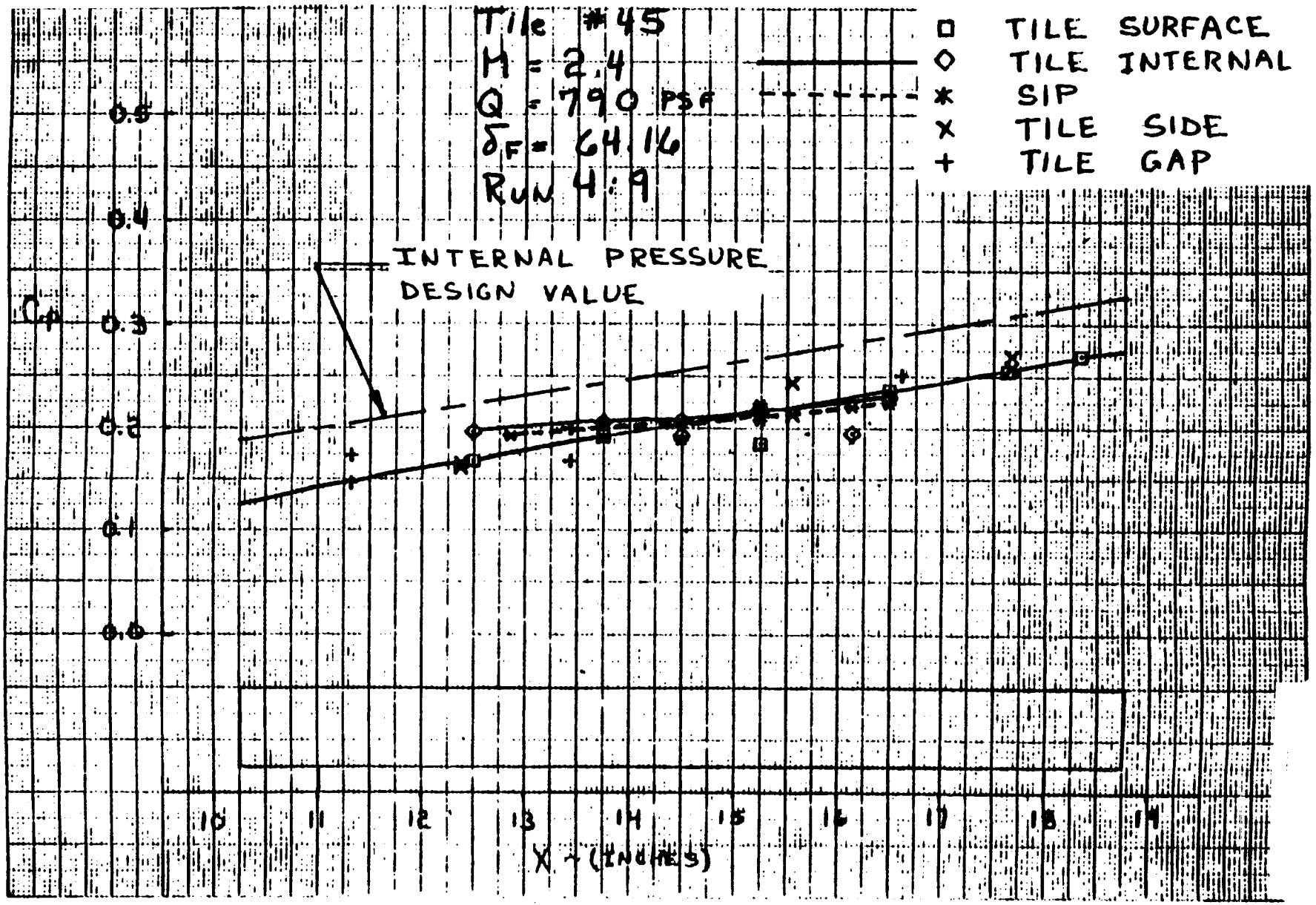

Figure 11e. Surface and Interna Pressures - Tile #45, δ_F = 64°, M = 2.4, q = 790 PSF, Run 4:9, OS57

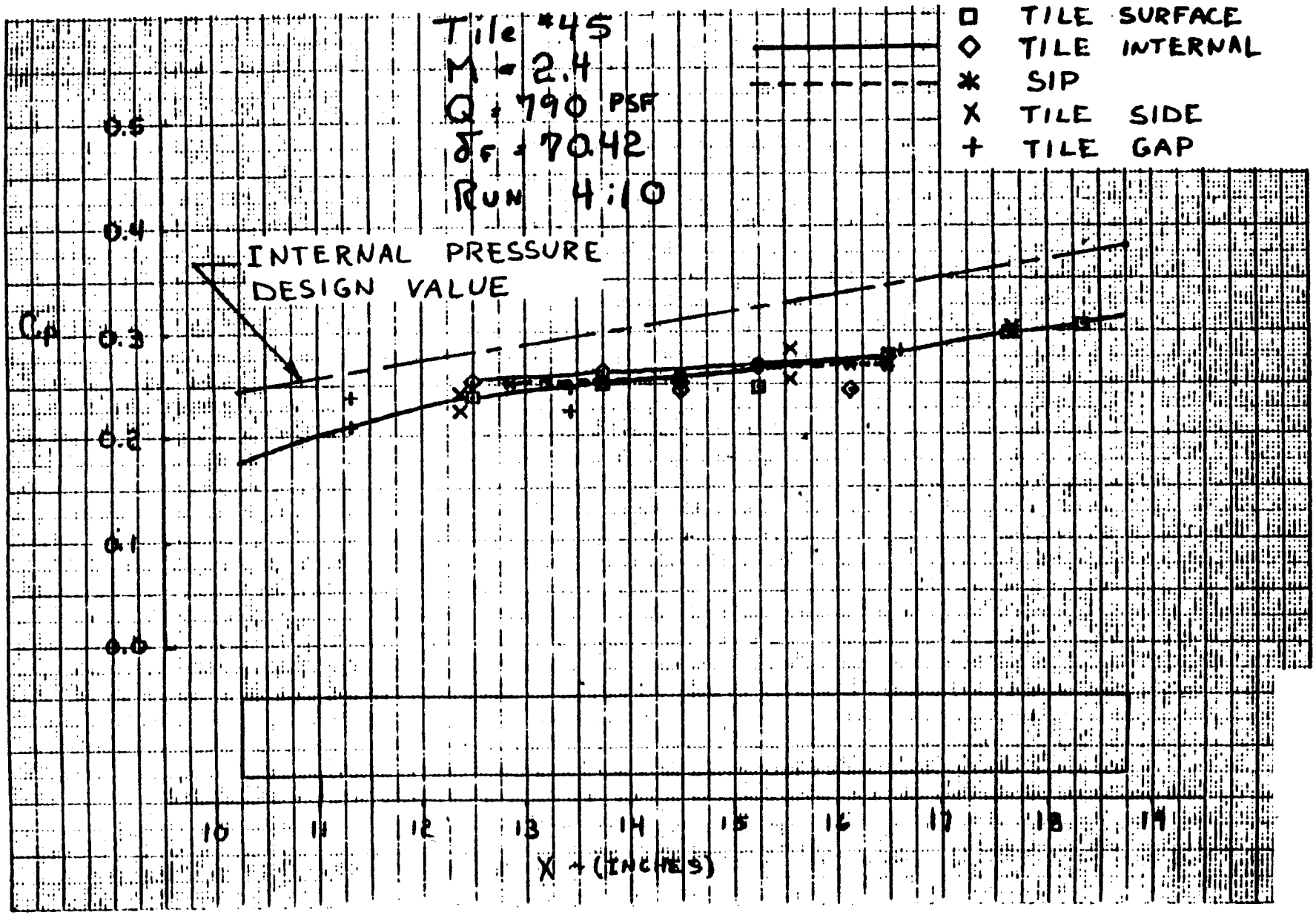

Figure 11f. Surface and Internal Pressures - Tile #45, $\delta_F = 70^{\circ}$, M = 2.4, q = 790 PSF, Run 4:10, OS57

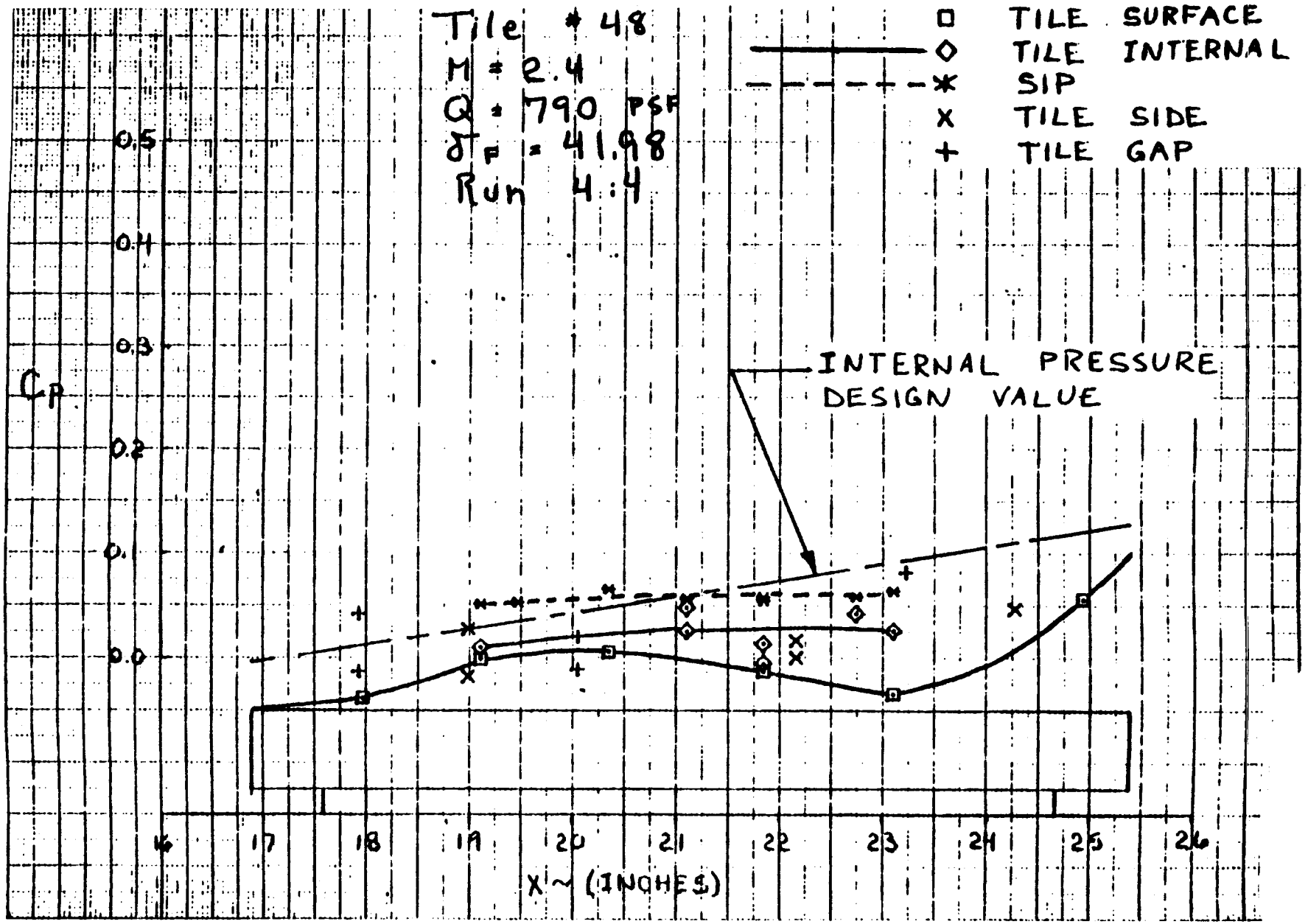

Figure 12a. Surface and Internal Pressures - Tile #48, $\delta_F = 42^o$, M = 2.4, q = 790 PSF, Run 4:4, OS57

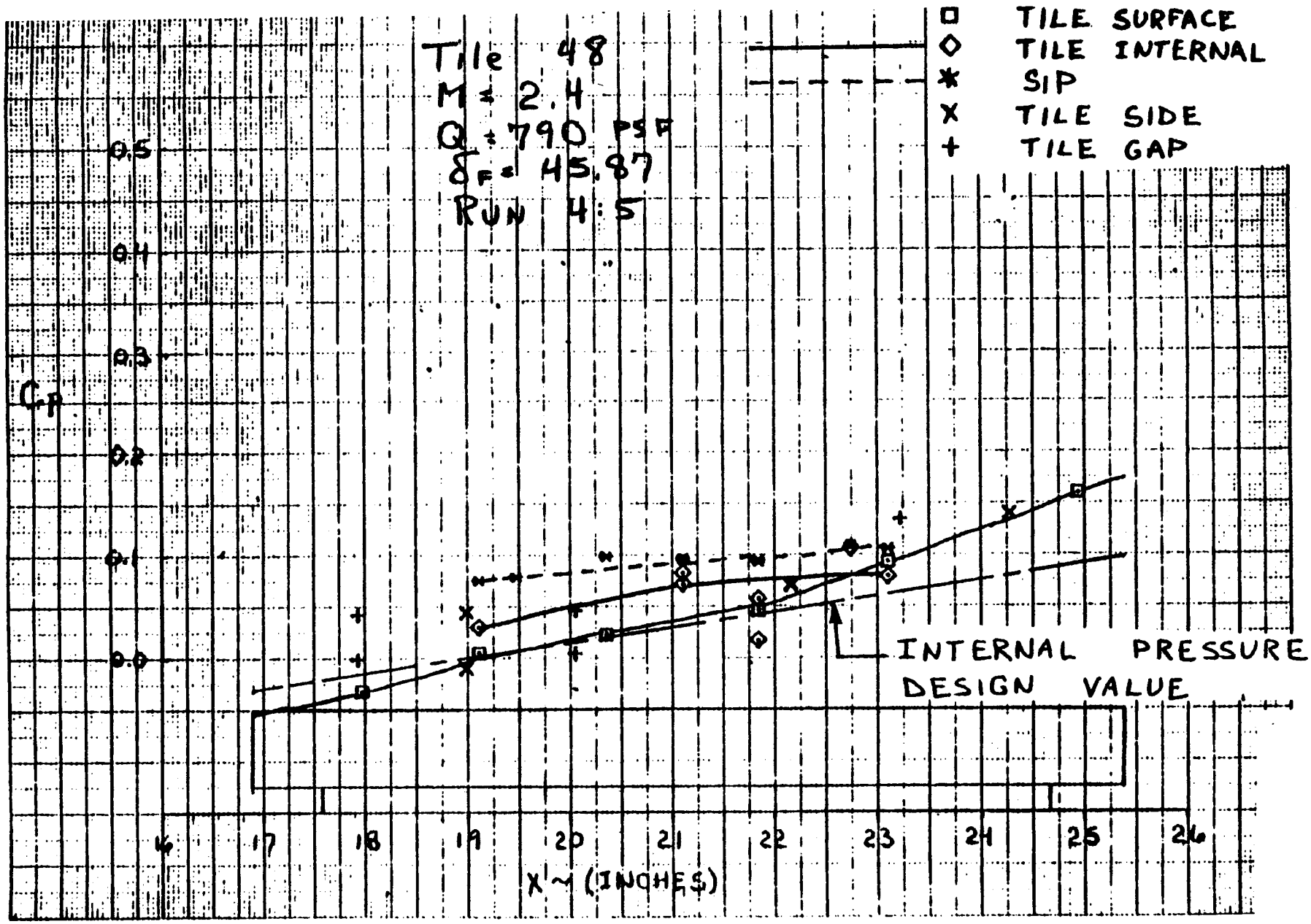

Figure 12b. Surface and Internal Pressures - Tile #48, δ_F = 46°, M = 2.4, q = 790 PSF, Run 4:5, OS57

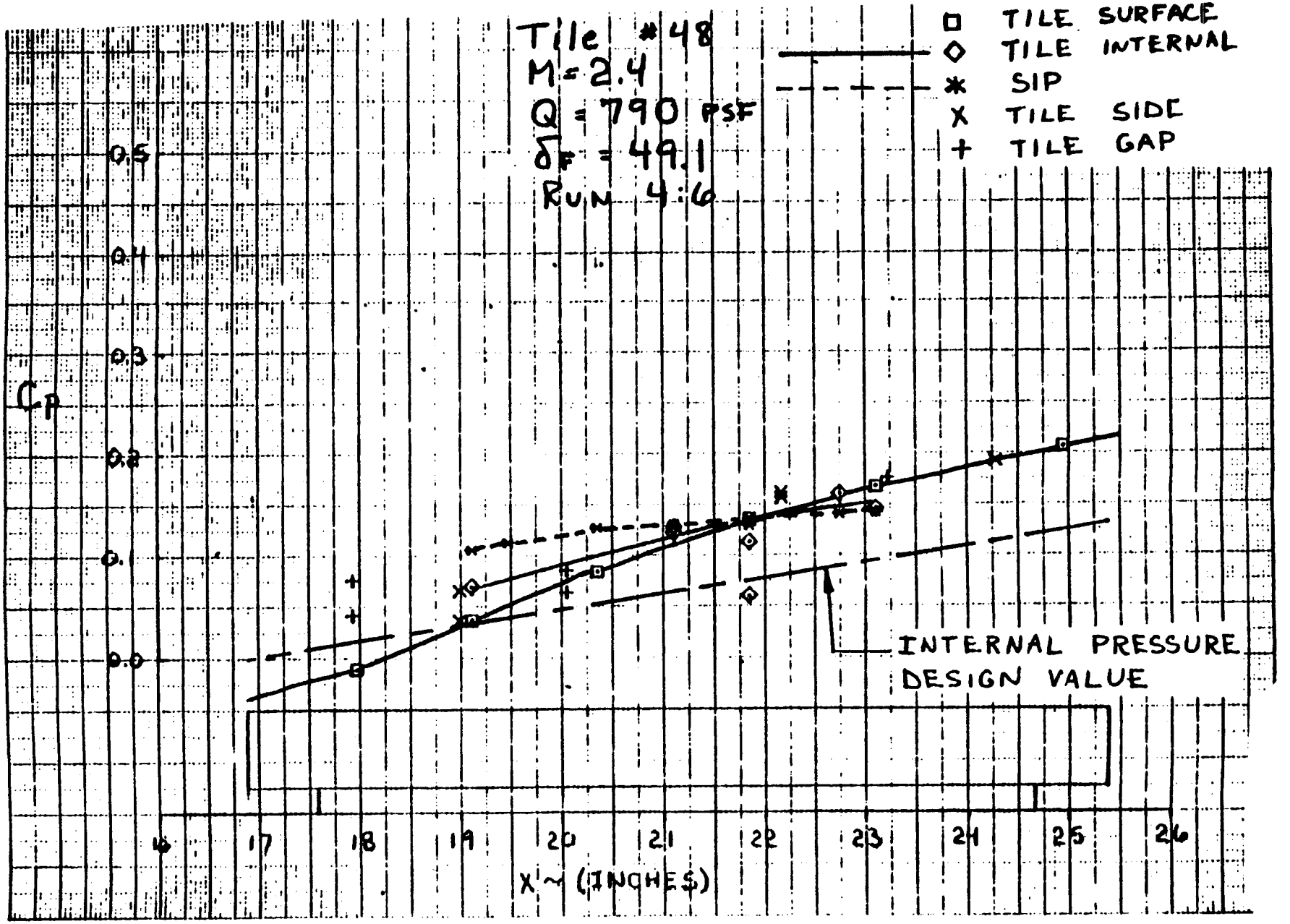

Figure 12c. Surface and Internal Pressures - Tile #48, $\delta_F = 49^{\circ}$, M = 2.4, q = 790 PSF, Run 4:6, OS57

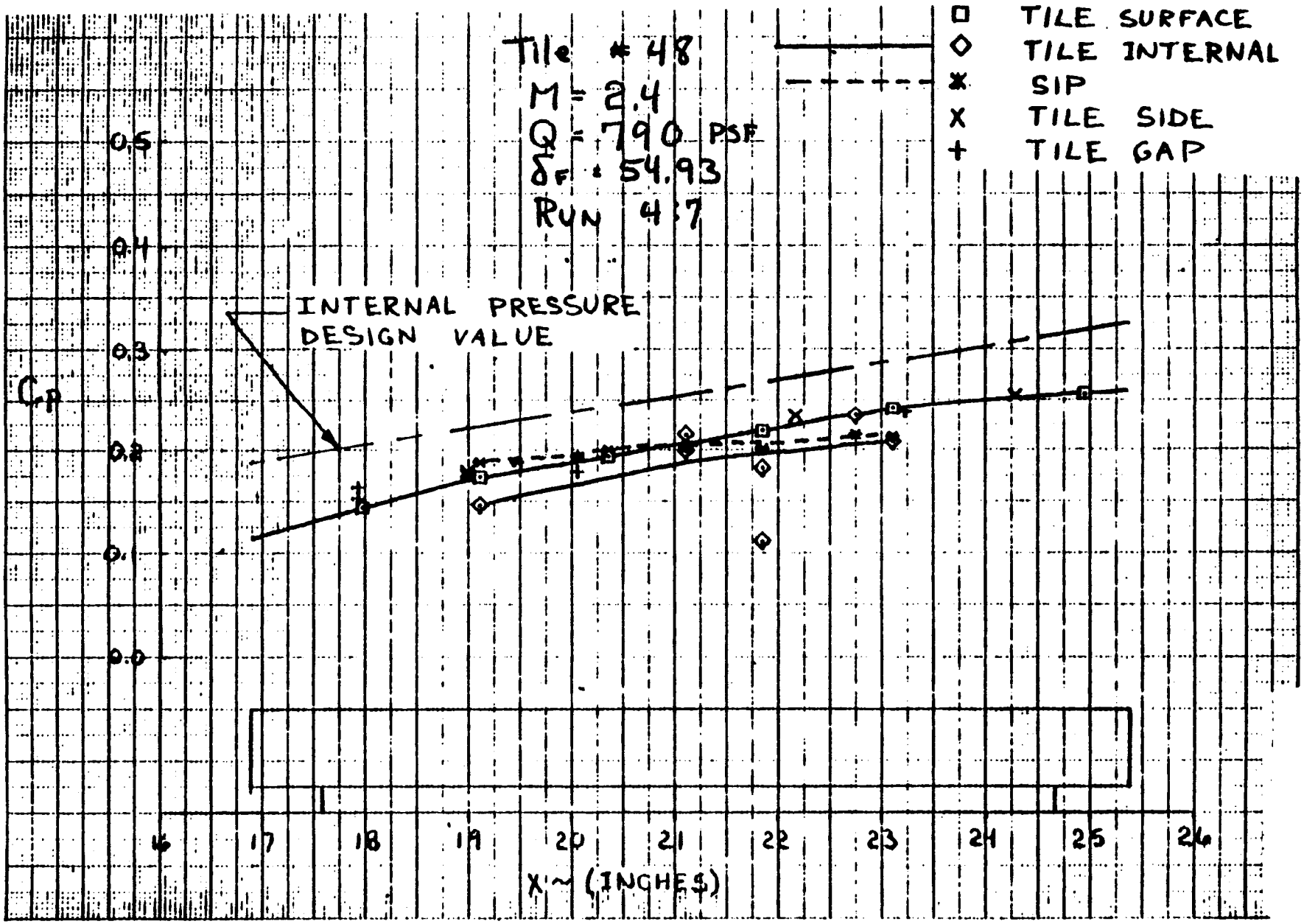

Figure 12d. Surface and Internal Pressures - Tile #48, $\delta_F = 55^o$, M = 2.4, q = 790 PSF, Run 4:7, OS57

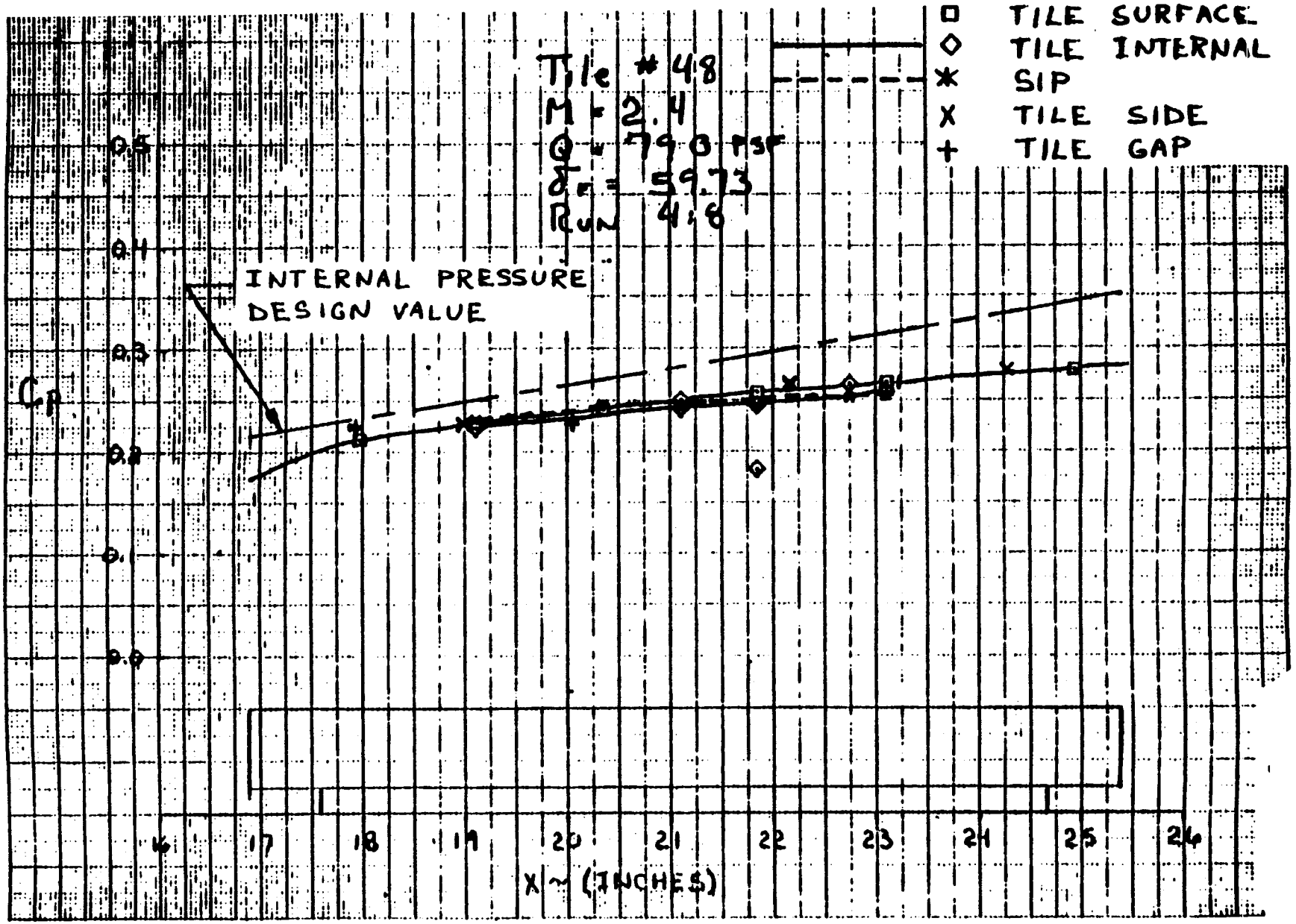

Figure 12e. Surface and Internal Pressures - Tile #48, $\delta_F = 60^\circ$, M = 2.4, q = 790 PSF, Run 4:8, OS57

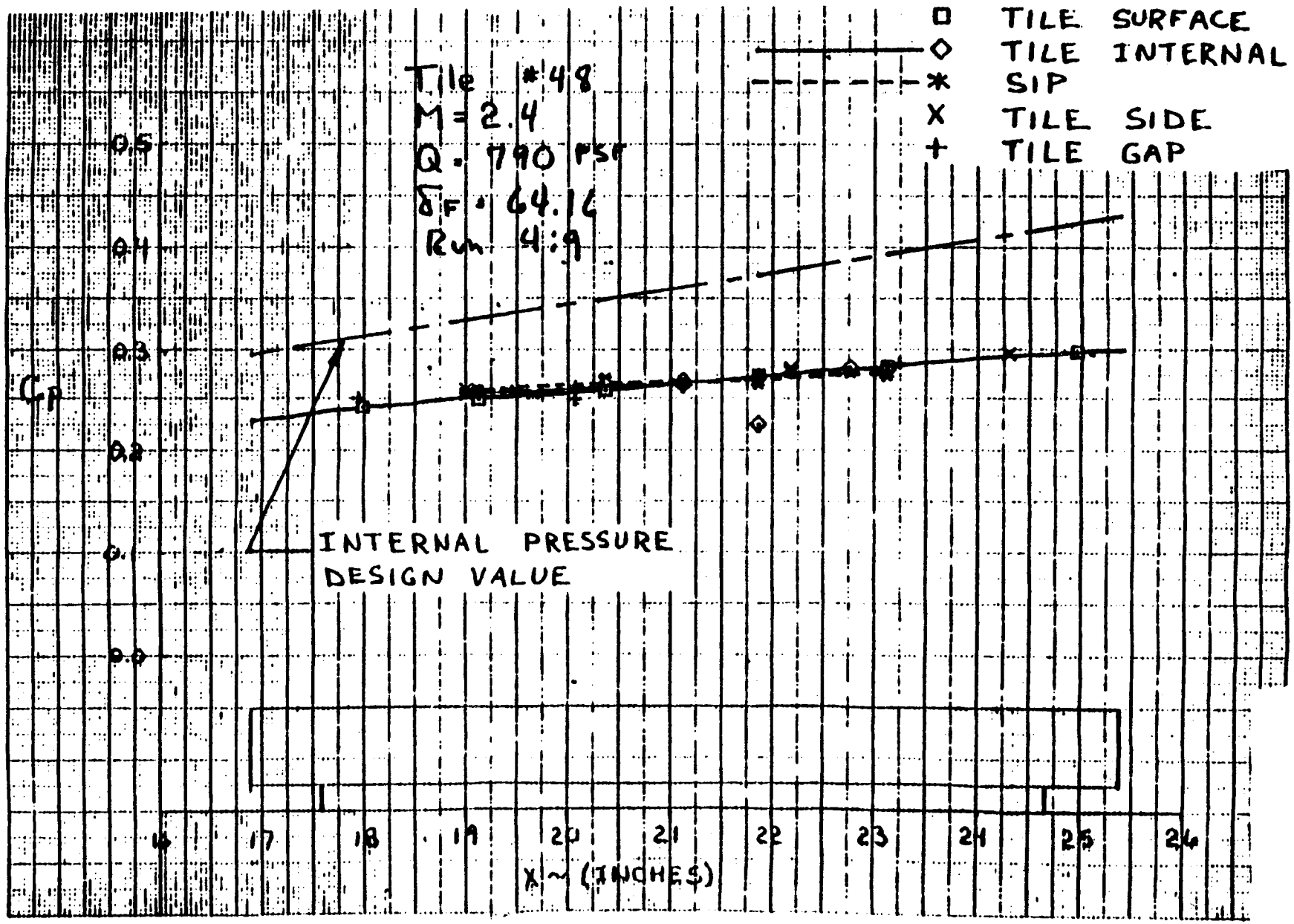

Figure 12E. Surface and Internal Pressures - Tile #48, $\delta_F = 64^\circ$, M = 2.4, q = 790 PSF, Run 4:9, OS57

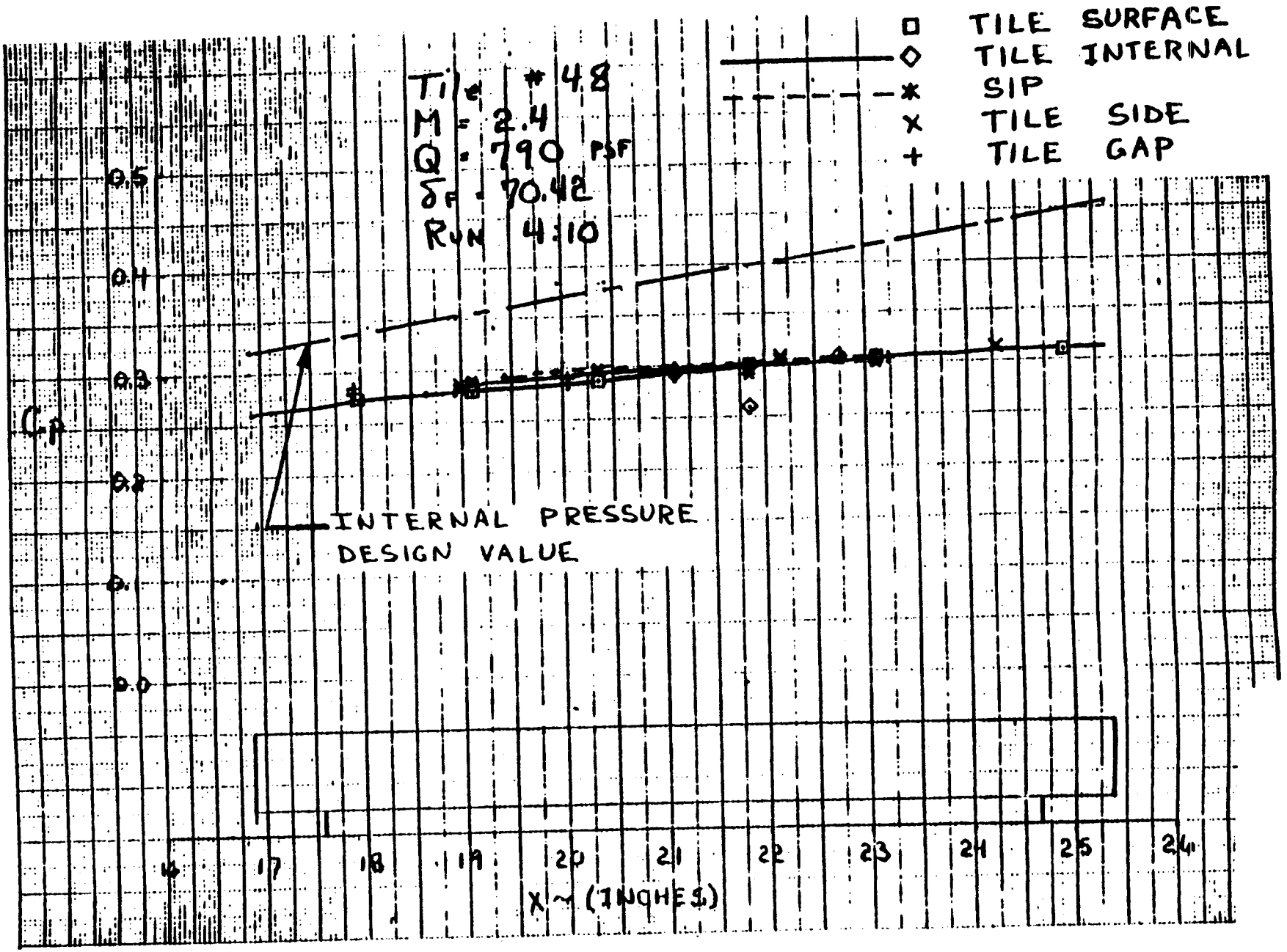

Figure 12g. Surface and Internal Pressures - Tile #48, $\delta_F = 70^o$, M = 2.4, q = 790 PSF, Run 4:10, OS57

APPENDICES

A. Tabulated Source Data - OS55

B. Tunnel Data - OS57

C. Reference Document

Appendix A

Tabulated Source Data - OS55

Dataset	Description	Page
RAJA01-A03	Tile 45 Surface	1 - 10
RAJB01-B03	Tile 45 Internal	11 - 20
RAJC01-C03	Tile 45 Side	21 - 33
RAJD01-D03	Tile 45 SIP	34 - 43
RAJE01-E03	Tile 45 Filler Bar	44 - 56
RAJF01-F03	Tile 48 Surface	57 - 66
RAJG01-G03	Tile 48 Internal	67 - 76
RAJH01-H03	Tile 48 Side	77 - 89
RAJI01-I03	Tile 48 SIP	90 - 99
RAJJ01-J03	Tile 48 Filler Bar	100 -112
RAJK01-K03	Tile 48 Differential	113 -122
RAJL01-L03	Panel Edge	123 -136

NOTE: Data for Tile 48 are questionable but are presented herein because they appear in the data figures.

OS55 HRSI TILE PANEL RUN 4

(RAJA01) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.8038	1.8776	1.9348	1.9023	1.9279	1.9367	2.0116	2.1089

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.8091	1.8849	1.9448	1.9045	1.9360	1.9429	2.0156	2.1110

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.8159	1.8828	1.9399	1.9045	1.9350	1.9448	2.0225	2.1072

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.8157	1.8787	1.9348	1.9033	1.9328	1.9496	2.0274	2.0948

OS55 HRSI TILE PANEL RUN 4 (RAJAO1)

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.8069	1.8768	1.9358	1.9024	1.9319	1.9496	2.0353	2.0912

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.8045	1.8745	1.9406	1.9051	1.9583	2.0441	2.3339	2.5658

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.8029	1.8935	1.9969	2.1681	2.5333	2.8129	2.9940	3.1251

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.9832	2.1317	2.3923	2.8190	3.0501	3.1671	3.2783	3.3566

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.8891	2.9659	3.1419	3.2865	3.3859	3.4852	3.5433	3.5641

OS55 HRSI TILE PANEL RUN 4 (RAJAO1)

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	3.3288	3.3967	3.4695	3.5492	3.6249	3.6613	3.7056	3.7267

OS55 HRSI TILE PANEL RUN 6 (RAJA02) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	7.6289	7.6853	7.7428	7.7557	7.8052	7.8369	7.8845	7.9000

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	3.5714	3.6363	3.6964	3.7692	3.8420	3.8981	3.9266	3.9690

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.0251	2.1795	2.3909	2.7371	2.9997	3.1472	3.2790	3.3463

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.6023	1.6820	1.7410	1.7617	1.9870	2.2704	2.5184	2.6327

OS55 HRSI TILE PANEL RUN 6 (RAJA02)

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.3478	1.4108	1.4689	1.5762	1.8558	2.1157	2.2948	2.3899

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.1824	1.2436	1.3086	1.4180	1.5787	1.7897	1.9947	2.0877

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	1.0322	1.0835	1.1220	1.1486	1.1703	1.2621	1.5058	1.6259

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	.8498	.8993	.9319	.9359	.9814	1.0813	1.2861	1.4036

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	.7221	.7627	.7874	.7914	.8092	.8884	1.0201	1.1352

OS55 HRSI TILE PANEL RUN 6 (RAJAO2)

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	.5694	.6070	.6348	.6457	.6784	.7597	.8926	.9646

OS55 HRSI TILE PANEL RUN 7 (RAJA03) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.4156	2.5144	2.6055	2.5565	2.5761	2.5937	2.7024	2.8298

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.4126	2.5059	2.6051	2.5589	2.5766	2.6002	2.7033	2.8579

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.4028	2.4980	2.5982	2.5462	2.5688	2.5904	2.7014	2.8402

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.4138	2.5111	2.6035	2.5613	2.5809	2.5996	2.7087	2.8537

OS55 HRSI TILE PANEL RUN 7 (RAJA03)

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.4185	2.5088	2.6051	2.5609	2.5776	2.6090	2.7102	2.8605

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.4188	2.5013	2.6083	2.5612	2.5789	2.6290	2.7762	2.9778

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.4299	2.5190	2.6209	2.5739	2.5954	2.6571	2.8236	3.0028

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.4352	2.5020	2.6179	2.5697	2.6513	2.8969	3.2976	3.5298

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.4484	2.5410	2.6888	2.8317	3.3400	3.7765	4.0228	4.2174

OS55 HRSI TILE PANEL RUN 7 (RAJA03)

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.4161	2.5419	2.6599	2.8476	3.3429	3.7703	4.0229	4.1666

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.5360	2.7882	2.9453	3.6117	3.8581	4.1349	4.2850	4.3716

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.9016	3.1035	3.6966	3.9995	4.2161	4.3475	4.5230	4.5354

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	2.7548	3.1423	3.5573	3.9262	4.1701	4.4081	4.4779	4.5043

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	3.9045	4.0216	4.1544	4.3796	4.5399	4.6255	4.7169	4.7490

OS55 HRSI TILE PANEL RUN 7 (RAJA03)

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SURFACE DEPENDENT VARIABLE P

XO	10.6500	11.3500	12.4900	13.7400	15.2400	16.4900	17.6300	18.3300
YO								
1.05000	3.9712	4.1496	4.2975	4.4868	4.5874	4.6988	4.7471	4.8147

OS55 HRSI TILE PANEL RUN 4 (RAJBO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.1562		2.1828		
.30000	2.1483		2.1503		2.1483		2.2074
2.56000		2.1582		2.1779		2.2054	
4.24000				2.1582			

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.1639		2.1865		
.30000	2.1833		2.1696		2.1912		2.2159
2.56000		2.1629		2.1855		2.2149	
4.24000				2.1629			

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.1729		2.2014		
.30000	2.1619		2.1776		2.2080		2.2338
2.56000		2.1788		2.1936		2.2279	
4.24000				2.1759			

OS55 HRSI TILE PANEL RUN 4 (RAJBO1)

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.1936		2.2309		
.30000	2.1796		2.1806		2.2267		2.2604
2.56000		2.1985		2.2172		2.2486	
4.24000				2.1975			

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.1974		2.2377		
.30000	2.1825		2.2041		2.2384		2.2731
2.56000		2.2004		2.2191		2.2505	
4.24000				2.2014			

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.2941		2.3777		
.30000	2.2613		2.3035		2.3811		2.4702
2.56000		2.2813		2.3236		2.3885	
4.24000				2.3147			

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.4836		2.6851		
.30000	2.4781		2.5115		2.6784		2.8276
2.56000		2.4914		2.6123		2.7401	
4.24000				2.5504			

OS55 HRSI TILE PANEL RUN 4 (RAJB01)

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.8352		2.9708		
.30000	2.7888		2.8398		2.9879		3.1163
2.56000		2.8175		2.9571		3.0534	
4.24000				2.9404			

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.2532		3.3415		
.30000	3.2104		3.3035		3.3829		3.4240
2.56000		3.2483		3.3298		3.4298	
4.24000				3.3690			

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.5476		3.5997		
.30000	3.5499		3.5509		3.6048		3.6340
2.56000		3.5290		3.6065		3.6223	
4.24000				3.5948			

OS55 HRSI TILE PANEL RUN 6 (RAJB02) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			7.8719		7.9153		
.30000	7.8517		7.8635		7.9324		7.9380
2.56000		7.8621		7.9005		7.9380	
4.24000				7.9055			

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.7893		3.8265		
.30000	3.7549		3.7892		3.8206		3.8785
2.56000		3.7500		3.8099		3.8570	
4.24000				3.8128			

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.8521		2.9412		
.30000	2.7600		2.8781		3.0159		3.1115
2.56000		2.7679		2.9099		3.0381	
4.24000				2.9852			

OS55 HRSI TILE PANEL RUN 6 (RAJBO2)

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.1413		2.2657		
.30000	2.0982		2.1022		2.2789		2.3832
2.56000		2.1178		2.2197		2.3235	
4.24000				2.1942			

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			1.8919		2.0136		
.30000	1.8539		1.9534		2.0184		2.1471
2.56000		1.8556		1.9743		2.0725	
4.24000				1.9282			

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			1.6523		1.7713		
.30000	1.6073		1.6772		1.7619		1.8695
2.56000		1.6523		1.7270		1.8017	
4.24000				1.6956			

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			1.3695		1.4325		
.30000	1.3449		1.3911		1.4423		1.5191
2.56000		1.3744		1.4020		1.4492	
4.24000				1.3931			

OS55 HRSI TILE PANEL RUN 6 (RAJB02)

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			1.1534		1.2176		
.30000	1.1731		1.1702		1.2224		1.2828
2.56000		1.1574		1.1890		1.2245	
4.24000				1.1742			

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			.9577		1.0140		
.30000	.9548		.9577		1.0130		1.0663
2.56000		.9716		.9883		1.0278	
4.24000				.9795			

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			.8034		.8498		
.30000	.7975		.8113		.8558		.8923
2.56000		.8044		.8202		.8637	
4.24000				.8212			

OS55 HRSI TILE PANEL RUN 7 (RAJB03) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.9152		2.9357		
.30000	2.9220		2.9103		2.9416		2.9710
2.56000		2.9103		2.9299		2.9739	
4.24000				2.9035			

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.9170		2.9474		
.30000	2.8998		2.9234		2.9528		2.9788
2.56000		2.9160		2.9366		2.9837	
4.24000				2.9082			

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.9230		2.9573		
.30000	2.9086		2.9292		2.9655		2.9907
2.56000		2.9181		2.9456		2.9897	
4.24000				2.9181			

OS55 HRSI TILE PANEL RUN 7 (RAJB03)

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.9377		2.9681		
.30000	2.9193		2.9399		2.9722		3.0044
2.56000		2.9377		2.9583		3.0034	
4.24000				2.9270			

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			2.9607		2.9999		
.30000	2.9398		2.9624		2.9987		3.0449
2.56000		2.9568		2.9823		3.0224	
4.24000				2.9490			

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.0224		3.0890		
.30000	2.9917		2.9926		3.0907		3.1517
2.56000		3.0057		3.0498		3.0968	
4.24000				3.0273			

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.0388		3.1023		
.30000	2.9921		2.9941		3.0815		3.1717
2.56000		3.0163		3.0642		3.1248	
4.24000				3.0437			

OS55 HRSI TILE PANEL RUN 7 (RAJB03)

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.1250		3.2594		
.30000	3.0714		3.1918		3.2770		3.3624
2.56000		3.0789		3.1858		3.3035	
4.24000				3.1603			

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.3792		3.5756		
.30000	3.3261		3.4489		3.6110		3.8252
2.56000		3.3261		3.5030		3.6876	
4.24000				3.4764			

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.3956		3.5503		
.30000	3.3280		3.4573		3.5798		3.7619
2.56000		3.2996		3.4984		3.6884	
4.24000				3.4641			

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.6909		3.8233		
.30000	3.5405		3.6771		3.8649		4.0312
2.56000		3.6536		3.7615		3.9812	
4.24000				3.8164			

OS55 HRSI TILE PANEL RUN 7 (RAJB03)

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.9213		4.1543		
.30000	3.8912		3.9846		4.1949		4.2483
2.56000		3.9408		4.1024		4.2277	
4.24000				4.1748			

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			3.9517		4.1018		
.30000	3.8514		4.0238		4.1203		4.1959
2.56000		3.8752		4.0537		4.2842	
4.24000				4.0939			

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			4.3474		4.4170		
.30000	4.3457		4.4076		4.4961		4.5809
2.56000		4.3179		4.4818		4.5603	
4.24000				4.5053			

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 INTERNAL DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-1.34000			4.4445		4.5240		
.30000	4.3876		4.4992		4.5575		4.6203
2.56000		4.4425		4.5172		4.6340	
4.24000				4.5378			

OS55 HRSI TILE PANEL RUN 4 (RAJCO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.1789	
-1.06000	1.9714		
.00000			2.2566
2.12000			2.2871
3.18000	2.0156		
4.23000		2.2212	

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.1808	
-1.06000	1.9764		
.00000			2.2584
2.12000			2.2859
3.18000	2.0167		
4.23000		2.2201	

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.1769	
-1.06000	1.9763		
.00000			2.2606
2.12000			2.2930
3.18000	2.0245		
4.23000		2.2104	

OS55 HRSI TILE PANEL RUN 4 (RAJCO1)

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.1720	
-1.06000	1.9773		
.00000			2.2359
2.12000			2.3007
3.18000	2.0314		
4.23000		2.2152	

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.1651	
-1.06000	1.9763		
.00000			2.2310
2.12000			2.2959
3.18000	2.0265		
4.23000		2.2143	

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.2046	
-1.06000	1.9771		
.00000			2.4685
2.12000			2.4823
3.18000	2.0697		
4.23000		2.3060	

OS55 HRSI TILE PANEL RUN 4 (RAJCO1)

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.7451	
-1.06000	1.9940		
.00000			3.1206
2.12000			3.0596
3.18000	2.2309		
4.23000		2.5544	

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		3.1719	
-1.06000	2.4479		
.00000			3.3585
2.12000			3.3075
3.18000	2.5776		
4.23000		3.1336	

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		3.4259	
-1.06000	3.2071		
.00000			3.5849
2.12000			3.5643
3.18000	3.2002		
4.23000		3.4652	

OS55 HRSI TILE PANEL RUN 4 (RAJCO1)

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		3.6602	
-1.06000	3.4764		
.00000			3.7536
2.12000			3.7457
3.18000	3.4931		
4.23000		3.6671	

OS55 HRSI TILE PANEL RUN 6 (RAJCO2) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		7.9124	
-1.06000	7.7733		
.00000			7.9726
2.12000			7.9923
3.18000	7.8266		
4.23000		7.9676	

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		3.8776	
-1.06000	3.7098		
.00000			3.9688
2.12000			3.9698
3.18000	3.7422		
4.23000		3.8913	

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		3.1218	
-1.06000	2.4440		
.00000			3.3119
2.12000			3.2766
3.18000	2.6232		
4.23000		3.1444	

OS55 HRSI TILE PANEL RUN 6 (RAJCO2)

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.1768	
-1.06000	1.7753		
.00000			2.5910
2.12000			2.5743
3.18000	1.9009		
4.23000		2.2013	

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.0219	
-1.06000	1.4908		
.00000			2.3504
2.12000			2.3229
3.18000	1.6796		
4.23000		1.9472	

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		1.7380	
-1.06000	1.3052		
.00000			2.0910
2.12000			2.0350
3.18000	1.4586		
4.23000		1.6809	

OS55 HRSI TILE PANEL RUN 6 (RAJCO2)

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		1.3222	
-1.06000	1.1252		
.00000			1.5971
2.12000			1.5586
3.18000	1.2277		
4.23000		1.4060	

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		1.1130	
-1.06000	.9214		
.00000			1.3865
2.12000			1.3519
3.18000	1.0211		
4.23000		1.1841	

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		.9192	
-1.06000	.7749		
.00000			1.1435
2.12000			1.1158
3.18000	.8579		
4.23000		.9933	

OS55 HRSI TILE PANEL RUN 6 (RAJCO2)

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		.7787	
-1.06000	.6306		
.00000			.9604
2.12000			.9367
3.18000	.7027		
4.23000		.8479	

OS55 HRSI TILE PANEL RUN 7 (RAJCO3) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.9602	
-1.06000	2.6560		
.00000			2.9965
2.12000			3.0887
3.18000	2.7276		
4.23000		2.9562	

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.9600	
-1.06000	2.6568		
.00000			2.9994
2.12000			3.0948
3.18000	2.7306		
4.23000		2.9462	

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.9496	
-1.06000	2.6527		
.00000			2.9555
2.12000			3.0971
3.18000	2.7264		
4.23000		2.9319	

OS55 HRSI TILE PANEL RUN 7 (RAJCO3)

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.9620	
-1.06000	2.6617		
.00000			2.9708
2.12000			3.1057
3.18000	2.7395		
4.23000		2.9472	

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.9557	
-1.06000	2.6638		
.00000			2.9036
2.12000			3.1227
3.18000	2.7513		
4.23000		2.9566	

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.9513	
-1.06000	2.6601		
.00000			2.9169
2.12000			3.1383
3.18000	2.7525		
4.23000		3.0330	

OS55 HRSI TILE PANEL RUN 7 (RAJCO3)

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		2.9675	
-1.06000	2.6764		
.00000			2.9302
2.12000			3.1683
3.18000	2.7646		
4.23000		3.0527	

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		3.0292	
-1.06000	2.6613		
.00000			3.3350
2.12000			3.4855
3.18000	2.8069		
4.23000		3.1462	

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		3.6071	
-1.06000	2.7280		
.00000			4.1443
2.12000			4.0792
3.18000	3.0542		
4.23000		3.4879	

OS55 HRSI TILE PANEL RUN 7 (RAJCO3)

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		3.6262	
-1.06000	2.7272		
.00000			4.0953
2.12000			4.0255
3.18000	2.9947		
4.23000		3.5249	

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		4.0501	
-1.06000	3.0825		
.00000			4.3910
2.12000			4.3143
3.18000	3.2485		
4.23000		4.0599	

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		4.3389	
-1.06000	3.6110		
.00000			4.5737
2.12000			4.5589
3.18000	3.6680		
4.23000		4.3094	

OS55 HRSI TILE PANEL RUN 7 (RAJCO3)

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		4.3162	
-1.06000	3.7214		
.00000			4.5561
2.12000			4.5364
3.18000	3.5562		
4.23000		4.3506	

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		4.5983	
-1.06000	4.2493		
.00000			4.7492
2.12000			4.7166
3.18000	4.2907		
4.23000		4.6032	

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIDE DEPENDENT VARIABLE P

XO	12.3700	15.5500	17.6700
YO			
-2.13000		4.6257	
-1.06000	4.3548		
.00000			4.8188
2.12000			4.8080
3.18000	4.3528		
4.23000		4.6691	

OS55 HRSI TILE PANEL RUN 4 (RAJDO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				2.1758			
-.44000		2.1542		2.1728		2.1768	
1.80000	2.1580		2.1674		2.1730		2.1815
3.44000			2.1664		2.1702		

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				2.1853			
-.44000		2.1657		2.1833		2.1833	
1.80000	2.1666		2.1685		2.1703		2.1892
3.44000			2.1807		2.1722		

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				2.2089			
-.44000		2.1786		2.1962		2.2070	
1.80000	2.1799		2.1827		2.1856		2.1969
3.44000			2.1818		2.1827		

OS55 HRSI TILE PANEL RUN 4 (RAJDO1)

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000			2.2296				
-.44000		2.1972	2.2237		2.2277		
1.80000	2.1959		2.1969	2.2215		2.2441	
3.44000			2.1940	2.2139			

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000			2.2649				
-.44000		2.2002	2.2021		2.2668		
1.80000	2.2016		2.2129	2.2290		2.2516	
3.44000			2.2016	2.2195			

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000			2.3576				
-.44000		2.2967	2.3625		2.4303		
1.80000	2.2969		2.3280	2.3762		2.4139	
3.44000			2.2875	2.3715			

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000			2.5625				
-.44000		2.4870	2.5675		2.7314		
1.80000	2.4472		2.5513	2.6905		2.7530	
3.44000			2.4917	2.6451			

OS55 HRSI TILE PANEL RUN 4 (RAJDO1)

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				2.9006			
-.44000		2.7996		2.8957		3.0085	
1.80000	2.7949		2.8468		3.0013		3.0786
3.44000			2.8241		3.0032		

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.2536			
-.44000		3.2320		3.2879		3.3584	
1.80000	3.2244		3.2714		3.3539		3.3849
3.44000			3.2929		3.3877		

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.5548			
-.44000		3.5059		3.5646		3.6087	
1.80000	3.5251		3.5515		3.5958		3.6391
3.44000			3.5270		3.6052		

OS55 HRSI TILE PANEL RUN 6 (RAJDO2) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				7.9107			
-.44000		7.8763		7.9009		7.9412	
1.80000	7.8593		7.8820		7.9028		7.9208
3.44000			7.8678		7.9113		

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.7383			
-.44000		3.7471		3.8019		3.8372	
1.80000	3.7689		3.7764		3.8111		3.8440
3.44000			3.7717		3.8215		

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				2.8397			
-.44000		2.8131		2.9067		2.9864	
1.80000	2.8089		2.8192		2.9449		3.0181
3.44000			2.8071		3.0321		

OS55 HRSI TILE PANEL RUN 6 (RAJDO2)

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000			2.1837				
-.44000		2.1130	2.1984			2.3231	
1.80000	2.1265		2.1774		2.2556		2.3301
3.44000			2.1378		2.2641		

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000			1.9081				
-.44000		1.8608	1.9455			2.0263	
1.80000	1.8624		1.9060		1.9874		2.0717
3.44000			1.8833		1.9903		

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000			1.6910				
-.44000		1.6280	1.7009			1.8142	
1.80000	1.6319		1.6791		1.7640		1.8093
3.44000			1.6432		1.7451		

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000			1.4629				
-.44000		1.3744	1.4314			1.4610	
1.80000	1.3645		1.3853		1.4279		1.4516
3.44000			1.3626		1.4194		

OS55 HRSI TILE PANEL RUN 6 (RAJDO2)

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				1.2195			
-.44000		1.1642		1.1948		1.2629	
1.80000	1.1613		1.1812		1.2134		1.2370
3.44000			1.1585		1.2086		

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				1.0318			
-.44000		.9656		.9676		1.0288	
1.80000	.9674		.9864		1.0110		1.0224
3.44000			.9712		.9987		

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				.8844			
-.44000		.8005		.8015		.8844	
1.80000	.8100		.8157		.8356		.8460
3.44000			.8081		.8394		

DATE 17 NOV 83 PRESSURE SOURCE DATA TABULATION - OS55(ARC 464-97-1)

(RAJD03) (17 NOV 83)

OS55 HRSI TILE PANEL RUN 7

PARAMETRIC DATA

REFERENCE DATA

MACH = 1.800 Q(PSF) = 862.000

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				2.9240			
-.44000		2.9172		2.9240		2.9230	
1.80000	2.8941		2.8997		2.9158		2.9291
3.44000			2.8893		2.9092		

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				2.9557			
-.44000		2.9341		2.9332		2.9508	
1.80000	2.9153		2.9267		2.9427		2.9559
3.44000			2.9163		2.9342		

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				2.9655			
-.44000		2.9282		2.9419		2.9713	
1.80000	2.9130		2.9290		2.9451		2.9687
3.44000			2.9205		2.9403		

OS55 HRSI TILE PANEL RUN 7 (RAJDO3)

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				2.9987			
-.44000		2.9408		2.9438		2.9438	
1.80000	2.9293		2.9406		2.9605		2.9841
3.44000			2.9331		2.9473		

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.0379			
-.44000		2.9820		2.9928		3.0408	
1.80000	2.9492		2.9634		2.9945		3.0219
3.44000			2.9473		2.9728		

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.0652			
-.44000		3.0074		3.0691		3.1496	
1.80000	3.0070		3.0334		3.0806		3.1258
3.44000			3.0033		3.0730		

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.0413			
-.44000		3.0216		3.0717		3.1464	
1.80000	3.0104		3.0322		3.0795		3.1286
3.44000			3.0066		3.0728		

OS55 HRSI TILE PANEL RUN 7 (RAJDO3)

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.1830			
-.44000		3.1047		3.2036		3.3495	
1.80000	3.0845		3.1535		3.2225		3.3265
3.44000			3.1015		3.2443		

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.4185			
-.44000		3.3900		3.4774		3.6788	
1.80000	3.3061		3.4161		3.5963		3.7101
3.44000			3.3564		3.5934		

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.4152			
-.44000		3.3398		3.4897		3.6543	
1.80000	3.3170		3.3775		3.5552		3.7073
3.44000			3.3558		3.5835		

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.7479			
-.44000		3.5955		3.7686		3.9013	
1.80000	3.6225		3.6575		3.9138		3.9564
3.44000			3.6500		3.9138		

OS55 HRSI TILE PANEL RUN 7 (RAJDO3)

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				4.0229			
-.44000		3.8784		3.9924		4.2214	
1.80000	3.8567		4.0323		4.1692		4.2523
3.44000			3.9455		4.2362		

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				3.9568			
-.44000		3.8080		4.0307		4.1765	
1.80000	3.8997		3.9742		4.1251		4.2147
3.44000			4.0185		4.1666		

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				4.3713			
-.44000		4.3251		4.3929		4.4725	
1.80000	4.3046		4.3292		4.4738		4.5608
3.44000			4.3755		4.5362		

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 SIP DEPENDENT VARIABLE P

XO	12.4900	12.8500	13.7400	14.4900	15.2400	16.1300	16.4900
YO							
-2.14000				4.4637			
-.44000		4.3669		4.4755		4.5732	
1.80000	4.4007		4.4518		4.5860		4.6049
3.44000			4.4688		4.5709		

OS55 HRSI TILE PANEL RUN 4 (RAJEO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.1403	
-1.06000			2.2255
.00000	2.0551		
2.12000	2.1248		
3.18000			2.3372
4.23000		2.1099	

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.1432	
-1.06000			2.2361
.00000	2.0640		
2.12000	2.1316		
3.18000			2.3485
4.23000		2.1138	

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.1531	
-1.06000			2.2638
.00000	2.0669		
2.12000	2.1396		
3.18000			2.3470
4.23000		2.1266	

OS55 HRSI TILE PANEL RUN 4 (RAJEO1)

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.1639	
-1.06000			2.3081
.00000	2.0717		
2.12000	2.1513		
3.18000			2.3443
4.23000		2.1414	

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.1668	
-1.06000			2.3421
.00000	2.0698		
2.12000	2.1504		
3.18000			2.3362
4.23000		2.1491	

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.2336	
-1.06000			2.5867
.00000	2.1110		
2.12000	2.1938		
3.18000			2.4200
4.23000		2.2140	

OS55 HRSI TILE PANEL RUN 4 (RAJEO1)

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.4301	
-1.06000			3.1212
.00000	2.3351		
2.12000	2.2958		
3.18000			2.7629
4.23000		2.4281	

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.7621	
-1.06000			3.3360
.00000	2.5643		
2.12000	2.5904		
3.18000			3.2234
4.23000		2.8111	

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		3.2224	
-1.06000			3.5685
.00000	3.0601		
2.12000	3.1777		
3.18000			3.5255
4.23000		3.2820	

OS55 HRSI TILE PANEL RUN 4 (RAJE01)

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		3.5313	
-1.06000			3.7545
.00000	3.4873		
2.12000	3.4685		
3.18000			3.7105
4.23000		3.5450	

OS55 HRSI TILE PANEL RUN 6 (RAJEO2) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		7.8458	
-1.06000			7.9941
.00000	7.7584		
2.12000	7.8187		
3.18000			8.0138
4.23000		7.8517	

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		3.7481	
-1.06000			3.9816
.00000	3.6709		
2.12000	3.6823		
3.18000			3.9454
4.23000		3.7921	

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.7150	
-1.06000			3.3022
.00000	2.5287		
2.12000	2.6663		
3.18000			3.2261
4.23000		2.8487	

OS55 HRSI TILE PANEL RUN 6 (RAJEO2)

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.0455	
-1.06000			2.6039
.00000	1.9586		
2.12000	1.9961		
3.18000			2.3589
4.23000		2.0475	

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		1.7995	
-1.06000			2.3627
.00000	1.7409		
2.12000	1.7298		
3.18000			2.1163
4.23000		1.8240	

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		1.5971	
-1.06000			2.0755
.00000	1.5138		
2.12000	1.5304		
3.18000			1.8305
4.23000		1.5815	

OS55 HRSI TILE PANEL RUN 6 (RAJEO2)

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		1.3242	
-1.06000			1.6204
.00000	1.2368		
2.12000	1.2887		
3.18000			1.4850
4.23000		1.3281	

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		1.1012	
-1.06000			1.4117
.00000	1.0344		
2.12000	1.0764		
3.18000			1.2633
4.23000		1.1022	

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		.9194	
-1.06000			1.1682
.00000	.8565		
2.12000	.9034		
3.18000			1.0473
4.23000		.9184	

OS55 HRSI TILE PANEL RUN 6 (RAJEO2)

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		.7583	
-1.06000			.9992
.00000	.6934		
2.12000	.7382		
3.18000			.8999
4.23000		.7612	

OS55 HRSI TILE PANEL RUN 7 (RAJEO3) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.9007	
-1.06000			2.9466
.00000	2.7583		
2.12000	2.8650		
3.18000			3.1709
4.23000		2.8529	

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.9105	
-1.06000			2.9700
.00000	2.7661		
2.12000	2.8743		
3.18000			3.1680
4.23000		2.8588	

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.9018	
-1.06000			2.9839
.00000	2.7571		
2.12000	2.8759		
3.18000			3.1490
4.23000		2.8548	

OS55 HRSI TILE PANEL RUN 7 (RAJEO3)

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.9192	
-1.06000			2.9975
.00000	2.7726		
2.12000	2.8822		
3.18000			3.1657
4.23000		2.8723	

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.9304	
-1.06000			3.0427
.00000	2.7751		
2.12000	2.8937		
3.18000			3.1599
4.23000		2.8972	

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.9675	
-1.06000			3.2097
.00000	2.7810		
2.12000	2.9316		
3.18000			3.1716
4.23000		2.9382	

OS55 HRSI TILE PANEL RUN 7 (RAJE03)

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		2.9800	
-1.06000			3.2246
.00000	2.7978		
2.12000	2.9449		
3.18000			3.1876
4.23000		2.9547	

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		3.0283	
-1.06000			3.5375
.00000	2.8547		
2.12000	2.9878		
3.18000			3.3180
4.23000		3.0069	

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		3.2605	
-1.06000			4.0887
.00000	3.1480		
2.12000	3.1528		
3.18000			3.7621
4.23000		3.3504	

OS55 HRSI TILE PANEL RUN 7 (RAJE03)

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		3.2380	
-1.06000			4.0480
.00000	3.1424		
2.12000	3.1383		
3.18000			3.7865
4.23000		3.2771	

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		3.5952	
-1.06000			4.3632
.00000	3.3210		
2.12000	3.3821		
3.18000			4.1924
4.23000		3.6030	

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		3.8786	
-1.06000			4.5816
.00000	3.6076		
2.12000	3.7741		
3.18000			4.4139
4.23000		3.9430	

OS55 HRSI TILE PANEL RUN 7 (RAJEO3)

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		3.8164	
-1.06000			4.5433
.00000	3.5448		
2.12000	3.6693		
3.18000			4.4485
4.23000		3.8642	

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		4.2822	
-1.06000			4.7164
.00000	4.1697		
2.12000	4.2315		
3.18000			4.6782
4.23000		4.3995	

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 45 FILLER BAR DEPENDENT VARIABLE P

XO	11.3100	13.4300	16.6100
YO			
-2.13000		4.4318	
-1.06000			4.8008
.00000	4.2126		
2.12000	4.2849		
3.18000			4.7382
4.23000		4.4583	

OS55 HRSI TILE PANEL RUN 4 (RAJFO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.0036	.0000	1.9892	1.9772	1.9558	2.0326	2.1180

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.0074	.0000	1.9925	1.9821	1.9628	2.0507	2.1441

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.0059	.0000	1.9947	1.9863	1.9833	2.1168	2.2026

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	1.9938	.0000	2.0098	2.1217	2.4218	2.6557	2.7541

OS55 HRSI TILE PANEL RUN 4 (RAJFO1)

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	1.9931	.0000	2.0619	2.2913	2.6060	2.7619	2.8325

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.3631	.0000	2.7723	2.8901	3.0029	3.0672	3.1007

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.8436	.0000	3.0091	3.0630	3.1394	3.1817	3.2053

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.9994	.0000	3.1137	3.1494	3.2172	3.2494	3.2726

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	3.1631	.0000	3.2404	3.2640	3.3170	3.3412	3.3616

OS55 HRSI TILE PANEL RUN 4 (RAJFO1)

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	3.2874	.0000	3.3466	3.3628	3.4102	3.4302	3.4420

OS55 HRSI TILE PANEL RUN 6

(RAJFO2) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	7.7215	.0000	.0000	.0000	8.0145	8.1595	8.1651

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	3.8107	.0000	.0000	.0000	4.1013	4.1962	4.1754

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	3.1434	.0000	.0000	.0000	3.5912	3.7096	3.6997

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.4372	.0000	.0000	.0000	3.0610	3.1839	3.1842

OS55 HRSI TILE PANEL RUN 6 (RAJFO2)

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.2138	.0000	.0000	.0000	2.7193	2.8328	2.8227

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	1.8994	.0000	.0000	.0000	2.4173	2.5295	2.5179

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	1.3817	.0000	.0000	.0000	2.0733	2.1934	2.1816

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	1.1866	.0000	.0000	.0000	1.7918	1.9036	1.8882

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	.9536	.0000	.0000	.0000	1.5285	1.6311	1.6061

OS55 HRSI TILE PANEL RUN 6 (RAJFO2)

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	.8182	.0000	.0000	.0000	1.3124	1.4032	1.3716

OS55 HRSI TILE PANEL RUN 7 (RAJF03) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.6991	2.6004	2.4660	2.1137	2.5205	2.7206	2.8550

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.6935	2.6011	2.4683	2.1152	2.5213	2.7376	2.8771

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.6781	2.5886	2.4581	2.1100	2.5871	2.9474	3.1126

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.6858	2.6037	2.4724	2.1191	2.5728	2.9313	3.1029

OS55 HRSI TILE PANEL RUN 7 (RAJF03)

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.6711	2.6033	2.4969	2.3052	3.2620	3.7658	3.9399

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.7603	2.9162	3.3750	3.5410	4.2035	4.3827	4.4508

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	2.7597	2.8854	3.3702	3.5513	4.2197	4.4054	4.4731

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	3.3417	3.5652	3.9010	3.8393	4.4059	4.5444	4.5913

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	4.1762	4.1782	4.3342	4.1713	4.6658	4.7708	4.7964

OS55 HRSI TILE PANEL RUN 7 (RAJFO3)

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	4.1051	4.1261	4.3011	4.1470	4.6473	4.7590	4.7857

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	4.3752	4.3225	4.4665	4.2830	4.7561	4.8528	4.8728

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	4.5101	4.4421	4.5714	4.3850	4.8439	4.9348	4.9508

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	4.4729	4.4102	4.5391	4.3479	4.8149	4.9148	4.9313

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	4.7189	4.6414	4.7314	4.5297	4.9576	5.0402	5.0493

OS55 HRSI TILE PANEL RUN 7 (RAJFO3)

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SURFACE DEPENDENT VARIABLE P

XO	17.2800	17.9800	19.1200	20.3600	21.8600	23.1200	24.2600	24.9600
YO								
-1.07000	.0000	4.7795	4.6847	4.7838	4.5786	5.0065	5.0846	5.0947

OS55 HRSI TILE PANEL RUN 4 (RAJGO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.1524		2.1581		
-1.82000	2.1676		2.1702		2.1724		2.3955
.43000		2.2055		2.1977		2.2069	
2.12000				.0000			

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.1694		2.1849		
-1.82000	2.1850		2.1903		2.1992		2.4057
.43000		2.2259		2.2267		2.2093	
2.12000				.0000			

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.2076		2.2436		
-1.82000	2.2164		2.2326		2.2594		2.4876
.43000		2.2650		2.2860		2.2867	
2.12000				.0000			

DATE 17 NOV 83 PRESSURE SOURCE DATA TABULATION - OS55(ARC 464-97-1)

(RAJGO1)

OS55 HRSI TILE PANEL RUN 4

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.3309		2.4565		
-1.82000	2.3048		2.3681		2.4717		2.5641
.43000		2.3675		2.4638		2.5357	
2.12000				.0000			

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.3699		2.5171		
-1.82000	2.3292		2.4054		2.5239		2.7953
.43000		2.3905		2.5060		2.5920	
2.12000				.0000			

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.7586		2.8687		
-1.82000	2.6289		2.7343		2.8425		3.1077
.43000		2.6786		2.8135		2.8985	
2.12000				.0000			

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.9943		3.0567		
-1.82000	2.9352		2.9886		3.0426		3.2990
.43000		2.9618		3.0417		3.0756	
2.12000				.0000			

OS55 HRSI TILE PANEL RUN 4 (RAJGO1)

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			3.1095		3.1582		
-1.82000	3.0690		3.1058		3.1468		3.3306
.43000		3.0935		3.1540		3.1709	
2.12000				.0000			

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			3.2446		3.2816		
-1.82000	3.2214		3.2437		3.2715		3.3771
.43000		3.2450		3.2891		3.2966	
2.12000				.0000			

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			3.3593		3.3881		
-1.82000	3.3373		3.3531		3.3731		3.3891
.43000		3.3587		3.3925		3.3723	
2.12000				.0000			

OS55 HRSI TILE PANEL RUN 6 (RAJGO2) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			7.9852		8.0805		
-1.82000	8.0292		8.0343		8.0687		8.1443
.43000		8.0243		8.0833		8.2176	
2.12000				.0000			

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			3.9994		4.0841		
-1.82000	4.0390		4.0492		4.0725		4.0650
.43000		4.0487		4.0985		4.1992	
2.12000				.0000			

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			3.3985		3.5133		
-1.82000	3.4131		3.4506		3.5166		3.8000
.43000		3.4196		3.5136		3.6569	
2.12000				.0000			

OS55 HRSI TILE PANEL RUN 6 (RAJGO2)

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.7966		2.9432		
-1.82000	2.7627		2.8391		2.9380		3.2583
.43000		2.7913		2.9249		3.0886	
2.12000				.0000			

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.5025		2.6261		
-1.82000	2.4938		2.5488		2.6265		2.9311
.43000		2.5230		2.6264		2.7631	
2.12000				.0000			

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.2026		2.3203		
-1.82000	2.1886		2.2480		2.3210		2.5712
.43000		2.2170		2.3260		2.4530	
2.12000				.0000			

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			1.8143		1.9552		
-1.82000	1.7721		1.8551		1.9527		2.2469
.43000		1.8235		1.9522		2.0884	
2.12000				.0000			

OS55 HRSI TILE PANEL RUN 6 (RAUGO2)

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			1.5617		1.6809		
-1.82000	1.5427		1.6076		1.6921		1.9891
.43000		1.5759		1.7034		1.8104	
2.12000				.0000			

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			1.3088		1.4185		
-1.82000	1.2994		1.3605		1.4327		1.7112
.43000		1.3323		1.4540		1.5450	
2.12000				.0000			

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			1.1175		1.2112		
-1.82000	1.1223		1.1720		1.2318		1.4995
.43000		1.1680		1.2642		1.3208	
2.12000				.0000			

OS55 HRSI TILE PANEL RUN 7 (RAJGO3) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.9319		2.9526		
-1.82000	2.9502		2.9534		2.9741		2.9984
.43000		3.0151		3.0007		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			2.9578		2.9909		
-1.82000	2.9768		2.9819		3.0141		3.0470
.43000		3.0438		3.0382		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			3.0326		3.1234		
-1.82000	3.0322		3.0715		3.1529		3.2307
.43000		3.1177		3.1735		.0000	
2.12000				.0000			

OS55 HRSI TILE PANEL RUN 7 (RAJG03)

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			3.0463		3.1352		
-1.82000	3.0487		3.0863		3.1692		3.2513
.43000		3.1318		3.1918		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			3.2258		3.4426		
-1.82000	3.1812		3.2921		3.4830		3.6534
.43000		3.2948		3.4622		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			3.6398		3.9126		
-1.82000	3.4471		3.6414		3.8988		4.0871
.43000		3.5507		3.8222		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			3.6569		3.9327		
-1.82000	3.4574		3.6541		3.9121		4.1018
.43000		3.5587		3.8332		.0000	
2.12000				.0000			

OS55 HRSI TILE PANEL RUN 7 (RAJGO3)

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			4.0011		4.1975		
-1.82000	3.7990		3.9709		4.1724		4.3190
.43000		3.8716		4.1064		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			4.4445		4.5541		
-1.82000	4.3559		4.4320		4.5478		4.6286
.43000		4.3719		4.5129		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			4.3987		4.5141		
-1.82000	4.3003		4.3861		4.5054		4.5937
.43000		4.3274		4.4694		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			4.5826		4.6691		
-1.82000	4.5171		4.5731		4.6610		4.7204
.43000		4.5418		4.6500		.0000	
2.12000				.0000			

OS55 HRSI TILE PANEL RUN 7 (RAJG03)

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			4.6959		4.7735		
-1.82000	4.6434		4.6865		4.7635		4.8142
.43000		4.6678		4.7593		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			4.6677		4.7514		
-1.82000	4.6095		4.6567		4.7374		4.7978
.43000		4.6298		4.7274		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			4.8765		4.9321		
-1.82000	4.8386		4.8611		4.9229		4.9631
.43000		4.8572		4.9221		.0000	
2.12000				.0000			

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 INTERNAL DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-3.46000			4.9343		4.9906		
-1.82000	4.8987		4.9210		4.9750		5.0132
.43000		4.9211		4.9808		.0000	
2.12000				.0000			

OS55 HRSI TILE PANEL RUN 4 (RAJHO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.0480	
-3.19000	2.1795		
-2.13000			2.1855
-.01000			2.1319
1.05000	2.2890		
2.11000		.0000	

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.0549	
-3.19000	2.1839		
-2.13000			2.2135
-.01000			2.1373
1.05000	2.2933		
2.11000		.0000	

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.0639	
-3.19000	2.1819		
-2.13000			2.2393
-.01000			2.1833
1.05000	2.2980		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 4 (RAJHO1)

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.3128	
-3.19000	2.1770		
-2.13000			2.6284
-.01000			2.6846
1.05000	2.2575		
2.11000		.0000	

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.4682	
-3.19000	2.1824		
-2.13000			2.7503
-.01000			2.7751
1.05000	2.2450		
2.11000		.0000	

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.9816	
-3.19000	2.6104		
-2.13000			3.0505
-.01000			3.0954
1.05000	2.5809		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 4 (RAJH01)

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		3.1296	
-3.19000	2.9489		
-2.13000			3.1575
-.01000			3.2172
1.05000	2.9343		
2.11000		.0000	

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		3.2194	
-3.19000	3.0935		
-2.13000			3.2280
-.01000			3.2818
1.05000	3.0742		
2.11000		.0000	

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		3.3271	
-3.19000	3.2265		
-2.13000			3.3131
-.01000			3.3718
1.05000	3.2324		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 4 (RAJHO1)

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		3.4358	
-3.19000	3.3531		
-2.13000			3.3929
-.01000			3.4588
1.05000	3.3529		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 6 (RAJH02) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		8.0656	
-3.19000	7.9610		
-2.13000			8.0348
-.01000			8.2584
1.05000	8.0025		
2.11000		.0000	

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		4.1428	
-3.19000	4.0143		
-2.13000			4.0868
-.01000			4.2312
1.05000	4.0383		
2.11000		.0000	

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		3.6026	
-3.19000	3.4200		
-2.13000			3.6182
-.01000			3.7528
1.05000	3.3932		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 6 (RAJHO2)

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		3.0639	
-3.19000	2.7521		
-2.13000			3.1103
-.01000			3.2296
1.05000	2.7699		
2.11000		.0000	

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.7321	
-3.19000	2.4707		
-2.13000			2.7589
-.01000			2.8810
1.05000	2.4927		
2.11000		.0000	

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.4350	
-3.19000	2.1635		
-2.13000			2.4600
-.01000			2.5871
1.05000	2.1968		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 6 (RAJHO2)

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.0920	
-3.19000	1.7114		
-2.13000			2.1315
-.01000			2.2325
1.05000	1.7523		
2.11000		.0000	

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		1.8176	
-3.19000	1.5042		
-2.13000			1.8438
-.01000			1.9380
1.05000	1.5422		
2.11000		.0000	

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		1.5666	
-3.19000	1.2376		
-2.13000			1.5792
-.01000			1.6713
1.05000	1.3040		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 6 (RAUHO2)

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		1.3639	
-3.19000	1.0645		
-2.13000			1.3599
-.01000			1.4226
1.05000	1.1547		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 7 (RAJHO3) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.7347	
-3.19000	2.8659		
-2.13000			2.9783
-.01000			2.9261
1.05000	3.2591		
2.11000		.0000	

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.7302	
-3.19000	2.8666		
-2.13000			3.0111
-.01000			2.9333
1.05000	3.2728		
2.11000		.0000	

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.7440	
-3.19000	2.8593		
-2.13000			3.0514
-.01000			3.1220
1.05000	3.2462		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 7 (RAJH03)

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		2.7538	
-3.19000	2.8610		
-2.13000			3.0526
-.01000			3.1168
1.05000	3.2715		
2.11000		.0000	

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		3.0361	
-3.19000	2.8581		
-2.13000			3.7008
-.01000			3.8571
1.05000	3.2029		
2.11000		.0000	

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		4.1193	
-3.19000	3.0400		
-2.13000			4.3565
-.01000			4.4525
1.05000	3.2735		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 7 (RAUH03)

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		4.1430	
-3.19000	3.0459		
-2.13000			4.3742
-.01000			4.4739
1.05000	3.2518		
2.11000		.0000	

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		4.3828	
-3.19000	3.7066		
-2.13000			4.5090
-.01000			4.6262
1.05000	3.7532		
2.11000		.0000	

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		4.6663	
-3.19000	4.3340		
-2.13000			4.7214
-.01000			4.8469
1.05000	4.3402		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 7 (RAJH03)

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		4.6311	
-3.19000	4.2803		
-2.13000			4.7016
-.01000			4.8364
1.05000	4.2959		
2.11000		.0000	

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		4.7560	
-3.19000	4.4799		
-2.13000			4.7950
-.01000			4.9320
1.05000	4.5200		
2.11000		.0000	

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		4.8587	
-3.19000	4.6071		
-2.13000			4.8723
-.01000			5.0068
1.05000	4.6403		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 7 (RAJH03)

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		4.8385	
-3.19000	4.5795		
-2.13000			4.8582
-.01000			4.9883
1.05000	4.6004		
2.11000		.0000	

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		4.9892	
-3.19000	4.8214		
-2.13000			4.9645
-.01000			5.1052
1.05000	4.8397		
2.11000		.0000	

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIDE DEPENDENT VARIABLE P

XO	19.0000	22.1800	24.3000
YO			
-4.25000		5.0467	
-3.19000	4.8510		
-2.13000			5.0171
-.01000			5.1502
1.05000	4.8986		
2.11000		.0000	

OS55 HRSI TILE PANEL RUN 4 (RAJIO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				2.2060			
-2.57000			2.2075	2.2092		2.2151	
-.32000	2.2071		2.1989		2.2018		2.2195
1.32000			2.2003		2.2064		

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				2.2357			
-2.57000			2.2378	2.2399		2.2530	
-.32000	2.2346		2.2312		2.2344		2.2553
1.32000			2.2307		2.2407		

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				2.3015			
-2.57000			2.2941	2.3110		2.3392	
-.32000	2.2905		2.2939		2.3127		2.3427
1.32000			2.2925		2.3199		

OS55 HRSI TILE PANEL RUN 4 (RAJIO1)

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				2.4850			
-2.57000		2.4465		2.5080		2.6045	
-.32000	2.4220		2.4618		2.5272		2.5945
1.32000			2.4429		2.5362		

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				2.5279			
-2.57000		2.4792		2.5508		2.6589	
-.32000	2.4521		2.4993		2.5742		2.6486
1.32000			2.4783		2.5858		

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				2.8193			
-2.57000		2.7530		2.8259		2.9310	
-.32000	2.7105		2.7616		2.8404		2.9138
1.32000			2.7465		2.8609		

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				3.0188			
-2.57000		2.9774		3.0271		3.1054	
-.32000	2.9484		2.9776		3.0316		3.0880
1.32000			2.9771		3.0527		

OS55 HRSI TILE PANEL RUN 4 (RAUIO1)

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				3.1307			
-2.57000			3.1036	3.1374		3.2039	
-.32000		3.0794	3.0986		3.1374		3.1850
1.32000			3.1027		3.1594		

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				3.2666			
-2.57000			3.2510	3.2716		3.3250	
-.32000		3.2324	3.2392		3.2658		3.3043
1.32000			3.2496		3.2857		

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				3.3778			
-2.57000			3.3671	3.3811		3.4248	
-.32000		3.3484	3.3497		3.3679		3.4029
1.32000			3.3617		3.3884		

OS55 HRSI TILE PANEL RUN 6 (RAJIO2) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			8.0931				
-2.57000		8.0605	8.0974		8.1583		
-.32000	8.0322		8.0448	8.0477		8.1150	
1.32000			8.0854	8.1017			

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			4.0844				
-2.57000		4.0613	4.0869		4.1212		
-.32000	4.0362		4.0484	4.0402		4.1003	
1.32000			4.0860	4.0933			

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			3.4767				
-2.57000		3.4314	3.4889		3.5622		
-.32000	3.4014		3.4416	3.4646		3.5481	
1.32000			3.4633	3.5220			

OS55 HRSI TILE PANEL RUN 6 (RAJIO2)

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			2.8949				
-2.57000		2.8341	2.9084		2.9953		
-.32000	2.7941		2.8500	2.8913		2.9866	
1.32000			2.8654	2.9483			

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			2.5945				
-2.57000		2.5459	2.6060		2.6750		
-.32000	2.5081		2.5520	2.5785		2.6666	
1.32000			2.5703	2.6349			

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			2.2924				
-2.57000		2.2520	2.3029		2.3682		
-.32000	2.2129		2.2543	2.2748		2.3579	
1.32000			2.2691	2.3290			

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			1.9327				
-2.57000		1.8875	1.9409		2.0120		
-.32000	1.8455		1.8893	1.9171		2.0016	
1.32000			1.8981	1.9691			

OS55 HRSI TILE PANEL RUN 6 (RAJIO2)

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				1.6689			
-2.57000			1.6368	1.6811		1.7400	
-.32000		1.5974	1.6358		1.6504		1.7300
1.32000			1.6459		1.7046		

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				1.4155			
-2.57000			1.3927	1.4270		1.4752	
-.32000		1.3572	1.3900		1.3974		1.4700
1.32000			1.3976		1.4474		

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				1.2195			
-2.57000			1.2061	1.2271		1.2656	
-.32000		1.1725	1.1983		1.1954		1.2652
1.32000			1.2092		1.2456		

OS55 HRSI TILE PANEL RUN 7 (RAJIO3) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				3.0028			
-2.57000		3.0020		3.0115		3.0249	
-.32000	3.0167		3.0228		3.0244		3.0320
1.32000			3.0239		3.0304		

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				3.0456			
-2.57000		3.0387		3.0594		3.0793	
-.32000	3.0564		3.0669		3.0728		3.0885
1.32000			3.0642		3.0820		

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				3.1842			
-2.57000		3.1584		3.2143		3.2820	
-.32000	3.1648		3.2054		3.2534		3.2986
1.32000			3.1918		3.2665		

OS55 HRSI TILE PANEL RUN 7 (RAJI03)

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			3.1970				
-2.57000		3.1693	3.2241		3.2918		
-.32000	3.1783		3.2182	3.2655		3.3084	
1.32000			3.2064	3.2787			

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			3.4634				
-2.57000		3.3867	3.5171		3.6931		
-.32000	3.3739		3.4679	3.5909		3.6907	
1.32000			3.4370	3.6083			

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			3.8206				
-2.57000		3.6830	3.8530		4.0829		
-.32000	3.6322		3.7608	3.9320		4.0609	
1.32000			3.7243	3.9699			

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000			3.8423				
-2.57000		3.7029	3.8741		4.1039		
-.32000	3.6469		3.7763	3.9503		4.0813	
1.32000			3.7371	3.9893			

OS55 HRSI TILE PANEL RUN 7 (RAJIO3)

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				4.0905			
-2.57000			3.9542	4.1089		4.3128	
-.32000		3.9007	4.0181		4.1708		4.2833
1.32000			3.9943		4.2080		

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				4.4675			
-2.57000			4.3792	4.4843		4.6338	
-.32000		4.3425	4.4202		4.5229		4.5964
1.32000			4.4116		4.5547		

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				4.4259			
-2.57000			4.3307	4.4415		4.5982	
-.32000		4.2925	4.3753		4.4834		4.5632
1.32000			4.3662		4.5183		

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				4.6025			
-2.57000			4.5294	4.6197		4.7431	
-.32000		4.5067	4.5646		4.6473		4.7074
1.32000			4.5700		4.6808		

OS55 HRSI TILE PANEL RUN 7 (RAJI03)

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				4.7176			
-2.57000			4.6552	4.7314		4.8431	
-.32000		4.6312	4.6812		4.7519		4.8034
1.32000			4.6910		4.7830		

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				4.6919			
-2.57000			4.6280	4.7066		4.8209	
-.32000		4.6012	4.6533		4.7280		4.7835
1.32000			4.6631		4.7603		

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				4.8927			
-2.57000			4.8523	4.9006		4.9914	
-.32000		4.8302	4.8591		4.9092		4.9452
1.32000			4.8728		4.9352		

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 SIP DEPENDENT VARIABLE P

XO	19.1200	19.4800	20.3600	21.1200	21.8600	22.7600	23.1200
YO							
-4.26000				4.9538			
-2.57000			4.9139	4.9607		5.0507	
-.32000		4.8931	4.9220		4.9690		5.0052
1.32000			4.9370		4.9969		

OS55 HRSI TILE PANEL RUN 4 (RAJJO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.1460	
-3.19000			2.1853
-2.13000	2.1865		
-.01000	2.2470		
1.05000			2.1533
2.11000		2.1454	

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.1629	
-3.19000			2.2073
-2.13000	2.1961		
-.01000	2.2529		
1.05000			2.1917
2.11000		2.1608	

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.1753	
-3.19000			2.2925
-2.13000	2.2048		
-.01000	2.2615		
1.05000			2.2929
2.11000		2.2020	

OS55 HRSI TILE PANEL RUN 4 (RAJJO1)

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.2175	
-3.19000			2.6913
-2.13000	2.2241		
-.01000	2.2796		
1.05000			2.5857
2.11000		2.2779	

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.2537	
-3.19000			2.8005
-2.13000	2.2409		
-.01000	2.2881		
1.05000			2.6605
2.11000		2.2897	

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.7807	
-3.19000			3.0994
-2.13000	2.4721		
-.01000	2.5218		
1.05000			3.0305
2.11000		2.6498	

OS55 HRSI TILE PANEL RUN 4 (RAJJO1)

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		3.0427	
-3.19000			3.2097
-2.13000	2.8650		
-.01000	2.8579		
1.05000			3.1757
2.11000		2.9382	

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		3.1544	
-3.19000			3.2931
-2.13000	3.0315		
-.01000	3.0210		
1.05000			3.2560
2.11000		3.0832	

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		3.2869	
-3.19000			3.3824
-2.13000	3.1942		
-.01000	3.1855		
1.05000			3.3513
2.11000		3.2321	

OS55 HRSI TILE PANEL RUN 4 (RAJJO1)

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		3.4086	
-3.19000			3.4767
-2.13000	3.3304		
-.01000	3.3225		
1.05000			3.4426
2.11000		3.3545	

OS55 HRSI TILE PANEL RUN 6 (RAJJO2) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		8.0130	
-3.19000			8.1484
-2.13000	8.0200		
-.01000	7.9823		
1.05000			8.1490
2.11000		8.0030	

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		4.0736	
-3.19000			4.1784
-2.13000	4.0018		
-.01000	3.9854		
1.05000			4.1371
2.11000		4.0451	

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		3.4683	
-3.19000			3.6842
-2.13000	3.3138		
-.01000	3.2967		
1.05000			3.6318
2.11000		3.4004	

OS55 HRSI TILE PANEL RUN 6 (RAJJO2)

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.8523	
-3.19000			3.1592
-2.13000	2.5910		
-.01000	2.6173		
1.05000			3.0968
2.11000		2.7739	

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.5614	
-3.19000			2.8145
-2.13000	2.3648		
-.01000	2.3713		
1.05000			2.7555
2.11000		2.4809	

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.2678	
-3.19000			2.4961
-2.13000	2.0533		
-.01000	2.0623		
1.05000			2.4482
2.11000		2.1769	

OS55 HRSI TILE PANEL RUN 6 (RAJJ02)

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		1.8572	
-3.19000			2.1606
-2.13000	1.6169		
-.01000	1.6577		
1.05000			2.0929
2.11000		1.7625	

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		1.6158	
-3.19000			1.8641
-2.13000	1.3927		
-.01000	1.4254		
1.05000			1.8096
2.11000		1.5191	

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		1.3730	
-3.19000			1.5876
-2.13000	1.1703		
-.01000	1.1946		
1.05000			1.5375
2.11000		1.2622	

OS55 HRSI TILE PANEL RUN 6 (RAJJO2)

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		1.1879	
-3.19000			1.3602
-2.13000	1.0064		
-.01000	1.0260		
1.05000			1.3205
2.11000		1.0806	

OS55 HRSI TILE PANEL RUN 7 (RAJJO3) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.8497	
-3.19000			2.9823
-2.13000	2.9120		
-.01000	3.0388		
1.05000			2.9427
2.11000		2.9819	

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.8732	
-3.19000			3.0113
-2.13000	2.9278		
-.01000	3.0551		
1.05000			2.9940
2.11000		3.0039	

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.8706	
-3.19000			3.1976
-2.13000	2.9206		
-.01000	3.0566		
1.05000			3.2597
2.11000		3.0802	

OS55 HRSI TILE PANEL RUN 7 (RAJJO3)

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.8945	
-3.19000			3.1893
-2.13000	2.9393		
-.01000	3.0766		
1.05000			3.2695
2.11000		3.1029	

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		2.9278	
-3.19000			3.7991
-2.13000	2.9729		
-.01000	3.1278		
1.05000			3.7243
2.11000		3.2260	

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		3.4460	
-3.19000			4.4393
-2.13000	3.1898		
-.01000	3.2935		
1.05000			4.2375
2.11000		3.4679	

OS55 HRSI TILE PANEL RUN 7 (RAJJ03)

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		3.4721	
-3.19000			4.4567
-2.13000	3.1949		
-.01000	3.2994		
1.05000			4.2630
2.11000		3.4606	

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		3.9322	
-3.19000			4.5923
-2.13000	3.4607		
-.01000	3.5634		
1.05000			4.4802
2.11000		3.8406	

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		4.4399	
-3.19000			4.8126
-2.13000	4.1761		
-.01000	4.1825		
1.05000			4.7410
2.11000		4.3590	

OS55 HRSI TILE PANEL RUN 7 (RAJJO3)

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		4.3810	
-3.19000			4.7866
-2.13000	4.0913		
-.01000	4.0990		
1.05000			4.7211
2.11000		4.3065	

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		4.5900	
-3.19000			4.8878
-2.13000	4.4077		
-.01000	4.3989		
1.05000			4.8396
2.11000		4.5419	

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		4.7148	
-3.19000			4.9794
-2.13000	4.5575		
-.01000	4.5480		
1.05000			4.9188
2.11000		4.6722	

OS55 HRSI TILE PANEL RUN 7 (RAJJO3)

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		4.6778	
-3.19000			4.9679
-2.13000	4.5173		
-.01000	4.5088		
1.05000			4.8965
2.11000		4.6316	

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		4.8912	
-3.19000			5.0906
-2.13000	4.7700		
-.01000	4.7626		
1.05000			5.0322
2.11000		4.8640	

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 FILLER BAR DEPENDENT VARIABLE P

XO	17.9400	20.0600	23.2400
YO			
-4.25000		4.9477	
-3.19000			5.1371
-2.13000	4.8391		
-.01000	4.8261		
1.05000			5.0868
2.11000		4.9276	

OS55 HRSI TILE PANEL RUN 4 (RAJKO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	1.9892	1.9772	1.9558
-.32000	2.2071	2.1989	2.2018	2.2195

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	1.9925	1.9821	1.9628
-.32000	2.2346	2.2312	2.2344	2.2553

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	1.9947	1.9863	1.9833
-.32000	2.2905	2.2939	2.3127	2.3427

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	2.0098	2.1217	2.4218
-.32000	2.4220	2.4618	2.5272	2.5945

OS55 HRSI TILE PANEL RUN 4 (RAJKO1)

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	2.0619	2.2913	2.6060
-.32000	2.4521	2.4993	2.5742	2.6486

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	2.7723	2.8901	3.0029
-.32000	2.7105	2.7616	2.8404	2.9138

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	3.0091	3.0630	3.1394
-.32000	2.9484	2.9776	3.0316	3.0880

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	3.1137	3.1494	3.2172
-.32000	3.0794	3.0986	3.1374	3.1850

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	3.2404	3.2640	3.3170
-.32000	3.2324	3.2392	3.2658	3.3043

OS55 HRSI TILE PANEL RUN 4 (RAJKO1)

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	3.3466	3.3628	3.4102
-.32000	3.3484	3.3497	3.3679	3.4029

OS55 HRSI TILE PANEL RUN 6 (RAJKO2) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	.0000	.0000	8.0145
-.32000	8.0322	8.0448	8.0477	8.1150

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	.0000	.0000	4.1013
-.32000	4.0362	4.0484	4.0402	4.1003

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	.0000	.0000	3.5912
-.32000	3.4014	3.4416	3.4646	3.5481

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	.0000	.0000	3.0610
-.32000	2.7941	2.8500	2.8913	2.9866

OS55 HRSI TILE PANEL RUN 6 (RAJKO2)

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	.0000	.0000	2.7193
-.32000	2.5081	2.5520	2.5785	2.6666

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	.0000	.0000	2.4173
-.32000	2.2129	2.2543	2.2748	2.3579

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	.0000	.0000	2.0733
-.32000	1.8455	1.8893	1.9171	2.0016

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	.0000	.0000	1.7918
-.32000	1.5974	1.6358	1.6504	1.7300

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	.0000	.0000	1.5285
-.32000	1.3572	1.3900	1.3974	1.4700

OS55 HRSI TILE PANEL RUN 6 (RAJKO2)

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	.0000	.0000	.0000	1.3124
-.32000	1.1725	1.1983	1.1954	1.2652

OS55 HRSI TILE PANEL RUN 7 (RAJKO3) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	2.6004	2.4660	2.1137	2.5205
-.32000	3.0167	3.0228	3.0244	3.0320

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	2.6011	2.4683	2.1152	2.5213
-.32000	3.0564	3.0669	3.0728	3.0885

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	2.5886	2.4581	2.1100	2.5871
-.32000	3.1648	3.2054	3.2534	3.2986

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	2.6037	2.4724	2.1191	2.5728
-.32000	3.1783	3.2182	3.2655	3.3084

OS55 HRSI TILE PANEL RUN 7 (RAJKO3)

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	2.6033	2.4969	2.3052	3.2620
-.32000	3.3739	3.4679	3.5909	3.6907

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	2.9162	3.3750	3.5410	4.2035
-.32000	3.6322	3.7608	3.9320	4.0609

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	2.8854	3.3702	3.5513	4.2197
-.32000	3.6469	3.7763	3.9503	4.0813

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	3.5652	3.9010	3.8393	4.4059
-.32000	3.9007	4.0181	4.1708	4.2833

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	4.1782	4.3342	4.1713	4.6658
-.32000	4.3425	4.4202	4.5229	4.5964

OS55 HRSI TILE PANEL RUN 7 (RAJKO3)

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	4.1261	4.3011	4.1470	4.6473
-.32000	4.2925	4.3753	4.4834	4.5632

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	4.3225	4.4665	4.2830	4.7561
-.32000	4.5067	4.5646	4.6473	4.7074

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	4.4421	4.5714	4.3850	4.8439
-.32000	4.6312	4.6812	4.7519	4.8034

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	4.4102	4.5391	4.3479	4.8149
-.32000	4.6012	4.6533	4.7280	4.7835

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	4.6414	4.7314	4.5297	4.9576
-.32000	4.8302	4.8591	4.9092	4.9452

OS55 HRSI TILE PANEL RUN 7 (RAJKO3)

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)TILE 48 DIFFERENTL DEPENDENT VARIABLE P

XO	19.1200	20.3600	21.8600	23.1200
YO				
-1.07000	4.6847	4.7838	4.5786	5.0065
-.32000	4.8931	4.9220	4.9690	5.0052

OS55 HRSI TILE PANEL RUN 4 (RAJLO1) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 656.000

RUN (1) = 4.000 THETA (1) = 32.820 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0179	1.9904	1.9983		1.9689		2.0032		1.9905		2.0414				
16.0000	2.0757	2.0087	2.0087	1.9792	1.9920	1.9900	1.9742	1.9792	2.0120	2.0698	2.2638	2.4980	2.8341	3.0252	3.1830

XO	36.0000
YO	
-16.0000	3.3360
16.0000	3.3058

RUN (1) = 4.000 THETA (2) = 34.715 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0209	1.9945	1.9985		1.9691		2.0151		1.9965		2.1471				
16.0000	2.0855	2.0118	2.0108	1.9824	1.9941	1.9981	1.9814	1.9971	2.0630	2.2332	2.5288	2.8390	2.9975	3.1463	3.2725

XO	36.0000
YO	
-16.0000	3.4287
16.0000	3.3835

RUN (1) = 4.000 THETA (3) = 37.223 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0218	1.9924	2.0032		1.9690		2.0228		2.0659		2.5818				
16.0000	2.0874	2.0146	2.0126	1.9801	1.9968	2.0047	1.9870	2.0569	2.2979	2.6533	2.9313	3.0722	3.1809	3.3111	3.4012

OS55 HRSI TILE PANEL RUN 4 (RAJLO1)

RUN (1) = 4.000 THETA (3) = 37.223

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	36.0000
YO	
-16.0000	3.5597
16.0000	3.4749

RUN (1) = 4.000 THETA (4) = 40.962 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0119	1.9854	1.9964		1.9621		2.0590		2.4407		3.0239				
16.0000	2.0845	2.0066	2.0057	1.9741	2.0037	2.0096	2.0461	2.3624	2.7082	2.9946	3.1364	3.2439	3.3466	3.4502	3.5274

XO	36.0000
YO	
-16.0000	3.6591
16.0000	3.6283

RUN (1) = 4.000 THETA (5) = 41.638 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0149	1.9885	1.9954		1.9641		2.1119		2.6726		3.1091				
16.0000	2.0786	2.0078	2.0068	1.9773	1.9793	2.0196	2.1002	2.4767	2.8111	3.0393	3.1950	3.3027	3.3938	3.4839	3.5828

XO	36.0000
YO	
-16.0000	3.6845
16.0000	3.6554

OS55 HRSI TILE PANEL RUN 4 (RAJLO1)

RUN (1) = 4.000 THETA (6) = 46.562 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0129	1.9864	1.9963		2.0316		2.7016		3.1523		3.3942				
16.0000	2.0845	2.0097	1.9880	1.9900	2.0668	2.1898	2.6436	3.0068	3.2089	3.3206	3.4392	3.5373	3.6157	3.6804	3.7539

XO	36.0000
YO	
-16.0000	3.8243
16.0000	3.8140

RUN (1) = 4.000 THETA (7) = 49.506 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0160	1.9895	2.0297		2.3693		3.1257		3.3919		3.5602				
16.0000	2.0737	2.0097	2.0038	2.0392	2.4162	2.6741	3.0865	3.2450	3.3845	3.4824	3.6028	3.6821	3.7546	3.7957	3.8691

XO	36.0000
YO	
-16.0000	3.8822
16.0000	3.9060

RUN (1) = 4.000 THETA (8) = 52.349 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0120	1.9905	2.1910		2.9122		3.2894		3.5298		3.6882				
16.0000	2.0845	2.0018	2.0845	2.3895	2.8540	3.1413	3.3007	3.4247	3.5500	3.6361	3.7125	3.7790	3.8358	3.8877	3.9249

XO	36.0000
YO	
-16.0000	3.9374
16.0000	3.9600

OS55 HRSI TILE PANEL RUN 4 (RAJLO1)

RUN (1) = 4.000 THETA (9) = 55.665 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0307	2.1070	2.8130		3.2678		3.5328		3.7059		3.8125				
16.0000	2.0806	2.1100	2.7242	3.0829	3.3216	3.4523	3.5663	3.6479	3.7112	3.7679	3.8412	3.8764	3.9145	3.9634	3.9810

XO	36.0000
YO	
-16.0000	3.9973
16.0000	4.0099

RUN (1) = 4.000 THETA (10) = 59.713 PT = 11.605 TTF = 106.49 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0786	2.6013	3.2612		3.5441		3.7350		3.8466		3.9386				
16.0000	2.2264	2.7312	3.2918	3.4283	3.5351	3.6607	3.6903	3.7556	3.8320	3.8692	3.9143	3.9555	4.0006	3.9938	4.0153

XO	36.0000
YO	
-16.0000	4.0218
16.0000	4.0194

. . .

OS55 HRSI TILE PANEL RUN 6 (RAJLO2) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

THETA = 52.000

RUN (1) = 6.000 MACH (1) = 1.721 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	7.4597	7.5599	7.6676		7.7599		7.8914		8.0161		8.1613				
16.0000	7.4880	7.5575	7.6612	7.7234	7.7678	7.8241	7.8863	7.9722	8.0360	8.1216	8.1923	8.2690	8.3447	8.4381	8.5237

XO	36.0000
YO	
-16.0000	8.6207
16.0000	8.5974

RUN (1) = 6.000 MACH (2) = 1.761 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.2701	2.8836	3.5135		3.7871		3.9419		4.0587		4.1590				
16.0000	2.3920	3.0568	3.5369	3.6400	3.7687	3.8256	3.9238	3.9700	4.0642	4.0847	4.1385	4.1620	4.2041	4.2344	4.2423

XO	36.0000
YO	
-16.0000	4.2641
16.0000	4.2638

RUN (1) = 6.000 MACH (3) = 1.813 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.0196	1.9923	2.1068		2.8720		3.2502		3.5170		3.6753				
16.0000	2.0628	1.9921	2.0817	2.2648	2.8409	3.0949	3.2830	3.4376	3.5402	3.6202	3.6875	3.7411	3.8065	3.8416	3.9060

OS55 HRSI TILE PANEL RUN 6 (RAJLO2)

RUN (1) = 6.000 MACH (3) = 1.813

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	36.0000														
YO															
-16.0000	3.9157														
16.0000	3.9409														

RUN (1) = 6.000 MACH (4) = 1.904 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	1.7048	1.7214	1.7690		1.9126		2.6375		2.9608		3.1698				
16.0000	1.7768	1.7318	1.7397	1.7830	1.9534	2.2884	2.6144	2.8301	2.9670	3.0657	3.1839	3.2455	3.3168	3.3735	3.4282
XO	36.0000														
YO															
-16.0000	3.4785														
16.0000	3.4730														

RUN (1) = 6.000 MACH (5) = 2.004 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	1.4935	1.4984	1.5101		1.7113		2.3717		2.6357		2.8163				
16.0000	1.5562	1.4880	1.4989	1.4950	1.6687	1.9994	2.3320	2.4948	2.6305	2.7422	2.8323	2.9048	2.9558	3.0136	3.0871
XO	36.0000														
YO															
-16.0000	3.0980														
16.0000	3.1131														

OS55 HRSI TILE PANEL RUN 6 (RAJLO2)

RUN (1) = 6.000 MACH (6) = 2.104 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	1.3374	1.3138	1.3275		1.5079		2.0914		2.3552		2.5238				
16.0000	1.3549	1.3170	1.3141	1.3239	1.4514	1.6924	2.0184	2.2169	2.3493	2.4434	2.5189	2.5895	2.6533	2.7033	2.7494

XO	36.0000
YO	
-16.0000	2.7837
16.0000	2.7879

RUN (1) = 6.000 MACH (7) = 2.204 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	1.1250	1.1417	1.1523		1.1935		1.6051		1.9853		2.1798				
16.0000	1.1552	1.1434	1.1404	1.1454	1.2333	1.3667	1.6029	1.8638	1.9941	2.0973	2.1751	2.2429	2.3010	2.3688	2.3993

XO	36.0000
YO	
-16.0000	2.4519
16.0000	2.4604

RUN (1) = 6.000 MACH (8) = 2.300 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	.9607	.9518	.9594		1.0037		1.4113		1.7047		1.8682				
16.0000	.9771	.9454	.9454	.9414	1.0078	1.1338	1.3113	1.5740	1.7128	1.8190	1.8800	1.9390	1.9911	2.0412	2.0825

XO	36.0000
YO	
-16.0000	2.1163
16.0000	2.1175

OS55 HRSI TILE PANEL RUN 6 (RAJLO2)

RUN (1) = 6.000 MACH (9) = 2.396 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	.7974	.7945	.8123		.8359		1.1347		1.4483		1.5908				
16.0000	.8368	.8023	.8023	.8014	.8301	.9261	1.1240	1.3289	1.4589	1.5288	1.6056	1.6617	1.6991	1.7414	1.7877

XO	36.0000
YO	
-16.0000	1.8228
16.0000	1.8114

RUN (1) = 6.000 MACH (10) = 2.504 PT = 11.600 TTF = 99.593 MACH = 1.8123 Q = 4.5571

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	.6649	.6580	.6545		.6910		.9722		1.2316		1.3461				
16.0000	.6732	.6600	.6580	.6550	.6986	.7806	.9577	1.1436	1.2462	1.3170	1.3692	1.4164	1.4498	1.4951	1.5266

XO	36.0000
YO	
-16.0000	1.5483
16.0000	1.5490

OS55 HRSI TILE PANEL RUN 7 (RAJL03) (17 NOV 83)

REFERENCE DATA

SREF = .0000 SQ. FT XMRP = .0000 IN. XO
LREF = .0000 INCHES YMRP = .0000 IN. YO
BREF = .0000 INCHES ZMRP = .0000 IN. ZO
SCALE = 1.0000

PARAMETRIC DATA

MACH = 1.800 Q(PSF) = 862.000

RUN (1) = 7.000 THETA (1) = 32.977 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.6988	2.6432	2.7665		2.7131		2.7436		2.7569		2.8207				
16.0000	2.8703	2.6717	2.6717	2.6282	2.6312	2.6322	2.6312	2.6322	2.7561	2.8342	2.9708	3.3211	3.7895	4.0656	4.2949

XO	36.0000
YO	
-16.0000	4.5398
16.0000	4.4480

RUN (1) = 7.000 THETA (2) = 34.653 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.7047	2.6491	2.6870		2.6301		2.6723		2.6987		2.8164				
16.0000	2.7967	2.6759	2.6729	2.6394	2.6404	2.6433	2.6473	2.6769	2.8236	3.0827	3.4169	3.8157	4.0522	4.2634	4.4188

XO	36.0000
YO	
-16.0000	4.6691
16.0000	4.5365

RUN (1) = 7.000 THETA (3) = 38.098 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.6906	2.6369	2.6803		2.6235		2.6666		2.7597		3.3545				
16.0000	2.7763	2.6584	2.6574	2.6258	2.6426	2.6584	2.6584	2.8580	3.1459	3.6284	3.9778	4.1823	4.3301	4.4720	4.5787

OS55 HRSI TILE PANEL RUN 7 (RAJL03)

RUN (1) = 7.000 THETA (3) = 38.098

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	36.0000
YO	
-16.0000	4.8586
16.0000	4.6961

RUN (1) = 7.000 THETA (4) = 38.178 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.7031	2.6494	2.6941		2.6353		2.6705		2.8107		3.3222				
16.0000	2.7911	2.6781	2.6791	2.6387	2.6426	2.6752	2.6781	2.8103	3.1910	3.6412	3.9944	4.1980	4.3223	4.4818	4.6071

XO	36.0000
YO	
-16.0000	4.8321
16.0000	4.7242

RUN (1) = 7.000 THETA (5) = 41.089 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.6970	2.6472	2.6894		2.6336		2.6992		3.1468		4.0655				
16.0000	2.7864	2.6846	2.6738	2.6373	2.6649	2.6856	2.7723	3.1429	3.6870	4.0127	4.2230	4.3835	4.4999	4.5977	4.7464

XO	36.0000
YO	
-16.0000	4.9314
16.0000	4.8471

OS55 HRSI TILE PANEL RUN 7 (RAJL03)

RUN (1) = 7.000 THETA (6) = 44.734 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.6980	2.6442	2.6887		2.6446		3.0470		4.0828		4.4705				
16.0000	2.7807	2.6535	2.6663	2.6278	2.6890	2.8036	3.1396	3.8105	4.1026	4.3378	4.4725	4.5993	4.7340	4.8247	4.9311

XO	36.0000
YO	
-16.0000	5.0276
16.0000	5.0214

RUN (1) = 7.000 THETA (7) = 44.840 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.7101	2.6565	2.7042		2.6670		3.0796		4.0545		4.4642				
16.0000	2.7931	2.6682	2.6731	2.6691	2.6859	2.8206	3.1855	3.7786	4.1164	4.3255	4.4906	4.6303	4.7378	4.8579	4.9498

XO	36.0000
YO	
-16.0000	5.0636
16.0000	5.0406

RUN (1) = 7.000 THETA (8) = 46.572 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.6967	2.6460	2.6945		2.7014		3.6520		4.2737		4.6007				
16.0000	2.7748	2.6445	2.6574	2.6267	2.8029	3.0553	3.6590	4.0895	4.2897	4.4793	4.6289	4.7403	4.8488	4.9456	5.0560

XO	36.0000
YO	
-16.0000	5.1020
16.0000	5.1062

OS55 HRSI TILE PANEL RUN 7 (RAJL03)

RUN (1) = 7.000 THETA (9) = 48.959 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.7031	2.6532	2.7627		3.0513		4.1143		4.5540		4.7895				
16.0000	2.7833	2.6655	2.6843	2.7288	3.2038	3.6680	4.0720	4.3584	4.5700	4.6847	4.8171	4.9308	5.0161	5.1200	5.1807

XO	36.0000
YO	
-16.0000	5.2243
16.0000	5.2270

RUN (1) = 7.000 THETA (10) = 49.170 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.6945	2.6428	2.7182		3.1449		4.1148		4.5121		4.8038				
16.0000	2.7828	2.6503	2.6789	2.7046	3.0536	3.6160	4.1122	4.3416	4.5238	4.6938	4.8042	4.8970	5.0084	5.0650	5.1432

XO	36.0000
YO	
-16.0000	5.1884
16.0000	5.1995

RUN (1) = 7.000 THETA (11) = 50.426 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.6974	2.6486	2.8446		3.6227		4.3158		4.6711		4.8898				
16.0000	2.7899	2.6603	2.7174	2.8869	3.5676	3.9706	4.3016	4.5193	4.6856	4.7872	4.9045	5.0267	5.0931	5.1674	5.1997

XO	36.0000
YO	
-16.0000	5.2168
16.0000	5.2741

OS55 HRSI TILE PANEL RUN 7 (RAJL03)

RUN (1) = 7.000 THETA (12) = 52.031 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.7028	2.6774	3.0165		3.9660		4.4988		4.8003		4.9574				
16.0000	2.7852	2.6635	2.8307	3.4756	3.9996	4.3034	4.4932	4.7134	4.8077	4.9123	4.9954	5.1098	5.1733	5.1938	5.2798

XO	36.0000
YO	
-16.0000	5.2531
16.0000	5.3006

RUN (1) = 7.000 THETA (13) = 52.127 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.6957	2.6615	2.8734		4.0531		4.4959		4.7637		4.9651				
16.0000	2.8000	2.6463	2.9030	3.3038	3.9305	4.2359	4.5343	4.6795	4.7792	4.9124	5.0163	5.1065	5.1751	5.2103	5.2740

XO	36.0000
YO	
-16.0000	5.2965
16.0000	5.2896

RUN (1) = 7.000 THETA (14) = 54.904 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.6725	2.8153	3.8720		4.3603		4.6491		4.9260		5.0954				
16.0000	2.7621	2.7215	3.6400	4.0739	4.4098	4.6100	4.7269	4.8438	4.9390	5.0126	5.0783	5.1411	5.1980	5.2461	5.2814

XO	36.0000
YO	
-16.0000	5.2980
16.0000	5.3051

OS55 HRSI TILE PANEL RUN 7 (RAJLO3)

RUN (1) = 7.000 THETA (15) = 55.265 PT = 15.121 TTF = 124.08 MACH = 1.7968 Q = 5.9764

SECTION (1)PANEL EDGE DEPENDENT VARIABLE P

XO	2.0000	6.0000	10.0000	12.0000	14.0000	16.0000	18.0000	20.0000	22.0000	24.0000	26.0000	28.0000	30.0000	32.0000	34.0000
YO															
-16.0000	2.6957	2.7808	3.7631		4.4504		4.7646		4.9865		5.1387				
16.0000	2.7969	2.7283	3.7471	4.2381	4.5199	4.6514	4.7988	4.8795	4.9888	5.0715	5.1414	5.2113	5.2507	5.3028	5.3373

XO	36.0000
YO	
-16.0000	5.3498
16.0000	5.3467

Appendix B

Tunnel Data - OS57

KEY TO OS57 DATA

MACH	q(psf)	P_T(psi)	P(psi)	T_T(^oF)	δ_F(deg.)	DATE M/DD/Y	TIME H/MM	RMS_{13}	RMS_{14}	RMS_{15}		RMS 1→15, psi COE BALANCE
RMS_1	RMS_2	RMS_3	RMS_4	RMS_5	RMS_6	RMS_7	RMS_8	RMS_9	RMS_{10}	RMS_{11}	RMS_{12}	
201	203	205	207	209	211	801	802	803	804	805	806	TAP NO psia
213	215	217	219	221	222	807	808	819	820	821	822	
224	225	227	228	101	103	823	824	809	810	811	812	
105	107	110	113	115	116	813	814	815	816	817	818	
501	502	503	504	505	506	825	826	827	828	829	830	
507	508	519	520	521	522	831	832	833	834	835	836	
523	524	509	510	511	512	837	838	839	840	(ATM)	(ATM)	
513	514	515	516	517	518	525	526	527	528	529	530	
531	532	533	534	535	536	537	538	539	540	(ATM)	(ATM)	

0 RUN.SEQ
2.7
0

1.8000	859.03	15.113	2.6303	116.00	0.5632	8261.0	544.00	0.0000	0.7546	0.6910	
0.0364	0.0228	0.0216	0.0250	0.0454	0.0255	0.0498	0.0774	0.0336	0.0490	0.0192	0.0424
2.8774	2.6920	2.6483	2.7102	2.7546	2.7169	2.6138	3.5331	2.8089	2.7781	2.6498	2.4714
2.7380	2.7315	2.6085	2.7496	2.7645	2.7169	2.6850	3.9198	2.8700		2.7995	2.8885
2.8376	2.7908	2.8177	2.7694	2.7843	2.6874	2.7664	6.1983	2.9821	2.9594	2.8194	2.8783
2.7678	2.6920	2.6882	12.541	2.7645	2.7169	2.8681	3.4286	2.9719	2.9191	2.8194	2.8681
		2.5885	12.462	2.9928	12.452	2.8376	4.4215	3.0127	2.8990	2.8394	2.7257
2.8177	2.8106	2.9472		3.0424	2.9430	2.9902	3.8676	2.9516	2.6370	2.9093	2.8173
2.9970	2.9490		2.9668	2.9928	2.9234	3.0410	3.6899	2.7681	2.6672	14.696	14.697
3.0069	2.9589	2.9272	2.9668	3.0126	2.9430	2.8783	4.4111	2.9719	2.9292	2.7596	3.0817
3.0169	2.8699	3.0069	2.9174	2.9928	2.8447	2.8885	4.2543	3.0331	2.8990	14.696	14.697

0 RUN.SEQ
2.9
0

1.8000	860.14	15.133	2.6337	127.00	33.602	8261.0	550.00	0.0000	0.2744	0.9674	
0.0333	0.0228	0.0233	0.0402	0.0507	0.0313	0.0524	0.0592	0.0588	0.0413	0.0222	0.0530
2.8356	2.6980	2.6909	2.6966	2.6823	2.6966	2.5669	3.5736	2.6314	2.6954	2.5820	2.3934
2.7153	2.7979	2.7413	2.9869	3.0445	3.2971	2.6807	3.8976	2.7253		2.8057	2.8622
3.9284	4.1865	4.3440	4.5280	2.7125	2.6766	2.8047	8.4984	2.9236	2.9833	2.9481	2.9663
2.7554	2.7180	2.7312	2.6766	2.8735	4.5481	2.9495	3.4440	2.9341	2.9525	2.9685	2.9455
		2.6405	2.5965	2.9439	2.5965	2.8668	4.4808	2.9028	2.9114	2.8057	2.6851
2.7955	2.8878	2.9832		2.9942	2.9668	2.9288	3.9084	2.7984	2.5514	2.9278	2.7788
2.9960	2.9877		2.9768	2.9540	2.9368	3.0322	3.5304	2.6105	2.5926	14.818	14.926
2.9960	2.9877	2.9631	2.9768	2.9741	2.9368	2.8461	4.4160	2.8088	2.8496	2.7244	3.0080
3.0160	2.9678	3.0639	2.9168	2.9338	2.8467	2.8771	4.2000	2.8714	2.7982	14.808	14.926

0 RUN.SEQ
2.12
0

1.8000	859.86	15.128	2.6328	131.00	37.008	8261.0	556.00	0.4620	1.0290	0.8292	
0.0412	0.0242	0.0250	0.0485	0.0507	0.0353	0.0511	0.0410	0.0504	0.0413	0.0251	0.0394
2.8411	2.7036	2.6865	2.6908	2.6663	2.6922	2.5623	3.5677	2.6266	2.6568	2.6064	2.4598
2.7208	2.8234	2.9080	3.4921	3.5929	3.9621	2.8103	4.0425	2.7726		2.8711	2.9395
4.2334	4.4304	4.5697	4.7242	2.6965	2.6822	2.8826	9.2866	3.0229	3.0796	3.0951	3.1272
2.7609	2.7036	2.7268	2.8110	3.6130	4.7320	3.0479	3.5785	3.0333	3.0796	3.1358	3.0750
		2.6462	2.5906	2.9483	2.6122	2.9446	4.5280	2.9812	2.9868	2.8609	2.8143
2.8010	2.9132	2.9987		3.0087	2.9922	3.1099	3.9777	2.7830	2.5434	2.9933	2.8248
3.0113	3.0131		2.9813	2.9584	2.9522	3.0686	4.0209	2.6475	2.5950	14.813	14.921
3.0113	3.0131	2.9785	2.9813	2.9886	2.9622	2.8619	4.4093	2.8248	2.8425	2.7184	3.0020
3.0314	3.0530	3.0792	2.9212	2.9382	2.8522	2.8929	4.2367	2.8769	2.7909	14.813	14.921

0 RUN·SEQ
2·13

0

1.8000	859.86	15.128	2.6328	131.00	40.993	8261.0	558.00	0.7392	1.0976	1.1747	
0.0380	0.0443	0.0383	0.0472	0.0822	0.0666	0.0677	0.0637	0.1343	0.0942	0.0370	0.0727
2.8344	2.7180	2.7039	2.7053	2.6809	2.7139	2.5221	3.5844	2.6210	2.6601	2.8850	3.4455
2.8143	3.3074	3.7684	4.0386	4.1525	4.3510	3.7778	4.7722	2.8924		3.1402	3.3620
4.5317	4.6860	4.8230	4.9509	2.7010	2.6637	3.1032	9.0374	3.1950	3.2908	3.4056	3.4872
2.7440	2.7180	2.7842	3.4672	4.2029	4.9636	3.2382	3.8004	3.2055	3.3321	3.4974	3.3724
		2.6737	2.5950	2.9631	2.6336	3.1448	4.8046	3.4664	3.2391	2.9258	3.2055
2.8143	2.9478	3.0453		3.0437	3.0453	3.8401	4.5346	3.1220	2.5463	3.0789	3.0072
3.0453	3.0477		3.0060	3.0034	2.9851	3.5391	6.6834	2.7045	2.6084	14.818	14.936
3.0353	3.0477	3.0152	3.0261	3.0437	2.9750	2.8749	4.4482	2.8611	2.8979	2.6502	3.0176
3.1156	3.0777	3.1257	2.9058	2.9530	2.8746	2.9580	4.2971	2.8819	2.8048	14.818	14.936

0 RUN·SEQ
2·14

0

1.8000	860.98	15.147	2.6363	130.00	44.093	8261.0	600.00	3.6960	4.3904	2.6949	
0.0840	0.1423	0.1132	0.1123	0.2919	0.3095	0.1915	0.2595	0.4910	0.2825	0.1626	0.2682
2.8293	2.7130	2.7060	2.7102	2.7275	2.9117	2.6340	3.7621	3.0627	3.4921	3.8779	4.1484
3.3114	3.8318	4.2179	4.3643	4.4379	4.5129	4.2986	5.0902	3.3245		3.7866	4.0026
4.7576	4.8907	4.9335	5.1563	2.7074	2.7016	3.5955	8.6320	3.4502	3.6261	3.7764	3.9088
2.7590	2.7329	3.1394	4.1839	4.4782	5.0733	3.5852	4.1292	3.5131	3.7497	3.9287	3.8046
		2.6757	2.6099	3.0394	2.6615	3.5232	5.1874	3.9635	3.6570	3.2485	4.0755
2.9599	3.2424	3.0991		3.1501	3.1919	4.3503	5.0039	4.0892	2.8740	3.3094	3.3776
3.1105	3.1525		3.1012	3.1702	3.1819	4.1952	7.5198	3.2198	2.9153	14.812	14.919
3.0904	3.1725	3.0688	3.1413	3.1903	3.0618	2.9648	4.4964	2.9370	3.0389	2.7003	3.0026
3.3214	3.1225	3.1696	2.9007	2.9991	2.9618	3.1820	4.3236	2.9474	2.8843	14.812	14.940

0 RUN·SEQ
2·15

0

1.8000	859.86	15.128	2.6328	130.00	45.712	8261.0	602.00	7.4382	4.3904	4.4915	
0.2360	0.2469	0.2031	0.3162	0.4230	0.3840	0.4316	0.5462	0.5918	0.3186	0.2986	0.3924
2.8293	2.7030	2.6944	2.7416	2.8471	3.5222	3.0484	4.2236	3.6174	3.9050	4.2258	4.3495
3.8637	4.2114	4.3504	4.5729	4.5706	4.6730	4.5242	5.3207	3.6591		4.0627	4.2554
4.8580	4.9906	5.0674	5.1634	2.6959	2.6916	3.9979	9.3114	3.7844	3.9359	4.0627	4.1927
2.7690	2.7729	3.6335	4.3228	4.5202	5.2635	3.9153	4.4172	3.8470	3.9566	4.1646	4.0567
		2.6843	[illegible].6315	3.0789	2.8817	3.8534	5.4821	4.2540	3.9669	3.7469	4.2972
3.3114	3.6620	3.1690		3.2805	3.3921	4.5036	5.1702	4.3270	3.6366	3.5737	3.8267

3.2411	3.2724		3.2019	3.2603	3.3320	4.4210	7.6979	3.7322	3.2548	14.823	14.962
3.1607	3.4122	3.1589	3.2420	3.4014	3.1719	3.0484	4.6108	3.0434	3.2445	2.7483	3.0112
3.6227	3.6420	3.3003	2.9117	3.0386	3.0018	3.3786	4.5355	2.9912	2.9452	14.833	14.962

0 RUN·SEQ
2·17

0

1.8000	859.0?	15.113	2.6303	132.00	49.099	8261.0	606.00	7.1148	5.8310	3.1095	
0.2709	0.1624	0.4446	0.3273	0.2622	0.1900	0.6602	0.4825	0.2476	0.1935	0.2587	0.1985
2.8305	2.7030	2.9176	3.4520	3.9047	4.1338	4.1940	5.0363	4.3671	4.4537	4.5946	4.6945
4.4145	4.5111	4.5908	4.7353	4.7901	4.9057	4.8029	5.5006	4.4401		4.6048	4.6841
5.0661	5.1804	5.2157	5.2566	2.6973	2.6801	4.5449	9.8197	4.4192	4.4951	4.5129	4.5481
2.7904	3.4822	4.3388	4.6751	4.8907	5.2867	4.4623	4.8527	4.4088	4.4744	4.6150	4.5377
		3.1696	3.5824	3.5928	4.2039	4.4933	5.8785	4.7005	4.5054	4.4109	4.6945
4.2541	4.4012	3.6030		3.8141	3.9934	4.8235	5.4250	4.6692	4.3297	4.2271	4.4750
3.6927	3.7918		3.6726	3.8544	4.0135	4.8029	7.4442	4.3151	4.2986	14.843	14.941
3.6726	3.9816	3.5929	3.7027	3.8544	3.6024	3.4921	5.0255	3.7630	3.9057	3.2574	3.9417
4.2340	4.3912	4.1070	3.1212	3.3412	3.4921	4.0907	5.2198	3.4088	3.2854	14.854	14.951

0 RUN·SEQ
2·20

0

1.8000	859.58	15.123	2.6320	132.00	55.093	8261.0	611.00	3.8346	2.4696	3.0404	
0.1711	0.1449	0.1632	0.1789	0.2342	0.2272	0.2516	0.2549	0.2896	0.2451	0.1877	0.2409
2.8649	3.3971	4.2725	4.5369	4.6753	4.8393	4.8346	5.611ᴗ	4.9282	4.9586	5.0445	5.0774
4.8818	4.9569	5.0378	5.0768	5.1788	5.2199	5.1042	5.7950	4.9491		5.0343	5.0669
5.3133	5.3568	5.3802	5.3168	2.7015	2.8760	4.9798	11.006	4.9282	4.9689	4.9834	4.9623
4.0590	4.6169	4.9069	5.0268	5.2594	5.4002	4.9487	5.2664	4.9386	4.9689	5.0139	4.9623
		4.5243	4.6469	4.6250	4.8293	4.9694	6.2697	5.0536	4.9689	4.9020	5.0355
4.9119	4.9669	4.6250		4.7156	4.8092	5.1353	5.7518	5.0953	4.9380	4.9325	4.9518
4.7313	4.7769		4.7269	4.7458	4.8192	5.1353	6.7983	4.9073	4.9072	14.818	14.968
4.6209	4.8069	4.5746	4.6069	4.6753	4.5889	4.5132	5.6763	4.5208	4.5881	4.4438	4.6169
4.9219	4.9769	4.8364	4.5469	4.4739	4.6289	4.7621	5.6979	4.4581	4.4028	14.818	14.968

0 RUN·SEQ
2·21

0

1.8000	859.58	15.123	2.6320	132.00	55.093	8261.0	612.00	4.2042	2.7440	3.1095	
0.1679	0.1355	0.1698	0.1775	0.2290	0.2272	0.2516	0.2139	0.2896	0.2399	0.1921	0.2379
2.8643	3.7468	4.3020	4.4695	4.6159	4.8057	4.8309	5.5487	4.8850	4.9496	5.0078	5.0938
4.9332	5.0454	5.1069	5.1512	5.2005	5.2053	5.1514	5.8078	4.9685		5.0487	5.0833

```
   5.3149  5.4350  5.3886  5.3718  2.7109  3.3872  5.0377  11.066  4.9268  5.0114  4.9976  4.9998
   3.9992  4.6958  4.9358  5.1011  5.2912  5.4450  4.9860  5.2787  4.9790  5.0011  4.9976  4.9477
                   4.5132  4.6299  4.4848  4.8257  4.9446  6.2397  5.0416  4.9599  4.8445  5.0103
   4.9232  4.9655  4.6239          4.6663  4.7757  5.0894  5.6998  5.0416  4.8981  4.7935  4.8537
   4.5918  4.6459          4.6500  4.6864  4.8057  5.1928  6.5853  4.8955  4.8981  14.838  14.945
   4.7022  4.8057  4.7245  4.7201  4.7973  4.6958  4.5414  5.7430  4.6033  4.7024  4.5485  4.7076
   4.9533  4.9755  4.8654  4.5497  4.5151  4.6658  4.7999  5.7214  4.4989  4.3830  14.838  14.945
1TST-508 PH-1 TN-97  2.24          ID-PRESSOUT1          10 SEP 81●22.20        PAGE   8
0     RUN.SEQ
        2.24
0
   1.8000  859.86  15.128  2.6328  135.00  0.5632  8261.0  617.00  0.0000  0.8232  1.1056
   0.0285  0.0242  0.0200  0.0319  0.0472  0.0294  0.0575  0.0273  0.0462  0.0439  0.0325  0.0470
   2.8442  2.7179  2.7022  2.7065  2.6792  2.7065  2.5958  3.6156  2.6397  2.6906  2.5886  2.3574
   2.7237  2.7778  2.6821  2.7565  2.6691  2.7065  2.6787  3.8958  2.7024          2.7621  2.8070
   2.8141  2.8278  2.8632  2.7765  2.7094  2.6865  2.7616  10.082  2.8488  2.8767  2.8233  2.8175
   2.7639  2.7179  2.7425  2.6664  2.7195  2.6965  2.8652  3.3246  2.8279  2.8353  2.8131  2.8070
                   2.6519  2.5964  2.9316  2.6064  2.8341  4.4778  2.8488  2.8146  2.8744  2.7129
   2.8141  2.9177  2.9940          2.9922  2.9667  2.9377  3.8635  2.7756  2.5251  2.9254  2.7756
   2.9949  2.9976          2.9667  2.9417  2.9266  2.9998  3.4539  2.5665  2.5561  14.838  14.967
   2.9949  2.9976  2.9839  2.9767  2.9619  2.9467  2.8652  4.4347  2.7965  2.8353  2.7417  2.9847
   3.0250  2.9676  3.0845  2.9266  2.9417  2.8466  2.8859  4.2299  2.8697  2.7836  14.838  14.956
0     RUN.SEQ
        3.6
0
   1.8000  659.41  11.601  2.0191  117.00  0.5632  8271.0  246.00  0.3696  0.4116  0.4146
   0.0348  0.0161  0.0183  0.0291  0.0210  0.0294  0.0345  0.0273  0.0546  0.0413  0.0399  0.0379
   2.2114  2.1168  2.0892  2.0851  2.0456  2.0821  3.6388  1.8073  1.9555  1.9620  1.9136  1.7555
   2.1411  2.1767  2.0892  2.1556  2.0355  2.0720  3.6493  2.0831  1.9977          2.0372  2.0714
   2.2214  2.2067  2.2108  2.1556  2.0558  2.0316  5.2629  1.9240  2.0924  2.1389  2.0578  2.0608
   2.1712  2.1168  2.1095  2.0548  2.0659  2.0518  6.2584  2.0937  2.0924  2.0764  2.0578  2.0608
                   2.0386  2.0044  2.2284  2.0013  4.1837  2.0725  2.1240  2.0660  2.0681  2.0187
   2.1913  2.2167  2.3019          2.2588  2.2337  3.7751  2.1786  2.0608  1.8788  2.0784  2.0082
   2.3318  2.3165          2.2766  2.2284  2.2235  3.2302  2.1149  1.9029  1.8892  14.840  15.002
   2.3217  2.3165  2.2918  2.2665  2.2284  2.2337  4.8333  2.1255  2.0714  2.0869  2.0063  2.2293
   2.3318  2.2466  2.3323  2.2463  2.2182  2.1629  6.4679  2.1998  2.1345  2.0556  14.840  15.002
1TST-508 PH-1 TN-97  3.7           ID-PRESSOUT1          10 SEP 81●22.20        PAGE   9
0     RUN.SEQ
        3.7
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  1.8000  658.58  11.586  2.0165  120.00  31.687  8271.0  250.00  0.5544  0.6860  0.9674
  0.0222  0.0201  0.0233  0.0250  0.0280  0.0196  0.0396  0.0046  0.0923  0.0323  0.0251  0.0348
  2.2052  2.1176  2.0727  2.0555  2.0525  2.0656  3.6245  1.8006  1.9279  1.9660  1.8967  1.7514
  2.1449  2.2078  2.2046  2.2780  2.2857  2.3792  3.6771  2.1086  2.0017          2.0514  2.0799
  2.8881  3.1196  3.2794  3.4312  2.0626  2.0150  5.2545  2.0343  2.1493  2.2055  2.1442  2.1540
  2.1549  2.1076  2.0930  2.0757  2.1640  3.3806  6.3167  2.1723  2.1493  2.1534  2.1442  2.1222
                  2.0322  1.9746  2.2350  2.0049  4.1819  2.0980  2.1282  2.1117  2.0411  1.9739
  2.1951  2.2479  2.2958          2.2654  2.2376  3.8033  2.2042  2.0650  1.8722  2.0411  2.0057
  2.3257  2.3280          2.2679  2.2451  2.2174  3.2354  2.2467  1.8963  1.8931  14.849  15.048
  2.3257  2.3180  2.2755  2.2679  2.2654  2.2275  4.8865  2.1192  2.0755  2.0909  1.9998  2.2070
  2.3458  2.2579  2.3465  2.2275  2.2451  2.1465  6.4849  2.2042  2.1282  2.0597  14.838  15.059

0     RUN.SEQ
        3.8
0

  1.8000  658.58  11.586  2.0165  120.00  37.344  8271.0  252.00  0.3234  0.2058  0.4146
  0.0301  0.0295  0.0233  0.0264  0.0315  0.0274  0.0409  0.0501  0.0755  0.0348  0.0296  0.0333
  2.1973  2.1038  2.0878  2.0765  2.0340  2.0806  3.6407  1.8055  1.9468  1.9604  1.8981  1.8343
  2.1671  2.2754  2.4427  2.7913  2.9284  3.1124  3.8410  2.4640  2.0520          2.1152  2.1830
  3.3450  3.4964  3.5580  3.6672  2.0645  2.0402  5.3485  2.0710  2.2834  2.3457  2.3219  2.3521
  2.1571  2.0937  2.0878  2.1470  2.8166  3.6486  6.3606  2.3578  2.3044  2.3353  2.3736  2.3098
                  2.0270  2.0060  2.2474  2.0200  4.2205  2.1772  2.2518  2.2624  2.0739  2.0456
  2.1772  2.2350  2.2906          2.2881  2.2728  3.9464  2.3684  2.0835  1.8876  2.0739  2.0879
  2.3181  2.3056          2.3081  2.2576  2.2526  3.2928  2.5384  1.9363  1.9188  14.881  15.024
  2.3081  2.3056  2.2804  2.2980  2.2678  2.2526  4.8952  2.1348  2.1046  2.1166  1.9912  2.2147
  2.3383  2.3258  2.3413  2.2577  2.2373  2.1717  6.5293  2.2304  2.1361  2.0750  14.881  15.024
1TST-508 PH-1 TN-97  3.9          ID-PRESSOUT1          10 SEP 81•22.20        PAGE  10
0     RUN.SEQ
        3.9
0

  1.8000  658.58  11.586  2.0165  121.00  40.993  8271.0  254.00  1.1088  0.8232  0.7601
  0.0285  0.0349  0.0366  0.0277  0.0629  0.0607  0.0524  0.0546  0.1553  0.0890  0.0414  0.0651
  2.2139  2.0903  2.0975  2.0571  2.0611  2.1306  3.6256  1.8095  1.9614  2.0093  2.3390  2.7179
  2.2240  2.6144  2.8956  3.1684  3.2387  3.3301  4.2483  3.0004  2.1719          2.3906  2.5807
  3.5513  3.5921  3.6938  3.7948  2.0510  2.0500  5.4832  2.2029  2.4141  2.5189  2.5454  2.6440
  2.1536  2.0903  2.1278  2.6127  3.1879  3.8038  6.4858  2.5857  2.4246  2.5397  2.6487  2.5701
                  2.0773  2.0065  2.2642  2.0399  4.3011  2.4475  2.6247  2.4773  2.1531  2.4752
  2.1837  2.2717  2.3298          2.3149  2.3423  4.2905  2.8941  2.4246  1.9261  2.2977  2.2430
  2.3446  2.3322          2.3197  2.2845  2.3121  3.6361  2.8622  2.0351  1.9781  14.852  15.014
  2.3346  2.3524  2.3298  2.3096  2.3251  2.2818  4.8921  2.1710  2.1193  2.1549  1.9776  2.2218
  2.4351  2.3221  2.4006  2.2187  2.2439  2.2113  6.5597  2.2561  2.1509  2.0925  14.852  15.014
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0 RUN.SEQ
3.10

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1.8000	658.58	11.586	2.0165	122.00	46.680	8271.0	256.00	6.0522	3.3614	3.3168	
0.2218	0.1865	0.1965	0.2538	0.2797	0.2468	0.3448	0.4324	0.4071	0.2296	0.2380	0.2666
2.1976	2.0768	2.1042	2.1372	2.4410	2.8194	3.9078	2.6012	2.8497	3.0336	3.2531	3.3357
3.1037	3.2849	3.4160	3.5265	3.5792	3.6589	4.6281	3.4955	2.7968		3.0474	3.1769
3.8084	3.9191	3.9104	3.9694	2.0649	2.0304	6.0263	2.5693	2.9765	3.0857	3.1297	3.1874
2.1674	2.1574	2.9518	3.4057	3.5996	3.9725	6.9691	3.1442	3.0187	3.0961	3.2120	3.1133
		2.1042	2.1372	2.3698	2.5058	4.7552	3.1655	3.2934	3.0961	2.9960	3.3040
2.9325	3.1037	2.4977		2.5832	2.6879	4.6387	3.4529	3.3252	2.9191	2.9651	2.9756
2.5399	2.5701		2.5198	2.5528	2.6171	4.0667	3.3464	2.9765	2.8150	14.835	15.041
2.4997	2.6507	2.4674	2.5198	2.6442	2.4654	4.9353	2.4628	2.3530	2.5130	2.1011	2.3400
2.8621	2.8621	2.5885	2.2379	2.3698	2.3440	6.7467	2.7716	2.2685	2.2215	14.835	15.041

1TST-508 PH-1 TN-97 3.11 ID-PRESSOUT1 10 SEP 81•22.20 PAGE 11

0 RUN.SEQ
3.11

0

1.8000	657.74	11.572	2.0139	122.00	49.099	8271.0	258.00	5.4516	4.3218	2.2112	
0.2107	0.1329	0.3313	0.2358	0.1958	0.1410	0.4584	0.3687	0.2602	0.1483	0.2099	0.1530
2.2039	2.1162	2.2516	2.5759	2.9037	3.2085	4.3403	3.1710	3.2669	3.3613	3.4643	3.5095
3.3401	3.4906	3.5921	3.6719	3.6955	3.8060	4.7443	3.6377	3.2248		3.3714	3.4673
3.9133	3.9922	4.0356	4.0339	2.0611	2.0338	6.2330	2.9906	3.3195	3.3925	3.3920	3.4039
2.1737	2.5075	3.3099	3.5714	3.8376	4.0390	7.2113	3.3937	3.3090	3.3717	3.4230	3.3828
		2.3221	2.5960	2.6195	3.1174	4.9464	3.4467	3.5196	3.3717	3.2578	3.4884
3.2999	3.4203	2.7354		2.9037	3.0364	4.7443	3.6058	3.4985	3.2469	3.2475	3.2667
2.8072	2.8786		2.7569	2.8225	2.9959	4.2233	3.5422	3.2669	3.2157	14.862	15.014
2.7871	2.9589	2.6648	2.7871	2.9037	2.6920	5.0208	2.7255	2.6457	2.8101	2.3286	2.9184
3.2496	3.3401	3.0680	2.3547	2.5890	2.7123	6.9455	3.1710	2.5089	2.4461	14.862	15.014

0 RUN.SEQ
3.13

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1.8000	658.02	11.577	2.0148	123.00	53.301	8271.0	305.00	3.3264	1.7836	2.2803	
0.1236	0.1047	0.1282	0.1221	0.1626	0.1450	0.1839	0.1821	0.2224	0.1729	0.1434	0.1651
2.2117	2.3544	3.1125	3.2647	3.4064	3.5586	4.6902	3.5590	3.5982	3.6483	3.7062	3.7367
3.6562	3.7755	3.8112	3.9198	3.9240	3.9037	4.9107	3.8036	3.6402		3.7165	3.7367
4.0775	4.1058	4.1049	4.1012	2.0563	2.0259	6.5909	3.6973	3.5877	3.6587	3.6444	3.6417
2.7734	3.4152	3.6796	3.8392	3.9545	4.1067	7.5884	3.6760	3.6297	3.6483	3.6753	3.6417
		3.2745	3.4159	3.3252	3.5586	5.2468	3.6973	3.7452	3.6483	3.5723	3.7156
3.6662	3.7455	3.3758		3.4267	3.4774	4.9002	3.7823	3.7347	3.5753	3.5723	3.5890

3.4255	3.4553		3.3957	3.4571	3.5079	4.4172	3.7610	3.5877	3.5962	14.828	15.007
3.3552	3.4853	3.2745	3.3554	3.4571	3.2744	5.4568	3.3358	3.3357	3.3877	3.1810	3.3990
3.6863	3.7255	3.5884	3.2647	3.2135	3.4165	7.2419	3.5697	3.1886	3.0958	14.328	15.007

0 RUN.SEQ
3.14

0

1.8000	656.90	11.557	2.0114	125.00	55.912	8271.0	307.00	3.4650	2.1266	2.2803	
0.1410	0.1194	0.1365	0.1373	0.1783	0.1704	0.2018	0.1821	0.2644	0.1922	0.1596	0.1788
2.3688	3.0325	3.3556	3.5696	3.6199	3.6901	4.8079	3.6666	3.7045	3.7331	3.8005	3.8229
3.8385	3.8599	3.8828	4.0280	3.9552	4.0145	4.9773	3.8693	3.7362		3.7902	3.8123
4.1003	4.1425	4.1869	4.2012	2.0752	2.4735	6.7037	3.7413	3.7362	3.7959	3.7695	3.7700
3.1238	3.5875	3.8321	3.9771	4.0060	4.1362	7.6886	3.7520	3.7362	3.7645	3.7902	3.7700
		3.5786	3.6715	3.5386	3.7104	5.3269	3.7947	3.8310	3.7645	3.6765	3.7912
3.8587	3.9104	3.6597		3.6605	3.7307	4.9985	3.8907	3.8521	3.7227	3.7075	3.6852
3.6573	3.6884		3.6307	3.6097	3.6800	4.5008	3.8267	3.6940	3.6913	14.859	15.039
3.7077	3.7590	3.6597	3.7224	3.7012	3.5887	5.6234	3.5279	3.4832	3.5344	3.3872	3.5264
3.8587	3.9003	3.8118	3.6511	3.4979	3.5989	7.3709	3.7626	3.4832	3.4088	14.859	15.039

0 RUN.SEQ
4.1

0

2.4000	788.22	19.848	1.3576	135.00	0.5632	8271.0	340.00	0.3696	0.6174	0.5528	
0.0269	0.0242	0.0216	0.0291	0.0245	0.0235	0.0370	0.0501	0.0504	0.0452	0.0370	0.0485
1.4697	1.3658	1.3591	1.3691	1.3895	1.4486	3.2668	1.1471	1.3629	1.3866	1.2783	1.1221
1.4295	1.4359	1.3591	1.4291	1.3288	1.3092	3.2352	1.4396	1.3421		1.3187	1.4006
1.4194	1.4159	1.4094	1.3791	1.3693	1.3391	4.8474	1.0322	1.4560	1.5093	1.4097	1.4213
1.4295	1.4058	1.3792	1.3290	1.3592	1.3391	5.6904	1.4396	1.4664	1.4377	1.4198	1.4213
		1.3390	1.3190	1.5613	1.2993	3.7621	1.4082	1.4664	1.4275	1.4602	1.3697
1.4798	1.5963	1.5803		1.6017	1.5681	3.4354	1.4814	1.3111	1.2229	1.4602	1.4006
1.6004	1.5862		1.5992	1.5613	1.5282	2.7610	1.4396	1.2593	1.2536	14.620	14.721
1.5904	1.5762	1.5904	1.5492	1.5815	1.5382	4.5629	1.4709	1.4560	1.4684	1.3693	1.5967
1.6306	1.5562	1.6708	1.4991	1.5411	1.4785	6.2278	1.5962	1.4871	1.4275	14.620	14.721

0 RUN.SEQ
4.2

0

2.4000	789.78	19.887	1.3603	134.00	35.487	8271.0	343.00	0.6930	0.3430	0.4837	
0.0333	0.0255	0.0250	0.0347	0.0350	0.0294	0.0447	0.0319	0.0672	0.0413	0.0310	0.0424
1.5030	1.3991	1.3457	1.3791	1.4029	1.4586	3.2984	1.1785	1.3491	1.3866	1.2919	1.1221
1.4427	1.4591	1.4162	1.5391	1.4533	1.5183	3.2458	1.4814	1.3594		1.3827	1.4316

1.7540	2.1795	2.3731	2.5297	1.4029	1.3491	4.8580	1.2098	1.5150	1.5707	1.4937	1.5038
1.4327	1.4091	1.3759	1.3591	1.4230	2.5436	5.7220	1.5127	1.5046	1.5093	1.4937	1.4935
		1.3255	1.3190	1.5744	1.3092	3.7832	1.4396	1.4839	1.4786	1.4735	1.3594
1.4829	1.6192	1.5673		1.6047	1.5979	3.4249	1.5127	1.2972	1.2331	1.4836	1.4213
1.6234	1.5992		1.6192	1.5643	1.5681	2.7927	1.5754	1.2557	1.2638	14.611	14.721
1.5933	1.5892	1.5774	1.5792	1.5744	1.5681	4.5945	1.4918	1.4631	1.4786	1.3928	1.6070
1.6335	1.5792	1.6580	1.5091	1.5542	1.5083	6.2384	1.6171	1.4943	1.4275	14.611	14.721

0 RUN·SEQ
4·3
0

2.4000	789.98	19.892	1.3606	133.00	39.344	8271.0	346.00	0.6006	0.7546	0.4837	
0.0301	0.0322	0.0266	0.0347	0.0332	0.0235	0.0447	0.0501	0.0630	0.0452	0.0370	0.0394
1.5066	1.3793	1.3391	1.3592	1.4130	1.4258	3.3146	1.1575	1.3563	1.3869	1.2853	1.1257
1.4363	1.4696	1.4904	1.7504	1.8256	2.1456	3.3040	1.5345	1.3770		1.4065	1.4561
2.3908	2.4625	2.5892	2.6732	1.4130	1.3258	4.9127	1.2936	1.5636	1.6433	1.5680	1.5800
1.4363	1.3993	1.3694	1.3592	1.7249	2.7454	5.8017	1.5868	1.5739	1.5818	1.5781	1.5697
		1.3190	1.3091	1.5740	1.2859	3.7802	1.4507	1.5118	1.5305	1.4872	1.3632
1.4966	1.6200	1.5609		1.6344	1.5658	3.4204	1.5345	1.3149	1.2331	1.5579	1.4251
1.6272	1.5899		1.5899	1.5941	1.5258	2.7642	1.6811	1.2631	1.2639	14.615	14.725
1.6171	1.5799	1.5710	1.5699	1.6042	1.5358	4.5634	1.4821	1.4599	1.4792	1.3863	1.6007
1.6573	1.5699	1.6718	1.4896	1.5639	1.4658	6.2356	1.5868	1.4910	1.4177	14.615	14.725

0 RUN·SEQ
4·4
0

2.4000	788.81	19.862	1.3586	134.00	41.976	8271.0	347.00	0.4620	0.2744	0.4837	
0.0348	0.0309	0.0266	0.0305	0.0332	0.0274	0.0536	0.0501	0.0839	0.0477	0.0310	0.0379
1.4935	1.3958	1.3593	1.3692	1.4097	1.4358	3.2934	1.1470	1.3460	1.3936	1.2853	1.1707
1.4331	1.5458	1.7222	2.0212	2.0952	2.3055	3.3357	1.6706	1.4081		1.4267	1.5006
2.4999	2.6254	2.6699	2.7835	1.3996	1.3258	4.8915	1.3251	1.6361	1.7206	1.6589	1.7067
1.4331	1.4158	1.3694	1.4696	1.9642	2.8753	5.8017	1.6811	1.6465	1.6695	1.6791	1.6655
		1.3291	1.3091	1.5811	1.2959	3.8014	1.5031	1.5947	1.6184	1.5074	1.4490
1.4834	1.6357	1.5811		1.6214	1.5957	3.4627	1.6183	1.3563	1.2607	1.5882	1.4696
1.6344	1.6157		1.5999	1.6013	1.5458	2.7960	1.8068	1.3045	1.2914	14.605	14.706
1.6042	1.6057	1.5710	1.5699	1.6113	1.5458	4.5634	1.4926	1.4703	1.4958	1.3762	1.5933
1.6545	1.5957	1.6819	1.4896	1.5609	1.4758	6.2356	1.6183	1.5014	1.4447	14.605	14.706

0 RUN·SEQ
4·5
0

2.4000	788.61	19.858	1.3582	134.00	45.873	8271.0	349.00	1.3398	1.5092	1.3129	
0.0491	0.0631	0.0566	0.0485	0.0961	0.0960	0.0830	0.0637	0.1889	0.1109	0.0443	0.0879
1.4963	1.3823	1.3590	1.3956	1.4159	1.4619	3.3139	1.1776	1.3797	1.4780	1.6110	1.8660
1.5967	1.9731	2.0445	2.3753	2.4809	2.5778	3.7252	2.2353	1.5246		1.6715	1.7935
2.7321	2.7742	2.9015	2.9651	1.4159	1.3423	5.0331	1.4499	1.7729	1.8964	1.8832	1.9384
1.4460	1.4224	1.3892	1.9454	2.4809	2.9962	5.9507	1.8688	1.7935	1.8862	1.9639	1.8763
		1.3489	1.3356	1.6168	1.3124	3.8834	1.7536	1.9384	1.8147	1.6009	1.7522
1.5063	1.6627	1.6009		1.6771	1.6512	3.7885	2.1306	1.7418	1.3046	1.5908	1.6073
1.6369	1.6427		1.6655	1.6369	1.6213	3.0291	2.0992	1.3797	1.3454	14.616	14.746
1.6269	1.6427	1.6110	1.6155	1.6671	1.5914	4.5690	1.5336	1.5142	1.5495	1.3892	1.5866
1.7374	1.6326	1.7017	1.5155	1.5967	1.5217	6.2355	1.6488	1.5349	1.4780	14.616	14.746

1TST-508 PH-1 TN-97 4.6 ID-PRESSOUT1 10 SEP 81•22.20 PAGE 15

0 RUN.SEQ
4.6

0

2.4000	788.81	19.862	1.3586	135.00	49.099	8271.0	351.00	3.5112	3.4986	2.4185	
0.0871	0.1329	0.1149	0.1054	0.2307	0.2351	0.1635	0.2048	0.4155	0.2322	0.1419	0.2015
1.5066	1.3725	1.3626	1.3958	1.4765	1.5816	3.3252	1.3041	1.5636	1.8228	2.1092	2.2804
1.8884	2.2437	2.3992	2.5854	2.6419	2.6676	3.9263	2.4979	1.7397		1.9775	2.1563
2.8630	2.9346	2.9729	3.0552	1.4162	1.3425	5.2551	1.6916	1.9366	2.0579	2.0687	2.1356
1.4564	1.4126	1.6042	2.3755	2.6520	3.0561	6.1198	2.1104	1.9781	2.0681	2.1295	2.0838
		1.3526	1.3358	1.6473	1.3325	4.0212	2.0581	2.2371	2.0272	1.7242	2.2183
1.5769	1.7731	1.6344		1.7176	1.7211	3.9790	2.4246	2.2475	1.5571	1.7850	1.8252
1.6875	1.6729		1.6857	1.7076	1.6812	3.2935	2.3303	1.7086	1.5878	14.643	14.735
1.6774	1.6930	1.6444	1.6657	1.7477	1.6215	4.5907	1.5868	1.5532	1.6082	1.3594	1.5770
1.8281	1.6529	1.7551	1.4958	1.6171	1.5517	6.3097	1.7125	1.5428	1.4754	14.633	14.745

0 RUN.SEQ
4.7

0

2.4000	788:61	19.858	1.3582	135.00	54.930	8271.0	353.00	7.2072	4.1160	3.8696	
0.2899	0.2187	0.3097	0.3412	0.3199	0.2625	0.4929	0.5280	0.4281	0.2503	0.2720	0.2772
1.4898	1.3991	1.3893	1.5592	1.8016	2.1235	3.6362	2.1498	2.3050	2.4212	2.5645	2.6800
2.3848	2.5397	2.6563	2.8798	2.8574	2.9611	4.1112	2.7661	2.1601		2.3631	2.5046
2.9982	3.0599	3.1390	3.1600	1.4295	1.3358	5.5152	1.9723	2.3879	2.4621	2.4638	2.5253
1.4496	1.5892	2.3647	2.6697	2.8876	3.1905	6.4441	2.4736	2.3879	2.4723	2.5444	2.4840
		1.3993	1.4391	1.7714	1.9340	4.3329	2.5363	2.6364	2.4519	2.3429	2.6388
2.2340	2.4096	1.7915		1.9524	2.0338	4.1640	2.7556	2.6364	2.3191	2.2019	2.4221
1.8921	1.9293		1.8493	1.9122	1.9540	3.5517	2.6616	2.3361	2.2579	14.602	14.731
1.7915	1.9394	1.7714	1.8593	2.0027	1.7944	4.6496	1.8678	1.7667	1.8903	1.5069	1.8030
2.2139	2.3496	1.9926	1.5391	1.7211	1.7346	6.4969	2.2647	1.7149	1.6248	14.602	14.731

1TST-508 PH-1 TN-97 4.8 ID-PRESSOUT1 10 SEP 81•22.20 PAGE 16

0 RUN.SEQ
4.8

0

										2.6258	
2.4000	788.81	19.862	1.3586	136.00	59.725	8271.0	356.00	5.3130	4.8020	0.2335	0.2076
0.2186	0.1516	0.3347	0.2372	0.2255	0.1939	0.4750	0.3596	0.2728	0.2219	2.7711	2.8196
1.5050	1.4074	1.6056	2.0022	2.3380	2.4975	3.9491	2.5195	2.6107	2.6807	2.7006	2.7680
2.5911	2.7458	2.8224	2.9543	2.9625	3.0260	4.2240	2.8857	2.5797		2.7006	2.7474
3.1341	3.2053	3.2045	3.2049	1.4012	1.3408	5.7151	2.3625	2.6315	2.7114	2.7409	2.6854
1.5050	2.1465	2.6212	2.8541	3.0330	3.2454	6.6774	2.6974	2.6418	2.6910	2.5999	2.8093
		1.7464	2.0624	2.0560	2.4676	4.5095	2.7288	2.8075	2.6807	2.5798	2.6235
2.6011	2.7259	2.1084		2.2876	2.3878	4.2557	2.8857	2.8178	2.6091	14.597	14.716
2.1989	2.2464		2.1626	2.2675	2.3180	3.6635	2.8229	2.6004	2.5989	1.8243	2.2624
2.0883	2.2964	2.0481	2.1426	2.2977	2.0887	4.7845	2.1533	2.0931	2.2102	14.587	14.695
2.5508	2.7059	2.4704	1.7717	2.0056	2.1485	6.6879	2.5300	1.9274	1.8317		

0 RUN.SEQ
4.9

0

										2.9022	
2.4000	788.42	19.853	1.3579	137.00	64.160	8271.0	359.00	3.8808	2.6754	0.1995	0.2394
0.1727	0.1449	0.1798	0.1651	0.2168	0.2096	0.2797	0.2185	0.3022	0.2606	2.8715	2.9217
1.5035	1.4527	2.0168	2.2619	2.4999	2.6365	4.0766	2.6864	2.7345	2.7826	2.8614	2.9010
2.7817	2.8745	2.9427	3.0543	3.0836	3.1355	4.3094	3.0005	2.7656		2.8513	2.8597
3.2044	3.2350	3.2547	3.3051	1.4130	1.3691	5.8123	2.6026	2.7863	2.8645	2.8816	2.8286
1.8860	2.4640	2.8018	2.9841	3.1339	3.2952	6.8283	2.8120	2.7863	2.8133	2.7606	2.8907
		2.2785	2.4124	2.3691	2.6465	4.6163	2.8435	2.9107	2.8133	2.7404	2.8079
2.7515	2.8345	2.4294		2.5502	2.6066	4.3200	2.9901	2.9107	2.7928	14.606	14.725
2.4798	2.5341		2.4024	2.4898	2.5767	3.7273	2.9377	2.7345	2.7416	2.2666	2.5183
2.4798	2.5842	2.4093	2.4826	2.5603	2.3871	4.9233	2.4141	2.4236	2.4857	14.606	14.725
2.7716	2.8345	2.6911	2.2419	2.3087	2.4469	6.7754	2.7283	2.2786	2.1581		

0 RUN.SEQ
4.10

0

										2.9713	
2.4000	789.20	19.872	1.3593	138.00	70.422	8271.0	401.00	3.9270	2.4010	0.2187	0.2697
0.1869	0.1637	0.1698	0.1803	0.2500	0.2410	0.2899	0.2686	0.3442	0.3031	3.0178	3.0515
1.5462	1.6992	2.3748	2.6185	2.7669	2.8714	4.2168	2.8689	2.8952	2.9414	2.9977	3.0412
2.9893	3.0099	3.0384	3.1396	3.1088	3.2104	4.3540	3.0680	2.9263		2.9977	3.0102
3.2800	3.3000	3.3100	3.3100	1.4295	1.5751	5.9691	2.7850	2.9573	3.0130	3.0279	2.9793
2.4181	2.7898	2.9580	3.1597	3.2094	3.3001	6.9613	2.9632	2.9677	2.9823	2.9070	3.0412
		2.6563	2.7287	2.7066	2.8813	4.7235	2.9947	3.0505	2.9720	2.8969	2.9586
2.9893	3.0299	2.7368		2.8172	2.8614	4.4068	3.0890	3.0609	2.9414		

Appendix C

Reference Document

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USE OF STRAIN-GAGE TRANSDUCERS TO MEASURE AERODYNAMIC FORCES, MOMENTS AND STRESSES ON SHUTTLE TPS TILES, VOLUME I

Charles F. Coe

COE ENGINEERING INCORPORATED

FINAL REPORT - RI CONTRACT M1N8XMS-760045P

September 1981

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FINAL REPORT - RI CONTRACT M1N8XMS-760045P

USE OF STRAIN-GAGE TRANSDUCERS TO MEASURE AERODYNAMIC FORCES, MOMENTS AND STRESSES ON SHUTTLE TPS TILES, VOLUME I

Charles F. Coe

SUMMARY

Engineering and instrumentation support has been provided to Rockwell International Corporation to incorporate special strain-gage transducers in tiles for the Undensified Tile Vent Tests. Two tests, OS-55 and OS-57, were conducted in the Ames Research Center 9-by 7-foot Supersonic Wind Tunnel. The purpose of the transducer installation was to measure aerodynamic forces and moments on tiles and bondline stresses. Different sets of transducers were installed in a single tile (number 47) for each of the tests. The transducers used for OS-55 proved to be unsatisfactory and no useful force or stress information was obtained. Measurements of force, moments and stresses by improved transducers used for OS-57, however, were successful. The approximate maximum tensile stresses in the 1-inch thick tile 47 with an external shock-wave loading ($\Delta p \approx 2$psi) were as follows:

Max. combined static stress ($F/A + Mc/I$)	0.5 psi
Max. combined dynamic peak stress $4(F_{rms}/A + M_{rms}c/I)$	2-4 psi
Max. static stress measured by single sensor	0.7 psi
Max. dynamic peak stress measured by single sensor	2.2 psi

INTRODUCTION

Wind-tunnel test OS-55 and follow-on test OS-57 were initiated with the objective of defining and improving the understanding of undensified tile surface and internal pressure relationships. The pressure relationships are needed to support the analysis of tile loads and stresses. The aerodynamic flow field of interest for these tests is the compression shock wave.

Both OS-55 and OS-57 were tested in the Ames Research Center 9-by 7-foot Supersonic Wind Tunnel using an available tunnel-ceiling panel fixture. A hydraulically actuated flap on the tunnel ceiling downstream of the panels was deflected into the airstream to position

the shock wave onto the panels. Figure 1 shows a photograph of the panel installation. Descriptions of the panels and instrumentation are given in RI Pretest Reports STS81-0330 dated February 1981 covering OS-55 and in STS81-0532 dated August 1981 covering OS-57.

The purpose of the contract was to provide engineering and instrumentation support to Rockwell to incorporate special strain-gage transducers in tile No. 47 of the OS-55 and OS-57 test panels to measure aerodynamic forces, moments and stresses. Two other tiles on each panel (Nos. 45 and 48) were instrumented with 80 pressure taps. Tile No. 48 was damaged during test OS-55 and was replaced with a densified tile for test OS-57. The instrumented tiles were among a 24- x 40-inch array of 1-inch thick HRSI tiles (Figure 2). The tiles were mounted with 0.160-inch SIP to a rigid aluminum substrate.

This report documents the work covered by this contract. The instrumentation installed in tile 47 is described and calibrations and test results are illustrated.

SENSOR CONCEPT FOR TILE LOADS AND STRESSES

The sensor concept employed for tile load and stress measurements is based on the deformation of a diaphragm by the relatively compliant tile material when loaded. Semiconductor strain gages bonded to the diaphragm sense the deformation. Previous tests, OS-52 and OS-53, demonstrated that loads could be measured thusly when the diaphragm was in the substrate at the bondline with the SIP. A sketch of the load transducer design for OS-52 is in Figure 3. The diaphragm of such a sensor is responsive to pressure, and therefore pneumatic pressures across the diaphragm must be equalized so that the pressure response is due only to the loading by the compliant material.

The transducer diaphragms for OS-52 and OS-53 were milled directly into the panel substrates. For OS-55 and OS-57, twelve (12) commercially available semiconductor strain-gage type pressure transducers were bonded into tile 47. The transducers, which were 0.030-0.040-inch thick flat type transducers, were bonded with RTV into small recesses at the IML. Thin transducers were desired to obtain load measurements as close to the tile bondline as possible. The diaphragms faced into the tile and the back side was flush with the tile IML. Figure 4 includes the RI Engineering Order M-931321 that describes the installation of tile 47 and placement of instrumentation for OS-57. The installation for OS-55 was the same except that a different transducer was used. Photographs of the transducer installations for OS-55 and OS-57 are in Figure 5.

DESCRIPTION OF TRANSDUCERS USED FOR OS-55

Preparation of the OS-55 test panel was extremely rushed so that the test and data analysis could be completed before STS-1. As a consequence only one-day notice was given on a verbal request to provide transducers to RI and to consult on the installation. With such a short notice it was impossible to design and acquire special transducers needed for sensing loads. The only transducers that were on hand and remotely suitable for the application were 10-year old Kulite pressure transducers. The Kulites were the desired flat-pack design, 0.030-inch thick with a silicon pressure diaphragm of 0.125-inch diameter, but they could not be adapted for pressure equalization. Also the temperature compensation of such old transducers was known to be inadequate for long term steady-state measurements. In spite of the high risk of failure a decision was made to go ahead with the installation of the transducers. It was expected that the effects of pressure variations could be removed from the data using the pressure measurements from tiles 45 and 48; and the insulative property of the tile was expected to minimize temperature variations during the test.

Calibrations of the transducers in tile 47 were performed after the OS-55 test panel was installed in the wind tunnel (Figure 6). Acceptable calibrations were obtained, but it was noted that voltage outputs were somewhat unstable. As might be expected, the instability of the transducer outputs increased during tunnel runs, and unfortunately no useful force or stress data was obtained. The voltage-output instability was presumed to be due to temperature effects.

DESCRIPTION OF TRANSDUCERS USED FOR OS-57

Preparation of new load transducers for OS-57 commenced immediately after completion of OS-55. There was a possibility that the test could be repeated quickly because of the availability of the wind tunnel. Once again, because of a prospectively tight schedule for tile 47 preparation, there was insufficient time for development of a special transducer; however, new Entran "Flatline" pressure transducers modified for pressure equalization were recommended and purchaed by Rockwell (Figure 7). The Entran transducers are 0.040-inch thick and have a 0.200-inch diameter stainless steel diaphragm with bonded semiconductor strain gages. The modification for pressure equalization consisted of a very small stainless steel right-angle tube (0.008-inch ID) that penetrated the side-wall of the transducer and extended 0.050-inch above the diaphragm (Figure 8).

Prior to the purchase of the modified Entran transducers an evaluation sample without pressure equalization was installed in a tile and calibrated to determine whether the stability and performance would be acceptable. The tile was bonded directly to an aluminum plate without SIP. Figure 9 shows a sketch of the tile and the calibration. As can be seen the tile strain was linear through both tension and compression leading. It was observed that the voltage outputs were stable over a long period after several hours were allowed for gage self-heating to stabilize.

In order to satisfactorily perform as a load transducer the pressure equalization must be effective for both steady and fluctuating pressures. Measurements of fluctuating pressures in tiles (OS-36 and OS-37) and in SIP (OS-52) have shown that significant fluctuating pressures may occur up to 100 Hz; it is therefore necessary that amplitudes and phase of the pressures are not significantly affected by the tubing over the frequency range from 0 to 100 Hz. Results of calculations performed by D. Buell at Ames Research Center showed that the tubing in the Entran transducers would adequately equalize pressures providing they were not plugged by tile material during installation (Figure 10) When the twelve (12) transducers were installed in tile 47 by a RI technician special care was taken to avoid blocking the pressure-equalization tube. Several trial installations were made to develop the installation technique. As a result of this experience an alternate design of the pressure equalization tube was conceived that would allow clearing the tube after installation.

Calibrations of the transducers in tile 47 were performed before the tile was bonded to SIP to determine the local tile-stress sensitivity of each transducer and to determine that the equalization tubes were clear. The stress sensitivity was determined by placing a 1.23-square inch cylindrical weight of 1.03 pounds over each transducer at the IML. The resulting stress sensitivities of the transducers are given in Table 1. The calibrations to determine the effectiveness of the pressure equalization tube was performed with the tile in a vacuum jar. Pressures were varied several times from atmosphere to -5 psia, yielding the sensitivities listed in Table 2. The data in Table 2 show that none of the pressure equalization tubes were totally blocked; however, the tubes in transducers C704, C708, C710, and C712 were less effective than desired. For example, 1 psi of pneumatic pressure at transducer C704 would result in an error of 15-percent when the load induced pressure is 1 psi. Consequently the data from transducers C704, C708, C710, and C712 were not included in the analysis for determining total forces and moments.

TILE STRESSES INDUCED BY VACUUM CHUCK

After tile 47 for OS-57 was bonded to SIP, additional compressive load calibrations were performed to verify that all the transducers still functioned satisfactorily. A vacuum chuck was used on the tile OML for these calibrations, thus the opportunity was taken to measure tile stresses due to the application of the vacuum chuck (Figure 11). The results show that the maximum tensile stress was 1.3 psi. The tensile stress due to the vacuum chuck would add to stresses induced by tile proof loading and thus result in an overconservative proof test. The results also show that the maximum compressive stress was 1.1 psi.

OS-57 TILE 47 DATA ACQUISITION SYSTEM

The data acquisition system for tile 47 force, moment, and stress measurements was furnished by Ames Research Center. The system components and circuit arrangement is shown in Figure 12. The steady-state (d.c. coupled) voltage outputs from the twelve (12) transducers responding to loads in the tile were recorded by HP 9830 and HP 9845 computers. The dynamic (a.c. coupled) voltage outputs were recorded individually on magnetic tape and also after analog summation to yield normal force, pitching moment and rolling moment. Dynamic outputs were also connected to a multi-channel RMS system, and the RMS voltages were recorded by the HP 9830 and HP 9845 computers.

The specific dynamic data recorded on the 32-track tape recorder is listed in Table 3. The data include the tile 47 force, moment and stress time histories and also 15 channels of fluctuating pressure time histories from Kulite pressure transducers that were at the panel edges.

OS-57 TILE 47 CALIBRATIONS

The transducers in tile 47 were calibrated after the OS-57 test panel was installed in the wind tunnel. Tension loads only were applied to four (4) weight pans in various combinations of loads on each pan to cover the estimated maximum range of normal force and moments. (Figure 6). The calibrations were limited to the tension case only because there was no convenient way to apply compression loads to the ceiling-mounted panel.

The transducer outputs from the calibration loads were recorded on the HP 9845. A regression andlysis of the data was performed to establish the coefficients to be applied to each transducer

output to yield the desired normal force and moments. As previously mentioned transducers C704, C708, C710, and C712 were not included in the analysis. Calibration factors for the computation of local stresses were taken from Table 1.

OS-57 TEST PROCEDURE

Test OS-57 was conducted at three (3) combinations of Mach number, M, and free steam dynamic pressure, q_∞:

$M = 1.8$	$q_\infty = 660$ psf
$M = 1.8$	$q_\infty = 860$ psf
$M = 2.4$	$q_\infty = 788$ psf

The flap angle, δ_f, was adjusted to several positions at each of these conditions to position the shock wave at approximately 2-inch increments from behind to ahead of the instrumented tiles. At each flap setting, data were recorded on the Hp 9830 and analog tape recorder.

During the first tunnel run it was observed that voltage outputs from many of the load transducers in tile 47 were changing more than expected from aerodynamic loads. The evidence unfortunately indicated that the transducers were responding to temperature changes. The temperature effect was not so destabilizing to influence the dynamic data, but the steady-state data from these runs were unusable. This experience indicates that additional transducer development and laboratory tests including temperature variations are needed. Questions arise on whether the tile is being stressed by temperature gradients or is the RTV bonding the transducer to the tile stressing with temperature variations? The unbonded transducers should have drifted less than 5-percent due to the tunnel temperature change.

The apparent effects of temperature was a slow drift in output voltage. Therefore a quasi-steady approach was taken to acquire the desired steady-state forces, moments and local stresses. The HP 9845 was programmed to scan 200 points in 2 minutes, to average every two (2) points, and to record and display 100 points. The data taking procedure was as follows: (1) The transducer outputs were adjusted to near zero with the flap retracted (no pressure gradients on the panel). (2) The HP 9845 scan was started. (3) After approximately 5 seconds to record the zeros the flap angle was slowly cycled two (2) times from 0° to 70° to 0°. During the 2-minute period the drift of transducer outputs due to temperature were negligible.

The flap sweep rate, however, was considered to be sufficiently slow to yield the equavilent of steady-state data. The analog tape recorder was operated continuously during the flap sweeps to record the dynamic data.

RESULTS OF TEST OS-57

The principal forces, moments, and corresponding stresses of interest are presented in this section without detailed analyses. All of the plotted data obtained from tile 47 are contained in Volume II plus the panel sideline steady-state and fluctuating-pressure distributions. The panel sideline pressures were used to determine the shock position on tile 47 versus flap angle.

Normal Force

Figure 13 show the steady-state normal force versus shock position. The substantial scatter in all the steady-state data when the shock wave is ahead of or over tile 47 is to be expected because the low-pass filters did not remove all the dynamic content from the transducer outputs. Very long time constants relating to the filters could not be used because of the flap-sweep approach to obtain the data. The data show a maximum tensile normal force of about 6 lbs when the shock wave was near the mid-chord of tile 47. The Δp across the shock wave at $M=1.8$, $q_\infty=660$ and $M=2.4$, $q_\infty=788$ was about 2 psi. The Δp across the shock wave at $M=1.8$, $q_\infty=860$ was about 2.6 psi.

Figure 14 shows the RMS values of the dynamic normal force. These data were obtained from the first set of runs when the flap angle was held fixed while data were recorded. The effective integration time was longer than 1 minute, representing a frequency range from 3 Hz to 5000 Hz. The maximum RMS normal force due to the 2-psi shock wave was approximately 7 lbs when the shock wave was near $x/c = 0.3$ on tile 47. Previous analyses of tile dynamic loads (OS-52 and OS-53) have shown that the peak-to-RMS ratio is approximately four (4). Thus the peak normal force on tile 47 would be about 28 lbs.

Pitching Moment

Steady-state and dynamic pitching moments are shown in Figure 15

and 16. The maximum steady-state pitching moments were about + 5 in-lbs when the 2-psi shock wave was between x/c = 0.25 and x/c = 0.75 on tile 47. The dynamic pitching moments were maximum, approximately 4.5 in-lbs, when the shock wave was near x/c = 0.25. The dynamic peak pitching moment would be about 18 in-lbs due to the 2-psi shock wave.

Rolling Moment

Figure 17 and 18 show the steady-state and dynamic rolling moments. The maximum steady-state rolling moments were larger than expected, approximately 6 psi, considering that the flow was two dimensional. Large scatter is also noted in the data indicating strong influence from the dynamic loads. The maximum dynamic rolling moments for the 2-psi shock wave were about 4 in-lbs or 16 in-lbs peak.

Stress

Figures 19 and 20 show the steady-state and dynamic stresses due to F/A + Mc/I. The maximum steady-state stress due to a 2-psi shock wave was about 0.5 psi. The maximum steady-state stress occurred when the shock wave was near x/c = 0.5. The maximum dynamic peak stress was probably close to 4 psi. At M = 1.8, q_∞=660 psi (Figure 20(a) the maximum measured dynamic stress was 2 psi, however, there were insufficient data points taken to define the maximum stress point. The data indicate that the maximum dynamic stress occurred when the shock wave was near x/c = 0.

Local Stress Measurements

As previously mentioned the individual transducers in tile 47 were calibrated in terms of stress (Table 1). Examples of the local steady-state and dynamic stresses versus the flap angle are shown in Figures 21 and 22. The examples are from transducers C703 and C707, which were closest to the upstream corner of tile 47 where the maximum local stresses were measured. (All the local measurements are included in Volume II of this report).

The maximum steady-state tensile stress due to a 2-psi shock

wave was about o.7 psi at transducer C707 (Figure 21(d)). The maximum dynamic stress was about 5.5 psi (RMS) or 2.4-psi peak (Figure 22(d)). When examining any of the figures showing RMS values of dynamic data obtained during continuous flap sweeps, a hysteresis effect can be noted. This effect was due to the time constant of the RMS system. The time constant was five (5) seconds for Runs 5 and 6, M=2.4; one(1) second for Run 7, M-1.8, q =660 psf; and 0.2 seconds for Run 8, M=1.8,q =860 psf.

CONCLUDING REMARKS

Engineering and instrumentation support has been provided to Rockwell International Corporation to incorporate special strain-gage transducers in tile 47 for tests OS-55 and OS-57. The purpose of the transducer installation was to measure aerodynamic force, moments, and stresses.

The transducers used for test OS-55 proved to be unsatisfactory and therefore no data were obtained. Improved transducers were used for OS-57 with reasonable success. The long term drift of the transducers was still unacceptable, due to large temperature variations during the wind-tunnel runs. However, a continuous shock-wave sweep approach was employed to eliminate the drift problem, thus yielding acceptable data.

RECOMMENDATIONS

If any future tile load measurements are anticipated, the design of the pressure-equalization system used to make pressure transducers respond as load transducers should be improved. Specific designs that will reduce the risk of blocking the pressure-equalization ports during installation in a tile have been discussed with a transducer manufacturer and are deemed feasible.

Additional laboratory tests of transducers in tiles are needed to investigate temperature effects. The transducers and/or the system of bonding the transducers in tiles need to be improved to eliminate any temperature sensitivity. Additional wind-tunnel tests should be conducted to confirm the performance of the transducer and installation design selected from the laboratory tests. As with OS-55 and OS-57 these tests could be conducted in conjunction with other tile-panel test objectives.

ACKNOWLEDGMENT

Appreciation is expressed to Dr. [illegible] of Langley Research Center, Jack Brownson and Dick [illegible] of Ames Research Center for their support of the in-tunnel calibrations and data acquisition. Dr. Elber contributed the regression analysis, data acquisition, and plotting accomplished on the [illegible] computer.

TABLE 1

STRESS SENSITIVITIES OF TRANSDUCERS FOR OS-57

TRANSDUCER NO.	PSI/V
C701	840
C702	671
C703	763
C704	730
C705	909
C706	909
C707	621
C708	763
C709	645
C710	599
C711	763
C712	800

TABLE 2

PRESSURE SENSITIVITIES OF TRANSDUCERS FOR OS-57

TRANSDUCER NO.	PSI/V*	STRESS SENSITIVITY** / PRES. SENSITIVITY
C701	1.11E5	.0076
C702	-5.55E4	.012
C703	1.11E5	.0079
C704	-5.00E3	.15
C705	-5.55E4	.016
C706	-5.55E4	.016
C707	∞	0
C708	-1.14E4	.067
C709	∞	0
C710	-9.43E3	.064
C711	-2.27E4	.034
C712	7.09E3	.11

* should be ∞

** should be 0

TABLE 3

TAPE RECORDER TRACK IDENTIFICATION

32-TRACK AMPEX FR-1800

TAPE SPEED = 15 ips FM CTR FREQ = 27 KH_z

TRACK	CHAN. ID	TRACK	CHAN. ID
1	Kulite x_p = 15, y_p = -14.62	2	C701
3	17	4	C702
5	19	6	C703
7	x_p = 5, y_p = 14.62	8	C704
9	9	10	C705
11	11	12	C706
13	13	14	C707
15	15	16	C708
17	17	18	C709
19	19	20	C710
21	21	22	C711
23	23	24	C712
25	25	26	NF
27	29	28	PM
29	33	30	RM
31	Flap Angle	32	IRIG B

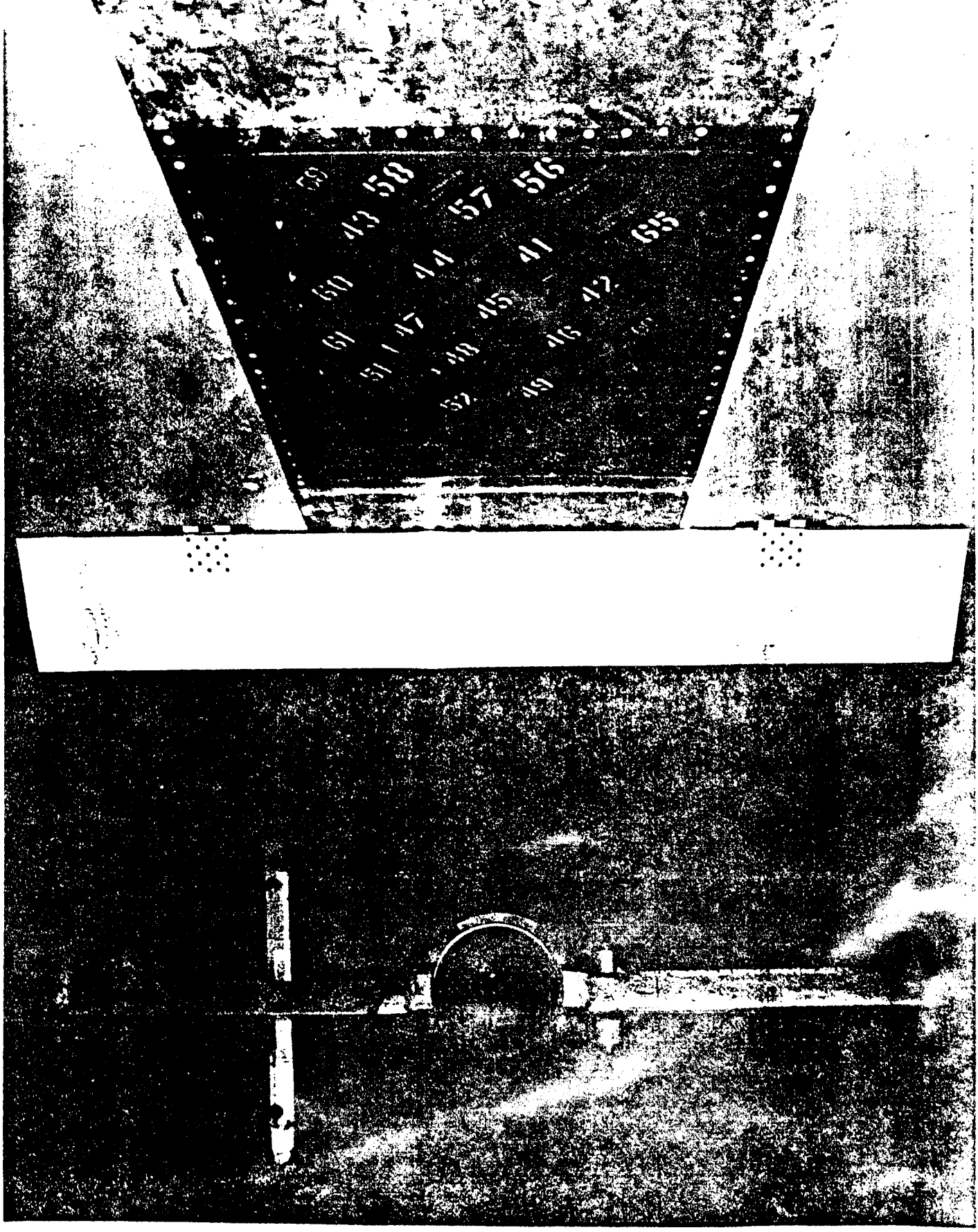
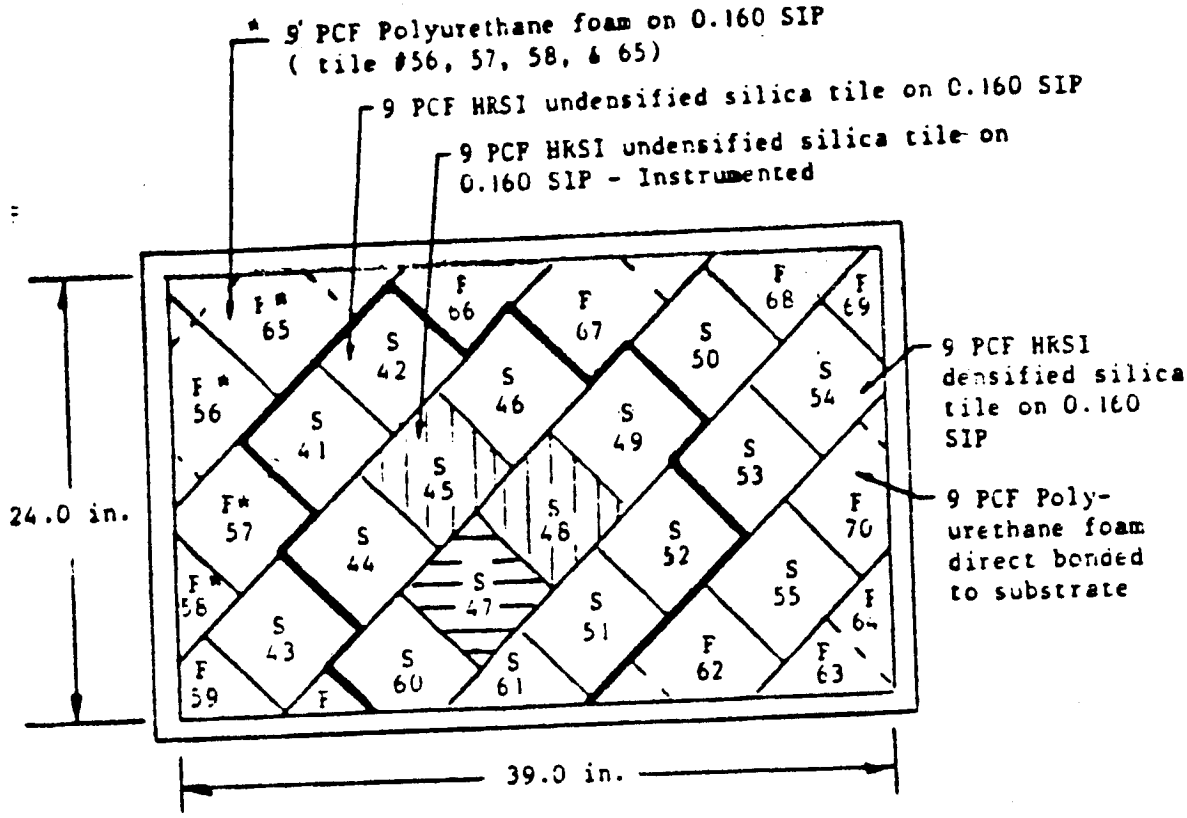


Figure 1. PHOTOGRAPH OF OS-55 TEST PANEL INSTALLATION IN AMES 9- x 7-FOOT SUPERSONIC WIND TUNNEL



- Tile thickness 1.000
- Substrate is 0.94 thick aluminum plate 2024-T351

Figure 2. TEST ARTICLE TILE ARRAY

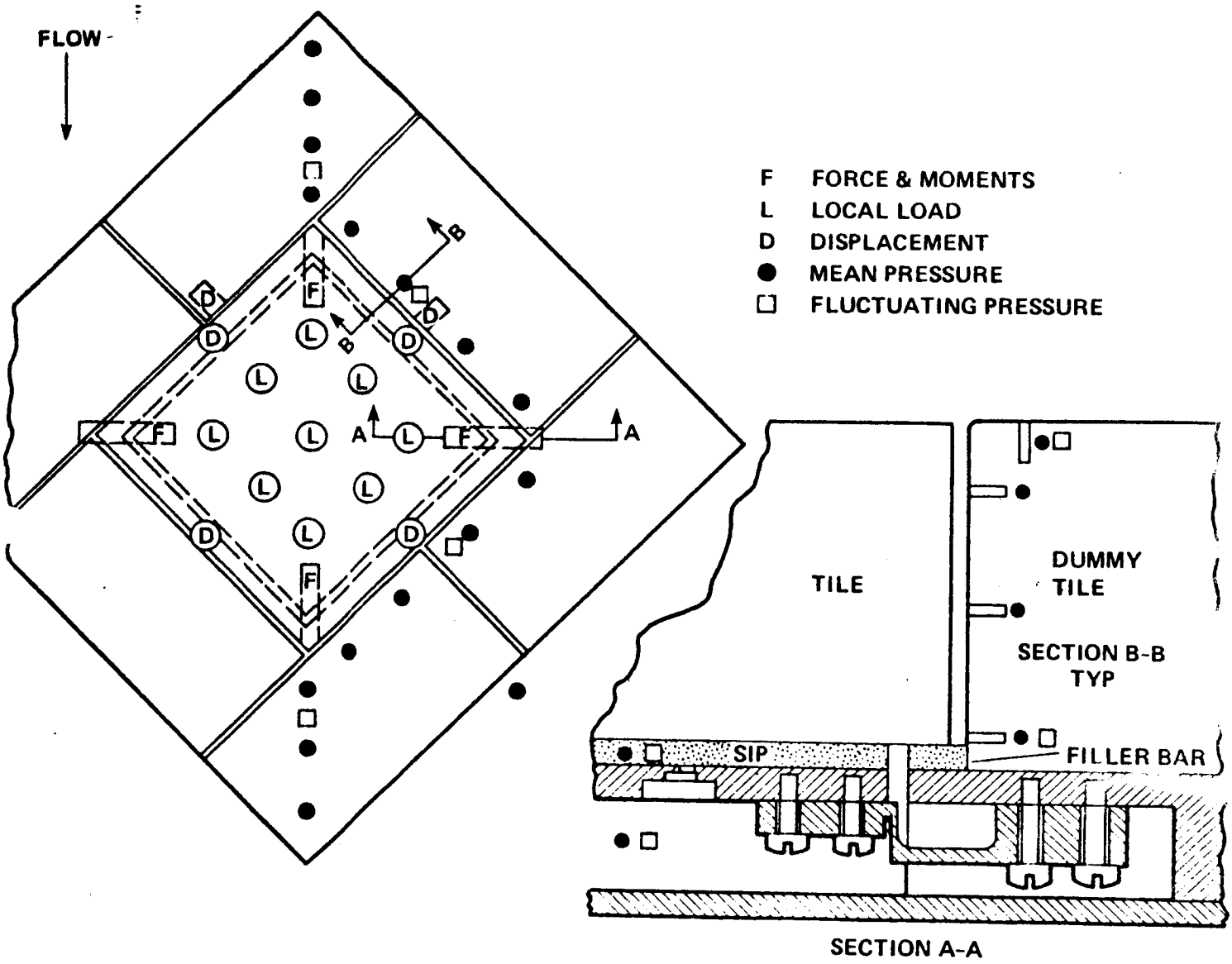


Figure 3. OS-52 TILE AIRLOAD INSTRUMENTATION

ENGINEERING ORDER

MODEL	EFFECT ON	AUTHORITY	PARTS MADE	SHEET 1 OF 4
	TEST -054	MCR 6137	☐ MAY BE HWKD NOTED ☐	M- 931321

SYM	DOCUMENT NUMBER	REV	SUBJECT

[11] VT70-093690 B

TEST/DEV CHANGE

1. ESTAB -054 EI ASSY, I&T=E, 1 REQD FOR TEST ONLY, NO N/A, SAME AS -037 EI ASSY EXCEPT -055 TILE ASSY REPLACES -052 TILE ASSY (TILE #47)
2. ESTAB -055 TILE ASSY, I&T=E, 1 REQD ON -054 ASSY. MAKE FROM -056 TILE, 1 REQD, AND EPF-S200-10 SENSOR, 12 REQD
3. ESTABLISH -056 TILE, I&T=T_M, 1 REQD ON -055 ASSY. MAKE FROM VT70-094900-016 TILE, OCN E09311

PLANNING NOTE

1. NO PLANNING REQD FOR -054, -055, & -056.
2. QPRD SECT 5 LEVEL 1 & 2 WAIVED. LAB NOTEBOOK ACCEPTABLE
3. -055 & -056 TO BE MADE IN D/048 (L&T).
4. -054 TO BE MADE ON-SITE AT AMES RESEARCH CTR FROM -037 ASSY

REF FOR M927721, M931315, M927724 SSR 713 R2

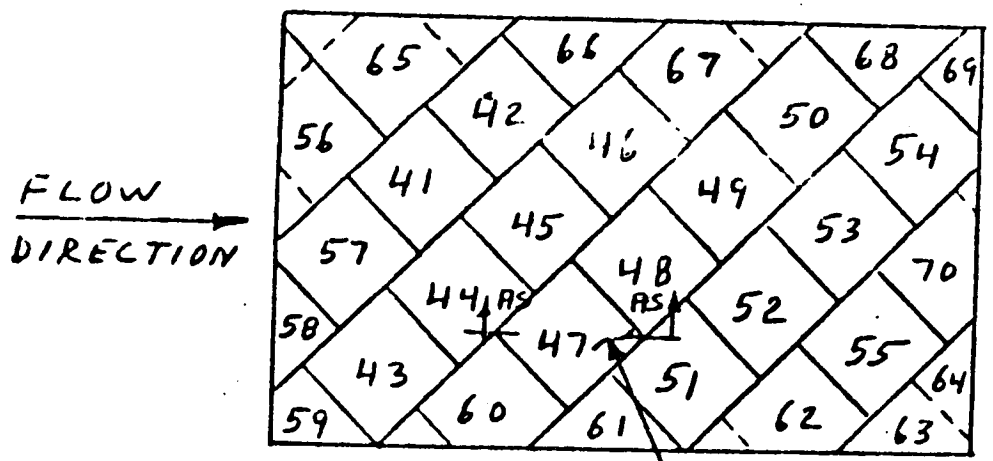
EO BY & DATE	23 FEB 87 D.H. CADE AE79
DEPT. GROUP	391-305
EXT	3832
SUPV	D. Cade / Jr J. N. Brown
DATE	2/24
DEPT. GROUP	391-305
CHK	
STRESS	
PROJ ENGR	

EO COPIES	ZIP
J. ROWE	AC 08
G. HAWLEY	AC 08
S. JACKSON	AC 08
H.M. CLANCY	AC 08
R. MUNGARY	AC 08
E.B. SCOTT	AC 08
C. SCHROEDER	AC 08
H. JAUREGUI	AC 08

RELEASE STAMP

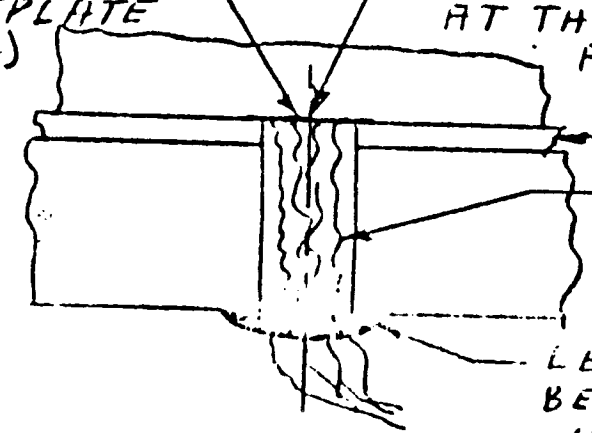
FIGURE 4

4. IN MAIN VIEW FOR -054,



-055 IREQD ON -054

(WAS) -052 IREQD ON -037



SECTION AS AS (AND)

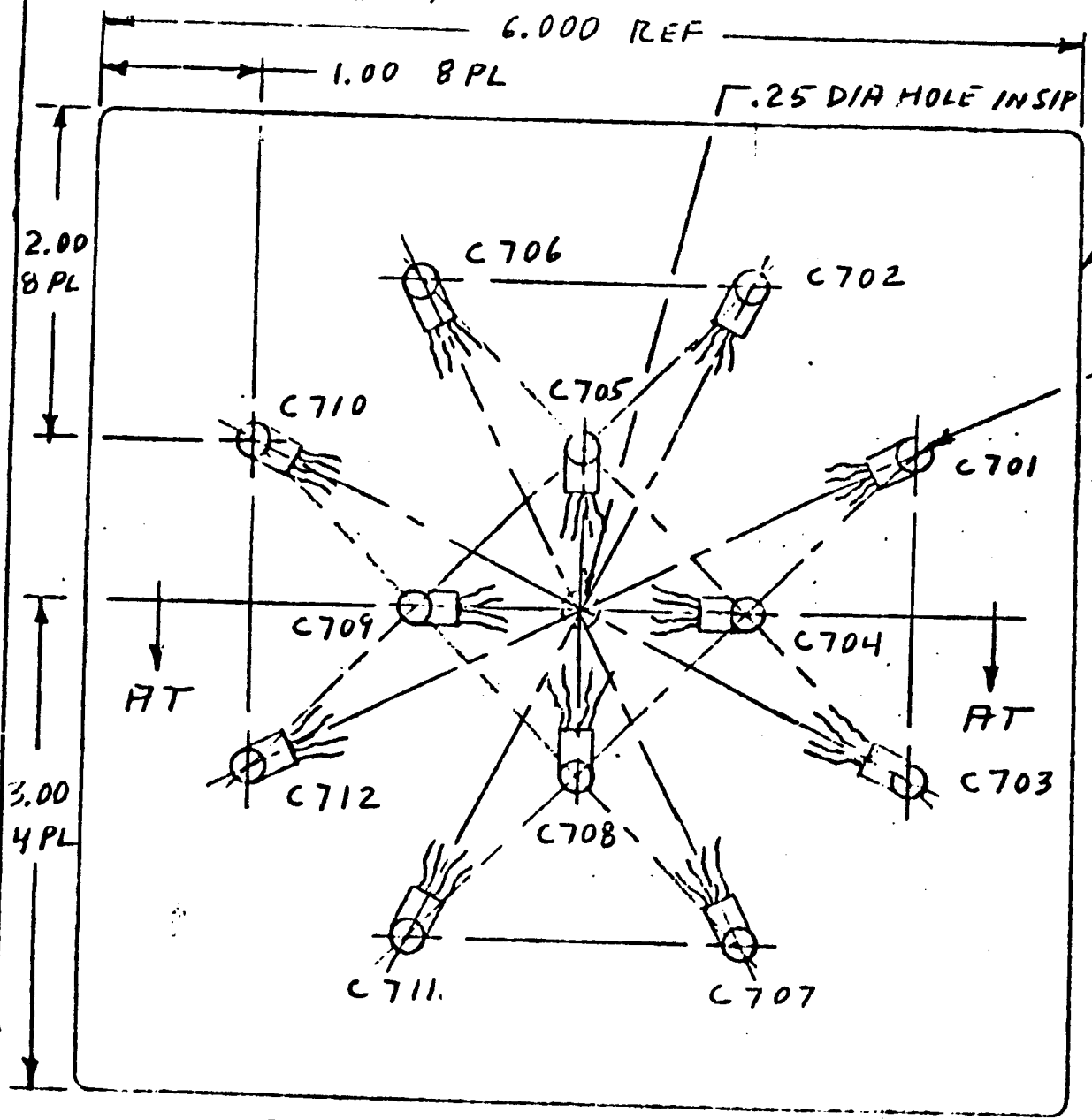
FIGURE 4. PAGE 2 4

ENGINEERING ORDER

SHEET 3 OF 4

M 931321

5. -055 TILE ASSY



VIEW LOOKING AT IML SURFACE OF TILE

(37) -056 1 REQD ON -055
DO NOT DENSIFY TILE

(37)(49)(50) EPF-S200-10
12 REQD ON -055

ADD G/N

(49) 75. MAY BE PURCHASED FROM ENTRIAN DEVICES, LITTLE FALLS, NJ

(50) 76. PROCUREMENT & INSTL BY L&T (D/098)

(36) L&T EFFORT --- (EO REF)
(45) PVT DATA REQD --- (EO REF)
(37) QVRD WAIVED --- (EO REF)
(32) RECORD VENT AREA --- (EO REF)

FLOW DIRECTION

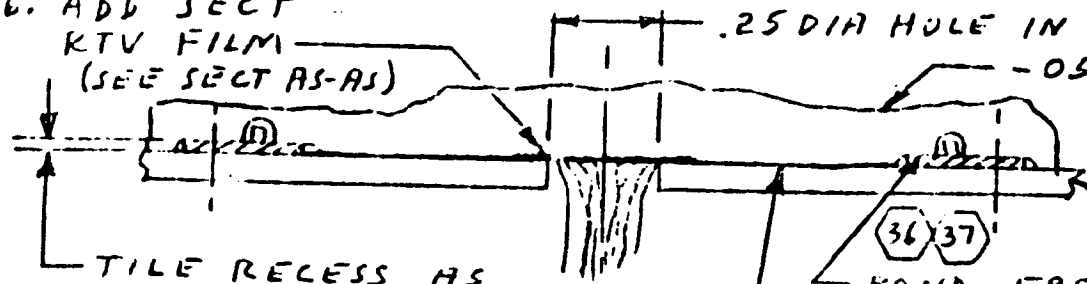
FIGURE 4. PAGE 3 OF 4

ENGINEERING ORDER

SHEET 4 OF 4

M 931321

6. ADD SECT
KTV FILM
(SEE SECT AS-AS)



CLASS 3 SIP AS REQD
ON -055

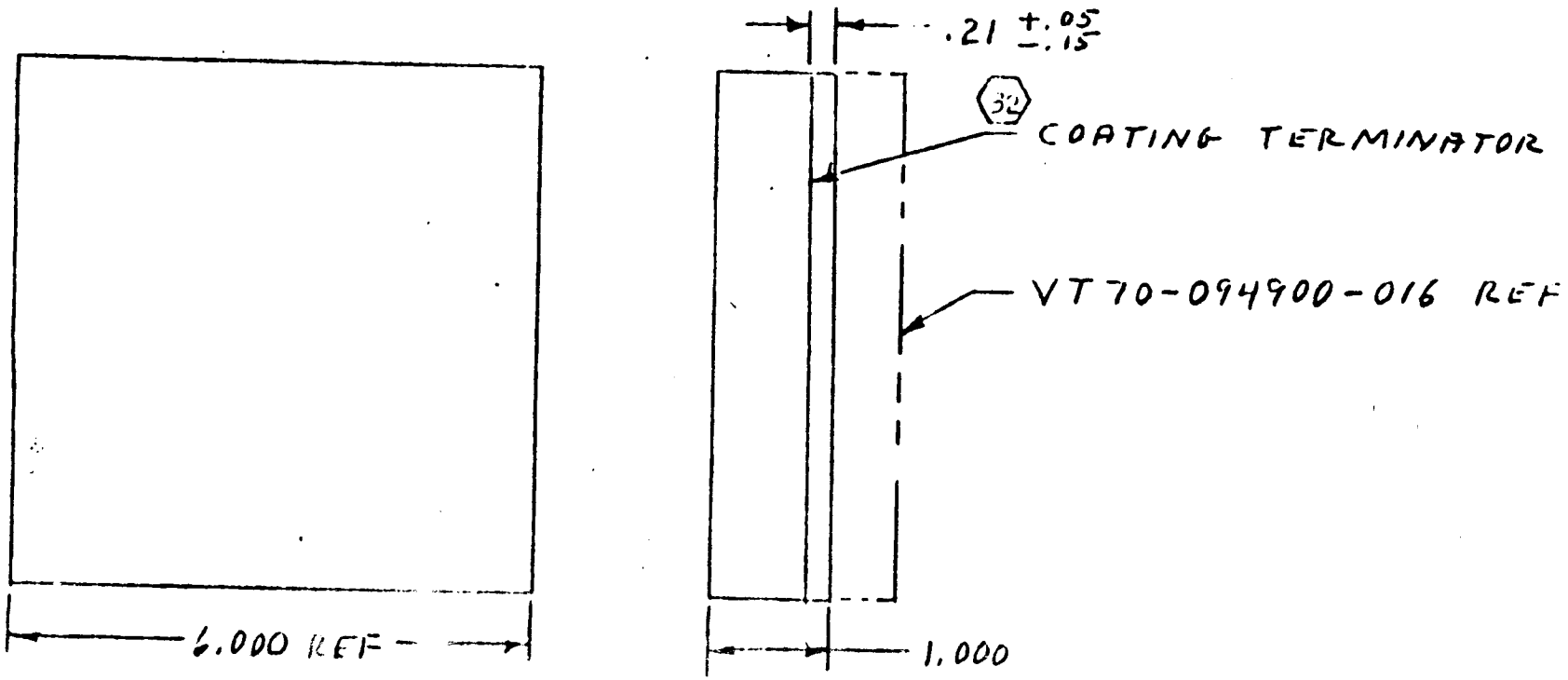
TILE RECESS AS
REQD TO SEAT SENSOR
FLUSH TO TILE BACKFACE
AND NOT BLOCK PRESSURE
PORT

BOND EPF-S200-10 SENSOR TO TILE PER
MA 0106-303 USING MB0130-119 TYPE II
ADHESIVE AND MB0125-050 PRIMER.
DO NOT BLOCK PRESSURE PORT.

SECT AT-AT

SENSOR WIRES TO BE FANNED INTO SINGLE
LAYER AND LAID INTO TILE/SIP BONDLINE.

7. ADD TILE DETAIL



DETAIL

FIGURE 4. PAGE

20

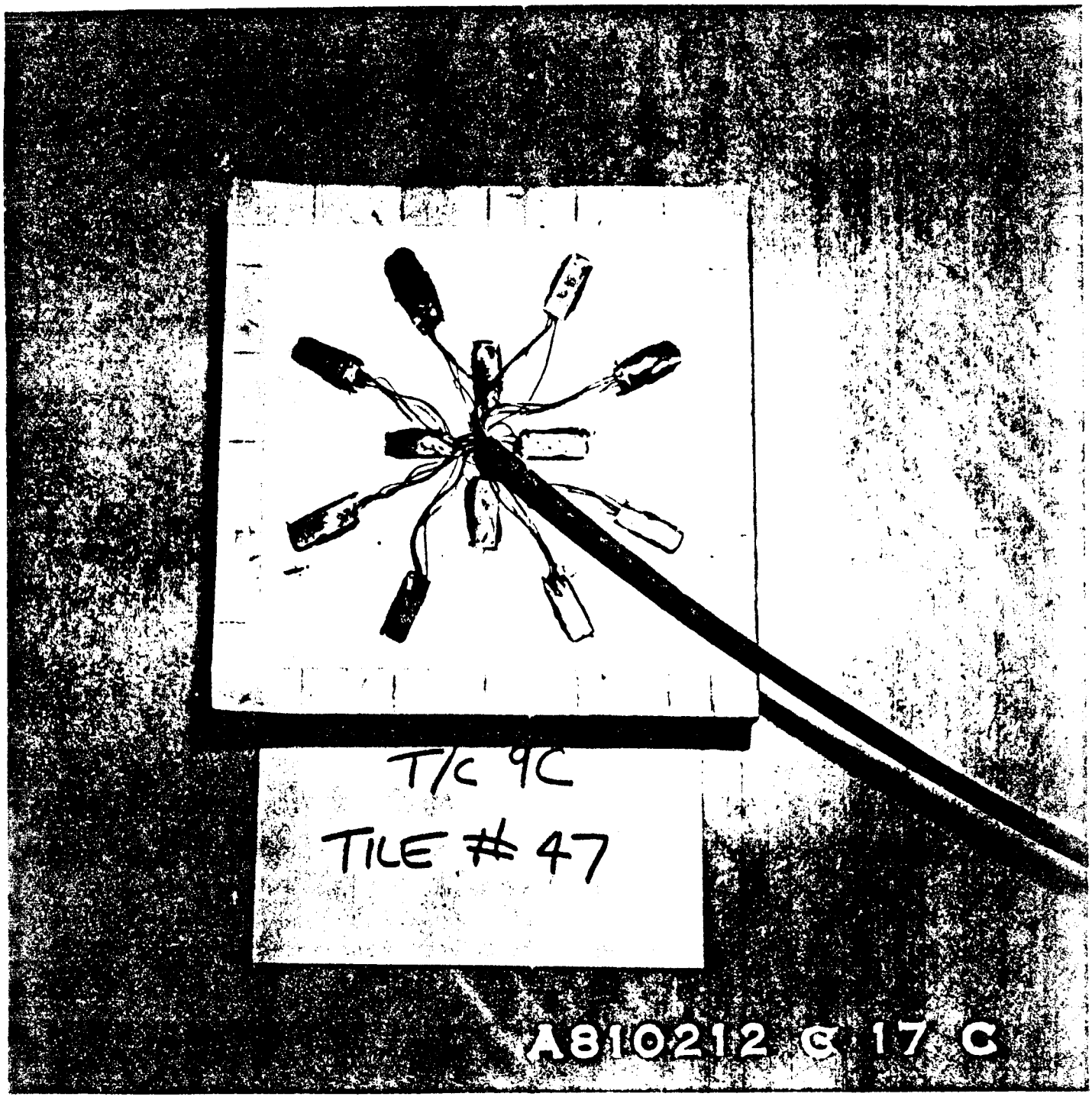


Figure 5(a). PHOTOGRAPH OF TRANSDUCER INSTALLATION FOR OS-55

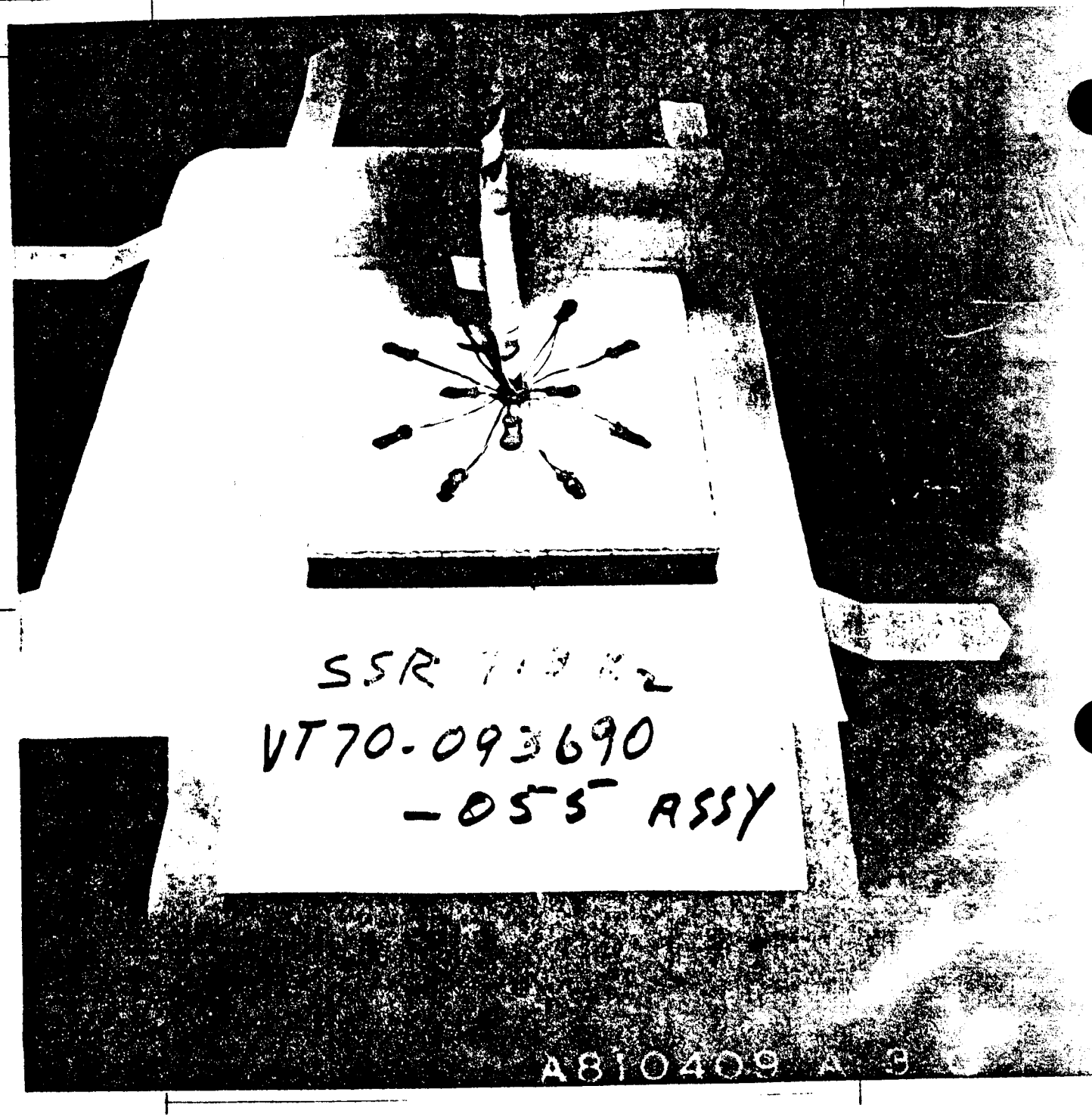


Figure 5(b). PHOTOGRAPH OF TRANSDUCER INSTALLATION FOR OS-57

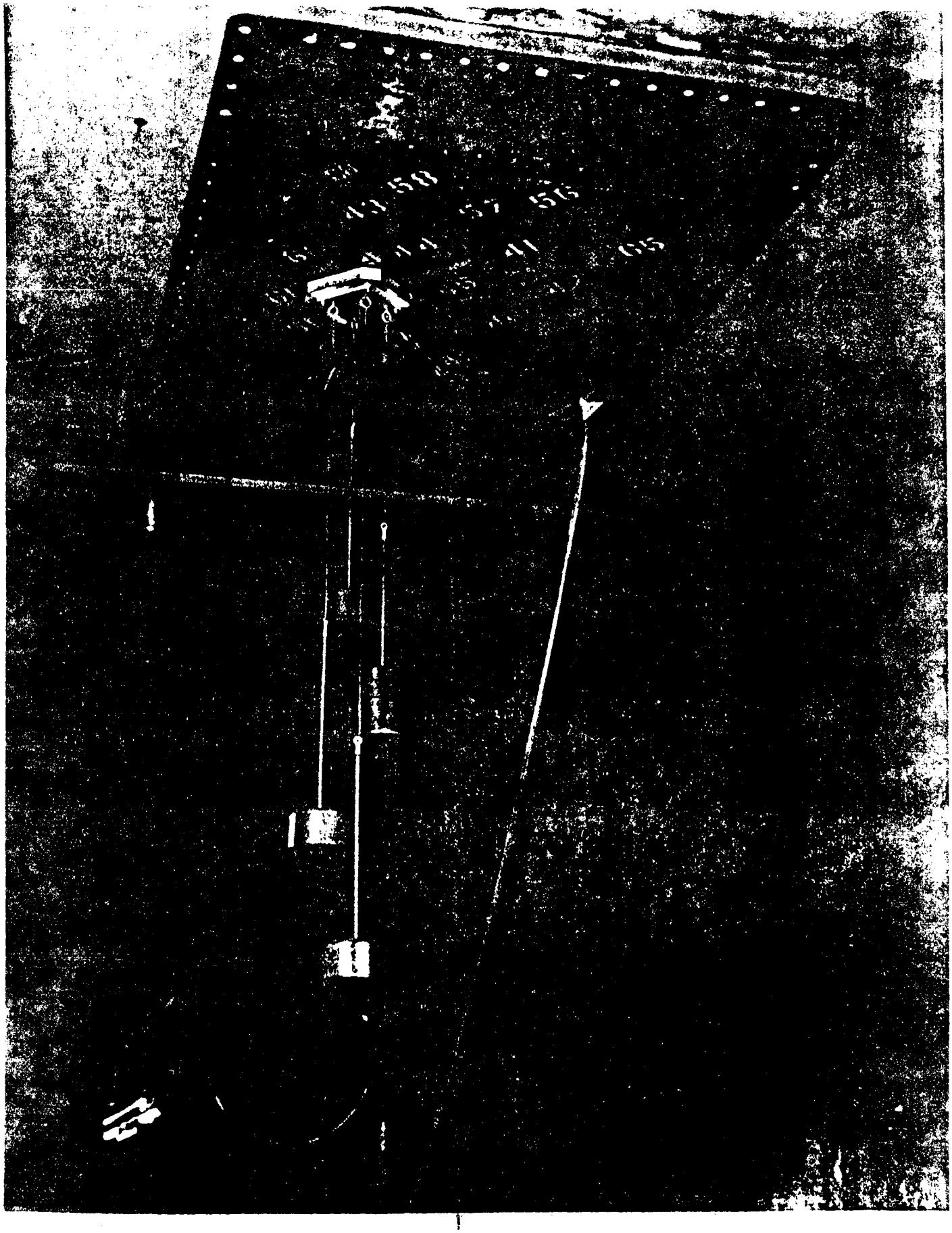
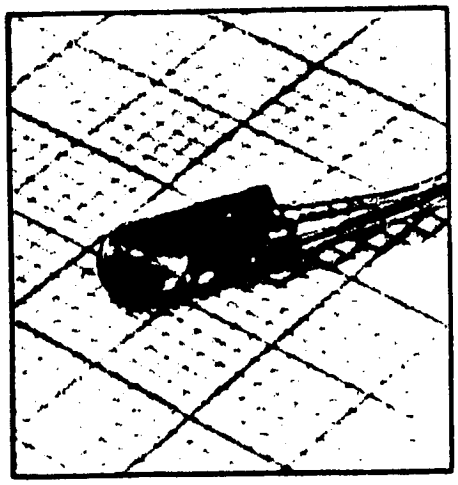


Figure 6. PHOTOGRAPH OF IN-TUNNEL CALIBRATION

Entran Devices, Inc.



EPF-200 Series
Flatline Pressure Transducers

- 10 PSI TO 500 PSI RANGES
- 0.040" LOW PROFILE
- HIGH NATURAL FREQUENCY
- STEADY STATE & DYNAMIC RESPONSE

The EPF-200 Series Pressure Transducer is a new addition to Entran's line of miniature sensing devices. Developed for applications requiring a low profile sensor, the EPF-200 uses the latest technology in semiconductor transducer design to create a pressure sensor with optimum operating characteristics.

The EPF-200 is available in psis, psig, psia and psid configurations to permit complete compatibility with existing test systems. Only 0.040" (1mm.) high, the transducer diaphragm is constructed of 17-4PH Stainless Steel to permit operation in a wide range of pressure media without corrosion or degradation. Other diaphragm materials are also available for unusual or extremely corrosive environments.

The EPF-200 is a piezoresistive pressure transducer which combines a fully active semiconductor bridge with the latest technology of transducer design. Its full scale output is sufficient to drive most recorders and data monitoring systems. The semiconductor circuitry is fully compensated for thermal changes in the environment and includes thermal sensitivity compensation as a standard specification. Thermal compensation is available either internal or external to the transducer to allow for maximum freedom in overall size, handling capability and application.

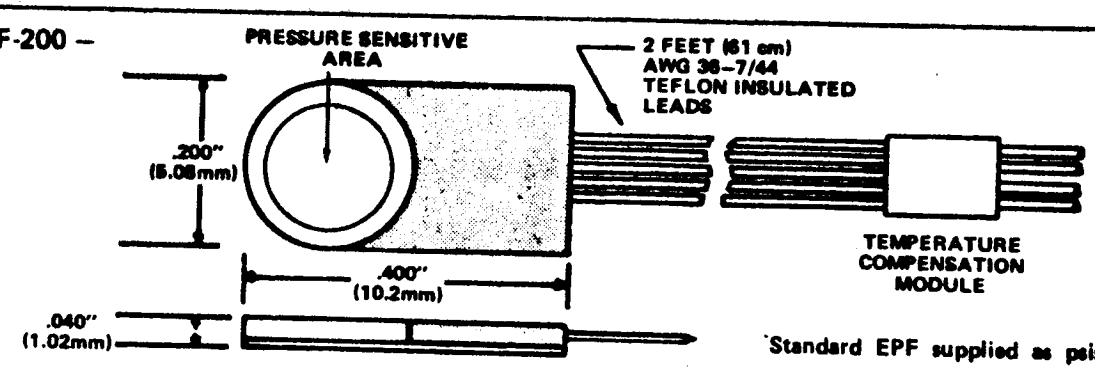
The EPF-200 Series Pressure Transducers are available in ranges from 10 to 500 psi and function from steady state to high dynamic responses. The EPF-200 is a low profile transducer which is ideal for testing requirements such as helicopter blade studies and turbine pressure measurements.

Entran Devices, Inc.	145 Paterson Ave. Little Falls, N. J. 07424 (201) 785-4060	Entran Bulletin	EPF200S-972

Figure 7. ENTRAN EFP-200 SERIES FLATLINE PRESSURE TRANSDUCER

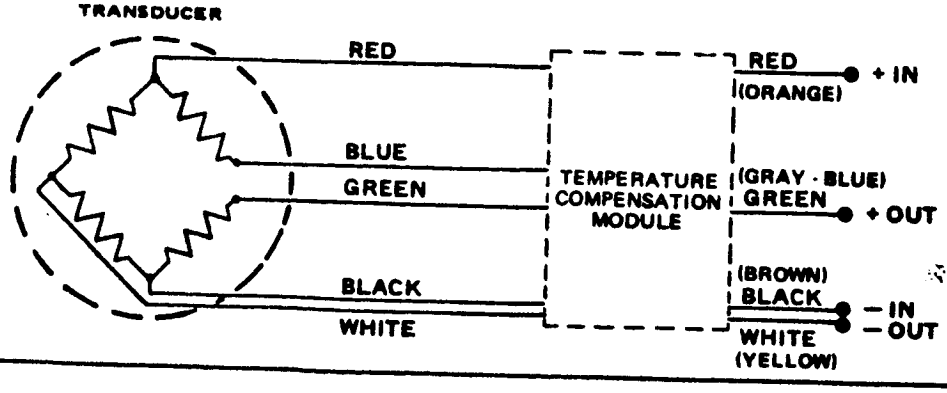
MODEL	EPF-200-10	EPF-200-25	EPF-200-50	EPF-200-100	EPF-200-250	EPF-200-500
RANGE psi	10	25	50	100	250	500
OVER-RANGE psi	50	50	100	200	500	1000
SENSITIVITY mV/psi (nom.)	5	3	2.5	1.2	.5	.25
RESONANT FREQUENCY (nom.)	40 KHz	45 KHz	50 KHz	60 KHz	85 KHz	120 KHz
INPUT IMPEDANCE (nom.)	500 ohms: 280 ohms optional					
OUTPUT IMPEDANCE (nom.)	250 ohms: 140 ohms optional					
EXCITATION	6.0 V DC or AC: For other excitation voltages, specify at time of order.					
COMBINED NON-LINEARITY and HYSTERESIS	±0.5% F.S.					
REPEATABILITY	0.25%					
RESOLUTION	Infinite					
THERMAL ZERO SHIFT	±1.5% F.S./100°F					
THERMAL SENSITIVITY SHIFT	±2%/100°F					
COMPENSATED TEMP. RANGE	80°F to 180°F (25°C to 80°C) Can be compensated over any portion of operating temp.					
OPERATING TEMP. RANGE	−40°F to 250°F (−40°C to 121°C) Higher and lower temperature ranges are available.					

EPF-200 –



*Standard EPF supplied as psis.

The EPF Series is available with internal compensation and is designated EPF-200I. Standard compensation module is located 18 inches from the transducer. Compensation module is encapsulated with shrink tubing with a maximum diameter of 0.100" (2.5 mm). Standard EPF supplied as psis transducer.



Entran Devices, Inc. 145 Paterson Ave. Little Falls, N. J. 07424 (201) 785-4060

Specifications subject to change without notice.

Figure 7. CONCLUDED

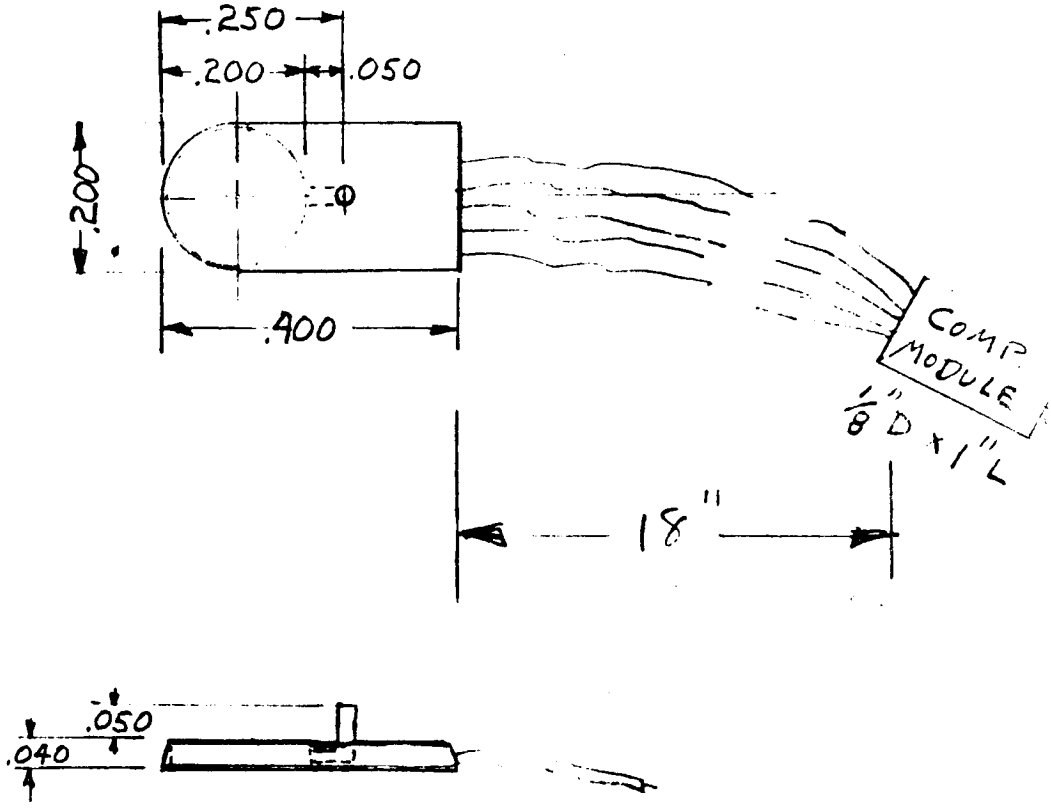


Figure 8. SKETCH OF ENTRAN TRANSDUCER WITH PRESSURE EQUALIZER TUBE

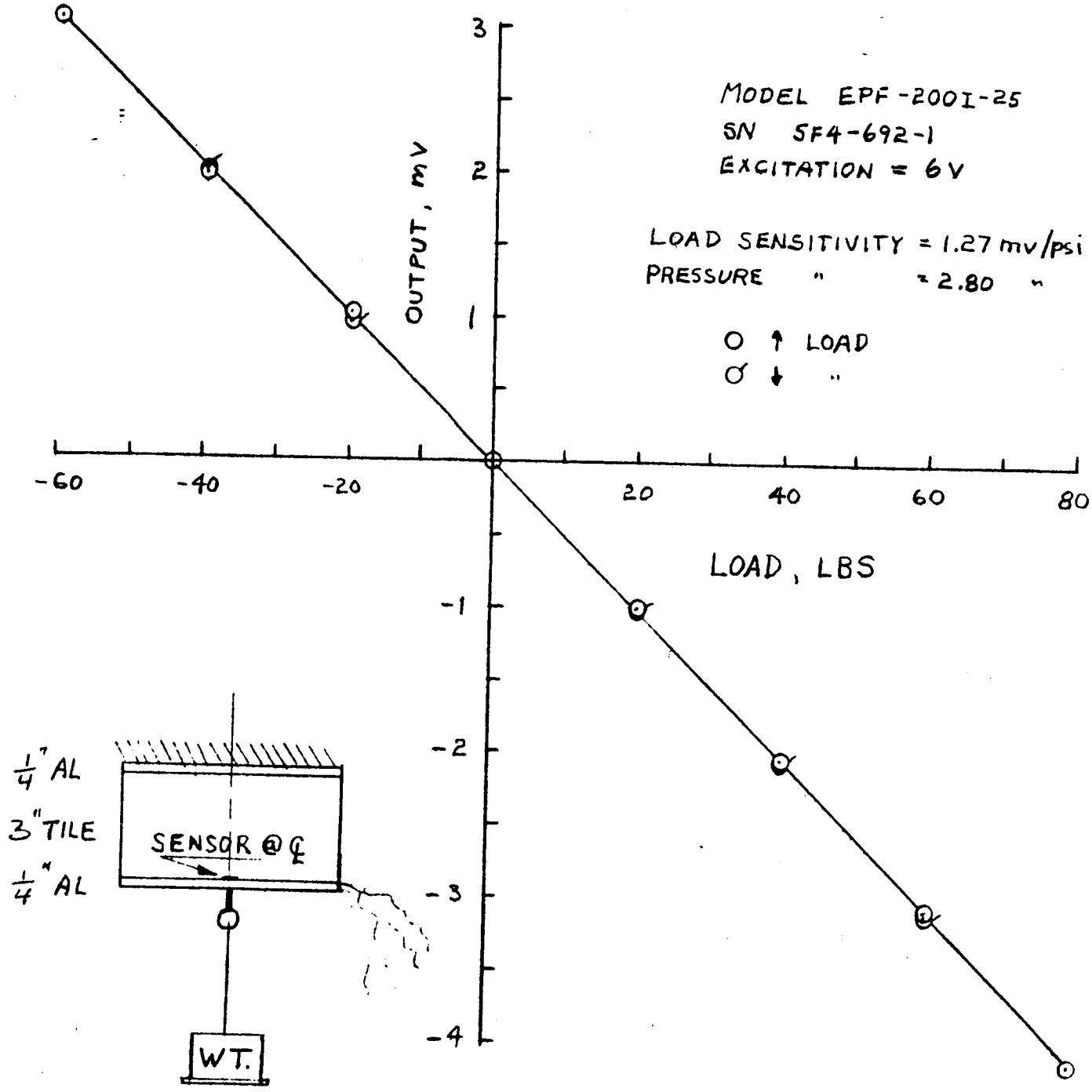
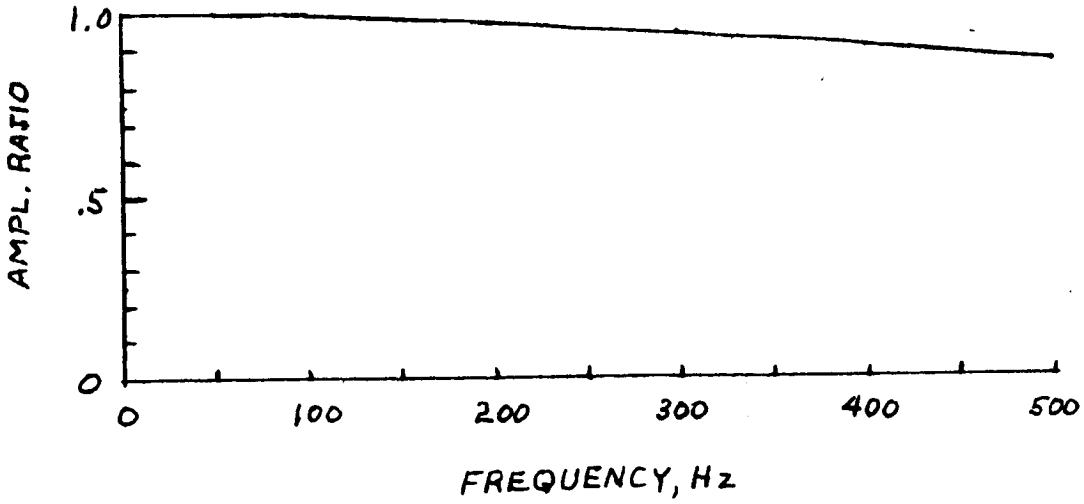


Figure 9. PRELIMINARY CALIBRATION OF ENTRAN TRANSDUCER WITHOUT PRESSURE EQUALIZATION



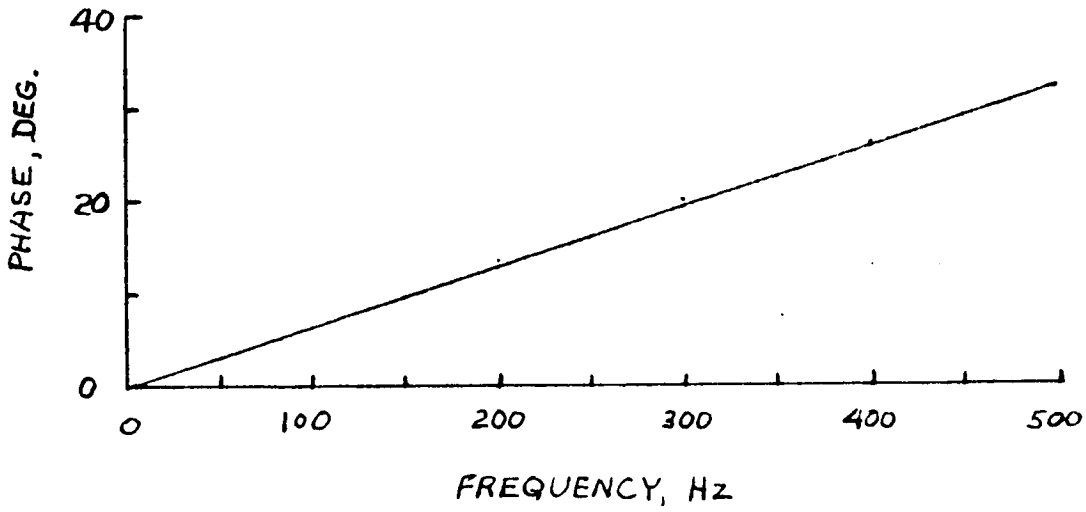


Figure 10. EFFECTS OF PRESSURE EQUALIZATION TUBING ON AMPLITUDE AND PHASE OF PRESSURE

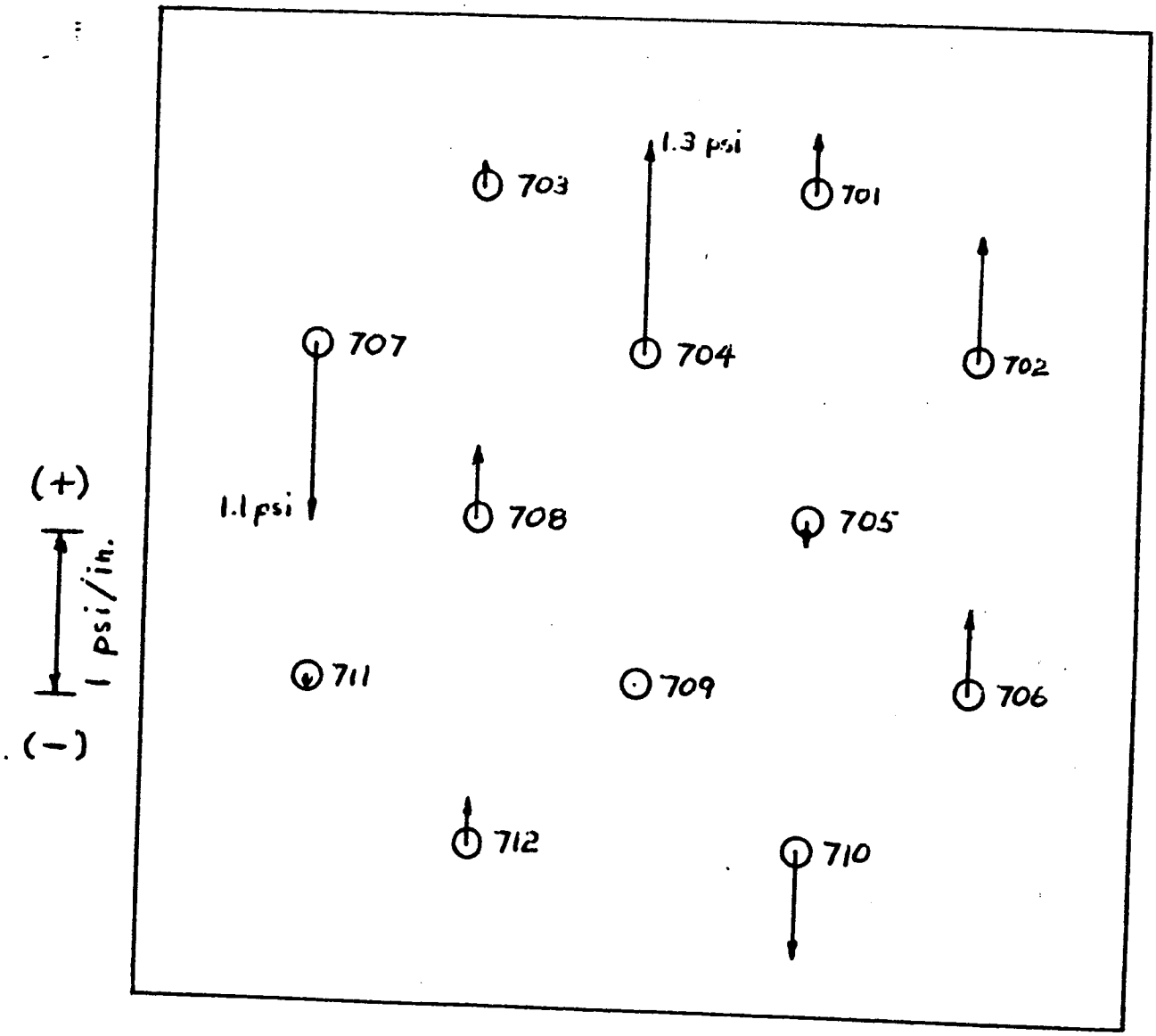


Figure 11.- STRESSES DUE TO VACUUM CHUCK ON TILE 47

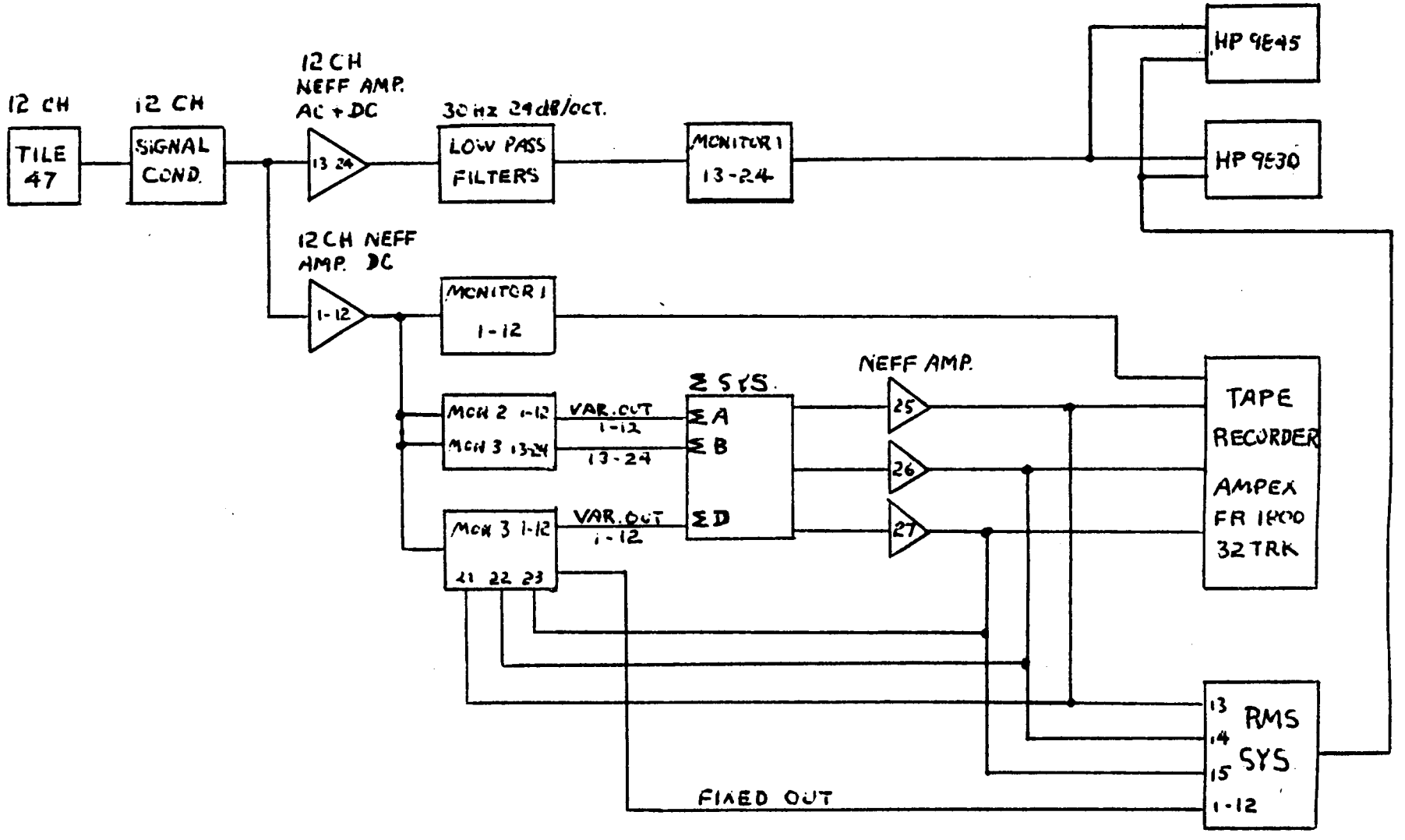


Figure 12. TILE 47 DATA ACQUISITION SYSTEM

RUN 7

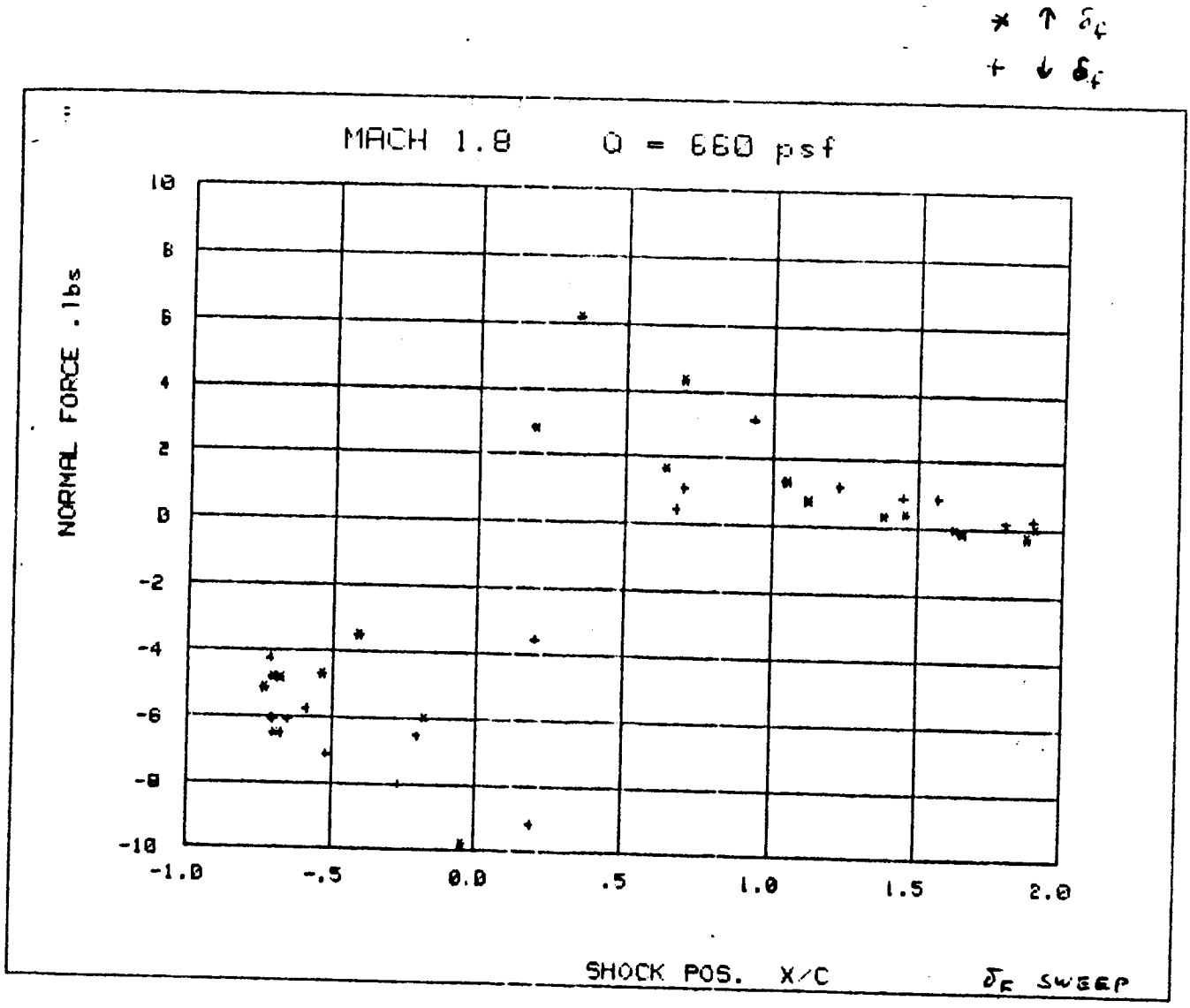


Figure 13(a). STEADY-STATE NORMAL FORCE, M=1.8, q_∞=660psf

RUN 8

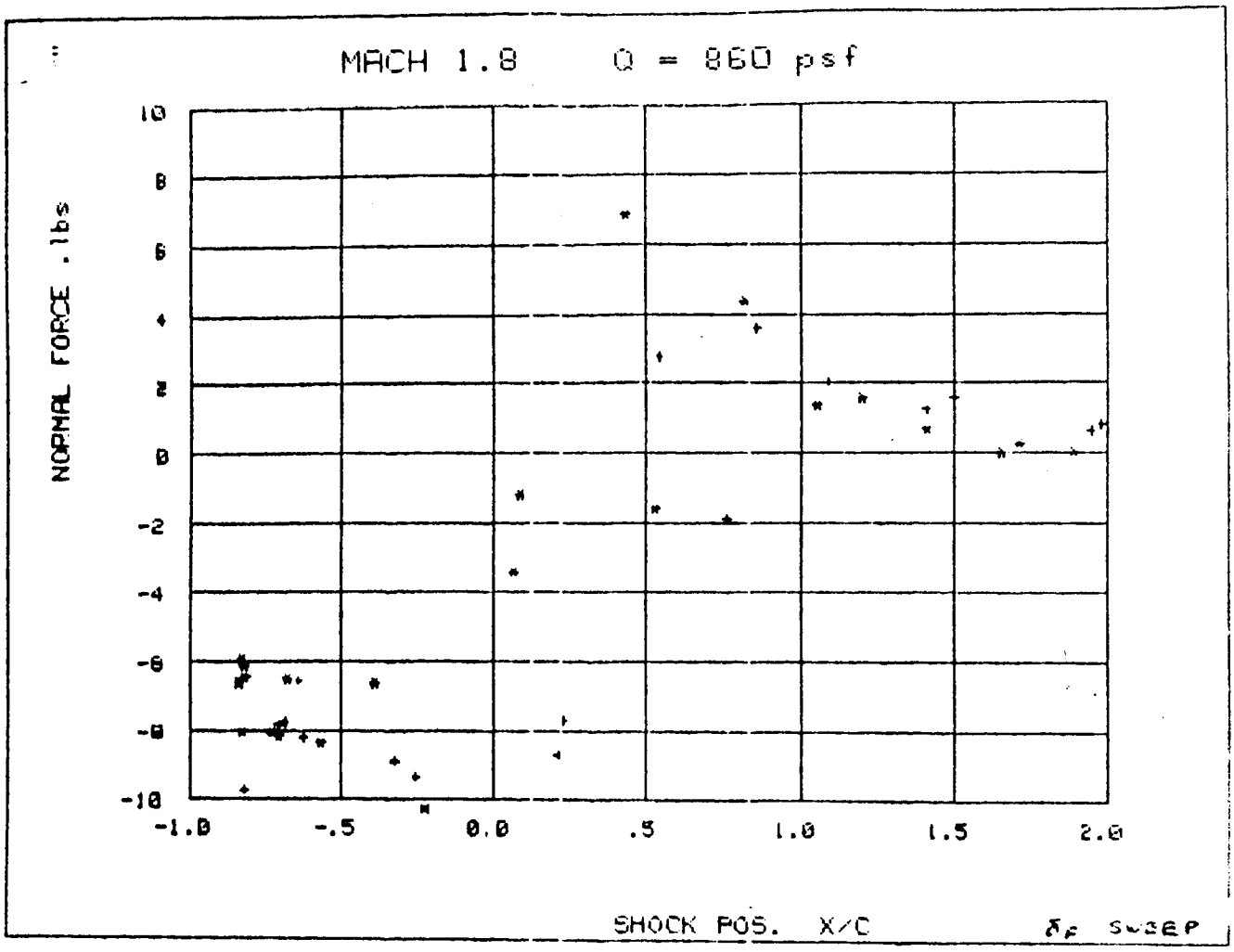


Figure 13(b). STEADY-STATE NORMAL FORCE, M=1.8, q_∞=860psf

RUN 6

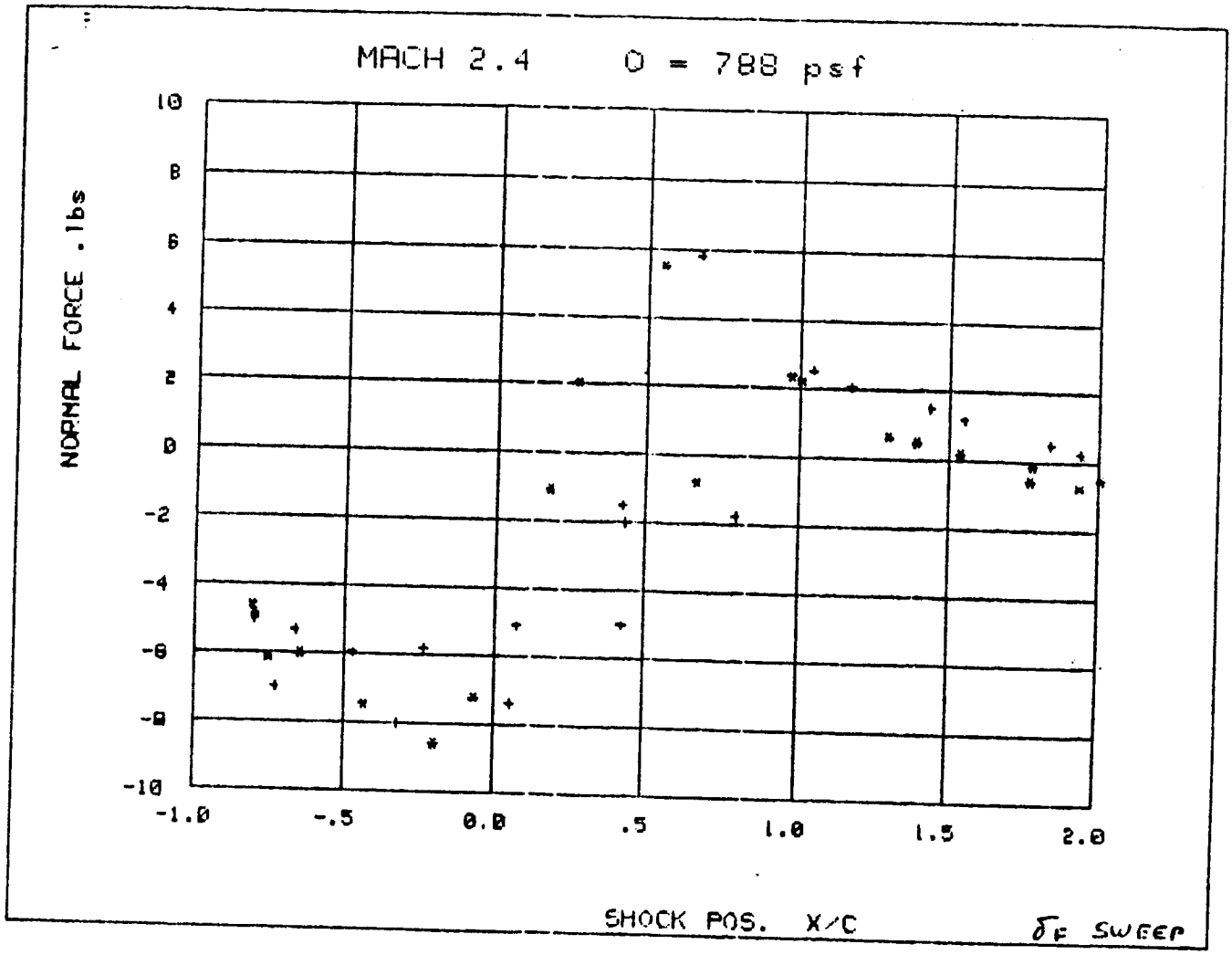


Figure 13(c). STEADY-STATE NORMAL FORCE, M=2.4, q_∞=788psf

RUN 3

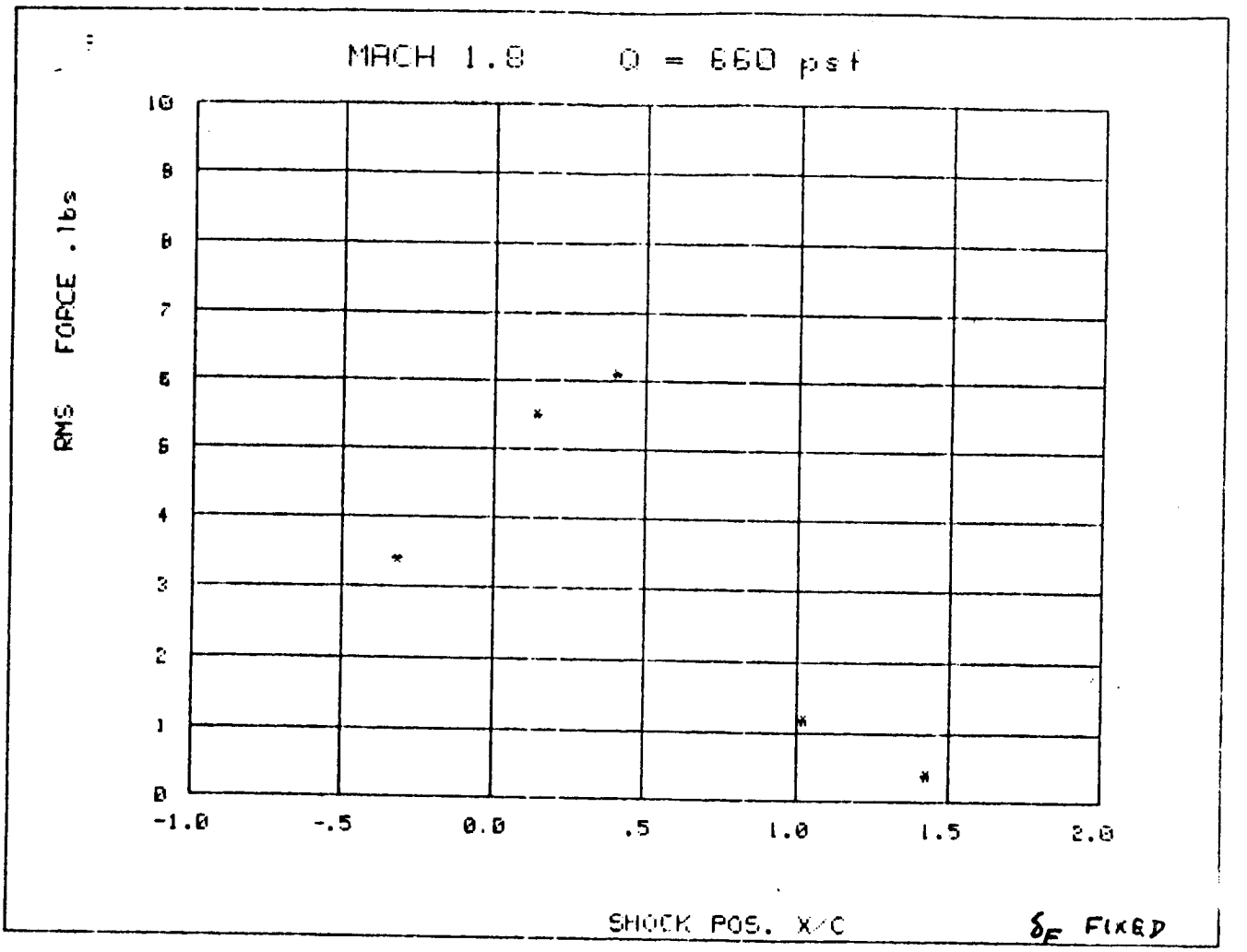


Figure 14(a). DYNAMIC NORMAL FORCE, M=1.8, q_u=660psf

RUN 2

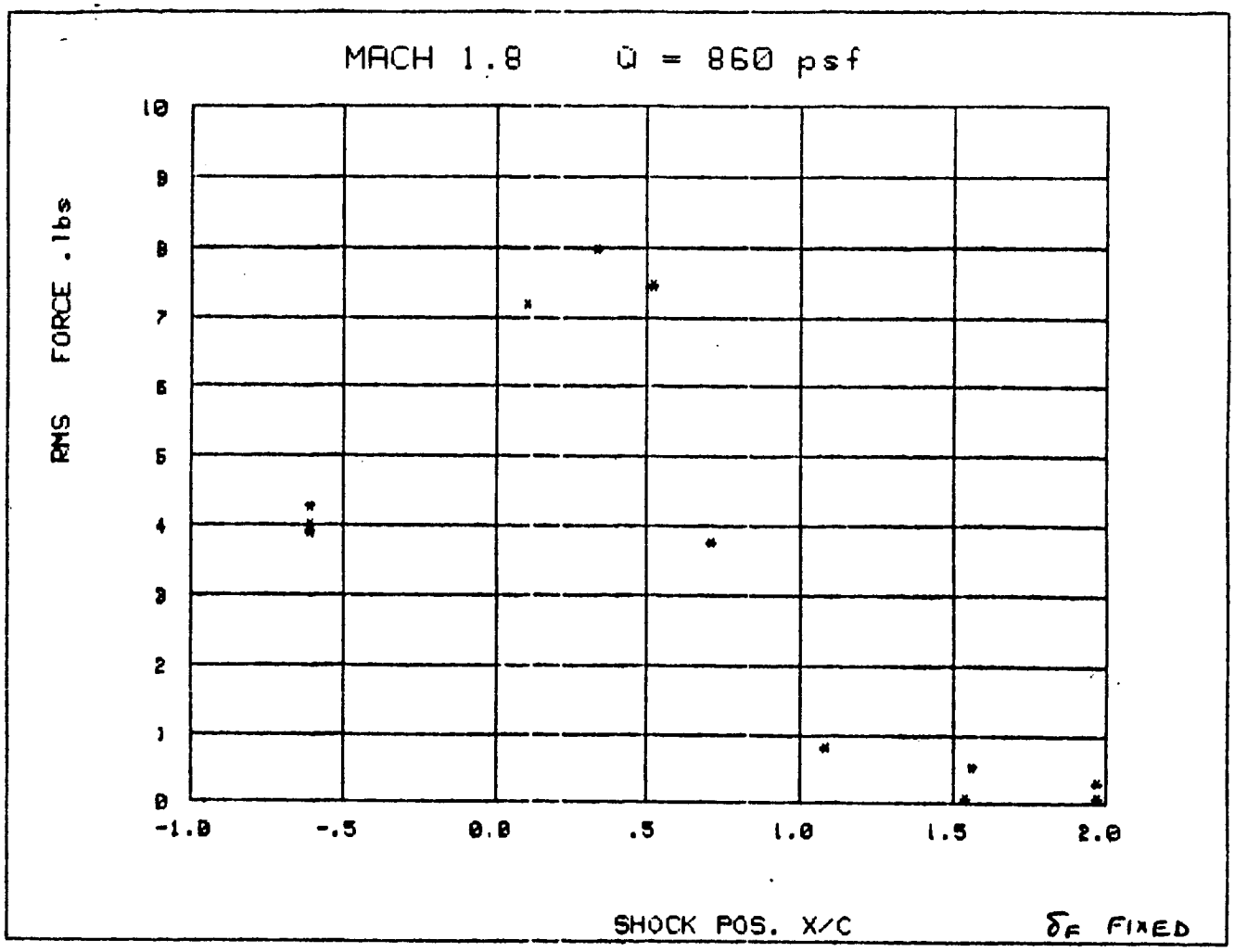


Figure 14(b). DYNAMIC NORMAL FORCE, M=1.8, q_∞=860psf

RUN 4

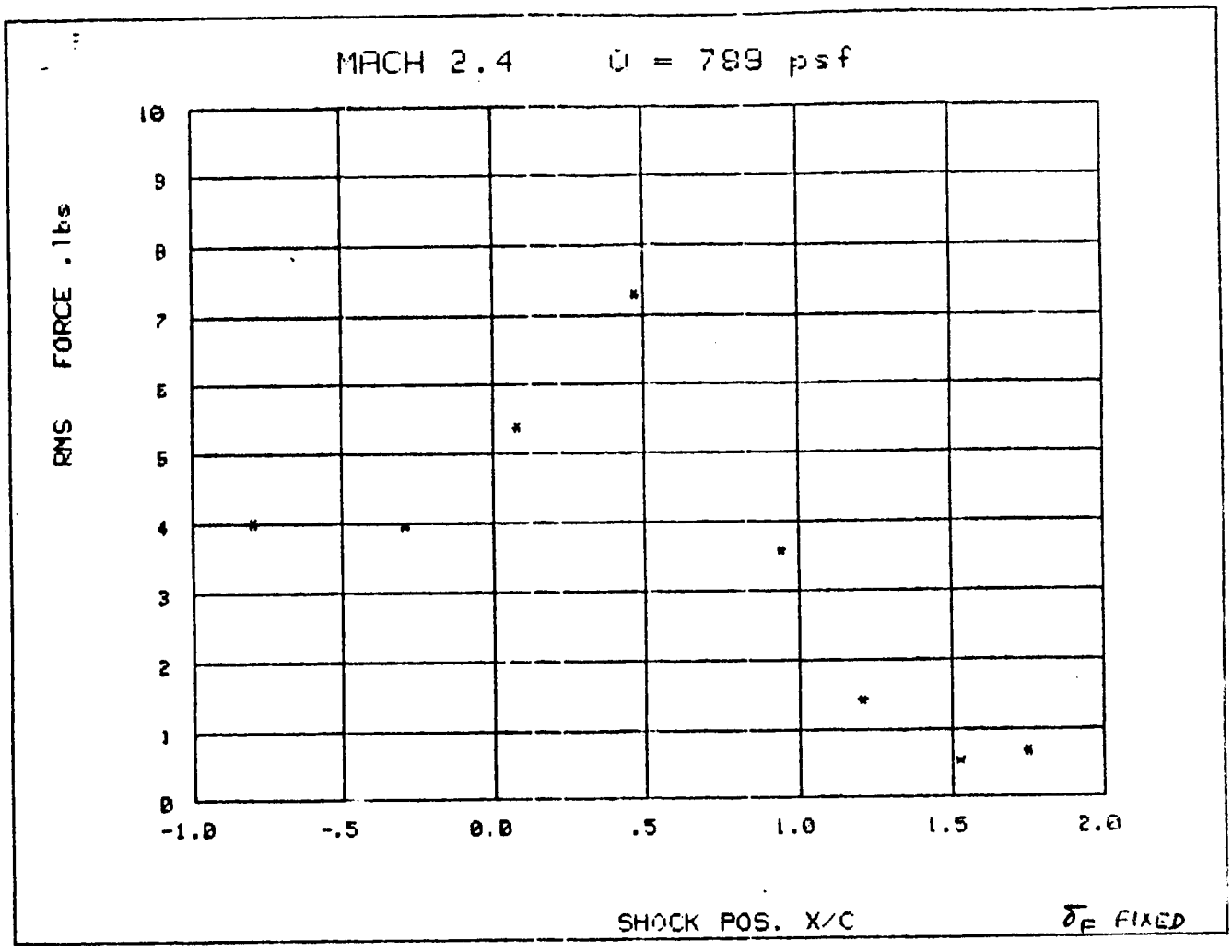


Figure 14(c). DYNAMIC NORMAL FORCE, M=2.4, q_∞=788psf

RUN 7

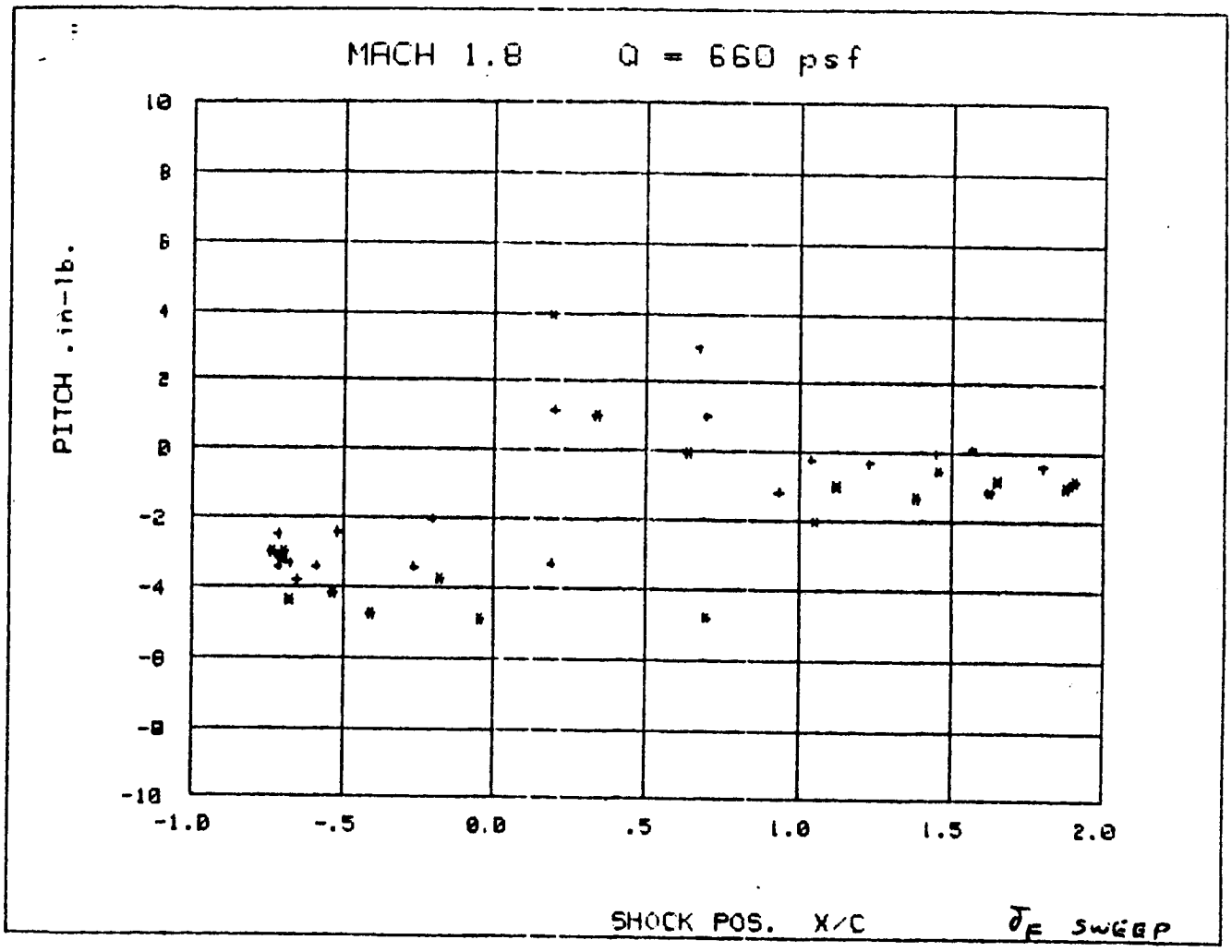


Figure 15(a). STEADY-STATE PITCHING MOMENT, M=1.8, q_∞=660psf

RUN 8

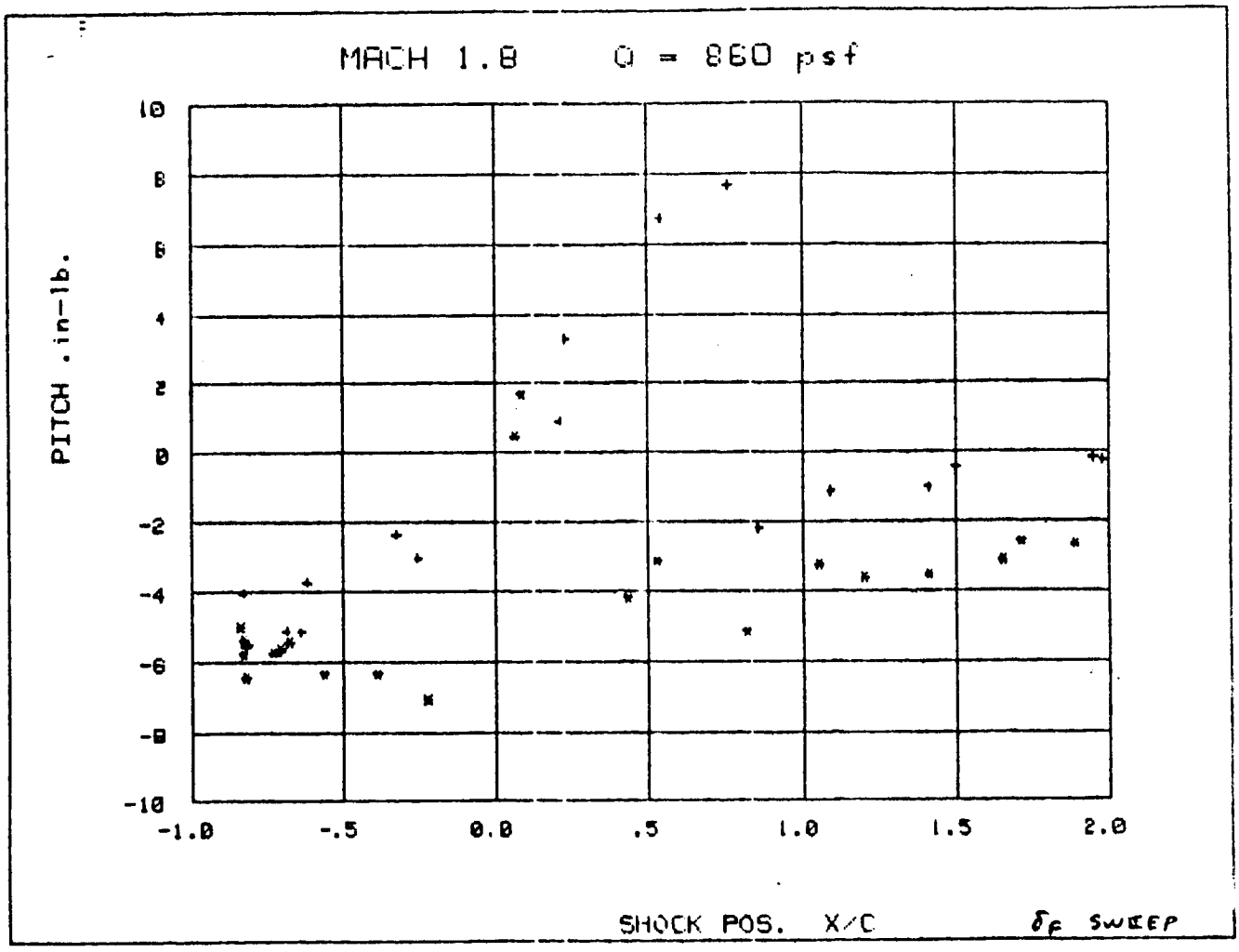


Figure 15(b). STEADY-STATE PITCHING MOMENT, M=1.8, q_∞=860psf

RUN 6

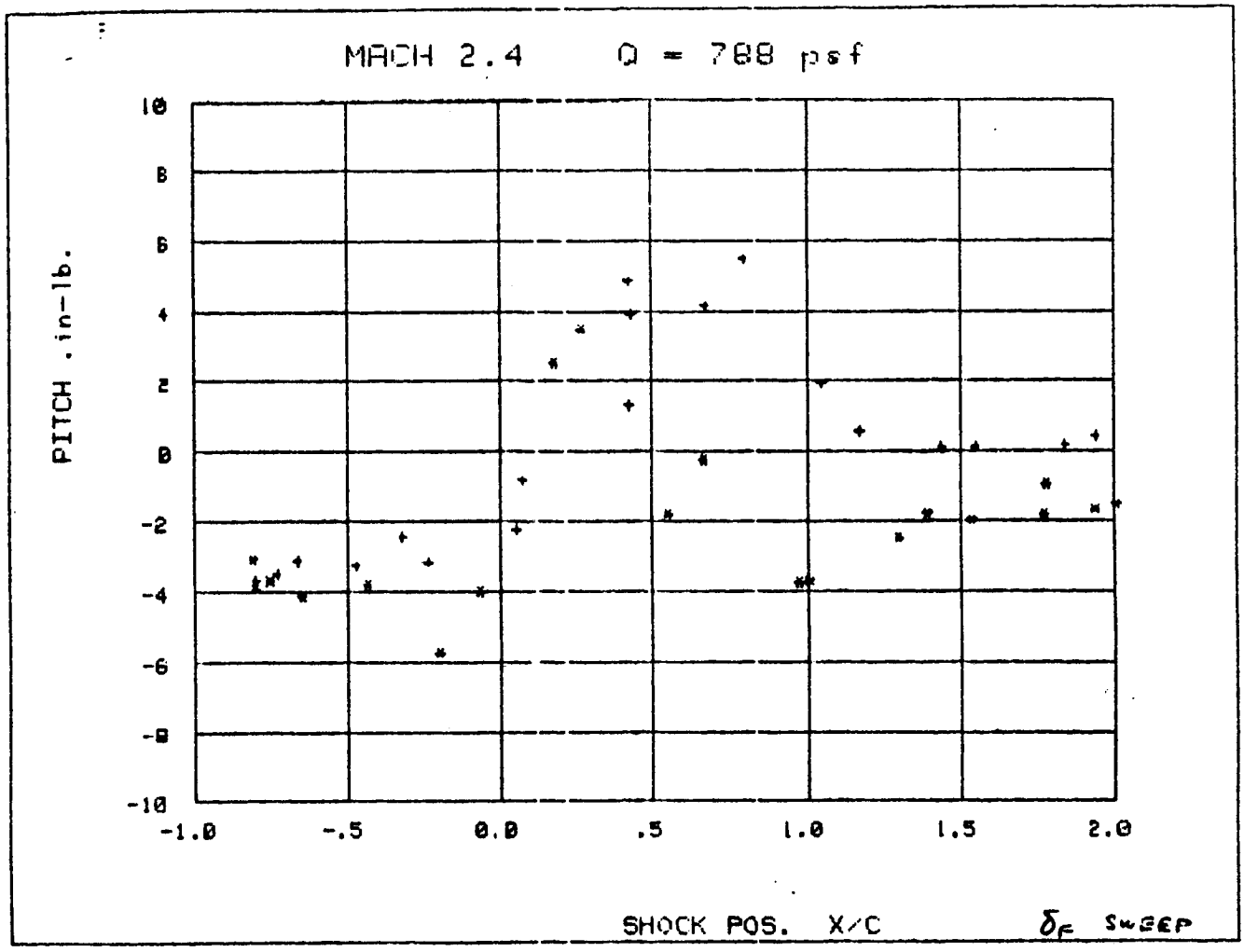


Figure 15(c). STEADY-STATE PITCHING MOMENT, M=2.4, q_∞=788psf

RUN 3

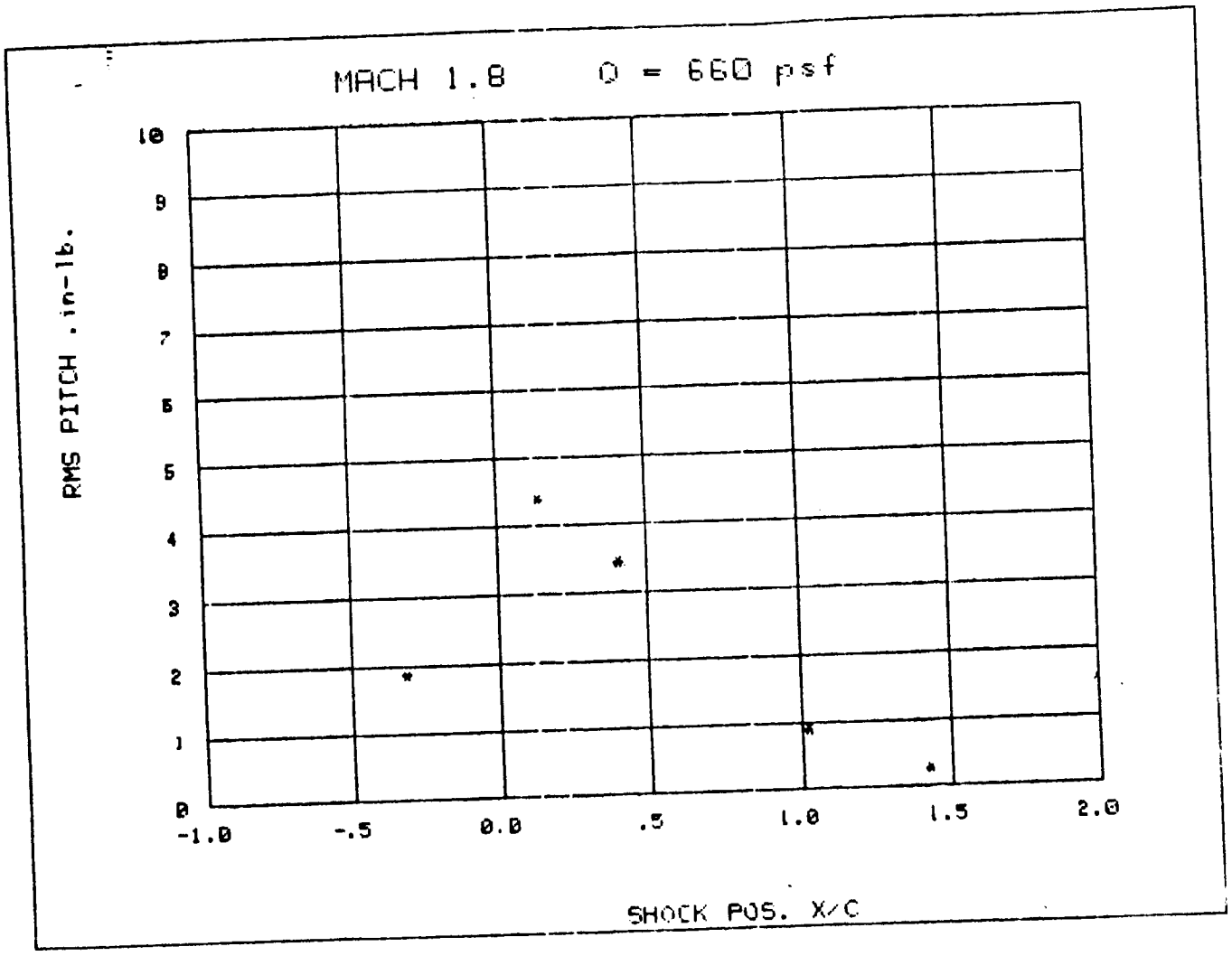


Figure 16(a). DYNAMIC PITCHING MOMENT, M=1.8, q_∞=660psf

RUN 2

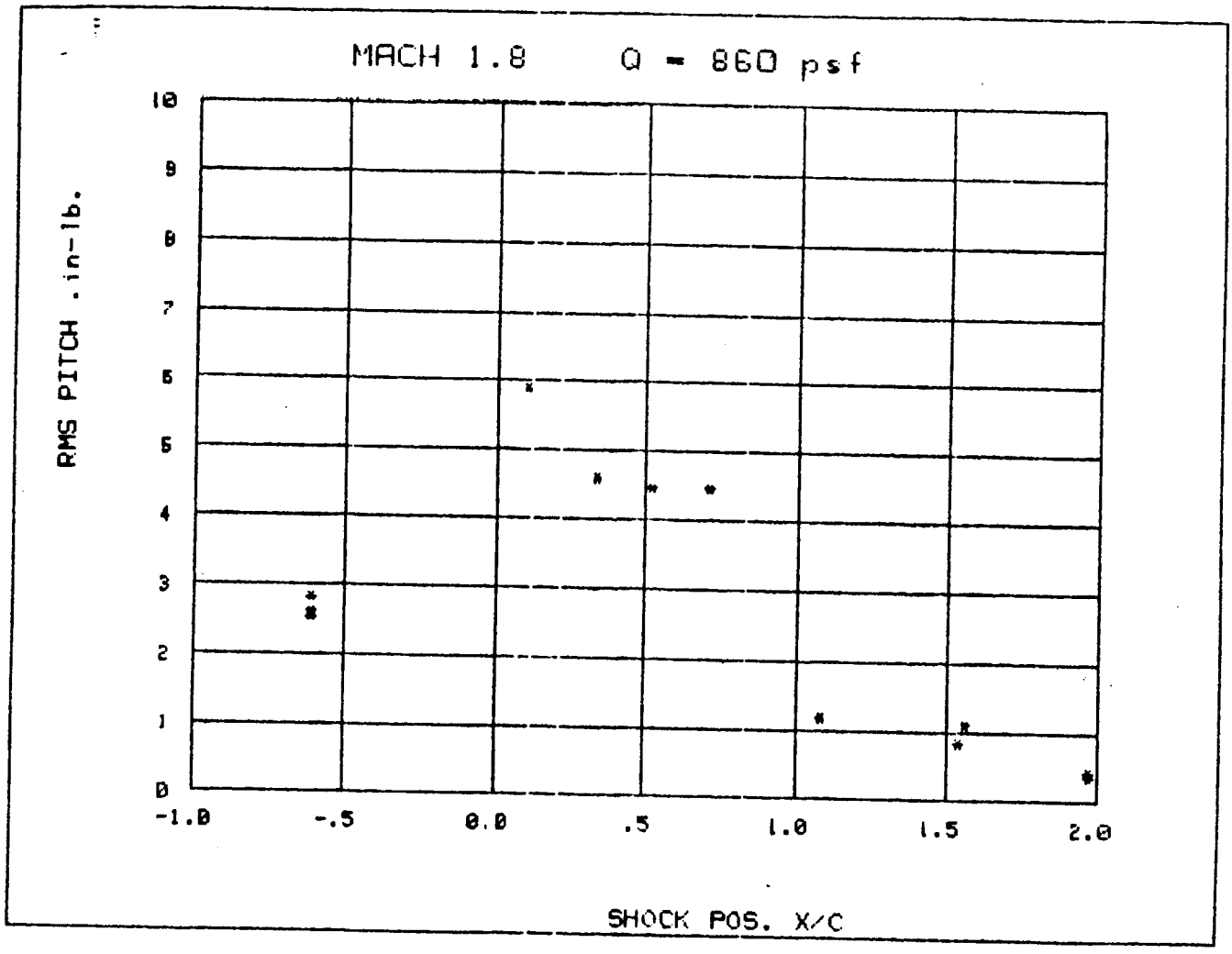


Figure 16(b). DYNAMIC PITCHING MOMENT, M=1.8, q_∞=860psf

RUN 4

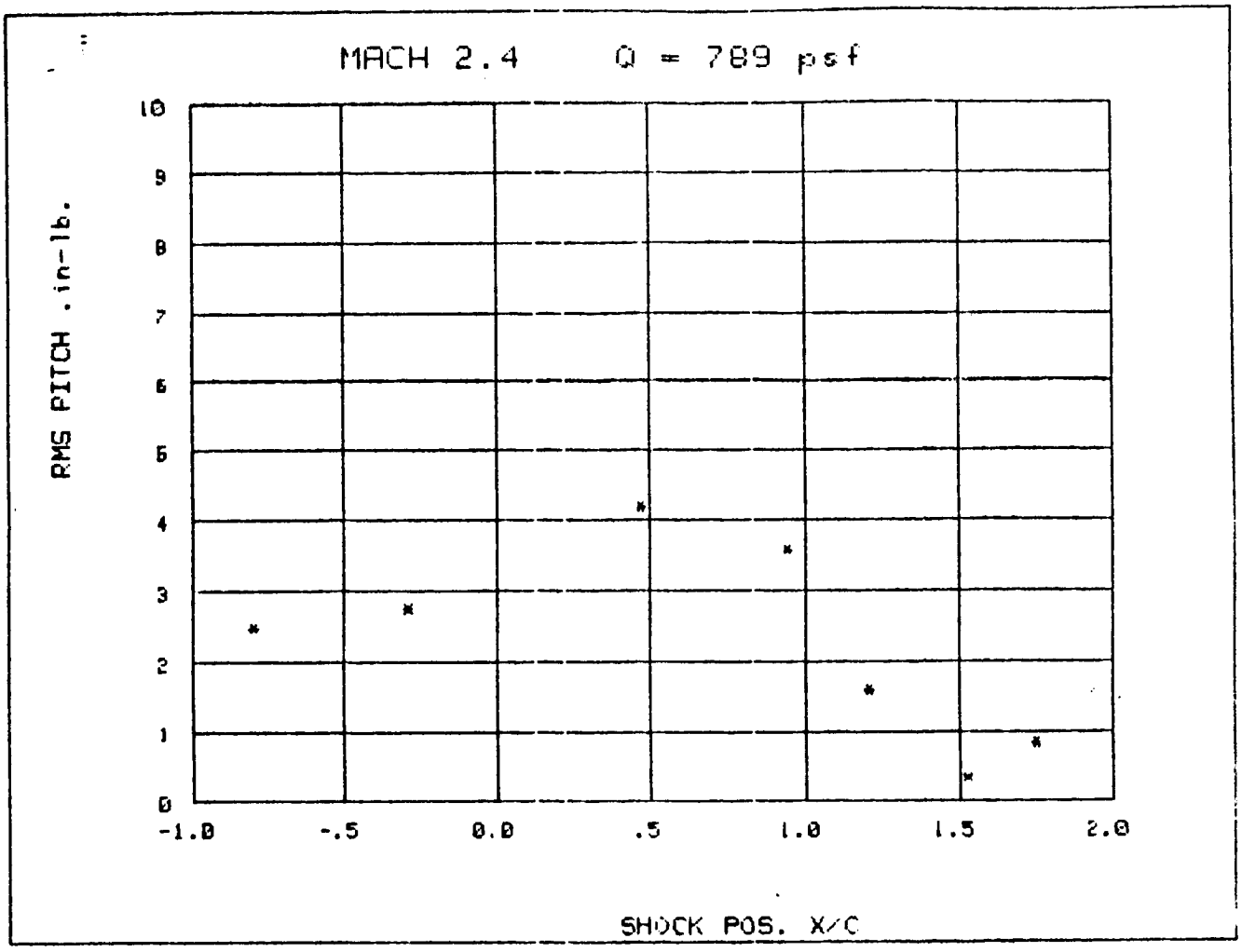


Figure 16(c). DYNAMIC PITCHING MOMENT, M=2.4, q_∞=788psf

KUN 7

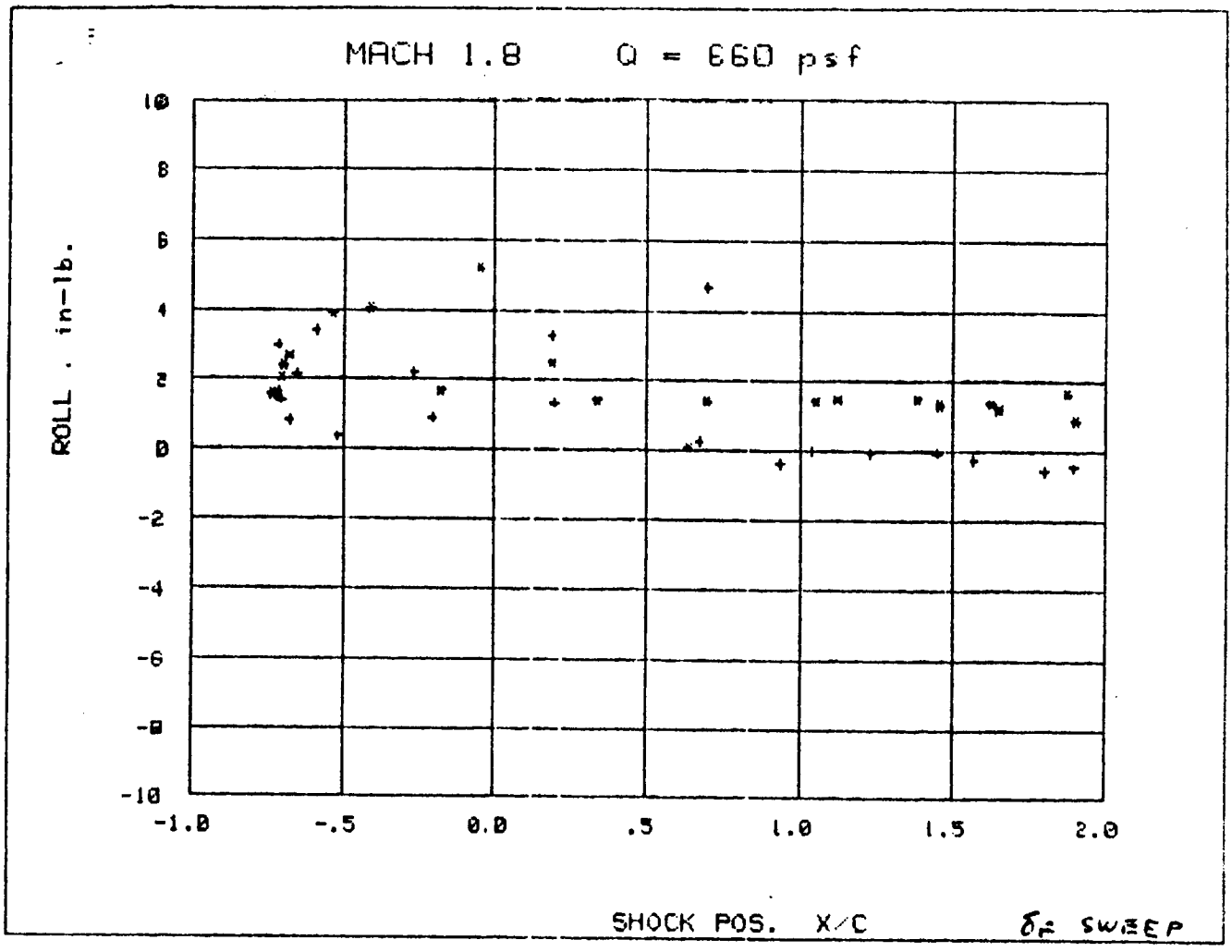


Figure 17(a). STEADY-STATE ROLLING MOMENT, M=1.8, q_∞=660psf

RUN 8

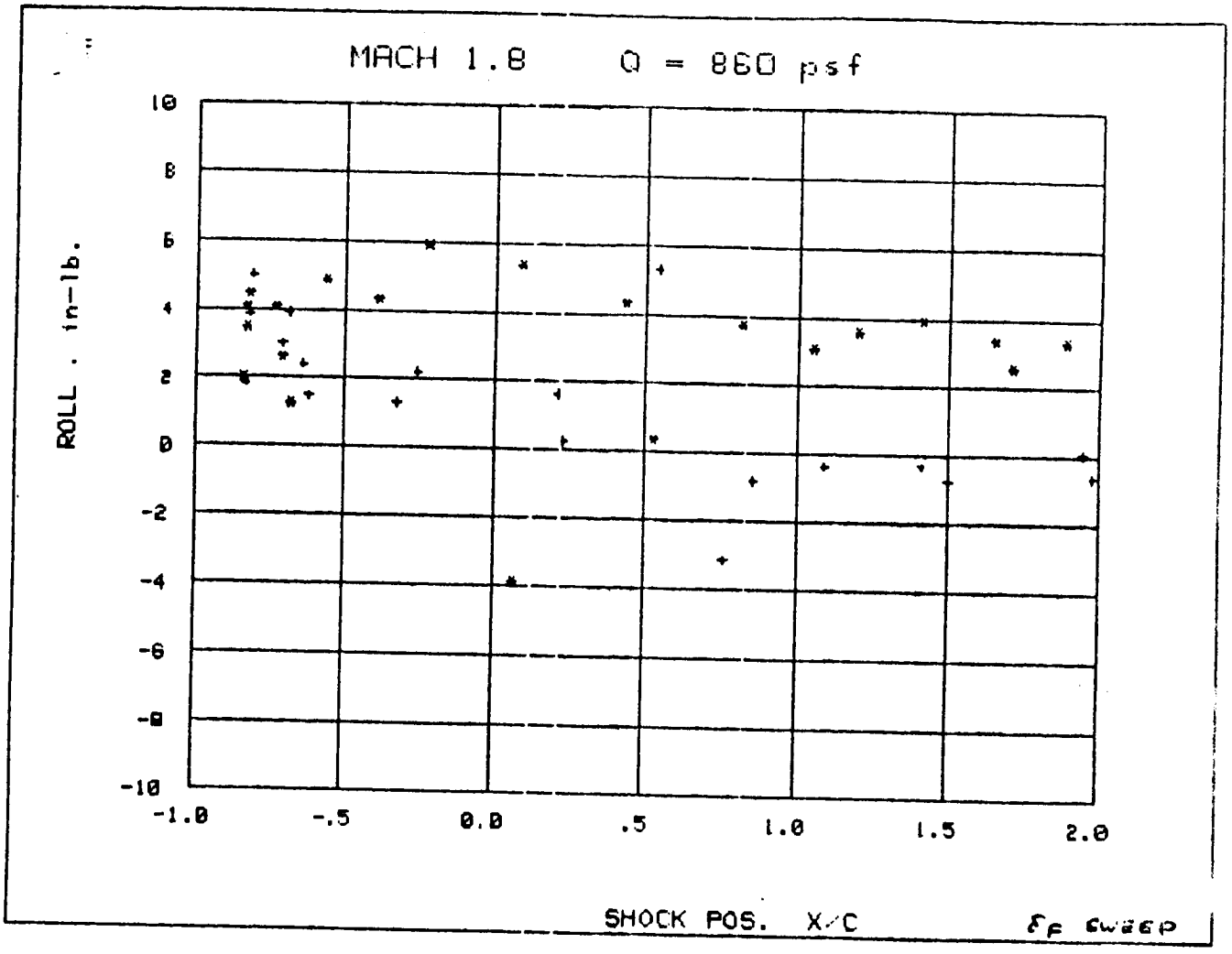


Figure 17(b). STEADY-STATE ROLLING MOMENT, M=1.8, q_∞=860psf

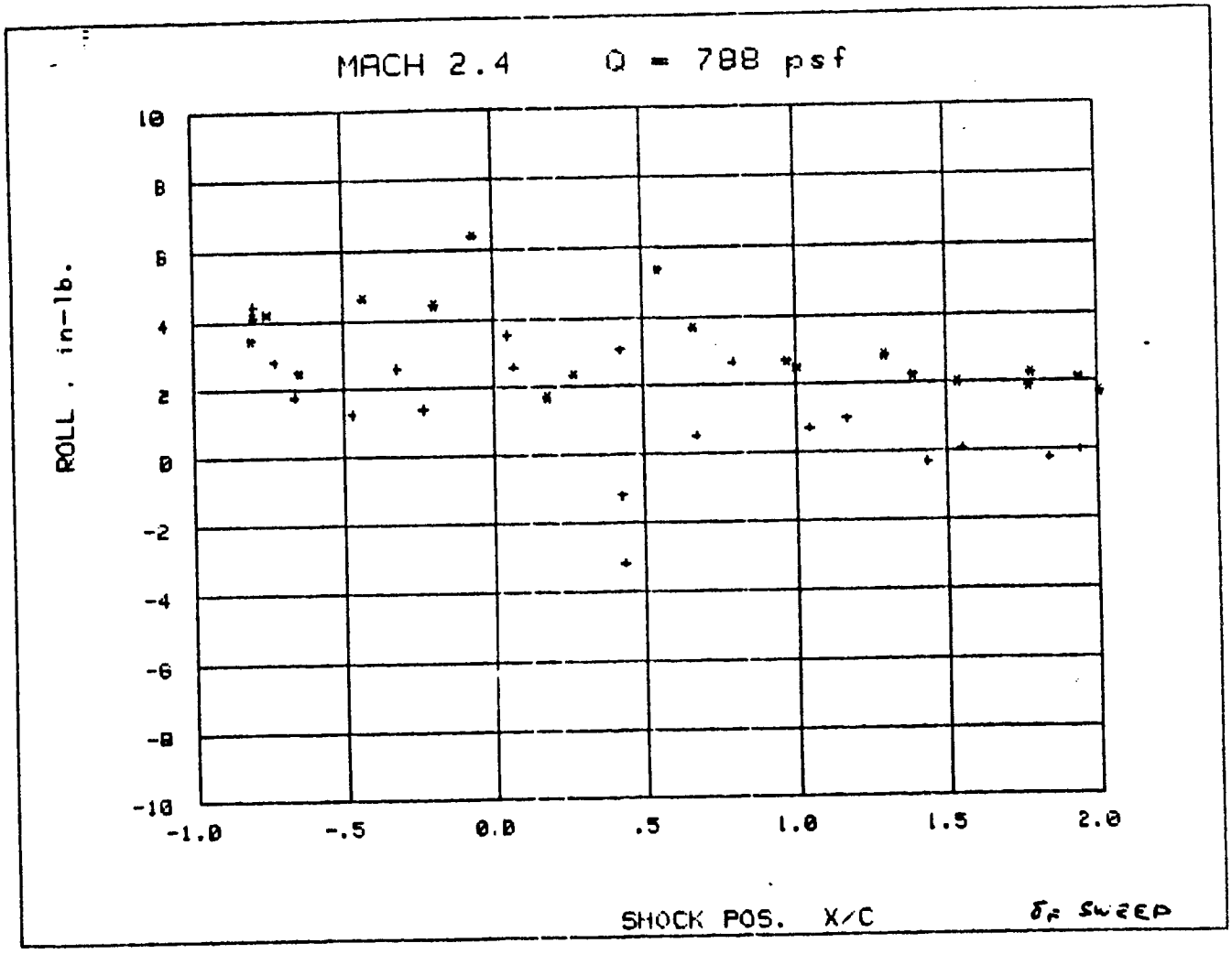


Figure 17(c). STEADY-STATE ROLLING MOMENT, M=2.4, q_∞=788psf

RUN 3

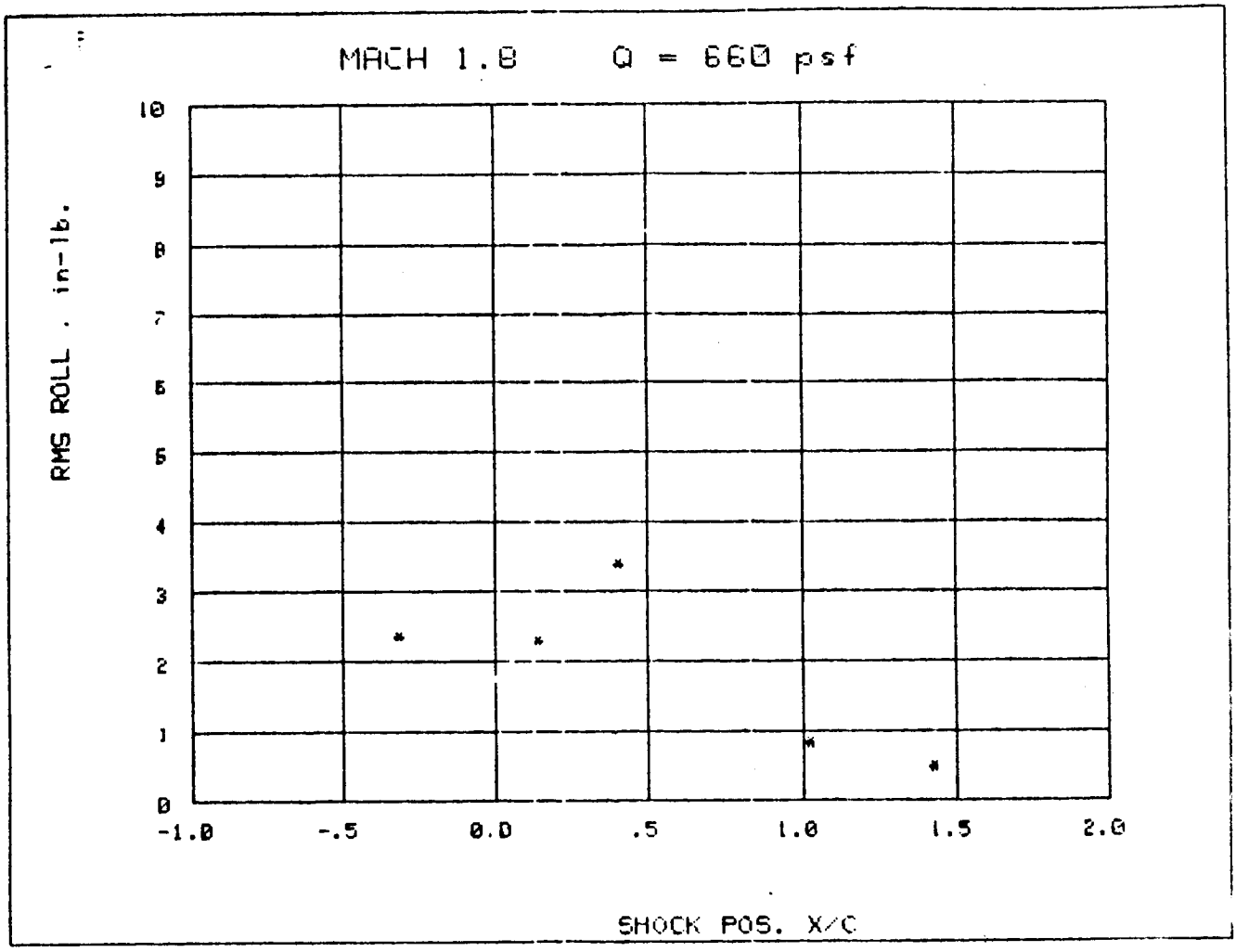


Figure 18(a). DYNAMIC ROLLING MOMENT, M=1.8, q_∞=660psf

RUN 2

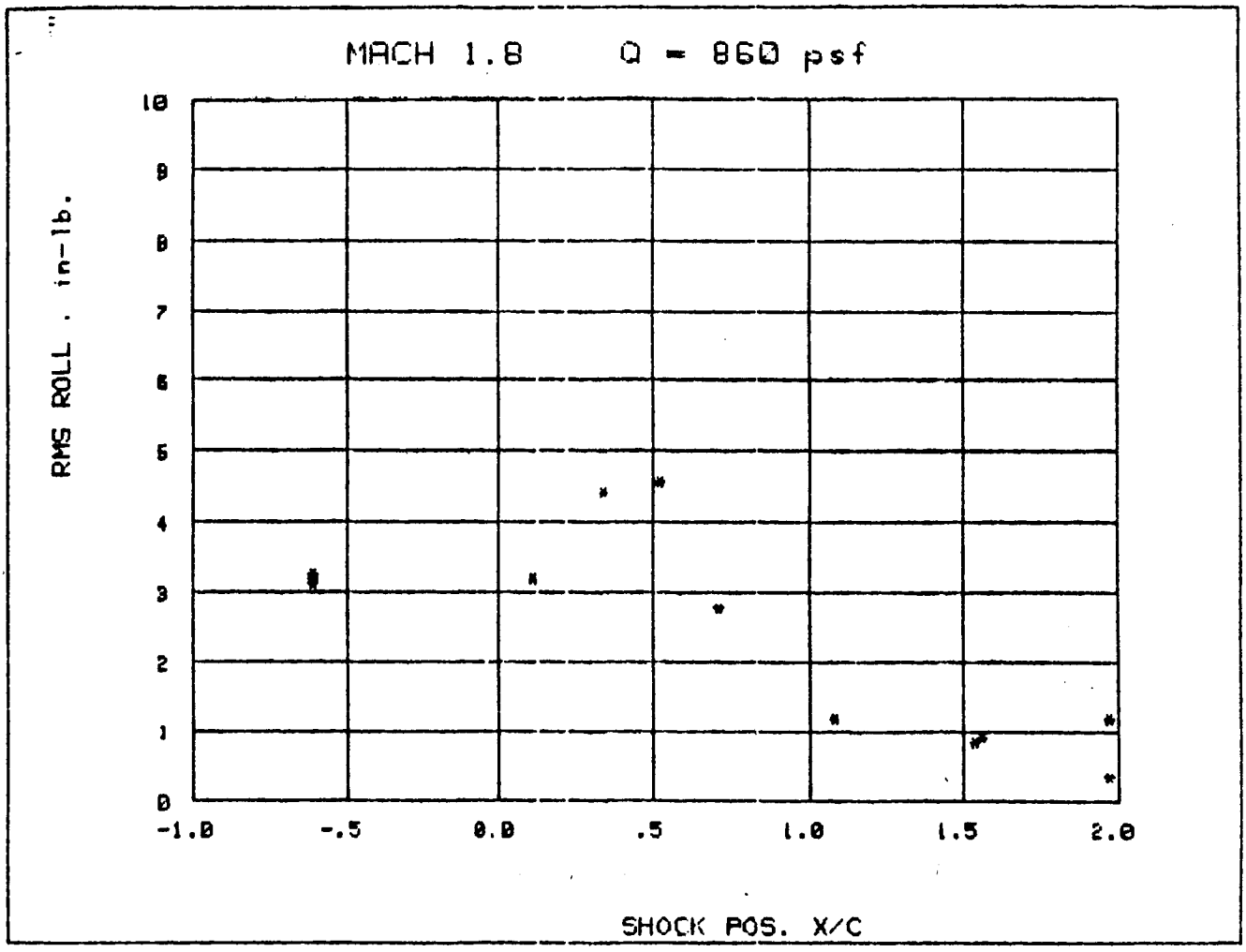


Figure 18(b). DYNAMIC ROLLING MOMENT, M=1.8, q_∞=860psf

RUN 4

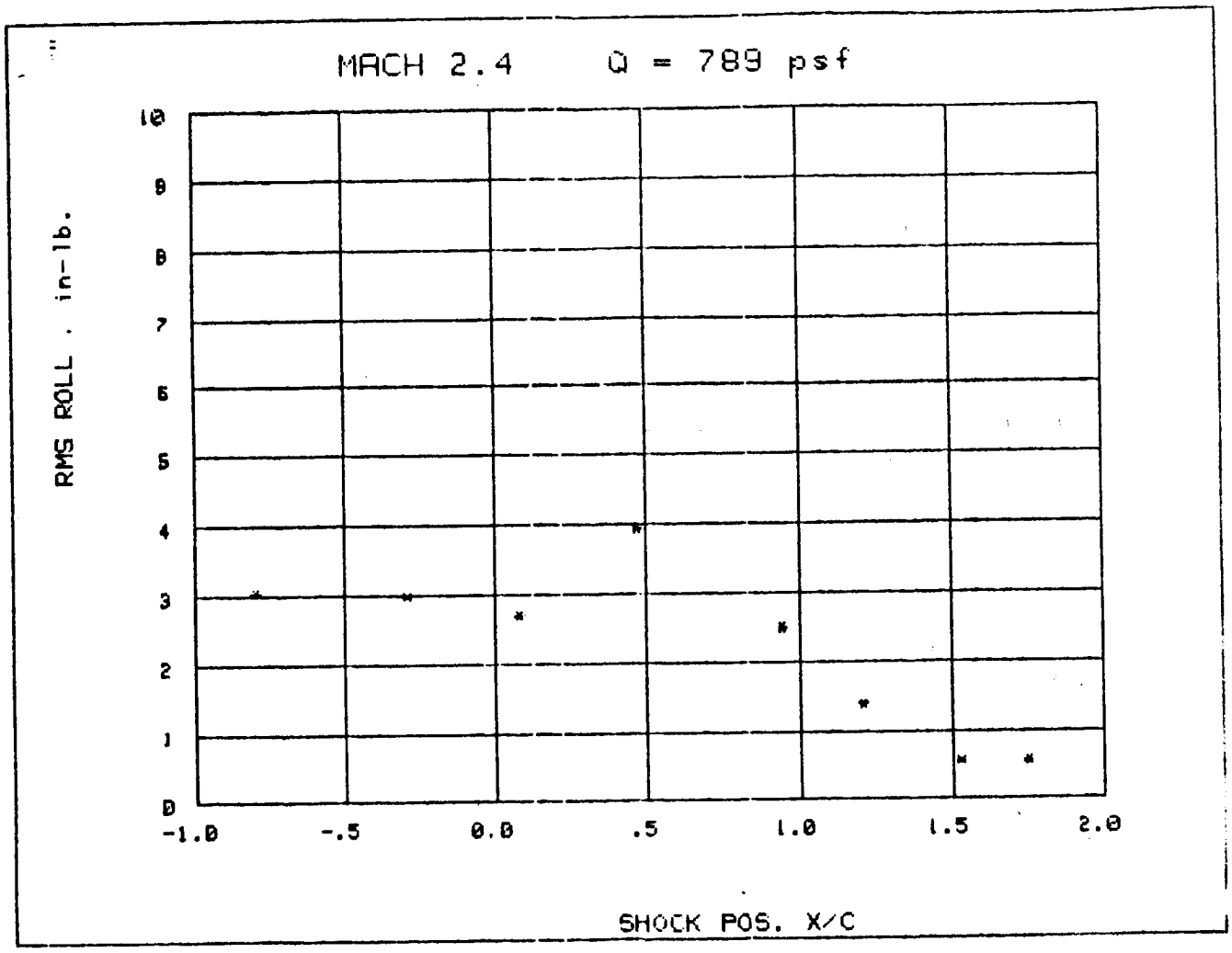


Figure 18(c). DYNAMIC ROLLING MOMENT, M=2.4, q_∞=788psf

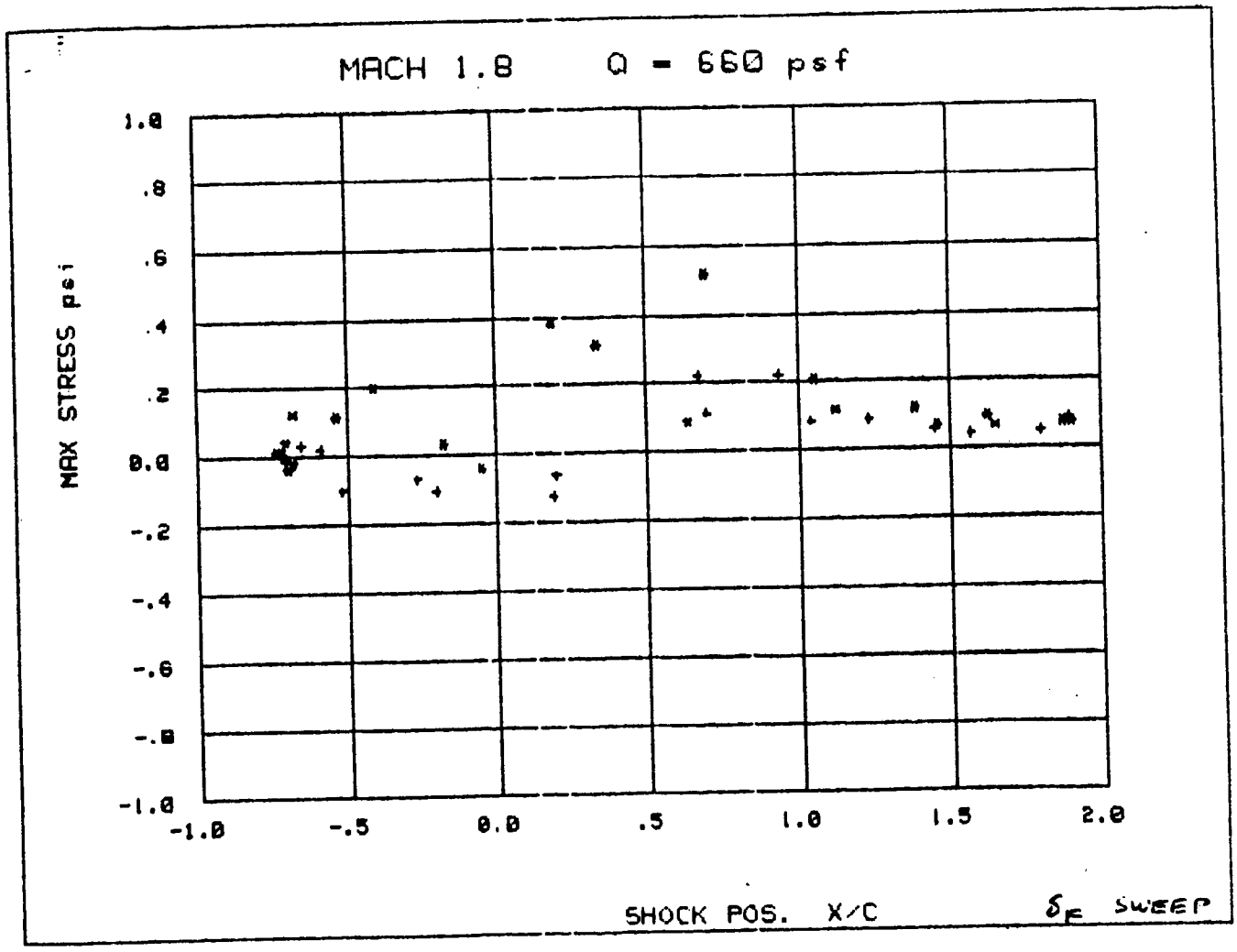


Figure 19(a). STEADY-STATE STRESS DUE TO (F/A + Mc/I)
M=1.8, q =660psf

RUN 8

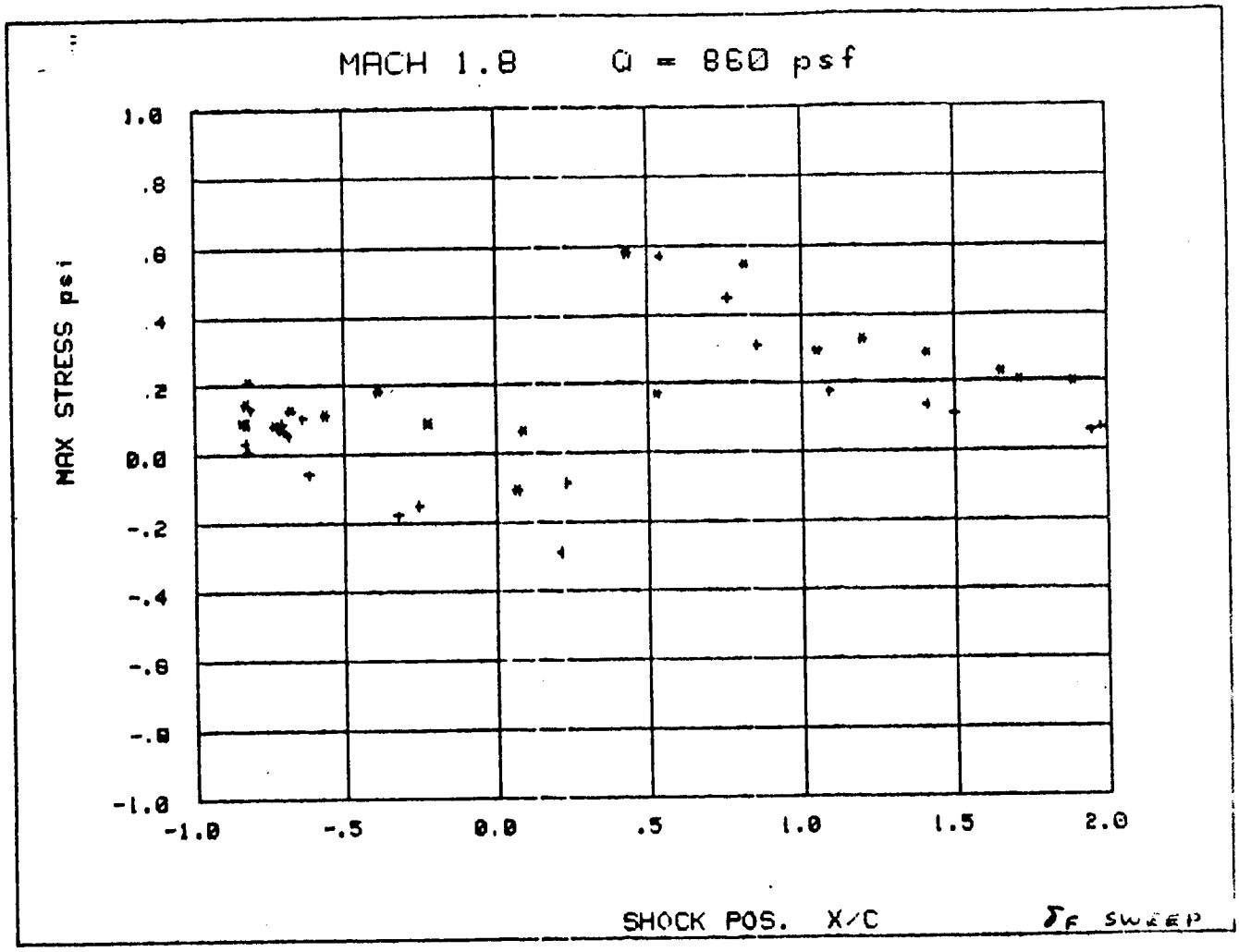


Figure 19(b). STEADY-STATE STRESS DUE TO (F/A + Mc/I)
M=1.8, q =860psf

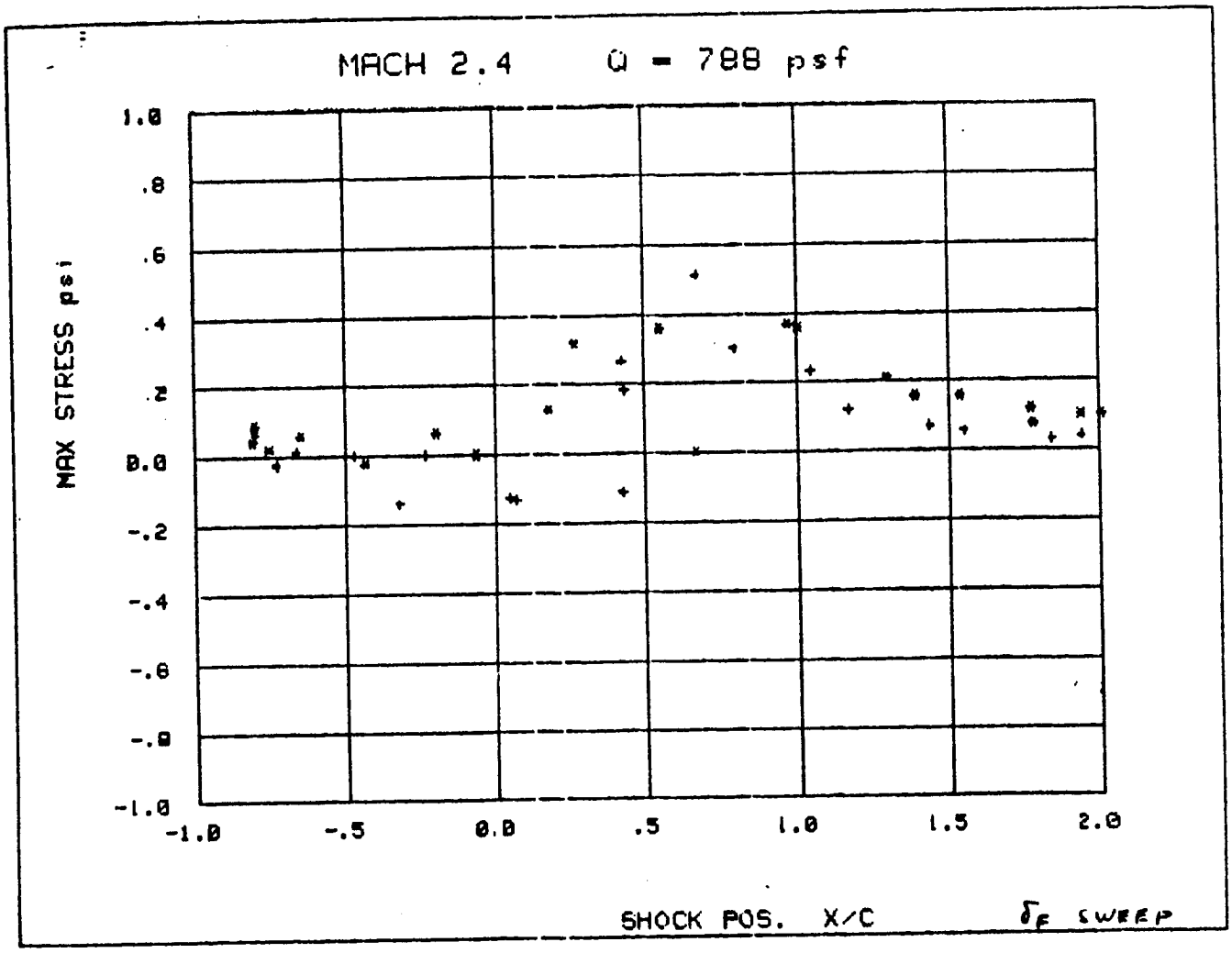


Figure 19(c). STEADY-STATE STRESS DUE TO (F/A + Mc/I)
M=2.4, q =788psf

RUN 3

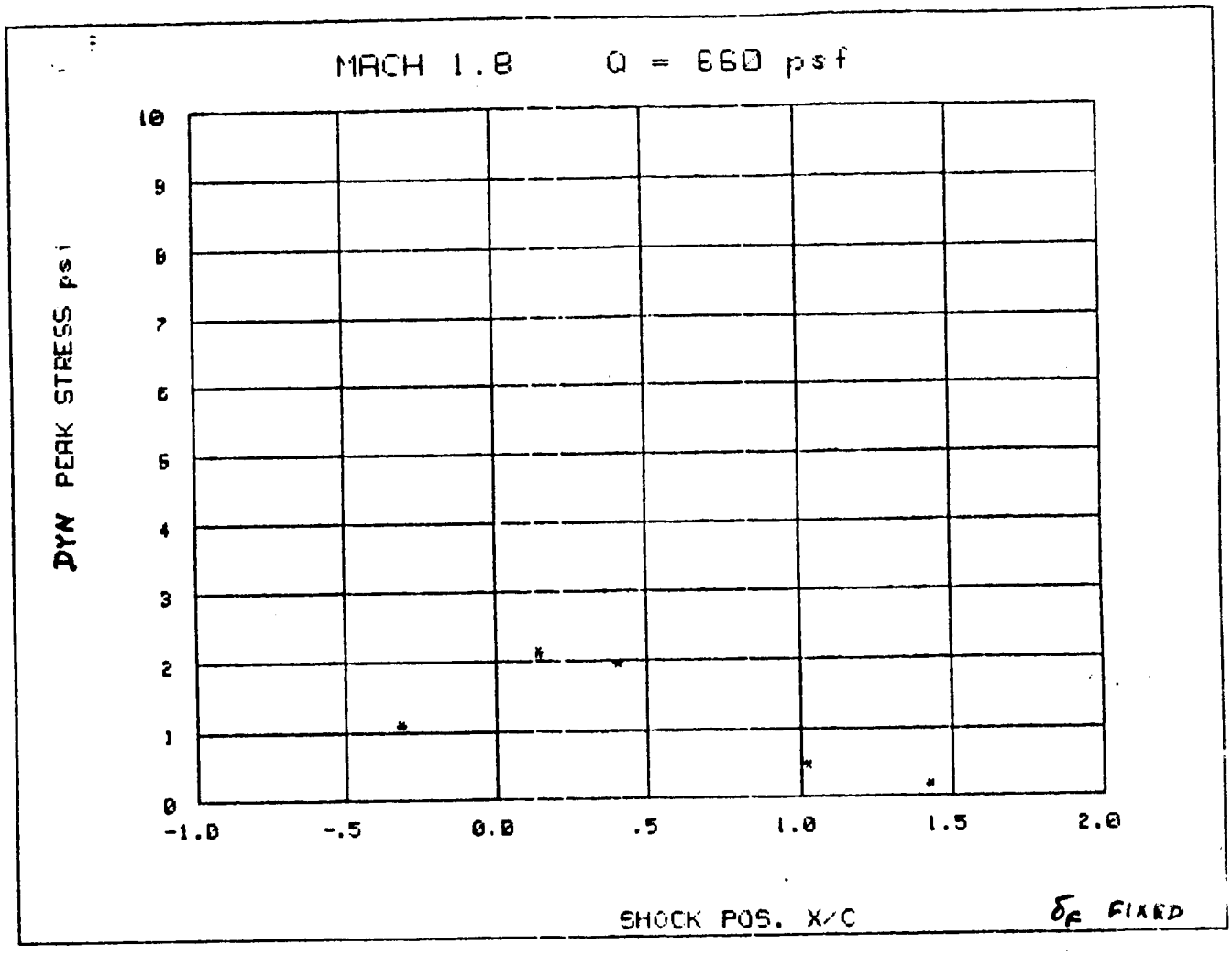


Figure 20(a). DYNAMIC PEAK STRESS DUE TO $(F_{rms}/A + M_{rms}c/I)4$
M=1.8, q =660psf

RUN 2

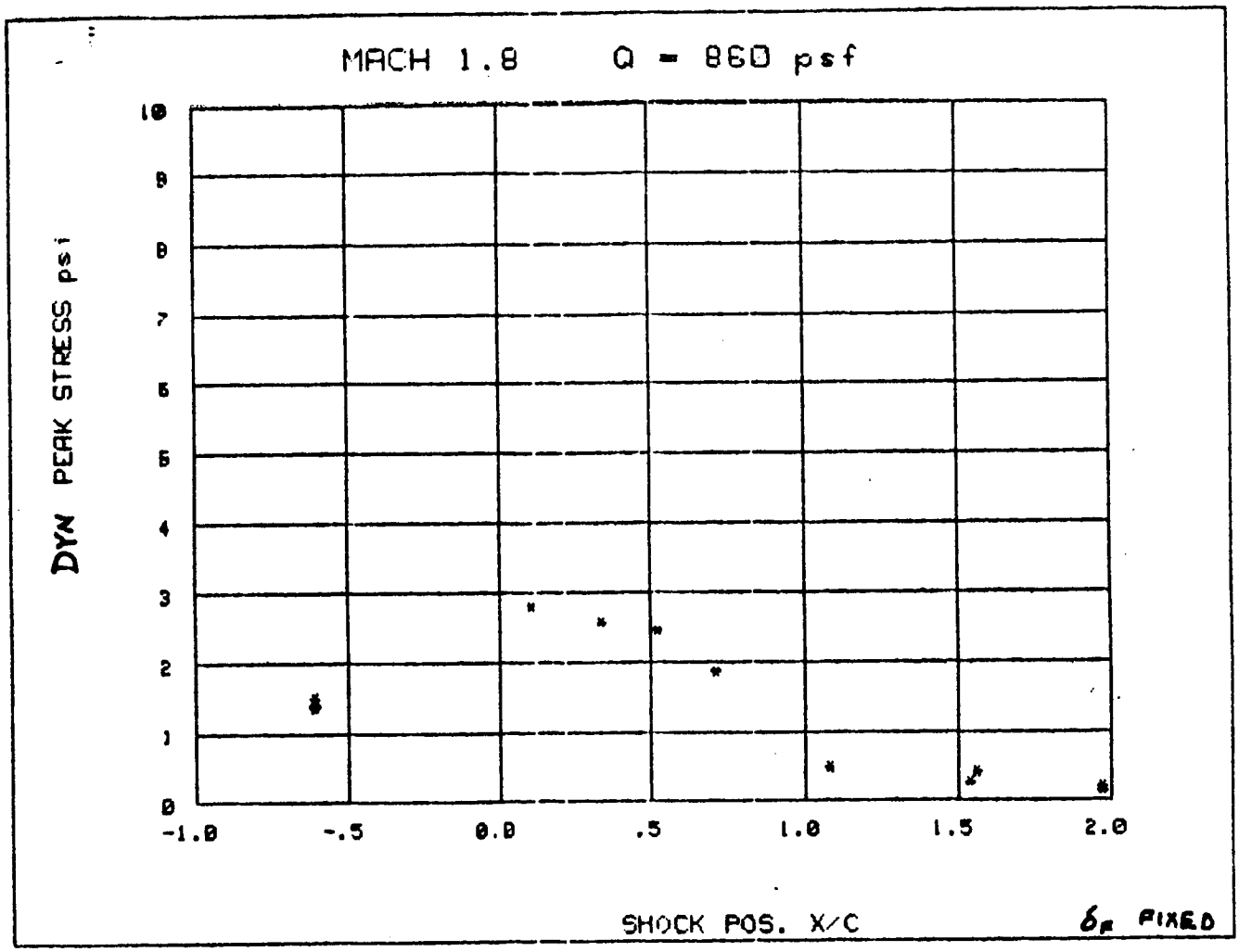


Figure 20(b). DYNAMIC PEAK STRESS DUE TO $(F_{rms}/A + M_{rms}c/I)4$
M=1.8, q =860psf

RUN 4

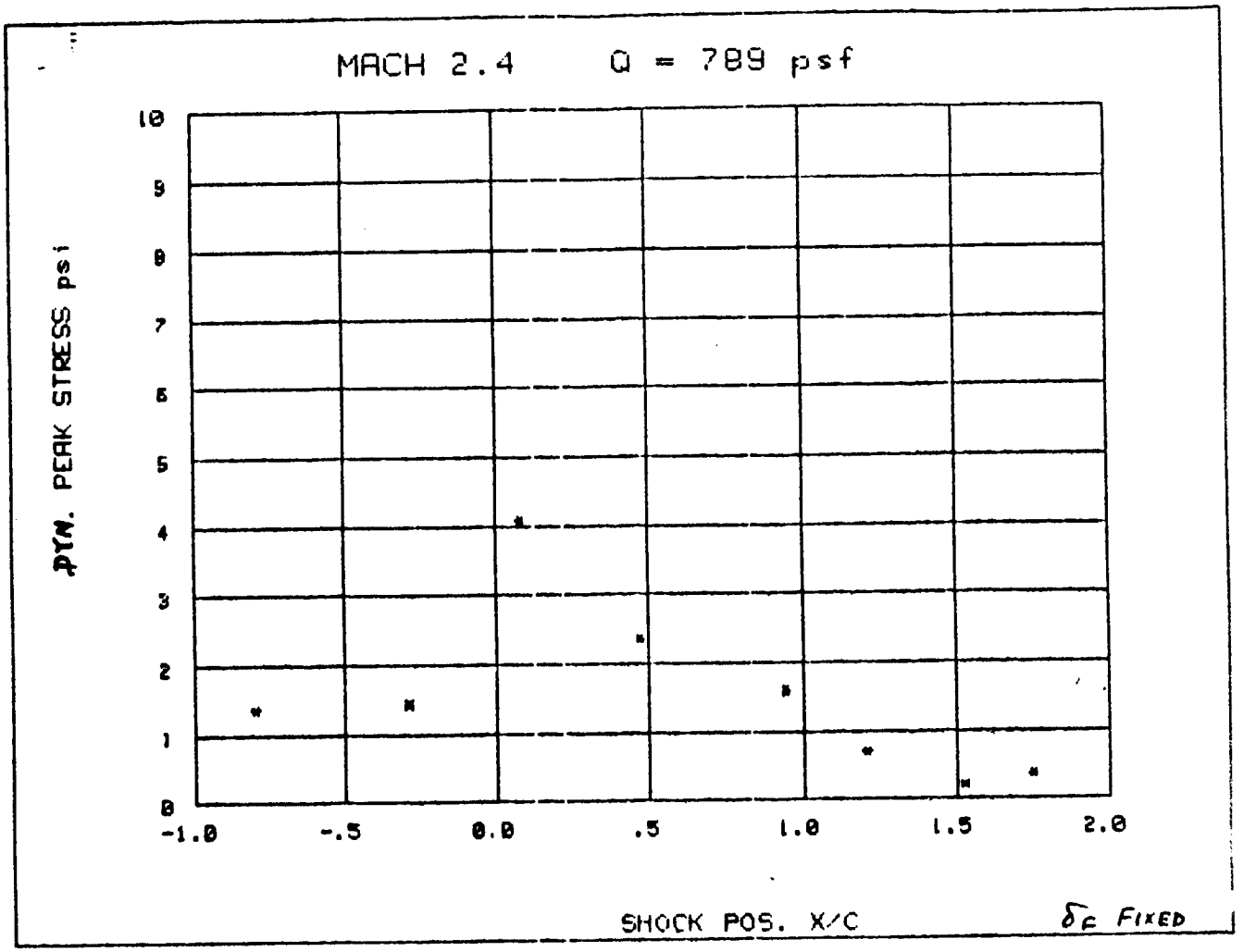


Figure 20(c). DYNAMIC PEAK STRESS DUE TO $(F_{rms}/A + M_{rms}c/I)4$
M=2.4, q =788psf

CHANNEL 3.0
RUN7A

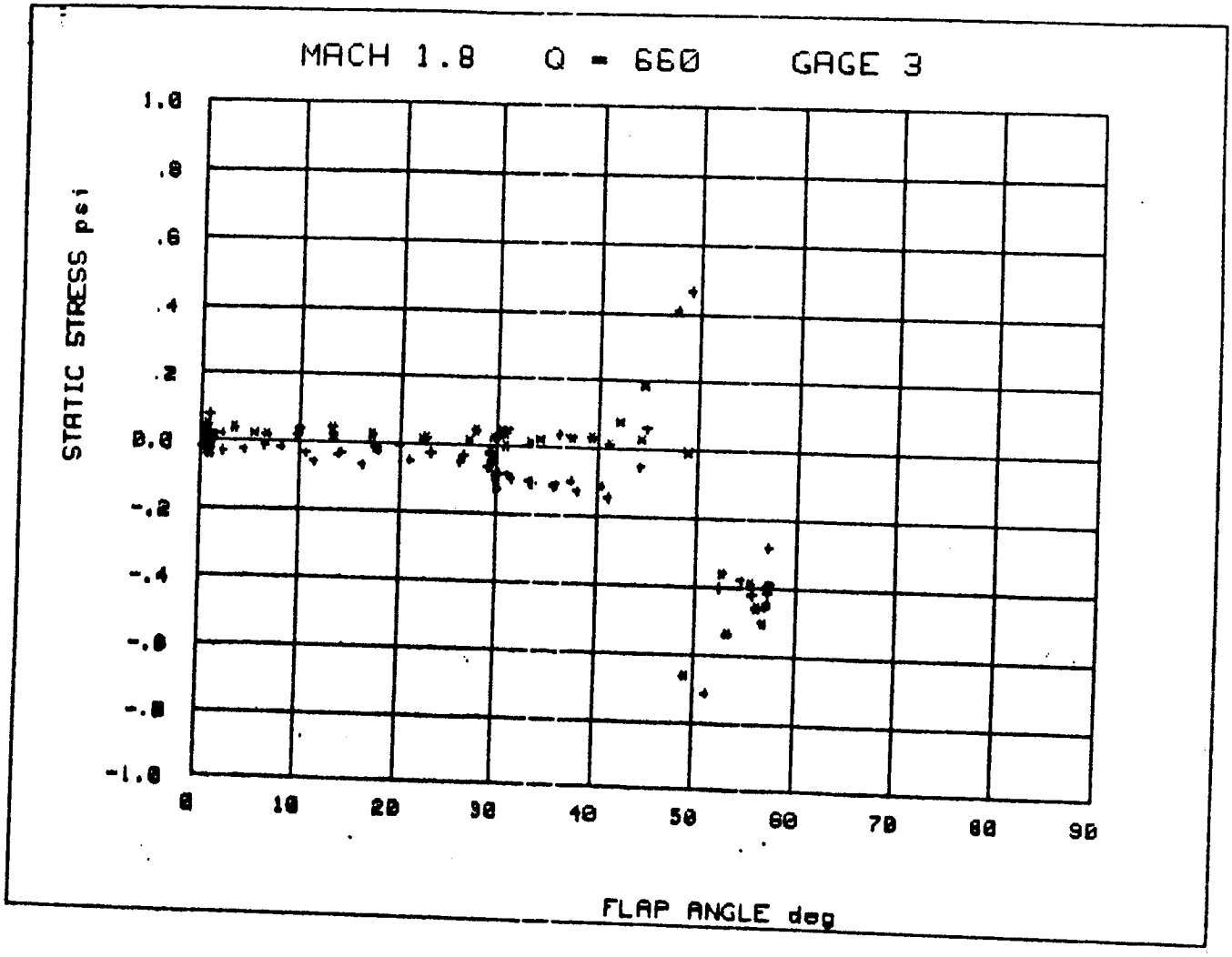


Figure 21(a). LOCAL STEADY-STATE STRESSES, C703, M = 1.8, q_∞ = 660psf

CHANNEL 7.0
RUN7A

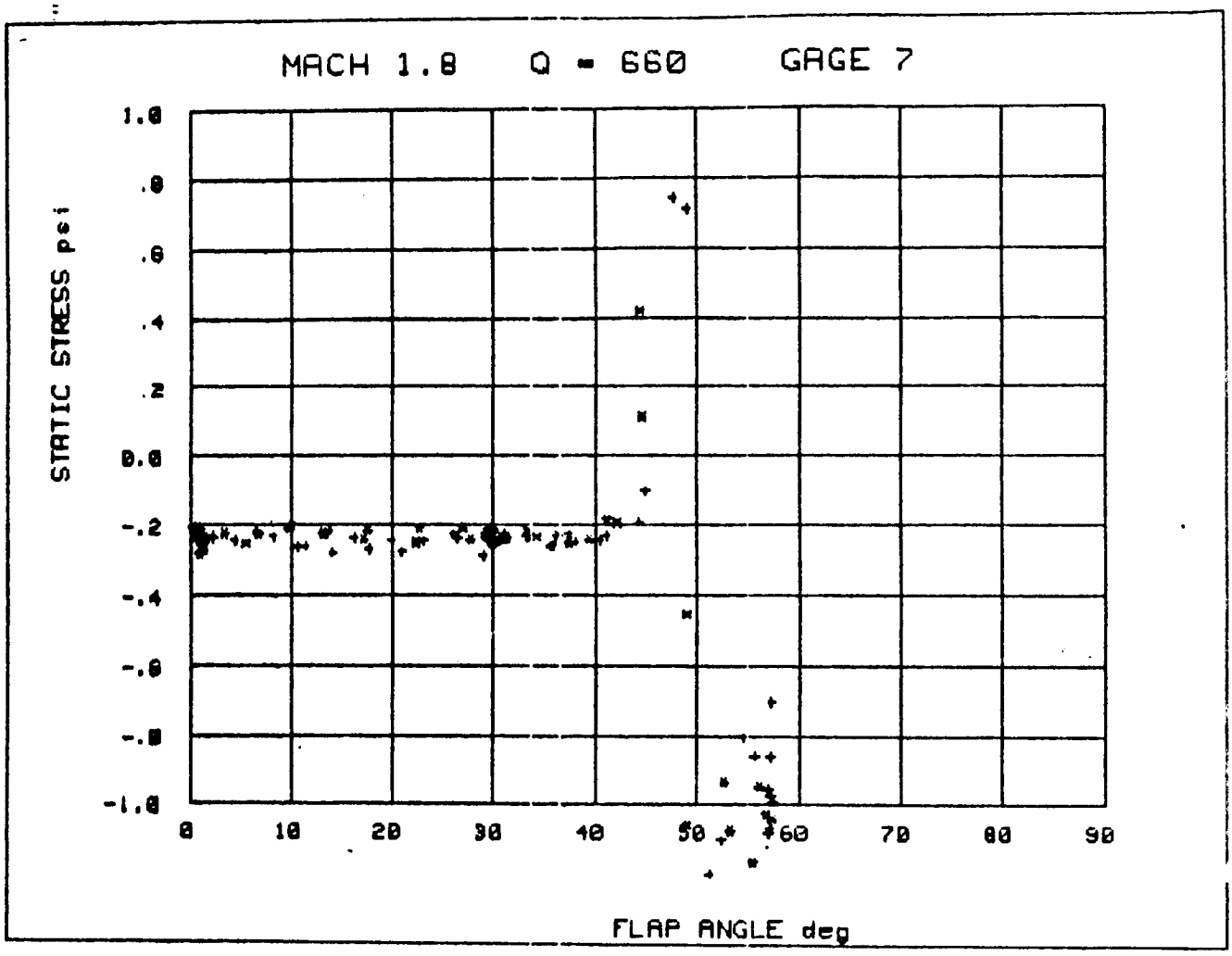


Figure 21(b). LOCAL STEADY-STATE STRESSES, C707, $M = 1.8$, $q_\infty = 660$psf

CHANNEL 3.0
RUN6B

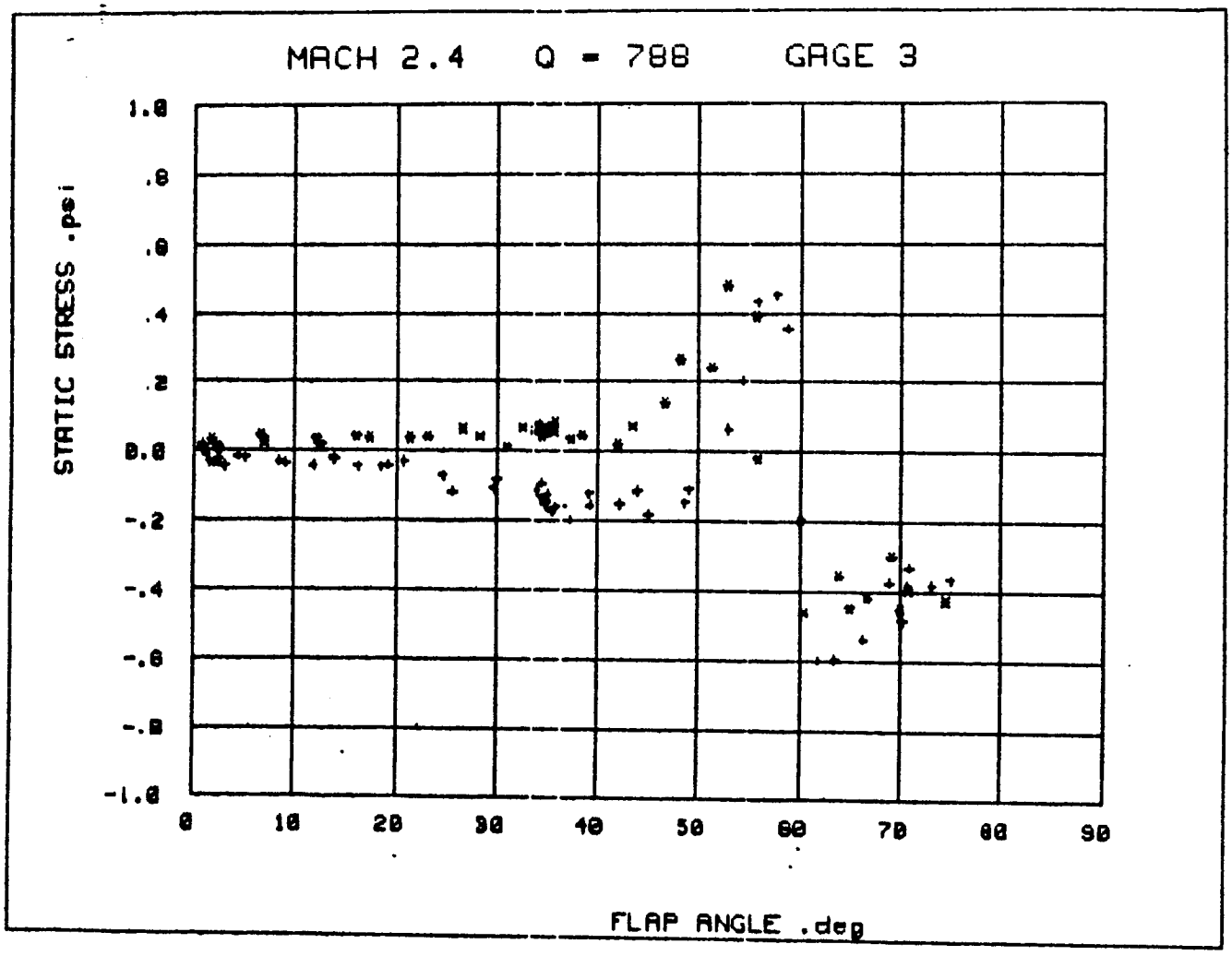


Figure 21(c). LOCAL STEADY-STATE STRESSES, C703, $M = 2.4$, $q_\infty = 788$psf

CHANNEL 7.0
RUN6B

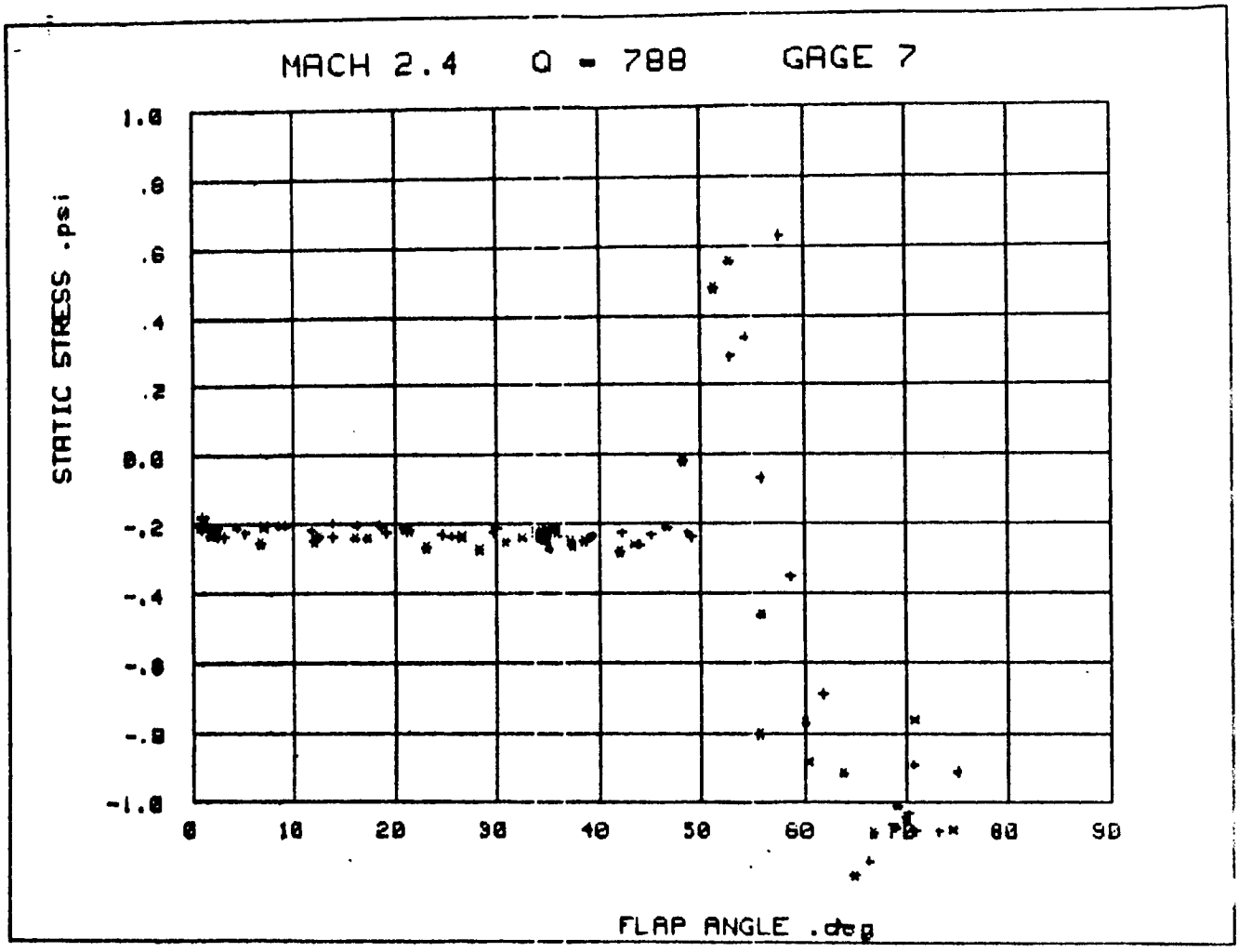


Figure 21(d). LOCAL STEADY-STATE STRESSES, C707, $M = 2.4$, $q_\infty = 788$psf

CHANNEL 3.0
RUN7A

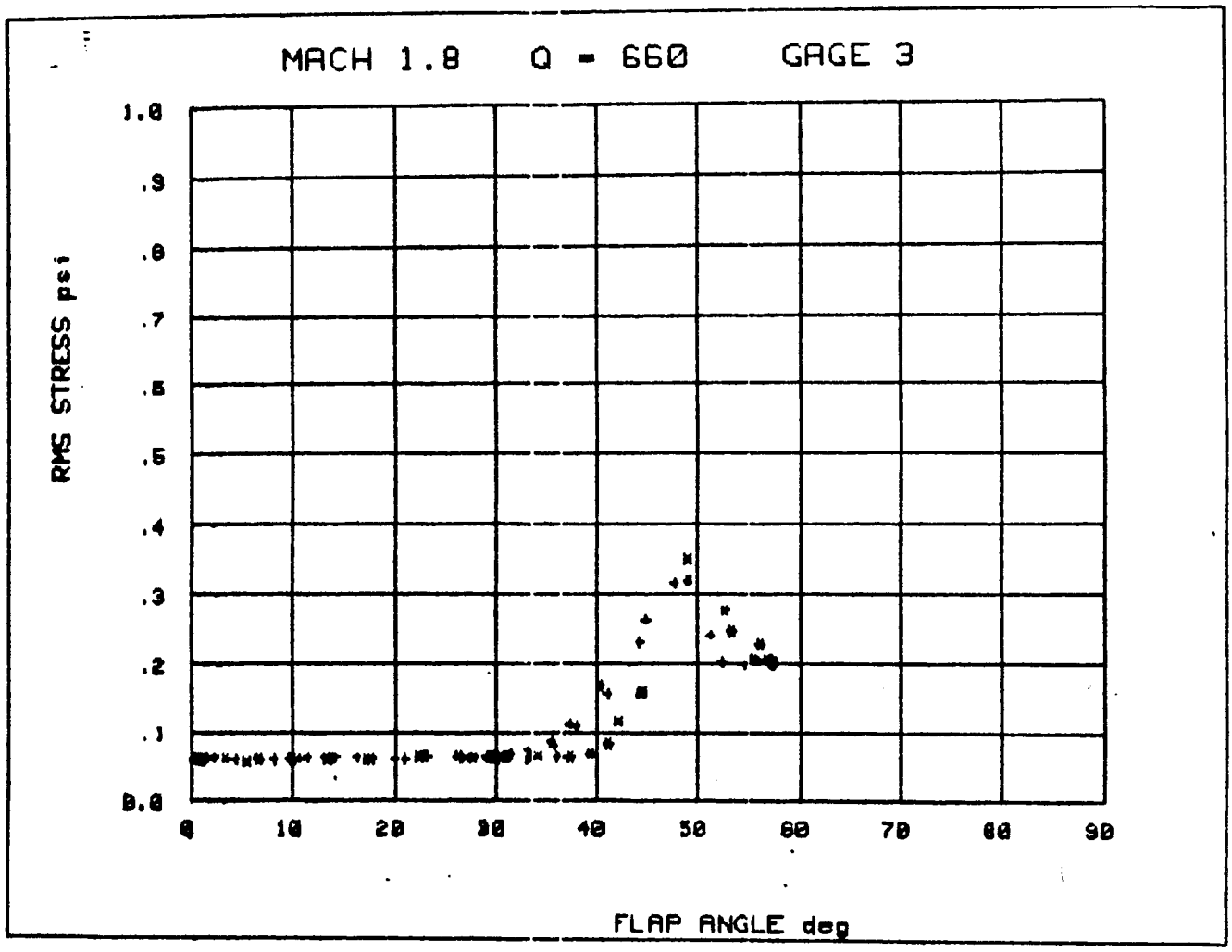


Figure 22(a). LOCAL DYNAMIC STRESSES, C703, $M = 1.8$, $q_\infty = 660$psf

CHANNEL 7.0
RUN7A

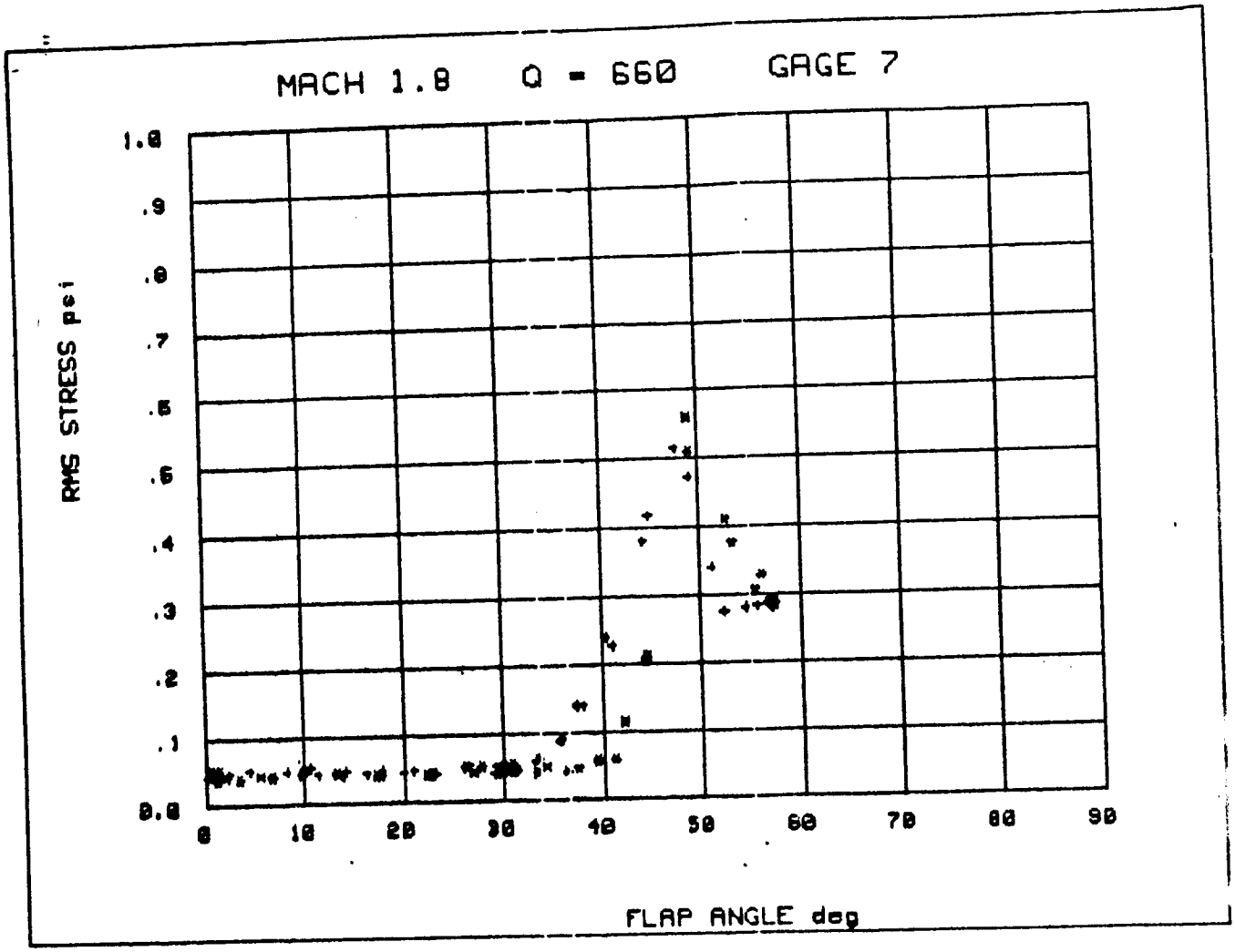


Figure 22(b). LOCAL DYNAMIC STRESSES, C707, $M = 1.8$, $q_\infty = 660$psf

CHANNEL 3.0
RUN6B

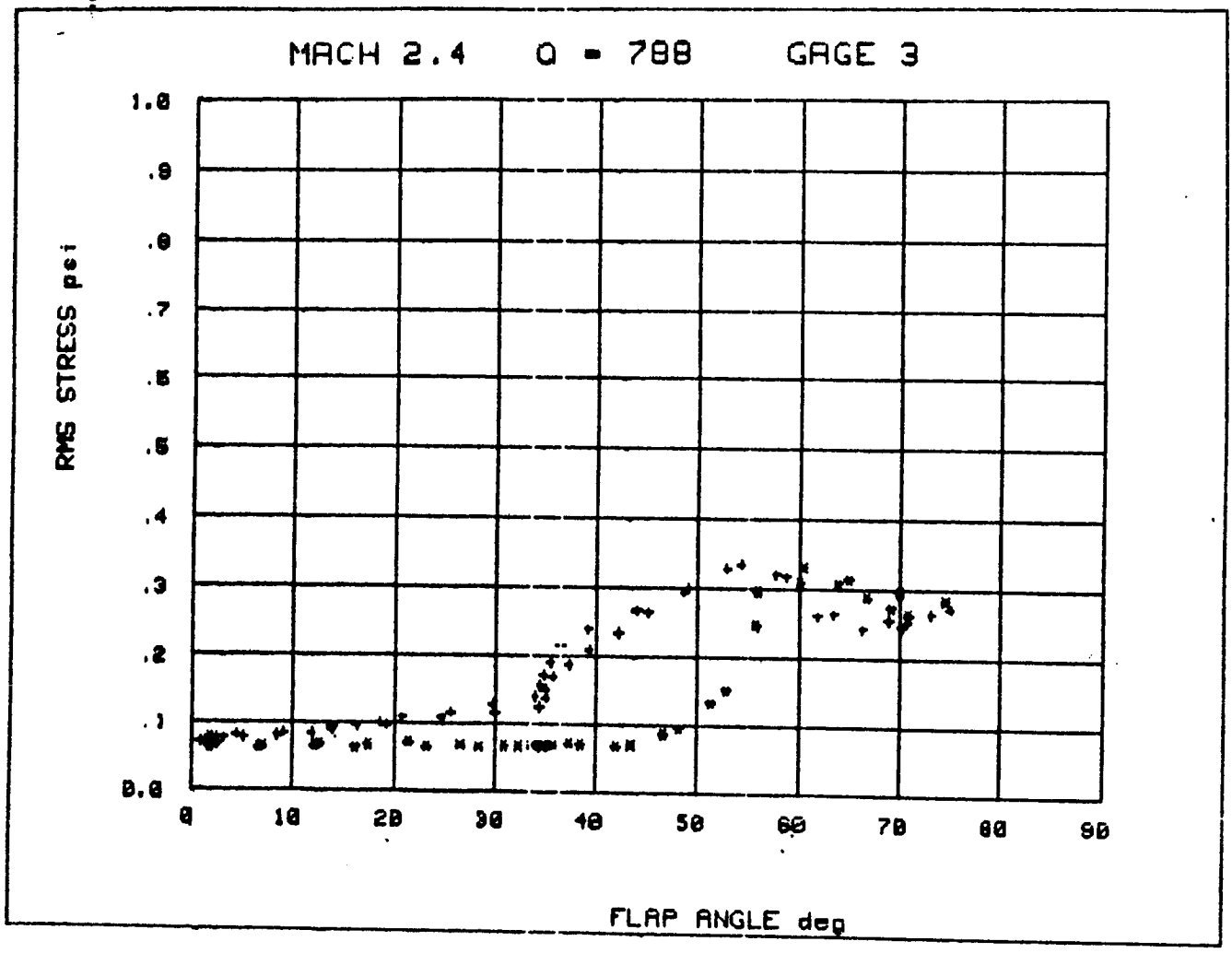


Figure 22(c). LOCAL DYNAMIC STRESSES, C703, $M = 2.4$, $q_\infty = 788$psf

CHANNEL 7.0
RUN6B

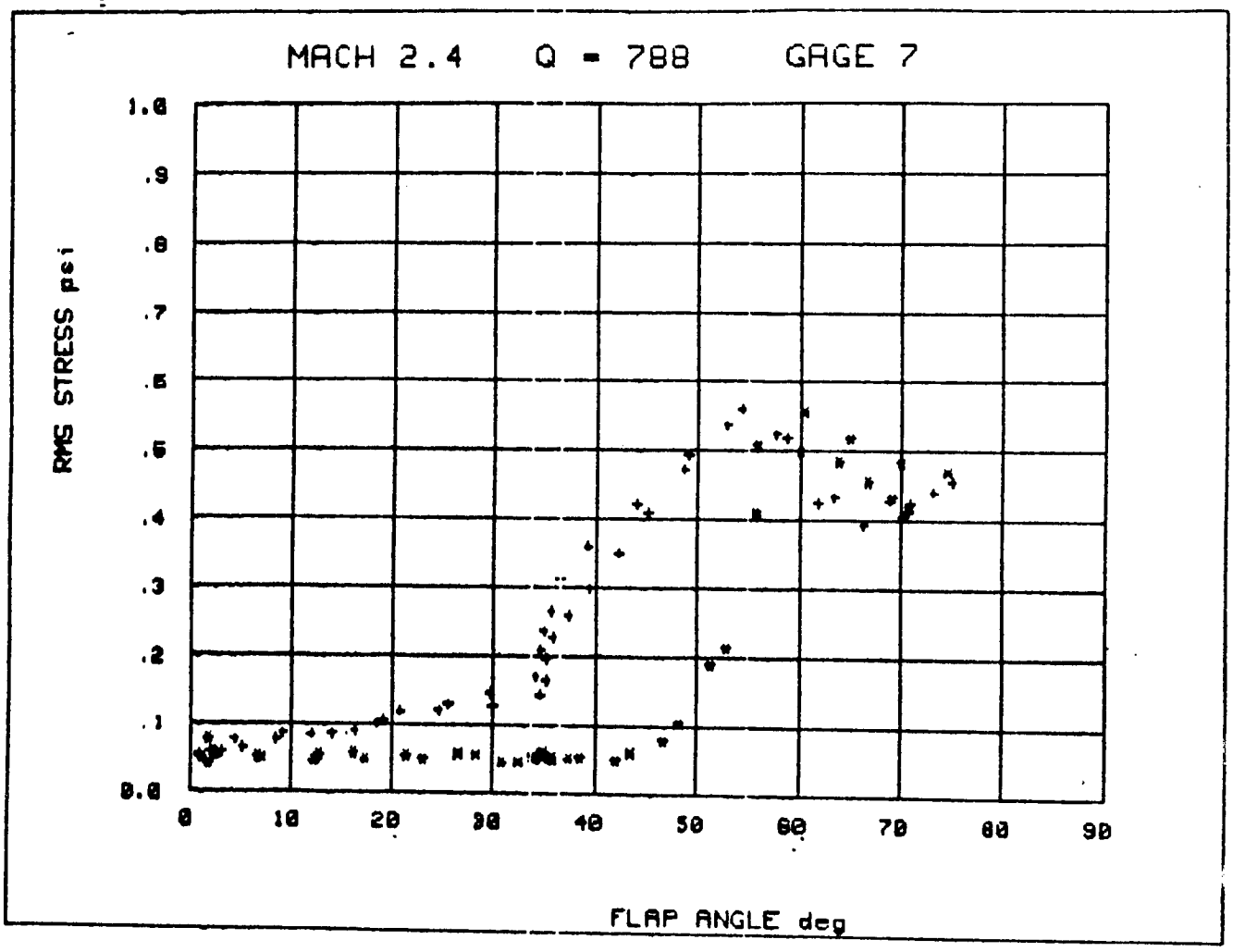


Figure 22(d). LOCAL DYNAMIC STRESSES, C707, $M = 2.4$, $q_\infty = 788$psf