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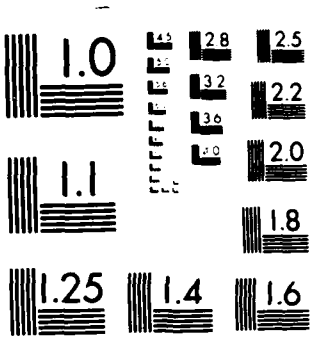

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TECHNICAL REPORT RD-82-6

A COLLECTION OF DATA FROM TEST OF FULL-SCALE MISSILES TO DEFINE PLUME INFLUENCE ON AERODYNAMICS

T. A. Martin
Systems Simulation and Development
Directorate
US Army Missile Laboratory

APR 19 1983
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September 1980

U.S. ARMY MISSILE COMMAND
Redstone Arsenal, Alabama 35809

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Data obtained during a series of tests to determine plume influence on the aerodynamics of a typical high thrust missile are presented. Pressure measurements were obtained over the rear surface of the missile as the sled carried it through the Mach number range of 0.8 to 1.6 as the motor was fired. Portions of these data are influenced by flow disturbances emunated from the carrier sled, other portions are free of this effect. A separate report referenced herein discusses the interference free data. This complete compilation of the data

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20. is offered to allow extraction of the meaningful information present in this unique investigation.

LIST OF SYMBOLS

CT	Coefficient fo Thrust, Thrust/q x base area
Dynamic	Dynamic Pressure (q) PSF
P(N), PS(N)	Local Surface Pressure See Figs 3 and 4 for location.
PB	Base Pressure
PA	Ambient Pressure
PC	Combustion Chamber Pressure
P Ratio	Ratio of Surface Pressure at Stated Location to PA

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I. INTRODUCTION

The information presented in this report consists of surface pressures measured on an actual high thrust rocket during motor firings. The rocket was mounted on top of a sled and tested over the velocity range of $0.8 \leq M_\infty \leq 1.6$ at the Holloman Air Force Base High Speed Test Track Facility. A typical photograph of the test article and the sled are shown in Figure 1. A sketch showing major dimensions is presented in Figure 2. The intent of this report is to make available a complete collection of data obtained in a series of tests to study the aerodynamic influences of a large underexpanded plume. A discussion of the test findings are published in technical report RD-80-8, entitled "Investion of Plume Induced Separation at Supersonic Velocities". It is pointed out in that report that portions of the data contained herein are subject to interpretation. This arises because the data is influenced by sled generated disturbances. The cited report describes the extent of involvement and treats that portion of the data that is least affected. It is felt that the other portions of the data contain a measure of useful information, such as relative responses for different cases to a given parameter or levels indicating onset or relief of plume influence.

The data is presented to show that the test was conducted in two phases. The first attempt to obtain the desired information is denoted as Run numbers 5F-"B"$_N$. This indicated that a 6-inch diameter test rocket was fired during each run. Orifice locations for this series are shown in Figure 3 and test results are presented in Appendices A through E. Runs designated as 5F-"F"$_N$ were completed after modifying the tests hardware to produce a 7-inch diameter motor. The orifice placement for this series is shown in Figure 4, and test results are presented in Appendices F through J.

After completion of the "B" series of runs, an evaluation of the data indicated that the presence of the sled influenced the flow quality over the test article to some extent until the sled exceeded M=1.5. In an attempt to obtain interference free data at lower Mach numbers, the sled and test article were modified. The missile support pylon was lengthened to position the test article more forward and higher than its original position. The rocket diameter was increased from 6 to 7 inches to provide space to inclose pressure lead lines, which had been routed along the exterior, within the test article envelope. The splitter plate on top of the sled was modified by extending and sweeping the leading edge. Additionally, plates were afixed to the sides in an attempt to entrain air flow beneath this plate.

After these alterations the "F" series runs were conducted. An examination of the results indicate that, generally, the data obtained above M=1.4 is free of unwanted flow disturbances.

Test results presented in Appendices A through J contain tabulated data to show surface pressures in ratio to ambient pressures, a velocity profile of each run, and a thrust history. It also contains typical surface pressures recorded at and near photographs obtained with syncroballistic cameras to show the plume shapes at various free stream Mach numbers and thrust levels.

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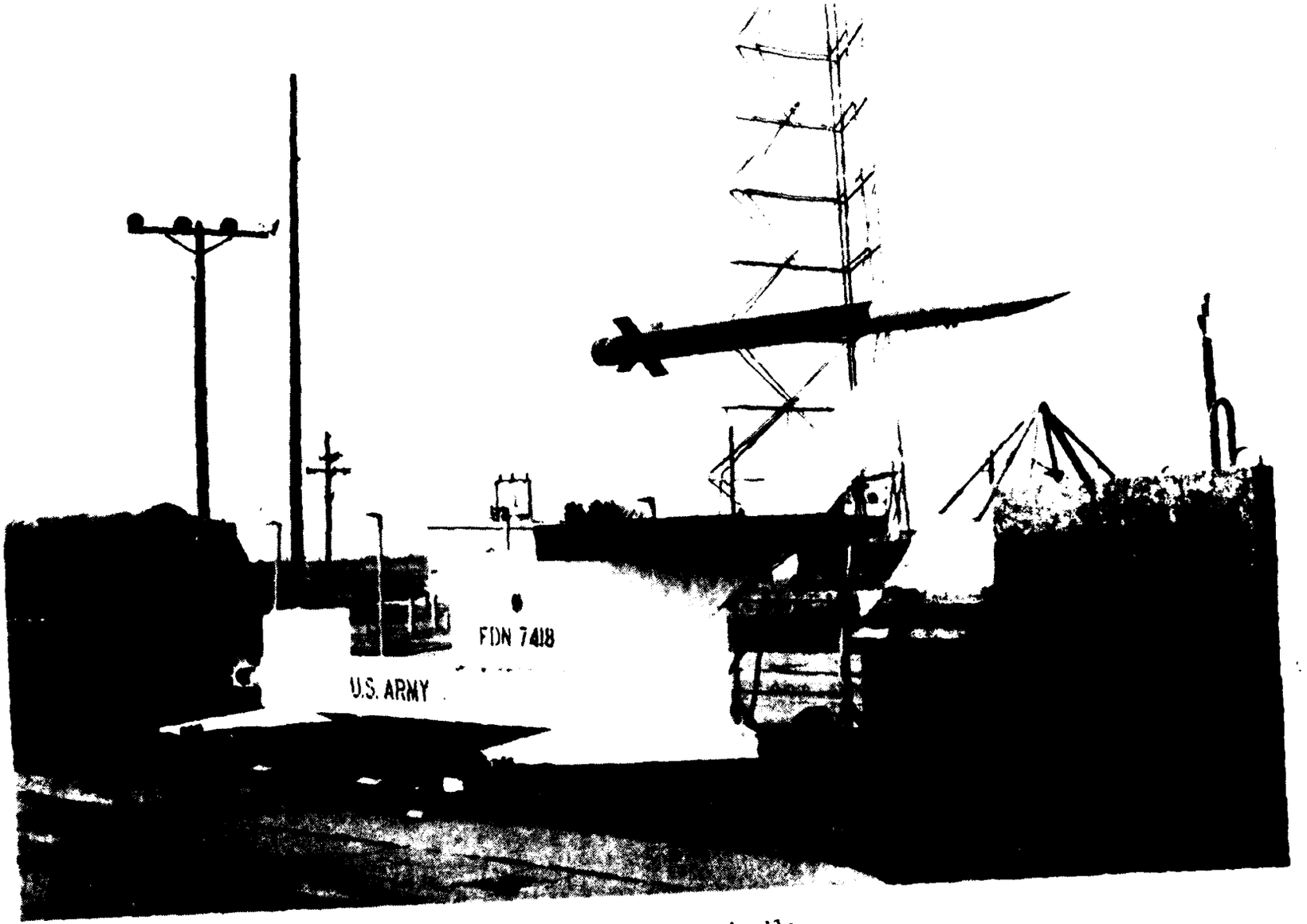


Figure 1. Sled and test missile.

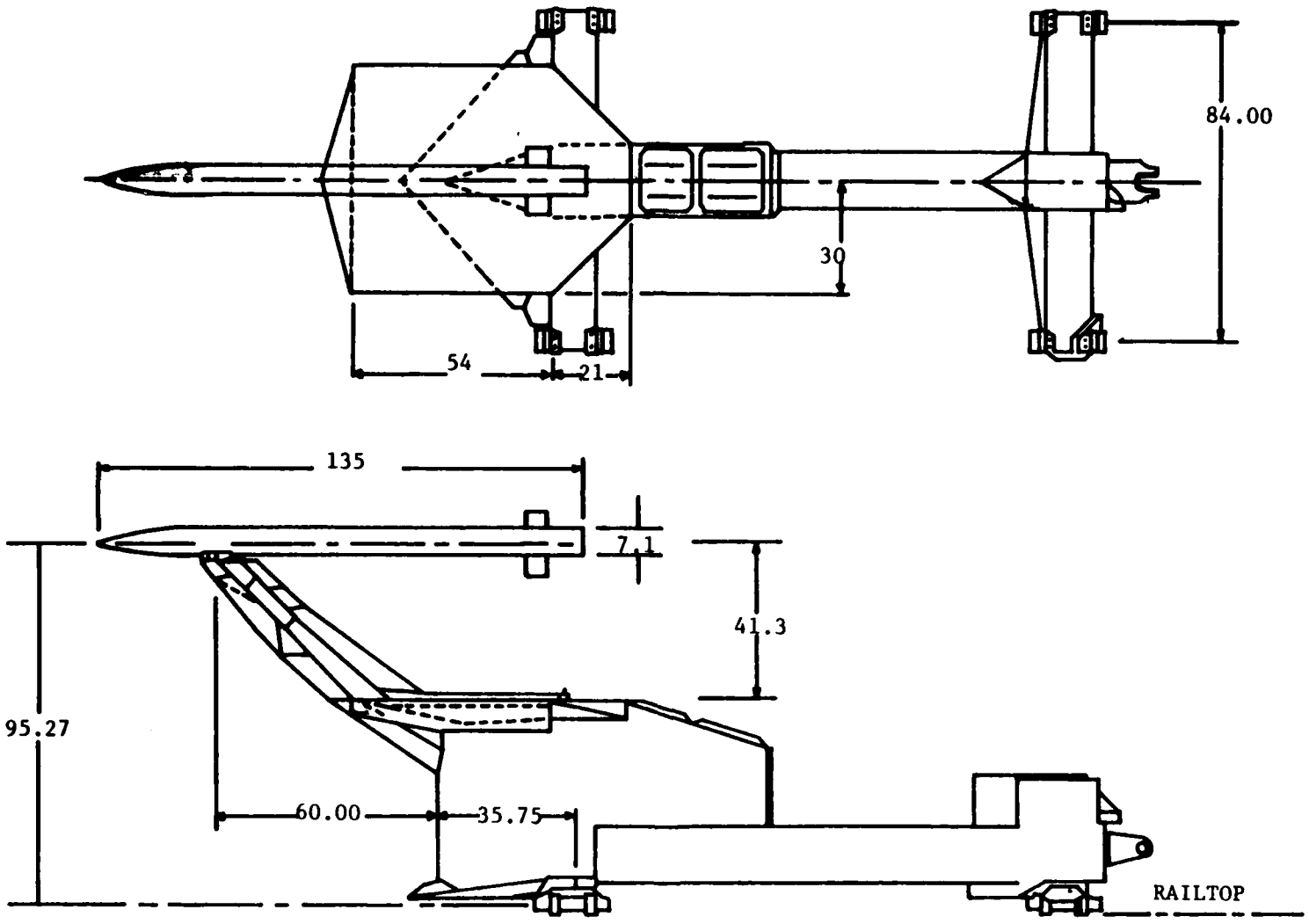
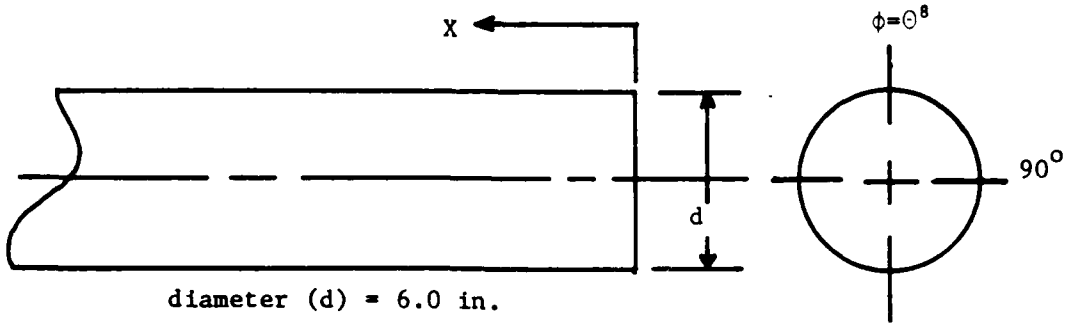
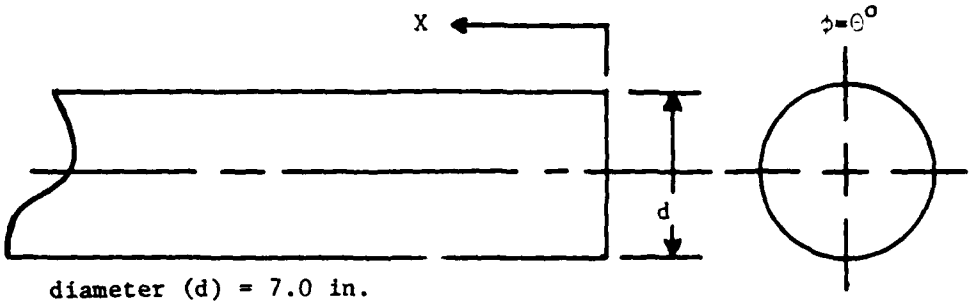


Figure 2. Sled and test missile details ("F" series).



PRESSURE NO.	X/d	ϕ
P_1	0.20	0°
P_2	0.97	↓
P_3	1.24	↓
P_4	1.79	↓
P_5	0.73	↓
P_6	↓	90°
P_7	↓	180°
P_8	↓	270°
P_9	3.0	0°
P_{10}	2.56	0°
P_{11}	0.60	0°
P_B	0	BASE PRESSURE
P_c	MOTOR CHAMBER PRESSURE	

Figure 3. Pressure Orifice locations ("B" series).



diameter (d) = 7.0 in.

Pressure No.	X/d	ϕ
P_1	0.01	
P_2	0.30	
P_3	0.56	
P_4	0.85	
P_5	1.12	
P_6	1.40	
P_7	0.18	
P_8	0.09	
P_9	2.30	
P_{10}	0.10	180°
P_{11}	0.85	
P_{12}	1.40	
P_{13}	2.30	
Pc Motor Chamber Pressure		

Figure 4. Pressure orifice lacations ("F" series).

II. APPENDIX A

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APPENDIX A

Run No. 5F-B2

Run Date: 14 May 1976

Configuration: 6 inch body
Angle of attack = 0
no fins

Motor Firing: 2.26 - 3.26 seconds

Remarks:

Test proved structural integrity of sled and suitability of instrumentation. This run also afforded drag information which allowed better trajectory prediction for the following runs. Motor firing was from Mach no. 1.25 to 1.65 and produced thrust coefficient variations from 15 to 40.

Test article was subjected to 20 g's accleration during boost to maximum velocity of 1856 fps by 7 NIKE motors.

A high response tranducer was used to measure P_{11} data. Inexact temperature compensation of this device allowed responses which rendered this data invalid.

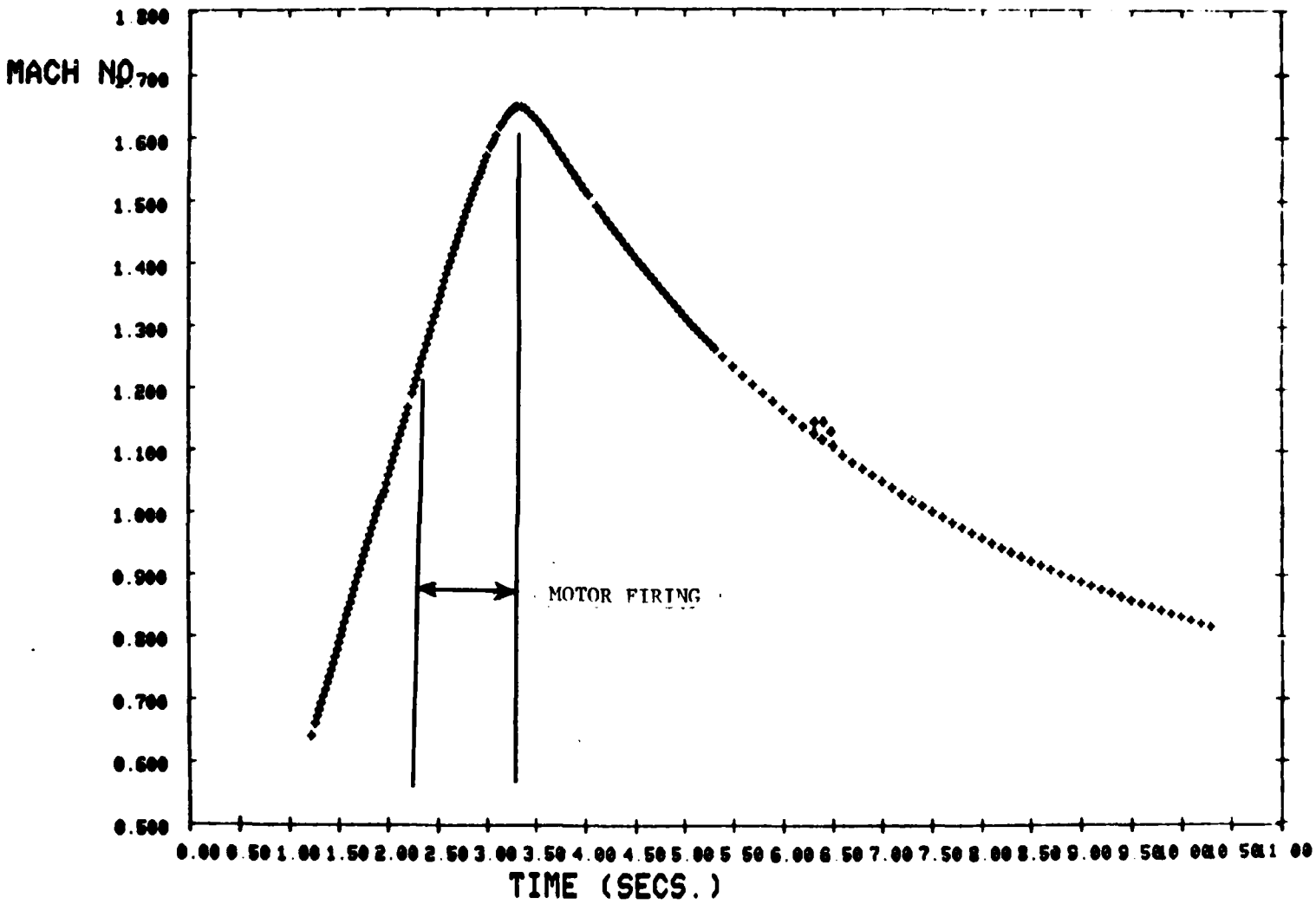

Figure 1. Test trajectory, Run 5F-B2.

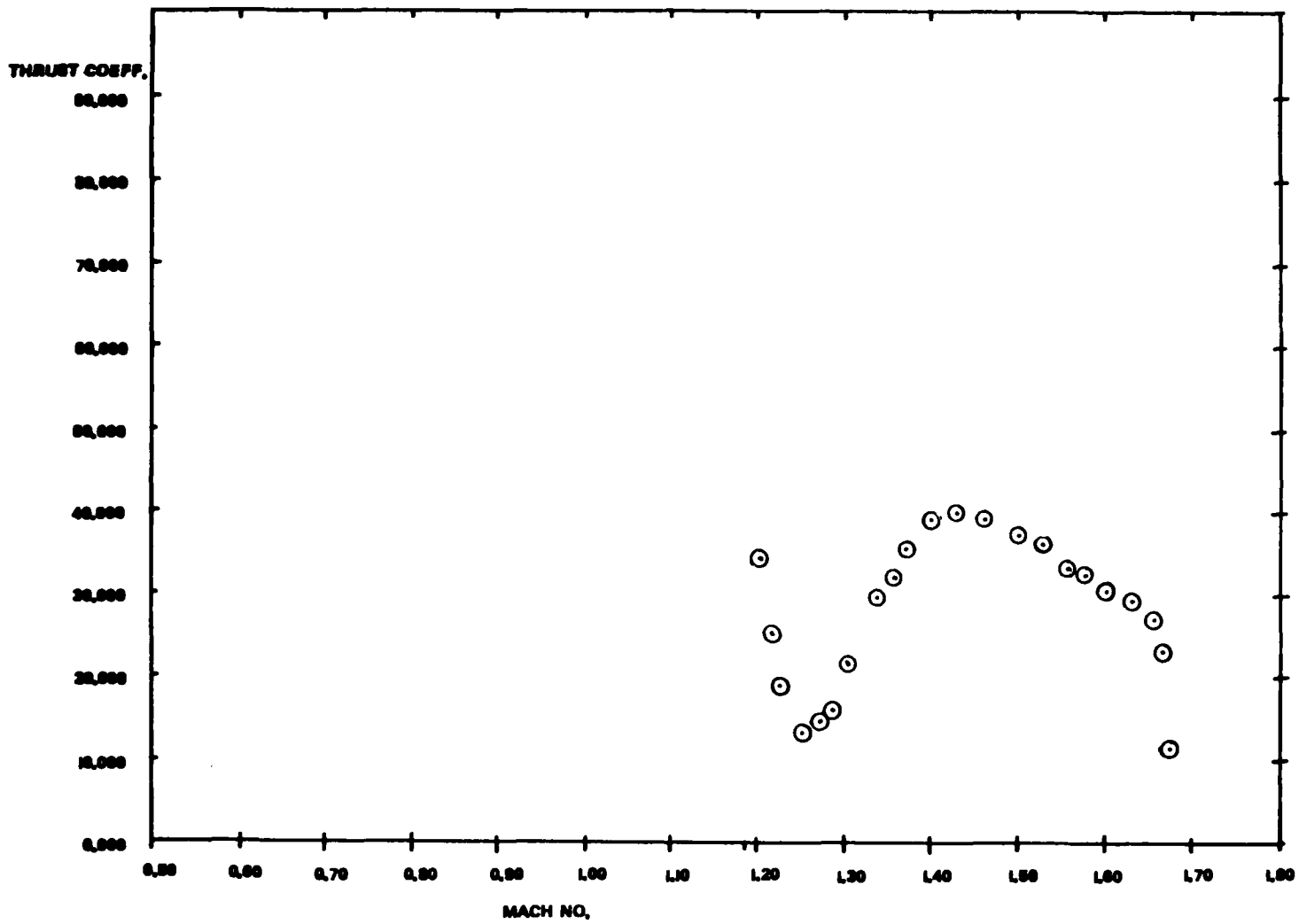

Figure 2. Thrust coefficient, Run 5F-B2.

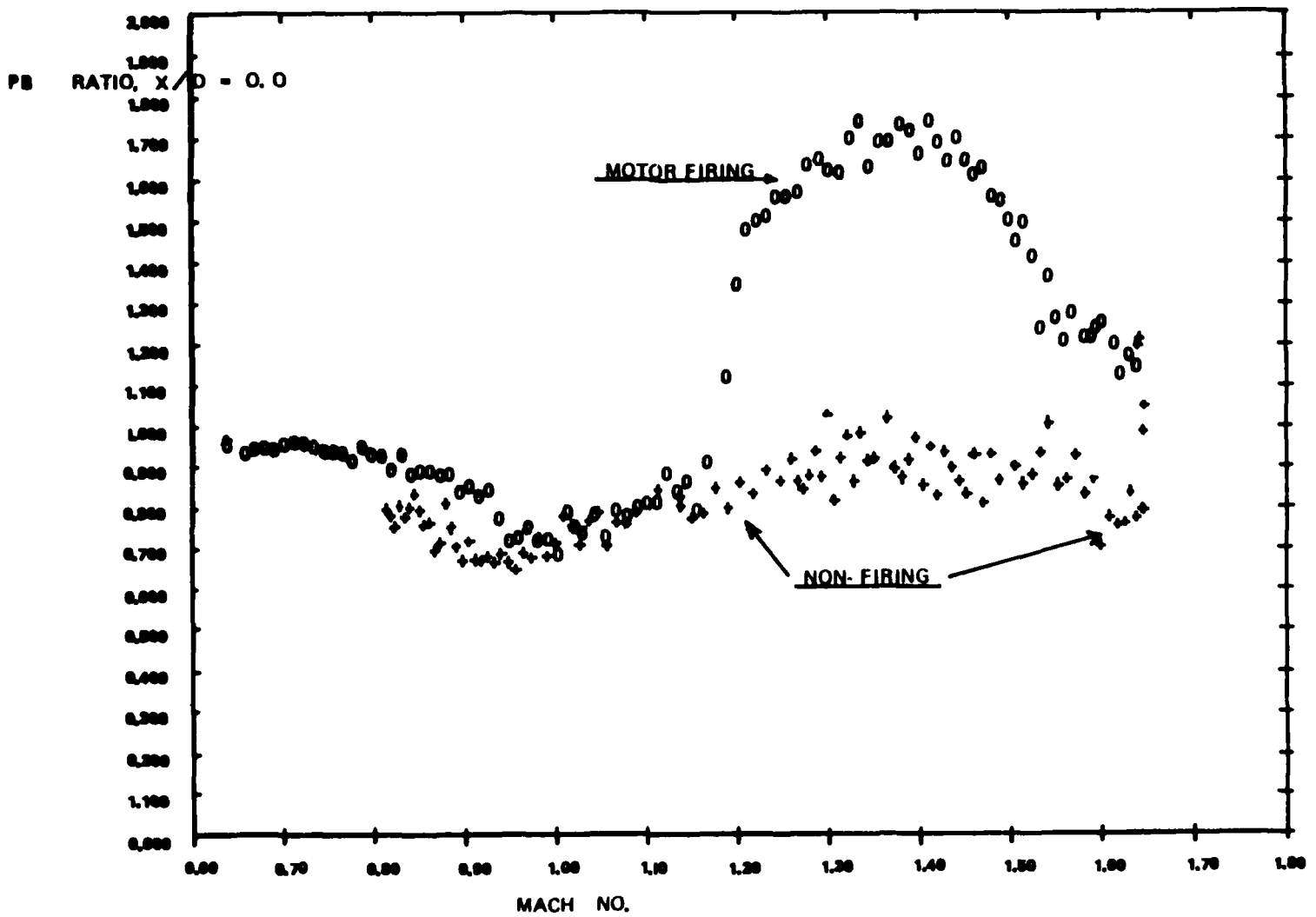

Figure 3. Base pressure/ambient pressure, Run 5F-B2.

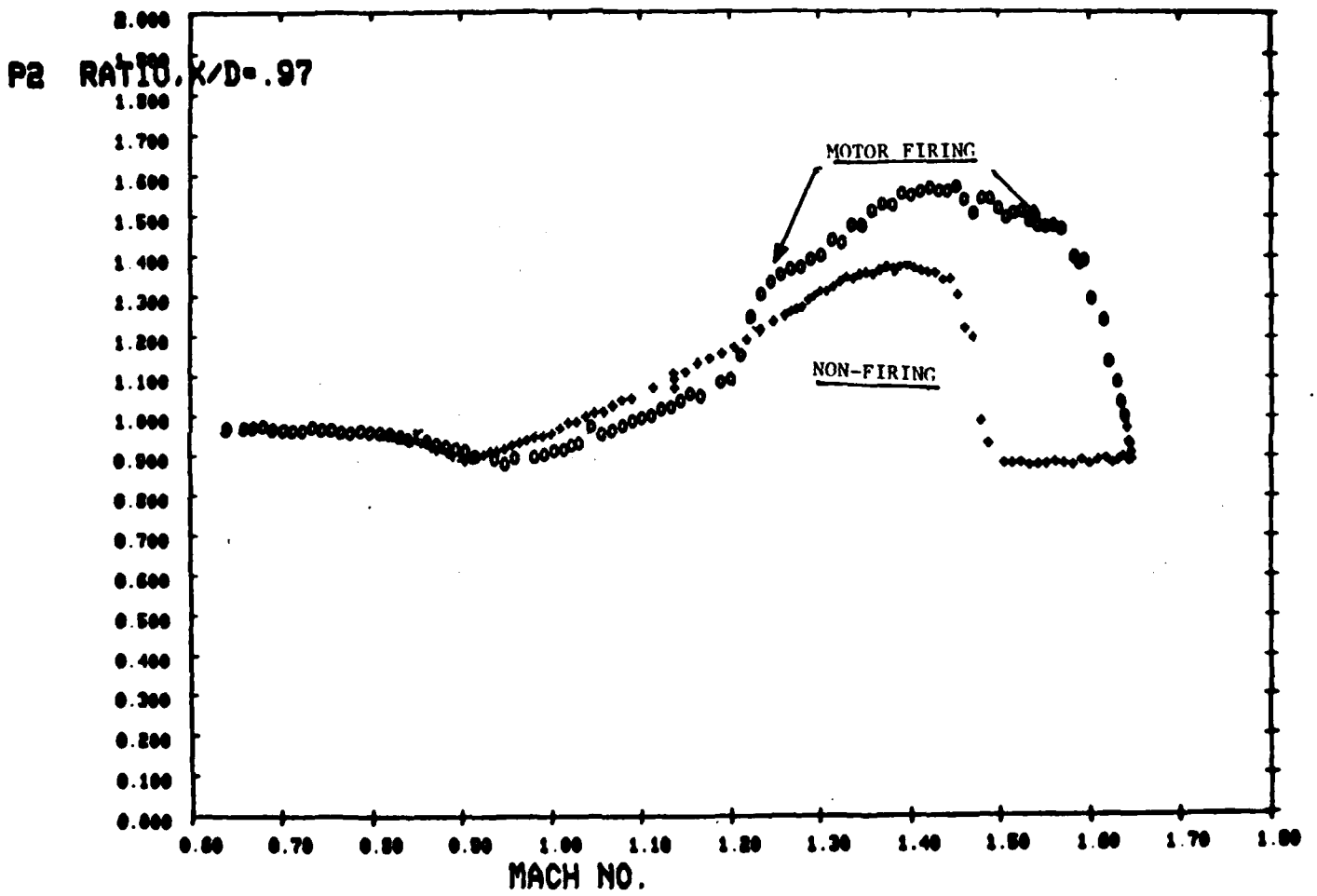

Figure 4. Surface pressure (x/D = 0.97)/ambient pressure, Run 5F-B2.

RUN NO. F5-B 2. RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P10/PA	P5/PA
.24	0.642	0	1.98	0.00	0.95	0.96	0.92	0.97
1.24	0.642	0	0.50	0.00	0.96	0.97	0.92	0.97
1.28	0.662	0	0.84	0.00	0.94	0.97	0.93	0.97
1.30	0.673	0	1.20	0.00	0.95	0.97	0.92	0.97
1.32	0.683	0	0.20	0.00	0.95	0.97	0.95	0.97
1.34	0.694	0	1.14	0.00	0.95	0.97	0.93	0.96
1.36	0.705	0	0.66	0.00	0.96	0.97	0.95	0.96
1.38	0.716	0	0.60	0.00	0.96	0.89	0.95	0.96
1.40	0.726	0	0.65	0.00	0.96	0.97	0.96	0.96
1.42	0.737	0	1.30	0.00	0.95	0.97	0.96	0.96
1.44	0.747	0	0.76	0.00	0.94	0.97	0.98	0.96
1.46	0.758	0	0.65	0.00	0.94	0.97	0.98	0.96
1.48	0.769	0	-0.08	0.00	0.94	0.97	0.98	0.96
1.50	0.779	0	-0.71	0.00	0.92	0.97	0.99	0.96
1.52	0.790	0	0.95	0.00	0.95	0.97	1.00	0.96
1.54	0.801	0	0.60	0.00	0.93	0.97	1.01	0.96
1.56	0.811	0	1.23	0.00	0.93	0.96	1.00	0.95
1.58	0.823	0	0.49	0.00	0.89	0.97	1.02	0.95
1.60	0.834	0	1.18	0.00	0.93	0.97	1.03	0.95
1.62	0.844	0	0.85	0.00	0.89	0.97	1.03	0.94
1.64	0.854	0	1.22	0.00	0.89	0.97	1.05	0.94
1.66	0.865	0	1.25	0.00	0.89	0.97	1.04	0.94
1.68	0.876	0	0.72	0.00	0.88	0.96	1.05	0.93
1.70	0.887	0	0.59	0.00	0.89	0.96	1.04	0.93
1.72	0.898	0	0.84	0.00	0.84	0.96	1.05	0.92
.74	0.908	0	0.50	0.00	0.86	0.96	1.06	0.91
.76	0.919	0	0.52	0.00	0.83	0.96	1.07	0.91
1.78	0.930	0	1.22	0.00	0.85	0.97	1.09	0.90
1.80	0.941	0	-0.12	0.00	0.77	0.97	1.11	0.89
1.82	0.952	0	0.32	0.00	0.72	0.97	1.13	0.89
1.84	0.962	0	0.69	0.00	0.73	0.96	1.14	0.89
1.86	0.973	0	1.30	0.00	0.76	0.97	1.16	0.89
1.88	0.984	0	-0.19	0.00	0.72	0.97	1.16	0.89
1.90	0.995	0	0.54	0.00	0.72	0.97	1.20	0.89
1.92	1.006	0	0.62	0.00	0.69	0.97	1.22	0.90
1.94	1.017	0	0.54	0.00	0.79	0.96	1.25	0.90
1.96	1.025	0	0.57	0.00	0.75	0.97	1.26	0.91
1.98	1.034	0	0.69	0.00	0.74	0.97	1.29	0.92
2.00	1.046	0	0.83	0.00	0.78	0.97	1.31	0.92
2.02	1.059	0	0.39	0.00	0.73	0.97	1.34	0.93
2.04	1.070	0	0.73	0.00	0.79	0.97	1.36	0.94
2.06	1.081	0	1.60	0.00	0.78	0.97	1.39	0.97
2.08	1.093	0	1.08	0.00	0.80	0.97	1.42	0.95
2.10	1.103	0	0.35	0.00	0.81	0.97	1.44	0.96
2.12	1.113	0	0.26	0.00	0.82	0.97	1.47	0.97
2.14	1.125	0	0.67	0.00	0.88	0.97	1.48	0.98
2.16	1.136	0	0.68	0.00	0.84	0.97	1.52	0.99
2.18	1.146	0	0.50	0.00	0.86	0.97	1.54	1.00
2.20	1.157	0	0.90	0.00	0.80	0.98	1.57	1.01
2.22	1.168	0	-0.26	0.00	0.91	0.97	1.60	1.02

RUN NO. F5-B 2 RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
24	0.642	0	0.96	0.92	0.97	0.97	0.94	0.98
34	0.642	0	0.97	0.92	0.97	0.97	0.94	0.97
1.28	0.662	0	0.97	0.93	0.97	0.97	0.94	0.97
1.30	0.673	0	0.97	0.92	0.97	0.97	0.94	0.97
1.32	0.683	0	0.97	0.95	0.97	0.97	0.94	0.98
1.34	0.694	0	0.97	0.93	0.96	0.97	0.93	0.97
1.36	0.705	0	0.97	0.95	0.96	0.97	0.93	0.97
1.38	0.716	0	0.89	0.95	0.96	0.96	0.93	0.97
1.40	0.726	0	0.97	0.96	0.96	0.96	0.93	0.97
1.42	0.737	0	0.97	0.96	0.96	0.97	0.95	0.93
1.44	0.747	0	0.97	0.98	0.96	0.97	0.93	0.97
1.46	0.758	0	0.97	0.98	0.96	0.97	0.92	0.97
1.48	0.769	0	0.97	0.98	0.96	0.96	0.92	0.97
1.50	0.779	0	0.97	0.99	0.96	0.96	0.92	0.96
1.52	0.790	0	0.97	1.00	0.96	0.96	0.92	0.97
1.54	0.801	0	0.97	1.01	0.96	0.96	0.91	0.96
1.56	0.811	0	0.96	1.00	0.95	0.96	0.91	0.96
1.58	0.823	0	0.97	1.02	0.95	0.95	0.90	0.97
1.60	0.834	0	0.97	1.03	0.95	0.95	0.89	0.96
1.62	0.844	0	0.97	1.03	0.94	0.94	0.89	0.95
1.64	0.854	0	0.97	1.05	0.94	0.97	0.92	0.89
1.66	0.865	0	0.97	1.04	0.94	0.94	0.88	0.95
1.68	0.876	0	0.96	1.05	0.93	0.93	0.87	0.94
1.70	0.887	0	0.96	1.04	0.93	0.92	0.86	0.94
1.72	0.898	0	0.96	1.05	0.92	0.92	0.86	0.94
1.74	0.908	0	0.96	1.06	0.91	0.91	0.85	0.93
1.76	0.919	0	0.96	1.07	0.91	0.90	0.84	0.92
.78	0.930	0	0.97	1.09	0.90	0.97	0.88	0.83
1.80	0.941	0	0.97	1.11	0.89	0.89	0.82	0.92
1.82	0.952	0	0.97	1.13	0.89	0.88	0.82	0.92
1.84	0.962	0	0.96	1.14	0.89	0.89	0.83	0.93
1.86	0.973	0	0.97	1.16	0.89	0.97	0.88	0.83
1.88	0.984	0	0.97	1.16	0.89	0.90	0.83	0.93
1.90	0.995	0	0.97	1.20	0.89	0.90	0.83	0.94
1.92	1.006	0	0.97	1.22	0.90	0.91	0.84	0.95
1.94	1.017	0	0.96	1.25	0.90	0.92	0.84	0.95
1.96	1.025	0	0.97	1.26	0.91	0.93	0.85	0.96
1.98	1.034	0	0.97	1.29	0.92	0.93	0.86	0.97
2.00	1.046	0	0.97	1.31	0.92	0.97	0.92	0.87
2.02	1.059	0	0.97	1.34	0.93	0.95	0.88	1.00
2.04	1.070	0	0.97	1.36	0.94	0.96	0.89	1.00
2.06	1.081	0	0.97	1.38	0.97	0.97	0.95	0.98
2.08	1.093	0	0.97	1.42	0.95	0.99	0.91	1.02
2.10	1.103	0	0.97	1.44	0.96	0.99	0.92	1.04
2.12	1.113	0	0.97	1.47	0.97	1.00	0.93	1.04
2.14	1.125	0	0.97	1.48	0.98	1.02	0.95	1.01
2.16	1.136	0	0.97	1.52	0.99	1.02	0.95	1.06
2.18	1.146	0	0.97	1.54	1.00	1.04	0.97	1.08
2.20	1.157	0	0.98	1.57	1.01	1.06	0.95	1.10
2.22	1.168	0	0.97	1.60	1.02	1.05	0.99	1.10

RUN NO. F5-B 2 RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
1.24	0.642	0	0.98	0.98	0.98	0.98	0.97	0.97
24	0.642	0	0.97	0.98	0.97	0.98	0.97	0.97
1.28	0.662	0	0.97	0.98	0.98	0.98	0.97	0.97
1.30	0.673	0	0.97	0.97	0.97	0.98	0.99	0.95
1.32	0.683	0	0.98	0.98	0.97	0.98	0.96	0.96
1.34	0.694	0	0.97	0.98	0.97	0.98	0.96	0.96
1.36	0.705	0	0.97	0.98	0.97	0.98	0.96	0.97
1.38	0.716	0	0.97	0.98	0.98	0.98	0.96	0.96
1.40	0.726	0	0.97	0.98	0.97	0.98	0.96	0.97
1.42	0.737	0	0.93	0.97	0.97	0.98	0.96	0.96
1.44	0.747	0	0.97	0.98	0.97	0.98	0.96	0.96
1.46	0.758	0	0.97	0.98	0.97	0.98	0.96	0.96
1.48	0.769	0	0.97	0.97	0.97	0.98	0.95	0.96
1.50	0.779	0	0.96	0.97	0.97	0.98	0.95	0.96
1.52	0.790	0	0.97	0.97	0.97	0.98	0.95	0.95
1.54	0.801	0	0.96	0.97	0.96	0.98	0.95	0.95
1.56	0.811	0	0.96	0.97	0.96	0.98	0.94	0.95
1.58	0.823	0	0.97	0.97	0.96	0.98	0.94	0.95
1.60	0.834	0	0.96	0.97	0.96	0.98	0.94	0.94
1.62	0.844	0	0.95	0.96	0.95	0.98	0.93	0.94
1.64	0.854	0	0.89	0.96	0.95	0.98	0.93	0.94
1.66	0.865	0	0.95	0.96	0.95	0.98	0.93	0.94
1.68	0.876	0	0.94	0.95	0.94	0.98	0.92	0.92
1.70	0.887	0	0.94	0.95	0.94	0.98	0.91	0.92
1.72	0.898	0	0.94	0.95	0.94	0.98	0.90	0.92
1.74	0.908	0	0.93	0.95	0.93	0.98	0.90	0.90
1.76	0.919	0	0.92	0.95	0.93	0.98	0.88	0.90
78	0.930	0	0.83	0.95	0.93	0.98	0.87	0.86
1.80	0.941	0	0.92	0.95	0.93	0.98	0.86	0.89
1.82	0.952	0	0.92	0.94	0.93	0.98	0.85	0.88
1.84	0.962	0	0.93	0.96	0.94	0.98	0.87	0.90
1.86	0.973	0	0.83	0.86	0.94	0.98	0.85	0.98
1.88	0.984	0	0.93	0.96	0.94	0.98	0.91	0.90
1.90	0.995	0	0.94	0.97	0.95	0.98	0.89	0.91
1.92	1.006	0	0.95	0.97	0.95	0.98	0.90	0.92
1.94	1.017	0	0.95	0.98	0.96	0.98	0.90	0.92
1.96	1.025	0	0.96	0.99	0.97	0.98	0.91	0.93
1.98	1.034	0	0.97	1.00	0.98	0.98	0.92	0.93
2.00	1.046	0	0.87	1.01	0.98	0.98	0.92	0.94
2.02	1.059	0	1.00	1.02	1.00	0.98	0.93	0.95
2.04	1.070	0	1.00	1.03	1.01	0.98	0.94	0.96
2.06	1.081	0	0.98	0.98	1.02	0.98	0.97	0.97
2.08	1.093	0	1.02	1.05	1.04	0.98	0.96	0.99
2.10	1.103	0	1.04	1.06	1.04	0.98	0.97	0.99
2.12	1.113	0	1.04	1.07	1.05	0.98	0.98	1.00
2.14	1.125	0	1.01	1.09	1.07	0.99	0.99	1.02
2.16	1.136	0	1.06	1.10	1.08	0.98	1.00	1.03
2.18	1.146	0	1.08	1.11	1.09	0.99	1.02	1.04
2.20	1.157	0	1.10	1.13	1.11	0.99	1.02	1.05
2.22	1.168	0	1.10	1.14	1.11	0.98	1.04	1.06

RUN NO. F5-B 2 RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
2.26	1.191	13579	98.82	36.52	1.12	0.97	1.96	1.05
2.28	1.202	9946	72.38	26.25	.35	0.97	2.01	1.06
2.30	1.214	7185	52.28	18.60	.48	0.97	2.07	1.08
2.32	1.225	5654	41.14	14.37	.50	0.97	2.11	1.10
2.34	1.236	5713	41.57	14.26	.51	0.97	2.18	1.12
2.36	1.247	6277	45.68	15.39	.56	0.97	2.21	1.14
2.38	1.259	6570	47.81	15.81	.56	0.97	2.33	1.16
2.40	1.270	7297	53.10	17.24	.57	0.97	2.39	1.18
2.42	1.282	7981	58.08	18.53	.64	0.97	4.7[illegible]	1.18
2.44	1.293	9613	69.96	21.94	.65	0.98	2.[illegible]0	1.20
2.46	1.304	10819	78.73	24.26	.62	0.97	2.40	1.21
2.48	1.316	12011	87.41	26.45	.62	0.96	2.48	1.22
2.50	1.327	13629	99.18	29.53	.70	0.98	2.50	1.26
2.52	1.337	14965	108.90	31.91	.74	0.98	2.53	1.26
2.54	1.348	15872	115.51	33.29	.63	0.97	2.56	1.26
2.56	1.360	16867	122.74	34.80	.69	0.98	2.62	1.28
2.58	1.371	18146	132.05	36.82	.69	0.97	2.66	1.29
2.60	1.382	18906	137.58	37.73	.73	0.97	2.71	1.31
2.62	1.393	20931	152.32	41.17	.72	0.99	2.77	1.34
2.64	1.403	20996	152.79	40.71	.66	0.97	2.82	1.33
2.66	1.413	21485	156.35	41.03	.74	0.98	2.82	1.35
2.68	1.424	21400	155.74	40.25	.69	0.98	2.91	1.37
2.70	1.434	21033	153.06	39.01	.65	0.98	2.93	1.37
2.72	1.444	21320	155.15	38.99	.70	0.99	2.98	1.40
[illegible].74	1.454	21740	158.21	39.24	.65	1.01	3.05	1.43
[illegible].76	1.463	21814	158.75	38.87	.61	1.01	3.10	1.44
2.78	1.473	22242	161.86	39.11	.63	1.01	3.24	1.44
2.80	1.483	22101	160.84	38.35	.56	1.01	3.1[illegible]	1.47
2.82	1.492	22171	161.34	38.00	.55	1.03	3.26	1.48
2.84	1.501	22419	163.15	37.97	.50	1.02	3.27	1.50
2.86	1.509	22351	162.66	37.44	.45	[illegible]	3.22	1.51
2.88	1.517	22186	161.45	36.76	.50	1.02	3.37	1.51
2.90	1.526	22375	162.83	36.65	.41	1.03	3.33	1.52
2.92	1.535	22522	163.90	36.46	.24	1.03	3.38	1.53
2.94	1.543	23065	167.85	36.92	.37	1.03	3.40	1.53
2.96	1.552	22645	164.79	35.85	.27	1.04	4.24	1.52
2.98	1.561	22844	166.24	35.76	.21	1.04	3.45	1.52
3.00	1.569	22390	162.94	34.67	.28	1.04	3.45	1.52
3.04	1.584	21989	160.02	33.43	.22	1.06	3.45	1.51
3.06	1.590	22055	160.50	33.28	.22	1.03	3.45	1.50
3.08	1.595	22072	160.62	33.08	.24	1.04	3.45	1.50
3.10	1.602	21676	157.74	32.20	.15	1.06	3.45	1.53
3.14	1.617	22697	165.17	33.11	.20	1.04	3.13	1.49
3.16	1.622	22500	163.74	32.61	.10	1.05	3.45	1.48
3.20	1.632	22587	164.37	32.35	.17	1.05	3.45	1.47
3.22	1.636	22532	163.97	32.12	.34	1.06	3.45	1.45
3.24	1.639	22101	160.84	31.36	.15	1.06	3.45	1.44
3.26	1.642	15700	114.26	22.20	.20	1.05	3.45	1.43
3.28	1.645	7915	57.60	11.15	.21	1.05	3.45	1.43
3.30	1.647	3651	26.57	5.14	0.99	1.07	3.45	1.43

RUN NO. F5-B 2 RUN DATE ~~[illegible]~~ 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
2.26	1.191	13579	0.97	1.96	1.05	1.08	1.01	1.13
2.28	1.202	9946	0.97	2.01	1.06	1.09	1.03	1.15
2.30	1.214	7185	0.97	2.07	1.08	1.15	1.06	1.17
2.32	1.225	5654	0.97	2.11	1.10	1.25	1.13	1.20
2.34	1.236	5713	0.97	2.18	1.12	1.30	1.19	1.21
2.36	1.247	6277	0.97	2.21	1.14	1.33	1.22	1.22
2.38	1.259	6570	0.97	2.23	1.16	1.35	1.25	1.26
2.40	1.270	7297	0.97	2.29	1.18	1.36	1.26	1.26
2.42	1.282	7981	0.97	4.72	1.18	1.37	1.28	1.27
2.44	1.293	9613	0.98	2.40	1.20	1.39	1.29	1.30
2.46	1.304	10819	0.97	2.40	1.21	1.40	1.31	1.31
2.48	1.316	12011	0.96	2.48	1.22	1.44	1.34	1.32
2.50	1.327	13629	0.98	2.50	1.26	1.43	1.36	1.35
2.52	1.337	14965	0.98	2.52	1.26	1.48	1.39	1.36
2.54	1.348	15872	0.97	2.56	1.26	1.47	1.41	1.37
2.56	1.360	16867	0.98	2.62	1.28	1.51	1.43	1.40
2.58	1.371	18146	0.97	2.66	1.29	1.53	1.46	1.41
2.60	1.382	18906	0.97	2.71	1.31	1.52	1.47	1.42
2.62	1.393	20931	0.99	2.77	1.34	1.55	1.49	1.44
2.64	1.403	20996	0.97	2.82	1.33	1.55	1.51	1.44
2.66	1.413	21485	0.98	2.82	1.35	1.56	1.52	1.45
2.68	1.424	21400	0.98	2.91	1.37	1.57	1.52	1.45
2.70	1.434	21033	0.98	2.93	1.37	1.56	1.53	1.43
2.72	1.444	21320	0.99	2.98	1.40	1.56	1.53	1.44
2.74	1.454	21740	1.01	3.05	1.43	1.57	1.51	1.41
2.76	1.463	21814	1.01	3.10	1.44	1.54	1.48	1.36
2.78	1.473	22242	1.01	3.24	1.44	1.51	1.48	1.34
2.80	1.483	22101	1.01	3.13	1.47	1.54	1.49	1.32
2.82	1.492	22171	1.03	3.26	1.48	1.54	1.46	1.23
2.84	1.501	22419	1.02	3.27	1.50	1.52	1.45	1.09
2.86	1.509	22351	1.03	3.22	1.51	1.49	1.43	0.98
2.88	1.517	22186	1.02	3.37	1.51	1.51	1.43	0.93
2.90	1.526	22375	1.03	3.33	1.52	1.51	1.43	0.90
2.92	1.535	22522	1.03	3.38	1.53	1.49	1.40	0.90
2.94	1.543	23065	1.03	3.40	1.53	1.47	1.38	0.92
2.96	1.552	22645	1.04	4.24	1.52	1.47	1.35	0.90
2.98	1.561	22844	1.04	3.45	1.52	1.47	1.34	0.90
3.00	1.569	22390	1.04	3.45	1.52	1.47	1.32	0.90
3.04	1.584	21989	1.06	3.45	1.51	1.40	1.24	0.92
3.06	1.590	22055	1.03	3.45	1.50	1.38	1.22	0.91
3.08	1.595	22072	1.04	3.45	1.50	1.39	1.19	0.92
3.10	1.602	21676	1.06	3.45	1.53	1.30	1.15	0.92
3.14	1.617	22697	1.04	3.13	1.49	1.24	1.09	0.92
3.16	1.622	22500	1.05	3.45	1.48	1.14	1.05	0.94
3.20	1.632	22587	1.05	3.45	1.47	1.09	1.01	0.93
3.22	1.636	22532	1.06	3.45	1.45	1.04	0.99	0.94
3.24	1.639	22101	1.06	3.45	1.44	1.00	0.96	0.95
3.26	1.642	15700	1.05	3.45	1.43	0.97	0.96	0.96
3.28	1.645	7915	1.05	3.45	1.43	0.94	0.94	0.94
3.30	1.647	3651	1.07	3.45	1.43	0.93	0.93	0.96

RUN NO. F5-B 2 RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
26	1.191	13579	1.13	1.17	1.15	0.99	1.06	1.09
2.28	1.202	9946	1.15	1.18	1.16	0.99	1.08	1.11
2.30	1.214	7185	1.17	1.19	1.17	0.99	1.12	1.24
2.32	1.225	5654	1.20	1.20	1.19	1.00	1.25	1.36
2.34	1.236	5713	1.21	1.22	1.20	0.99	1.33	1.37
2.36	1.247	6277	1.22	1.24	1.23	0.99	1.36	1.40
2.38	1.259	6570	1.26	1.26	1.25	1.00	1.40	1.42
2.40	1.270	7297	1.26	1.26	1.25	0.99	1.40	1.42
2.42	1.282	7981	1.27	1.28	1.27	1.00	1.41	1.43
2.44	1.293	9613	1.30	1.30	1.29	1.00	1.42	1.45
2.46	1.304	10819	1.31	1.31	1.31	0.99	1.43	1.45
2.48	1.316	12011	1.32	1.33	1.32	1.00	1.46	1.47
2.50	1.327	13629	1.35	1.33	1.33	1.00	1.51	1.49
2.52	1.337	14965	1.36	1.34	1.34	1.00	1.46	1.49
2.54	1.348	15872	1.37	1.34	1.35	1.00	1.49	1.51
2.56	1.360	16867	1.40	1.34	1.35	1.00	1.50	1.53
2.58	1.371	18146	1.41	1.33	1.36	1.00	1.52	1.54
2.60	1.382	18906	1.42	1.32	1.35	1.00	1.54	1.55
2.62	1.393	20931	1.44	1.30	1.35	1.00	1.55	1.57
2.64	1.403	20996	1.44	1.26	1.33	1.00	1.57	1.57
2.66	1.413	21485	1.45	1.21	1.31	1.00	1.58	1.58
2.68	1.424	21400	1.45	1.11	1.28	1.00	1.61	1.60
2.70	1.434	21033	1.43	1.00	1.22	1.00	1.62	1.59
2.72	1.444	21320	1.44	0.93	1.12	1.00	1.62	1.59
2.74	1.454	21740	1.41	0.91	0.98	1.00	1.65	1.61
2.76	1.463	21814	1.36	0.91	0.93	1.00	1.67	1.61
78	1.473	22242	1.34	0.90	0.91	1.00	1.69	1.60
2.80	1.483	22101	1.32	0.94	0.91	1.00	1.72	1.59
2.82	1.492	22171	1.23	0.91	0.90	1.00	1.72	1.59
2.84	1.501	22419	1.09	0.93	0.90	1.01	1.73	1.60
2.86	1.509	22351	0.98	0.92	0.91	1.01	1.73	1.60
2.88	1.517	22186	0.93	0.93	0.90	1.01	1.71	1.57
2.90	1.526	22375	0.90	0.94	0.92	1.01	1.67	1.56
2.92	1.535	22522	0.90	0.94	0.92	1.01	1.61	1.56
2.94	1.543	23065	0.92	0.95	0.92	1.01	1.57	1.53
2.96	1.552	22645	0.90	0.96	0.93	1.01	1.54	1.50
2.98	1.561	22844	0.90	0.95	0.93	1.01	1.49	1.45
3.00	1.569	22390	0.90	0.95	0.93	1.01	1.46	1.45
3.04	1.584	21989	0.92	1.02	0.95	1.01	1.40	1.43
3.06	1.590	22055	0.91	0.98	0.95	1.01	1.39	1.39
3.08	1.595	22072	0.92	1.04	0.94	1.02	1.40	1.38
3.10	1.602	21676	0.92	0.98	0.98	1.02	1.37	1.33
3.14	1.617	22697	0.92	0.98	0.96	1.02	1.34	1.36
3.16	1.622	22500	0.94	1.02	0.98	1.02	1.32	1.30
3.20	1.632	22587	0.93	1.01	0.97	1.02	1.32	1.31
3.22	1.636	22532	0.94	1.02	0.98	1.02	1.30	1.26
3.24	1.639	22101	0.95	1.03	1.00	1.02	1.28	1.26
3.26	1.642	15700	0.96	1.02	1.00	1.01	1.29	1.29
3.28	1.645	7915	0.94	1.03	0.99	1.02	1.30	1.30
3.30	1.647	3651	0.96	1.04	1.01	1.03	1.30	1.33

RUN NO. F5-B 2 RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
3.32	1.643	2610	18.99	3.66	0.80	1.06	3.45	1.39
3.36	1.643	2905	21.14	4.08	.05	1.06	3.45	1.37
3.40	1.645	571	4.15	0.80	0.79	1.06	3.45	1.34
3.44	1.638	571	4.15	0.81	0.77	0.98	3.45	1.38
3.48	1.632	571	4.15	0.82	0.84	0.97	3.45	1.36
3.52	1.626	571	4.15	0.82	0.76	0.96	3.41	1.12
3.56	1.619	571	4.15	0.83	0.76	0.94	3.39	1.15
3.60	1.610	571	4.15	0.84	0.78	0.93	3.35	1.13
3.64	1.600	571	4.15	0.85	0.70	0.93	3.32	1.09
3.68	1.591	571	4.15	0.86	0.87	0.93	3.31	1.04
3.72	1.582	571	4.15	0.87	0.83	0.94	3.27	1.01
3.76	1.573	571	4.15	0.88	0.93	0.94	3.25	0.98
3.80	1.563	571	4.15	0.89	0.87	0.94	3.25	0.94
3.84	1.553	571	4.15	0.90	0.85	0.97	3.19	0.92
3.88	1.543	571	4.15	0.91	1.01	0.99	3.19	0.90
3.92	1.534	571	4.15	0.92	0.93	0.97	3.19	0.90
3.96	1.525	571	4.15	0.94	0.88	1.05	3.19	0.90
4.00	1.515	571	4.15	0.95	0.86	1.12	3.29	0.92
4.04	1.507	571	4.15	0.96	0.90	1.13	3.44	0.92
4.12	1.499	571	4.15	0.98	0.87	1.25	3.45	1.05
4.16	1.491	571	4.15	0.99	0.93	1.27	3.45	1.14
4.20	1.472	571	4.15	1.00	0.81	1.28	3.45	1.28
4.24	1.463	571	4.15	1.02	0.93	1.29	3.45	1.30
4.28	1.455	571	4.15	1.03	0.83	1.29	3.45	1.34
4.32	1.446	571	4.15	1.04	0.86	1.30	3.45	1.36
4.36	1.438	571	4.15	1.05	0.90	1.29	3.45	1.35
4.40	1.430	571	4.15	1.07	0.94	1.30	3.44	1.35
.44	1.421	571	4.15	1.08	0.83	1.29	3.45	1.37
4.48	1.413	571	4.15	1.09	0.95	1.28	3.41	1.36
4.52	1.406	571	4.15	1.10	0.85	1.29	3.40	1.37
4.56	1.398	571	4.15	1.11	0.97	1.28	3.38	1.36
4.60	1.390	571	4.15	1.13	0.91	1.28	3.35	1.36
4.64	1.383	571	4.15	1.14	0.87	1.27	3.33	1.35
4.68	1.375	571	4.15	1.15	0.89	1.28	3.30	1.36
4.72	1.368	571	4.15	1.16	1.02	1.26	3.27	1.35
4.76	1.360	571	4.15	1.18	0.98	1.26	3.23	1.34
4.80	1.353	571	4.15	1.19	0.92	1.25	3.18	1.34
4.84	1.346	571	4.15	1.20	0.92	1.25	3.14	1.34
4.88	1.338	571	4.15	1.22	0.98	1.24	3.12	1.33
4.92	1.331	571	4.15	1.23	0.86	1.24	3.08	1.32
4.96	1.324	571	4.15	1.24	0.97	1.22	3.04	1.31
5.00	1.316	571	4.15	1.26	0.92	1.21	3.00	1.30
5.04	1.309	571	4.15	1.27	0.82	1.21	2.98	1.29
5.08	1.302	571	4.15	1.28	1.03	1.21	2.93	1.28
5.12	1.296	571	4.15	1.30	0.87	1.19	2.90	1.27
5.16	1.289	571	4.15	1.31	0.94	1.19	2.87	1.27
5.20	1.283	571	4.15	1.32	0.88	1.18	2.83	1.25
5.24	1.276	571	4.15	1.34	0.84	1.18	2.79	1.25
5.28	1.270	571	4.15	1.35	0.86	1.17	2.76	1.24
5.32	1.264	571	4.15	1.36	0.92	1.16	2.72	1.23

RUN NO. F5-B 2 RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
32	1.648	2610	1.06	3.45	1.39	0.91	0.90	0.94
3.36	1.648	2905	1.06	3.45	1.37	0.89	0.88	0.93
3.40	1.645	571	1.06	3.45	1.34	0.89	0.86	0.93
3.44	1.638	571	0.98	3.45	1.28	0.90	0.87	0.95
3.48	1.632	571	0.97	3.45	1.26	0.89	0.85	0.93
3.52	1.626	571	0.96	3.41	1.22	0.88	0.84	0.93
3.56	1.619	571	0.94	3.39	1.16	0.89	0.86	0.94
3.60	1.610	571	0.93	3.35	1.13	0.89	0.84	0.92
3.64	1.600	571	0.93	3.32	1.09	0.88	0.83	0.93
3.68	1.591	571	0.93	3.31	1.04	0.89	0.85	0.93
3.72	1.582	571	0.94	3.27	1.01	0.88	0.83	0.92
3.76	1.572	571	0.94	3.25	0.98	0.88	0.84	0.92
3.80	1.563	571	0.94	3.25	0.94	0.88	0.85	0.93
3.84	1.553	571	0.97	3.19	0.92	0.88	0.83	0.92
3.88	1.543	571	0.99	3.19	0.90	0.88	0.83	0.91
3.92	1.534	571	0.97	3.19	0.90	0.88	0.84	0.91
3.96	1.525	571	1.05	3.19	0.90	0.88	0.83	0.90
4.00	1.515	571	1.12	3.29	0.92	0.88	0.83	0.90
4.04	1.507	571	1.13	3.44	0.93	0.88	0.84	0.90
4.12	1.489	571	1.25	3.45	1.05	0.93	0.84	0.89
4.16	1.481	571	1.27	3.45	1.14	0.99	0.86	0.89
4.20	1.472	571	1.28	3.45	1.28	1.20	0.92	0.89
4.24	1.463	571	1.29	3.45	1.30	1.22	0.93	0.90
4.28	1.455	571	1.29	3.45	1.34	1.30	1.10	0.92
4.32	1.446	571	1.30	3.45	1.36	1.34	1.25	1.04
4.36	1.438	571	1.29	3.45	1.35	1.34	1.25	1.09
.40	1.430	571	1.30	3.44	1.36	1.36	1.30	1.25
4.44	1.421	571	1.29	3.45	1.36	1.36	1.30	1.26
4.48	1.413	571	1.28	3.41	1.36	1.36	1.31	1.31
4.52	1.406	571	1.29	3.40	1.37	1.37	1.33	1.33
4.56	1.398	571	1.28	3.38	1.36	1.38	1.34	1.34
4.60	1.390	571	1.28	3.35	1.36	1.37	1.33	1.34
4.64	1.383	571	1.27	3.33	1.35	1.37	1.34	1.36
4.68	1.375	571	1.28	3.30	1.36	1.37	1.34	1.37
4.72	1.368	571	1.26	3.27	1.35	1.37	1.34	1.37
4.76	1.360	571	1.26	3.23	1.34	1.35	1.33	1.36
4.80	1.353	571	1.25	3.18	1.34	1.36	1.33	1.37
4.84	1.346	571	1.25	3.14	1.34	1.35	1.33	1.37
4.88	1.338	571	1.24	3.12	1.33	1.34	1.32	1.37
4.92	1.331	571	1.24	3.08	1.32	1.35	1.31	1.37
4.96	1.324	571	1.22	3.04	1.31	1.33	1.30	1.36
5.00	1.316	571	1.21	3.00	1.30	1.32	1.29	1.36
5.04	1.309	571	1.21	2.98	1.29	1.31	1.28	1.36
5.08	1.302	571	1.21	2.93	1.28	1.31	1.28	1.35
5.12	1.296	571	1.19	2.90	1.27	1.30	1.27	1.34
5.16	1.289	571	1.19	2.87	1.27	1.29	1.26	1.34
5.20	1.283	571	1.18	2.83	1.25	1.27	1.24	1.33
5.24	1.276	571	1.18	2.79	1.25	1.27	1.23	1.32
5.28	1.270	571	1.17	2.76	1.24	1.26	1.22	1.31
5.32	1.264	571	1.16	2.72	1.23	1.25	1.21	1.30

RUN NO. F5-B 2 RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
3.32	1.648	2610	0.94	1.03	1.00	1.02	1.35	1.03
3.36	1.648	2905	0.93	1.01	0.96	1.03	1.07	0.95
3.40	1.645	571	0.93	1.01	0.97	1.03	1.02	0.93
3.44	1.638	571	0.95	1.03	0.99	1.04	0.99	0.91
3.48	1.632	571	0.93	1.02	0.97	1.04	1.05	0.94
3.52	1.626	571	0.93	1.02	0.97	1.04	1.04	0.93
3.56	1.619	571	0.94	1.02	0.98	1.04	1.02	0.92
3.60	1.610	571	0.92	1.01	0.96	1.05	1.06	0.99
3.64	1.600	571	0.93	1.01	0.96	1.04	1.06	0.97
3.68	1.591	571	0.92	1.01	0.97	1.05	1.06	0.97
3.72	1.582	571	0.92	0.99	0.95	1.05	1.07	1.01
3.76	1.572	571	0.92	0.99	0.95	1.04	1.07	1.00
3.80	1.563	571	0.93	0.99	0.96	1.04	1.08	1.02
3.84	1.553	571	0.92	0.98	0.94	1.04	1.12	1.05
3.88	1.543	571	0.91	0.98	0.94	1.04	1.15	1.05
3.92	1.534	571	0.91	0.98	0.95	1.05	1.17	1.05
3.96	1.525	571	0.90	0.97	0.94	1.10	1.33	1.10
4.00	1.515	571	0.90	0.97	0.93	1.18	1.42	1.20
4.04	1.507	571	0.90	0.97	0.93	1.26	1.46	1.27
4.12	1.489	571	0.89	0.96	0.92	1.31	1.54	1.32
4.16	1.481	571	0.89	0.95	0.92	1.31	1.32	1.35
4.20	1.472	571	0.89	0.94	0.91	1.33	1.55	1.38
4.24	1.463	571	0.90	1.36	0.91	1.33	1.54	1.53
4.28	1.455	571	0.92	0.94	0.91	1.35	1.53	1.38
4.32	1.446	571	1.04	0.93	0.90	1.36	1.50	1.39
4.36	1.438	571	1.09	0.93	0.90	1.36	1.49	1.38
4.40	1.430	571	1.25	0.92	0.90	1.37	1.46	1.38
4.44	1.421	571	1.26	0.92	0.98	1.37	1.44	1.37
4.48	1.413	571	1.31	0.91	0.92	1.37	1.43	1.37
4.52	1.406	571	1.33	0.91	1.05	1.37	1.41	1.36
4.56	1.398	571	1.34	0.94	1.15	1.37	1.43	1.36
4.60	1.390	571	1.34	0.96	1.17	1.37	1.40	1.37
4.64	1.383	571	1.36	1.11	1.26	1.29	1.39	1.36
4.68	1.375	571	1.37	1.13	1.26	1.36	1.38	1.36
4.72	1.368	571	1.37	1.20	1.29	1.35	1.36	1.35
4.76	1.360	571	1.36	1.26	1.32	1.34	1.34	1.34
4.80	1.353	571	1.37	1.28	1.33	1.34	1.34	1.34
4.84	1.346	571	1.37	1.30	1.33	1.33	1.32	1.33
4.88	1.338	571	1.37	1.32	1.35	1.32	1.31	1.32
4.92	1.331	571	1.37	1.33	1.35	1.31	1.29	1.32
4.96	1.324	571	1.36	1.33	1.35	1.30	1.29	1.31
5.00	1.316	571	1.36	1.34	1.35	1.28	1.27	1.29
5.04	1.309	571	1.36	1.34	1.35	1.27	1.26	1.29
5.08	1.302	571	1.35	1.35	1.35	1.27	1.25	1.29
5.12	1.296	571	1.34	1.34	1.35	1.26	1.25	1.28
5.16	1.289	571	1.34	1.34	1.35	1.26	1.24	1.26
5.20	1.283	571	1.33	1.34	1.34	1.25	1.22	1.25
5.24	1.276	571	1.32	1.34	1.33	1.25	1.21	1.25
5.28	1.270	571	1.31	1.33	1.33	1.24	1.21	1.23
5.32	1.264	571	1.30	1.32	1.32	1.23	1.20	1.23

RUN NO. F5-B 2 RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
3.32	1.648	2610	0.94	1.03	1.00	1.02	1.25	1.[illegible]
3.36	1.648	2905	0.93	1.01	0.96	1.03	1.07	0.95
3.40	1.645	571	0.93	1.01	0.97	1.03	1.02	0.93
3.44	1.638	571	0.95	1.03	0.99	1.04	0.99	0.91
3.48	1.632	571	0.93	1.02	0.97	1.04	1.05	0.94
3.52	1.626	571	0.93	1.02	0.97	1.04	1.04	0.93
3.56	1.619	571	0.94	1.02	0.98	1.04	1.02	0.92
3.60	1.610	571	0.92	1.01	0.96	1.05	1.06	0.99
3.64	1.600	571	0.93	1.01	0.96	1.04	1.06	0.97
3.68	1.591	571	0.92	1.01	0.97	1.05	1.06	0.97
3.72	1.582	571	0.92	0.99	0.95	1.05	1.07	1.01
3.76	1.572	571	0.92	0.99	0.95	1.04	1.07	1.00
3.80	1.563	571	0.93	0.99	0.96	1.04	1.08	1.02
3.84	1.553	571	0.92	0.98	0.94	1.04	1.10	1.05
3.88	1.543	571	0.91	0.98	0.94	1.04	1.15	1.05
3.92	1.534	571	0.91	0.98	0.95	1.05	1.17	1.05
3.96	1.525	571	0.90	0.97	0.94	1.10	1.33	1.10
4.00	1.515	571	0.90	0.97	0.93	1.18	1.40	1.20
4.04	1.507	571	0.90	0.97	0.93	1.26	1.46	1.27
4.12	1.489	571	0.89	0.96	0.92	1.31	1.54	1.32
4.16	1.481	571	0.89	0.95	0.92	1.31	1.32	1.33
4.20	1.472	571	0.89	0.94	0.91	1.33	1.55	1.38
4.24	1.463	571	0.90	1.06	0.91	1.33	1.54	1.53
4.28	1.455	571	0.92	0.94	0.91	1.35	1.53	1.38
4.32	1.446	571	1.04	0.93	0.90	1.36	1.50	1.39
4.36	1.438	571	1.09	0.93	0.90	1.36	1.46	1.38
4.40	1.430	571	1.25	0.92	0.90	1.37	1.46	1.38
4.44	1.421	571	1.26	0.92	0.98	1.37	1.44	1.37
4.48	1.413	571	1.31	0.91	0.92	1.37	1.43	1.37
4.52	1.406	571	1.33	0.91	1.05	1.37	1.41	1.36
4.56	1.398	571	1.34	0.94	1.15	1.37	1.40	1.36
4.60	1.390	571	1.34	0.96	1.17	1.37	1.40	1.37
4.64	1.383	571	1.36	1.11	1.26	1.29	1.38	1.36
4.68	1.375	571	1.37	1.13	1.26	1.36	1.38	1.36
4.72	1.368	571	1.37	1.20	1.29	1.35	1.36	1.35
4.76	1.360	571	1.36	1.26	1.32	1.34	1.34	1.34
4.80	1.353	571	1.37	1.28	1.33	1.34	1.34	1.34
4.84	1.346	571	1.37	1.30	1.33	1.33	1.32	1.33
4.88	1.338	571	1.37	1.32	1.35	1.32	1.31	1.32
4.92	1.331	571	1.37	1.33	1.35	1.31	1.29	1.32
4.96	1.324	571	1.36	1.33	1.35	1.30	1.29	1.31
5.00	1.316	571	1.36	1.34	1.35	1.28	1.27	1.29
5.04	1.309	571	1.36	1.34	1.35	1.27	1.26	1.29
5.08	1.302	571	1.35	1.35	1.35	1.27	1.25	1.29
5.12	1.296	571	1.34	1.34	1.35	1.26	1.25	1.28
5.16	1.289	571	1.34	1.34	1.35	1.26	1.24	1.26
5.20	1.283	571	1.33	1.34	1.34	1.25	1.22	1.25
5.24	1.276	571	1.32	1.34	1.33	1.25	1.21	1.25
5.28	1.270	571	1.31	1.33	1.33	1.24	1.21	1.23
5.32	1.264	571	1.30	1.32	1.32	1.23	1.20	1.23

RUN NO. F5-B 2 RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	[illegible]
5.40	1.251	571	4.15	1.39	0.87	1.15	2.66	[illegible]
[illegible]50	1.235	571	4.15	1.43	0.89	1.14	2.58	1.20
[illegible].60	1.220	571	4.15	1.46	0.83	1.12	2.51	1.17
5.70	1.206	571	4.15	1.50	0.86	1.11	2.46	1.16
5.80	1.192	571	4.15	1.53	0.80	1.09	2.45	1.14
5.90	1.179	571	4.15	1.57	0.85	1.09	2.38	[illegible].13
6.00	1.165	571	4.15	1.60	0.79	1.08	2.35	1.13
6.10	1.152	571	4.15	1.64	0.78	1.06	2.30	1.11
6.20	1.139	571	4.15	1.68	0.83	1.06	2.25	1.10
6.30	1.139	571	4.15	1.68	0.81	1.05	2.22	1.09
6.40	1.140	571	4.15	1.67	0.80	1.03	2.17	[illegible]
6.50	1.116	571	4.15	1.75	0.84	1.02	2.13	[illegible].06
6.60	1.091	571	4.15	1.83	0.79	1.01	2.08	1.04
6.70	1.081	571	4.15	1.86	0.76	1.00	2.05	1.03
6.80	1.071	571	4.15	1.90	0.77	0.99	2.01	1.02
6.90	1.060	571	4.15	1.94	0.71	0.97	1.97	1.01
7.00	1.050	571	4.15	1.97	0.79	0.97	1.95	[illegible]
7.10	1.040	571	4.15	2.01	0.77	0.96	1.91	[illegible].00
7.20	1.030	571	4.15	2.05	0.71	0.95	1.87	0.98
7.30	1.021	571	4.15	2.09	0.76	0.95	1.84	0.99
7.40	1.011	571	4.15	2.13	0.78	0.93	1.81	0.97
7.50	1.002	571	4.15	2.17	0.72	0.92	1.80	0.95
7.60	0.993	571	4.15	2.21	0.68	0.91	1.77	0.94
7.70	0.984	571	4.15	2.25	0.73	0.91	1.75	0.94
7.80	0.976	571	4.15	2.29	0.68	0.90	1.73	0.94
7.90	0.968	571	4.15	2.33	0.69	0.90	1.70	0.93
8.00	0.959	571	4.15	2.37	0.65	0.89	1.68	0.92
[illegible].10	0.951	571	4.15	2.41	0.67	0.88	1.67	0.91
[illegible].20	0.943	571	4.15	2.45	0.69	0.88	1.65	0.91
8.30	0.935	571	4.15	2.49	0.67	0.87	1.63	0.90
8.40	0.928	571	4.15	2.53	0.68	0.87	1.60	0.90
8.50	0.922	571	4.15	2.56	0.67	0.86	1.58	0.89
8.60	0.915	571	4.15	2.60	0.68	0.86	1.57	0.88
8.70	0.908	571	4.15	2.64	0.72	0.85	1.54	0.88
8.80	0.901	571	4.15	2.68	0.67	0.87	1.55	0.89
8.90	0.894	571	4.15	2.72	0.71	0.88	1.54	0.90
9.00	0.888	571	4.15	2.76	0.75	0.89	1.55	0.90
9.10	0.882	571	4.15	2.80	0.81	0.90	1.53	0.91
9.20	0.876	571	4.15	2.84	0.72	0.88	1.53	0.91
9.30	0.870	571	4.15	2.87	0.70	0.91	1.49	0.92
9.40	[illegible]	571	4.15	2.91	0.77	0.92	1.52	0.93
9.50	[illegible]	571	4.15	2.95	0.76	0.92	1.52	0.92
9.60	0.858	571	4.15	2.99	0.80	0.92	1.51	0.94
9.70	0.848	571	4.15	3.03	0.83	0.92	1.51	0.94
9.80	0.842	571	4.15	3.07	0.80	0.92	1.50	0.94
9.90	0.837	571	4.15	3.11	0.78	0.92	1.51	0.93
10.00	0.832	571	4.15	3.15	0.81	0.93	1.50	0.94
10.10	0.827	571	4.15	3.19	0.75	0.93	1.48	0.95
10.20	0.821	571	4.15	3.23	0.78	0.94	1.49	0.95
10.30	0.816	571	4.15	3.27	0.80	0.94	1.48	0.95

RUN NO. F5-B 2 RUN DATE 19 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/P1
5.40	1.251	571	1.15	2.66	1.21	1.24	1.19	1.29
50	1.235	571	1.14	2.58	1.20	1.22	1.17	1.27
5.60	1.220	571	1.12	2.51	1.17	1.19	1.14	1.24
5.70	1.206	571	1.11	2.46	1.16	1.17	1.12	1.22
5.80	1.192	571	1.09	2.45	1.14	1.16	1.10	1.21
5.90	1.179	571	1.09	2.38	1.13	1.14	1.10	1.20
6.00	1.165	571	1.08	2.35	1.13	1.13	1.07	1.18
6.10	1.152	571	1.06	2.30	1.11	1.11	1.05	1.16
6.20	1.139	571	1.06	2.26	1.10	1.11	1.04	1.16
6.30	1.139	571	1.05	2.22	1.09	1.09	1.03	1.14
6.40	1.140	571	1.03	2.17	1.07	1.07	1.01	1.12
6.50	1.116	571	1.02	2.12	1.06	1.07	1.00	1.11
6.60	1.091	571	1.01	2.08	1.04	1.04	0.98	1.09
6.70	1.081	571	1.00	2.05	1.03	1.04	0.97	1.08
6.80	1.071	571	0.99	2.01	1.02	1.03	0.95	1.07
6.90	1.060	571	0.97	1.97	1.01	1.01	0.94	1.05
7.00	1.050	571	0.97	1.95	1.00	1.01	0.93	1.04
7.10	1.040	571	0.96	1.91	1.00	1.00	0.92	1.03
7.20	1.030	571	0.95	1.87	0.98	0.98	0.90	1.02
7.30	1.021	571	0.95	1.84	0.98	0.98	0.90	1.02
7.40	1.011	571	0.93	1.81	0.97	0.97	0.89	1.00
7.50	1.002	571	0.92	1.80	0.95	0.95	0.88	0.99
7.60	0.993	571	0.91	1.77	0.94	0.95	0.87	0.98
7.70	0.984	571	0.91	1.75	0.94	0.95	0.87	0.97
7.80	0.976	571	0.90	1.73	0.94	0.94	0.87	0.97
7.90	0.968	571	0.90	1.70	0.93	0.93	0.86	0.96
8.00	0.959	571	0.89	1.68	0.92	0.93	0.85	0.95
.10	0.951	571	0.88	1.67	0.91	0.92	0.85	0.95
8.20	0.943	571	0.88	1.65	0.91	0.91	0.83	0.94
8.30	0.935	571	0.87	1.63	0.90	0.91	0.83	0.94
8.40	0.928	571	0.87	1.60	0.90	0.90	0.83	0.93
8.50	0.922	571	0.86	1.58	0.89	0.90	0.82	0.93
8.60	0.915	571	0.86	1.57	0.88	0.89	0.82	0.92
8.70	0.908	571	0.85	1.54	0.88	0.89	0.82	0.92
8.80	0.901	571	0.87	1.55	0.89	0.90	0.83	0.92
8.90	0.894	571	0.88	1.54	0.90	0.90	0.83	0.92
9.00	0.888	571	0.89	1.55	0.90	0.91	0.83	0.93
9.10	0.882	571	0.90	1.53	0.91	0.92	0.85	0.93
9.20	0.876	571	0.88	1.53	0.91	0.92	0.84	0.94
9.30	0.870	571	0.91	1.49	0.92	0.92	0.85	0.94
9.40	0.865	571	0.92	1.52	0.93	0.93	0.86	0.94
9.50	0.859	571	0.92	1.52	0.93	0.93	0.86	0.94
9.60	0.853	571	0.92	1.51	0.94	0.94	0.87	0.95
9.70	0.848	571	0.92	1.51	0.94	0.94	0.87	0.95
9.80	0.842	571	0.92	1.50	0.94	0.95	0.88	0.95
9.90	0.837	571	0.92	1.51	0.93	0.95	0.87	0.95
10.00	0.832	571	0.93	1.50	0.94	0.95	0.88	0.95
10.10	0.827	571	0.93	1.48	0.95	0.95	0.88	0.96
10.20	0.821	571	0.94	1.49	0.95	0.95	0.89	0.95
10.30	0.816	571	0.94	1.48	0.95	0.95	0.89	0.96

RUN NO. F5-B 2 RUN DATE 14 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
[illegible]	1.251	571	1.29	1.31	[illegible].31	1.21	1.19	1.19
[illegible]	1.235	571	1.27	1.29	[illegible].29	1.20	1.18	1.20
5.60	1.220	571	1.24	1.26	[illegible].26	1.18	1.16	1.18
5.70	1.206	571	1.22	1.25	[illegible].24	1.16	1.15	1.17
5.80	1.192	571	1.21	1.24	[illegible].22	1.15	1.13	1.15
5.90	1.179	571	1.20	1.22	[illegible].21	1.13	1.13	1.15
6.00	1.165	571	1.18	1.20	[illegible].19	1.13	1.11	1.12
6.10	1.152	571	1.16	1.18	[illegible].17	1.12	1.10	1.11
6.20	1.139	571	1.16	1.18	[illegible].16	1.11	1.09	1.11
6.30	1.139	571	1.14	1.16	[illegible].14	1.10	1.08	1.09
6.40	1.140	571	1.12	1.17	[illegible].12	1.08	1.05	1.05
6.50	1.116	571	1.11	1.12	[illegible].11	1.07	1.04	1.05
6.60	1.091	571	1.09	1.10	[illegible].09	1.05	1.03	1.04
6.70	1.081	571	1.08	1.09	[illegible].08	1.04	1.02	1.03
6.80	1.071	571	1.07	1.08	[illegible].07	1.03	1.00	1.01
6.90	1.060	571	1.05	1.06	[illegible].05	1.02	0.99	1.00
7.00	1.050	571	1.04	1.05	[illegible].04	1.01	0.99	1.00
7.10	1.040	571	1.03	1.05	[illegible].04	1.00	0.98	0.99
7.20	1.030	571	1.02	1.03	[illegible].02	0.99	0.96	0.98
7.30	1.021	571	1.02	1.03	[illegible].01	0.98	0.96	0.97
7.40	1.011	571	1.00	1.01	[illegible].00	0.97	0.95	0.96
7.50	1.002	571	0.99	1.00	0.99	0.96	0.94	0.95
7.60	0.993	571	0.98	0.99	0.98	0.95	0.93	0.94
7.70	0.984	571	0.97	0.98	0.97	0.94	0.92	0.94
7.80	0.976	571	0.97	0.97	0.96	0.94	0.92	0.93
7.90	0.968	571	0.96	0.97	0.96	0.93	0.91	0.92
[illegible]00	0.959	571	0.95	0.96	0.95	0.92	0.90	0.92
[illegible].10	0.951	571	0.95	0.95	0.94	0.91	0.89	0.90
8.20	0.943	571	0.94	0.95	0.93	0.91	0.88	0.90
8.30	0.935	571	0.94	0.94	0.93	0.91	0.88	0.90
8.40	0.928	571	0.93	0.94	0.93	0.90	0.88	0.89
8.50	0.922	571	0.93	0.93	0.92	0.89	0.87	0.89
8.60	0.915	571	0.92	0.92	0.91	0.88	0.86	0.87
8.70	0.908	571	0.92	0.92	0.91	0.88	0.86	0.87
8.80	0.901	571	0.92	0.92	0.91	0.89	0.86	0.88
8.90	0.894	571	0.92	0.92	0.92	0.89	0.87	0.88
9.00	0.888	571	0.92	0.92	0.91	0.90	0.88	0.89
9.10	0.882	571	0.93	0.92	0.92	0.91	0.88	0.90
9.20	0.876	571	0.93	0.92	0.92	0.91	0.89	0.90
9.30	0.870	571	0.94	0.95	0.92	0.91	0.89	0.91
9.40	0.865	571	0.94	0.93	0.93	0.92	0.90	0.90
9.50	0.859	571	0.94	0.93	0.92	0.92	0.90	0.92
9.60	0.853	571	0.95	0.93	0.93	1.01	0.91	0.92
9.70	0.848	571	0.95	0.93	0.93	0.93	0.91	0.92
9.80	0.842	571	0.95	0.94	0.93	0.94	0.92	0.93
9.90	0.837	571	0.95	0.86	0.93	0.94	0.92	0.93
10.00	0.832	571	0.95	0.94	0.93	0.94	0.92	0.93
10.10	0.827	571	0.96	0.94	0.93	0.94	0.92	0.93
10.20	0.821	571	0.95	0.95	0.94	0.95	0.92	0.94
10.30	0.816	571	0.96	0.95	0.94	0.95	0.93	0.94

III. APPENDIX B

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APPENDIX B

Run No. 5F-B3

Run D-te 20 May 1976

Configuration: 6 inch diameter body
Angle of attack = 0
No fins

Motor Firing: 1.48 to 2.48 seconds

Remarks:

Aim of this run was to obtain data at transonic speeds by firing the motor as the sled travesed the Mach No. range from 0.85 to 1.36 with coefficient of thrust varied from 35 to 80.

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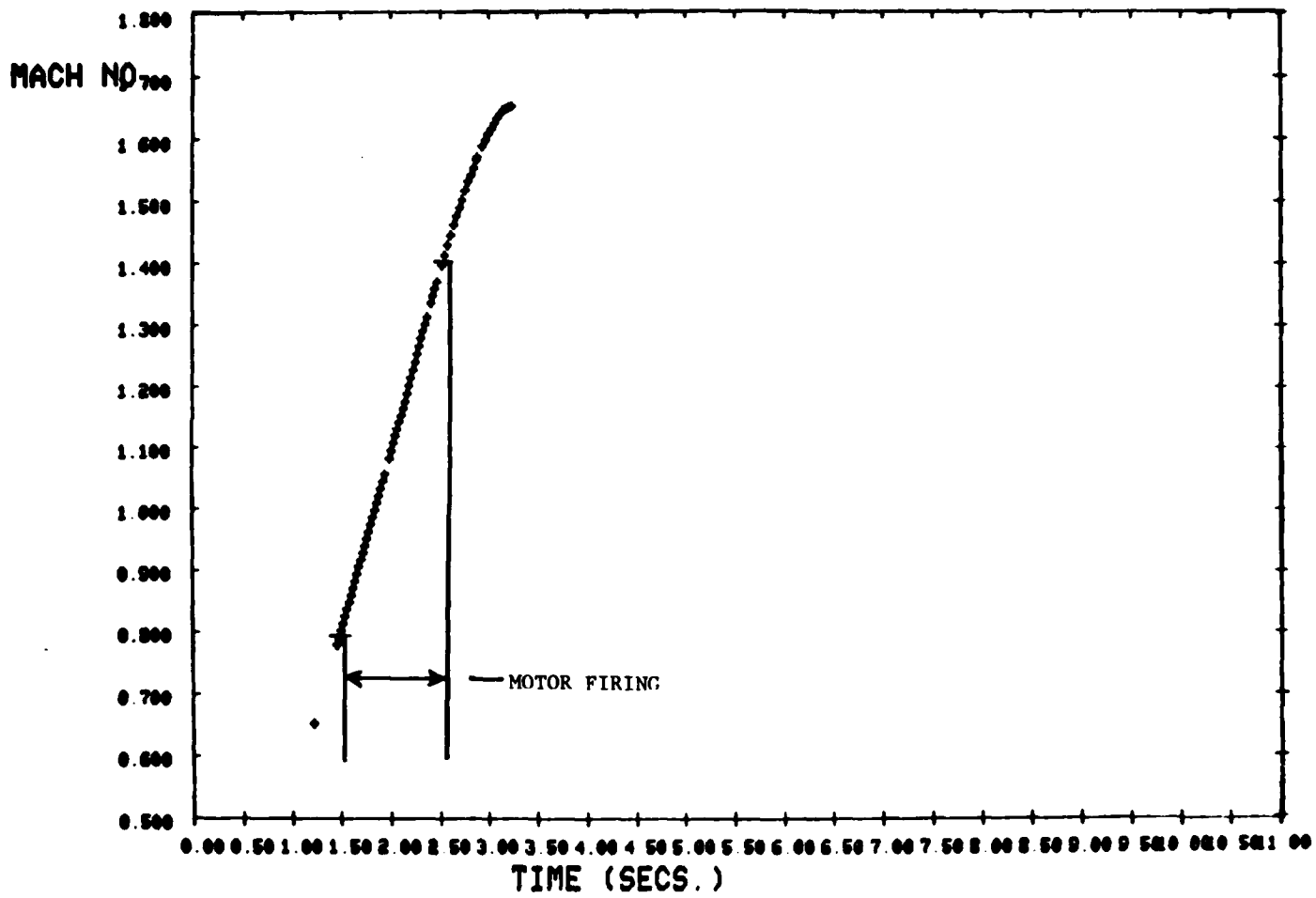

Figure 1. Test trajectory, Run 5F-B3.

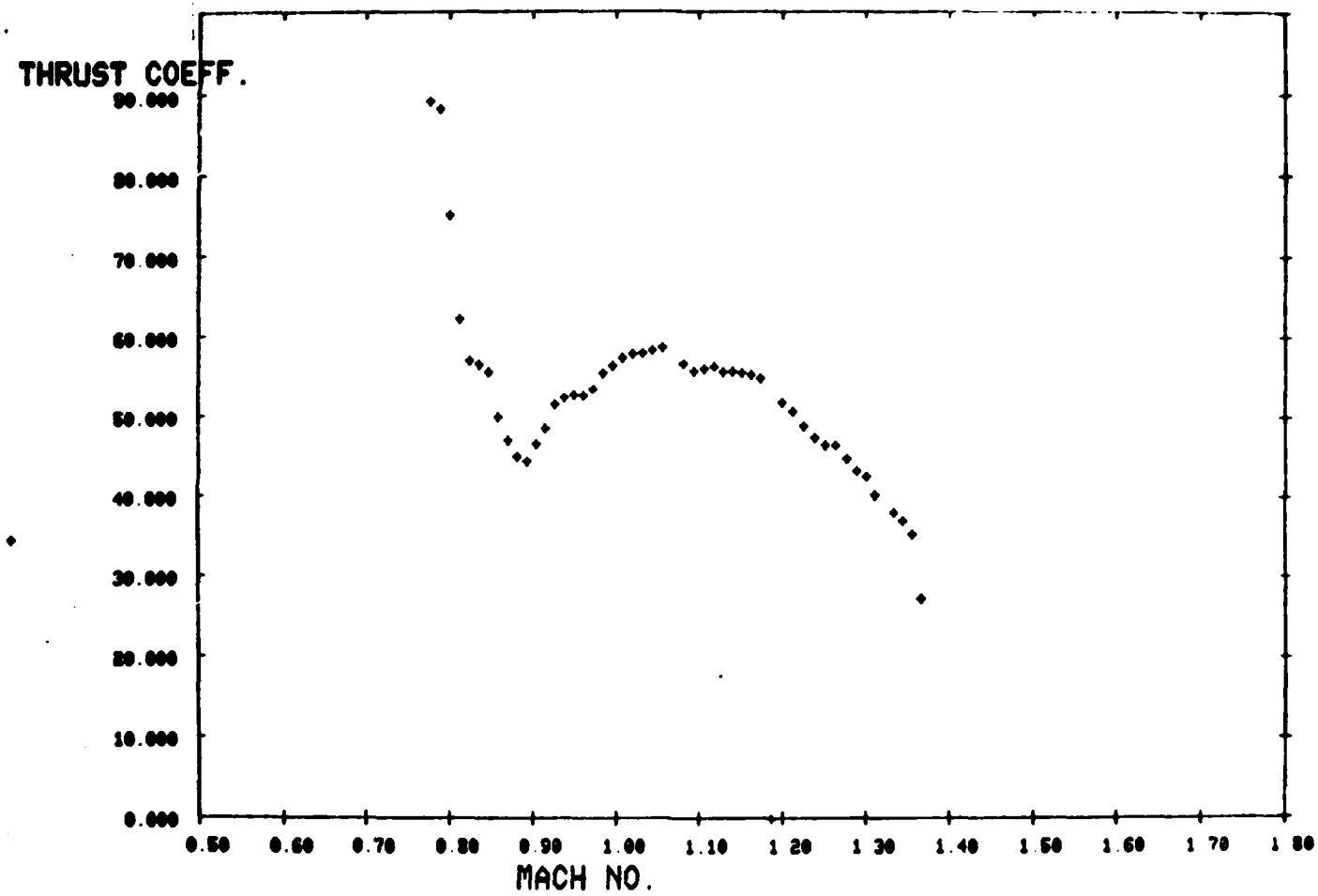

Figure 2. Thrust coefficient, Run 5F-B3.

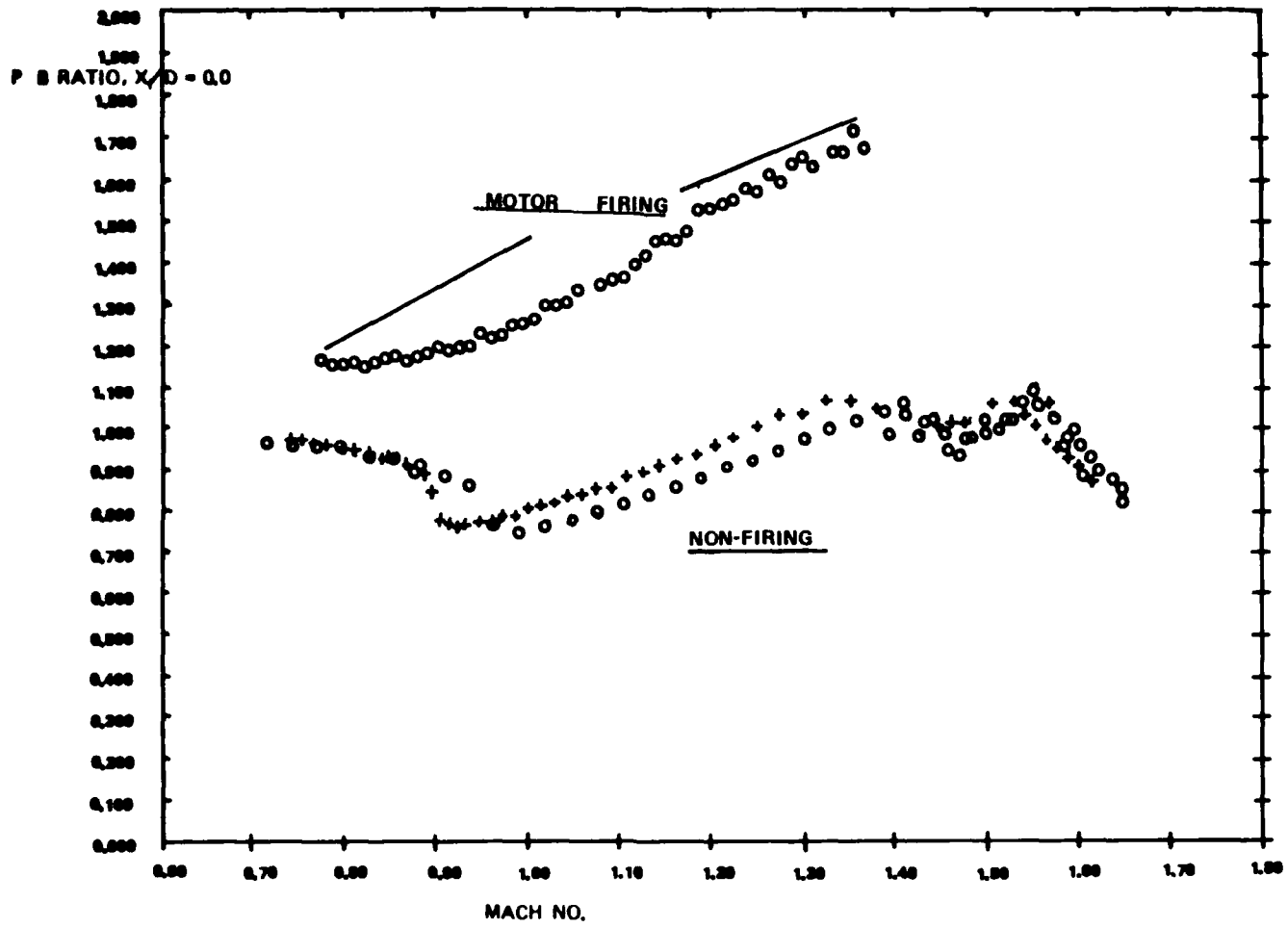

Figure 3. Base pressure/ambient pressure, Run 5F-B3.

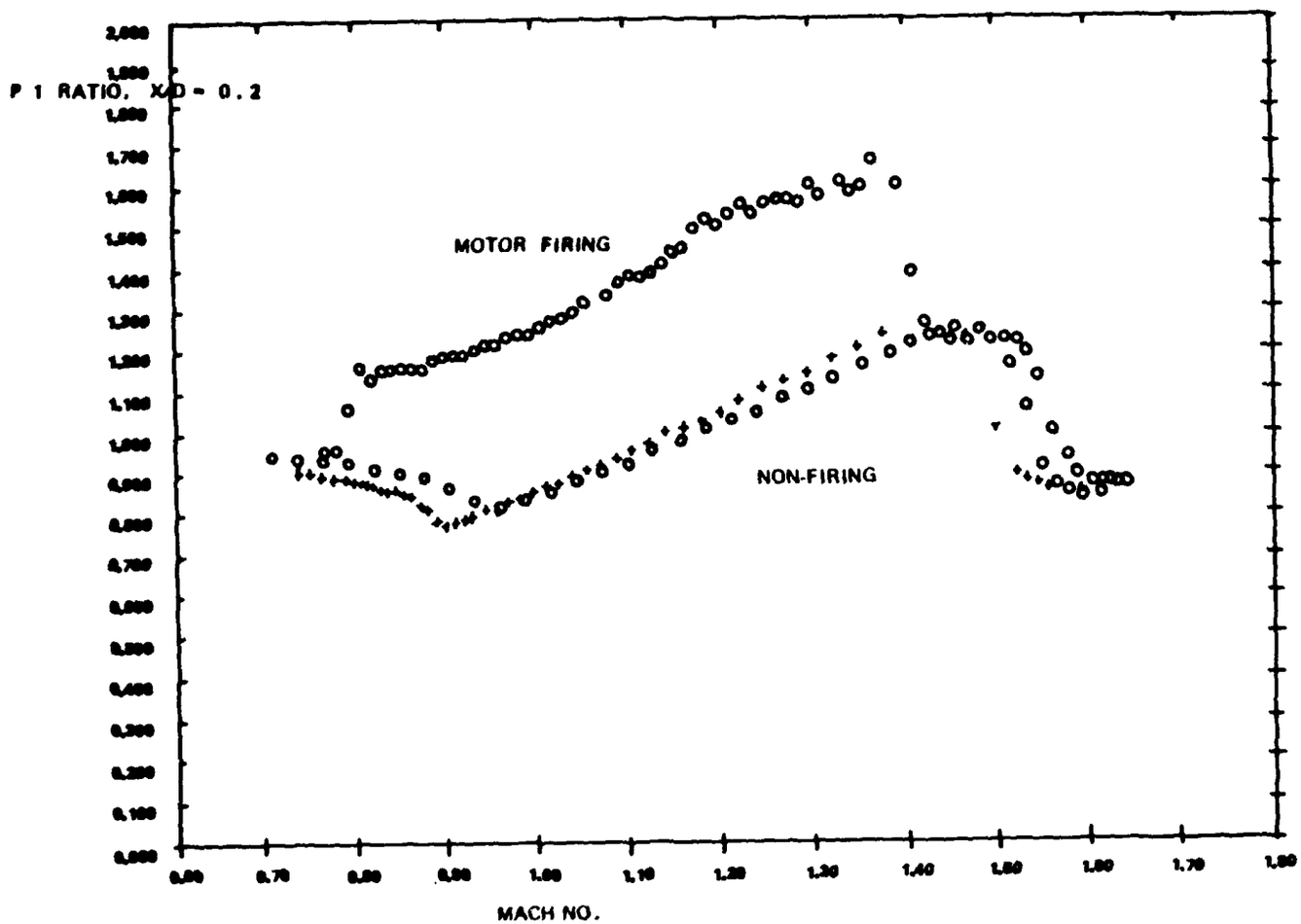

Figure 4. Surface pressure (x/D - 0.2)/ambient pressure, Run 5F-B3.

RUN NO. FF-B 3 RUN DATE 29 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
1.48	0.779	14205	103.62	89.55	1.14	0.95	1.10	0.95
0	0.791	14477	105.60	88.56	1.13	0.96	1.10	0.95
1.52	0.802	12693	92.59	75.38	1.13	1.06	1.11	1.00
1.54	0.814	10821	78.94	62.41	1.14	1.16	1.10	1.06
1.56	0.826	10201	74.41	57.20	1.12	1.13	1.11	1.07
1.58	0.837	10397	75.84	56.72	1.14	1.15	1.13	1.08
1.60	0.849	10506	76.63	55.78	1.15	1.16	1.14	1.09
1.62	0.860	9701	70.76	50.15	1.15	1.16	1.15	1.09
1.64	0.871	9374	68.38	47.20	1.14	1.16	1.16	1.09
1.66	0.883	9200	67.11	45.14	1.15	1.16	1.17	1.09
1.68	0.894	9320	67.98	44.57	1.16	1.18	1.18	1.10
1.70	0.906	10016	73.06	46.70	1.17	1.19	1.20	1.11
1.72	0.917	10712	78.14	48.71	1.17	1.19	1.20	1.11
1.74	0.928	11670	85.13	51.77	1.17	1.19	1.20	1.12
1.76	0.940	12149	88.62	52.59	1.18	1.21	1.22	1.13
1.78	0.951	12519	91.32	52.90	1.20	1.22	1.25	1.13
1.80	0.963	12812	93.46	52.87	1.20	1.22	1.26	1.15
1.82	0.974	13302	97.03	53.61	1.20	1.24	1.28	1.16
1.84	0.985	14140	103.14	55.67	1.23	1.25	1.30	1.17
1.86	0.997	14716	107.35	56.59	1.23	1.25	1.31	1.18
1.88	1.009	15336	111.87	57.58	1.24	1.26	1.34	1.19
1.90	1.021	15848	115.60	58.11	1.27	1.28	1.36	1.20
1.92	1.033	16239	118.46	58.17	1.27	1.29	1.38	1.22
1.94	1.045	16729	122.03	58.56	1.28	1.30	1.40	1.24
1.96	1.057	17208	125.52	58.87	1.31	1.33	1.42	1.26
2.00	1.082	17425	127.11	56.86	1.32	1.35	1.46	1.28
2.02	1.095	17534	127.90	55.90	1.34	1.38	1.48	1.30
4	1.108	18035	131.56	56.19	1.35	1.40	1.49	1.32
2.06	1.120	18513	135.05	56.46	1.37	1.39	1.52	1.33
2.08	1.131	18677	136.24	55.85	1.40	1.40	1.53	1.34
2.10	1.142	19057	139.02	55.89	1.43	1.43	1.56	1.36
2.12	1.153	19362	141.24	55.69	1.44	1.45	1.62	1.38
2.14	1.164	19656	143.38	55.46	1.43	1.46	1.62	1.39
2.16	1.175	19884	145.05	55.05	1.45	1.50	1.65	1.42
2.18	1.188				-	1.53	1.65	1.45
2.20	1.201	19645	143.30	52.08	1.51	1.53	1.63	1.46
2.22	1.214	19612	143.06	50.90	1.52	1.55	1.69	1.48
2.24	1.227	19308	140.84	49.06	1.53	1.57	1.69	1.50
2.26	1.239	19123	139.49	47.59	1.56	1.55	1.70	1.50
2.28	1.252	19123	139.49	46.62	1.55	1.57	1.68	1.51
2.30	1.265	19503	142.27	46.60	1.59	1.58	1.72	1.52
2.32	1.278	19177	139.89	44.91	1.57	1.58	0.05	1.52
2.34	1.290	18862	137.59	43.35	1.62	1.58	1.76	1.52
2.36	1.301	18883	137.75	42.66	1.63	1.62	1.79	1.54
2.38	1.312	18165	132.51	40.34	1.62	1.60	1.79	1.55
1.24	0.653	17839	130.13	159.92	1.64	1.61	1.79	1.55
2.42	1.335	17752	129.49	38.10	1.65	1.63	1.84	1.57
2.44	1.346	17556	128.06	37.06	1.65	1.60	1.86	1.56
2.46	1.357	17045	124.33	35.38	1.70	1.62	1.84	1.56
2.48	1.368	13356	97.43	27.28	1.66	1.68	1.80	1.59

RUN NO. F5-B 3 RUN DATE 99 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
48	0.779	14205	0.95	1.10	0.95	0.97	0.92	0.96
50	0.791	14477	0.96	1.10	0.95	0.96	0.92	0.96
1.52	0.802	12693	1.06	1.11	1.00	1.01	0.95	1.00
1.54	0.814	10821	1.16	1.10	1.06	1.07	1.00	1.03
1.56	0.826	10201	1.13	1.11	1.07	1.05	1.00	1.01
1.58	0.837	10397	1.15	1.13	1.08	1.06	1.00	1.02
1.60	0.849	10506	1.16	1.14	1.09	1.07	1.01	1.02
1.62	0.860	9701	1.16	1.15	1.09	1.07	1.02	1.02
1.64	0.871	9374	1.16	1.16	1.09	1.07	1.02	1.02
1.66	0.883	9200	1.16	1.17	1.09	1.07	1.02	1.02
1.68	0.894	9320	1.18	1.18	1.10	1.07	1.02	1.02
1.70	0.906	10016	1.19	1.20	1.11	1.08	1.01	1.02
1.72	0.917	10712	1.19	1.20	1.11	1.08	1.02	1.02
1.74	0.928	11670	1.19	1.20	1.12	1.09	1.03	1.02
1.76	0.940	12149	1.21	1.22	1.13	1.10	1.03	1.03
1.78	0.951	12519	1.22	1.25	1.13	1.10	1.04	1.03
1.80	0.963	12812	1.22	1.26	1.15	1.11	1.05	1.03
1.82	0.974	13302	1.24	1.28	1.16	1.13	1.05	1.05
1.84	0.985	14140	1.25	1.30	1.17	1.14	1.06	1.04
1.86	0.997	14716	1.25	1.31	1.18	1.14	1.07	1.05
1.88	1.009	15336	1.26	1.34	1.19	1.16	1.08	1.07
1.90	1.021	15848	1.28	1.36	1.20	1.17	1.10	1.07
1.92	1.033	16239	1.29	1.38	1.22	1.18	1.11	1.09
1.94	1.045	16729	1.30	1.40	1.24	1.20	1.12	1.09
1.96	1.057	17208	1.33	1.42	1.26	1.22	1.14	1.12
2.00	1.082	17425	1.35	1.46	1.28	1.17	1.17	1.13
02	1.095	17534	1.38	1.48	1.30	1.27	1.19	1.15
04	1.108	18035	1.40	1.49	1.32	1.28	1.20	1.16
2.06	1.120	18513	1.39	1.52	1.33	1.29	1.21	1.17
2.08	1.131	18677	1.40	1.53	1.34	0.16	[illegible]	1.18
2.10	1.142	19057	1.43	1.56	1.36	1.34	1.25	1.22
2.12	1.153	19362	1.45	1.62	1.38	1.36	1.27	1.23
2.14	1.164	19656	1.46	1.62	1.39	1.37	1.29	1.24
2.16	1.175	19884	1.50	1.65	1.42	1.39	1.30	1.25
2.18	1.188	0	1.53	1.65	1.45	1.42	1.33	1.29
2.20	1.201	19645	1.52	1.68	1.46	1.45	1.36	1.30
2.22	1.214	19612	1.55	1.69	1.48	0.17		1.57
2.24	1.227	19308	1.57	1.69	1.50	1.49	1.42	1.35
2.26	1.239	19123	1.55	1.70	1.50	1.48	1.43	1.35
2.28	1.252	19123	1.57	1.68	1.51	1.49	1.45	1.36
2.30	1.265	19503	1.58	1.72	1.52	1.51	1.46	1.38
2.32	1.278	19177	1.58	0.05	1.52	1.51	1.48	1.39
2.34	1.290	18862	1.58	1.76	1.52	1.52	1.48	1.41
2.36	1.301	18883	1.62	1.79	1.54	1.54	1.50	1.43
2.38	1.312	18165	1.60	1.79	1.55	1.54	1.52	1.45
1.24	0.653	17839	1.61	1.79	1.56	1.55	1.53	1.45
2.42	1.335	17752	1.63	1.84	1.57	1.57	1.54	1.48
2.44	1.346	17556	1.60	1.86	1.56	1.56	1.54	1.50
2.46	1.357	17045	1.62	1.84	1.56	1.56	1.50	4.60
2.48	1.368	13356	1.68	1.80	1.59	1.60	1.57	1.50

RUN NO. F5-B 3 RUN DATE 99 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
.48	0.779	14205	0.96	0.97	0.96	0.98	0.97	0.95
50	0.791	14477	0.96	0.97	0.96	0.98	0.98	0.97
1.52	0.802	12693	1.00	1.00	0.99	0.98	0.98	1.07
1.54	0.814	10821	1.03	0.97	0.61	0.98	0.98	1.08
1.56	0.826	10201	1.01	1.00	0.99	0.97	0.96	1.07
1.58	0.837	10397	1.02	0.99	1.00	0.98	0.97	1.08
1.60	0.849	10506	1.02	1.00	1.00	0.98	0.97	1.09
1.62	0.860	9701	1.02	1.00	1.00	0.98	0.98	1.09
1.64	0.871	9374	1.02	0.99	1.00	0.98	0.98	1.10
1.66	0.883	9200	1.02	0.99	1.00	0.98	0.98	1.10
1.68	0.894	9320	1.02	0.99	0.99	0.98	0.98	1.10
1.70	0.906	10016	1.02	0.99	1.00	0.98	0.98	1.11
1.72	0.917	10712	1.02	0.99	0.99	0.98	0.98	1.12
1.74	0.928	11670	1.02	0.98	0.99	0.98	0.98	1.12
1.76	0.940	12149	1.03	0.99	0.99	0.98	0.97	1.13
1.78	0.951	12519	1.03	0.99	1.00	0.98	0.98	1.14
1.80	0.963	12812	1.03	0.99	1.00	0.98	0.98	1.15
1.82	0.974	13302	1.05	0.99	1.00	0.99	0.98	1.16
1.84	0.985	14140	1.04	1.00	1.00	0.98	0.98	1.17
1.86	0.997	14716	1.05	0.99	1.00	0.98	0.98	1.18
1.88	1.009	15336	1.07	1.01	1.02	0.98	0.97	1.20
1.90	1.021	15848	1.07	1.01	1.02	0.98	0.99	1.21
1.92	1.033	16239	1.09	1.02	1.02	0.98	0.98	1.22
1.94	1.045	16729	1.09	1.03	1.04	0.98	0.98	1.24
1.96	1.057	17208	1.12	1.04	1.05	0.98	0.97	1.26
2.00	1.082	17425	1.13	1.05	1.07	0.98	0.98	1.29
2.02	1.095	17534	1.15	1.07	1.08	0.99	0.99	1.31
04	1.108	18035	1.16	1.07	1.09	0.99	0.98	1.33
2.06	1.120	18513	1.17	1.08	1.09	0.98	0.98	1.35
2.08	1.131	18677	1.42	1.36	1.11	1.31	0.97	0.98
2.10	1.142	19057	1.22	1.11	1.12	0.99	0.97	1.37
2.12	1.153	19362	1.23	1.13	1.13	0.98	0.97	1.39
2.14	1.164	19656	1.24	1.13	1.16	0.98	0.97	1.40
2.16	1.175	19884	1.25	1.14	1.17	0.99	0.98	1.44
2.18	1.188		1.29	1.16	1.18	0.99	0.98	1.46
2.20	1.201	19645	1.30	1.17	1.20	0.99	0.98	1.48
2.22	1.214	19612	1.57	1.20	1.22	0.99	0.99	1.52
2.24	1.227	19308	1.35	1.22	1.24	1.00	0.98	1.52
2.26	1.239	19123	1.35	1.23	1.25	0.99	0.98	1.53
2.28	1.252	19123	1.36	1.24	1.26		0.96	1.54
2.30	1.265	19503	1.38	1.27	1.27	1.00	0.98	1.56
2.32	1.278	19177	1.39	1.27	1.29	0.99	0.99	1.56
2.34	1.290	18862	1.41	1.30	1.31	0.99	0.98	1.58
2.36	1.301	18883	1.43	1.31	1.33	1.00	0.98	1.60
2.38	1.312	18165	1.45	1.33	1.35	1.00	0.98	1.51
1.24	0.653	17839	1.45	1.34	1.37	1.00	0.98	1.52
2.42	1.335	17752	1.48	1.36	1.38	1.01	0.99	1.62
2.44	1.346	17556	1.50	1.36	1.39	1.00	0.99	1.62
2.46	1.357	17045	4.60	1.36	1.39	1.00	0.98	1.64
2.48	1.368	13356	1.50	1.36	1.40	1.00	0.98	1.65

RUN NO. F5-B 3 RUN DATE 99 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
2.53	1.396	0	1.62	1.59	1.58	1.57	1.55	1.48
56	1.412	0	1.41	1.62	1.51	1.37	1.42	1.32
2.59	1.429	0	1.29	1.64	1.48	1.36	1.37	1.36
2.62	1.445	0	1.27	1.66	1.42	1.34	1.33	1.31
2.65	1.461	0	1.28	1.67	1.37	1.34	1.28	1.27
2.68	1.474	0	1.25	1.68	1.34	1.32	1.27	1.25
2.71	1.487	0	1.27	1.67	1.33	1:33	1.27	1.18
2.74	1.501	0	1.26	1.69	0.99	1.28	1.22	1.00
2.77	1.516	0	1.25	1.64	1.25	1.16	1.11	1.14
2.80	1.530	0	1.25	1.55	1.23	1.08	1.05	0.88
2.83	1.540	0	1.22	1.37	1.19	1.00	1.00	0.87
2.86	1.552	0	1.17	1.42	1.11	0.91	0.94	0.88
2.89	1.565	0	1.04	1.41	1.03	0.88	0.90	0.89
2.90	1.568	0	1.03	1.41	0.99	0.88	0.87	0.88
2.95	1.586	0	0.97	1.44	0.96	0.87	0.79	0.89
2.98	1.596	0	0.93	1.46	0.93	0.88	1.00	0.89
3.01	1.606	0	1.34	1.49	0.90	1.24	1.16	1.13
3.04	1.615	0	0.91	1.51	0.89	0.88	0.82	0.89
3.07	1.624	0	0.91	1.49	0.88	0.88	0.82	0.90
3.10	1.632	0	0.91	1.55	0.88	0.88	0.82	0.91
3.13	1.639	0	0.91	1.59	0.88	0.89	0.82	0.92
3.16	1.644	0	0.90	1.62	0.88	0.88	0.83	0.91
3.19	1.648	0	0.90	1.65	0.87	0.97	0.92	0.92
3.22	1.650	0	0.91	1.67	0.88	0.90	0.83	0.92
3.25	1.651	0	0.91	1.70	0.88	0.90	0.83	0.93
3.32	1.647	0	0.91		0.93	0.87	1.03	1.04
3.44	1.627	0	0.91		0.94	0.88	1.02	1.04
56	1.600	0	0.90		0.98	0.87	1.04	1.05
3.68	1.571	0	0.90		1.03	0:86	1.04	1.05
3.80	1.541	0	0.90		1.08	0.87	1.04	1.06
3.92	1.513	0	0.89		1.24	0.90	1.04	1.05
4.04	1.485	0	0.89		0.95	0.87	1.01	0.97
4.16	1.459	0	0.88		1.35	1.27	1.05	1.54
4.28	1.435	0	1.11		1.38	1.32	1.15	1.48
4.40	1.412	0	1.29		1.38	1.33	1.36	1.42
4.52	1.389	0	1.33		1.39	1.33	1.37	1.38
4.64	1.365	0	1.34		1.38	1.32	1.34	1.35
4.76	1.342	0	1.35		1.36	1.30	1.31	1.30
4.88	1.322	0	1.34		1.32	1.26	1.28	1.25
5.00	1.301	0	1.32		1.30	1.25	1.26	1.23
5.12	1.281	0	1.30		1.27	1.22	1.23	1.20
5.24	1.262	0	1.29		1.26	1.22	1.22	1.19
5.36	1.243	0	1.25		1.24	1.18	1.20	1.18
5.48	1.225	0	1.24		1.23	1.16		1.17
5.60	1.207	0	1.22		1.20	1.14	1.16	1.15
5.72	1.190	0	1.19		1.19	1.12	1.14	1.12
5.84	1.174	0	1.17		1.18	1.11	1.13	1.12
5.96	1.158	0	1.14		1.15	1.08	1.11	1.07
6.08	1.143	0	1.32		1.30	1.24	1.25	1.22
6.20	1.128	0	1.12		1.12	1.06	1.08	1.06

RUN NO. F5-B 3 RUN DATE 99 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
53	1.396	0	-1.78	0.00	0.97	1.62	1.59	1.56
56	1.412	0	-1.78	0.00	1.04	1.41	1.62	1.51
2.59	1.429	0	-1.78	0.00	0.97	1.29	1.64	1.48
2.62	1.445	0	-1.78	0.00	1.01	1.27	1.66	1.42
2.65	1.461	0	-1.78	0.00	0.93	1.28	1.67	1.37
2.68	1.474	0	-1.78	0.00	0.92	1.25	1.68	1.34
2.71	1.487	0	-1.78	0.00	0.96	1.27	1.67	1.33
2.74	1.501	0	-1.78	0.00	1.00	1.26	1.69	0.99
2.77	1.516	0	-1.78	0.00	0.98	1.25	1.64	1.25
2.80	1.530	0	-1.78	0.00	1.00	1.25	1.55	1.23
2.83	1.540	0	-1.78	0.00	1.05	1.22	1.37	1.19
2.86	1.552	0	-1.78	0.00	1.07	1.17	1.42	1.11
2.89	1.565	0	-1.78	0.00	1.04	1.04	1.41	1.03
2.90	1.568	0	-1.78	0.00	1.04	1.03	1.41	0.99
2.95	1.586	0	-1.78	0.00	0.94	0.97	1.44	0.96
2.98	1.596	0	-1.78	0.00	0.98	0.93	1.46	0.93
3.01	1.606	0	-1.79	0.00	0.95	1.34	1.49	0.90
3.04	1.615	0	-1.79	0.00	0.92	0.91	1.51	0.89
3.07	1.624	0	-1.78	0.00	1.35	0.91	1.48	0.88
3.10	1.632	0	-1.78	0.00	0.86	0.91	1.55	0.88
3.13	1.639	0	-1.78	0.00	0.86	0.91	1.59	0.88
3.16	1.644	0	-1.78	0.00	0.86	0.90	1.62	0.88
3.19	1.648	0	-1.78	0.00	0.84	0.90	1.65	0.87
3.22	1.650	0	-1.78	0.00	0.81	0.91	1.67	0.88
3.25	1.651	0	-1.78	0.00	0.84	0.91	1.70	0.86
3.32	1.647	0	-1.78	0.00		0.91		0.93
44	1.627	0	-1.78	0.00		0.91		0.94
56	1.600	0	-1.78	0.00		0.90		0.98
3.68	1.571	0	-1.78	0.00		0.90		1.03
3.80	1.541	0	-1.78	0.00		0.90		1.08
3.92	1.513	0	-1.78	0.00		0.89		1.24
4.04	1.485	0	-1.78	0.00		0.89		0.95
4.16	1.459	0	-1.78	0.00		0.88		1.35
4.28	1.435	0	-1.78	0.00		1.11		1.36
4.40	1.412	0	-1.78	0.00		1.29		1.38
4.52	1.389	0	-1.78	0.00		1.33		1.39
4.64	1.365	0	-1.78	0.00		1.34		1.38
4.76	1.342	0	-1.78	0.00		1.35		1.36
4.88	1.322	0	-1.78	0.00		1.34		1.32
5.00	1.301	0	-1.78	0.00		1.32		1.30
5.12	1.281	0	-1.78	0.00		1.30		1.27
5.24	1.262	0	-1.78	0.00		1.29		1.26
5.36	1.243	0	-1.78	0.00		1.25		1.24
5.48	1.225	0	-1.78	0.00		1.24		1.23
5.60	1.207	0	-1.78	0.00		1.22		1.20
5.72	1.190	0	-1.78	0.00		1.19		1.19
5.84	1.174	0	-1.78	0.00		1.17		1.18
5.96	1.158	0	-1.78	0.00		1.14		1.15
6.08	1.143	0	-1.78	0.00		1.32		1.30
6.20	1.128	0	-1.78	0.00		1.12		1.12

RUN NO. F5-B 3 RUN DATE 99 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
2.53	1.396	0	1.48	1.28	1.37	1.01	0.99	1.57
56	1.412	0	1.32	1.20	1.28	1.00	0.99	1.34
2.59	1.429	0	1.36	1.12	1.26	1.01	0.97	1.33
2.62	1.445	0	1.31	0.93	1.13	1.01	1.00	1.33
2.65	1.461	0	1.27	0.90	0.93	1.01	0.98	1.32
2.68	1.474	0	1.25	0.89	0.90	1.01	0.98	1.32
2.71	1.487	0	1.18	0.89	0.88	1.01	0.98	1.33
2.74	1.501	0	1.00	0.91	0.88	1.01	0.98	1.30
2.77	1.516	0	1.14	0.92	0.90	1.01	0.98	1.25
2.80	1.530	0	0.88	0.92	1.14	1.01	0.99	1.28
2.83	1.540	0	0.87	0.92	0.89	1.01	1.00	1.27
2.86	1.552	0	0.88	0.93	0.90	1.01	1.00	1.21
2.89	1.565	0	0.89	0.94	0.92	0.99	0.99	1.09
2.90	1.568	0	0.88	0.94	0.92	1.01	1.00	1.04
2.95	1.586	0	0.89	0.95	0.91	1.01	0.99	1.01
2.98	1.596	0	0.89	0.96	0.92	1.01	1.00	0.98
3.01	1.606	0	1.13	1.05	0.94	0.98	0.98	1.28
3.04	1.615	0	0.89	0.96	0.92	1.01	1.00	0.98
3.07	1.624	0	0.90	0.97	1.09	1.02	1.01	0.95
3.10	1.632	0	0.91	0.98	0.93	1.02	1.01	0.92
3.13	1.639	0	0.92	0.98	0.94	1.02	1.01	0.91
3.16	1.644	0	0.91	0.99	0.94	1.02	1.01	0.92
3.19	1.648	0	0.92	0.99	0.94	1.02	1.01	0.91
3.22	1.650	0	0.92	0.99	0.95	1.03	1.03	0.90
3.25	1.651	0	0.93	1.00	0.95	1.03	1.03	0.89
3.32	1.647	0	1.04					
3.44	1.627	0	1.04					
56	1.600	0	1.05					
3.68	1.571	0	1.05					
3.80	1.541	0	1.06					
3.92	1.513	0	1.05					
4.04	1.485	0	0.97					
4.16	1.459	0	1.54					
4.28	1.435	0	1.48					
4.40	1.412	0	1.42					
4.52	1.389	0	1.38					
4.64	1.365	0	1.35					
4.76	1.342	0	1.30					
4.88	1.322	0	1.25					
5.00	1.301	0	1.23					
5.12	1.281	0	1.20					
5.24	1.262	0	1.19					
5.36	1.243	0	1.18					
5.48	1.225	0	1.17					
5.60	1.207	0	1.15					
5.72	1.190	0	1.12					
5.84	1.174	0	1.12					
5.96	1.158	0	1.07					
6.08	1.143	0	1.22					
6.20	1.128	0	1.06					

RUN NO. F5-B 3 RUN DATE 99 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
26	1.121	0	-1.78	0.00		1.11		1.12
.38	1.108	0	-1.78	0.00		1.09		1.09
6.50	1.095	0	-1.78	0.00		1.10		1.10
6.62	1.081	0	-1.78	0.00		1.07		1.08
6.74	1.068	0	-1.78	0.00		1.04		1.05
6.86	1.056	0	-1.78	0.00		1.04		1.04
6.98	1.043	0	-1.78	0.00		1.02		1.04
7.10	1.032	0	-1.78	0.00		1.13		1.14
7.22	1.021	0	-1.78	0.00		1.00		1.02
7.34	1.009	0	-1.78	0.00		0.98		0.98
7.46	0.997	0	-1.78	0.00		0.98		0.99
7.58	0.987	0	-1.78	0.00		0.96		0.98
7.70	0.977	0	-1.78	0.00		0.96		0.95
7.82	0.966	0	-1.78	0.00		0.94		0.96
7.94	0.957	0	-1.78	0.00		0.93		0.95
8.06	0.947	0	-1.78	0.00		0.92		0.94
8.18	0.938	0	-1.78	0.00		0.92		0.94
8.30	0.929	0	-1.78	0.00		0.91		0.93
8.42	0.921	0	-1.78	0.00		0.91		0.92
8.54	0.912	0	-1.78	0.00		0.90		0.91
8.66	0.904	0	-1.78	0.00		0.90		0.91
8.78	0.896	0	-1.78	0.00		0.91		0.92
8.90	0.888	0	-1.78	0.00		0.91		0.92
9.02	0.881	0	-1.78	0.00		0.92		0.94
9.14	0.874	0	-1.78	0.00		0.90		0.94
9.26	0.867	0	-1.78	0.00		0.92		0.94
38	0.860	0	-1.78	0.00		0.92		0.95
44	0.857	0	-1.78	0.00		0.92		0.95
9.50	0.853	0	-1.78	0.00		0.88		0.96
9.62	0.847	0	-1.78	0.00		0.93		0.96
9.74	0.841	0	-1.78	0.00		0.93		0.97
9.86	0.834	0	-1.78	0.00		0.93		0.97
9.98	0.827	0	-1.78	0.00		0.87		0.95
10.10	0.821	0	-1.78	0.00		0.87		0.95
10.22	0.815	0	-1.78	0.00		0.94		0.98
10.34	0.810	0	-1.78	0.00		0.94		0.97
10.46	0.804	0	-1.78	0.00		0.94		0.97
10.58	0.798	0	-1.78	0.00		0.95		0.97
10.70	0.792	0	-1.78	0.00		0.95		0.98
10.82	0.787	0	-1.78	0.00		0.95		0.99
10.94	0.781	0	-1.78	0.00		0.95		0.99
11.06	0.776	0	-1.78	0.00		0.94		0.99
11.18	0.770	0	-1.78	0.00		0.95		0.99
11.30	0.765	0	-1.78	0.00		0.95		0.99
11.31	0.764	0	-1.78	0.00		0.05		0.10
11.32	0.764	0	-1.78	0.00		0.05		
11.33	0.764	0	-1.78	0.00		0.05		
11.34	0.763	0	-1.78	0.00		0.05		
11.35	0.763	0	-1.78	0.00		0.05		
11.36	0.762	0	-1.78	0.00		0.05		

RUN NO. F5-B 3 RUN DATE 99 MAY 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
26	1.121	0	1.11	-0.13	1.12	1.05	1.07	1.06
38	1.108	0	1.09	-0.13	1.09	1.03	1.05	1.03
6.50	1.095	0	1.10	-0.13	1.10	1.02	1.04	1.02
6.62	1.081	0	1.07	-0.13	1.08	1.01	1.03	1.02
6.74	1.068	0	1.04	-0.13	1.05	0.99	1.01	1.00
6.86	1.056	0	1.04	-0.13	1.04	0.98	1.00	0.99
6.98	1.043	0	1.02	-0.13	1.04	0.97	0.99	0.97
7.10	1.032	0	1.13	-0.13	1.14	0.99	1.09	1.08
7.22	1.021	0	1.00	-0.13	1.02	0.95	0.98	0.96
7.34	1.009	0	0.98	-0.13	0.98	0.94	0.96	0.94
7.46	0.997	0	0.98	-0.13	0.99	0.93	0.94	0.93
7.58	0.987	0	0.96	-0.13	0.98	0.92	0.93	0.92
7.70	0.977	0	0.96	-0.13	0.95	0.91	0.37	0.90
7.82	0.966	0	0.94	-0.13	0.96	0.90	0.91	0.90
7.94	0.957	0	0.93	-0.13	0.95	0.89	0.91	0.89
8.06	0.947	0	0.92	-0.13	0.94	0.88	0.90	0.88
8.18	0.938	0	0.92	-0.13	0.94	0.88	0.89	0.91
8.30	0.929	0	0.91	-0.13	0.93	0.87	0.88	0.87
8.42	0.921	0	0.91	-0.13	0.92	0.87	0.88	0.87
8.54	0.912	0	0.90	-0.13	0.91	0.86	0.87	0.96
8.66	0.904	0	0.90	-0.13	0.91	0.93	0.86	0.85
8.78	0.896	0	0.91	-0.13	0.92	0.87	0.88	0.86
8.90	0.888	0	0.91	-0.13	0.92	0.88	0.88	0.87
9.02	0.881	0	0.92	-0.13	0.94	0.89	0.90	0.88
9.14	0.874	0	0.90	-0.13	0.94	0.89	0.90	0.88
9.26	0.867	0	0.92	-0.13	0.94	0.90	0.90	0.88
38	0.860	0	0.92	-0.13	0.95	0.90	0.91	0.90
44	0.857	0	0.92	-0.13	0.95	0.91	0.91	0.90
9.50	0.853	0	0.88	-0.13	0.96	0.92	0.90	0.91
9.62	0.847	0	0.93	-0.13	0.96	0.92	0.92	0.91
9.74	0.841	0	0.93	-0.13	0.97	0.91	0.93	0.91
9.86	0.834	0	0.93	-0.13	0.97	0.92	0.92	0.92
9.98	0.827	0	0.87	-0.13	0.95	0.97	0.91	0.93
10.10	0.821	0	0.87	-0.13	0.95	0.96	0.91	0.94
10.22	0.815	0	0.94	-0.13	0.98	0.93	0.94	0.93
10.34	0.810	0	0.94	-0.13	0.97	0.93	0.93	0.93
10.46	0.804	0	0.94	-0.13	0.97	0.93	0.93	0.92
10.58	0.798	0	0.95	-0.13	0.97	0.93	0.94	0.93
10.70	0.792	0	0.95	-0.13	0.98	0.93	0.94	0.94
10.82	0.787	0	0.95	-0.13	0.99	0.94	0.95	0.94
10.94	0.781	0	0.95	-0.13	0.99	0.94	0.95	0.94
11.06	0.776	0	0.94	-0.13	0.99	0.94	0.95	0.93
11.18	0.770	0	0.95	-0.13	0.99	0.94	0.95	0.94
11.30	0.765	0	0.95	-0.13	0.99	0.94	0.95	0.94
11.31	0.764	0		-0.13				
11.32	0.764	0		-0.13				
11.33	0.764	0		-0.13				
11.34	0.763	0		-0.13				
11.35	0.763	0		-0.13				
11.36	0.762	0		-0.13				

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
6.26	1.121	0	1.06				-0.02	-0.01
38	1.108	0	1.03				-0.02	
50	1.095	0	1.02					
6.62	1.081	0	1.02					
6.74	1.068	0	1.00					
6.86	1.056	0	0.99					
6.98	1.043	0	0.97					
7.10	1.032	0	1.08					
7.22	1.021	0	0.96					
7.34	1.009	0	0.94					
7.46	0.997	0	0.93					
7.58	0.987	0	0.92					
7.70	0.977	0	0.90					
7.82	0.966	0	0.90					
7.94	0.957	0	0.89					
8.06	0.947	0	0.88					
8.18	0.938	0	0.91					
8.30	0.929	0	0.87					
8.42	0.921	0	0.87					
8.54	0.912	0	0.86					
8.66	0.904	0	0.85					
8.78	0.896	0	0.86					
8.90	0.888	0	0.87					
9.02	0.881	0	0.88					
9.14	0.874	0	0.88					
9.26	0.867	0	0.88					
9.38	0.860	0	0.90					
44	0.857	0	0.90					
50	0.853	0	0.91					
9.62	0.847	0	0.91					
9.74	0.841	0	0.91					
9.86	0.834	0	0.92					
9.98	0.827	0	0.93					
10.10	0.821	0	0.94					
10.22	0.815	0	0.93					
10.34	0.810	0	0.93					
10.46	0.804	0	0.92					
10.58	0.798	0	0.93					
10.70	0.792	0	0.94					
10.82	0.787	0	0.94					
10.94	0.781	0	0.94					
11.06	0.776	0	0.93					
11.18	0.770	0	0.94					
11.30	0.765	0	0.94					
11.31	0.764	0	0.07					
11.32	0.764	0	0.07					
11.33	0.764	0	0.07					
11.34	0.763	0	0.07					
11.35	0.763	0	0.07					
11.36	0.762	0	0.07					

IV. APPENDIX C

APPENDIX C

Run No. 5F-B4

Run Date: 11 Jun 76

Configuration: 6.0 diameter body
Angle of attack: 0°
No fins

Motor Firing: 4.14 to 5.12 seconds

Remarks:

Propulsion staged so sled could be sustained at $M_{\infty} \simeq 1.2$ in order to reduce varying Mach number effect on test results and allow only thrust variation to influence surface pressures. Mach number variation held at +0.02 during firing which yielded C_T variation of 25 to 61.

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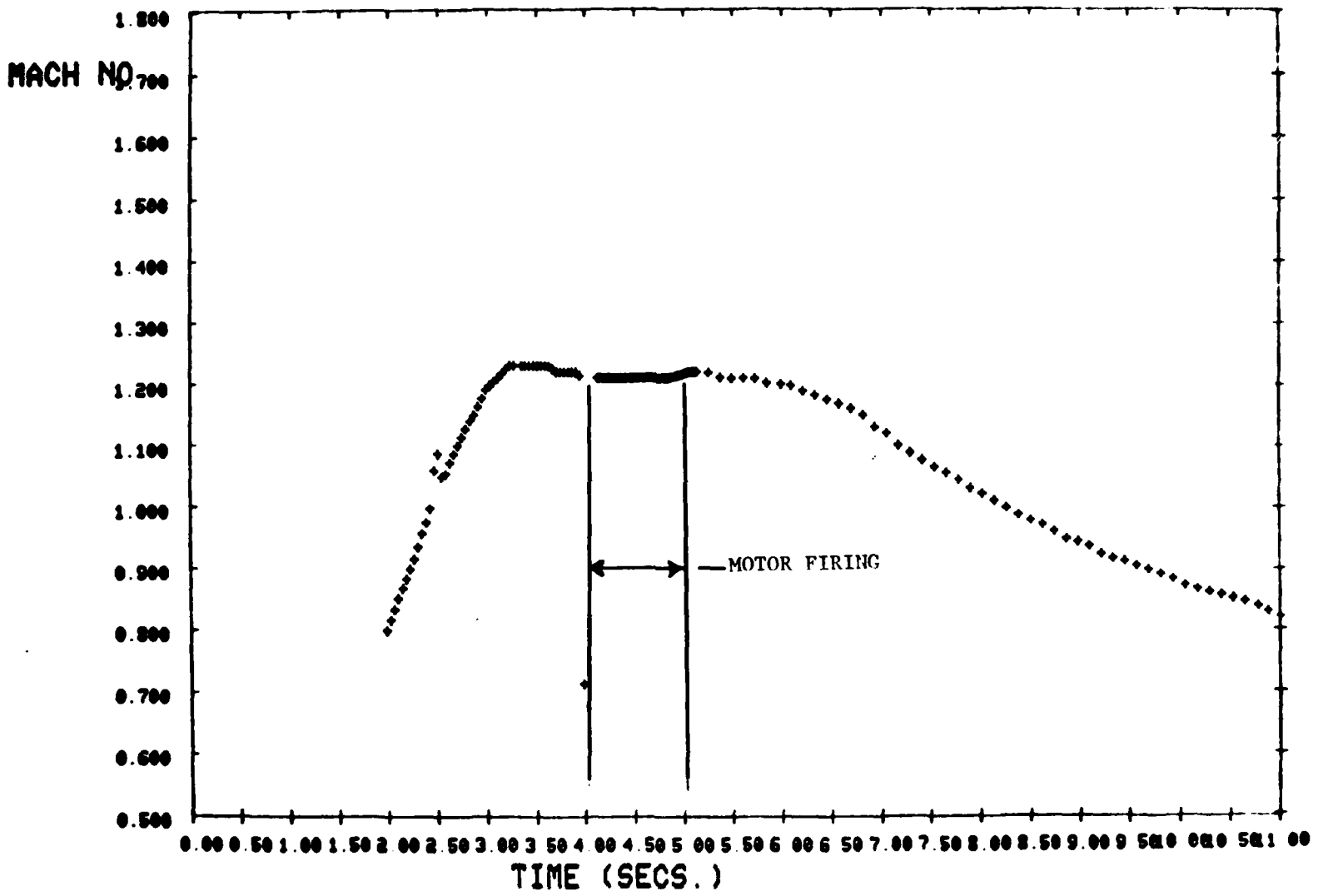

Figure 1. Test trajectory, Run 5F-B4.

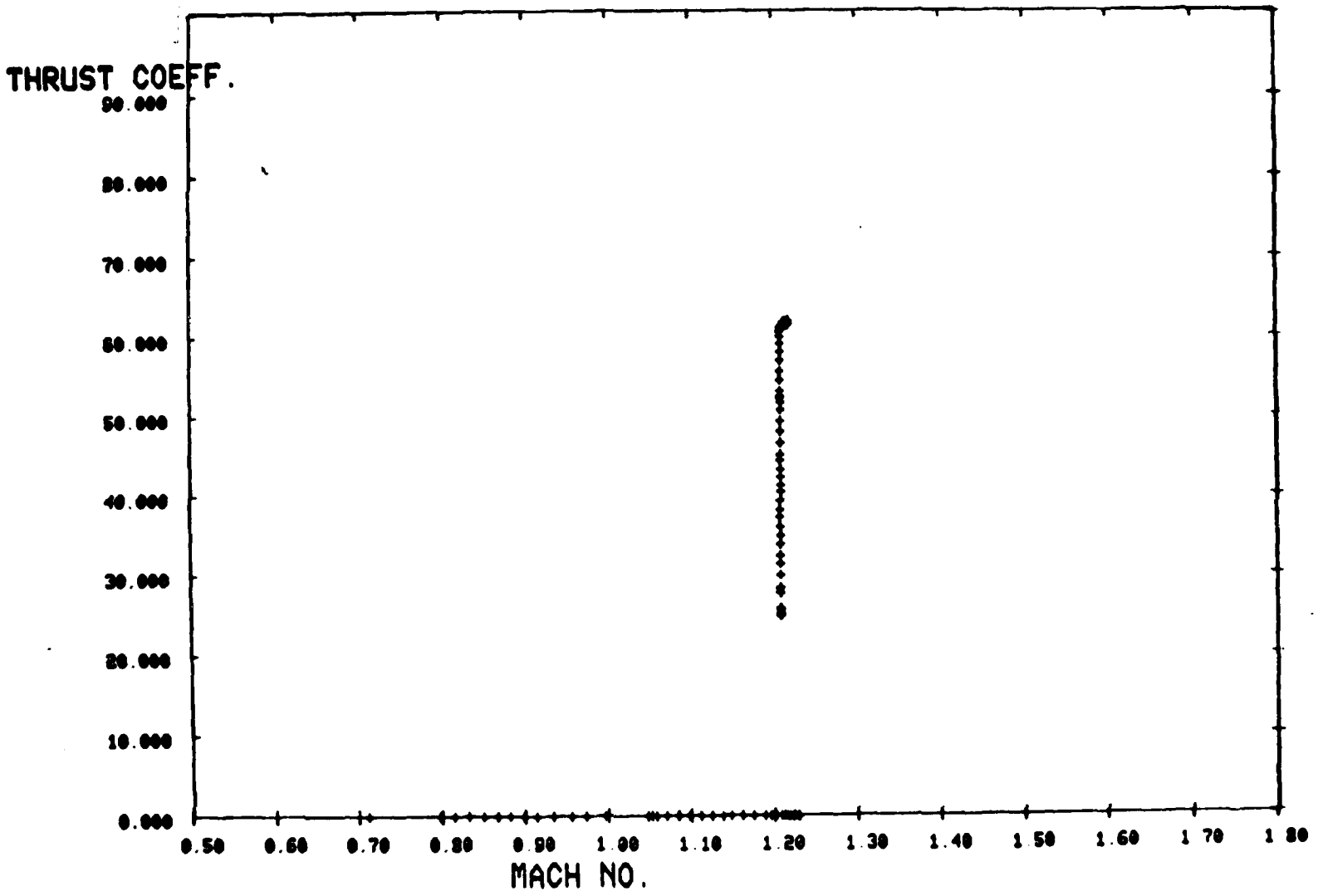

Figure 2. Thrust coefficient, Run 5F-B4.

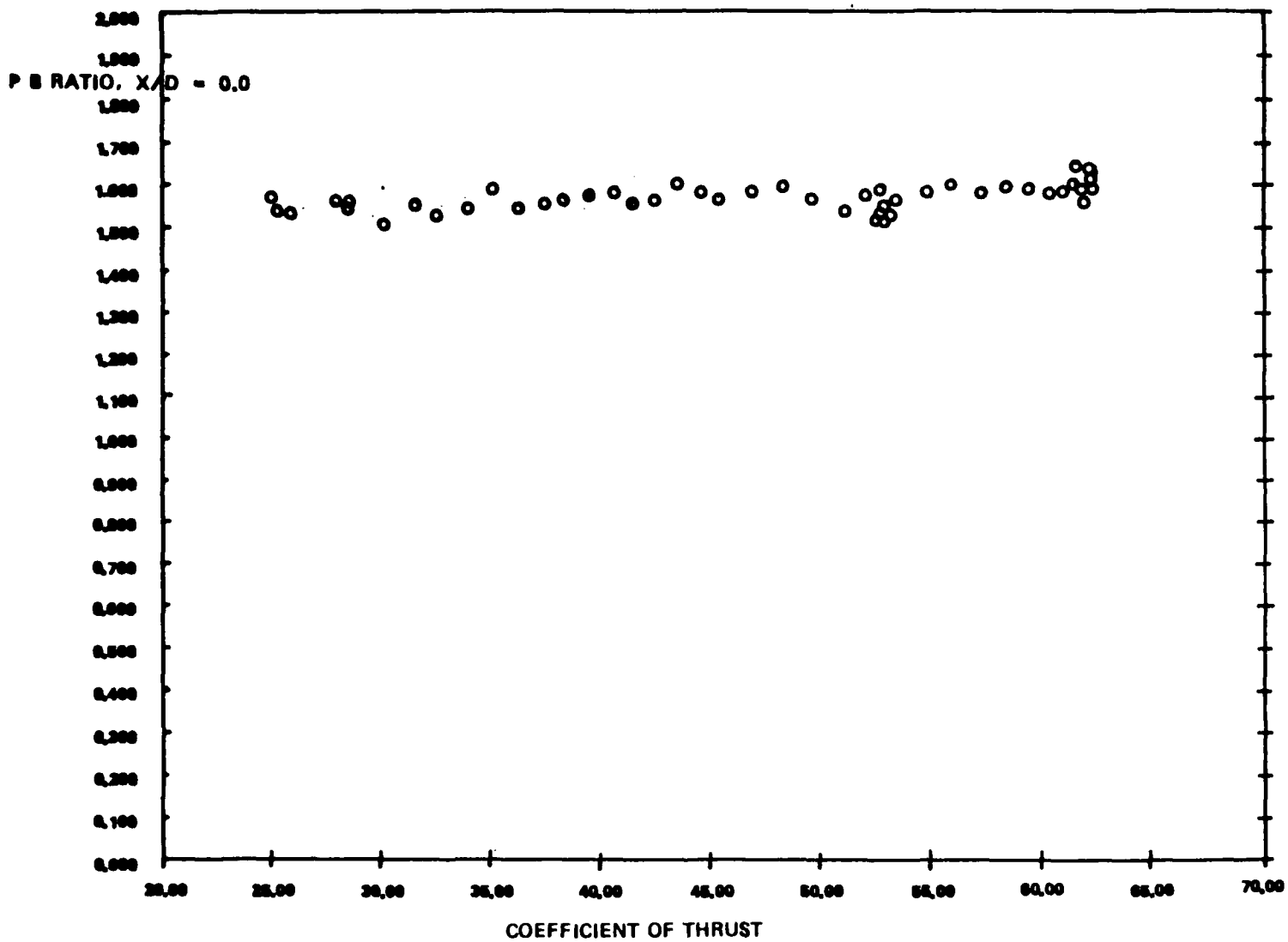

Figure 3. Base pressure/ambient pressure, Run 5F-B4.

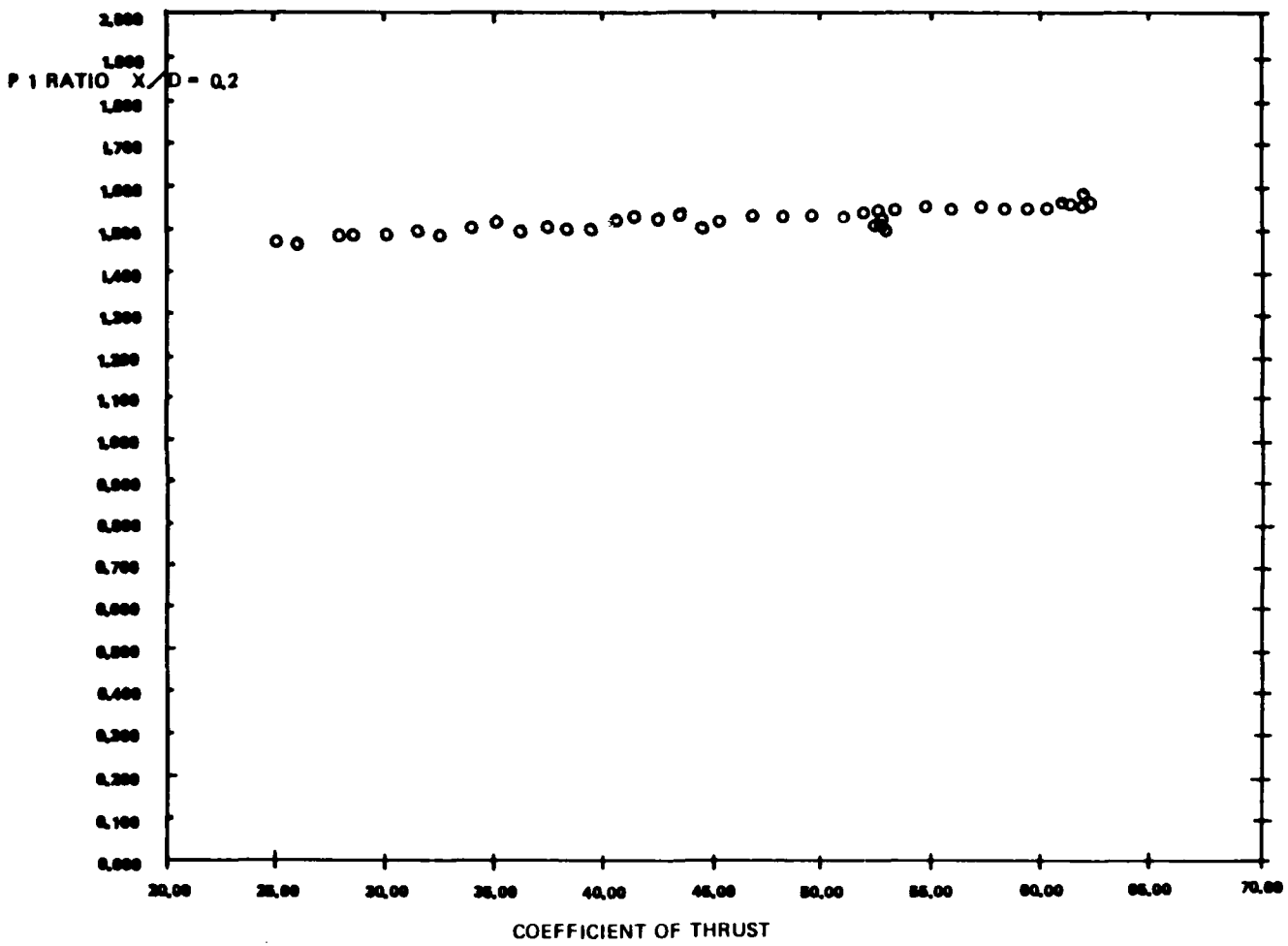

Figure 4. Surface pressure (x/D = 0.2)/ambient pressure, Run 5F-B4.

RUN NO. F5-B 4 RUN DATE 99JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
2.00	0.800	0	0.06	0.06	0.06	0.05	0.06	0.06
[illegible]94	0.817	0	0.06	0.97	0.96	0.05	0.06	0.06
[illegible].08	0.834	0	0.96	0.96	0.96	0.95	0.95	0.96
2.12	0.852	0	0.96	0.96	0.96	0.94	0.94	0.95
2.16	0.868	0	0.95	0.96	0.95	0.94	0.87	0.94
2.20	0.883	0	0.94	0.95	0.94	0.92	0.92	0.93
2.24	0.899	0	0.94	0.94	0.94	0.91	0.91	0.91
2.28	0.915	0	0.93	0.94	0.93	0.89	0.89	0.90
2.32	0.935	0	0.93	0.94	0.93	0.89	0.88	0.90
2.36	0.957	0	0.93	0.95	0.94	0.89	0.88	0.89
2.40	0.975	0	0.94	0.99	0.94	0.89	0.88	0.91
2.44	0.998	0	0.94	0.96	0.94	0.89	0.88	0.91
2.48	1.060	0	0.96	0.97	0.96	0.91	0.89	0.92
2.52	1.087	0	0.98	0.99	0.97	0.92	0.90	0.95
2.56	1.049	0	0.97	1.00	0.98	0.93	0.92	0.96
2.60	1.054	0	1.00	1.02	[illegible].01	0.95	0.93	0.96
2.64	1.072	0	1.02	1.04	[illegible].02	0.96	0.93	0.97
2.68	1.086	0	1.03	1.06	[illegible].03	0.98	0.95	1.00
2.72	1.099	0	1.05	1.07	[illegible].05	0.99	0.96	1.01
2.76	1.113	0	1.07	1.09	[illegible].06	1.01	0.97	1.03
2.80	1.127	0	1.08	1.10	[illegible].09	1.02	0.99	1.04
2.84	1.140	0	1.10	1.12	[illegible].10	1.04	1.00	1.04
2.88	1.150	0	1.12	1.14	[illegible].12	1.05	1.01	1.09
2.92	1.164	0	1.12	1.15	[illegible].13	1.06	1.02	1.08
2.96	1.177	0	1.14	1.17	[illegible].15	1.08	1.03	1.09
3.00	1.191	0	1.16	1.18	[illegible].16	1.09	1.02	1.11
3.04	1.198	0	1.15	1.18	[illegible].16	1.10	1.05	1.12
[illegible]08	1.204	0	1.18	1.20	[illegible].19	1.12	1.05	1.12
[illegible].12	1.210	0	1.19	1.22	[illegible].20	1.12	1.06	1.14
3.16	1.217	0	1.20	1.26	[illegible].21	1.13	1.07	1.14
3.20	1.224	0	1.21	1.24	[illegible].22	1.14	1.08	1.15
3.24	1.230	0	1.22	1.25	[illegible].23	1.14	1.09	1.16
3.28	1.230	0	1.21	1.25	[illegible].23	1.15	1.09	1.16
3.36	1.230	0	1.24	1.27	[illegible].26	1.16	1.10	1.17
3.40	1.230	0	1.23	1.27	[illegible].26	1.17	1.11	1.18
3.44	1.230	0	1.24	1.28	[illegible].26	1.17	1.11	1.18
3.48	1.230	0	1.25	1.28	[illegible].26	1.17	1.10	1.18
3.52	1.230	0	1.25	1.28	[illegible].27	1.18	1.11	1.19
3.56	1.230	0	1.25	1.28	[illegible].26	1.18	1.12	1.18
3.60	1.230	0	1.24	1.27	[illegible].26	1.17	1.12	1.18
3.64	1.230	0	1.23	1.27	[illegible].26	1.17	1.13	[illegible].17
3.68	1.226	0	1.24	1.28	[illegible].26	1.17	1.13	1.18
3.72	1.220	0	1.24	1.28	[illegible].26	1.17	1.13	1.17
3.76	1.220	0	1.24	1.27	[illegible].25	1.17	1.14	1.17
3.80	1.220	0	1.22	1.26	[illegible].25	1.17	1.14	1.17
3.84	1.220	0	1.23	1.27	[illegible].25	1.17	1.14	1.17
3.88	1.220	0	1.23	1.26	[illegible].24	1.16	1.14	1.17
3.92	1.220	0	1.22	1.25	[illegible].24	1.16	1.14	1.17
3.96	1.214	0	1.22	1.25	[illegible].24	1.16	1.14	1.16
4.00	1.210	0	1.22	1.26	[illegible].24	1.16	1.14	1.17

RUN NO. F5-B 4 RUN DATE 29JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
4	1.210	10888	79.87	28.59	1.54	1.09	2.13	1.14
.16	1.210	9858	72.31	25.88	.53	1.09	2.16	1.14
4.18	1.210	9655	70.83	25.35	.54	1.22	2.17	1.19
4.20	1.210	9567	70.18	25.12	.57	1.47	2.18	1.32
4.22	1.210	9919	72.76	26.04	.53	1.46	2.17	1.38
4.24	1.210	10666	78.24	28.00	.56	1.48	2.22	1.39
4.26	1.210	10895	79.92	28.60	.56	1.48	2.22	1.40
4.28	1.210	11501	84.37	30.20	.50	1.48	2.22	1.40
4.30	1.210	12055	88.43	31.65	.55	1.49	2.25	1.40
4.32	1.210	12425	91.14	32.62	.53	1.48	2.25	1.40
4.34	1.210	12978	95.20	34.07	.54	1.50	2.27	1.41
4.36	1.210	13400	98.30	35.18	.58	1.51	2.36	1.42
4.38	1.210	13831	101.46	36.31	.54	1.49	2.27	1.42
4.40	1.210	14297	104.87	37.54	.55	1.50	2.29	1.43
4.42	1.210	14622	107.26	38.39	.56	1.49	2.30	1.43
4.44	1.210	15071	110.55	39.57	.57	1.49	2.29	1.44
4.46	1.210	15519	113.84	40.74	.58	1.51	2.31	1.44
4.48	1.210	15835	116.16	41.58	.55	1.52	2.32	1.44
4.50	1.210	16222	119.00	42.59	.56	1.52	2.31	1.45
4.52	1.210	16600	121.77	43.58	.60	1.52	2.28	1.45
4.54	1.210	17022	124.86	44.69	.58	1.50	2.31	1.45
4.56	1.210	17304	126.93	45.43	.56	1.51	2.35	1.46
4.58	1.210	17884	131.18	46.95	.58	1.52	2.38	1.47
4.60	1.210	18438	135.25	48.41	.59	1.52	2.38	1.47
4.62	1.210	18939	138.92	49.72	.56	1.53	2.36	1.47
4.64	1.210	19484	142.92	51.15	.54	1.52	2.36	1.47
66	1.210	19835	145.50	52.08	.57	1.53	2.36	1.48
.68	1.210	20064	147.18	52.68	.58	1.54	2.40	1.48
4.70	1.210	20117	147.56	52.82	.59	1.53	2.40	1.49
4.72	1.210	20372	149.43	53.49	.56	1.54	2.40	1.48
4.74	1.210	20917	153.43	54.92	.58	1.55	2.39	1.50
4.76	1.210	21347	156.59	56.05	.60	1.54	2.39	1.49
4.78	1.210	21875	160.46	57.43	.58	1.55	2.40	1.50
4.80	1.210	22279	163.43	58.49	.59	1.54	2.42	1.49
4.82	1.210	22666	166.26	59.51	.59	1.54	2.43	1.49
4.84	1.210	23009	168.78	60.41	.58	1.55	2.44	1.51
4.86	1.210	23255	170.58	61.05	.58	1.56	2.43	1.52
4.88	1.211	23501	172.39	61.60	.64	1.55	2.47	1.51
4.90	1.212	23519	172.52	61.55	.60	1.55	2.47	1.52
4.92	1.213	23501	172.39	61.41	.59	1.55	2.45	1.52
4.94	1.214	23747	174.20	61.96	.56	1.58	2.49	1.51
4.96	1.215	23888	175.23	62.23	.59	1.56	2.44	1.52
4.98	1.216	23950	175.68	62.29	.61	1.55	2.50	1.51
5.00	1.217	23950	175.68	62.20	.63	1.58	2.48	1.52
5.02	1.218	23897	175.29	61.96	.58	1.56	2.49	1.52
5.04	1.219	23906	175.36	61.89	.58	1.56	2.48	1.51
5.06	1.219	23976	175.87	61.98	.58	1.57	2.52	1.52
5.08	1.220	24020	176.19	62.03	.60	1.55	2.51	1.51
5.10	1.220	24169	177.29	62.42	.59	1.55	2.54	1.52
5.12	1.220	23993	176.00	61.97	.59	1.55	2.51	1.52

RUN NO. F5-B 4 RUN DATE 29JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
[illegible]4	1.210	10888	1.09	2.13	1.14	1.16	1.10	1.22
[illegible].16	1.210	9858	1.09	2.16	[illegible].14	1.16	1.11	1.21
4.18	1.210	9655	1.22	2.17	1.19	1.18	1.13	1.22
4.20	1.210	9567	1.47	2.18	1.32	1.29	1.22	1.24
4.22	1.210	9919	1.46	2.17	1.38	1.34	1.25	1.25
4.24	1.210	10666	1.48	2.22	1.39	1.35	1.24	1.25
4.26	1.210	10895	1.48	2.22	1.40	1.34	1.27	1.25
4.28	1.210	11501	1.48	2.22	1.40	1.35	1.26	1.25
4.30	1.210	12055	1.49	2.25	1.40	1.34	1.25	1.24
4.32	1.210	12425	1.48	2.25	1.40	1.34	1.24	1.23
4.34	1.210	12978	1.50	2.27	1.41	1.35	1.25	1.25
4.36	1.210	13400	1.51	2.26	1.42	1.37	1.25	1.25
4.38	1.210	13831	1.49	2.27	1.42	1.37	1.28	1.25
4.40	1.210	14297	1.50	2.29	1.43	1.38	1.29	1.25
4.42	1.210	14622	1.49	2.30	1.43	1.38	1.30	1.25
4.44	1.210	15071	1.49	2.29	1.44	1.39	1.31	1.26
4.46	1.210	15519	1.51	2.31	1.44	1.39	1.30	1.26
4.48	1.210	15835	1.52	2.32	1.44	1.38	1.29	1.26
4.50	1.210	16222	1.52	2.31	1.45	1.41	1.30	1.28
4.52	1.210	16600	1.52	2.28	1.46	1.42	1.32	1.27
4.54	1.210	17022	1.50	2.31	1.45	1.41	1.34	1.27
4.56	1.210	17304	1.51	2.35	1.46	1.42	1.34	1.28
4.58	1.210	17884	1.52	2.38	1.47	1.43	1.35	1.28
4.60	1.210	18438	1.52	2.33	1.47	1.43	1.35	1.29
4.62	1.210	18939	1.53	2.36	1.47	1.43	1.34	1.29
4.64	1.210	19484	1.52	2.36	1.47	1.44	1.36	1.29
[illegible].66	1.210	19835	1.53	2.36	1.48	1.44	1.37	1.30
[illegible].68	1.210	20064	1.54	2.40	1.48	1.45	1.38	1.31
4.70	1.210	20117	1.53	2.40	1.49	1.46	1.40	1.31
4.72	1.210	20372	1.54	2.40	1.48	1.46	1.39	1.31
4.74	1.210	20917	1.55	2.39	1.50	1.47	1.41	1.32
4.76	1.210	21347	1.54	2.39	1.49	1.47	1.41	1.33
4.78	1.210	21875	1.55	2.40	1.50	1.46	1.40	1.33
4.80	1.210	22279	1.54	2.42	1.49	1.47	1.40	1.33
4.82	1.210	22666	1.54	2.42	1.49	1.48	1.43	1.35
4.84	1.210	23009	1.55	2.44	1.51	1.49	1.45	1.35
4.86	1.210	23255	1.56	2.43	1.52	1.50	1.44	1.36
4.88	1.211	23501	1.55	2.47	1.51	1.50	1.46	1.36
4.90	1.212	23519	1.55	2.47	1.52	1.49	1.46	1.37
4.92	1.213	23501	1.55	2.45	1.52	1.50	1.47	1.39
4.94	1.214	23747	1.58	2.49	1.51	1.50	1.45	1.38
4.96	1.215	23888	1.56	2.44	1.52	1.50	1.46	1.38
4.98	1.216	23950	1.55	2.50	1.51	1.50	1.47	1.37
5.00	1.217	23950	1.58	2.48	1.52	1.51	1.47	1.38
5.02	1.218	23897	1.56	2.48	1.52	1.50	1.47	1.38
5.04	1.219	23906	1.56	2.48	1.52	1.51	1.47	1.39
5.06	1.219	23976	1.57	2.52	1.52	1.51	1.47	1.40
5.08	1.220	24020	1.55	2.51	1.51	1.50	1.47	1.39
5.10	1.220	24169	1.55	2.54	1.52	1.50	1.47	1.40
5.12	1.220	23993	1.55	2.51	1.52	1.51	1.48	1.38

RUN NO. F5-B 4 RUN DATE 99JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
.14	1.210	10888	1.22	1.25	1.23	1.15	1.14	1.16
4.16	1.210	9858	1.21	1.24	1.23	1.15	1.14	1.17
4.18	1.210	9655	1.22	1.24	1.23	1.15	1.14	1.34
4.20	1.210	9567	1.24	1.26	1.24	1.17	1.14	1.38
4.22	1.210	9919	1.25	1.23	1.22	1.20	1.14	1.39
4.24	1.210	10656	1.25	1.24	1.24	1.23	1.15	1.40
4.26	1.210	10895	1.25	1.24	1.24	1.25	1.15	1.40
4.28	1.210	11501	1.25	1.24	1.23	1.28	1.15	1.41
4.30	1.210	12055	1.24	1.23	1.23	1.29	1.15	1.40
4.32	1.210	12425	1.23	1.23	1.22	1.29	1.15	1.41
4.34	1.210	12978	1.25	1.24	1.23	1.32	1.15	1.42
4.36	1.210	13400	1.25	1.23	1.23	1.34	1.16	1.42
4.38	1.210	13831	1.25	1.23	1.22	1.36	1.16	1.42
4.40	1.210	14297	1.25	1.23	1.23	1.37	1.16	1.44
4.42	1.210	14622	1.25	1.23	1.23	1.38	1.16	1.44
4.44	1.210	15071	1.26	1.23	1.23	1.39	1.16	1.44
4.46	1.210	15519	1.26	1.23	1.22	1.40	1.16	1.45
4.48	1.210	15835	1.26	1.23	1.23	1.41	1.16	1.46
4.50	1.210	16222	1.28	1.24	1.23	1.42	1.16	1.46
4.52	1.210	16600	1.27	1.23	1.23	1.44	1.17	1.46
4.54	1.210	17022	1.27	1.23	1.23	1.44	1.17	1.46
4.56	1.210	17304	1.28	1.24	1.24	1.44	1.17	1.47
4.58	1.210	17884	1.28	1.23	1.24	1.46	1.17	1.47
4.60	1.210	18438	1.29	1.23	1.23	1.46	1.17	1.48
4.62	1.210	18939	1.29	1.23	1.23	1.46	1.17	1.48
4.64	1.210	19484	1.29	1.23	1.24	1.47	1.17	1.49
.66	1.210	19835	1.30	1.23	1.23	1.48	1.17	1.50
4.68	1.210	20064	1.31	1.23	1.24	1.48	1.18	1.49
4.70	1.210	20117	1.31	1.23	1.24	1.48	1.17	1.50
4.72	1.210	20372	1.31	1.23	1.23	1.49	1.18	1.51
4.74	1.210	20917	1.32	1.24	1.25	1.50	1.18	1.51
4.76	1.210	21347	1.33	1.24	1.25	1.50	1.18	1.51
4.78	1.210	21875	1.33	1.24	1.25	1.50	1.18	1.51
4.80	1.210	22279	1.33	1.24	1.24	1.50	1.18	1.52
4.82	1.210	22666	1.35	1.25	1.26	1.50	1.18	1.52
4.84	1.210	23009	1.35	1.24	1.26	1.51	1.18	1.53
4.86	1.210	23255	1.36	1.25	1.26	1.52	1.19	1.53
4.88	1.211	23501	1.36	1.25	1.27	1.52	1.19	1.54
4.90	1.212	23519	1.37	1.26	1.27	1.53	1.19	1.55
4.92	1.213	23501	1.39	1.26	1.27	1.53	1.19	1.55
4.94	1.214	23747	1.38	1.26	1.28	1.53	1.19	1.54
4.96	1.215	23888	1.38	1.26	1.28	1.54	1.19	1.53
4.98	1.216	23950	1.37	1.25	1.27	1.53	1.19	1.53
5.00	1.217	23950	1.38	1.25	1.26	1.54	1.20	1.54
5.02	1.218	23897	1.38	1.25	1.27	1.55	1.20	1.56
5.04	1.219	23906	1.39	1.26	1.28	1.55	1.20	1.56
5.06	1.219	23976	1.40	1.27	1.28	1.54	1.19	1.54
5.08	1.220	24020	1.39	1.26	1.28	1.54	1.20	1.55
5.10	1.220	24169	1.40	1.26	1.28	1.54	1.20	1.54
5.12	1.220	23993	1.38	1.25	1.28	1.54	1.20	1.54

RUN NO. F5-B 4 RUN DATE 29JUNE 1976 PRESSURE RATIO

ME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
5.14	1.220	0	1.57	2.80	1.53	1.51	1.48	1.38
5.26	1.219	0	1.11	2.76	1.16	1.18	1.13	1.31
5.38	1.212	0	1.09	2.73	1.15	1.17	1.14	1.[illegible]3
5.50	1.210	0	1.09	2.69	1.15	1.17	1.12	1.[illegible]2
5.62	1.210	0	1.09	2.64	1.14	1.15	1.10	1.21
5.74	1.209	0	-1.08	2.60	1.14	1.15	1.11	1.21
5.86	1.202	0	-1.08	2.56	1.14	1.16	1.11	1.21
6.00	1.200	0	1.08	2.53	1.14	1.16	1.10	1.20
6.10	1.198	0	1.08	2.49	1.13	1.15	1.09	1.20
6.22	1.189	0	1.07	2.45	1.13	1.14	1.09	1.19
6.34	1.182	0	1.07	2.41	1.12	1.14	1.08	1.18
6.46	1.175	0	1.06	2.38	1.12	1.1[illegible]	1.07	1.18
6.58	1.168	0	1.04	2.34	1.10	1.12	1.06	1.17
6.70	1.160	0	1.04	2.29	1.10	1.13	1.05	1.16
6.82	1.149	0	1.03	2.25	1.08	1.10	1.05	1.15
6.94	1.129	0	1.02	2.22	1.07	1.03	1.01	1.14
7.06	1.119	0	1.01	2.18	1.06	1.02	1.02	1.13
7.18	1.100	0	1.00	2.14	1.03	1.06	1.00	1.10
7.30	1.088	0	0.99	2.11	1.02	1.05	0.99	1.08
7.42	1.075	0	0.98	2.08	1.01	1.04	0.97	1.06
7.54	1.064	0	0.96	2.06	0.99	1.03	0.95	1.06
7.66	1.055	0	0.95	2.00	0.98	1.01	0.95	1.05
7.78	1.044	0	0.94	1.96	0.97	1.00	0.94	1.04
7.90	1.030	0	0.93	1.95	0.97	0.99	0.92	1.03
8.02	1.021	0	0.93	1.92	0.96	0.98	0.92	1.01
8.14	1.010	0	0.92	1.90	0.95	0.97	0.91	1.00
8.26	0.998	0	0.90	1.88	0.94	0.96	0.90	0.99
8.38	0.986	0	0.89	1.85	0.93	0.96	0.89	0.99
8.50	0.977	0	0.88	1.79	0.93	0.95	0.87	0.97
8.62	0.971	0	0.88	1.76	0.92	0.93	0.87	0.96
8.74	0.960	0	0.86	1.76	0.91	0.92	0.86	0.95
8.86	0.949	0	0.86	1.73	0.91	0.93	0.85	0.96
8.98	0.944	0	0.85	1.72	0.90	0.91	0.85	0.95
9.10	0.936	0	0.85	1.71	0.90	0.91	0.85	0.94
9.22	0.924	0	0.84	1.69	0.89	0.90	0.84	0.93
9.34	0.916	0	0.84	1.67	0.88	0.90	0.83	0.93
9.46	0.911	0	0.86	1.66	0.89	0.91	0.83	0.94
9.58	0.903	0	0.88	1.63	0.90	0.92	0.85	0.94
9.70	0.896	0	0.90	1.65	0.91	0.92	0.86	0.94
9.82	0.890	0	0.90	1.63	0.92	0.92	0.86	0.95
9.94	0.881	0	0.91	1.63	0.92	0.92	0.86	0.95
10.06	0.871	0	0.91	1.62	0.92	0.93	0.87	0.95
10.18	0.865	0	0.92	1.62	0.93	0.94	0.88	0.96
10.30	0.860	0	0.92	1.62	0.94	0.95	0.88	0.96
10.42	0.855	0	0.92	1.60	0.94	0.95	0.89	0.96
10.54	0.850	0	0.93	1.62	0.94	0.95	0.88	0.96
10.66	0.845	0	0.93	1.59	0.94	0.95	0.89	0.96
10.80	0.837	0	0.93	1.59	0.94	0.95	0.90	0.97
10.90	0.829	0	0.93	1.58	0.95	0.96	0.90	0.97
11.02	0.819	0	0.94	1.58	0.95	0.96	0.90	0.97
11.14	0.815	0	0.94	1.56	0.95	0.96	0.91	0.97
11.26	0.810	0	0.94	1.56	0.96	0.97	0.91	0.97
11.38	0.806	0	0.95	1.55	0.96	0.97	0.91	0.98

RUN NO. F5-B 4 RUN DATE 24 JUNE 1976 PRESSURE RATIO —

TIME	MACH	THRUST	PC/PA	CT	P0/PA	P1/PA	P11/PA	F5/PA
5.14	1.220	0	0.50	0.00	2.81	1.57	2.80	1.53
5.26	1.219	0	-0.09	0.00	2.78	1:11	2.76	1.16
5.38	1.212	0	-0.11	0.00	2.74	1.09	2.73	1.15
5.50	1.210	0	-0.11	0.00	2.71	1.09	2.69	1.15
5.62	1.210	0	-0.12	0.00	2.65	1.09	2.64	1.14
5.74	1.209	0	-0.12	0.00	2.61	1.08	2.60	1.14
5.86	1.202	0	-0.11	0.00	2.56	1.08	2.56	1.14
6.00	1.200	0	-0.12	0.00	2.54	1.08	2.53	1.14
6.10	1.196	0	-0.12	0.00	2.51	1.08	2.49	1.13
6.22	1.189	0	-0.12	0.00	2.46	1.07	2.45	1.13
6.34	1.182	0	-0.12	0.00	2.43	1.07	2.41	1.12
6.46	1.175	0	-0.12	0.00	2.35	1.06	2.38	1.12
6.58	1.168	0	-0.12	0.00	2.29	1.04	2.34	1.10
6.70	1.160	0	-0.12	0.00	2.25	1.04	2.29	1.10
6.82	1.149	0	-0.12	0.00	2.22	1.03	2.25	1.08
6.94	1.139	0	-0.12	0.00	2.19	1.02	2.22	1.07
7.06	1.119	0	-0.12	0.00	2.15	1.01	2.18	1.06
7.18	1.100	0	-0.12	0.00	2.12	1.00	2.14	1.03
7.30	1.088	0	-0.12	0.00	2.09	0.99	2.11	1.02
7.42	1.075	0	-0.12	0.00	2.05	0.98	2.08	1.01
7.54	1.064	0	-0.12	0.00	2.01	0.96	2.05	0.99
7.66	1.055	0	-0.12	0.00	1.98	0.95	2.00	0.98
.78	1.044	0	-0.12	0.00	1.95	0.94	1.96	0.97
7.90	1.030	0	-0.12	0.00	1.93	0.93	1.95	0.97
8.02	1.021	0	-0.12	0.00	1.89	0.93	1.92	0.96
8.14	1.010	0	-0.12	0.00	1.88	0.92	1.90	0.95
8.26	0.998	0	-0.12	0.00	1.86	0.90	1.88	0.94
8.38	0.986	0	-0.12	0.00	1.82	0.89	1.85	0.93
8.50	0.977	0	-0.12	0.00	1.80	0.88	1.79	0.93
8.62	0.971	0	-0.12	0.00	1.80	0.88	1.76	0.92
8.74	0.960	0	-0.12	0.00	1.79	0.86	1.76	0.91
8.86	0.949	0	-0.12	0.00	1.76	0.86	1.73	0.91
8.98	0.944	0	-0.12	0.00	1.76	0.85	1.72	0.90
9.10	0.936	0	-0.12	0.00	1.74	0.85	1.71	0.90
9.22	0.924	0	-0.12	0.00	1.73	0.84	1.69	0.89
9.34	0.916	0	-0.12	0.00	1.72	0.84	1.67	0.88
9.46	0.911	0	-0.12	0.00	1.70	0.86	1.66	0.89
9.58	0.903	0	-0.12	0.00	1.69	0.88	1.63	0.90
9.70	0.896	0	-0.12	0.00	1.68	0.90	1.65	0.91
9.82	0.890	0	-0.12	0.00	1.67	0.90	1.63	0.92
9.94	0.881	0	-0.12	0.00	1.66	0.91	1.62	0.92
10.06	0.871	0	-0.12	0.00	1.65	0.91	1.62	0.92
10.18	0.865	0	-0.12	0.00	1.64	0.92	1.62	0.93
10.30	0.860	0	-0.12	0.00	1.70	0.92	1.62	0.94
10.42	0.855	0	-0.12	0.00	1.61	0.92	1.60	0.94
10.54	0.850	0	-0.12	0.00	1.60	0.93	1.62	0.94
10.66	0.845	0	-0.12	0.00	1.59	0.93	1.59	0.94
10.80	0.837	0	-0.12	0.00	1.58	0.93	1.59	0.94
0.90	0.829	0	-0.12	0.00	1.57	0.93	1.58	0.95
11.02	0.819	0	-0.12	0.00	1.56	0.94	1.58	0.95
11.14	0.815	0	-0.12	0.00	1.54	0.94	1.56	0.95
11.26	0.810	0	-0.12	0.00	1.54	0.94	1.56	0.96
11.38	0.806	0	-0.12	0.00	1.53	0.95	1.55	0.96

RUN NO. F5-8 4 RUN DATE 99JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
5.14	1.220	0	1.38	1.26	1.36	1.55	1.20	1.55
5.26	1.219	0	1.31	1.26	1.33	1.39	1.21	1.16
5.38	1.212	0	1.23	1.25	1.31	1.16	1.20	1.17
5.50	1.210	0	1.22	1.25	1.29	1.16	1.20	1.16
5.62	1.210	0	1.21	1.24	1.26	1.15	1.19	1.15
5.74	1.209	0	1.21	1.24	1.24	1.14	1.19	1.15
5.86	1.202	0	1.21	1.23	1.21	1.14	1.19	1.15
6.00	1.200	0	1.20	1.23	1.20	1.14	1.18	1.15
6.10	1.198	0	1.20	1.22	1.18	1.14	1.18	1.14
6.22	1.189	0	1.19	1.21	1.17	1.13	1.17	1.14
6.34	1.182	0	1.18	1.20	1.14	1.12	1.16	1.13
6.46	1.175	0	1.18	1.20	1.13	1.12	1.16	1.13
6.58	1.168	0	1.17	1.19	1.12	1.10	1.16	1.11
6.70	1.160	0	1.16	1.18	1.10	1.11	1.15	1.11
6.82	1.149	0	1.15	1.16	1.08	1.09	1.14	1.10
6.94	1.129	0	1.14	1.15	1.07	1.08	1.15	1.08
7.06	1.119	0	1.12	1.13	0.98	1.06	1.13	1.06
7.18	1.100	0	1.10	1.10	1.05	1.05	1.11	1.06
7.30	1.088	0	1.08	1.09	1.04	1.04	1.08	1.04
7.42	1.075	0	1.06	1.07	1.03	1.03	1.05	1.02
7.54	1.064	0	1.06	1.06	1.01	1.01	1.01	1.00
7.66	1.055	0	1.05	1.05	1.00	1.00	0.99	0.99
7.78	1.044	0	1.04	1.03	0.99	0.99	0.98	0.98
7.90	1.030	0	1.03	1.02	0.98	0.98	0.97	0.99
8.02	1.021	0	1.01	1.01	0.97	0.97	0.96	0.98
8.14	1.010	0	1.00	0.99	0.97	0.97	0.95	0.97
8.26	0.998	0	0.99	0.99	0.96	0.95	0.94	0.95
8.38	0.986	0	0.99	0.97	0.95	0.94	0.93	0.95
8.50	0.977	0	0.97	0.96	0.95	0.93	0.92	0.94
8.62	0.971	0	0.96	0.95	0.94	0.92	0.91	0.92
8.74	0.960	0	0.95	0.95	0.95	0.91	0.90	0.91
8.86	0.949	0	0.96	0.95	0.95	0.91	0.89	0.91
8.98	0.944	0	0.95	0.94	0.95	0.90	0.89	0.91
9.10	0.936	0	0.94	0.93	0.95	0.89	0.88	0.90
9.22	0.924	0	0.93	0.92	0.95	0.88	0.87	0.89
9.34	0.916	0	0.93	0.92	0.95	0.88	0.87	0.89
9.46	0.911	0	0.94	0.92	0.96	0.89	0.87	0.88
9.58	0.903	0	0.94	0.93	0.96	0.89	0.90	0.91
9.70	0.896	0	0.94	0.93	0.97	0.90	0.89	0.92
9.82	0.890	0	0.95	0.93	0.97	0.91	0.90	0.92
9.94	0.881	0	0.95	0.93	0.97	0.91	0.90	0.92
10.06	0.871	0	0.95	0.94	0.97	0.92	0.92	0.93
10.18	0.865	0	0.96	0.94	0.97	0.93	0.92	0.94
10.30	0.860	0	0.96	0.94	0.98	0.94	0.93	0.94
10.42	0.855	0	0.96	0.94	0.98	0.94	0.92	0.94
10.54	0.850	0	0.96	0.94	0.98	0.94	0.93	0.94
10.66	0.845	0	0.96	0.94	0.98	0.94	0.93	0.95
10.80	0.837	0	0.97	0.94	0.98	0.94	0.94	0.93
10.90	0.829	0	0.97	0.95	0.98	0.95	0.94	0.93
11.02	0.819	0	0.97	0.95	0.98	0.95	0.94	0.94

RUN NO. F5-B 4 RUN DATE JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
2.00	0.800	0	-0.12	0.00	0.03	0.06	0.02	0.08
04	0.817	0	-0.11	0.00	0.03	0.06	0.02	0.08
2.08	0.834	0	-0.11	0.00	0.91	0.94	1.01	0.95
2.12	0.852	0	-0.11	0.00	0.92	0.93	1.00	0.94
2.16	0.868	0	-0.11	0.00	0.91	0.92	1.02	0.94
2.20	0.883	0	-0.11	0.00	0.92	0.91	1.00	0.92
2.24	0.899	0	-0.11	0.00	0.87	0.90	0.99	0.91
2.28	0.915	0	-0.11	0.00	0.83	0.88	0.98	0.90
2.32	0.935	0	-0.11	0.00	0.79	0.87	0.99	0.89
2.36	0.957	0	-0.11	0.00	0.73	0.86	1.01	0.89
2.40	0.975	0	-0.11	0.00	0.72	0.85	1.03	0.89
2.44	0.998	0	-0.11	0.00	0.74	0.85	1.04	0.89
2.48	1.060	0	-0.11	0.00	0.73	0.87	1.07	0.91
2.52	1.087	0	-0.11	0.00	0.72	0.88	1.09	0.93
2.56	1.049	0	-0.11	0.00	0.75	0.89	1.10	0.93
2.60	1.054	0	-0.11	0.00	0.76	0.91	1.14	0.95
2.64	1.072	0	-0.11	0.00	0.84	0.93	1.16	0.96
2.68	1.086	0	-0.11	0.00	0.80	0.93	1.19	0.98
2.72	1.099	0	-0.11	0.00	0.80	0.95	1.22	0.99
2.76	1.113	0	-0.11	0.00	0.82	0.97	1.23	1.01
2.80	1.127	0	-0.11	0.00	0.81	0.98	1.27	1.02
2.84	1.140	0	-0.11	0.00	0.85	0.99	1.29	1.04
2.88	1.150	0	-0.11	0.00	0.86	1.01	1.32	1.05
2.92	1.164	0	-0.11	0.00	0.86	1.01	1.33	1.06
2.96	1.177	0	-0.11	0.00	0.86	1.03	1.35	1.08
3.00	1.191	0	-0.11	0.00	0.88	1.04	1.39	1.09
3.04	1.198	0	-0.11	0.00	0.85	1.04	1.43	1.10
08	1.204	0	-0.11	0.00	0.90	1.07	1.42	1.11
3.12	1.210	0	-0.11	0.00	0.92	1.06	1.45	1.12
3.16	1.217	0	-0.11	0.00	0.91	1.06	1.48	1.13
3.20	1.224	0	-0.11	0.00	0.89	1.08	1.50	1.13
3.24	1.230	0	-0.11	0.00	0.89	1.09	1.52	1.14
3.28	1.230	0	-0.11	0.00	0.88	1.09	1.55	1.14
3.36	1.230	0	-0.11	0.00	0.90	1.10	1.59	1.16
3.40	1.230	0	-0.11	0.00	0.90	1.10	1.60	1.16
3.44	1.230	0	-0.11	0.00	0.91	1.11	1.63	1.17
3.48	1.230	0	-0.11	0.00	0.89	1.12	1.64	1.16
3.52	1.230	0	-0.11	0.00	0.89	1.11	1.67	1.18
3.56	1.230	0	-0.11	0.00	0.89	1.11	1.66	1.17
3.60	1.230	0	-0.11	0.00	0.92	1.11	1.67	1.17
3.64	1.230	0	-0.11	0.00	0.89	1.10	1.71	1.16
3.68	1.226	0	-0.11	0.00	0.89	1.11	1.72	1.17
3.72	1.220	0	-0.11	0.00	0.92	1.11	1.73	1.17
3.76	1.220	0	-0.11	0.00	0.90	1.11	1.75	1.16
3.80	1.220	0	-0.11	0.00	0.88	1.10	1.76	1.16
3.84	1.220	0	-0.11	0.00	0.89	1.11	1.77	1.16
3.88	1.220	0	-0.11	0.00	0.87	1.10	1.80	1.16
3.92	1.220	0	-0.11	0.00	0.88	1.08	1.81	1.15
3.96	1.214	0	-0.11	0.00	0.90	1.10	1.82	1.15
4.00	1.210	0	-0.11	0.00	0.86	1.09	1.84	1.16

V. APPENDIX D

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APPENDIX D

Run No. 5F-B5

Rnu Date: 17 Jun 76

Configuration: $\alpha = -2^{\circ}$, No fins

Motor Firing: 2.24 to 3.28 seconds

Remarks:

Attempt to obtain Plume influence measurements with body at Angle of Attack. Thrust coefficient variation from 27 to 35 were achieved over a Mach number range of 1.17 to 1.60.

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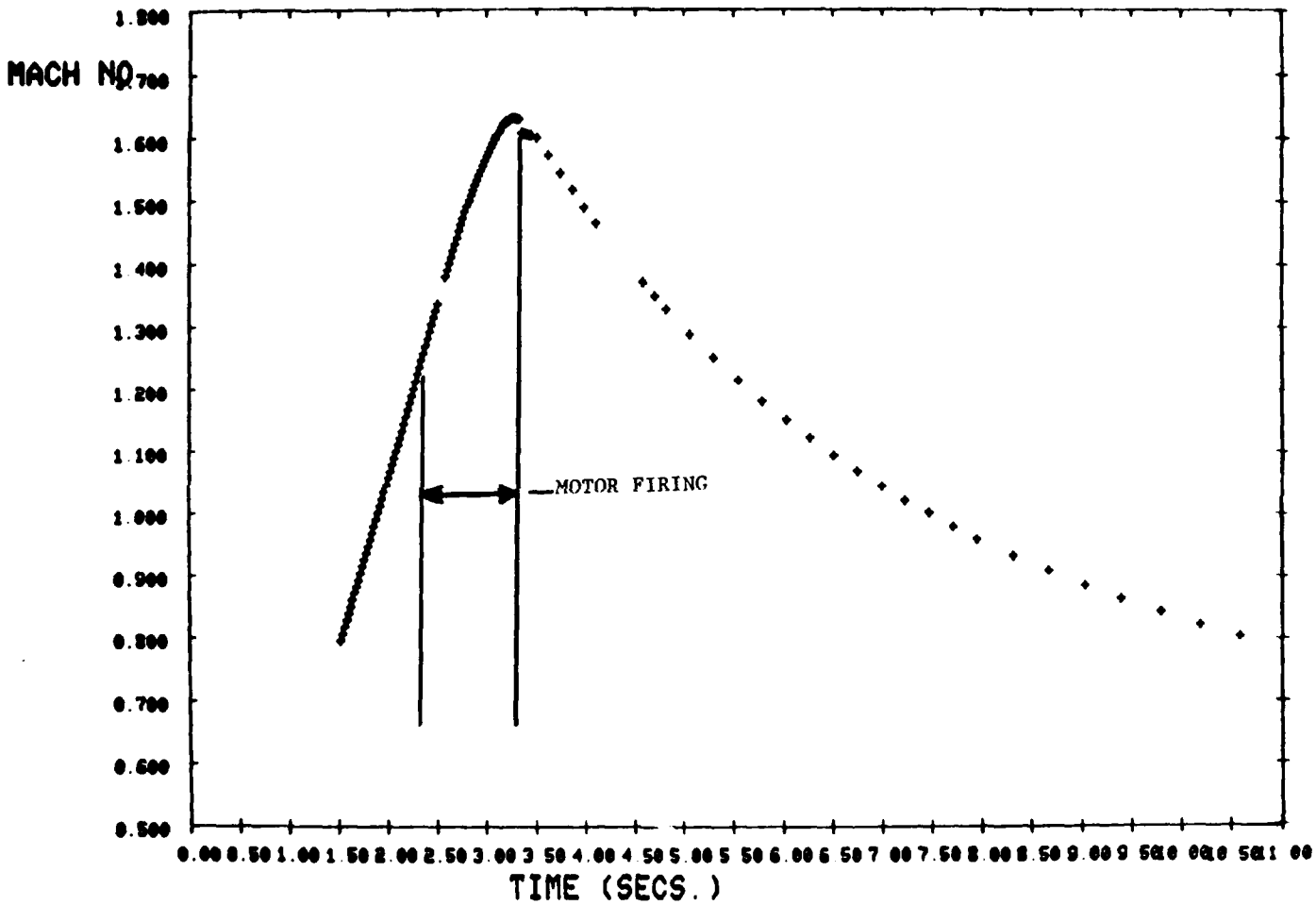

Figure 1. Test trajectory, Run 5F-B5.

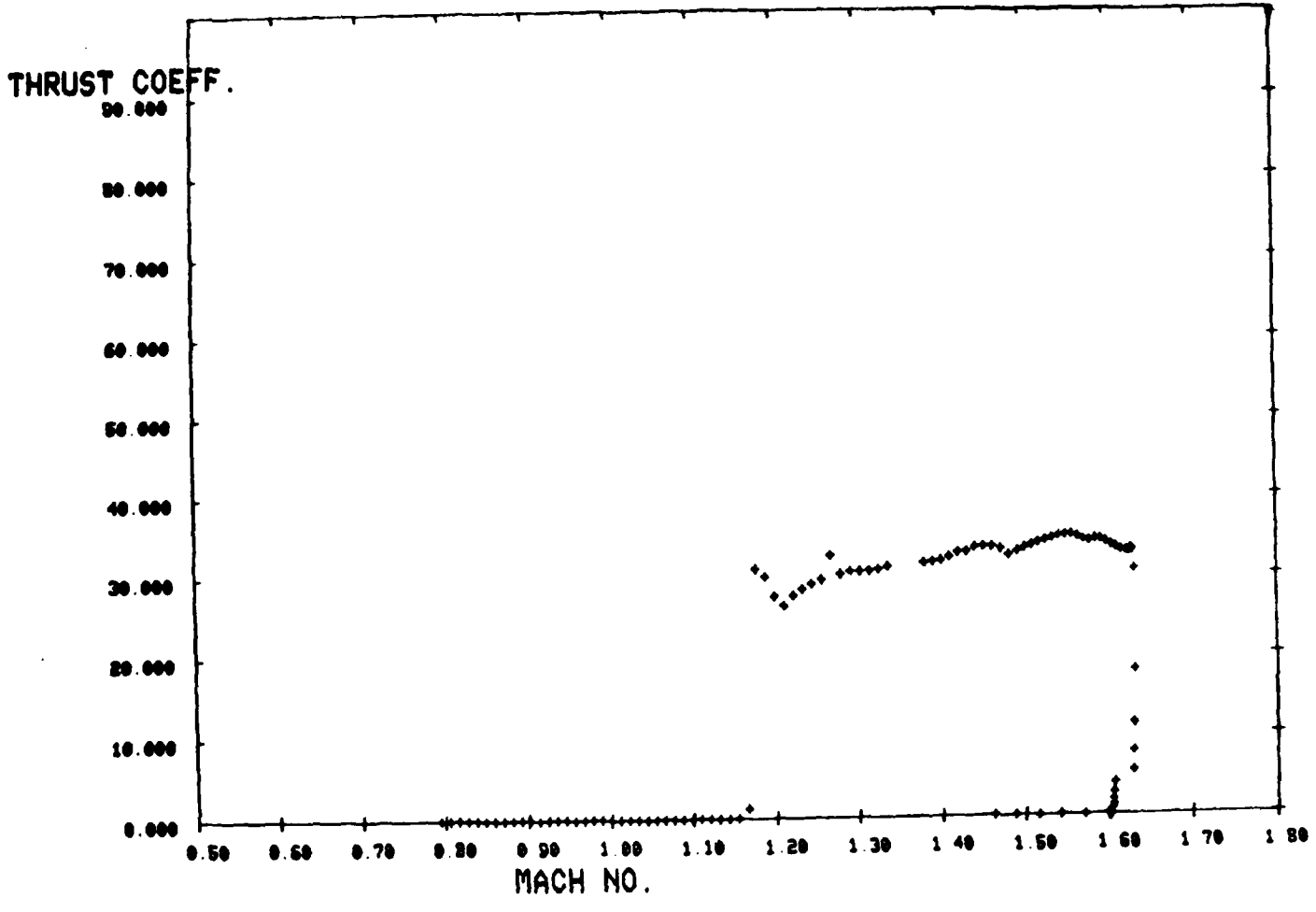

Figure 2. Thrust coeffient, Run 5F-B5.

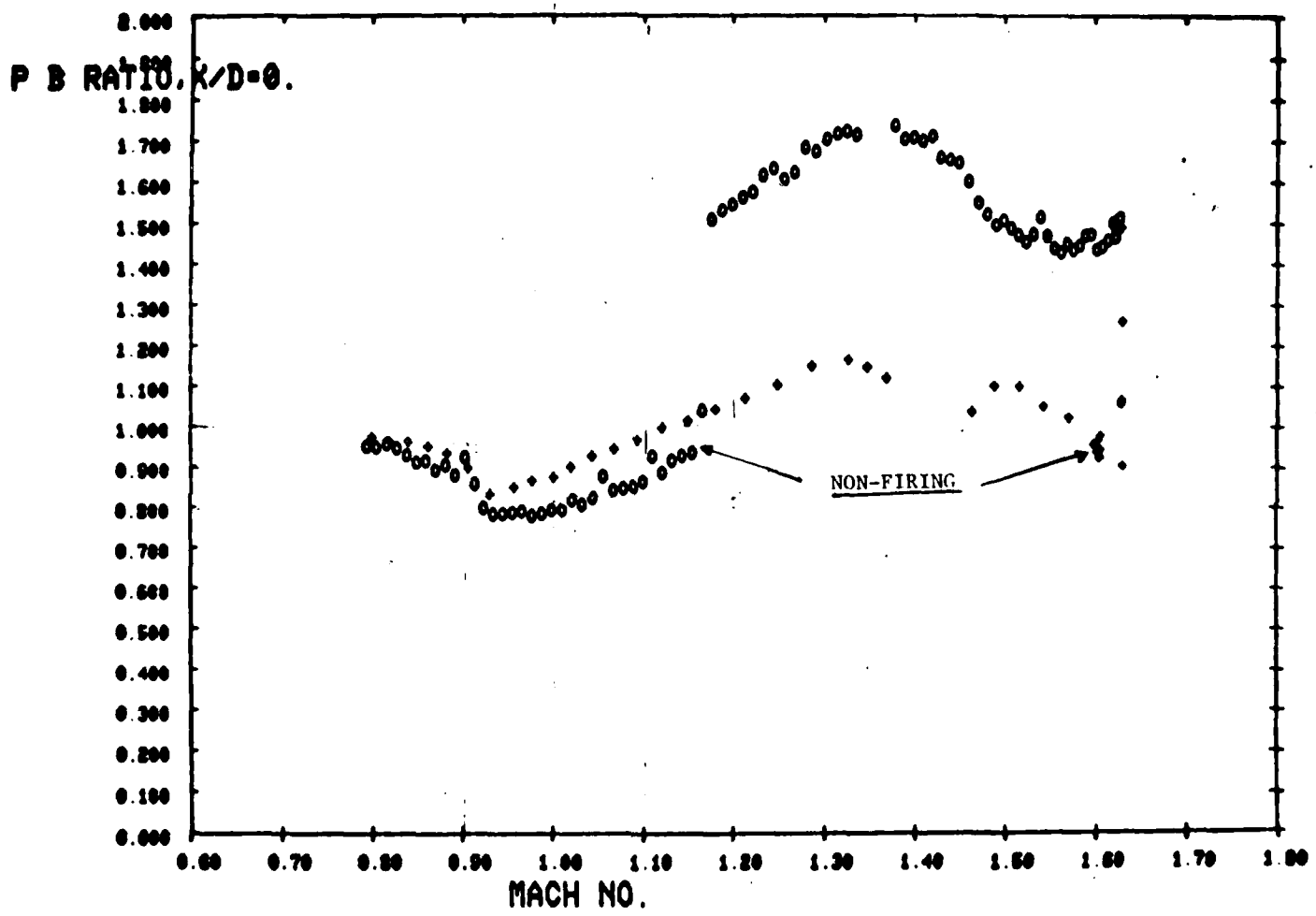

Figure 3. Base pressure (x/D = 0.2)/ambient pressure, Run 5F-B5.

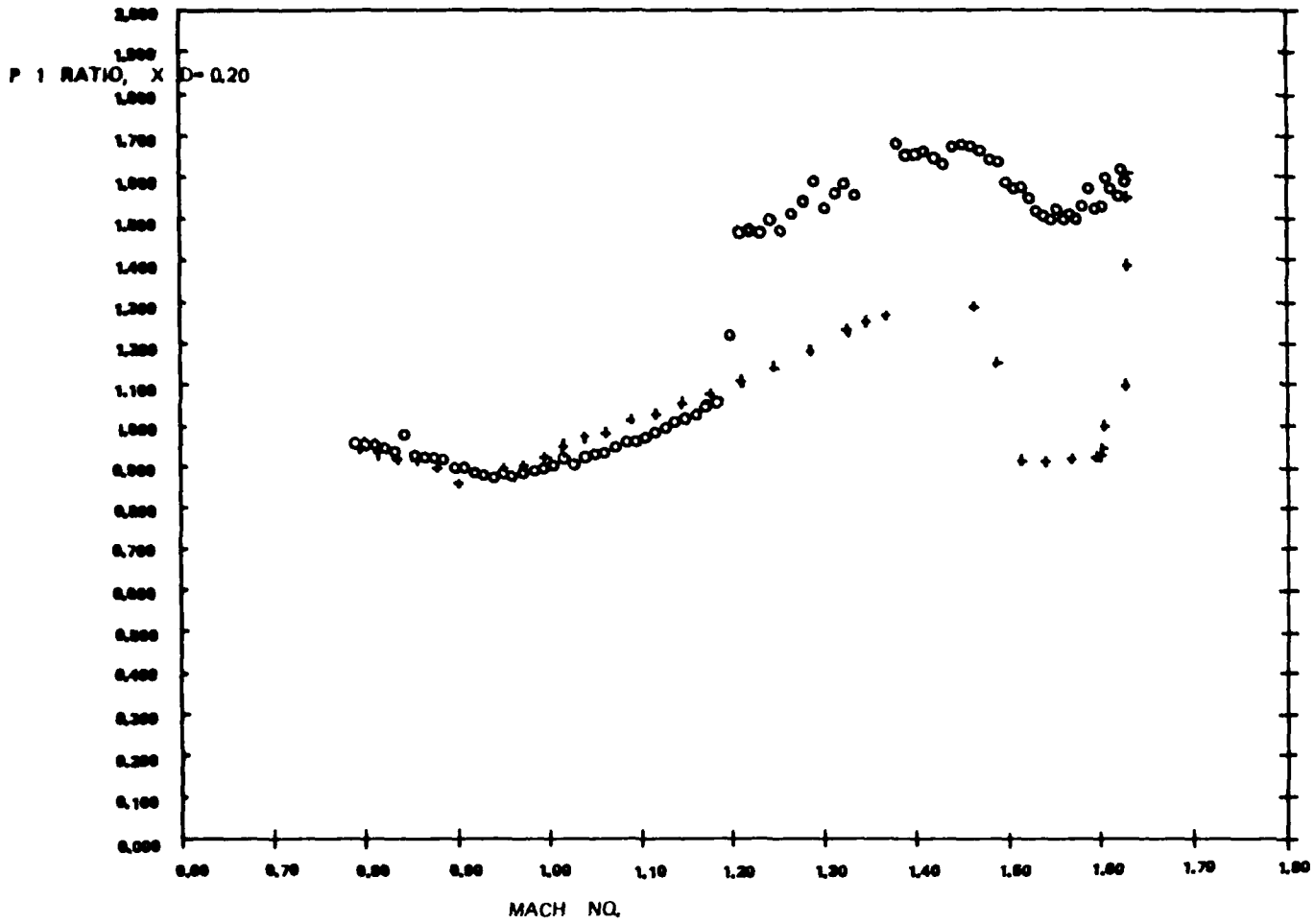

Figure 4. Surface pressure (x/D = 0.2)/ambient pressure, Run 5F-B5.

RUN NO. F5-B 5 RUN DATE 17JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
1.54	0.796	0	0.96	0.96	0.97	0.95	0.93	0.94
1.56	0.807	0	0.97	0.97	0.96	0.95	0.93	0.95
1.58	0.819	0	0.97	0.97	0.97	0.95	0.93	0.95
1.60	0.829	0	0.96	0.96	0.96	0.94	0.93	0.94
1.62	0.840	0	0.95	0.96	0.95	0.93	0.92	0.94
1.64	0.850	0	0.97	0.96	0.96	0.94	0.92	0.94
1.66	0.861	0	0.95	0.95	0.95	0.93	0.91	0.92
1.68	0.872	0	0.95	0.95	0.95	0.92	0.91	0.92
1.70	0.883	0	0.95	0.95	0.96	0.92	0.90	0.92
1.72	0.893	0	0.95	0.95	0.95	0.91	0.89	0.91
1.74	0.904	0	0.93	0.94	0.93	0.90	0.88	0.90
1.76	0.915	0	0.94	0.94	0.94	0.90	0.87	0.89
1.78	0.926	0	0.93	0.94	0.94	0.89	0.87	0.89
1.80	0.936	0	0.93	0.94	0.94	0.89	0.86	0.88
1.82	0.947	0	0.94	0.95	0.94	0.89	0.86	0.89
1.84	0.958	0	0.95	0.95	0.95	0.90	0.87	0.89
1.86	0.969	0	0.94	0.96	0.95	0.90	0.87	0.90
1.88	0.979	0	0.95	0.97	0.96	0.92	0.89	0.91
1.90	0.990	0	0.97	0.98	0.96	0.92	0.90	0.92
1.92	1.001	0	0.97	0.98	0.97	0.92	0.90	0.92
1.94	1.013	0	0.99	1.00	0.98	0.93	0.90	0.93
1.96	1.024	0	0.98	1.00	0.99	0.94	0.91	0.93
.98	1.035	0	0.99	1.00	[illegible]	0.94	0.92	0.94
2.00	1.046	0	1.01	1.02	1.01	0.95	0.92	0.95
2.02	1.057	0	1.01	1.03	[illegible]	0.96	0.93	0.96
2.04	1.068	0	1.01	1.04	1.02	0.97	0.94	0.96
2.06	1.078	0	1.04	1.05	1.04	0.99	0.96	0.99
2.08	1.089	0	1.04	1.06	1.05	0.99	0.97	0.98
2.10	1.100	0	1.00	1.07	1.05	1.00	0.97	1.00
2.12	1.111	0	1.06	1.07	1.07	1.01	0.98	1.00
2.14	1.122	0	1.08	1.10	1.08	1.02	0.99	1.02
2.16	1.133	0	1.09	1.11	1.10	1.04	1.00	1.03
2.18	1.145	0	1.10	1.12	1.11	1.05	1.03	1.05
2.20	1.156	0	1.11	1.13	1.12	1.06	1.03	1.06
2.22	1.167	452	1.13	1.15	1.14	1.08	1.05	1.08
2.24	1.178	11312	1.14	1.16	1.15	1.09	1.06	1.09
2.26	1.190	11173	1.15	1.17	1.16	1.10	1.07	1.10
2.28	1.201	10449	1.18	1.18	1.18	1.18	1.12	1.14
2.30	1.212	10175	1.20	1.19	1.19	1.35	1.21	1.26
2.32	1.223	10859	1.20	1.20	1.20	1.36	1.28	1.35
2.34	1.235	11386	1.23	1.22	1.21	1.36	1.33	1.38
2.36	1.246	11856	1.36	1.24	1.24	1.40	1.36	1.39
2.38	1.257	12289	1.25	1.25	1.25	1.39	1.36	1.39
2.40	1.269	13780	1.28	1.27	1.26	1.41	1.38	1.41
2.42	1.281	13027	1.31	1.29	1.28	1.44	1.42	1.45
2.44	1.292	13412	1.32	1.30	1.28	1.48	1.44	1.45
2.46	1.304	13663	1.33	1.30	1.31	1.44	1.42	1.45
2.48	1.315	13936	1.34	1.32	1.32	1.48	1.45	1.47
2.50	1.326	14257	1.34	1.31	1.32	1.47	1.45	1.47
2.52	1.337	14607	1.38	1.31	1.33	1.49	1.46	1.50

RUN NO. F5-B 5 RUN DATE 17JUNE 1976 PRESSURE RATIO

IME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
1.54	0.796	0	-1.22	0.00	0.95	0.96	0.97	0.92
1.56	0.807	0	-1.22	0.00	0.95	0.95	0.97	0.92
1.58	0.819	0	-1.22	0.00	0.96	0.95	0.96	0.92
1.60	0.829	0	-1.22	0.00	0.95	0.94	0.95	0.91
1.62	0.840	0	-1.22	0.00	0.93	0.94	0.95	0.90
1.64	0.850	0	-1.22	0.00	0.91	0.97	0.96	0.91
1.66	0.861	0	-1.22	0.00	0.91	0.93	0.94	0.90
1.68	0.872	0	-1.22	0.00	0.89	0.92	0.94	0.89
1.70	0.883	0	-1.22	0.00	0.90	0.92	0.93	0.89
1.72	0.893	0	-1.22	0.00	0.88	0.91	0.93	0.88
1.74	0.904	0	-1.22	0.00	0.92	0.90	0.93	0.87
1.76	0.915	0	-1.22	0.00	0.86	0.90	0.92	0.87
1.78	0.926	0	-1.22	0.00	0.80	0.89	0.93	0.86
1.80	0.936	0	-1.22	0.00	0.78	0.88	0.95	0.86
1.82	0.947	0	-1.22	0.00	0.78	0.87	0.94	0.86
1.84	0.958	0	-1.22	0.00	0.79	0.88	0.96	0.87
1.86	0.969	0	-1.22	0.00	0.79	0.88	0.96	0.87
1.88	0.979	0	-1.22	0.00	0.78	0.88	0.96	0.87
1.90	0.990	0	-1.22	0.00	0.78	0.89	0.98	0.88
1.92	1.001	0	-1.22	0.00	0.79	0.89	0.98	0.88
1.94	1.013	0	-1.22	0.00	0.79	0.90	0.99	0.89
1.96	1.024	0	-1.22	0.00	0.82	0.92	1.00	0.90
1.98	1.035	0	-1.22	0.00	0.81	0.91	1.02	0.90
2.00	1.046	0	-1.22	0.00	0.82	0.92	1.03	0.92
2.02	1.057	0	-1.22	0.00	0.88	0.93	1.04	0.93
2.04	1.068	0	-1.22	0.00	0.84	0.93	1.06	0.93
2.06	1.078	0	-1.22	0.00	0.85	0.95	1.07	0.94
2.08	1.089	0	-1.22	0.00	0.85	0.96	1.08	0.95
2.10	1.100	0	-1.22	0.00	0.86	0.96	1.11	0.96
2.12	1.111	0	-1.22	0.00	0.93	0.97	1.11	0.97
2.14	1.122	0	-1.22	0.00	0.89	0.99	1.12	0.99
2.16	1.133	0	-1.22	0.00	0.92	1.00	1.14	1.00
2.18	1.145	0	-1.22	0.00	0.93	1.01	1.16	1.01
2.20	1.156	0	-1.22	0.00	0.93	1.02	1.20	1.02
2.22	1.167	452	3.28	1.26	1.04	1.03	1.21	1.04
2.24	1.178	11312	82.06	30.97	1.51	1.05	1.49	1.04
2.26	1.190	11173	81.05	30.01	1.53	1.06	1.51	1.06
2.28	1.201	10449	75.80	27.54	1.54	1.22	1.54	1.15
2.30	1.212	10175	73.81	26.32	1.56	1.47	1.56	1.33
2.32	1.223	10859	78.77	27.58	1.58	1.47	1.54	1.33
2.34	1.235	11386	82.60	28.39	1.62	1.46	1.57	1.34
2.36	1.246	11856	86.01	29.03	1.63	1.49	1.61	1.37
2.38	1.257	12289	89.15	29.55	1.61	1.47	1.62	1.36
2.40	1.269	13780	99.96	32.53	1.62	1.51	1.65	1.39
2.42	1.281	13027	94.50	30.30	1.68	1.54	1.65	1.42
2.44	1.292	13412	97.29	30.54	1.67	1.59	1.70	1.44
2.46	1.304	13663	99.12	30.56	1.71	1.53	1.71	1.42
2.48	1.315	13936	101.10	30.63	1.72	1.56	1.72	1.46
2.50	1.326	14257	103.43	30.82	1.72	1.58	1.76	1.46
2.52	1.337	14607	105.97	31.07	1.72	1.56	1.78	1.47
2.54	1.348	14909	108.16	31.20	1.73	1.63	1.81	1.51
2.56	1.359	15262	110.71	31.43	1.74	1.62	1.84	1.51
2.58	1.369	15511	112.52	31.45	1.76	1.62	1.77	1.52

RUN NO. F5-B 5 RUN DATE 17JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
2.60	1.380	15843	114.93	31.62	1.74	1.68	1.83	1.56
2.62	1.391	16166	117.28	31.78	1.70	1.66	1.83	1.54
2.64	1.401	16434	119.22	31.84	1.71	1.66	1.83	1.54
2.66	1.411	16880	122.45	32.23	1.70	1.66	1.82	1.55
2.68	1.421	17417	126.35	32.78	1.71	1.65	1.90	1.52
2.70	1.431	17749	128.75	32.93	1.66	1.64	1.90	1.52
2.72	1.441	18269	132.53	33.42	1.65	1.68	1.90	1.54
2.74	1.452	18561	134.65	33.48	1.65	1.68	1.84	1.55
2.76	1.462	18809	136.45	33.45	1.60	1.68	1.87	1.53
2.78	1.472	18939	137.39	33.21	1.55	1.67	1.88	1.53
2.80	1.483	18769	136.15	32.45	1.52	1.65	1.85	1.50
2.82	1.492	19260	139.72	32.87	1.50	1.64	1.83	1.50
2.84	1.501	19699	142.90	33.25	1.51	1.59	1.84	1.49
2.86	1.509	20116	145.93	33.59	1.49	1.58	1.87	1.46
2.88	1.517	20563	149.17	33.96	1.47	1.58	1.80	1.47
2.90	1.525	20974	152.15	34.27	1.46	1.55	1.81	1.46
2.92	1.534	21343	154.83	34.50	1.47	1.53	1.84	1.43
2.94	1.541	21681	157.28	34.70	1.52	1.51	1.84	1.42
2.96	1.549	21989	159.51	34.85	1.47	1.50	1.86	1.41
2.98	1.556	22210	161.12	34.86	1.44	1.52	1.84	1.40
3.00	1.564	22306	161.82	34.68	1.43	1.51	1.78	1.37
3.02	1.571	22258	161.47	34.30	1.45	1.52	1.70	1.38
3.04	1.577	22350	162.13	34.14	1.44	1.51	1.79	1.30
3.06	1.584	22622	164.11	34.27	1.45	1.54	1.86	1.19
3.08	1.591	22790	165.33	34.23	1.47	1.58	1.78	1.16
3.10	1.597	22731	164.90	33.86	1.47	1.53	1.60	1.15
3.12	1.604	22726	164.86	33.50	1.44	1.54	1.74	1.17
3.14	1.610	22659	164.38	33.25	1.44	1.60	1.72	1.04
3.16	1.616	22616	164.06	32.93	1.46	1.58	1.57	1.01
3.18	1.622	22694	164.63	32.80	1.50	1.56	1.52	1.04
3.20	1.625	22761	165.12	32.78	1.47	1.62	1.56	0.97
3.22	1.627	23046	167.18	33.10	1.49	1.60	1.52	0.94
3.24	1.629	23042	167.15	33.01	1.51	1.60	1.52	0.92
3.26	1.631	21448	155.59	30.64	1.49	1.62	1.53	0.93
3.28	1.633	12656	91.81	18.07	1.26	1.61	1.54	0.93
3.30	1.631	8000	58.04	11.44	0.90	1.56	1.55	0.92
3.32	1.630	5533	40.14	7.92	1.07	1.40	1.54	0.91
3.34	1.629	3825	27.75	5.48	1.06	1.11	1.57	0.90
3.36	1.607	2660	19.30	3.91	0.98	1.01	1.60	0.88
3.38	1.606	1803	13.08	2.66	0.94	0.95	1.61	0.88
3.40	1.606	1211	8.78	1.78	0.93	0.94	1.63	0.89
3.42	1.605	748	5.43	1.10	0.92	0.93	1.64	0.89
3.44	1.604	423	3.07	0.63	0.97	0.93	1.65	0.90
3.46	1.603	0	-1.22	0.00	0.94	0.93	1.68	0.89
3.52	1.599	0	-1.22	0.00	0.96	0.93	1.72	0.89
3.64	1.572	0	-1.22	0.00	1.03	0.93	1.81	0.88
3.76	1.544	0	-1.22	0.00	1.05	0.92	1.92	0.87
3.88	1.517	0	-1.22	0.00	1.10	0.92	2.01	0.86
4.00	1.490	0	-1.22	0.00	1.10	1.16	2.24	0.88
4.12	1.465	0	-1.22	0.00	1.04	1.29	2.62	1.19
4.24	1.440	0	-1.22	0.00	1.04	1.30	2.70	1.30
4.36	1.416	0	-1.22	0.00	1.04	1.30	2.76	1.32
4.48	1.393	0	-1.22	0.00	1.07	1.38	2.78	1.32

RUN NO. F5-B 5 RUN DATE 17JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
1.54	0.796	0	0.96	0.97	0.92	0.95	0.90	0.96
1.56	0.807	0	0.95	0.97	0.92	0.98	0.90	0.97
1.58	0.819	0	0.95	0.96	0.92	0.95	0.89	0.97
1.60	0.829	0	0.94	0.95	0.91	0.94	0.89	0.96
1.62	0.840	0	0.94	0.95	0.90	0.94	0.89	0.95
1.64	0.850	0	0.97	0.96	0.91	0.94	0.88	0.97
1.66	0.861	0	0.93	0.94	0.90	0.94	0.87	0.95
1.68	0.872	0	0.92	0.94	0.89	0.93	0.87	0.95
1.70	0.883	0	0.92	0.93	0.89	0.92	0.85	0.95
1.72	0.893	0	0.91	0.93	0.88	0.92	0.85	0.95
1.74	0.904	0	0.90	0.93	0.87	0.91	0.84	0.93
1.76	0.915	0	0.90	0.92	0.87	0.91	0.83	0.94
1.78	0.926	0	0.89	0.93	0.86	0.90	0.82	0.93
1.80	0.936	0	0.88	0.95	0.86	0.89	0.82	0.93
1.82	0.947	0	0.87	0.94	0.86	0.90	0.82	0.94
1.84	0.958	0	0.88	0.96	0.87	0.90	0.82	0.95
1.86	0.969	0	0.88	0.96	0.87	0.90	0.83	0.94
1.88	0.979	0	0.88	0.96	0.87	0.90	0.84	0.95
1.90	0.990	0	0.89	0.98	0.88	0.91	0.84	0.97
1.92	1.001	0	0.89	0.98	0.88	0.92	0.85	0.97
1.94	1.013	0	0.90	0.99	0.89	0.93	0.85	0.99
1.96	1.024	0	0.92	1.00	0.90	0.94	0.86	0.98
1.98	1.035	0	0.91	1.02	0.90	0.93	0.87	0.99
2.00	1.046	0	0.92	1.03	0.92	0.95	0.88	1.01
2.02	1.057	0	0.93	1.04	0.93	0.97	0.90	1.01
2.04	1.068	0	0.93	1.06	0.93	0.96	0.90	1.01
2.06	1.078	0	0.95	1.07	0.94	0.97	0.91	1.04
2.08	1.089	0	0.96	1.08	0.95	0.99	0.92	1.04
2.10	1.100	0	0.96	1.11	0.96	0.94	0.91	1.00
2.12	1.111	0	0.97	1.11	0.97	1.01	0.95	1.06
2.14	1.122	0	0.99	1.12	0.99	1.02	0.96	1.08
2.16	1.133	0	1.00	1.14	1.00	1.03	0.97	1.09
2.18	1.145	0	1.01	1.16	1.01	1.04	0.98	1.10
2.20	1.156	0	1.02	1.20	1.02	1.05	0.99	1.11
2.22	1.167	452	1.03	1.21	1.04	1.06	1.00	1.13
2.24	1.178	11312	1.05	1.49	1.04	1.08	1.01	1.14
2.26	1.190	11173	1.06	1.51	1.06	1.09	1.02	1.15
2.28	1.201	10449	1.22	1.54	1.15	1.14	1.06	1.18
2.30	1.212	10175	1.47	1.56	1.33	1.26	1.16	1.20
2.32	1.223	10859	1.47	1.54	1.33	1.30	1.19	1.20
2.34	1.235	11386	1.46	1.57	1.34	1.30	1.20	1.23
2.36	1.246	11856	1.49	1.61	1.37	1.33	1.20	1.36
2.38	1.257	12289	1.47	1.62	1.36	1.34	1.25	1.35
2.40	1.269	13780	1.51	1.65	1.39	1.35	1.27	1.28
2.42	1.281	13027	1.54	1.65	1.42	1.37	1.29	1.31
2.44	1.292	13412	1.59	1.70	1.44	1.41	1.32	1.32
2.46	1.304	13663	1.53	1.71	1.42	1.41	1.32	1.33
2.48	1.315	13956	1.56	1.72	1.46	1.43	1.36	1.34
2.50	1.326	14257	1.58	1.76	1.46	1.45	1.36	1.34
2.52	1.337	14607	1.56	1.78	1.47	1.45	1.39	1.38
2.54	1.348	14909	1.63	1.81	1.51	1.49	1.40	1.39
2.56	1.359	15262	1.62	1.84	1.51	1.49	1.41	1.38
2.58	1.369	15511	1.62	1.77	1.52	1.50	1.45	1.40

RUN NO. F5-B 5 RUN DATE 17JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
2.60	1.380	15843	1.68	1.83	1.56	1.53	1.45	1.39
2.62	1.391	16166	1.66	1.83	1.54	1.52	1.45	1.39
2.64	1.401	16434	1.66	1.83	1.54	1.53	1.48	1.40
2.66	1.411	16880	1.66	1.82	1.55	1.55	1.49	1.39
2.68	1.421	17417	1.65	1.90	1.52	1.52	1.47	1.39
2.70	1.431	17749	1.64	1.90	1.52	1.52	1.47	1.37
2.72	1.441	18269	1.68	1.90	1.54	1.53	1.45	1.33
2.74	1.452	18561	1.68	1.84	1.55	1.52	1.43	1.22
2.76	1.462	18809	1.68	1.87	1.53	1.52	1.41	1.07
2.78	1.472	18939	1.67	1.88	1.53	1.52	1.41	0.98
2.80	1.483	18769	1.65	1.85	1.50	1.49	1.37	0.86
2.82	1.492	19260	1.64	1.83	1.50	1.48	1.29	0.92
2.84	1.501	19699	1.59	1.84	1.49	1.48	1.21	0.92
2.86	1.509	20116	1.58	1.87	1.46	1.45	1.15	0.91
2.88	1.517	20563	1.58	1.80	1.47	1.44	1.09	0.93
2.90	1.525	20974	1.55	1.81	1.46	1.42	1.00	0.92
2.92	1.534	21343	1.53	1.84	1.43	1.38	0.97	1.39
2.94	1.541	21681	1.51	1.84	1.42	1.34	0.95	0.93
2.96	1.549	21989	1.50	1.86	1.41	1.26	0.93	0.96
2.98	1.556	22210	1.52	1.84	1.40	1.21	0.92	0.93
3.00	1.564	22306	1.51	1.78	1.37	1.15	0.91	0.95
3.02	1.571	22258	1.52	1.70	1.28	1.06	0.91	0.94
3.04	1.577	22350	1.51	1.79	1.30	1.07	0.91	0.94
.06	1.584	22622	1.54	1.86	1.19	1.04	0.92	0.97
3.08	1.591	22790	1.58	1.78	1.10	0.99	0.92	0.96
3.10	1.597	22731	1.53	1.60	1.16	0.98	0.91	0.95
3.12	1.604	22726	1.54	1.74	1.17	1.00	0.92	0.96
3.14	1.610	22659	1.60	1.72	1.04	0.97	0.93	0.97
3.16	1.616	22616	1.58	1.57	1.01	0.95	0.94	0.97
3.18	1.622	22694	1.56	1.52	1.04	0.95	0.93	0.96
3.20	1.625	22761	1.62	1.56	0.97	0.95	0.94	0.99
3.22	1.627	23046	1.60	1.52	0.94	0.94	0.95	0.99
3.24	1.629	23042	1.60	1.52	0.92	0.93	0.94	0.98
3.26	1.631	21448	1.62	1.53	0.93	0.93	0.95	1.00
3.28	1.632	12656	1.61	1.54	0.92	0.95	0.97	1.00
3.30	1.631	8000	1.56	1.55	0.92	0.94	0.96	1.00
3.32	1.630	5533	1.40	1.54	0.91	0.94	0.95	0.99
3.34	1.629	3825	1.11	1.57	0.90	0.93	0.94	0.99
3.36	1.607	2660	1.01	1.60	0.88	0.91	0.92	0.97
3.38	1.606	1803	0.95	1.61	0.88	0.90	0.90	0.97
3.40	1.606	1211	0.94	1.63	0.89	0.91	0.91	0.97
3.42	1.605	748	0.93	1.64	0.89	0.91	0.93	0.97
3.44	1.604	423	0.93	1.65	0.90	0.91	0.94	0.98
3.46	1.603	0	0.93	1.68	0.89	0.89	0.93	0.97
3.52	1.599	0	0.93	1.72	0.89	0.91	0.93	0.97
3.64	1.572	0	0.93	1.81	0.88	0.91	0.92	0.97
3.76	1.544	0	0.92	1.92	0.87	0.89	0.91	0.95
3.88	1.517	0	0.92	2.01	0.86	0.89	0.89	0.94
4.00	1.490	0	1.16	2.24	0.88	0.89	0.88	0.93
.12	1.465	0	1.29	2.62	1.19	1.00	0.90	0.92
4.24	1.440	0	1.30	2.70	1.30	1.28	1.07	0.94
4.36	1.416	0	1.30	2.76	1.32	1.34	1.19	1.12
4.48	1.393	0	1.28	2.78	1.32	1.36	1.27	1.33

RUN NO. F5-B 5 RUN DATE 17JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
2.60	1.380	15843	1.39	1.19	1.31	1.57	1.52	1.56
2.62	1.391	16166	1.39	1.08	1.26	1.62	1.54	1.55
2.64	1.401	16434	1.40	0.96	1.19	1.58	1.56	1.57
2.66	1.411	16880	1.39	0.92	1.09	1.60	1.57	1.57
2.68	1.421	17417	1.39	0.90	1.02	1.58	1.56	1.55
2.70	1.431	17749	1.37	0.91	0.98	1.59	1.58	1.55
2.72	1.441	18269	1.33	0.91	0.95	1.58	1.59	1.57
2.74	1.452	18561	1.22	0.92	0.95	1.54	1.60	1.55
2.76	1.462	18809	1.07	0.94	0.95	1.29	1.63	1.49
2.78	1.472	18939	0.98	0.94	0.96	1.53	1.62	1.52
2.80	1.483	18769	0.86	0.95	0.96	1.52	1.61	1.50
2.82	1.492	19260	0.92	0.96	0.97	1.49	1.58	1.49
2.84	1.501	19699	0.92	0.96	0.97	1.46	1.55	1.47
2.86	1.509	20116	0.91	0.95	0.97	1.45	1.52	1.44
2.88	1.517	20563	0.92	0.97	0.98	1.46	1.49	1.44
2.90	1.525	20974	0.92	0.98	0.99	1.41	1.44	1.42
2.92	1.534	21343	1.39	0.98	0.99	1.39	1.40	1.40
2.94	1.541	21681	0.93	0.99	1.00	1.38	1.36	1.39
2.96	1.549	21989	0.86	1.00	1.00	1.39	1.34	1.37
2.98	1.556	22210	0.93	1.00	1.00	1.38	1.32	1.36
3.00	1.564	22306	0.95	1.02	1.01	1.32	1.30	1.34
3.02	1.571	22258	0.94	1.01	1.02	1.31	1.29	1.29
3.04	1.577	22350	0.94	1.01	1.01	1.31	1.28	1.29
3.06	1.584	22622	0.97	1.03	1.03	1.27	1.26	1.29
3.08	1.591	22790	0.96	1.03	1.04	1.26	1.26	1.26
3.10	1.597	22731	0.95	1.03	1.03	1.26	1.26	1.25
3.12	1.604	22726	0.96	1.04	1.03	1.23	1.24	1.22
3.14	1.610	22659	0.97	1.05	1.06	1.23	1.24	1.24
3.16	1.616	22616	0.97	1.03	1.06	1.23	1.23	1.22
3.18	1.622	22694	0.96	1.03	1.05	1.21	1.23	1.20
3.20	1.625	22761	0.99	1.05	1.06	1.23	1.22	1.22
3.22	1.627	23046	0.99	1.05	1.08	1.23	1.23	1.24
3.24	1.629	23042	0.98	1.04	1.06	1.23	1.23	1.24
3.26	1.631	21448	1.00	1.06	1.08	1.22	1.24	1.25
3.28	1.632	12656	1.00	1.07	1.09	1.23	1.25	1.28
3.30	1.631	8000	1.00	1.06	1.09	1.23	1.26	1.27
3.32	1.630	5533	0.99	1.06	1.07	1.12	1.22	1.11
3.34	1.629	3825	0.99	1.05	1.07	0.95	1.14	0.95
3.36	1.607	2660	0.97	1.03	1.03	0.89	1.12	0.91
3.38	1.606	1803	0.97	1.03	1.02	0.87	1.11	0.90
3.40	1.606	1211	0.97	1.03	1.04	0.86	1.09	0.89
3.42	1.605	748	0.97	1.04	1.05	0.85	1.04	0.89
3.44	1.604	423	0.98	1.05	1.05	0.85	1.00	0.88
3.46	1.603	0	0.97	1.03	1.04	0.85	0.98	0.89
3.52	1.599	0	0.97	1.04	1.05	0.85	0.96	0.88
3.64	1.572	0	0.97	1.03	1.04	0.84	0.99	0.89
3.76	1.544	0	0.95	1.00	1.01	0.90	1.04	0.96
3.88	1.517	0	0.94	0.99	1.00	1.05	1.17	1.04
4.00	1.490	0	0.93	0.98	0.99	1.29	1.43	1.24
4.12	1.465	0	0.92	0.97	0.98	1.32	1.48	1.26

RUN NO. F5-B 5 RUN DATE 17JUNE 1976. PRESSURE RATIO .

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
4.60	1.371	0	-1.22	0.00	1.12	1.27	2.82	1.32
4.72	1.349	0	-1.22	0.00	1.15	1.26	2.80	1.30
4.84	1.328	0	-1.22	0.00	1.16	1.24	2.82	1.28
5.08	1.288	0	-1.22	0.00	1.15	1.19	2.77	1.22
5.32	1.250	0	-1.22	0.00	1.10	1.15	2.70	1.18
5.56	1.215	0	-1.22	0.00	1.07	1.11	2.63	1.14
5.80	1.182	0	-1.22	0.00	1.04	1.08	2.55	1.10
6.04	1.151	0	-1.22	0.00	1.01	1.06	2.48	1.06
6.28	1.122	0	-1.22	0.00	1.00	1.03	2.40	1.04
6.52	1.094	0	-1.22	0.00	0.97	1.02	2.31	1.01
6.76	1.069	0	-1.22	0.00	0.94	0.99	2.24	0.98
7.00	1.044	0	-1.22	0.00	0.93	0.98	2.16	0.97
7.24	1.021	0	-1.22	0.00	0.90	0.95	2.09	0.94
7.48	1.002	0	-1.22	0.00	0.87	0.93	2.03	0.93
7.72	0.979	0	-1.22	0.00	0.87	0.91	1.96	0.90
7.96	0.959	0	-1.22	0.00	0.85	0.90	1.91	0.89
8.32	0.932	0	-1.22	0.00	0.83	0.88	1.82	0.87
8.68	0.908	0	-1.22	0.00	0.90	0.86	1.76	0.85
9.04	0.885	0	-1.22	0.00	0.93	0.90	1.73	0.88
9.40	0.864	0	-1.22	0.00	0.95	0.92	1.70	0.89
9.80	0.841	0	-1.22	0.00	0.96	0.92	1.66	0.91
10.20	0.821	0	-1.22	0.00	0.96	0.94	1.64	0.91
10.60	0.802	0	-1.22	0.00	0.97	0.94	1.59	0.92

RUN NO. F5-B 5 RUN DATE 17JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
4.60	1.371	0	1.27	2.82	1.32	1.36	1.30	1.37
4.72	1.349	0	1.26	2.80	1.30	1.35	1.27	1.38
4.84	1.328	0	1.24	2.82	1.28	1.33	1.28	1.38
5.08	1.288	0	1.19	2.77	1.23	1.28	1.24	1.34
5.32	1.250	0	1.15	2.70	1.18	1.23	1.19	1.29
5.56	1.215	0	1.11	2.63	1.14	1.19	1.14	1.25
5.80	1.182	0	1.08	2.55	1.10	1.15	1.08	1.20
6.04	1.151	0	1.06	2.48	1.06	1.11	1.04	1.17
6.28	1.122	0	1.03	2.40	1.04	1.08	1.01	1.15
6.52	1.094	0	1.02	2.31	1.01	1.05	0.96	1.11
6.76	1.069	0	0.99	2.24	0.98	1.02	0.94	1.08
7.00	1.044	0	0.98	2.16	0.97	1.01	0.92	1.05
7.24	1.021	0	0.95	2.09	0.94	0.98	0.90	1.03
7.48	1.002	0	0.93	2.03	0.93	0.96	0.88	1.01
7.72	0.979	0	0.91	1.96	0.90	0.94	0.85	0.98
7.96	0.959	0	0.90	1.91	0.89	0.93	0.84	0.97
8.32	0.932	0	0.88	1.82	0.87	0.91	0.82	0.96
8.68	0.908	0	0.86	1.76	0.85	0.90	0.81	0.93
9.04	0.885	0	0.90	1.73	0.88	0.91	0.83	0.95
9.40	0.864	0	0.92	1.70	0.89	0.93	0.86	0.96
9.80	0.841	0	0.92	1.66	0.91	0.94	0.86	0.96
10.20	0.821	0	0.94	1.64	0.91	0.96	0.87	0.97
10.60	0.802	0	0.94	1.59	0.92	0.96	0.90	0.98

RUN NO. F5-B 5 RUN DATE 17JUNE 1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
4.60	1.371	0	1.37	0.94	1.21	1.36	1.34	1.35
4.72	1.349	0	1.38	1.31	1.33	1.34	1.29	1.32
4.84	1.328	0	1.38	1.30	1.35	1.32	1.26	1.30
5.08	1.288	0	1.34	1.33	1.34	1.28	1.21	1.26
5.32	1.250	0	1.29	1.30	1.30	1.22	1.15	1.21
5.56	1.215	0	1.25	1.26	1.26	1.18	1.12	1.17
5.80	1.182	0	1.20	1.21	1.21	1.15	1.09	1.14
6.04	1.151	0	1.17	1.17	1.17	1.11	1.05	1.10
6.28	1.122	0	1.15	1.15	1.14	1.09	1.03	1.09
6.52	1.094	0	1.11	1.11	1.11	1.05	1.00	1.04
6.76	1.069	0	1.08	1.08	1.07	1.02	0.97	1.01
7.00	1.044	0	1.05	1.05	1.05	1.01	0.95	1.00
7.24	1.021	0	1.03	1.02	1.02	0.98	0.93	0.98
7.48	1.002	0	1.01	1.00	1.00	0.96	0.91	0.96
7.72	0.979	0	0.98	0.98	0.98	0.94	0.89	0.94
7.96	0.959	0	0.97	0.96	0.96	0.92	0.87	0.92
8.32	0.932	0	0.96	0.94	0.94	0.90	0.86	0.90
8.68	0.908	0	0.93	0.92	0.93	0.88	0.84	0.88
9.04	0.885	0	0.95	0.93	0.94	0.90	0.86	0.90
9.40	0.864	0	0.96	0.94	0.94	0.92	0.88	0.92
9.80	0.841	0	0.96	0.94	0.96	0.93	0.88	0.93
10.20	0.821	0	0.97	0.95	0.96	0.94	0.91	0.94
10.60	0.802	0	0.98	0.95	0.96	0.95	0.92	0.95

VI. APPENDIX E

APPENDIX E

Run No. 5F-B6

Run Date: 28 Sep 76

Configureation: Angle of Attack: 0 No fins

Motor Firing: None

Remarks:

Run was made with no motor firing in order to evaluate surface pressures influenced by non uniform flow conditions observed in previous runs. Data obtained during accelerating and decellerating portions of trajectory reveal hystersis in location of external generated flow disturbances.

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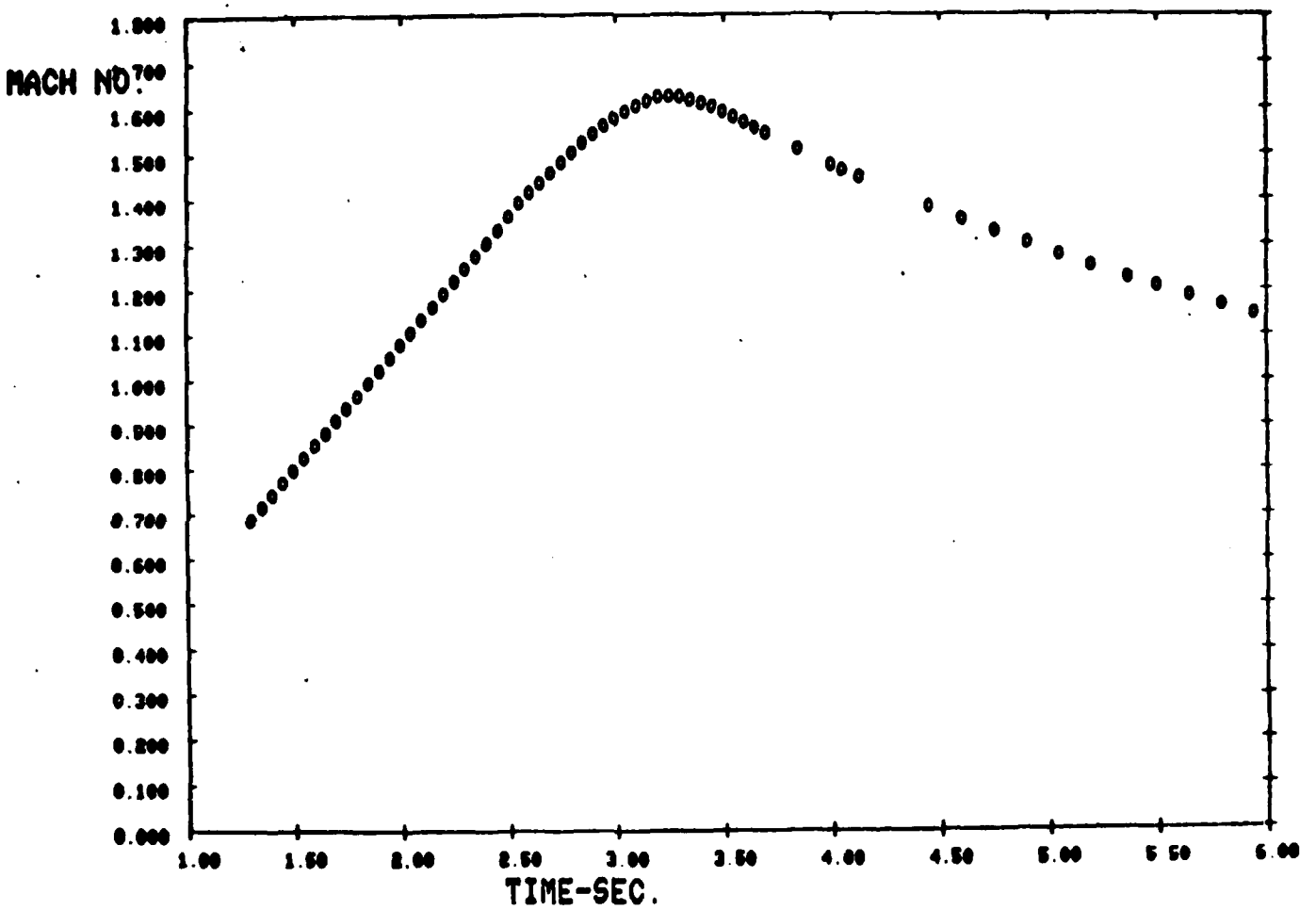

Figure 1. Test trajectory, Run 5F-B6.

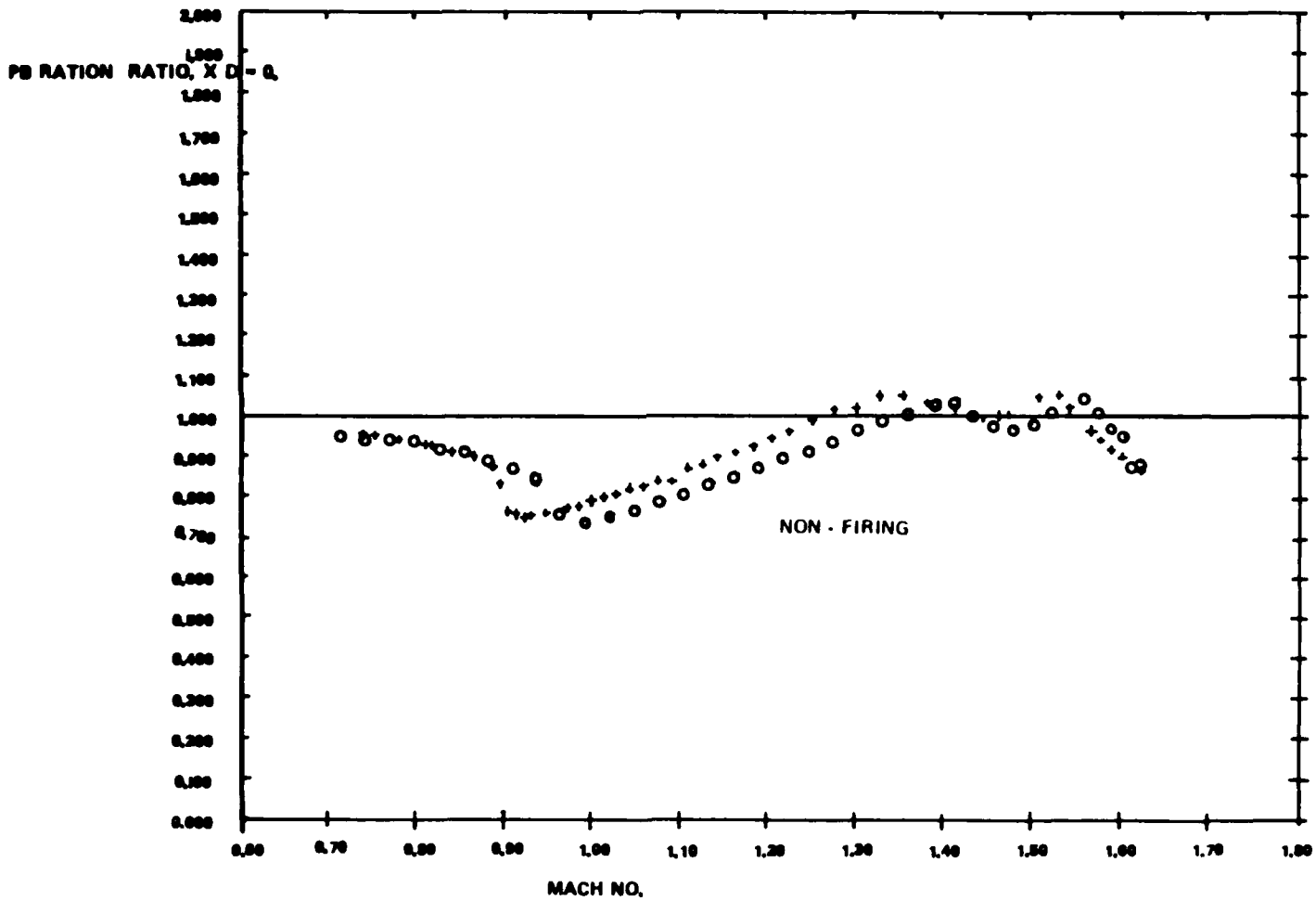

Figure 2. Base pressure/ambient pressure, Run 5F-B6.

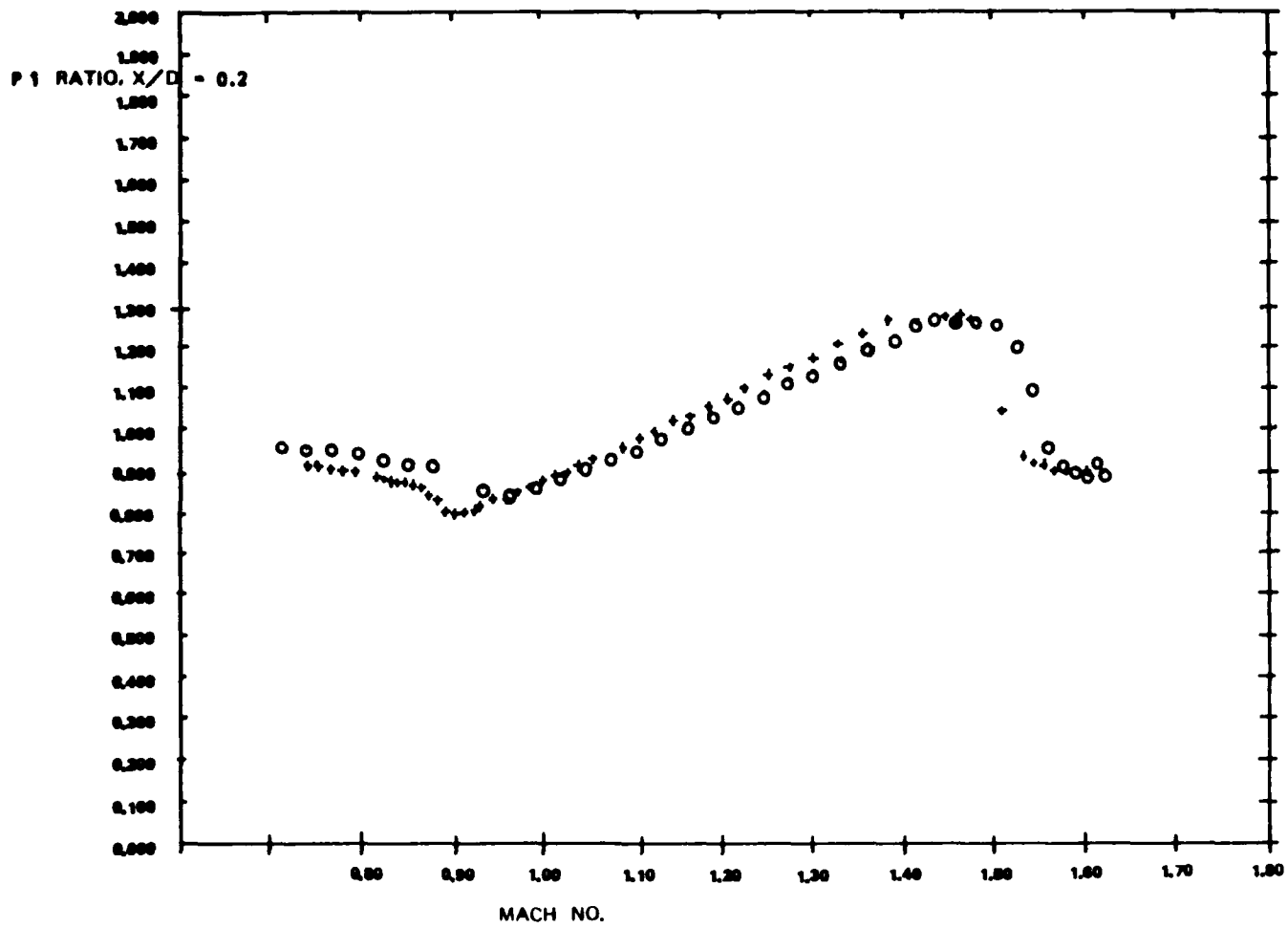

Figure 3. Surface pressure (x/D = 0.2)/ambient pressure, Run 5F-B6.

RUN NO. F5-B 6 RUN DATE 23SEPT.1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
.30	0.688	0	0.00	0.00	0.95	0.95	0.97	0.97
1.35	0.716	0	0.00	0.00	0.95	0.95	0.96	0.97
1.40	0.744	0	0.00	0.00	0.94	0.95	0.96	0.96
1.45	0.772	0	0.00	0.00	0.94	0.95	0.96	0.96
1.50	0.799	0	0.00	0.00	0.93	0.94	0.96	0.96
1.55	0.828	0	0.00	0.00	0.92	0.92	0.94	0.95
1.60	0.855	0	0.00	0.00	0.91	0.91	0.94	0.94
1.65	0.883	0	0.00	0.00	0.89	0.90	0.92	0.93
1.70	0.911	0	0.00	0.00	0.87	0.88	0.90	0.91
1.75	0.939	0	0.00	0.00	0.84	0.85	0.88	0.89
1.80	0.966	0	0.00	0.00	0.76	0.83	0.88	0.90
1.85	0.994	0	0.00	0.00	0.74	0.85	0.90	0.92
1.90	1.022	0	0.00	0.00	0.75	0.87	0.92	0.95
1.95	1.050	0	0.00	0.00	0.77	0.90	0.95	0.97
2.00	1.078	0	0.00	0.00	0.79	0.92	0.98	1.00
2.05	1.106	0	0.00	0.00	0.80	0.94	1.00	1.02
2.10	1.135	0	0.00	0.00	0.83	0.97	1.03	1.05
2.15	1.163	0	0.00	0.00	0.85	1.00	1.06	1.07
2.20	1.192	0	0.00	0.00	0.87	1.03	1.08	1.10
2.25	1.220	0	0.00	0.00	0.89	1.05	1.11	1.13
2.30	1.247	0	0.00	0.00	0.91	1.07	1.13	1.15
2.35	1.275	0	0.00	0.00	0.94	1.11	1.16	1.18
2.40	1.303	0	0.00	0.00	0.97	1.13	1.19	1.21
2.45	1.331	0	0.00	0.00	0.99	1.15	1.22	1.25
2.50	1.361	0	0.00	0.00	1.01	1.18	1.25	1.28
2.55	1.391	0	0.00	0.00	1.03	1.21	1.28	1.32
2.60	1.414	0	0.00	0.00	1.03	1.25	1.32	1.35
2.65	1.435	0	0.00	0.00	1.01	1.26	1.34	1.36
2.70	1.458	0	0.00	0.00	0.98	1.26	1.32	1.35
2.75	1.481	0	0.00	0.00	0.97	1.26	1.32	1.34
2.80	1.503	0	0.00	0.00	0.98	1.25	1.29	1.29
2.85	1.524	0	0.00	0.00	1.01	1.20	1.13	1.08
2.90	1.543	0	0.00	0.00	1.04	1.09	0.96	0.96
2.95	1.560	0	0.00	0.00	1.05	0.95	0.88	0.94
3.00	1.577	0	0.00	0.00	1.02	0.91	0.87	0.93
3.05	1.591	0	0.00	0.00	0.97	0.89	0.86	0.94
3.10	1.604	0	0.00	0.00	0.95	0.88	0.86	0.94
3.15	1.615	0	0.00	0.00	0.87	0.92	0.90	0.94
3.20	1.624	0	0.00	0.00	0.89	0.88	0.84	0.95
3.25	1.625	0	0.00	0.00	0.88	0.89	0.87	0.98
3.30	1.624	0	0.00	0.00	0.88	0.90	0.87	0.97
3.35	1.617	0	0.00	0.00	0.89	0.90	0.87	0.95
3.40	1.609	0	0.00	0.00	0.88	0.90	0.87	0.95
3.45	1.602	0	0.00	0.00	0.91	0.90	0.87	0.94
3.50	1.590	0	0.00	0.00	0.93	0.90	0.87	0.94
3.55	1.579	0	0.00	0.00	0.95	0.90	0.87	0.93
3.60	1.567	0	0.00	0.00	0.97	0.90	0.88	0.93
3.65	1.555	0	0.00	0.00	1.00	0.91	0.88	0.94
3.70	1.544	0	0.00	0.00	1.03	0.92	0.89	0.94
3.75	1.532	0	0.00	0.00	1.06	0.93	0.89	0.94

RUN NO. F5-B 6 RUN DATE 28SEPT.1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
30	0.688	0	0.95	0.97	0.97	0.94	0.97	0.97
1.35	0.716	0	0.95	0.96	0.97	0.94	0.97	0.96
1.40	0.744	0	0.95	0.96	0.96	0.93	0.97	0.96
1.45	0.772	0	0.95	0.96	0.96	0:93	0.96	0.96
1.50	0.799	0	0.94	0.96	0.96	0.92	0.96	0.96
1.55	0.828	0	0.92	0.94	0.95	0.91	0.95	0.95
1.60	0.855	0	0.91	0.94	0.94	0.90	0.95	0.95
1.65	0.883	0	0.90	0.92	0.93	0.88	0.93	0.94
1.70	0.911	0	0.88	0.90	0.91	0.85	0.91	0.92
1.75	0.939	0	0.85	0.88	0.89	0.84	0.90	0.91
1.80	0.966	0	0.83	0.88	0.90	0.84	0.90	0.93
1.85	0.994	0	0.85	0.90	0.92	0.86	0.92	0.95
1.90	1.022	0	0.87	0.92	0.95	0.88	0.95	0.97
1.95	1.050	0	0.90	0.95	0.97	0.91	0.97	1.00
2.00	1.078	0	0.92	0.98	1.00	0.93	1.00	1.03
2.05	1.106	0	0.94	1.00	1.02	0.96	1.02	1.05
2.10	1.135	0	0.97	1.03	1.05	0.99	1.06	1.08
2.15	1.163	0	1.00	1.06	1.07	1.02	1.08	1.11
2.20	1.192	0	1.03	1.08	1.10	1.05	1.11	1.14
2.25	1.220	0	1.05	1.11	1.13	1.08	1.14	1.16
2.30	1.247	0	1.07	1.13	1.15	1.11	1.16	1.19
2.35	1.275	0	1.11	1.16	1.18	1.16	1.20	1.24
2.40	1.303	0	1.13	1.19	1.21	1.20	1.21	1.28
2.45	1.331	0	1.15	1.22	1.25	1.23	1.35	1.31
2.50	1.361	0	1.18	1.25	1.28	1.28	1.33	1.34
55	1.391	0	1.21	1.28	1.32	1.32	1.34	1.36
60	1.414	0	1.25	1.32	1.35	1.17	1.36	1.35
2.65	1.435	0	1.26	1.34	1.36	1.31	1.37	1.33
2.70	1.458	0	1.26	1.32	1.35	1.27	1.35	1.21
2.75	1.481	0	1.26	1.32	1.34	1.15	1.32	0.98
2.80	1.503	0	1.25	1.29	1.29	0.97	1.22	0.89
2.85	1.524	0	1.20	1.13	1.08	0.88	0.96	0.88
2.90	1.543	0	1.09	0.96	0.96	0.88	0.90	0.88
2.95	1.560	0	0.95	0.88	0.94	0.88	0.89	0.88
3.00	1.577	0	0.91	0.87	0.93	0.88	0.90	0.89
3.05	1.591	0	0.89	0.86	0.94	0.88	0.90	0.90
3.10	1.604	0	0.88	0.86	0.94	0.87	0.89	0.90
3.15	1.615	0	0.92	0.90	0.94	0.92	0.93	0.92
3.20	1.624	0	0.88	0.84	0.95	0.90	0.91	0.91
3.25	1.625	0	0.89	0.87	0.93	0.91	0.92	0.91
3.30	1.624	0	0.90	0.87	0.37	0.92	0.92	0.93
3.35	1.617	0	0.90	0.87	0.95	0.92	0.92	0.93
3.40	1.609	0	0.90	0.87	0.95	0.92	0.93	0.93
3.45	1.602	0	0.90	0.87	0.94	0.92	0.92	0.93
3.50	1.590	0	0.90	0.87	0.94	0.92	0.92	0.88
3.55	1.579	0	0.90	0.87	0.93	0.92	0.92	0.86
3.60	1.567	0	0.90	0.88	0.93	0.91	0.92	0.93
3.65	1.555	0	0.91	0.88	0.94	0.91	0.91	0.92
3.70	1.544	0	0.92	0.89	0.94	0.92	0.91	0.92
3.75	1.532	0	0.93	0.89	0.94	0.91	0.92	0.92

RUN NO. F5-B 6 RUN DATE 28SEPT.1976 PRESSURE RATIO

IME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
1.30	0.688	0	0.97	3.37	0.98	0.97	0.96	0.93
1.35	0.716	0	0.96	0.98	0.97	0.97	0.95	0.97
1.40	0.744	0	0.96	0.98	0.97	0.97	0.95	0.96
1.45	0.772	0	0.96	0.97	0.96	0.96	0.95	0.96
1.50	0.799	0	0.96	0.97	0.96	0.96	0.95	0.96
1.55	0.828	0	0.95	0.96	0.95	0.95	0.91	0.94
1.60	0.855	0	0.95	0.96	0.95	0.94	0.91	0.94
1.65	0.883	0	0.94	0.95	0.94	0.92	0.90	0.91
1.70	0.911	0	0.92	0.95	0.93	0.90	0.88	0.90
1.75	0.939	0	0.91	0.94	0.93	0.88	0.86	0.88
1.80	0.966	0	0.93	0.96	0.94	0.89	0.86	0.89
1.85	0.994	0	0.95	0.97	0.96	0.91	0.97	0.90
1.90	1.022	0	0.97	0.99	0.97	0.91	0.91	0.93
1.95	1.050	0	1.00	1.02	1.00	0.96	0.94	0.95
2.00	1.078	0	1.03	1.05	1.03	0.98	0.97	0.98
2.05	1.106	0	1.05	1.07	1.05	1.00	0.99	1.00
2.10	1.135	0	1.08	1.10	1.08	1.03	1.02	1.03
2.15	1.163	0	1.11	1.13	1.11	1.06	1.05	1.06
2.20	1.192	0	1.14	1.17	1.15	1.10	1.08	1.09
2.25	1.220	0	1.16	1.20	1.18	1.13	1.12	1.12
2.30	1.247	0	1.19	1.24	1.22	1.17	1.15	1.14
2.35	1.275	0	1.24	1.28	1.26	1.18	1.18	1.16
2.40	1.303	0	1.28	1.32	1.31	1.18	1.17	1.18
2.45	1.331	0	1.31	1.34	1.33	1.20	1.19	1.21
.50	1.361	0	1.34	1.34	1.34	1.24	1.23	1.25
2.55	1.391	0	1.36	1.30	1.33	1.27	1.28	1.28
2.60	1.414	0	1.35	1.12	1.28	1.32	1.33	1.31
2.65	1.435	0	1.33	0.89	1.25	1.35	1.40	1.33
2.70	1.458	0	1.21	0.90	0.91	1.37	1.46	1.31
2.75	1.481	0	0.98	0.91	0.91	1.36	1.51	1.29
2.80	1.503	0	0.89	0.92	0.91	1.34	1.54	1.27
2.85	1.524	0	0.88	0.93	0.92	1.31	1.48	1.23
2.90	1.543	0	0.88	0.94	0.94	1.28	1.39	1.19
2.95	1.560	0	0.88	0.95	0.94	1.15	1.24	1.04
3.00	1.577	0	0.89	0.96	0.95	1.01	1.09	0.98
3.05	1.591	0	0.90	0.96	0.95	0.96	1.04	0.95
3.10	1.604	0	0.90	0.97	0.94	1.00	1.05	0.94
3.15	1.615	0	0.92	0.97	0.95	1.03	1.03	0.86
3.20	1.624	0	0.91	0.98	0.95	0.88	1.03	0.89
3.25	1.625	0	0.91	0.99	0.96	0.87	1.04	0.89
3.30	1.624	0	0.93	1.00	0.97	0.87	1.04	0.88
3.35	1.617	0	0.93	1.00	0.97	0.96	1.05	0.90
3.40	1.609	0	0.93	1.00	0.98	0.88	1.05	0.89
3.45	1.602	0	0.93	1.00	0.97	0.89	1.06	0.92
3.50	1.590	0	0.88	0.99	0.97	0.93	1.07	0.93
3.55	1.579	0	0.86	0.99	0.97	0.96	1.07	0.95
3.60	1.567	0	0.93	0.99	0.97	0.98	1.07	0.97
3.65	1.555	0	0.92	0.98	0.97	1.01	1.07	0.98
3.70	1.544	0	0.92	0.98	0.97	1.03	1.12	1.01
3.75	1.532	0	0.92	0.97	0.97	1.05	1.23	1.03

RUN NO. F5-B 6 RUN DATE 28SEPT.1976 PRESSURE RATIO

TIME	MACH	THRUST	PC/PA	CT	PB/PA	P1/PA	P11/PA	P5/PA
..85	1.509	0	0.00	0.00	1.05	1.04	0.93	0.95
4.00	1.475	0	0.00	0.00	1.01	1.26	1.26	1.24
4.05	1.463	0	0.00	0.00	1.01	1.27	1.27	1.30
4.13	1.447	0	0.00	0.00	1.00	1.27	1.36	1.39
4.45	1.383	0	0.00	0.00	1.04	1.26	1.36	1.38
4.60	1.354	0	0.00	0.00	1.06	1.23	1.33	1.36
4.75	1.327	0	0.00	0.00	1.06	1.20	1.29	1.32
4.90	1.301	0	0.00	0.00	1.03	1.17	1.26	1.28
5.05	1.276	0	0.00	0.00	1.02	1.15	1.23	1.26
5.20	1.252	0	0.00	0.00	0.99	1.13	1.21	1.22
5.37	1.225	0	0.00	0.00	0.97	1.10	1.18	1.21
5.50	1.206	0	0.00	0.00	0.95	1.07	1.15	1.18
5.65	1.186	0	0.00	0.00	0.93	1.05	1.14	1.16
5.80	1.165	0	0.00	0.00	0.91	1.03	1.11	1.14
5.95	1.146	0	0.00	0.00	0.90	1.02	1.10	1.12
6.10	1.127	0	0.00	0.00	0.88	0.99	1.07	1.10
6.25	1.109	0	0.00	0.00	0.87	0.98	1.05	1.08
6.40	1.092	0	0.00	0.00	0.84	0.95	1.03	1.07
6.55	1.075	0	0.00	0.00	0.84	0.94	1.02	1.04
6.70	1.060	0	0.00	0.00	0.83	0.93	1.00	1.03
6.85	1.044	0	0.00	0.00	0.82	0.91	0.99	1.02
7.00	1.030	0	0.00	0.00	0.81	0.89	0.97	1.00
7.15	1.016	0	0.00	0.00	0.80	0.89	0.97	0.99
7.30	1.002	0	0.00	0.00	0.79	0.87	0.95	0.98
7.45	0.988	0	0.00	0.00	0.79	0.86	0.94	0.96
.60	0.975	0	0.00	0.00	0.77	0.85	0.93	0.95
.75	0.962	0	0.00	0.00	0.76	0.83	0.91	0.94
7.90	0.949	0	0.00	0.00	0.76	0.83	0.90	0.93
8.10	0.934	0	0.00	0.00	0.75	0.81	0.90	0.93
8.20	0.926	0	0.00	0.00	0.75	0.80	0.89	0.92
8.35	0.916	0	0.00	0.00	0.76	0.80	0.88	0.90
8.50	0.906	0	0.00	0.00	0.76	0.79	0.87	0.90
8.65	0.896	0	0.00	0.00	0.83	0.80	0.87	0.91
8.80	0.887	0	0.00	0.00	0.88	0.83	0.89	0.91
8.95	0.877	0	0.00	0.00	0.88	0.84	0.90	0.92
9.10	0.868	0	0.00	0.00	0.90	0.85	0.92	0.94
9.25	0.860	0	0.00	0.00	0.90	0.86	0.92	0.93
9.40	0.851	0	0.00	0.00	0.91	0.87	0.93	0.94
9.55	0.843	0	0.00	0.00	0.91	0.87	0.94	0.95
9.70	0.834	0	0.00	0.00	0.92	0.87	0.94	0.95
9.85	0.827	0	0.00	0.00	0.92	0.88	0.95	0.95
10.00	0.819	0	0.00	0.00	0.93	0.88	0.95	0.96
10.15	0.812	0	0.00	0.00	0.93	0.89	0.95	0.96
10.30	0.805	0	0.00	0.00	0.94	0.89	0.96	0.96
10.50	0.795	0	0.00	0.00	0.94	0.90	0.96	0.97
10.60	0.781	0	0.00	0.00	0.94	0.90	0.96	0.98
11.10	0.768	0	0.00	0.00	0.95	0.90	0.97	0.97
11.40	0.755	0	0.00	0.00	0.96	0.91	0.97	0.98
11.70	0.743	0	0.00	0.00	0.96	0.91	0.97	1.00
12.00	0.000	0	0.00	0.00	0.96	0.91	0.97	0.98

RUN NO. F5-B 6 RUN DATE 28SEPT.1976 PRESSURE RATIO

TIME	MACH	THRUST	P1/PA	P11/PA	P5/PA	P2/PA	P3/PA	P4/PA
3.85	1.509	0	1.04	0.93	0.95	0.91	0.92	0.91
30	1.475	0	1.26	1.26	1.24	0.92	1.01	0.90
4.05	1.463	0	1.27	1.27	1.30	1.00	1.09	0.90
4.13	1.447	0	1.27	1.36	1.39	1.32	1.38	1.30
4.45	1.383	0	1.26	1.36	1.38	1.34	1.38	1.37
4.60	1.354	0	1.23	1.33	1.36	1.34	1.36	1.38
4.75	1.327	0	1.20	1.29	1.32	1.32	1.34	1.38
4.90	1.301	0	1.17	1.26	1.28	1.28	1.30	1.34
5.05	1.276	0	1.15	1.23	1.26	1.25	1.27	1.32
5.20	1.252	0	1.13	1.21	1.22	1.24	1.35	1.27
5.37	1.225	0	1.10	1.18	1.21	1.17	1.22	1.25
5.50	1.206	0	1.07	1.15	1.18	1.14	1.18	1.22
5.65	1.186	0	1.05	1.14	1.16	1.11	1.16	1.20
5.80	1.165	0	1.03	1.11	1.14	1.09	1.14	1.17
5.95	1.146	0	1.02	1.10	1.12	1.07	1.12	1.16
6.10	1.127	0	0.99	1.07	1.10	1.05	1.10	1.13
6.25	1.109	0	0.98	1.05	1.08	1.03	1.08	1.11
6.40	1.092	0	0.95	1.03	1.07	1.00	1.06	1.09
6.55	1.075	0	0.94	1.02	1.04	0.99	1.04	1.08
6.70	1.060	0	0.93	1.00	1.03	0.97	1.03	1.07
6.85	1.044	0	0.91	0.98	1.02	0.96	1.02	1.05
7.00	1.030	0	0.89	0.97	1.00	0.93	1.00	1.03
7.15	1.016	0	0.89	0.97	0.99	0.93	0.99	1.02
7.30	1.002	0	0.87	0.95	0.98	0.92	0.98	1.01
7.45	0.988	0	0.86	0.94	0.96	0.90	0.96	0.99
7.60	0.975	0	0.85	0.93	0.95	0.89	0.95	0.98
7.75	0.962	0	0.83	0.91	0.94	0.87	0.94	0.97
90	0.949	0	0.83	0.90	0.93	0.86	0.93	0.96
8.10	0.934	0	0.81	0.90	0.93	0.85	0.92	0.94
8.20	0.926	0	0.80	0.89	0.92	0.84	0.91	0.94
8.35	0.916	0	0.80	0.88	0.90	0.83	0.90	0.92
8.50	0.906	0	0.79	0.87	0.90	0.82	0.89	0.92
8.65	0.896	0	0.80	0.87	0.91	0.82	0.89	0.91
8.80	0.887	0	0.83	0.89	0.91	0.84	0.90	0.92
8.95	0.877	0	0.84	0.90	0.92	0.84	0.91	0.92
9.10	0.868	0	0.85	0.92	0.94	0.86	0.92	0.93
9.25	0.860	0	0.86	0.92	0.93	0.86	0.93	0.93
9.40	0.851	0	0.87	0.93	0.94	0.87	0.94	0.94
9.55	0.843	0	0.87	0.94	0.95	0.88	0.94	0.94
9.70	0.834	0	0.87	0.94	0.95	0.88	0.94	0.94
9.85	0.827	0	0.88	0.95	0.95	0.88	0.95	0.95
10.00	0.819	0	0.88	0.95	0.96	0.89	0.95	0.95
10.15	0.812	0	0.89	0.95	0.96	0.89	0.95	0.95
10.30	0.805	0	0.89	0.96	0.96	0.90	0.96	0.95
10.50	0.795	0	0.90	0.96	0.97	0.90	0.96	0.96
10.80	0.781	0	0.90	0.96	0.98	0.91	0.96	0.96
11.10	0.768	0	0.90	0.97	0.97	0.91	0.97	0.96
11.40	0.755	0	0.91	0.97	0.98	0.92	0.97	0.96
11.70	0.743	0	0.91	0.97	1.00	0.92	0.97	0.97
12.00	0.000	0	0.91	0.97	0.98	0.89	0.97	0.97

RUN NO. F5-B 6 RUN DATE 28SEPT.1976 PRESSURE RATIO

TIME	MACH	THRUST	P4/PA	P9/PA	P10/PA	P6/PA	P7/PA	P8/PA
3.85	1.509	0	0.91	0.96	0.96	1.28	1.40	1.19
0	1.475	0	0.90	0.95	0.94	1.35	1.53	1.27
4.05	1.463	0	0.90	0.94	0.94	1.34	1.55	1.29
4.13	1.447	0	1.30	0.93	0.93	1.39	1.47	1.32
4.45	1.383	0	1.37	0.91	1.09	1.36	1.39	1.35
4.60	1.354	0	1.38	1.25	1.32	1.32	1.33	1.32
4.75	1.327	0	1.38	1.34	1.35	1.29	1.28	1.29
4.90	1.301	0	1.34	1.35	1.34	1.24	1.23	1.25
5.05	1.276	0	1.32	1.34	1.33	1.22	1.21	1.23
5.20	1.252	0	1.27	1.32	1.29	1.19	1.18	1.19
5.37	1.225	0	1.25	1.29	1.26	1.19	1.19	1.17
5.50	1.206	0	1.22	1.25	1.22	1.19	1.15	1.15
5.65	1.186	0	1.20	1.22	1.19	1.16	1.13	1.14
5.80	1.165	0	1.17	1.20	1.16	1.13	1.12	1.12
5.95	1.146	0	1.16	1.18	1.14	1.12	1.10	1.10
6.10	1.127	0	1.13	1.15	1.11	1.09	1.07	1.08
6.25	1.109	0	1.11	1.12	1.09	1.07	1.05	1.06
6.40	1.092	0	1.09	1.10	1.07	1.05	1.03	1.03
6.55	1.075	0	1.08	1.08	1.05	1.03	1.00	1.02
6.70	1.060	0	1.07	1.07	1.03	1.01	0.99	1.01
6.85	1.044	0	1.05	1.05	1.02	1.00	0.98	0.99
7.00	1.030	0	1.03	1.04	0.99	0.98	0.96	1.00
7.15	1.016	0	1.02	1.03	0.99	0.97	0.95	0.97
7.30	1.002	0	1.01	1.01	0.98	0.96	0.94	0.96
7.45	0.988	0	0.99	1.00	0.96	0.94	0.92	0.94
7.60	0.975	0	0.98	0.99	0.95	0.93	0.92	0.93
7.75	0.962	0	0.97	1.00	0.94	0.92	0.90	0.91
90	0.949	0	0.96	0.95	0.93	0.91	0.89	0.91
8.10	0.934	0	0.94	0.95	0.91	0.90	0.87	0.89
8.20	0.926	0	0.94	0.94	0.91	0.89	0.87	0.89
8.35	0.916	0	0.92	0.93	0.90	0.88	0.86	0.87
8.50	0.906	0	0.92	0.92	0.89	0.87	0.85	0.86
8.65	0.896	0	0.91	0.92	0.88	0.87	0.86	0.87
8.80	0.887	0	0.92	0.93	0.89	0.88	0.86	0.88
8.95	0.877	0	0.92	0.93	0.89	0.90	0.87	0.88
9.10	0.868	0	0.93	0.93	0.90	0.91	0.89	0.90
9.25	0.860	0	0.93	0.93	0.90	0.91	0.90	0.91
9.40	0.851	0	0.94	0.94	0.90	0.92	0.91	0.92
9.55	0.843	0	0.94	0.94	0.90	0.93	0.91	0.92
9.70	0.834	0	0.94	0.94	0.91	0.93	0.92	0.92
9.85	0.827	0	0.95	0.94	0.91	0.94	0.92	0.93
10.00	0.819	0	0.95	0.95	0.91	0.94	0.93	0.93
10.15	0.812	0	0.95	0.95	0.92	0.95	0.93	0.94
10.30	0.805	0	0.95	0.95	0.92	0.95	0.94	0.94
10.50	0.795	0	0.96	0.95	0.92	0.95	0.94	0.95
10.80	0.781	0	0.96	0.96	0.92	0.96	0.94	0.95
11.10	0.768	0	0.96	0.96	0.93	0.96	0.95	0.95
11.40	0.755	0	0.96	0.96	0.93	0.96	0.95	0.96
11.70	0.743	0	0.97	0.96	0.93	0.96	0.95	0.96
12.00	0.000	0	0.97	0.96	0.93	0.96	0.95	0.96

VII. APPENDIX F

APPENDIX F

Run No 5F-F1

Run Date: 3 May 77

Configuration: Angle of Attack: 0° No fins

Motor Firing: Time = 2.82 to 4.02 seconds

Remarks:

Post run examination of results prompted move of orifices 7 and 8 to location nearer base into area of greater plume influence.

Original Location:	$x/d = 1.70$	$\phi = 0$	No. 7
	$x/d = 2.30$	$\phi = 0$	No. 8

New Location: See Figure 4.

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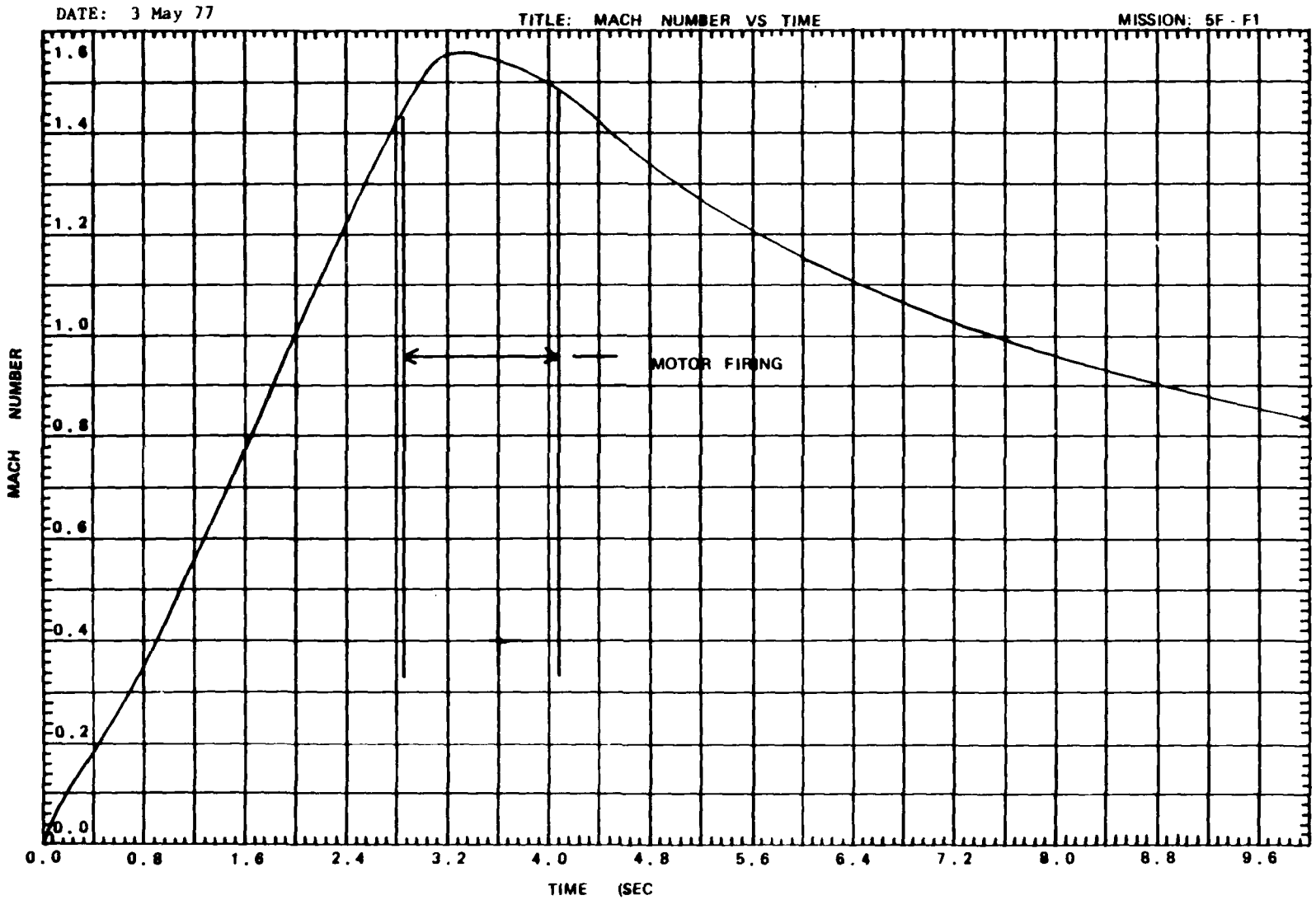


Figure 1. Test trajectory, Tun 5F-F1.

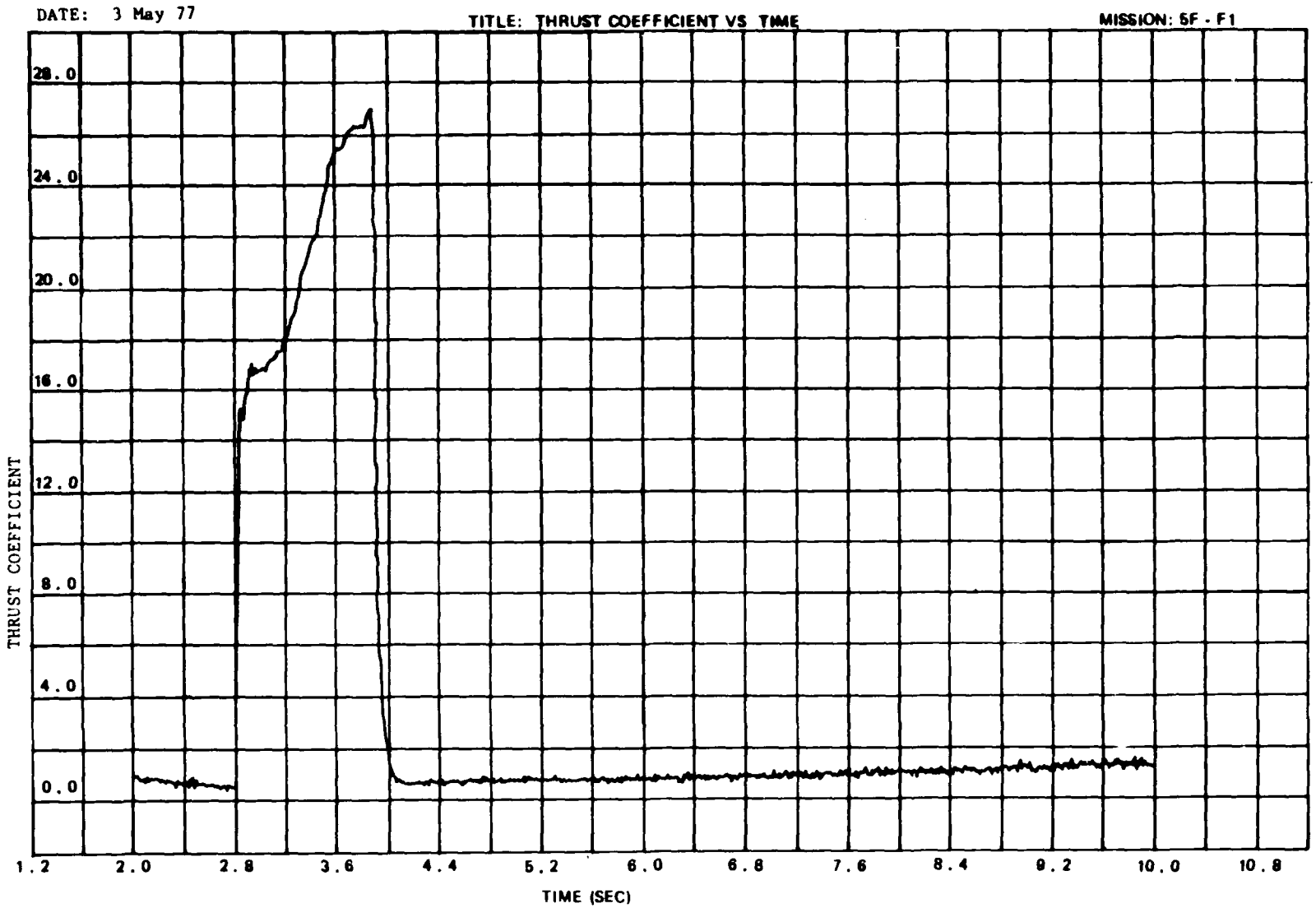


Figure 2. Thrust coefficient, Run 5F-F1.

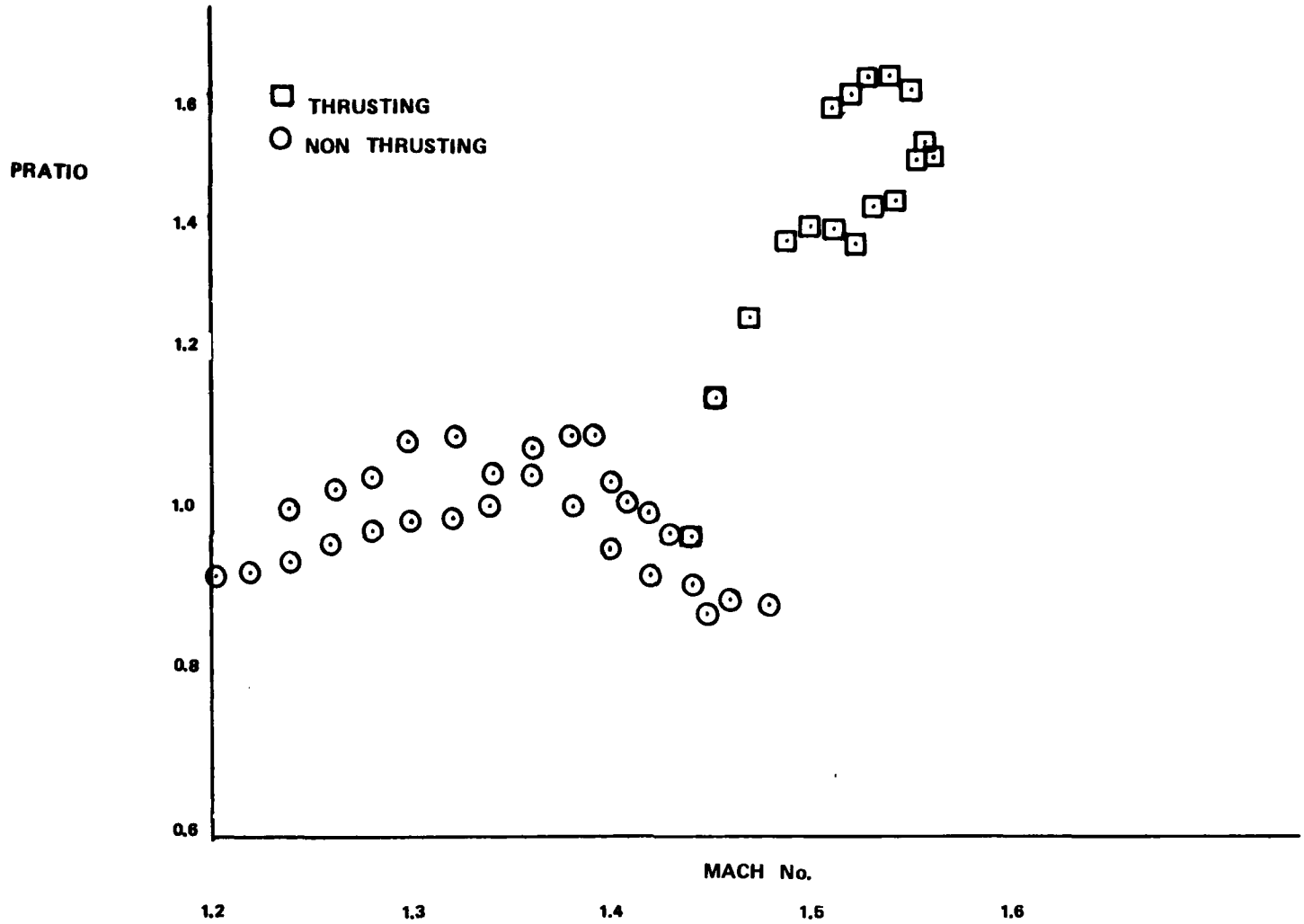


Figure 3. Base pressure/ambient pressure.

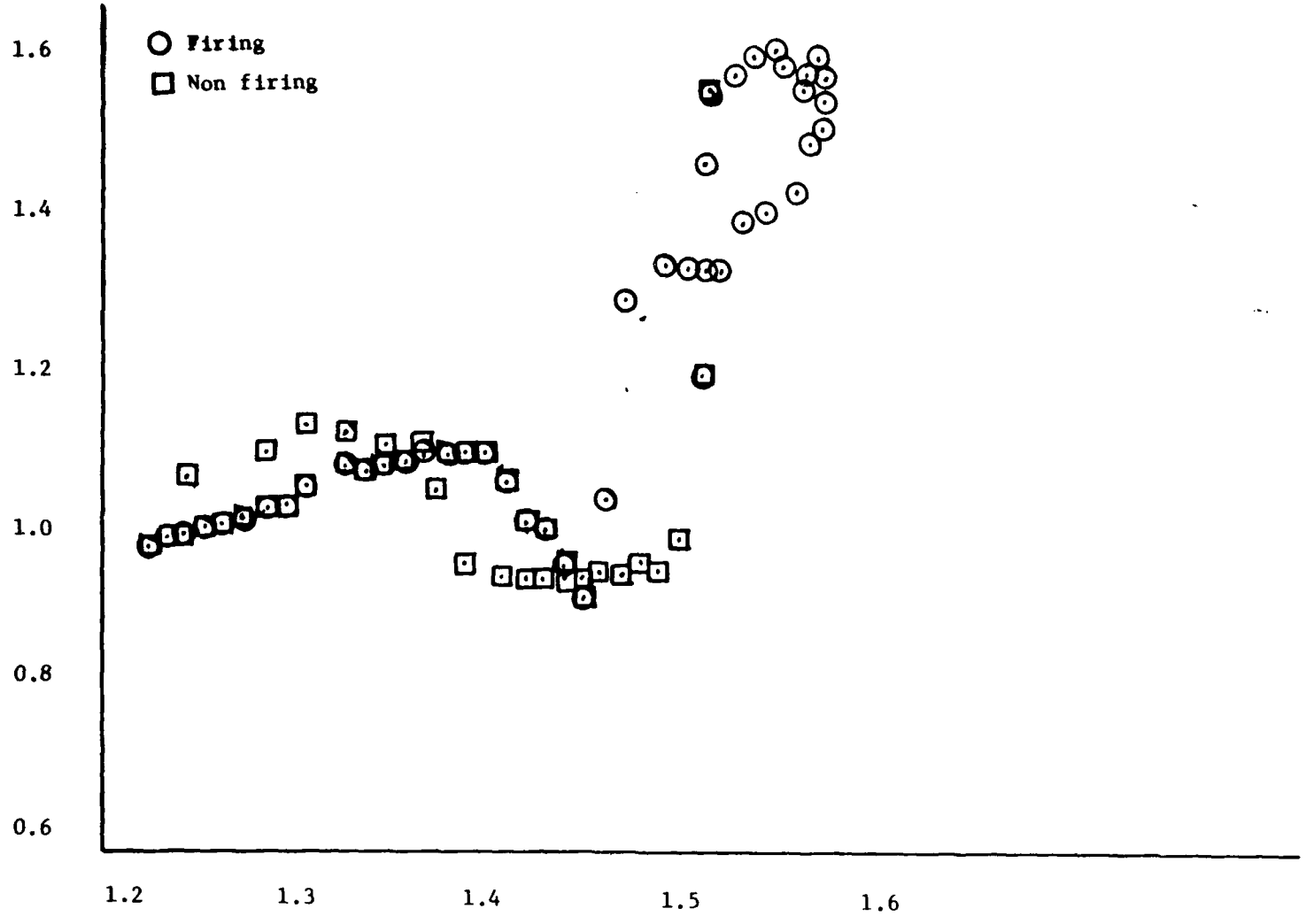


Figure 4. Surface pressure (x/D = 0.01)/ambient pressure.

RUN # 5F-F1

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
2.710	1.380	16.926	1.112	1.180	1.027	0.946	0.950	0.936	1.134	0.991
2.720	1.385	17.040	1.108	1.125	0.968	0.935	0.947	0.935	1.125	0.992
2.730	1.389	17.147	1.098	1.066	0.936	0.931	0.944	0.933	1.118	0.990
2.740	1.394	17.258	1.089	1.017	0.926	0.932	0.948	0.934	1.116	0.991
2.750	1.398	17.369	1.079	0.977	0.925	0.934	0.952	0.939	1.115	0.996
2.760	1.402	17.479	1.063	0.941	0.925	0.938	0.955	0.945	1.111	1.003
2.770	1.407	17.591	1.040	0.914	0.925	0.942	0.960	0.951	1.107	1.009
2.780	1.411	17.703	1.022	0.902	0.927	0.947	0.965	0.954	1.104	1.013
2.790	1.416	17.818	1.008	0.902	0.928	0.948	0.966	0.953	1.099	1.013
2.800	1.420	17.930	0.992	0.902	0.925	0.944	0.963	0.950	1.093	1.009
2.810	1.425	18.043	0.974	0.898	0.923	0.940	0.960	0.948	1.089	1.005
2.820	1.429	18.158	0.954	0.895	0.925	0.941	0.962	0.949	1.086	1.004
2.830	1.434	18.269	0.941	0.897	0.930	0.946	0.965	0.951	1.084	1.006
2.840	1.438	18.370	0.928	0.899	0.929	0.946	0.965	0.950	1.076	1.006
2.850	1.442	18.481	0.919	0.891	0.925	0.940	0.961	0.946	1.065	1.002
2.860	1.447	18.604	0.945	0.885	0.921	0.937	0.960	0.945	1.058	0.998
2.870	1.451	18.719	1.042	0.887	0.928	0.943	0.967	0.954	1.055	1.003
2.880	1.456	18.829	1.192	0.903	0.946	0.961	0.985	0.973	1.059	1.022
2.890	1.459	18.912	1.294	0.920	0.963	0.981	1.000	0.991	1.061	1.048
2.900	1.465	19.064	1.305	0.932	0.969	0.991	1.006	0.999	1.058	1.062
2.910	1.469	19.181	1.259	0.939	0.968	0.994	1.006	0.999	1.053	1.064
2.920	1.472	19.259	1.244	0.937	0.963	0.988	1.002	0.993	1.048	1.053
2.930	1.476	19.353	1.287	0.932	0.960	0.981	0.998	0.986	1.046	1.043
2.940	1.479	19.441	1.335	0.931	0.961	0.978	0.998	0.983	1.048	1.036
2.950	1.485	19.607	1.347	0.935	0.968	0.982	1.004	0.989	1.052	1.039
2.960	1.489	19.701	1.336	0.941	0.972	0.987	1.008	0.994	1.052	1.045
2.970	1.492	19.777	1.330	0.937	0.967	0.983	1.004	0.990	1.043	1.044
2.980	1.495	19.874	1.337	0.928	0.958	0.974	0.996	0.983	1.031	1.037
2.990	1.499	19.970	1.344	0.925	0.960	0.972	0.997	0.983	1.027	1.032
3.000	1.503	20.065	1.343	0.932	0.974	0.985	1.012	0.994	1.031	1.041
3.010	1.507	20.191	1.336	0.947	0.992	1.006	1.029	1.012	1.039	1.064
3.020	1.511	20.292	1.331	0.959	1.002	1.020	1.038	1.024	1.040	1.084
3.030	1.513	20.339	1.340	0.962	1.001	1.021	1.035	1.022	1.037	1.088
3.040	1.517	20.447	1.359	0.957	0.991	1.009	1.024	1.010	1.032	1.073
3.050	1.521	20.552	1.379	0.950	0.981	0.996	1.016	0.999	1.030	1.055
3.060	1.525	20.661	1.385	0.948	0.982	0.991	1.017	0.995	1.032	1.045
3.070	1.526	20.707	1.383	0.953	0.989	0.996	1.023	0.999	1.036	1.049
3.080	1.528	20.742	1.391	0.962	1.000	1.009	1.032	1.010	1.041	1.066
3.090	1.533	20.883	1.405	0.969	1.003	1.017	1.037	1.020	1.040	1.080
3.100	1.536	20.956	1.415	0.969	0.999	1.017	1.037	1.022	1.035	1.083
3.110	1.538	21.025	1.414	0.968	1.000	1.018	1.039	1.022	1.035	1.083
3.120	1.540	21.079	1.410	0.972	1.010	1.026	1.047	1.028	1.040	1.087
3.130	1.542	21.138	1.422	0.981	1.023	1.036	1.058	1.040	1.049	1.102
3.140	1.543	21.171	1.444	0.985	1.027	1.040	1.060	1.048	1.051	1.111
3.150	1.546	21.229	1.457	0.982	1.020	1.034	1.055	1.045	1.047	1.106

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
3.160	1.548	21.285	1.448	0.974	1.011	1.025	1.047	1.035	1.045	1.091
3.170	1.549	21.317	1.430	0.970	1.009	1.022	1.046	1.031	1.048	1.082
3.180	1.550	21.351	1.436	0.976	1.019	1.030	1.057	1.040	1.056	1.092
3.190	1.551	21.387	1.463	0.990	1.033	1.045	1.070	1.056	1.062	1.112
3.200	1.553	21.436	1.485	1.001	1.041	1.057	1.078	1.067	1.062	1.129
3.210	1.554	21.463	1.490	1.002	1.040	1.057	1.076	1.067	1.059	1.133
3.220	1.555	21.490	1.489	0.995	1.030	1.046	1.067	1.057	1.056	1.121
3.230	1.556	21.511	1.490	0.985	1.024	1.036	1.062	1.048	1.054	1.109
3.240	1.557	21.540	1.491	0.984	1.025	1.036	1.064	1.049	1.056	1.105
3.250	1.557	21.554	1.498	0.992	1.035	1.045	1.075	1.061	1.063	1.116
3.260	1.558	21.570	1.513	1.003	1.047	1.058	1.084	1.074	1.071	1.132
3.270	1.558	21.582	1.528	1.007	1.049	1.063	1.086	1.076	1.072	1.139
3.280	1.559	21.588	1.529	1.004	1.042	1.060	1.080	1.071	1.071	1.136
3.290	1.559	21.598	1.516	1.001	1.036	1.053	1.075	1.064	1.072	1.127
3.300	1.559	21.598	1.506	1.002	1.036	1.052	1.075	1.062	1.076	1.120
3.310	1.559	21.595	1.518	1.005	1.042	1.060	1.084	1.069	1.080	1.127
3.320	1.559	21.589	1.541	1.008	1.051	1.070	1.094	1.080	1.083	1.137
3.330	1.558	21.585	1.561	1.015	1.059	1.079	1.100	1.093	1.089	1.150
3.340	1.558	21.573	1.570	1.021	1.061	1.082	1.099	1.096	1.097	1.154
3.350	1.558	21.565	1.569	1.015	1.051	1.072	1.091	1.084	1.099	1.146
3.360	1.557	21.553	1.558	1.000	1.039	1.059	1.083	1.068	1.096	1.131
3.370	1.557	21.542	1.545	0.991	1.037	1.053	1.081	1.064	1.094	1.120
3.380	1.556	21.529	1.550	0.998	1.047	1.062	1.088	1.075	1.102	1.128
3.390	1.556	21.512	1.575	1.013	1.057	1.076	1.096	1.086	1.113	1.146
3.400	1.555	21.499	1.599	1.022	1.057	1.084	1.098	1.088	1.118	1.159
3.410	1.555	21.483	1.602	1.022	1.054	1.082	1.096	1.084	1.118	1.160
3.420	1.554	21.467	1.586	1.020	1.052	1.077	1.096	1.084	1.118	1.151
3.430	1.554	21.452	1.573	1.021	1.053	1.074	1.097	1.087	1.118	1.144
3.440	1.553	21.437	1.571	1.020	1.052	1.075	1.095	1.085	1.115	1.143
3.450	1.552	21.418	1.578	1.020	1.052	1.077	1.093	1.080	1.112	1.147
3.460	1.552	21.403	1.591	1.024	1.057	1.082	1.097	1.084	1.117	1.154
3.470	1.551	21.382	1.597	1.027	1.058	1.081	1.100	1.088	1.119	1.156
3.480	1.550	21.365	1.588	1.026	1.054	1.074	1.095	1.086	1.115	1.152
3.490	1.550	21.340	1.572	1.021	1.048	1.071	1.090	1.081	1.110	1.147
3.500	1.548	21.309	1.567	1.023	1.048	1.073	1.091	1.084	1.110	1.148
3.510	1.548	21.288	1.582	1.031	1.055	1.079	1.096	1.092	1.117	1.156
3.520	1.547	21.265	1.596	1.036	1.059	1.084	1.098	1.098	1.123	1.163
3.530	1.546	21.247	1.601	1.035	1.057	1.083	1.097	1.096	1.124	1.163
3.540	1.545	21.215	1.598	1.030	1.052	1.078	1.094	1.090	1.120	1.157
3.550	1.544	21.189	1.596	1.026	1.048	1.071	1.093	1.084	1.113	1.151
3.560	1.543	21.165	1.594	1.022	1.046	1.066	1.091	1.080	1.106	1.147
3.570	1.542	21.137	1.593	1.017	1.046	1.064	1.087	1.078	1.103	1.142
3.580	1.541	21.110	1.596	1.023	1.051	1.070	1.092	1.082	1.112	1.147
3.590	1.540	21.086	1.606	1.031	1.061	1.082	1.101	1.092	1.125	1.159
3.600	1.539	21.058	1.609	1.033	1.064	1.089	1.105	1.095	1.129	1.167

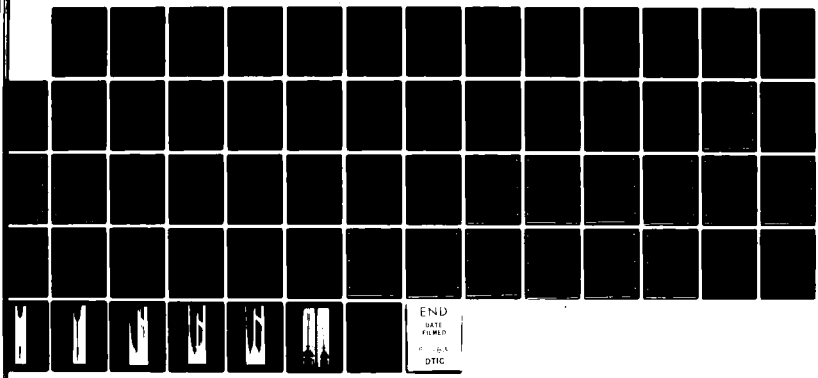
TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
T+ 3.610	1.539	21.040	1.597	1.024	1.058	1.083	1.099	1.087	1.122	1.163
T+ 3.620	1.538	21.020	1.584	1.014	1.052	1.072	1.090	1.075	1.111	1.150
T+ 3.630	1.537	21.000	1.585	1.014	1.050	1.066	1.086	1.070	1.105	1.139
T+ 3.640	1.536	20.973	1.596	1.017	1.050	1.065	1.086	1.072	1.105	1.136
T+ 3.650	1.535	20.939	1.602	1.017	1.048	1.065	1.086	1.075	1.106	1.139
T+ 3.660	1.534	20.922	1.607	1.017	1.050	1.068	1.086	1.080	1.111	1.145
T+ 3.670	1.533	20.897	1.608	1.018	1.051	1.070	1.087	1.083	1.115	1.147
T+ 3.680	1.532	20.867	1.598	1.020	1.051	1.070	1.088	[illegible]	1.115	1.146
T+ 3.690	1.532	20.849	1.585	1.017	1.048	1.068	1.087	[illegible]	1.110	1.142
T+ 3.700	1.531	20.822	1.581	1.015	1.046	1.065	1.087	1.076	1.107	1.139
T+ 3.710	1.530	20.800	1.588	1.016	1.048	1.068	1.089	1.079	1.108	1.140
T+ 3.720	1.529	20.770	1.587	1.015	1.050	1.070	1.089	1.079	1.109	1.141
T+ 3.730	1.528	20.745	1.582	1.014	1.052	1.074	1.089	1.078	1.111	1.144
T+ 3.740	1.527	20.719	1.582	1.012	1.053	1.077	1.090	1.080	1.112	1.147
T+ 3.750	1.526	20.682	1.585	1.009	1.051	1.074	1.087	1.080	1.109	1.146
T+ 3.760	1.525	20.657	1.578	1.004	1.047	1.069	1.082	1.079	1.105	1.141
T+ 3.770	1.524	20.631	1.565	0.999	1.043	1.063	1.079	1.075	1.102	1.133
T+ 3.780	1.523	20.607	1.565	1.000	1.044	1.063	1.080	1.075	1.104	1.131
T+ 3.790	1.522	20.589	1.576	1.003	1.046	1.066	1.083	1.077	1.105	1.133
T+ 3.800	1.521	20.570	1.578	1.002	1.045	1.065	1.080	1.073	1.102	1.135
T+ 3.810	1.520	20.546	1.566	0.999	1.042	1.061	1.076	1.067	1.097	1.132
T+ 3.820	1.520	20.525	1.557	1.001	1.041	1.058	1.075	[illegible]	1.097	1.128
T+ 3.830	1.519	20.495	1.562	1.007	1.043	1.060	1.080	1.072	1.101	1.129
T+ 3.840	1.518	20.470	1.576	1.006	1.045	1.063	1.082	1.075	1.103	1.132
T+ 3.850	1.517	20.441	1.576	0.999	1.044	1.065	1.080	1.071	1.101	1.133
T+ 3.860	1.515	20.407	1.561	0.998	1.045	1.068	1.081	1.070	1.101	1.137
T+ 3.870	1.514	20.384	1.546	1.003	1.045	1.068	1.083	1.070	1.100	1.136
T+ 3.880	1.513	20.352	1.544	1.008	1.043	1.066	1.082	1.070	1.097	1.133
T+ 3.890	1.512	20.320	1.549	1.004	[illegible]	1.064	1.078	1.067	1.095	1.129
T+ 3.900	1.511	20.284	1.553	1.001	[illegible]	1.062	1.075	[illegible]	1.095	1.126
T+ 3.910	1.509	20.240	1.559	1.002	1.041	1.063	1.076	[illegible]	1.097	1.127
T+ 3.920	1.508	20.198	1.566	1.001	1.040	1.063	1.076	[illegible]	1.096	1.127
T+ 3.930	1.506	20.155	1.568	0.997	1.033	1.062	1.074	[illegible]	1.095	1.127
T+ 3.940	1.504	20.110	1.540	0.995	1.037	1.061	[illegible]	1.065	1.094	1.126
T+ 3.950	1.503	20.068	1.463	0.996	1.037	1.059	[illegible]	1.064	1.093	1.122
T+ 3.960	1.501	20.027	[illegible]	0.989	1.030	1.050	1.069	[illegible]	1.084	1.115
T+ 3.970	1.500	19.987	1.193	0.969	1.013	1.034	1.055	1.040	1.062	1.098
T+ 3.980	1.498	19.949	1.084	0.950	0.997	1.018	1.040	1.024	1.041	1.079
T+ 3.990	1.497	19.906	1.023	0.941	0.992	1.011	1.033	1.020	1.035	1.068
T+ 4.000	1.495	19.865	1.002	0.945	0.999	1.016	1.039	1.027	1.044	1.072
T+ 4.010	1.494	19.824	1.000	0.955	1.011	1.027	1.050	1.036	1.058	1.084
T+ 4.020	1.492	19.782	0.993	0.962	1.014	1.030	1.054	1.038	1.064	1.090
T+ 4.030	1.490	19.739	0.979	0.963	1.010	1.026	1.052	1.033	1.058	1.088
T+ 4.040	1.489	19.694	0.962	0.956	1.000	1.018	1.045	1.026	1.049	1.079
T+ 4.050	1.487	19.650	0.953	0.944	0.996	1.014	1.040	1.023	1.044	1.072

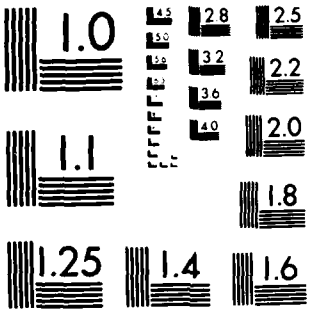
TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA	CH17 P THRUST
T+ 2.710	1.380	16.926	1.012	1.244	1.496	1.165	0.809	1.099	327.527
T+ 2.720	1.385	17.040	1.008	1.245	1.479	1.035	0.811	1.099	360.160
T+ 2.730	1.389	17.147	1.004	1.240	1.459	0.926	0.813	1.097	353.139
T+ 2.740	1.394	17.258	1.010	1.243	1.437	0.861	0.814	1.105	191.471
T+ 2.750	1.398	17.369	1.018	1.251	1.399	0.838	0.814	1.120	396.580
T+ 2.760	1.402	17.479	1.025	1.259	1.322	0.832	0.817	1.126	372.816
T+ 2.770	1.407	17.591	1.028	1.256	1.207	0.828	0.821	1.112	321.337
T+ 2.780	1.411	17.703	1.031	1.244	1.076	0.826	0.827	1.081	315.624
T+ 2.790	1.416	17.818	1.030	1.228	0.961	0.823	0.829	1.042	324.552
T+ 2.800	1.420	17.930	1.023	1.220	0.884	0.819	0.829	1.009	255.939
T+ 2.810	1.425	18.043	1.018	1.219	0.849	0.818	0.831	0.988	264.633
T+ 2.820	1.429	18.158	1.019	1.212	0.840	0.819	0.838	0.973	7200.410
T+ 2.830	1.434	18.269	1.021	1.193	0.838	0.823	0.848	0.957	10152.191
T+ 2.840	1.438	18.370	1.016	1.162	0.831	0.823	0.855	0.934	10558.535
T+ 2.850	1.442	18.481	1.007	1.134	0.826	0.819	0.858	0.931	11264.706
T+ 2.860	1.447	18.604	1.006	1.145	0.838	0.816	0.860	1.001	10896.743
T+ 2.870	1.451	18.719	1.021	1.226	0.884	0.818	0.859	1.153	11151.022
T+ 2.880	1.456	18.829	1.050	1.343	0.941	0.830	0.862	1.309	11684.258
T+ 2.890	1.459	18.912	1.075	1.406	0.945	0.844	0.871	1.364	11909.313
T+ 2.900	1.465	19.064	1.082	1.383	0.893	0.856	0.881	1.321	12219.583
T+ 2.910	1.469	19.181	1.076	1.317	0.846	0.862	0.890	1.277	12621.452
T+ 2.920	1.472	19.259	1.062	1.279	0.838	0.862	0.896	1.293	12933.990
T+ 2.930	1.476	19.353	1.051	1.288	0.855	0.860	0.902	1.341	13006.206
T+ 2.940	1.479	19.441	1.046	1.312	0.863	0.859	0.910	1.361	13198.391
T+ 2.950	1.485	19.607	1.051	1.322	0.860	0.865	0.918	1.345	12930.661
T+ 2.960	1.489	19.701	1.055	1.317	0.855	0.869	0.923	1.332	13029.202
T+ 2.970	1.492	19.777	1.049	1.308	0.850	0.862	0.917	1.337	13279.019
T+ 2.980	1.495	19.874	1.041	1.299	0.846	0.854	0.913	1.347	13179.327
T+ 2.990	1.499	19.970	1.040	1.294	0.846	0.855	0.917	1.341	13340.292
T+ 3.000	1.503	20.065	1.055	1.295	0.856	0.870	0.931	1.331	13450.481
T+ 3.010	1.507	20.191	1.080	1.309	0.871	0.886	0.940	1.338	13483.011
T+ 3.020	1.511	20.292	1.095	1.330	0.882	0.888	0.939	1.357	13593.190
T+ 3.030	1.513	20.339	1.094	1.340	0.884	0.885	0.934	1.365	13642.961
T+ 3.040	1.517	20.447	1.076	1.330	0.876	0.884	0.930	1.353	13652.221
T+ 3.050	1.521	20.552	1.059	1.312	0.867	0.889	0.934	1.339	13665.012
T+ 3.060	1.525	20.661	1.053	1.306	0.865	0.896	0.939	1.345	13995.403
T+ 3.070	1.526	20.707	1.061	1.319	0.868	0.897	0.944	1.365	14014.743
T+ 3.080	1.528	20.742	1.079	1.340	0.877	0.898	0.946	1.385	14118.493
T+ 3.090	1.533	20.883	1.091	1.355	0.881	0.894	0.944	1.391	14266.415
T+ 3.100	1.536	20.956	1.091	1.357	0.880	0.885	0.941	1.383	14398.117
T+ 3.110	1.538	21.025	1.090	1.354	0.880	0.879	0.942	1.380	14373.790
T+ 3.120	1.540	21.079	1.099	1.362	0.887	0.880	0.950	1.393	14592.119
T+ 3.130	1.542	21.138	1.114	1.384	0.902	0.887	0.960	1.415	14580.225
T+ 3.140	1.543	21.171	1.119	1.400	0.907	0.889	0.963	1.427	14810.356
T+ 3.150	1.546	21.229	1.109	1.397	0.902	0.883	0.961	1.420	14787.930

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P	CH17 THRUST
T+ 3.160	1.548	21.285	1.094	1.380	0.892	0.877	0.957	1.411	14909.613
T+ 3.170	1.549	21.317	1.089	1.371	0.888	0.872	0.958	1.413	15061.287
T+ 3.180	1.550	21.351	1.102	1.380	0.898	0.878	0.966	1.431	15361.895
T+ 3.190	1.551	21.387	1.121	1.404	0.912	0.886	0.975	1.453	15382.492
T+ 3.200	1.553	21.436	1.134	1.427	0.922	0.891	0.977	1.464	15477.202
T+ 3.210	1.554	21.463	1.134	1.436	0.924	0.890	0.976	1.462	15480.329
T+ 3.220	1.555	21.490	1.122	1.426	0.918	0.884	0.972	1.451	15558.239
T+ 3.230	1.556	21.511	1.111	1.413	0.913	0.878	0.971	1.442	15822.326
T+ 3.240	1.557	21.540	1.112	1.410	0.912	0.878	0.974	1.445	16054.047
T+ 3.250	1.557	21.554	1.126	1.424	0.920	0.886	0.983	1.465	16103.518
T+ 3.260	1.558	21.570	1.141	1.447	0.934	0.895	0.994	1.485	16231.859
T+ 3.270	1.558	21.582	1.143	1.460	0.941	0.897	0.995	1.490	16347.720
T+ 3.280	1.559	21.588	1.135	1.456	0.940	0.896	0.992	1.482	16474.838
T+ 3.290	1.559	21.598	1.125	1.437	0.932	0.892	0.989	1.470	16732.182
T+ 3.300	1.559	21.598	1.123	1.418	0.931	0.893	0.991	1.473	16973.293
T+ 3.310	1.559	21.595	1.131	1.425	0.940	0.897	0.995	1.490	17122.904
T+ 3.320	1.559	21.589	1.143	1.455	0.952	0.903	0.998	1.507	17442.672
T+ 3.330	1.558	21.585	1.156	1.484	0.962	0.910	1.003	1.516	17662.252
T+ 3.340	1.558	21.573	1.158	1.488	0.961	0.914	1.004	1.514	17732.617
T+ 3.350	1.558	21.565	1.145	1.469	0.950	0.909	0.999	1.508	17874.951
T+ 3.360	1.557	21.553	1.128	1.453	0.939	0.901	0.992	1.502	18019.754
T+ 3.370	1.557	21.542	1.123	1.460	0.933	0.898	0.988	1.503	18061.293
T+ 3.380	1.556	21.529	1.136	1.484	0.943	0.904	0.994	1.514	18233.025
T+ 3.390	1.556	21.512	1.154	1.501	0.959	0.911	0.999	1.531	18444.982
T+ 3.400	1.555	21.499	1.163	1.501	0.970	0.915	0.997	1.537	18552.328
T+ 3.410	1.555	21.483	1.162	1.491	0.968	0.915	0.992	1.528	18533.656
T+ 3.420	1.554	21.467	1.156	1.484	0.957	0.914	0.993	1.515	18648.584
T+ 3.430	1.554	21.452	1.150	1.487	0.954	0.915	0.999	1.518	18770.078
T+ 3.440	1.553	21.437	1.145	1.495	0.962	0.913	0.998	1.528	18857.609
T+ 3.450	1.552	21.418	1.144	1.499	0.970	0.913	0.994	1.534	19039.441
T+ 3.460	1.552	21.403	1.150	1.497	0.968	0.916	0.996	1.534	19160.137
T+ 3.470	1.551	21.382	1.151	1.496	0.956	0.918	1.000	1.531	19332.482
T+ 3.480	1.550	21.365	1.146	1.499	0.946	0.916	0.999	1.530	19549.979
T+ 3.490	1.550	21.340	1.141	1.502	0.946	0.910	0.993	1.529	19686.746
T+ 3.500	1.548	21.309	1.144	1.503	0.951	0.912	0.990	1.529	19969.639
T+ 3.510	1.548	21.288	1.154	1.508	0.954	0.918	0.995	1.535	20205.393
T+ 3.520	1.547	21.265	1.159	1.513	0.954	0.920	0.998	1.545	20331.498
T+ 3.530	1.546	21.247	1.159	1.514	0.953	0.921	0.997	1.550	20536.012
T+ 3.540	1.545	21.219	1.155	1.503	0.950	0.917	0.993	1.541	20812.027
T+ 3.550	1.544	21.189	1.147	1.494	0.945	0.915	0.993	1.531	20964.543
T+ 3.560	1.543	21.165	1.141	1.496	0.940	0.913	0.994	1.529	20905.725
T+ 3.570	1.542	21.137	1.139	1.503	0.938	0.912	0.993	1.535	21092.990
T+ 3.580	1.541	21.110	1.149	1.509	0.945	0.916	0.994	1.545	21115.357
T+ 3.590	1.540	21.086	1.161	1.510	0.951	0.923	0.997	1.550	21219.201
T+ 3.600	1.539	21.058	1.163	1.512	0.954	0.926	0.996	1.549	21318.016

AD-A127 274 A COLLECTION OF DATA FROM TEST OF FULL-SCALE MISSILES TO DEFINE PLUME INF..(U) ARMY MISSILE COMMAND REDSTONE ARSENAL AL SYSTEMS SIMULATION A.. T A MARTIN SEP 80 2/2

UNCLASSIFIED DRSMI/RD-82-6-TR SBI-AD-E950 377 F/G 20/4 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA	CH17 P THRUST
T+ 3.610	1.539	21.040	1.155	1.513	0.952	0.925	0.987	1.540	21222.793
T+ 3.620	1.538	21.020	1.142	1.509	0.945	0.919	0.981	1.535	21221.045
T+ 3.630	1.537	21.000	1.137	1.506	0.938	0.916	0.985	1.541	21277.176
T+ 3.640	1.536	20.973	1.140	1.507	0.932	0.915	0.992	1.548	21207.500
T+ 3.650	1.535	20.939	1.144	1.511	0.932	0.914	0.993	1.549	21249.277
T+ 3.660	1.534	20.922	1.149	1.513	0.936	0.914	0.988	1.546	21365.197
T+ 3.670	1.533	20.897	1.150	1.511	0.938	0.915	0.986	1.539	21420.115
T+ 3.680	1.532	20.867	1.148	1.507	0.936	0.915	0.987	1.537	21609.910
T+ 3.690	1.532	20.849	1.144	1.503	0.933	0.913	0.986	1.536	21564.877
T+ 3.700	1.531	20.822	1.142	1.504	0.931	0.912	0.985	1.541	21614.129
T+ 3.710	1.530	20.800	1.143	1.503	0.933	0.913	0.984	1.545	21620.525
T+ 3.720	1.529	20.770	1.144	1.497	0.935	0.914	0.983	1.540	21586.908
T+ 3.730	1.528	20.745	1.149	1.493	0.939	0.917	0.983	1.531	21704.582
T+ 3.740	1.527	20.719	1.154	1.491	0.940	0.918	0.984	1.525	21626.203
T+ 3.750	1.526	20.682	1.150	1.490	0.938	0.916	0.983	1.527	21559.727
T+ 3.760	1.525	20.657	1.142	1.493	0.933	0.914	0.978	1.534	21580.160
T+ 3.770	1.524	20.631	1.135	1.498	0.929	0.912	0.975	1.537	21569.223
T+ 3.780	1.523	20.607	1.136	1.502	0.931	0.913	0.977	1.534	21500.088
T+ 3.790	1.522	20.589	1.140	1.501	0.933	0.914	0.980	1.527	21547.998
T+ 3.800	1.521	20.570	1.138	1.498	0.933	0.915	0.979	1.524	21482.313
T+ 3.810	1.520	20.546	1.135	1.497	0.932	0.915	0.975	1.524	21423.340
T+ 3.820	1.520	20.525	1.135	1.496	0.931	0.914	0.975	1.531	21529.867
T+ 3.830	1.519	20.495	1.140	1.495	0.932	0.915	0.977	1.541	21665.154
T+ 3.840	1.518	20.470	1.140	1.494	0.931	0.913	0.976	1.541	21656.813
T+ 3.850	1.517	20.441	1.137	1.492	0.931	0.910	0.972	1.531	21784.748
T+ 3.860	1.515	20.407	1.138	1.490	0.932	0.910	0.972	1.525	21844.830
T+ 3.870	1.514	20.384	1.137	1.487	0.930	0.912	0.974	1.528	21740.475
T+ 3.880	1.513	20.352	1.133	1.485	0.927	0.913	0.973	1.530	21314.207
T+ 3.890	1.512	20.320	1.130	1.490	0.923	0.912	0.965	1.525	20914.076
T+ 3.900	1.511	20.284	1.133	1.499	0.924	0.910	0.963	1.524	16348.469
T+ 3.910	1.509	20.240	1.140	1.505	0.927	0.909	0.965	1.530	11336.200
T+ 3.920	1.508	20.198	1.141	1.497	0.929	0.907	0.968	1.528	8138.464
T+ 3.930	1.506	20.155	1.138	1.478	0.930	0.909	0.967	1.509	6211.498
T+ 3.940	1.504	20.110	1.137	1.446	0.930	0.912	0.966	1.465	4883.861
T+ 3.950	1.503	20.068	1.136	1.381	0.930	0.914	0.968	1.374	3909.881
T+ 3.960	1.501	20.027	1.127	1.256	0.922	0.914	0.966	1.219	3145.273
T+ 3.970	1.500	19.987	1.104	1.092	0.906	0.909	0.960	1.036	2532.285
T+ 3.980	1.498	19.949	1.082	0.963	0.890	0.907	0.951	0.884	2031.421
T+ 3.990	1.497	19.906	1.075	0.898	0.883	0.904	0.948	0.850	1767.240
T+ 4.000	1.495	19.865	1.084	0.898	0.887	0.906	0.954	0.938	1441.067
T+ 4.010	1.494	19.824	1.099	0.924	0.897	0.912	0.962	1.025	1235.592
T+ 4.020	1.492	19.782	1.104	0.924	0.901	0.916	0.964	1.003	1052.1[illegible]
T+ 4.030	1.490	19.739	1.099	0.885	0.899	0.916	0.962	0.909	[illegible]
T+ 4.040	1.489	19.694	1.091	0.844	0.892	0.913	0.957	0.844	694.770
T+ 4.050	1.487	19.650	1.084	0.828	0.889	0.912	0.953	0.850	635.229

VIII. APPENDIX G

PRECEDING PAGE BLANK-NOT FILMED

APPENDIX G

Run 5F-F2

Run Date: 6 May 77

Configuration: $\alpha = -2^{\circ}$. No fins

Motor Firing: None

Remarks:

Track side initator broke and failed to signal motor firing device.

PRECEDING PAGE BLANK-NOT FILMED

Figure 1. Test trajectory, Run 5F-F2.

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
T+ 1.810	0.874	6.766	0.917	0.938	0.952	0.964	0.965	0.961	0.977	0.968
T+ 1.820	0.880	6.852	0.915	0.938	0.953	0.966	0.967	0.963	0.978	0.970
T+ 1.830	0.886	6.941	0.914	0.939	0.951	0.965	0.964	0.962	0.977	0.970
T+ 1.840	0.891	7.030	0.912	0.938	0.946	0.961	0.961	0.958	0.976	0.967
T+ 1.850	0.897	7.116	0.910	0.936	0.944	0.958	0.960	0.957	0.976	0.967
T+ 1.860	0.902	7.205	0.905	0.932	0.942	0.957	0.959	0.957	0.976	0.966
T+ 1.870	0.908	7.294	0.899	0.930	0.941	0.956	0.959	0.958	0.976	0.967
T+ 1.880	0.913	7.385	0.895	0.928	0.942	0.958	0.961	0.960	0.977	0.970
T+ 1.890	0.919	7.477	0.891	0.924	0.941	0.958	0.961	0.959	0.977	0.969
T+ 1.900	0.925	7.566	0.886	0.921	0.938	0.956	0.959	0.957	0.976	0.968
T+ 1.910	0.930	7.657	0.882	0.919	0.939	0.955	0.959	0.957	0.976	0.968
T+ 1.920	0.936	7.750	0.877	0.917	0.939	0.956	0.961	0.959	0.976	0.970
T+ 1.930	0.941	7.844	0.872	0.916	0.939	0.955	0.961	0.959	0.976	0.971
T+ 1.940	0.947	7.938	0.866	0.916	0.939	0.955	0.960	0.958	0.974	0.969
T+ 1.950	0.953	8.033	0.860	0.917	0.943	0.958	0.963	0.960	0.976	0.970
T+ 1.960	0.958	8.123	0.856	0.918	0.948	0.963	0.968	0.964	0.978	0.976
T+ 1.970	0.964	8.216	0.853	0.916	0.948	0.965	0.970	0.966	0.977	0.982
T+ 1.980	0.969	8.311	0.849	0.915	0.950	0.967	0.971	0.971	0.976	0.984
T+ 1.990	0.975	8.407	0.845	0.913	0.951	0.968	0.974	0.977	0.975	0.984
T+ 2.000	0.980	8.504	0.842	0.913	0.956	0.971	0.979	0.982	0.977	0.986
T+ 2.010	0.986	8.602	0.840	0.915	0.959	0.976	0.982	0.982	0.977	0.990
T+ 2.020	0.991	8.696	0.838	0.920	0.963	0.980	0.983	0.982	0.977	0.993
T+ 2.030	0.997	8.796	0.837	0.926	0.969	0.984	0.988	0.987	0.978	0.998
T+ 2.040	1.003	8.895	0.836	0.929	0.973	0.989	0.994	0.992	0.978	1.002
T+ 2.050	1.008	8.994	0.835	0.930	0.977	0.993	0.998	0.996	0.978	1.006
T+ 2.060	1.014	9.092	0.835	0.928	0.981	0.996	1.000	0.996	0.976	1.008
T+ 2.070	1.019	9.192	0.836	0.930	0.989	1.002	1.005	1.000	0.978	1.013
T+ 2.080	1.025	9.294	0.838	0.937	0.997	1.010	1.011	1.008	0.981	1.023
T+ 2.090	1.030	9.395	0.839	0.945	0.998	1.014	1.013	1.012	0.978	1.027
T+ 2.100	1.036	9.498	0.841	0.952	0.997	1.014	1.015	1.013	0.975	1.028
T+ 2.110	1.041	9.599	0.841	0.951	1.001	1.017	1.021	1.019	0.976	1.030
T+ 2.120	1.047	9.699	0.842	0.951	1.010	1.025	1.030	1.030	0.978	1.037
T+ 2.130	1.053	9.806	0.846	0.955	1.021	1.034	1.039	1.040	0.978	1.047
T+ 2.140	1.058	9.912	0.851	0.964	1.027	1.042	1.044	1.046	0.977	1.054
T+ 2.150	1.064	10.017	0.855	0.973	1.033	1.048	1.048	1.051	0.978	1.058
T+ 2.160	1.070	10.123	0.859	0.980	1.036	1.051	1.051	1.051	0.979	1.062
T+ 2.170	1.075	10.229	0.863	0.980	1.040	1.055	1.056	1.053	0.978	1.068
T+ 2.180	1.081	10.334	0.866	0.981	1.046	1.062	1.062	1.062	0.978	1.075
T+ 2.190	1.086	10.440	0.870	0.986	1.052	1.069	1.069	1.074	0.977	1.080
T+ 2.200	1.092	10.550	0.874	0.996	1.060	1.075	1.077	1.080	0.978	1.087
T+ 2.210	1.097	10.659	0.879	1.006	1.066	1.081	1.084	1.083	0.978	1.094
T+ 2.220	1.103	10.764	0.883	1.011	1.072	1.089	1.091	1.088	0.978	1.101
T+ 2.230	1.109	10.875	0.887	1.012	1.080	1.097	1.098	1.099	0.979	1.109
T+ 2.240	1.114	10.984	0.892	1.015	1.086	1.102	1.106	1.111	0.979	1.114
T+ 2.250	1.120	11.094	0.897	1.023	1.091	1.107	1.111	1.117	0.979	1.120

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
T+ 2.260	1.125	11.206	0.902	1.034	1.094	1.111	1.114	1.117	0.978	1.123
T+ 2.270	1.131	11.315	0.907	1.041	1.099	1.117	1.119	1.118	0.979	1.128
T+ 2.280	1.136	11.427	0.910	1.042	1.108	1.126	1.127	1.126	0.981	1.137
T+ 2.290	1.142	11.538	0.913	1.043	1.116	1.134	1.135	1.138	0.980	1.146
T+ 2.300	1.147	11.650	0.920	1.051	1.125	1.143	1.144	1.149	0.979	1.155
T+ 2.310	1.153	11.764	0.926	1.063	1.134	1.151	1.152	1.157	0.978	1.162
T+ 2.320	1.159	11.878	0.931	1.072	1.141	1.159	1.158	1.161	0.979	1.170
T+ 2.330	1.164	11.993	0.936	1.075	1.145	1.163	1.162	1.163	0.979	1.176
T+ 2.340	1.170	12.105	0.939	1.076	1.150	1.168	1.169	1.169	0.980	1.180
T+ 2.350	1.175	12.219	0.945	1.084	1.160	1.176	1.177	1.182	0.983	1.189
T+ 2.360	1.180	12.331	0.953	1.096	1.167	1.184	1.185	1.191	0.982	1.198
T+ 2.370	1.186	12.447	0.957	1.104	1.168	1.187	1.188	1.192	0.978	1.202
T+ 2.380	1.191	12.563	0.959	1.105	1.170	1.190	1.190	1.192	0.976	1.203
T+ 2.390	1.197	12.677	0.962	1.106	1.177	1.197	1.199	1.201	0.980	1.210
T+ 2.400	1.202	12.793	0.968	1.115	1.190	1.209	1.210	1.216	0.983	1.225
T+ 2.410	1.208	12.906	0.974	1.127	1.198	1.217	1.217	1.225	0.982	1.235
T+ 2.420	1.213	13.024	0.979	1.134	1.201	1.220	1.219	1.227	0.978	1.237
T+ 2.430	1.219	13.143	0.982	1.135	1.206	1.223	1.224	1.228	0.980	1.240
T+ 2.440	1.224	13.261	0.985	1.137	1.212	1.229	1.233	1.232	0.981	1.247
T+ 2.450	1.230	13.379	0.992	1.147	1.219	1.236	1.243	1.237	0.981	1.256
T+ 2.460	1.235	13.495	0.997	1.155	1.229	1.245	1.254	1.248	0.981	1.266
T+ 2.470	1.240	13.613	1.000	1.160	1.243	1.258	1.267	1.265	0.984	1.279
T+ 2.480	1.246	13.733	1.005	1.163	1.254	1.271	1.277	1.279	0.985	1.291
T+ 2.490	1.251	13.848	1.011	1.171	1.257	1.276	1.281	1.283	0.979	1.295
T+ 2.500	1.256	13.968	1.019	1.181	1.263	1.280	1.288	1.288	0.978	1.298
T+ 2.510	1.262	14.095	1.023	1.188	1.273	1.296	1.298	1.298	0.982	1.307
T+ 2.520	1.267	14.212	1.025	1.191	1.283	1.302	1.307	1.308	0.985	1.315
T+ 2.530	1.273	14.334	1.032	1.199	1.289	1.307	1.309	1.312	0.982	1.315
T+ 2.540	1.278	14.452	1.039	1.211	1.293	1.310	1.311	1.312	0.981	1.308
T+ 2.550	1.283	14.571	1.046	1.220	1.298	1.315	1.317	1.315	0.982	1.304
T+ 2.560	1.289	14.700	1.048	1.221	1.300	1.319	1.321	1.319	0.982	1.298
T+ 2.570	1.294	14.815	1.050	1.223	1.301	1.321	1.325	1.320	0.980	1.278
T+ 2.580	1.299	14.926	1.055	1.232	1.310	1.329	1.331	1.324	0.982	1.241
T+ 2.590	1.304	15.048	1.062	1.242	1.323	1.340	1.337	1.329	0.986	1.178
T+ 2.600	1.309	15.163	1.067	1.246	1.330	1.349	1.338	1.324	0.985	1.093
T+ 2.610	1.314	15.282	1.071	1.249	1.332	1.349	1.333	1.309	0.983	1.009
T+ 2.620	1.319	15.396	1.076	1.259	1.333	1.347	1.325	1.285	0.983	0.955
T+ 2.630	1.324	15.514	1.080	1.266	1.335	1.346	1.314	1.253	0.985	0.939
T+ 2.640	1.329	15.633	1.081	1.266	1.333	1.343	1.296	1.203	0.983	0.940
T+ 2.650	1.334	15.742	1.085	1.271	1.332	1.336	1.266	1.135	0.983	0.945
T+ 2.660	1.339	15.862	1.091	1.278	1.333	1.322	1.215	1.055	0.986	0.950
T+ 2.670	1.344	15.978	1.095	1.282	1.328	1.295	1.140	0.984	0.987	0.958
T+ 2.680	1.348	16.091	1.099	1.283	1.314	1.256	1.060	0.943	0.987	0.965
T+ 2.690	1.353	16.212	1.105	1.287	1.288	1.202	0.999	0.933	0.985	0.969
T+ 2.700	1.358	16.318	1.111	1.290	1.242	1.129	0.967	0.936	0.985	0.973

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P
T+ 2.260	1.125	11.206	0.984	0.931	1.100	1.120	1.139	0.860
T+ 2.270	1.131	11.315	0.983	0.939	1.106	1.127	1.147	0.866
T+ 2.280	1.136	11.427	0.983	0.947	1.115	1.137	1.156	0.879
T+ 2.290	1.142	11.538	0.982	0.953	1.125	1.146	1.164	0.887
T+ 2.300	1.147	11.650	0.983	0.961	1.137	1.155	1.173	0.889
T+ 2.310	1.153	11.764	0.982	0.967	1.146	1.163	1.183	0.890
T+ 2.320	1.159	11.878	0.981	0.975	1.149	1.170	1.190	0.893
T+ 2.330	1.164	11.993	0.979	0.978	1.151	1.175	1.193	0.894
T+ 2.340	1.170	12.105	0.980	0.982	1.157	1.180	1.200	0.897
T+ 2.350	1.175	12.219	0.984	0.989	1.169	1.192	1.211	0.910
T+ 2.360	1.180	12.331	0.984	0.998	1.179	1.199	1.219	0.923
T+ 2.370	1.186	12.447	0.980	1.005	1.181	1.202	1.222	0.925
T+ 2.380	1.191	12.563	0.979	1.011	1.185	1.206	1.227	0.920
T+ 2.390	1.197	12.677	0.981	1.020	1.193	1.215	1.236	0.920
T+ 2.400	1.202	12.793	0.985	1.029	1.204	1.228	1.248	0.930
T+ 2.410	1.208	12.906	0.984	1.033	1.211	1.233	1.252	0.941
T+ 2.420	1.213	13.024	0.982	1.036	1.213	1.235	1.253	0.948
T+ 2.430	1.219	13.143	0.983	1.042	1.218	1.241	1.261	0.949
T+ 2.440	1.224	13.261	0.988	1.050	1.224	1.249	1.269	0.948
T+ 2.450	1.230	13.379	0.991	1.052	1.230	1.256	1.275	0.951
T+ 2.460	1.235	13.495	0.992	1.055	1.240	1.263	1.281	0.962
T+ 2.470	1.240	13.613	0.996	1.067	1.253	1.275	1.292	0.980
T+ 2.480	1.246	13.733	0.997	1.080	1.265	1.287	1.301	0.995
T+ 2.490	1.251	13.848	0.992	1.088	1.279	1.290	1.304	0.993
T+ 2.500	1.256	13.968	0.985	1.099	1.277	1.296	1.310	0.983
T+ 2.510	1.262	14.095	0.986	1.113	1.287	1.307	1.321	0.980
T+ 2.520	1.267	14.212	0.988	1.124	1.297	1.316	1.329	0.984
T+ 2.536	1.273	14.334	0.989	1.127	1.304	1.320	1.332	0.992
T+ 2.540	1.278	14.452	0.987	1.132	1.309	1.322	1.338	0.998
T+ 2.550	1.283	14.571	0.988	1.139	1.314	1.328	1.350	1.003
T+ 2.560	1.289	14.700	0.989	1.143	1.316	1.331	1.360	0.997
T+ 2.570	1.294	14.815	0.990	1.143	1.318	1.332	1.372	0.991
T+ 2.580	1.299	14.926	0.995	1.146	1.326	1.340	1.389	0.997
T+ 2.590	1.304	15.048	0.997	1.152	1.337	1.352	1.407	1.014
T+ 2.600	1.309	15.163	0.993	1.159	1.347	1.364	1.416	1.027
T+ 2.610	1.314	15.282	0.989	1.167	1.353	1.373	1.406	1.026
T+ 2.620	1.319	15.396	0.990	1.177	1.362	1.386	1.376	1.017
T+ 2.630	1.324	15.514	0.992	1.185	1.370	1.399	1.323	1.012
T+ 2.640	1.329	15.633	0.991	1.182	1.375	1.406	1.253	1.017
T+ 2.650	1.334	15.742	0.990	1.181	1.379	1.411	1.178	1.030
T+ 2.660	1.339	15.862	0.995	1.186	1.387	1.417	1.091	1.044
T+ 2.670	1.344	15.978	1.002	1.193	1.398	1.422	0.982	1.056
T+ 2.680	1.348	16.091	1.000	1.194	1.407	1.423	0.882	1.064
T+ 2.690	1.353	16.212	0.992	1.196	1.412	1.416	0.831	1.065
T+ 2.700	1.358	16.318	0.987	1.202	1.416	1.400	0.830	1.065

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA
T+ 2.710	1.363	16.441	0.990	1.209	1.421	1.362	0.838	1.072
T+ 2.720	1.368	16.558	0.996	1.214	1.427	1.288	0.835	1.089
T+ 2.730	1.372	16.658	1.001	1.220	1.432	1.181	0.827	1.109
T+ 2.740	1.377	16.779	0.998	1.218	1.426	1.066	0.823	1.112
T+ 2.750	1.381	16.890	0.993	1.218	1.407	0.969	0.822	1.102
T+ 2.760	1.386	17.000	0.991	1.223	1.380	0.900	0.825	1.099
T+ 2.770	1.391	17.113	0.995	1.231	1.349	0.861	0.829	1.110
T+ 2.780	1.395	17.224	0.999	1.223	1.304	0.848	0.831	1.113
T+ 2.790	1.399	17.328	0.997	1.201	1.222	0.844	0.831	1.087
T+ 2.800	1.403	17.431	0.995	1.183	1.097	0.845	0.834	1.044
T+ 2.810	1.408	17.546	0.996	1.180	0.964	0.845	0.840	1.007
T+ 2.820	1.412	17.648	1.001	1.179	0.874	0.842	0.845	0.988
T+ 2.830	1.416	17.753	1.003	1.170	0.843	0.840	0.851	0.976
T+ 2.840	1.420	17.856	1.002	1.152	0.842	0.840	0.857	0.956
T+ 2.850	1.425	17.960	1.004	1.138	0.844	0.845	0.869	0.927
T+ 2.860	1.429	18.065	1.006	1.125	0.838	0.850	0.881	0.902
T+ 2.870	1.433	18.175	1.007	1.095	0.833	0.850	0.888	0.887
T+ 2.880	1.437	18.273	1.009	1.031	0.834	0.850	0.893	0.879
T+ 2.890	1.442	18.391	1.010	0.933	0.837	0.851	0.898	0.866
T+ 2.900	1.446	18.493	1.011	0.856	0.840	0.854	0.904	0.854
T+ 2.910	1.451	18.623	1.014	0.818	0.842	0.860	0.910	0.848
T+ 2.920	1.458	18.824	1.016	0.819	0.843	0.865	0.916	0.845
T+ 2.930	1.464	18.979	1.013	0.817	0.843	0.868	0.918	0.842
T+ 2.940	1.468	19.070	1.006	0.805	0.843	0.867	0.917	0.836
T+ 2.950	1.471	19.157	1.004	0.797	0.847	0.869	0.920	0.831
T+ 2.960	1.475	19.250	1.006	0.802	0.850	0.874	0.926	0.829
T+ 2.970	1.478	19.333	1.008	0.808	0.853	0.880	0.932	0.829
T+ 2.980	1.481	19.419	1.009	0.808	0.855	0.883	0.934	0.828
T+ 2.990	1.484	19.501	1.009	0.805	0.855	0.881	0.935	0.824
T+ 3.000	1.494	19.750	1.014	0.799	0.853	0.874	0.935	0.817
T+ 3.010	1.498	19.864	1.019	0.796	0.850	0.865	0.936	0.811
T+ 3.020	1.501	19.931	1.026	0.798	0.852	0.862	0.940	0.806
T+ 3.030	1.503	19.999	1.032	0.807	0.859	0.867	0.945	0.804
T+ 3.040	1.506	20.060	1.036	0.814	0.867	0.873	0.948	0.799
T+ 3.050	1.508	20.113	1.035	0.811	0.870	0.876	0.945	0.792
T+ 3.060	1.510	20.174	1.033	0.805	0.866	0.874	0.937	0.786
T+ 3.070	1.512	20.219	1.032	0.802	0.862	0.873	0.934	0.784
T+ 3.080	1.513	20.254	1.038	0.806	0.863	0.875	0.937	0.786
T+ 3.090	1.514	20.287	1.043	0.810	0.868	0.878	0.942	0.778
T+ 3.100	1.515	20.320	1.045	0.815	0.876	0.881	0.946	0.757
T+ 3.110	1.517	20.354	1.049	0.818	0.880	0.884	0.951	0.738
T+ 3.120	1.518	20.387	1.052	0.814	0.878	0.883	0.950	0.737
T+ 3.130	1.519	20.421	1.056	0.806	0.872	0.878	0.945	0.749
T+ 3.140	1.520	20.454	1.060	0.806	0.873	0.878	0.945	0.753
T+ 3.150	1.522	20.487	1.069	0.821	0.886	0.889	0.955	0.741

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
T+ 3.160	1.523	20.521	0.958	0.975	1.027	1.038	1.057	1.052	1.007	1.096
T+ 3.170	1.524	20.555	0.960	0.978	1.023	1.037	1.053	1.048	1.004	1.098
T+ 3.180	1.526	20.598	0.960	0.978	1.014	1.027	1.045	1.034	1.000	1.089
T+ 3.190	1.535	20.853	0.959	0.978	1.009	1.019	1.042	1.027	1.000	1.078
T+ 3.200	1.537	20.902	0.958	0.978	1.015	1.023	1.049	1.033	1.006	1.080
T+ 3.210	1.535	20.857	0.960	0.981	1.031	1.038	1.063	1.052	1.013	1.096
T+ 3.220	1.537	20.903	0.965	0.985	1.047	1.055	1.078	1.072	1.017	1.116
T+ 3.230	1.538	20.921	0.970	0.991	1.052	1.064	1.083	1.084	1.018	1.128
T+ 3.240	1.538	20.932	0.974	0.995	1.044	1.058	1.077	1.081	1.016	1.124
T+ 3.250	1.538	20.939	0.976	0.996	1.033	1.045	1.070	1.067	1.017	1.113
T+ 3.260	1.539	20.957	0.977	0.995	1.027	1.036	1.065	1.054	1.019	1.104
T+ 3.270	1.539	20.954	0.977	0.994	1.033	1.036	1.068	1.055	1.026	1.104
T+ 3.280	1.538	20.946	0.979	0.995	1.044	1.046	1.078	1.069	1.041	1.116
T+ 3.290	1.538	20.938	0.981	0.997	1.052	1.058	1.084	1.083	1.063	1.125
T+ 3.300	1.538	20.937	0.983	1.001	1.049	1.060	1.083	1.082	1.085	1.128
T+ 3.310	1.539	20.968	0.985	1.002	1.044	1.054	1.078	1.072	1.099	1.121
T+ 3.320	1.539	20.962	0.986	1.003	1.041	1.050	1.076	1.067	1.102	1.115
T+ 3.330	1.538	20.946	0.986	1.004	1.047	1.054	1.081	1.073	1.105	1.119
T+ 3.340	1.538	20.936	0.987	1.005	1.052	1.062	1.088	1.082	1.110	1.128
T+ 3.350	1.538	20.924	0.991	1.007	1.057	1.067	1.093	1.088	1.117	1.136
T+ 3.360	1.537	20.894	0.994	1.009	1.061	1.070	1.095	1.091	1.123	1.138
T+ 3.370	1.536	20.888	0.995	1.012	1.058	1.067	1.093	1.087	1.120	1.133
T+ 3.380	1.536	20.875	0.996	1.015	1.049	1.060	1.085	1.077	1.110	1.125
T+ 3.390	1.535	20.857	0.995	1.015	1.043	1.052	1.079	1.068	1.101	1.117
T+ 3.400	1.534	20.835	0.994	1.014	1.045	1.052	1.083	1.072	1.103	1.119
T+ 3.410	1.533	20.808	0.996	1.014	1.055	1.061	1.094	1.087	1.117	1.128
T+ 3.420	1.533	20.790	0.998	1.015	1.062	1.069	1.103	1.100	1.127	1.138
T+ 3.430	1.532	20.767	1.001	1.016	1.059	1.071	1.101	1.097	1.125	1.140
T+ 3.440	1.531	20.741	1.002	1.016	1.051	1.064	1.092	1.084	1.115	1.131
T+ 3.450	1.530	20.716	1.001	1.017	1.049	1.059	1.088	1.078	1.109	1.124
T+ 3.460	1.529	20.688	0.999	1.018	1.053	1.060	1.092	1.084	1.113	1.124
T+ 3.470	1.528	20.652	0.999	1.018	1.057	1.064	1.096	1.090	1.117	1.130
T+ 3.480	1.527	20.637	1.001	1.019	1.057	1.066	1.096	1.088	1.117	1.133
T+ 3.490	1.526	20.603	1.001	1.019	1.052	1.064	1.090	1.081	1.111	1.129
T+ 3.500	1.524	20.567	1.001	1.018	1.047	1.059	1.083	1.074	1.104	1.120
T+ 3.510	1.523	20.537	1.000	1.016	1.042	1.051	1.079	1.068	1.098	1.114
T+ 3.520	1.522	20.507	0.997	1.015	1.042	1.050	1.081	1.067	1.098	1.114
T+ 3.530	1.521	20.472	0.996	1.016	1.048	1.056	1.086	1.073	1.103	1.120
T+ 3.540	1.520	20.442	0.996	1.016	1.055	1.065	1.091	1.082	1.112	1.127
T+ 3.550	1.519	20.410	0.998	1.018	1.059	1.070	1.095	1.089	1.118	1.132
T+ 3.560	1.517	20.371	0.999	1.019	1.056	1.068	1.094	1.087	1.117	1.131
T+ 3.570	1.516	20.337	0.998	1.020	1.051	1.062	1.091	1.081	1.110	1.127
T+ 3.580	1.515	20.304	0.998	1.020	1.048	1.058	1.087	1.075	1.105	1.122
T+ 3.590	1.514	20.274	0.996	1.020	1.045	1.053	1.083	1.071	1.102	1.119
T+ 3.600	1.512	20.239	0.996	1.019	1.042	1.050	1.079	1.069	1.100	1.117

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P
T+ 1.810	0.874	6.766	0.981	0.886	0.942	0.952	0.965	0.888
T+ 1.820	0.880	6.852	0.982	0.883	0.942	0.952	0.966	0.884
T+ 1.830	0.886	6.941	0.982	0.879	0.939	0.950	0.964	0.884
T+ 1.840	0.891	7.030	0.980	0.877	0.936	0.947	0.963	0.886
T+ 1.850	0.897	7.116	0.980	0.873	0.934	0.947	0.963	0.881
T+ 1.860	0.902	7.205	0.980	0.866	0.934	0.947	0.964	0.873
T+ 1.870	0.908	7.294	0.981	0.855	0.935	0.948	0.965	0.867
T+ 1.880	0.913	7.385	0.983	0.848	0.936	0.950	0.969	0.862
T+ 1.890	0.919	7.477	0.981	0.846	0.935	0.950	0.969	0.852
T+ 1.900	0.925	7.566	0.980	0.841	0.933	0.949	0.969	0.840
T+ 1.910	0.930	7.657	0.981	0.835	0.934	0.950	0.970	0.832
T+ 1.920	0.936	7.750	0.98[illegible]	0.828	0.937	0.953	0.973	0.828
T+ 1.930	0.941	7.844	0.982	0.820	0.937	0.953	0.973	0.824
T+ 1.940	0.947	7.938	0.979	0.814	0.937	0.952	0.973	0.814
T+ 1.950	0.953	8.033	0.979	0.813	0.941	0.956	0.978	0.804
T+ 1.960	0.958	8.123	0.981	0.814	0.947	0.962	0.984	0.795
T+ 1.970	0.964	8.216	0.981	0.810	0.950	0.966	0.988	0.790
T+ 1.980	0.969	8.311	0.982	0.807	0.952	0.968	0.988	0.787
T+ 1.990	0.975	8.407	0.982	0.811	0.956	0.971	0.990	0.784
T+ 2.000	0.980	8.504	0.983	0.815	0.960	0.974	0.996	0.782
T+ 2.010	0.986	8.602	0.982	0.814	0.963	0.977	0.999	0.779
T+ 2.020	0.991	8.696	0.980	0.813	0.964	0.980	1.001	0.776
T+ 2.030	0.997	8.796	0.981	0.817	0.969	0.984	1.007	0.777
T+ 2.040	1.003	8.895	0.982	0.823	0.974	0.991	1.012	0.779
T+ 2.050	1.008	8.994	0.982	0.825	0.979	0.994	1.015	0.780
T+ 2.060	1.014	9.092	0.980	0.824	0.982	0.99[illegible]	1.018	0.784
T+ 2.070	1.019	9.192	0.983	0.828	0.989	1.005	1.026	0.792
T+ 2.080	1.025	9.294	0.986	0.837	0.998	1.014	1.035	0.798
T+ 2.090	1.030	9.395	0.984	0.841	1.000	1.019	1.040	0.796
T+ 2.100	1.036	9.498	0.979	0.845	1.000	1.019	1.041	0.791
T+ 2.110	1.041	9.599	0.978	0.851	1.004	1.022	1.044	0.789
T+ 2.120	1.047	9.699	0.981	0.858	1.013	1.030	1.053	0.793
T+ 2.130	1.053	9.806	0.983	0.863	1.024	1.039	1.061	0.800
T+ 2.140	1.058	9.912	0.983	0.867	1.030	1.046	1.066	0.805
T+ 2.150	1.064	10.017	0.983	0.872	1.033	1.050	1.071	0.811
T+ 2.160	1.070	10.123	0.9[illegible]	0.877	1.036	1.056	1.077	0.820
T+ 2.170	1.075	10.229	0.981	0.881	1.043	1.062	1.083	0.827
T+ 2.180	1.081	10.334	0.981	0.887	1.052	1.070	1.090	0.831
T+ 2.190	1.086	10.440	0.980	0.893	1.059	1.077	1.096	0.829
T+ 2.200	1.092	10.550	0.981	0.901	1.066	1.084	1.104	0.831
T+ 2.210	1.097	10.659	0.981	0.906	1.069	1.089	1.111	0.840
T+ 2.220	1.103	10.764	0.981	0.912	1.075	1.096	1.117	0.852
T+ 2.230	1.109	10.875	0.982	0.918	1.083	1.104	1.123	0.860
T+ 2.240	1.114	10.984	0.982	0.923	1.090	1.111	1.129	0.862
T+ 2.250	1.120	11.094	0.984	0.926	1.096	1.116	1.135	0.860

IME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P
2.260	1.125	11.206	0.984	0.931	1.100	1.120	1.139	0.860
2.270	1.131	11.315	0.983	0.939	1.106	1.127	1.147	0.866
2.280	1.136	11.427	0.983	0.947	1.115	1.137	1.156	0.879
2.290	1.142	11.538	0.982	0.953	1.125	1.146	1.164	0.887
2.300	1.147	11.650	0.983	0.961	1.137	1.155	1.173	0.889
2.310	1.153	11.764	0.982	0.967	1.146	1.163	1.183	0.890
2.320	1.159	11.878	0.981	0.975	1.149	1.170	1.190	0.893
2.330	1.164	11.993	0.979	0.978	1.151	1.175	1.193	0.894
2.340	1.170	12.105	0.980	0.982	1.157	1.180	1.200	0.897
2.350	1.175	12.219	0.984	0.989	1.169	1.192	1.211	0.910
2.360	1.180	12.331	0.984	0.998	1.179	1.199	1.219	0.923
2.370	1.186	12.447	0.980	1.005	1.181	1.202	1.222	0.925
2.380	1.191	12.563	0.979	1.011	1.185	1.206	1.227	0.920
2.390	1.197	12.677	0.981	1.020	1.193	1.215	1.236	0.920
2.400	1.202	12.793	0.985	1.029	1.204	1.228	1.248	0.930
2.410	1.208	12.906	0.984	1.033	1.211	1.233	1.252	0.941
2.420	1.213	13.024	0.982	1.036	1.213	1.235	1.253	0.948
2.430	1.219	13.143	0.983	1.042	1.218	1.241	1.261	0.949
2.440	1.224	13.261	0.988	1.050	1.224	1.249	1.269	0.948
2.450	1.230	13.379	0.991	1.052	1.230	1.256	1.275	0.951
2.460	1.235	13.495	0.992	1.055	1.240	1.263	1.281	0.962
2.470	1.240	13.613	0.996	1.067	1.253	1.275	1.292	0.980
2.480	1.246	13.733	0.997	1.080	1.265	1.287	1.301	0.995
2.490	1.251	13.848	0.992	1.088	1.270	1.290	1.304	0.993
2.500	1.256	13.968	0.985	1.099	1.277	1.296	1.310	0.983
2.510	1.262	14.095	0.986	1.113	1.287	1.307	1.321	0.980
2.520	1.267	14.212	0.988	1.124	1.297	1.316	1.329	0.984
2.530	1.273	14.334	0.989	1.127	1.304	1.320	1.332	0.992
2.540	1.278	14.452	0.987	1.132	1.309	1.322	1.338	0.998
2.550	1.283	14.571	0.988	1.139	1.314	1.328	1.350	1.003
2.560	1.289	14.700	0.989	1.143	1.316	1.331	1.360	0.997
2.570	1.294	14.815	0.990	1.143	1.318	1.332	1.372	0.991
2.580	1.299	14.926	0.995	1.146	1.326	1.340	1.389	0.997
2.590	1.304	15.048	0.997	1.152	1.337	1.352	1.407	1.014
2.600	1.309	15.163	0.993	1.159	1.347	1.364	1.416	1.027
2.610	1.314	15.282	0.989	1.167	1.353	1.373	1.406	1.026
2.620	1.319	15.396	0.990	1.177	1.362	1.386	1.376	1.017
2.630	1.324	15.514	0.992	1.185	1.370	1.399	1.323	1.012
2.640	1.329	15.633	0.991	1.182	1.375	1.406	1.253	1.017
2.650	1.334	15.742	0.990	1.181	1.379	1.411	1.178	1.030
2.660	1.339	15.862	0.995	1.186	1.387	1.417	1.091	1.044
2.670	1.344	15.978	1.002	1.193	1.398	1.422	0.982	1.056
2.680	1.348	16.091	1.000	1.194	1.407	1.423	0.882	1.064
2.690	1.353	16.212	0.992	1.196	1.412	1.416	0.831	1.065
2.700	1.358	16.318	0.987	1.202	1.416	1.400	0.830	1.065

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
T+ 2.710	1.363	16.441	1.114	1.284	1.167	1.044	0.956	0.940	0.983	0.978
T+ 2.720	1.368	16.558	1.118	1.271	1.077	0.979	0.956	0.946	0.985	0.989
T+ 2.730	1.372	16.658	1.123	1.257	1.006	0.956	0.962	0.957	0.990	1.002
T+ 2.740	1.377	16.779	1.125	1.233	0.964	0.958	0.962	0.962	0.990	1.010
T+ 2.750	1.381	16.890	1.124	1.198	0.947	0.957	0.957	0.956	0.985	1.006
T+ 2.760	1.386	17.000	1.118	1.159	0.941	0.950	0.955	0.949	0.982	1.001
T+ 2.770	1.391	17.113	1.110	1.124	0.941	0.948	0.962	0.954	0.986	1.006
T+ 2.780	1.395	17.224	1.100	1.095	0.944	0.955	0.968	0.967	0.990	1.017
T+ 2.790	1.399	17.328	1.085	1.069	0.946	0.961	0.970	0.975	0.988	1.024
T+ 2.800	1.403	17.431	1.069	1.045	0	[illegible]	0.973	0.976	0.987	1.026
T+ 2.810	1.408	17.546	1.052	1.025	0	[illegible]	0.976	0.977	0.988	1.026
T+ 2.820	1.412	17.648	1.036	1.008	0.	0.9[illegible]5	0.978	0.976	0.989	1.024
T+ 2.830	1.416	17.753	1.023	0.996	0.[illegible]	0.963	0.975	0.974	0.990	1.020
T+ 2.840	1.420	17.856	1.009	0.984	0.946	0.961	0.974	0.972	0.988	1.015
T+ 2.850	1.425	17.960	0.996	0.974	0.953	0.965	0.978	0.976	0.990	1.017
T+ 2.860	1.429	18.065	0.984	0.965	0.956	0.968	0.982	0.979	0.992	1.019
T+ 2.870	1.433	18.175	0.973	0.957	0.953	0.967	0.983	0.976	0.991	1.018
T+ 2.880	1.437	18.273	0.965	0.952	0.951	0.965	0.982	0.971	0.989	1.016
T+ 2.890	1.442	18.391	0.956	0.945	0.951	0.965	0.983	0.972	0.989	1.014
T+ 2.900	1.446	18.493	0.951	0.942	0.955	0.968	0.986	0.978	0.990	1.015
T+ 2.910	1.451	18.623	0.945	0.940	0.962	0.975	0.992	0.986	0.992	1.021
T+ 2.920	1.458	18.824	0.941	0.939	0.969	0.982	0.997	0.990	0.993	1.028
T+ 2.930	1.464	18.979	0.940	0.939	0.970	0.984	0.998	0.991	0.992	1.032
T+ 2.940	1.468	19.070	0.937	0.938	0.967	0.981	0.995	0.989	0.989	1.030
T+ 2.950	1.471	19.157	0.935	0.938	0.967	0.980	0.996	0.989	0.990	1.028
T+ 2.960	1.475	19.250	0.931	0.939	0.970	0.983	1.000	0.994	0.992	1.032
T+ 2.970	1.478	19.333	0.931	0.939	0.975	0.990	1.005	1.001	0.993	1.037
T+ 2.980	1.481	19.419	0.933	0.940	0.979	0.993	1.009	1.007	0.994	1.043
T+ 2.990	1.484	19.501	0.933	0.941	0.979	0.993	1.010	1.008	0.994	1.045
T+ 3.000	1.494	19.750	0.931	0.942	0.979	0.992	1.011	1.006	0.994	1.046
T+ 3.010	1.498	19.864	0.930	0.942	0.979	0.992	1.011	1.002	0.992	1.046
T+ 3.020	1.501	19.931	0.931	0.943	0.982	0.995	1.015	1.004	0.993	1.046
T+ 3.030	1.503	19.999	0.934	0.945	0.990	1.004	1.024	1.014	0.998	1.054
T+ 3.040	1.506	20.060	0.935	0.947	0.998	1.012	1.031	1.023	1.001	1.064
T+ 3.050	1.508	20.113	0.938	0.952	1.001	1.015	1.033	1.028	0.999	1.072
T+ 3.060	1.510	20.174	0.941	0.954	0.997	1.012	1.029	1.022	0.995	1.068
T+ 3.070	1.512	20.219	0.943	0.955	0.994	1.007	1.025	1.015	0.993	1.062
T+ 3.080	1.513	20.254	0.943	0.956	0.996	1.007	1.027	1.015	0.997	1.060
T+ 3.090	1.514	20.287	0.942	0.957	1.002	1.012	1.032	1.023	0.999	1.066
T+ 3.100	1.515	20.320	0.944	0.960	1.010	1.022	1.040	1.035	1.000	1.077
T+ 3.110	1.517	20.354	0.947	0.964	1.015	1.029	1.046	1.042	1.002	1.085
T+ 3.120	1.518	20.387	0.950	0.967	1.013	1.027	1.046	1.037	1.000	1.087
T+ 3.130	1.519	20.421	0.952	0.969	1.007	1.020	1.043	1.028	0.995	1.081
T+ 3.140	1.520	20.454	0.953	0.969	1.007	1.018	1.044	1.029	0.995	1.075
T+ 3.150	1.522	20.487	0.954	0.971	1.018	1.028	1.052	1.042	1.003	1.084

IX. APPENDIX H

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APPENDIX H

Run 5F-F3

Run Date: 12 May 77

Configuration: Angle of Attack = -2° No fins

Motor Firing: Time = 2.50 to 3.60 seconds

Remarks:

Duplication of Run F-3 with peak thrust coefficient of 24.5

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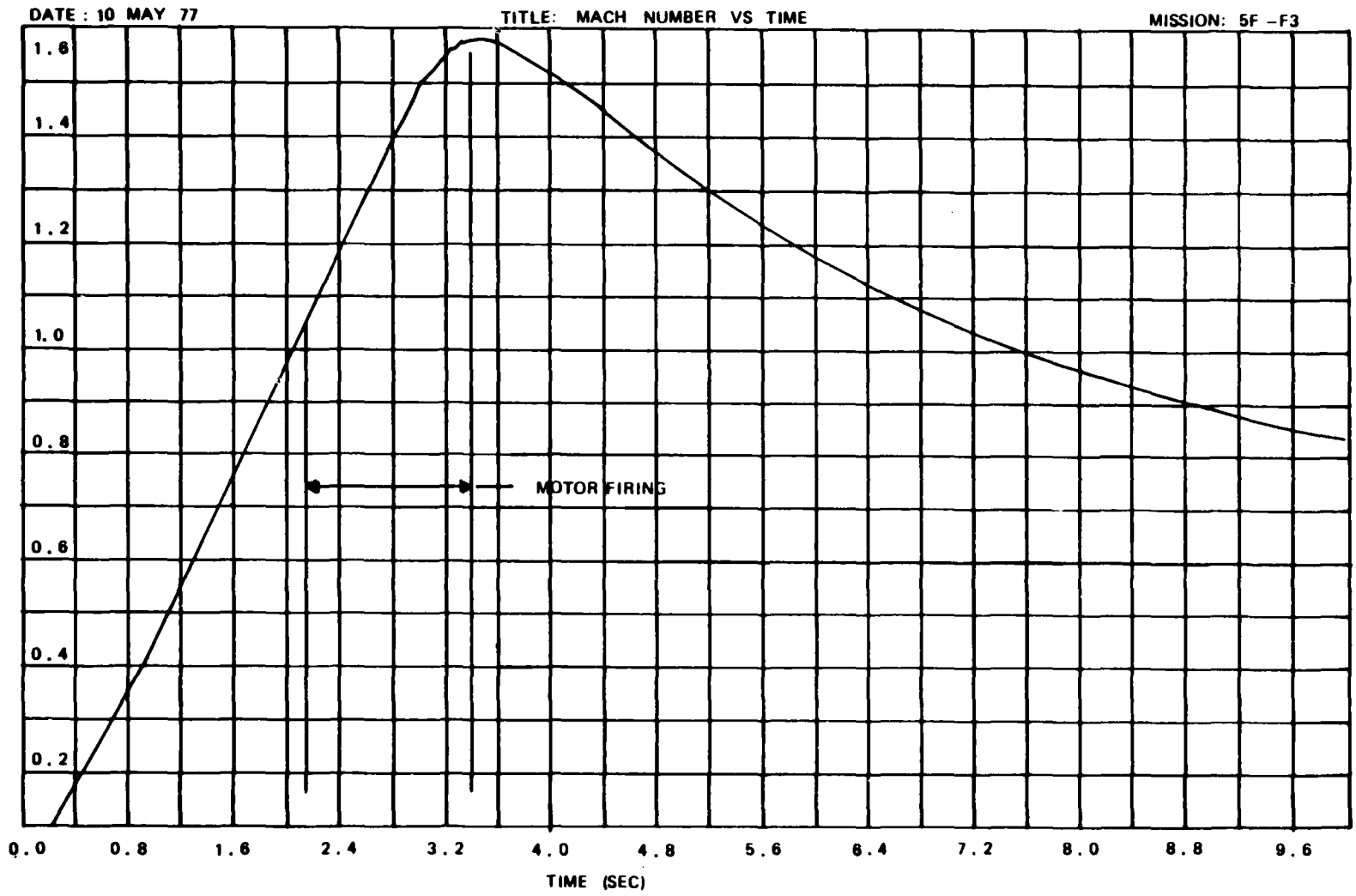

Figure 1. Test trajectory, Run 5F-F3.

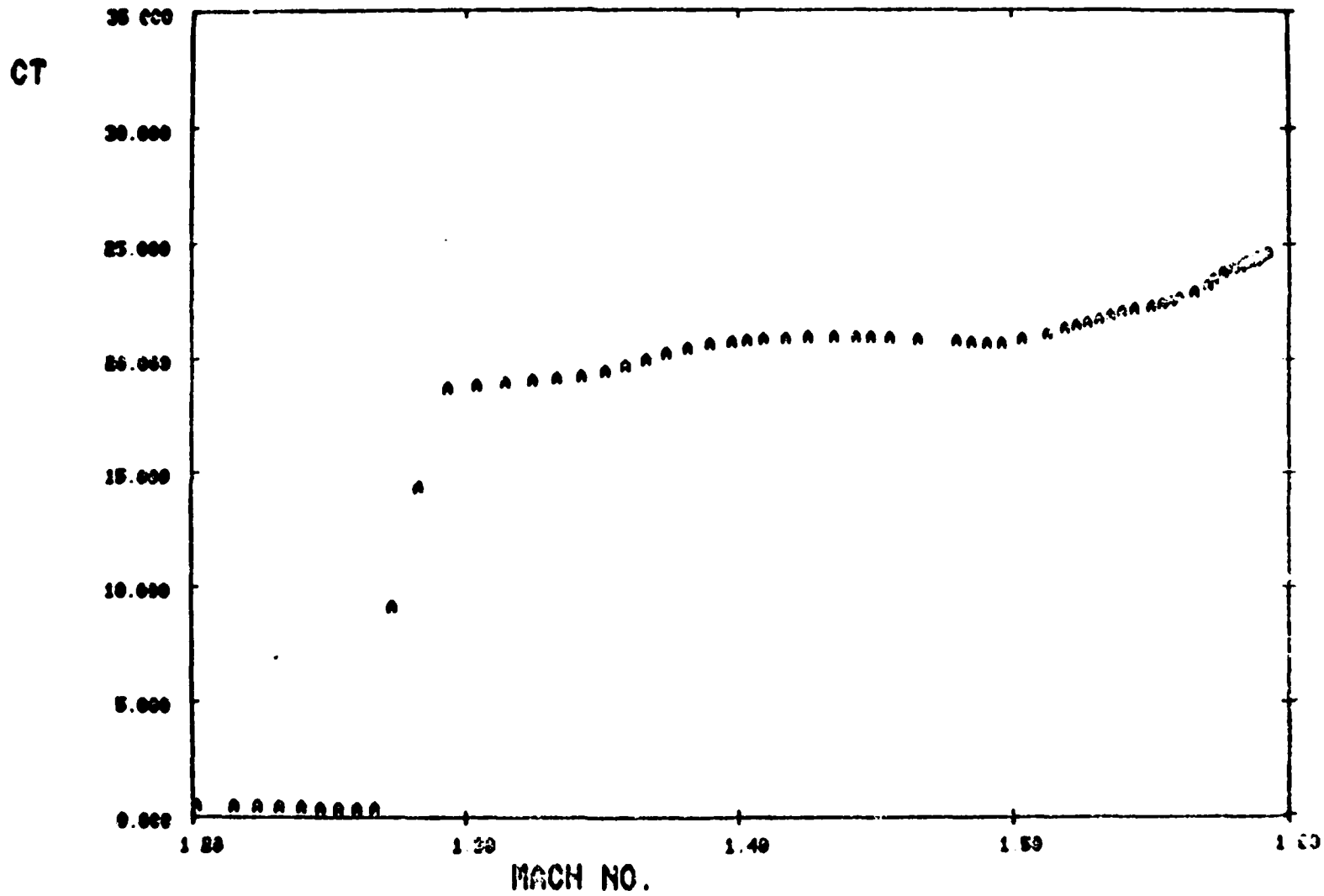

Figure 2. Thrust coefficient, Run 5F-F3.

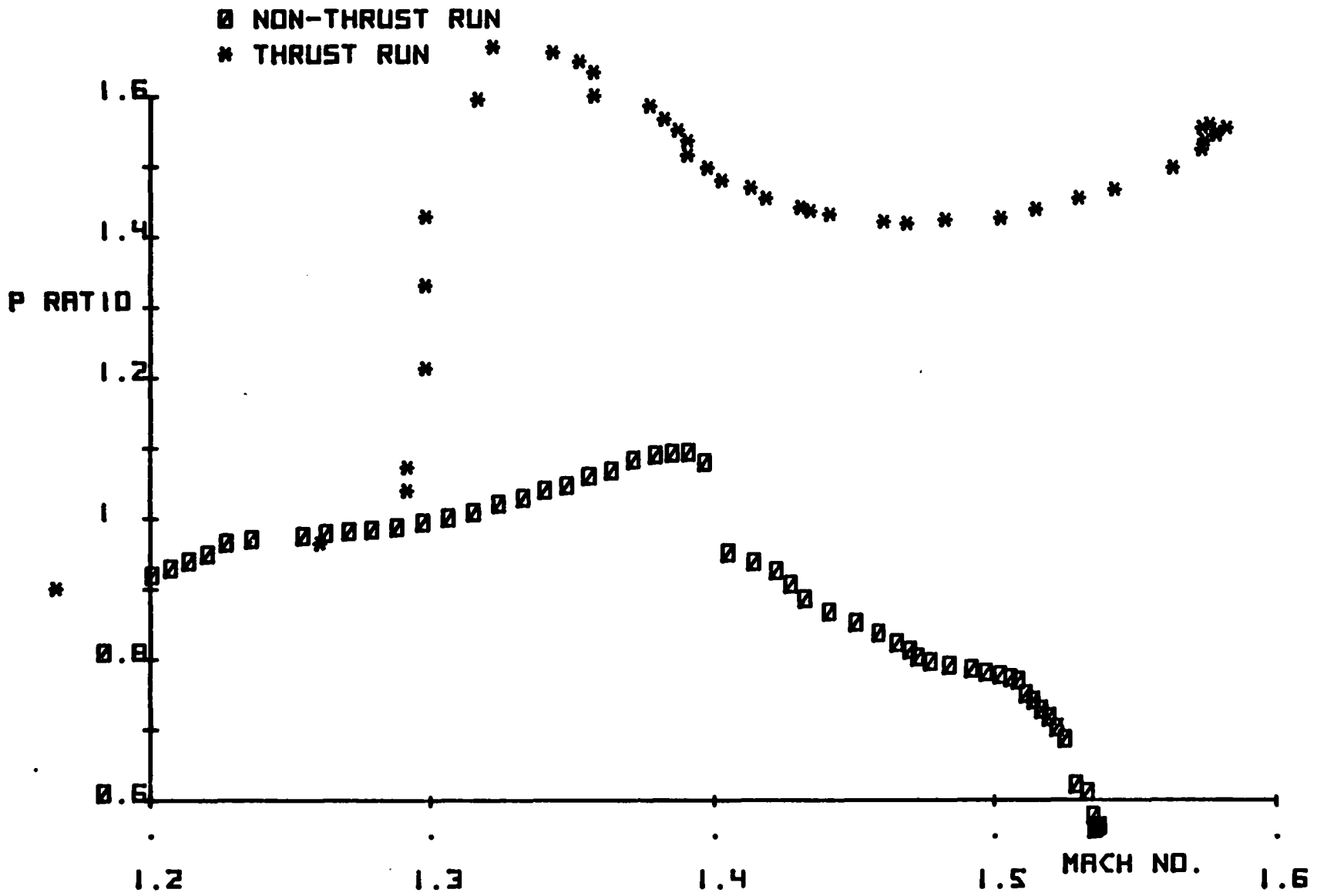

Figure 3. Base pressure/ambient pressure, Run 5F-F3.

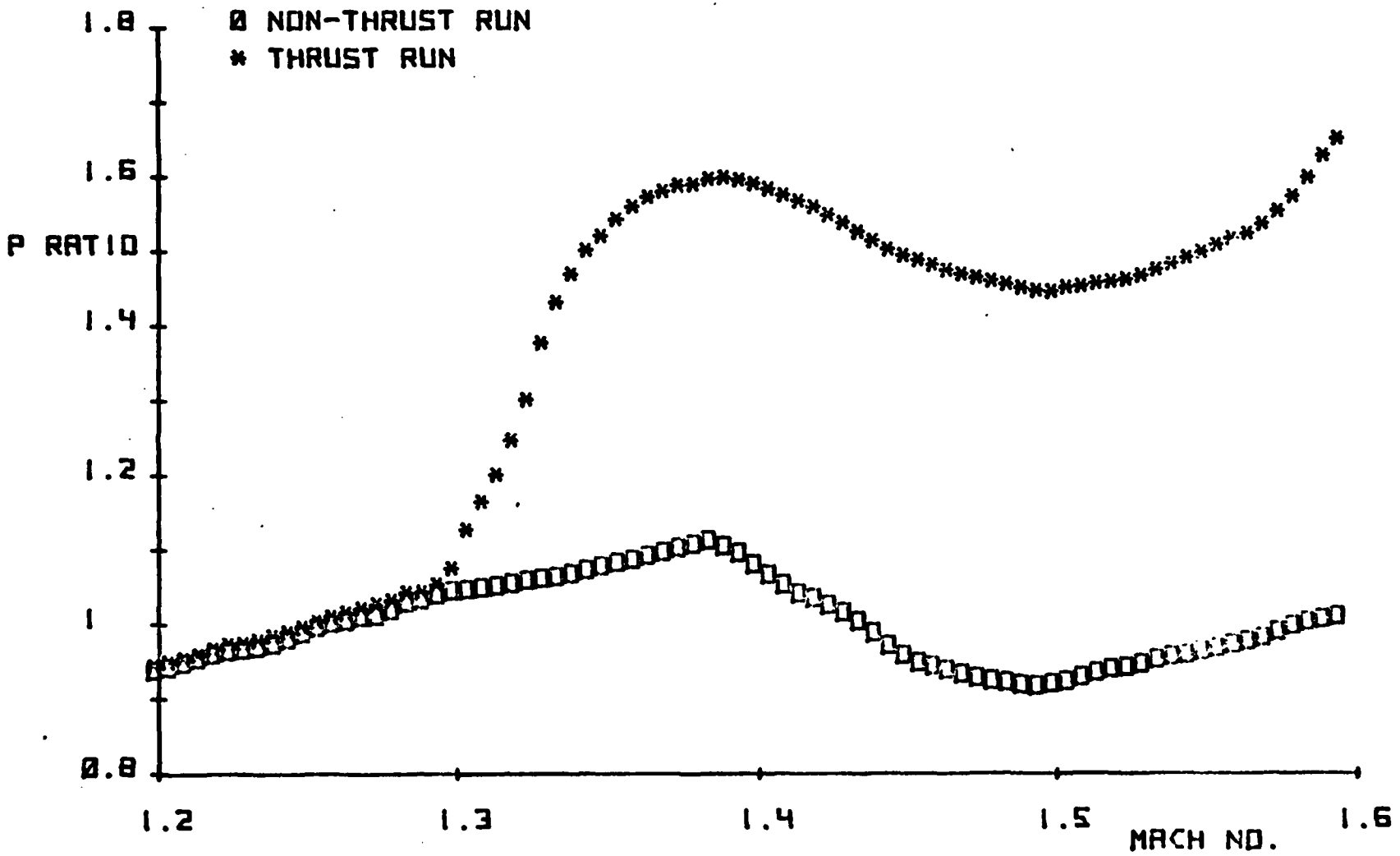

Figure 4. Surface pressure (x/D = 0.2)/ambient pressure, Run 5F-F3.

RUN # 5F-F3

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA
T+ 2.260	1.114	11.016	1.131	0.925	1.107	1.119	1.131	0.845
T+ 2.270	1.120	11.126	1.132	0.928	1.111	1.123	1.134	0.845
T+ 2.280	1.125	11.233	1.137	0.934	1.116	1.129	1.141	0.849
T+ 2.290	1.130	11.341	1.147	0.938	1.125	1.139	1.149	0.854
T+ 2.300	1.136	11.449	1.155	0.943	1.133	1.146	1.155	0.860
T+ 2.310	1.141	11.561	1.160	0.950	1.138	1.152	1.163	0.865
T+ 2.320	1.147	11.671	1.166	0.957	1.144	1.157	1.169	0.869
T+ 2.330	1.152	11.782	1.170	0.961	1.148	1.161	1.173	0.864
T+ 2.340	1.158	11.895	1.178	0.967	1.156	1.169	1.179	0.864
T+ 2.350	1.163	12.006	1.187	0.973	1.167	1.181	1.190	0.872
T+ 2.360	1.168	12.114	1.195	0.980	1.175	1.190	1.201	0.883
T+ 2.370	1.174	12.227	1.198	0.983	1.178	1.193	1.203	0.888
T+ 2.380	1.179	12.339	1.200	0.985	1.178	1.193	1.205	0.887
T+ 2.390	1.185	12.454	1.208	0.996	1.187	1.202	1.213	0.891
T+ 2.400	1.190	12.564	1.219	1.009	1.199	1.215	1.225	0.900
T+ 2.410	1.195	12.679	1.230	1.020	1.209	1.225	1.234	0.910
T+ 2.420	1.201	12.789	1.237	1.025	1.215	1.230	1.239	0.915
T+ 2.430	1.206	12.901	1.245	1.035	1.221	1.236	1.247	0.915
T+ 2.440	1.211	13.020	1.261	1.046	1.232	1.249	1.258	0.916
T+ 2.450	1.217	13.139	1.271	1.049	1.240	1.256	1.264	0.918
T+ 2.460	1.222	13.260	1.275	1.049	1.243	1.259	1.266	0.923
T+ 2.470	1.227	13.367	1.285	1.054	1.252	1.269	1.273	0.933
T+ 2.480	1.233	13.483	1.301	1.062	1.264	1.281	1.284	0.940
T+ 2.490	1.238	13.601	1.310	1.069	1.272	1.288	1.292	0.940
T+ 2.500	1.244	13.725	1.310	1.073	1.276	1.291	1.294	0.936
T+ 2.510	1.249	13.844	1.311	1.082	1.281	1.296	1.302	0.937
T+ 2.520	1.254	13.963	1.315	1.091	1.289	1.307	1.309	0.944
T+ 2.530	1.260	14.077	1.314	1.099	1.295	1.310	1.310	0.949
T+ 2.540	1.265	14.194	1.312	1.111	1.302	1.314	1.313	0.954
T+ 2.550	1.271	14.327	1.313	1.124	1.308	1.319	1.321	0.960
T+ 2.560	1.276	14.451	1.316	1.131	1.313	1.325	1.328	0.959
T+ 2.570	1.281	14.572	1.310	1.126	1.314	1.326	1.329	0.954
T+ 2.580	1.287	14.690	1.293	1.124	1.316	1.328	1.340	0.956
T+ 2.590	1.292	14.809	1.259	1.133	1.328	1.340	1.364	0.968
T+ 2.600	1.297	14.919	1.205	1.163	1.338	1.347	1.386	0.998
T+ 2.610	1.302	15.047	1.132	1.263	1.349	1.353	1.405	1.097
T+ 2.620	1.307	15.169	1.046	1.459	1.386	1.374	1.430	1.307
T+ 2.630	1.313	15.297	0.968	1.656	1.452	1.403	1.446	1.549
T+ 2.640	1.319	15.427	0.927	1.731	1.512	1.427	1.420	1.685
T+ 2.650	1.323	15.542	0.929	1.692	1.525	1.440	1.356	1.682
T+ 2.660	1.329	15.664	0.953	1.654	1.505	1.447	1.295	1.631
T+ 2.670	1.334	15.781	0.966	1.677	1.493	1.454	1.258	1.625
T+ 2.680	1.339	15.898	0.961	1.729	1.503	1.456	1.227	1.661
T+ 2.690	1.344	16.020	0.962	1.754	1.525	1.462	1.160	1.688
T+ 2.700	1.349	16.144	0.971	1.746	1.540	1.475	1.051	1.687

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
T+ 2.710	1.354	16.268	1.525	1.513	1.567	1.520	1.397	1.155	1.613	1.621
T+ 2.720	1.359	16.392	1.543	1.524	1.551	1.498	1.343	1.068	1.608	1.614
T+ 2.730	1.364	16.515	1.558	1.531	1.512	1.459	1.267	0.990	1.594	1.601
T+ 2.740	1.369	16.631	1.569	1.535	1.474	1.422	1.181	0.954	1.581	1.591
T+ 2.750	1.375	16.768	1.577	1.534	1.463	1.393	1.089	0.949	1.573	1.586
T+ 2.760	1.380	16.888	1.584	1.533	1.481	1.367	1.010	0.954	1.574	1.589
T+ 2.770	1.383	16.982	1.589	1.536	1.494	1.328	0.966	0.957	1.582	1.598
T+ 2.780	1.388	17.099	1.593	1.537	1.482	1.264	0.953	0.958	1.585	1.594
T+ 2.790	1.393	17.222	1.595	1.537	1.461	1.185	0.950	0.961	1.576	1.576
T+ 2.800	1.398	17.353	1.594	1.534	1.447	1.111	0.948	0.964	1.560	1.561
T+ 2.810	1.403	17.457	1.591	1.531	1.441	1.055	0.948	0.970	1.553	1.560
T+ 2.820	1.407	17.570	1.588	1.527	1.430	1.014	0.950	0.973	1.546	1.557
T+ 2.830	1.412	17.686	1.583	1.523	1.415	0.979	0.950	0.972	1.534	1.541
T+ 2.840	1.416	17.804	1.578	1.518	1.396	0.956	0.950	0.969	1.521	1.522
T+ 2.850	1.420	17.895	1.570	1.511	1.367	0.948	0.951	0.970	1.506	1.508
T+ 2.860	1.424	17.994	1.562	1.502	1.324	0.953	0.955	0.976	1.495	1.498
T+ 2.870	1.429	18.113	1.551	1.490	1.257	0.957	0.960	0.980	1.477	1.481
T+ 2.880	1.434	18.253	1.537	1.478	1.177	0.956	0.961	0.981	1.455	1.458
T+ 2.890	1.439	18.373	1.525	1.465	1.102	0.954	0.962	0.980	1.443	1.448
T+ 2.900	1.444	18.513	1.513	1.452	1.041	0.956	0.961	0.980	1.438	1.449
T+ 2.910	1.449	18.633	1.503	1.437	0.996	0.957	0.964	0.982	1.428	1.446
T+ 2.920	1.455	18.777	1.495	1.418	0.969	0.963	0.971	0.988	1.403	1.431
T+ 2.930	1.460	18.919	1.487	1.391	0.953	0.969	0.976	0.996	1.367	1.411
T+ 2.940	1.464	19.022	1.481	1.358	0.946	0.973	0.978	1.001	1.326	1.391
T+ 2.950	1.469	19.148	1.473	1.315	0.946	0.974	0.981	1.005	1.276	1.363
T+ 2.960	1.473	19.246	1.469	1.270	0.950	0.975	0.985	1.007	1.214	1.326
T+ 2.970	1.476	19.340	1.466	1.222	0.953	0.978	0.989	1.010	1.143	1.279
T+ 2.980	1.480	19.431	1.461	1.177	0.956	0.982	0.992	1.014	1.080	1.239
T+ 2.990	1.483	19.524	1.460	1.141	0.960	0.989	0.996	1.019	1.036	1.219
T+ 3.000	1.487	19.629	1.458	1.109	0.962	0.992	0.998	1.019	1.009	1.224
T+ 3.010	1.494	19.813	1.457	1.083	0.961	0.989	0.997	1.017	0.992	1.247
T+ 3.020	1.499	19.952	1.455	1.061	0.959	0.987	0.996	1.016	0.980	1.257
T+ 3.030	1.503	20.034	1.453	1.041	0.962	0.990	0.999	1.017	0.970	1.240
T+ 3.040	1.506	20.118	1.453	1.026	0.969	0.997	1.005	1.023	0.964	1.215
T+ 3.050	1.509	20.199	1.455	1.014	0.974	1.002	1.008	1.028	0.961	1.204
T+ 3.060	1.511	20.273	1.459	1.004	0.973	1.002	1.008	1.030	0.961	1.223
T+ 3.070	1.514	20.342	1.461	0.996	0.970	0.997	1.005	1.025	0.963	1.264
T+ 3.080	1.516	20.407	1.464	0.987	0.969	0.994	1.004	1.020	0.969	1.296
T+ 3.090	1.519	20.473	1.467	0.981	0.973	0.997	1.007	1.023	0.977	1.307
T+ 3.100	1.521	20.539	1.470	0.977	0.978	1.003	1.013	1.031	0.983	1.304
T+ 3.110	1.524	20.605	1.475	0.974	0.985	1.012	1.021	1.042	0.989	1.307
T+ 3.120	1.526	20.671	1.481	0.973	0.988	1.017	1.024	1.045	0.993	1.310
T+ 3.130	1.529	20.737	1.485	0.972	0.984	1.014	1.020	1.039	0.989	1.299
T+ 3.140	1.531	20.803	1.489	0.971	0.984	1.012	1.020	1.034	0.984	1.288
T+ 3.150	1.534	20.869	1.493	0.971	0.992	1.018	1.028	1.039	0.985	1.290

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
T+ 3.160	1.536	20.935	1.498	0.972	1.000	1.027	1.035	1.051	0.994	1.306
T+ 3.170	1.538	21.002	1.502	0.974	0.999	1.029	1.033	1.054	1.006	1.331
T+ 3.180	1.541	21.068	1.506	0.974	0.990	1.021	1.026	1.045	1.019	1.359
T+ 3.190	1.543	21.139	1.512	0.974	0.987	1.014	1.024	1.034	1.031	1.378
T+ 3.200	1.547	21.238	1.515	0.974	0.991	1.015	1.028	1.033	1.033	1.367
T+ 3.210	1.551	21.352	1.520	0.976	1.004	1.029	1.039	1.047	1.025	1.337
T+ 3.220	1.555	21.465	1.526	0.979	1.018	1.046	1.050	1.068	1.014	1.311
T+ 3.230	1.559	21.579	1.533	0.984	1.021	1.053	1.054	1.081	1.010	1.303
T+ 3.240	1.560	21.603	1.539	0.988	1.016	1.049	1.049	1.078	1.020	1.333
T+ 3.250	1.561	21.618	1.543	0.989	1.005	1.037	1.041	1.062	1.050	1.395
T+ 3.260	1.561	21.633	1.544	0.988	1.001	1.027	1.037	1.048	1.099	1.454
T+ 3.270	1.562	21.644	1.547	0.988	1.008	1.028	1.042	1.051	1.132	1.462
T+ 3.280	1.563	21.683	1.550	0.991	1.023	1.042	1.056	1.068	1.119	1.417
T+ 3.290	1.566	21.763	1.558	0.995	1.037	1.062	1.070	1.090	1.078	1.370
T+ 3.300	1.570	21.861	1.569	1.001	1.039	1.071	1.073	1.100	1.046	1.354
T+ 3.310	1.571	21.913	1.578	1.003	1.030	1.065	1.067	1.095	1.043	1.376
T+ 3.320	1.573	21.947	1.582	1.003	1.022	1.054	1.059	1.085	1.067	1.423
T+ 3.330	1.573	21.969	1.583	1.004	1.020	1.048	1.057	1.078	1.103	1.467
T+ 3.340	1.574	21.984	1.585	1.006	1.027	1.053	1.060	1.080	1.121	1.474
T+ 3.350	1.575	22.010	1.588	1.008	1.035	1.062	1.068	1.089	1.104	1.434
T+ 3.360	1.576	22.040	1.593	1.011	1.042	1.072	1.077	1.101	1.070	1.389
T+ 3.370	1.577	22.056	1.601	1.014	1.045	1.077	1.081	1.108	1.050	1.387
T+ 3.380	1.577	22.065	1.607	1.015	1.039	1.070	1.075	1.104	1.053	1.427
T+ 3.390	1.577	22.070	1.612	1.016	1.028	1.058	1.064	1.092	1.072	1.467
T+ 3.400	1.577	22.068	1.613	1.014	1.024	1.050	1.060	1.082	1.083	1.469
T+ 3.410	1.577	22.072	1.613	1.014	1.034	1.058	1.068	1.086	1.085	1.450
T+ 3.420	1.578	22.087	1.616	1.016	1.048	1.074	1.079	1.104	1.077	1.429
T+ 3.430	1.578	22.109	1.619	1.019	1.051	1.082	1.083	1.119	1.062	1.411
T+ 3.440	1.579	22.138	1.624	1.021	1.046	1.079	1.080	1.122	1.050	1.413
T+ 3.450	1.580	22.152	1.626	1.020	1.039	1.071	1.075	1.115	1.054	1.444
T+ 3.460	1.580	22.158	1.627	1.019	1.039	1.067	1.075	1.107	1.076	1.486
T+ 3.470	1.580	22.155	1.629	1.019	1.042	1.067	1.078	1.103	1.102	1.501
T+ 3.480	1.580	22.146	1.630	1.020	1.045	1.071	1.081	1.102	1.111	1.482
T+ 3.490	1.579	22.125	1.633	1.021	1.050	1.077	1.086	1.105	1.099	1.453
T+ 3.500	1.580	22.160	1.636	1.024	1.051	1.081	1.087	1.108	1.075	1.437
T+ 3.510	1.580	22.153	1.640	1.025	1.046	1.077	1.083	1.107	1.061	1.442
T+ 3.520	1.579	22.135	1.642	1.025	1.039	1.069	1.078	1.100	1.062	1.455
T+ 3.530	1.579	22.119	1.639	1.024	1.035	1.063	1.074	1.093	1.072	1.465
T+ 3.540	1.578	22.104	1.637	1.022	1.041	1.066	1.079	1.094	1.082	1.462
T+ 3.550	1.577	22.081	1.636	1.022	1.049	1.075	1.086	1.103	1.081	1.448
T+ 3.560	1.577	22.058	1.637	1.025	1.051	1.080	1.090	1.114	1.073	1.438
T+ 3.570	1.577	22.063	1.639	1.027	1.048	1.079	1.089	1.116	1.072	1.450
T+ 3.580	1.576	22.035	1.637	1.027	1.045	1.075	1.086	1.111	1.084	1.471
T+ 3.590	1.575	22.000	1.635	1.026	1.043	1.072	1.085	1.104	1.100	1.485
T+ 3.600	1.573	21.967	1.634	1.025	1.042	1.069	1.084	1.101	1.102	1.472

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
T+ 3.160	1.536	20.935	1.498	0.972	1.000	1.027	1.035	1.051	0.994	1.306
T+ 3.170	1.538	21.002	1.502	0.974	0.999	1.029	1.033	1.054	1.006	1.331
T+ 3.180	1.541	21.068	1.506	0.974	0.990	1.021	1.026	1.045	1.019	1.359
T+ 3.190	1.543	21.139	1.512	0.974	0.987	1.014	1.024	1.034	1.031	1.378
T+ 3.200	1.547	21.238	1.515	0.974	0.991	1.015	1.028	1.033	1.033	1.367
T+ 3.210	1.551	21.352	1.520	0.976	1.004	1.029	1.039	1.047	1.025	1.337
T+ 3.220	1.555	21.465	1.526	0.979	1.018	1.046	1.050	1.068	1.014	1.311
T+ 3.230	1.559	21.579	1.533	0.984	1.021	1.053	1.054	1.081	1.010	1.303
T+ 3.240	1.560	21.603	1.539	0.988	1.016	1.049	1.049	1.078	1.020	1.333
T+ 3.250	1.561	21.618	1.543	0.989	1.005	1.037	1.041	1.062	1.050	1.395
T+ 3.260	1.561	21.633	1.544	0.988	1.001	1.027	1.037	1.048	1.099	1.454
T+ 3.270	1.562	21.644	1.547	0.988	1.008	1.028	1.042	1.051	1.132	1.462
T+ 3.280	1.563	21.683	1.550	0.991	1.023	1.042	1.056	1.068	1.119	1.417
T+ 3.290	1.566	21.763	1.558	0.995	1.037	1.062	1.070	1.090	1.078	1.370
T+ 3.300	1.570	21.861	1.569	1.001	1.039	1.071	1.073	1.100	1.046	1.354
T+ 3.310	1.571	21.913	1.578	1.003	1.030	1.065	1.067	1.095	1.043	1.376
T+ 3.320	1.573	21.947	1.582	1.003	1.022	1.054	1.059	1.085	1.067	1.423
T+ 3.330	1.573	21.969	1.583	1.004	1.020	1.048	1.057	1.078	1.103	1.467
T+ 3.340	1.574	21.984	1.585	1.006	1.027	1.053	1.060	1.080	1.121	1.474
T+ 3.350	1.575	22.010	1.588	1.008	1.035	1.062	1.068	1.089	1.104	1.434
T+ 3.360	1.576	22.040	1.593	1.011	1.042	1.072	1.077	1.101	1.070	1.389
T+ 3.370	1.577	22.056	1.601	1.014	1.045	1.077	1.081	1.108	1.050	1.387
T+ 3.380	1.577	22.065	1.607	1.015	1.039	1.070	1.075	1.104	1.053	1.427
T+ 3.390	1.577	22.070	1.612	1.016	1.028	1.058	1.064	1.092	1.072	1.467
T+ 3.400	1.577	22.068	1.613	1.014	1.024	1.050	1.060	1.082	1.083	1.469
T+ 3.410	1.577	22.072	1.613	1.014	1.034	1.058	1.068	1.086	1.085	1.450
T+ 3.420	1.578	22.087	1.616	1.016	1.048	1.074	1.079	1.104	1.077	1.429
T+ 3.430	1.578	22.109	1.619	1.019	1.051	1.082	1.083	1.119	1.062	1.411
T+ 3.440	1.579	22.138	1.624	1.021	1.046	1.079	1.080	1.122	1.050	1.413
T+ 3.450	1.580	22.152	1.626	1.020	1.039	1.071	1.075	1.115	1.054	1.444
T+ 3.460	1.580	22.158	1.627	1.019	1.039	1.067	1.075	1.107	1.076	1.486
T+ 3.470	1.580	22.155	1.629	1.019	1.042	1.067	1.078	1.103	1.102	1.501
T+ 3.480	1.580	22.146	1.630	1.020	1.045	1.071	1.081	1.102	1.111	1.482
T+ 3.490	1.579	22.125	1.633	1.021	1.050	1.077	1.086	1.105	1.099	1.453
T+ 3.500	1.580	22.160	1.636	1.024	1.051	1.081	1.087	1.108	1.075	1.437
T+ 3.510	1.580	22.153	1.640	1.025	1.046	1.077	1.083	1.107	1.061	1.442
T+ 3.520	1.579	22.135	1.642	1.025	1.039	1.069	1.078	1.100	1.062	1.455
T+ 3.530	1.579	22.119	1.639	1.024	1.035	1.063	1.074	1.093	1.072	1.465
T+ 3.540	1.578	22.104	1.637	1.022	1.041	1.066	1.079	1.094	1.082	1.462
T+ 3.550	1.577	22.081	1.636	1.022	1.049	1.075	1.086	1.103	1.081	1.448
T+ 3.560	1.577	22.058	1.637	1.025	1.051	1.080	1.090	1.114	1.073	1.438
T+ 3.570	1.577	22.063	1.639	1.027	1.048	1.079	1.089	1.116	1.072	1.450
T+ 3.580	1.576	22.035	1.637	1.027	1.045	1.075	1.086	1.111	1.084	1.471
T+ 3.590	1.575	22.000	1.635	1.026	1.043	1.072	1.085	1.104	1.100	1.485
T+ 3.600	1.573	21.967	1.634	1.025	1.042	1.069	1.084	1.101	1.102	1.472

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA	CH10 PS8/PA
T+ 3.610	1.572	21.929	1.636	1.026	1.048	1.074	1.088	1.105	1.089	1.449
T+ 3.620	1.571	21.902	1.640	1.028	1.058	1.085	1.095	1.114	1.076	1.440
T+ 3.630	1.570	21.862	1.643	1.030	1.059	1.092	1.097	1.119	1.070	1.448
T+ 3.640	1.568	21.823	1.643	1.031	1.054	1.088	1.093	1.117	1.068	1.443
T+ 3.650	1.567	21.784	1.637	1.031	1.045	1.077	1.087	1.111	1.061	1.382
T+ 3.660	1.565	21.745	1.620	1.030	1.038	1.066	1.080	1.102	1.045	1.264
T+ 3.670	1.564	21.706	1.582	1.028	1.031	1.056	1.075	1.094	1.025	1.138
T+ 3.680	1.563	21.666	1.525	1.024	1.025	1.049	1.069	1.084	1.010	1.055
T+ 3.690	1.561	21.627	1.458	1.019	1.019	1.043	1.064	1.076	1.005	1.025
T+ 3.700	1.560	21.588	1.389	1.016	1.014	1.036	1.059	1.070	1.002	1.015
T+ 3.710	1.558	21.549	1.326	1.015	1.012	1.033	1.057	1.067	0.998	1.006
T+ 3.720	1.557	21.512	1.268	1.014	1.012	1.032	1.057	1.066	0.994	0.996
T+ 3.730	1.556	21.481	1.217	1.008	1.011	1.032	1.054	1.062	0.993	0.990
T+ 3.740	1.555	21.447	1.175	1.003	1.014	1.034	1.054	1.061	0.994	0.993
T+ 3.750	1.554	21.425	1.140	1.001	1.016	1.038	1.058	1.062	0.998	0.998
T+ 3.760	1.552	21.381	1.112	1.002	1.020	1.044	1.062	1.070	1.003	1.002
T+ 3.770	1.551	21.342	1.089	1.003	1.021	1.046	1.063	1.076	1.005	1.003
T+ 3.780	1.549	21.302	1.069	1.003	1.017	1.042	1.058	1.075	1.001	0.999
T+ 3.790	1.548	21.263	1.053	1.002	1.012	1.035	1.053	1.068	0.996	0.994
T+ 3.800	1.546	21.222	1.036	1.001	1.007	1.029	1.049	1.059	0.991	0.988
T+ 3.810	1.545	21.187	1.022	1.000	1.005	1.025	1.048	1.055	0.988	0.984
T+ 3.820	1.543	21.138	1.011	0.999	1.006	1.026	1.049	1.055	0.988	0.985
T+ 3.830	1.542	21.098	1.001	0.998	1.006	1.028	1.050	1.059	0.988	0.989
T+ 3.840	1.540	21.057	0.994	0.998	1.008	1.030	1.052	1.060	0.990	0.993
T+ 3.850	1.539	21.017	0.989	0.997	1.010	1.033	1.054	1.062	0.993	0.992
T+ 3.860	1.538	20.977	0.984	0.995	1.012	1.036	1.055	1.064	0.995	0.992
T+ 3.870	1.536	20.937	0.981	0.995	1.010	1.035	1.054	1.064	0.994	0.992
T+ 3.880	1.535	20.898	0.978	0.994	1.006	1.031	1.050	1.060	0.989	0.989
T+ 3.890	1.533	20.857	0.975	0.993	1.005	1.026	1.049	1.055	0.987	0.987
T+ 3.900	1.532	20.817	0.970	0.990	1.002	1.023	1.048	1.050	0.984	0.982
T+ 3.910	1.530	20.782	0.967	0.988	1.000	1.020	1.046	1.045	0.982	0.979
T+ 3.920	1.528	20.730	0.965	0.987	0.998	1.018	1.043	1.044	0.980	0.978
T+ 3.930	1.528	20.706	0.961	0.986	1.000	1.021	1.046	1.045	0.982	0.981
T+ 3.940	1.526	20.665	0.961	0.987	1.004	1.026	1.052	1.050	0.988	0.989
T+ 3.950	1.525	20.624	0.959	0.987	1.003	1.028	1.053	1.052	0.988	0.988
T+ 3.960	1.523	20.577	0.957	0.987	0.999	1.025	1.050	1.050	0.983	0.983
T+ 3.970	1.521	20.542	0.956	0.987	0.996	1.020	1.046	1.047	0.979	0.978
T+ 3.980	1.520	20.508	0.954	0.986	0.995	1.018	1.042	1.047	0.978	0.975
T+ 3.990	1.519	20.472	0.953	0.984	0.994	1.017	1.041	1.045	0.978	0.975
T+ 4.000	1.517	20.427	0.951	0.982	0.989	1.013	1.038	1.040	0.974	0.971
T+ 4.010	1.516	20.383	0.949	0.981	0.988	1.012	1.036	1.037	0.971	0.970
T+ 4.020	1.514	20.342	0.949	0.980	0.990	1.014	1.036	1.039	0.973	0.971
T+ 4.030	1.513	20.311	0.950	0.979	0.993	1.018	1.040	1.044	0.977	0.976
T+ 4.040	1.511	20.266	0.950	0.980	0.995	1.021	1.042	1.048	0.981	0.979
T+ 4.050	1.510	20.221	0.948	0.980	0.992	1.018	1.039	1.046	0.979	0.975

X

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA
T+ 2.260	1.114	11.016	1.131	0.925	1.107	1.119	1.131	0.845
T+ 2.270	1.120	11.126	1.132	0.928	1.111	1.123	1.134	0.845
T+ 2.280	1.125	11.233	1.137	0.934	1.116	1.129	1.141	0.849
T+ 2.290	1.130	11.341	1.147	0.938	1.125	1.139	1.149	0.854
T+ 2.300	1.136	11.449	1.155	0.943	1.133	1.146	1.155	0.860
T+ 2.310	1.141	11.561	1.160	0.950	1.138	1.152	1.163	0.865
T+ 2.320	1.147	11.671	1.166	0.957	1.144	1.157	1.169	0.869
T+ 2.330	1.152	11.782	1.170	0.961	1.148	1.161	1.173	0.864
T+ 2.340	1.158	11.895	1.178	0.967	1.156	1.169	1.179	0.864
T+ 2.350	1.163	12.006	1.187	0.973	1.167	1.181	1.190	0.872
T+ 2.360	1.168	12.114	1.195	0.980	1.175	1.190	1.201	0.883
T+ 2.370	1.174	12.227	1.198	0.983	1.178	1.193	1.203	0.888
T+ 2.380	1.179	12.339	1.200	0.985	1.178	1.193	1.205	0.887
T+ 2.390	1.185	12.454	1.208	0.996	1.187	1.202	1.213	0.891
T+ 2.400	1.190	12.564	1.219	1.009	1.199	1.215	1.225	0.900
T+ 2.410	1.195	12.679	1.230	1.020	1.209	1.225	1.234	0.910
T+ 2.420	1.201	12.789	1.237	1.025	1.215	1.230	1.239	0.915
T+ 2.430	1.206	12.901	1.245	1.035	1.221	1.236	1.247	0.915
T+ 2.440	1.211	13.020	1.261	1.046	1.232	1.249	1.258	0.916
T+ 2.450	1.217	13.139	1.271	1.049	1.240	1.256	1.264	0.918
T+ 2.460	1.222	13.260	1.275	1.049	1.243	1.259	1.266	0.923
T+ 2.470	1.227	13.367	1.285	1.054	1.252	1.269	1.273	0.933
T+ 2.480	1.233	13.483	1.301	1.062	1.264	1.281	1.284	0.940
T+ 2.490	1.238	13.601	1.310	1.069	1.272	1.288	1.292	0.940
T+ 2.500	1.244	13.725	1.310	1.073	1.276	1.291	1.294	0.936
T+ 2.510	1.249	13.844	1.311	1.082	1.281	1.296	1.302	0.937
T+ 2.520	1.254	13.963	1.315	1.091	1.289	1.307	1.309	0.9[illegible]
T+ 2.530	1.260	14.077	1.314	1.099	1.295	1.310	1.310	0.949
T+ 2.540	1.265	14.194	1.312	1.111	1.302	1.314	1.313	0.954
T+ 2.550	1.271	14.327	1.313	1.124	1.308	1.319	1.321	0.960
T+ 2.560	1.276	14.451	1.316	1.131	1.313	1.325	1.328	0.959
T+ 2.570	1.281	14.572	1.310	1.126	1.314	1.326	1.329	0.954
T+ 2.580	1.287	14.690	1.293	1.124	1.316	1.328	1.340	0.956
T+ 2.590	1.292	14.809	1.259	1.133	1.328	1.340	1.364	0.968
T+ 2.600	1.297	14.919	1.205	1.163	1.338	1.347	1.386	0.998
T+ 2.610	1.302	15.047	1.132	1.263	1.349	1.353	1.405	1.097
T+ 2.620	1.307	15.169	1.046	1.459	1.386	1.374	1.430	1.307
T+ 2.630	1.313	15.297	0.968	1.656	1.452	1.403	1.446	1.549
T+ 2.640	1.319	15.427	0.927	1.731	1.512	1.427	1.420	1.685
T+ 2.650	1.323	15.542	0.929	1.692	1.525	1.440	1.356	1.682
T+ 2.660	1.329	15.664	0.953	1.654	1.505	1.447	1.295	1.631
T+ 2.670	1.334	15.781	0.966	1.677	1.493	1.454	1.258	1.625
T+ 2.680	1.339	15.898	0.961	1.729	1.503	1.456	1.227	1.661
T+ 2.690	1.344	16.020	0.962	1.754	1.525	1.462	1.160	1.688
T+ 2.700	1.349	16.144	0.971	1.746	1.540	1.475	1.051	1.687

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P
T+ 2.710	1.354	16.268	0.975	1.736	1.544	1.482	0.930	1.674
T+ 2.720	1.359	16.392	0.974	1.753	1.548	1.473	0.844	1.666
T+ 2.730	1.364	16.515	0.979	1.791	1.557	1.450	0.813	1.664
T+ 2.740	1.369	16.631	0.994	1.814	1.567	1.414	0.817	1.661
T+ 2.750	1.375	16.768	1.002	1.801	1.564	1.358	0.817	1.648
T+ 2.760	1.380	16.888	1.006	1.784	1.547	1.291	0.806	1.623
T+ 2.770	1.383	16.982	1.016	1.794	1.530	1.217	0.803	1.599
T+ 2.780	1.388	17.099	1.028	1.817	1.508	1.116	0.808	1.580
T+ 2.790	1.393	17.222	1.031	1.816	1.475	0.997	0.813	1.561
T+ 2.800	1.398	17.353	1.027	1.788	1.431	0.900	0.815	1.537
T+ 2.810	1.403	17.457	1.029	1.757	1.387	0.854	0.818	1.516
T+ 2.820	1.407	17.570	1.035	1.727	1.360	0.849	0.826	1.504
T+ 2.830	1.412	17.686	1.032	1.690	1.344	0.846	0.832	1.497
T+ 2.840	1.416	17.804	1.026	1.652	1.336	0.835	0.834	1.488
T+ 2.850	1.420	17.895	1.027	1.619	1.333	0.825	0.835	1.474
T+ 2.860	1.424	17.994	1.037	1.587	1.337	0.827	0.839	1.458
T+ 2.870	1.429	18.113	1.045	1.538	1.342	0.835	0.844	1.450
T+ 2.880	1.434	18.253	1.048	1.483	1.340	0.836	0.846	1.446
T+ 2.890	1.439	18.373	1.053	1.460	1.332	0.836	0.844	1.443
T+ 2.900	1.444	18.513	1.057	1.459	1.321	0.834	0.840	1.435
T+ 2.910	1.449	18.633	1.057	1.450	1.306	0.834	0.840	1.431
T+ 2.920	1.455	18.777	1.058	1.435	1.288	0.839	0.850	1.436
T+ 2.930	1.460	18.919	1.061	1.426	1.277	0.843	0.858	1.436
T+ 2.940	1.464	19.022	1.065	1.422	1.253	0.846	0.859	1.428
T+ 2.950	1.469	19.148	1.071	1.413	1.188	0.848	0.858	1.421
T+ 2.960	1.473	19.246	1.080	1.408	1.102	0.852	0.861	1.420
T+ 2.970	1.476	19.340	1.086	1.404	1.034	0.856	0.865	1.416
T+ 2.980	1.480	19.431	1.089	1.393	0.974	0.863	0.871	1.409
T+ 2.990	1.483	19.524	1.089	1.386	0.913	0.871	0.878	1.409
T+ 3.000	1.487	19.629	1.087	1.389	0.869	0.874	0.886	1.417
T+ 3.010	1.494	19.813	1.082	1.395	0.856	0.871	0.891	1.420
T+ 3.020	1.499	19.952	1.078	1.391	0.862	0.870	0.894	1.415
T+ 3.030	1.503	20.034	1.079	1.386	0.867	0.875	0.898	1.417
T+ 3.040	1.506	20.118	1.087	1.396	0.867	0.886	0.906	1.430
T+ 3.050	1.509	20.199	1.091	1.411	0.866	0.894	0.913	1.439
T+ 3.060	1.511	20.273	1.089	1.413	0.866	0.894	0.914	1.436
T+ 3.070	1.514	20.342	1.085	1.402	0.866	0.894	0.914	1.431
T+ 3.080	1.516	20.407	1.084	1.397	0.865	0.894	0.918	1.433
T+ 3.090	1.519	20.473	1.088	1.402	0.866	0.891	0.921	1.442
T+ 3.100	1.521	20.539	1.094	1.410	0.870	0.882	0.921	1.449
T+ 3.110	1.524	20.605	1.100	1.415	0.873	0.874	0.921	1.454
T+ 3.120	1.526	20.671	1.101	1.415	0.875	0.872	0.924	1.457
T+ 3.130	1.529	20.737	1.097	1.406	0.870	0.870	0.923	1.456
T+ 3.140	1.531	20.803	1.099	1.409	0.870	0.871	0.922	1.457
T+ 3.150	1.534	20.869	1.107	1.426	0.878	0.876	0.925	1.466

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P
T+ 3.610	1.572	21.929	1.167	1.548	0.945	0.922	0.986	1.570
T+ 3.620	1.571	21.902	1.181	1.558	0.955	0.930	0.988	1.572
T+ 3.630	1.570	21.862	1.182	1.543	0.957	0.934	0.993	1.562
T+ 3.640	1.568	21.823	1.171	1.516	0.954	0.932	0.998	1.537
T+ 3.650	1.567	21.784	1.160	1.471	0.948	0.925	0.997	1.494
T+ 3.660	1.565	21.745	1.154	1.380	0.937	0.918	0.989	1.411
T+ 3.670	1.564	21.706	1.149	1.234	0.926	0.913	0.978	1.274
T+ 3.680	1.563	21.666	1.140	1.078	0.915	0.907	0.968	1.106
T+ 3.690	1.561	21.627	1.132	0.975	0.910	0.903	0.962	0.950
T+ 3.700	1.560	21.588	1.126	0.912	0.905	0.899	0.960	0.823
T+ 3.710	1.558	21.549	1.125	0.874	0.901	0.895	0.959	0.739
T+ 3.720	1.557	21.512	1.124	0.858	0.900	0.894	0.958	0.740
T+ 3.730	1.556	21.481	1.125	0.862	0.898	0.892	0.955	0.828
T+ 3.740	1.555	21.447	1.131	0.875	0.900	0.893	0.953	0.926
T+ 3.750	1.554	21.425	1.136	0.877	0.905	0.896	0.954	0.944
T+ 3.760	1.552	21.381	1.136	0.865	0.912	0.900	0.959	0.880
T+ 3.770	1.551	21.342	1.132	0.852	0.914	0.903	0.962	0.810
T+ 3.780	1.549	21.302	1.125	0.844	0.909	0.901	0.959	0.781
T+ 3.790	1.548	21.263	1.120	0.843	0.904	0.898	0.953	0.781
T+ 3.800	1.546	21.222	1.112	0.843	0.900	0.893	0.949	0.780
T+ 3.810	1.545	21.187	1.110	0.841	0.899	0.892	0.949	0.775
T+ 3.820	1.543	21.138	1.113	0.838	0.900	0.893	0.951	0.779
T+ 3.830	1.542	21.098	1.116	0.834	0.900	0.894	0.950	0.786
T+ 3.840	1.540	21.057	1.118	0.836	0.901	0.896	0.948	0.784
T+ 3.850	1.539	21.017	1.120	0.840	0.903	0.899	0.948	0.772
T+ 3.860	1.538	20.977	1.123	0.844	0.903	0.899	0.949	0.760
T+ 3.870	1.536	20.937	1.123	0.838	0.902	0.898	0.951	0.759
T+ 3.880	1.535	20.898	1.118	0.832	0.900	0.895	0.949	0.765
T+ 3.890	1.533	20.857	1.114	0.832	0.900	0.894	0.949	0.776
T+ 3.900	1.532	20.817	1.111	0.832	0.897	0.897	0.946	0.788
T+ 3.910	1.530	20.782	1.110	0.830	0.892	0.903	0.944	0.798
T+ 3.920	1.528	20.730	1.110	0.830	0.891	0.906	0.943	0.800
T+ 3.930	1.528	20.706	1.111	0.835	0.894	0.903	0.943	0.794
T+ 3.940	1.526	20.665	1.113	0.835	0.900	0.902	0.944	0.786
T+ 3.950	1.525	20.624	1.109	0.829	0.900	0.905	0.942	0.777
T+ 3.960	1.523	20.577	1.103	0.826	0.897	0.912	0.939	0.773
T+ 3.970	1.521	20.542	1.100	0.831	0.894	0.913	0.940	0.777
T+ 3.980	1.520	20.501	1.098	0.834	0.893	0.911	0.943	0.788
T+ 3.990	1.519	20.472	1.096	0.828	0.891	0.912	0.945	0.802
T+ 4.000	1.517	20.427	1.089	0.821	0.887	0.914	0.943	0.812
T+ 4.010	1.516	20.383	1.087	0.822	0.885	0.913	0.940	0.813
T+ 4.020	1.514	20.342	1.092	0.830	0.888	0.911	0.941	0.811
T+ 4.030	1.513	20.311	1.098	0.835	0.891	0.909	0.943	0.810
T+ 4.040	1.511	20.266	1.100	0.835	0.893	0.913	0.943	0.812
T+ 4.050	1.510	20.221	1.994	0.831	0.891	0.917	0.940	0.812

X. APPENDIX I

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APPENDIX I

Run 5F-F4

Run Date: 12 May 76

Configuration: Angle of Attack: 0° Fin Installed in "X" configuration.

Motor Firing Time: 2.57 to 3.45 seconds

Remarks:

To obtain higher thrust the motor was preheated prior to firing. C_T Variation was 22 to 30 while Mach number varied from 1.20 to 1.58.

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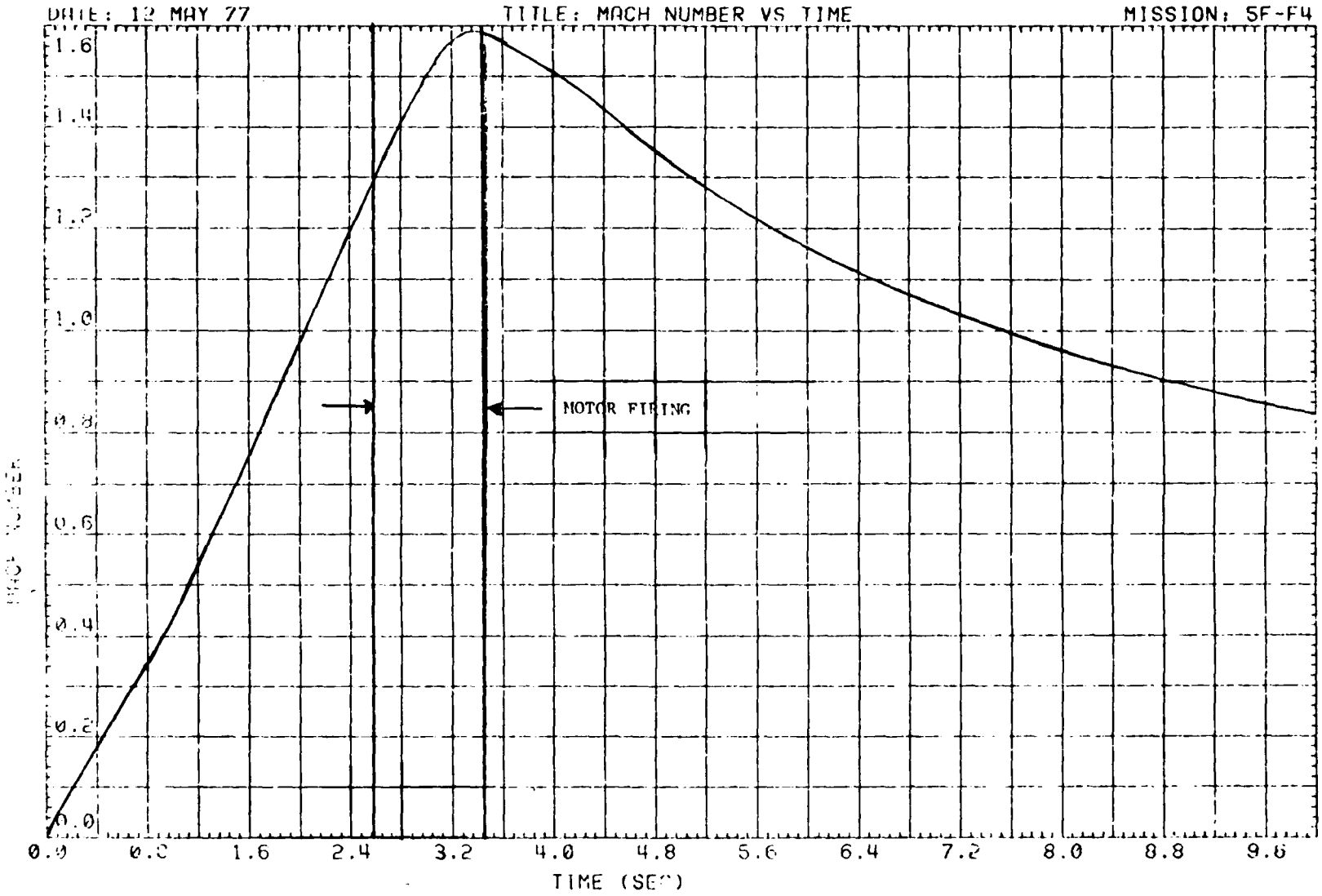

Figure 1. Test trajectory, Run 5F-F4.

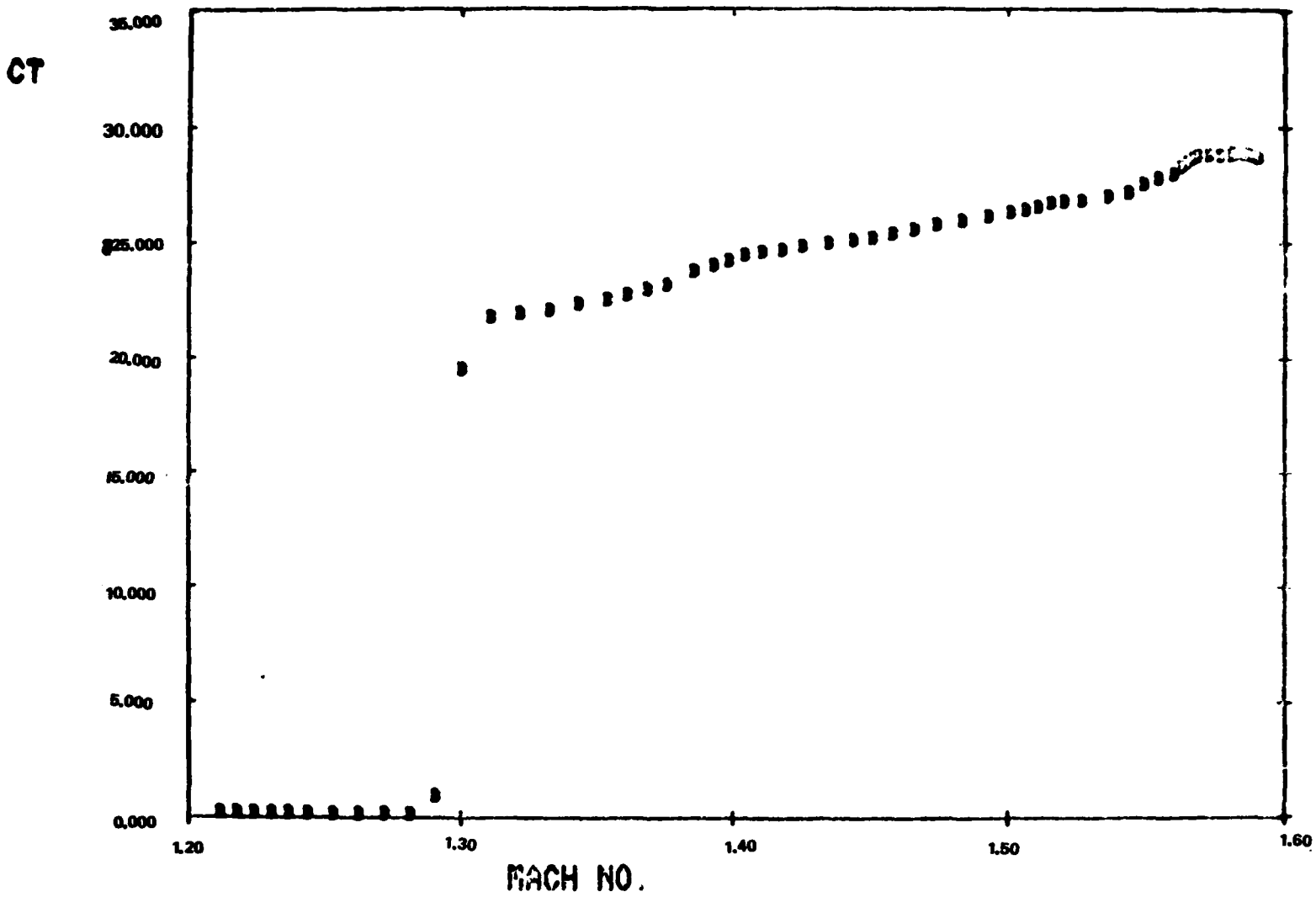

Figure 2. Thrust coefficient, Run 5F-F4.

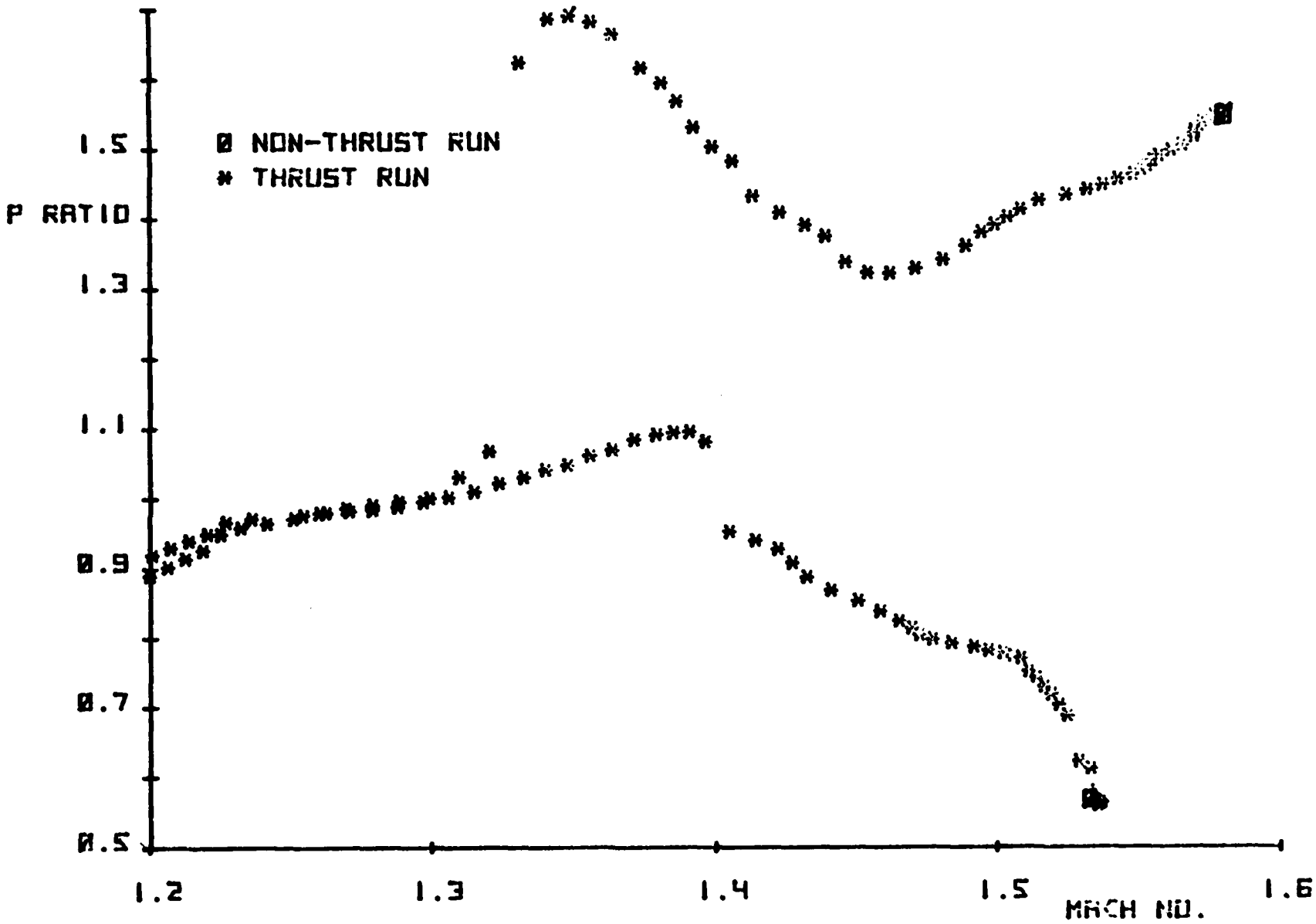

Figure 3. Base pressure/ambient pressure, Run 5F-F4.

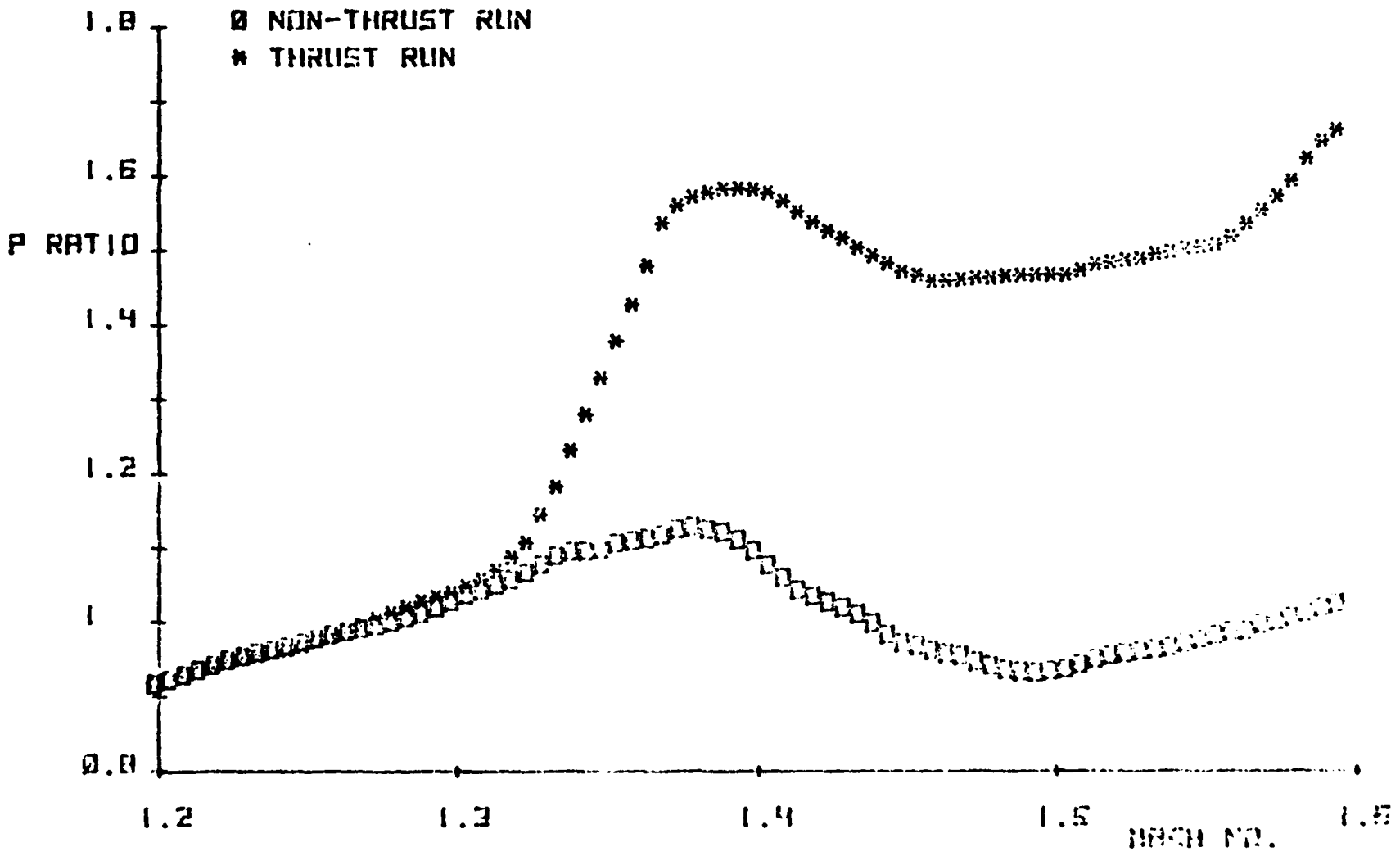

Figure 4. Surface pressure (x/D = 0.20)/ambient pressure, Run 5F-F4.

Run No. 5F-F4

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA
T+ 3.160	1.559	21.581	1.547	1.074	1.028	1.027	0.990	1.047	1.336
T+ 3.170	1.563	21.668	1.558	1.074	1.032	1.033	0.992	1.047	1.345
T+ 3.180	1.565	21.728	1.566	1.077	1.026	1.031	0.984	1.034	1.367
T+ 3.190	1.567	21.789	1.570	1.082	1.021	1.025	0.976	1.023	1.385
T+ 3.200	1.569	21.855	1.573	1.089	1.025	1.024	0.980	1.029	1.372
T+ 3.210	1.571	21.907	1.580	1.093	1.038	1.031	0.996	1.052	1.358
T+ 3.220	1.574	21.987	1.588	1.093	1.048	1.044	1.014	1.078	1.357
T+ 3.230	1.576	22.044	1.597	1.093	1.048	1.052	1.017	1.085	1.376
T+ 3.240	1.578	22.086	1.603	1.098	1.040	1.051	1.001	1.066	1.415
T+ 3.250	1.579	22.116	1.609	1.107	1.030	1.042	0.978	1.035	1.434
T+ 3.260	1.580	22.166	1.615	1.120	1.029	1.035	0.970	1.023	1.425
T+ 3.270	1.582	22.213	1.621	1.128	1.039	1.040	0.988	1.048	1.390
T+ 3.280	1.583	22.245	1.626	1.128	1.058	1.055	1.023	1.096	1.354
T+ 3.290	1.584	22.276	1.631	1.121	1.072	1.071	1.048	1.126	1.340
T+ 3.300	1.585	22.303	1.636	1.114	1.069	1.074	1.041	1.113	1.350
T+ 3.310	1.586	22.328	1.641	1.109	1.055	1.066	1.007	1.071	1.392
T+ 3.320	1.587	22.359	1.646	1.112	1.043	1.055	0.975	1.035	1.434
T+ 3.330	1.588	22.372	1.651	1.121	1.043	1.050	0.968	1.030	1.434
T+ 3.340	1.588	22.383	1.654	1.132	1.054	1.057	0.991	1.056	1.395
T+ 3.350	1.589	22.399	1.656	1.137	1.067	1.069	1.026	1.100	1.342
T+ 3.360	1.589	22.414	1.658	1.132	1.079	1.083	1.054	1.136	1.317
T+ 3.370	1.589	22.418	1.661	1.127	1.080	1.089	1.055	1.141	1.334
T+ 3.380	1.589	22.398	1.665	1.125	1.068	1.081	1.025	1.102	1.379
T+ 3.390	1.589	22.411	1.668	1.130	1.051	1.063	0.986	1.053	1.415
T+ 3.400	1.589	22.419	1.666	1.140	1.046	1.049	0.971	1.032	1.416
T+ 3.410	1.589	22.410	1.664	1.148	1.060	1.053	0.992	1.056	1.379
T+ 3.420	1.589	22.403	1.665	1.146	1.079	1.069	1.030	1.102	1.321
T+ 3.430	1.589	22.396	1.670	1.137	1.089	1.084	1.056	1.136	1.277
T+ 3.440	1.590	22.428	1.674	1.128	1.085	1.087	1.055	1.142	1.289
T+ 3.450	1.587	22.342	1.672	1.126	1.076	1.080	1.030	1.1[illegible]7	1.343
T+ 3.460	1.585	22.296	1.669	1.130	1.068	1.071	1.002	1.079	1.386
T+ 3.470	1.584	22.262	1.664	1.134	1.062	1.064	0.990	1.051	1.384
T+ 3.480	1.583	22.236	1.660	1.134	1.066	1.067	1.004	1.062	1.334
T+ 3.490	1.582	22.221	1.651	1.129	1.079	1.076	1.034	1.102	1.259
T+ 3.500	1.580	22.162	1.624	1.121	1.083	1.082	1.045	1.124	1.183
T+ 3.510	1.579	22.132	1.574	1.114	1.067	1.072	1.014	092	1.124
T+ 3.520	1.578	22.100	1.505	1.102	1.035	1.044	0.951	1.019	1.073
T+ 3.530	1.577	22.056	1.428	1.086	1.008	1.012	0.897	0.956	1.038
T+ 3.540	1.575	22.014	1.356	1.069	1.006	0.996	0.884	0.942	1.025
T+ 3.550	1.574	21.977	1.295	1.058	1.026	1.006	0.908	0.974	1.021
T+ 3.560	1.571	21.897	1.240	1.053	1.051	1.039	0.943	1.022	1.028
T+ 3.570	1.571	21.902	1.195	1.052	1.060	1.063	0.958	1.044	1.028
T+ 3.580	1.570	21.862	1.156	1.049	1.050	1.065	0.952	1.036	1.015
T+ 3.590	1.568	21.831	1.127	1.044	1.033	1.049	0.931	1.011	1.005
T+ 3.600	1.567	21.791	1.102	1.038	1.022	1.028	0.918	0.992	1.000

	TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA
T+	2.710	1.367	16.474	1.554	1.549	1.587	1.544	1.382	1.068	1.623
T+	2.720	1.368	16.600	1.569	1.558	1.577	1.527	1.347	1.034	1.609
T+	2.730	1.373	16.729	1.579	1.564	1.559	1.511	1.324	1.017	1.596
T+	2.740	1.379	16.863	1.586	1.567	1.542	1.501	1.303	1.013	1.588
T+	2.750	1.384	16.988	1.589	1.566	1.534	1.488	1.254	1.008	1.573
T+	2.760	1.388	17.106	1.590	1.564	1.527	1.462	1.163	1.005	1.567
T+	2.770	1.393	17.224	1.589	1.561	1.518	1.423	1.064	1.010	1.565
T+	2.780	1.398	17.344	1.586	1.557	1.502	1.386	0.994	1.013	1.547
T+	2.790	1.403	17.478	1.582	1.551	1.477	1.354	0.960	1.005	1.518
T+	2.800	1.409	17.615	1.570	1.539	1.443	1.319	0.948	0.998	1.496
T+	2.810	1.414	17.731	1.556	1.524	1.413	1.274	0.946	1.004	1.486
T+	2.820	1.418	17.853	1.542	1.510	1.390	1.221	0.948	1.011	1.468
T+	2.830	1.423	17.975	1.530	1.500	1.370	1.174	0.950	1.015	1.447
T+	2.840	1.428	18.094	1.517	1.488	1.353	1.145	0.948	1.011	1.441
T+	2.850	1.431	18.179	1.503	1.475	1.338	1.129	0.944	1.007	1.438
T+	2.860	1.435	18.283	1.493	1.463	1.321	1.115	0.944	1.005	1.433
T+	2.870	1.443	18.469	1.484	1.454	1.290	1.090	0.948	1.008	1.431
T+	2.880	1.447	18.580	1.477	1.445	1.248	1.053	0.950	1.011	1.436
T+	2.890	1.452	18.700	1.470	1.437	1.205	1.015	0.948	1.015	1.433
T+	2.900	1.456	18.821	1.467	1.426	1.160	0.986	0.945	1.020	1.416
T+	2.910	1.461	18.939	1.467	1.413	1.116	0.973	0.947	1.025	1.410
T+	2.920	1.465	19.054	1.467	1.398	1.079	0.969	0.952	1.025	1.405
T+	2.930	1.470	19.168	1.469	1.385	1.049	0.970	0.956	1.021	1.389
T+	2.940	1.475	19.293	1.474	1.370	1.026	0.969	0.956	1.019	1.379
T+	2.950	1.479	19.407	1.474	1.351	1.011	0.968	0.956	1.023	1.364
T+	2.960	1.483	19.527	1.472	1.332	1.005	0.971	0.957	1.026	1.354
T+	2.970	1.488	19.638	1.472	1.313	0.999	0.976	0.958	1.024	1.350
T+	2.980	1.492	19.752	1.475	1.295	0.993	0.978	0.959	1.022	1.336
T+	2.990	1.496	19.851	1.478	1.276	0.992	0.979	0.962	1.025	1.322
T+	3.000	1.501	19.988	1.475	1.253	0.993	0.980	0.964	1.029	1.303
T+	3.010	1.505	20.100	1.475	1.228	0.994	0.981	0.965	1.031	1.289
T+	3.020	1.509	20.211	1.479	1.203	0.994	0.982	0.964	1.029	1.280
T+	3.030	1.513	20.327	1.484	1.178	0.994	0.984	0.964	1.027	1.272
T+	3.040	1.517	20.430	1.488	1.157	0.999	0.989	0.966	1.032	1.277
T+	3.050	1.521	20.536	1.492	1.142	1.004	0.993	0.969	1.036	1.282
T+	3.060	1.525	20.626	1.496	1.131	1.006	0.997	0.969	1.032	1.284
T+	3.070	1.529	20.745	1.500	1.118	1.004	0.996	0.966	1.023	1.295
T+	3.080	1.534	20.870	1.505	1.105	1.004	0.995	0.964	1.015	1.305
T+	3.090	1.537	20.950	1.508	1.094	1.007	0.998	0.965	1.014	1.294
T+	6.100	1.540	21.056	1.511	1.086	1.011	1.003	0.969	1.023	1.278
T+	3.110	1.544	21.162	1.515	1.080	1.017	1.011	0.977	1.038	1.286
T+	3.120	1.548	21.257	1.521	1.079	1.020	1.015	0.980	1.045	1.301
T+	3.130	1.551	21.346	1.525	1.080	1.017	1.016	0.977	1.037	1.303
T+	3.140	1.553	21.412	1.530	1.080	1.015	1.015	0.975	1.030	1.311
T+	3.150	1.557	21.500	1.537	1.077	1.019	1.017	0.980	1.037	1.323

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PA	CH 8 PS6/PA	CH 9 PS7/PA
T+ 2.260	1.118	11.087	0.883	1.028	1.099	1.120	1.118	1.062	1.045
T+ 2.270	1.123	11.197	0.881	1.033	1.103	1.123	1.123	1.061	1.050
T+ 2.280	1.129	11.306	0.887	1.040	1.108	1.127	1.129	1.065	1.056
T+ 2.290	1.134	11.417	0.897	1.045	1.116	1.134	1.134	1.074	1.062
T+ 2.300	1.140	11.528	0.899	1.052	1.123	1.143	1.138	1.082	1.067
T+ 2.310	1.145	11.638	0.899	1.057	1.131	1.151	1.143	1.089	1.075
T+ 2.320	1.151	11.750	0.907	1.062	1.134	1.155	1.150	1.093	1.078
T+ 2.330	1.156	11.863	0.917	1.069	1.136	1.156	1.155	1.094	1.078
T+ 2.340	1.162	11.977	0.917	1.075	1.141	1.159	1.158	1.097	1.087
T+ 2.350	1.167	12.089	0.918	1.081	1.151	1.166	1.164	1.104	1.097
T+ 2.360	1.173	12.201	0.928	1.088	1.162	1.178	1.173	1.116	1.103
T+ 2.370	1.178	12.313	0.933	1.094	1.168	1.187	1.180	1.126	1.106
T+ 2.380	1.183	12.426	0.933	1.100	1.170	1.191	1.183	1.128	1.109
T+ 2.390	1.189	12.541	0.940	1.104	1.174	1.193	1.187	1.128	1.119
T+ 2.400	1.194	12.660	0.946	1.110	1.182	1.198	1.193	1.131	1.124
T+ 2.410	1.200	12.775	0.948	1.117	1.192	1.206	1.200	1.138	1.128
T+ 2.420	1.205	12.889	0.951	1.123	1.198	1.215	1.204	1.148	1.135
T+ 2.430	1.211	13.006	0.961	1.128	1.203	1.222	1.209	1.155	1.143
T+ 2.440	1.216	13.123	0.968	1.134	1.212	1.229	1.217	1.159	1.152
T+ 2.450	1.222	13.244	0.969	1.141	1.218	1.235	1.224	1.160	1.152
T+ 2.460	1.227	13.365	0.977	1.148	1.224	1.239	1.230	1.164	1.160
T+ 2.470	1.232	13.475	0.984	1.155	1.233	1.246	1.237	1.175	1.176
T+ 2.480	1.238	13.589	0.987	1.161	1.244	1.258	1.248	1.187	1.180
T+ 2.490	1.243	13.706	0.992	1.167	1.250	1.268	1.256	1.195	1.182
T+ 2.500	1.248	13.826	0.999	1.171	1.251	1.272	1.257	1.195	1.186
T+ 2.510	1.254	13.947	1.003	1.178	1.255	1.273	1.258	1.194	1.195
T+ 2.520	1.259	14,074	1.004	1.183	1.261	1.276	1.262	1.197	1.199
T+ 2.530	1.265	14.194	1.011	1.189	1.268	1.282	1.267	1.202	1.201
T+ 2.540	1.270	14.314	1.018	1.195	1.275	1.290	1.274	1.210	1.213
T+ 2.550	1.276	14.438	1.020	1.202	1.284	1.299	1.283	1.217	1.223
T+ 2.560	1.281	14.565	1.026	1.209	1.292	1.308	1.294	1.218	1.226
T+ 2.570	1.287	14.699	1.033	1.216	1.295	1.312	1.298	1.212	1.231
T+ 2.580	1.293	14.825	1.037	1.222	1.299	1.316	1.301	1.208	1.240
T+ 2.590	1.298	14.949	1.042	1.230	1.309	1.323	1.306	1.206	1.249
T+ 2.600	1.303	15.064	1.050	1.236	1.317	1.331	1.307	1.192	1.255
T+ 2.610	1.308	15.184	1.058	1.245	1.339	1.339	1.305	1.157	1.309
T+ 2.620	~~1.314~~	~~15.325~~	1.086	1.264	1.419	1.372	1.329	1.122	1.419
T+ 2.630	1.320	15.466	1.144	1.304	1.546	1.448	1.398	1.120	1.513
T+ 2.640	1.326	15.594	1.227	1.361	1.636	1.542	1.474	1.162	1.582
T+ 2.650	1.331	15.721	1.313	1.413	1.641	1.593	1.502	1.207	1.632
T+ 2.660	1.336	15.840	1.381	1.453	1.609	1.589	1.484	1.213	1.664
T+ 2.670	1.342	15.979	1.430	1.482	1.597	1.563	1.459	1.186	1.660
T+ 2.680	1.347	16.105	1.471	1.505	1.601	1.550	1.448	1.154	1.636
T+ 2.690	1.352	16.228	1.508	1.524	1.600	1.552	1.439	1.133	1.631
T+ 2.700	1.357	16.351	1.535	1.538	1.592	1.553	1.416	1.106	1.633

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH10 PS8/PA	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P
T+ 2.260	1.118	11.087	1.017	1.096	0.931	1.106	1.083	1.153	0.862
T+ 2.270	1.123	11.197	1.021	1.096	0.934	1.109	1.089	1.162	0.865
T+ 2.280	1.129	11.306	1.026	1.100	0.939	1.115	1.098	1.171	0.865
T+ 2.290	1.134	11.417	1.032	1.107	0.944	1.121	1.105	1.180	0.868
T+ 2.300	1.140	11.528	1.037	1.116	0.950	1.130	1.112	1.185	0.874
T+ 2.310	1.145	11.638	1.044	1.123	0.957	1.138	1.116	1.190	0.886
T+ 2.320	1.151	11.750	1.048	1.126	0.963	1.143	1.121	1.199	0.894
T+ 2.330	1.156	11.863	1.050	1.127	0.964	1.145	1.125	1.207	0.895
T+ 2.340	1.162	11.977	1.053	1.131	0.965	1.146	1.130	1.210	0.894
T+ 2.350	1.167	12.089	1.060	1.141	0.974	1.157	1.141	1.217	0.901
T+ 2.360	1.173	12.201	1.070	1.154	0.988	1.171	1.153	1.227	0.914
T+ 2.370	1.178	12.313	1.077	1.159	0.996	1.179	1.160	1.236	0.920
T+ 2.380	1.183	12.426	1.078	1.158	1.000	1.181	1.162	1.243	0.915
T+ 2.390	1.189	12.541	1.080	1.162	1.006	1.184	1.166	1.253	0.910
T+ 2.400	1.194	12.660	1.088	1.172	1.016	1.194	1.176	1.271	0.912
T+ 2.410	1.200	12.775	1.098	1.181	1.022	1.203	1.182	1.285	0.921
T+ 2.420	1.205	12.889	1.102	1.185	1.020	1.209	1.186	1.290	0.933
T+ 2.430	1.211	13.006	1.105	1.191	1.023	1.214	1.194	1.298	0.946
T+ 2.440	1.216	13.123	1.112	1.200	1.033	1.222	1.202	1.315	0.953
T+ 2.450	1.222	13.244	1.120	1.208	1.041	1.230	1.207	1.332	0.956
T+ 2.460	1.227	13.365	1.125	1.215	1.044	1.233	1.209	1.338	0.957
T+ 2.470	1.232	13.475	1.132	1.229	1.051	1.239	1.217	1.342	0.964
T+ 2.480	1.238	13.589	1.141	1.251	1.066	1.248	1.230	1.353	0.974
T+ 2.490	1.243	13.706	1.150	1.266	1.075	1.255	1.236	1.366	0.979
T+ 2.500	1.248	13.826	1.151	1.264	1.074	1.256	1.236	1.377	0.982
T+ 2.510	1.254	13.947	1.154	1.256	1.076	1.259	1.240	1.391	0.987
T+ 2.520	1.259	14.074	1.159	1.254	1.087	1.266	1.251	1.412	0.995
T+ 2.530	1.265	14.194	1.165	1.259	1.096	1.274	1.260	1.426	1.000
T+ 2.540	1.270	14.314	1.171	1.267	1.101	1.278	1.265	1.433	1.000
T+ 2.550	1.276	14.438	1.179	1.276	1.110	1.287	1.277	1.444	1.002
T+ 2.560	1.281	14.565	1.189	1.284	1.118	1.293	1.287	1.460	1.007
T+ 2.570	1.287	14.699	1.196	1.283	1.120	1.295	1.295	1.471	1.008
T+ 2.580	1.293	14.825	1.199	1.272	1.120	1.299	1.305	1.480	1.010
T+ 2.590	1.298	14.949	1.207	1.258	1.127	1.309	1.322	1.495	1.017
T+ 2.600	1.303	15.064	1.218	1.233	1.142	1.317	1.335	1.509	1.032
T+ 2.610	1.308	15.184	1.257	1.193	1.203	1.326	1.343	1.509	1.097
T+ 2.620	1.314	15.325	1.371	1.139	1.371	1.365	1.362	1.507	1.273
T+ 2.630	1.320	15.466	1.550	1.084	1.608	1.453	1.403	1.494	1.517
T+ 2.640	1.326	15.594	1.691	1.047	1.762	1.541	1.443	1.438	1.688
T+ 2.650	1.331	15.721	1.724	1.039	1.770	1.572	1.461	1.341	1.720
T+ 2.660	1.336	15.840	1.686	1.057	1.723	1.554	1.459	1.259	1.687
T+ 2.670	1.342	15.979	1.653	1.073	1.722	1.537	1.454	1.222	1.682
T+ 2.680	1.347	16.105	1.646	1.075	1.762	1.545	1.452	1.187	1.705
T+ 2.690	1.352	16.228	1.646	1.081	1.799	1.566	1.452	1.099	1.711
T+ 2.700	1.357	16.351	1.643	1.098	1.822	1.583	1.447	0.979	1.690

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH10 PS8/PA	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P
T+ 2.710	1.363	16.474	1.640	1.117	1.842	1.588	1.416	0.894	1.667
T+ 2.720	1.368	16.600	1.631	1.120	1.853	1.579	1.344	0.873	1.652
T+ 2.730	1.373	16.729	1.613	1.113	1.855	1.559	1.257	0.881	1.641
T+ 2.740	1.379	16.863	1.597	1.112	1.848	1.514	1.204	0.878	1.622
T+ 2.750	1.384	16.988	1.586	1.118	1.813	1.438	1.208	0.861	1.590
T+ 2.760	1.388	17.106	1.581	1.123	1.732	1.352	1.241	0.854	1.556
T+ 2.770	1.393	17.224	1.574	1.125	1.634	1.302	1.270	0.872	1.540
T+ 2.780	1.398	17.344	1.564	1.124	1.564	1.297	1.286	0.895	1.536
T+ 2.790	1.403	17.478	1.542	1.123	1.520	1.300	1.285	0.900	1.519
T+ 2.800	1.409	17.615	1.511	1.125	1.484	1.293	1.280	0.892	1.491
T+ 2.810	1.414	17.731	1.489	1.133	1.455	1.280	1.278	0.891	1.468
T+ 2.820	1.418	17.853	1.479	1.136	1.424	1.277	1.294	0.898	1.452
T+ 2.830	1.423	17.975	1.468	1.136	1.390	1.286	1.310	0.904	1.432
T+ 2.840	1.428	18.094	1.453	1.135	1.361	1.291	1.291	0.899	1.409
T+ 2.850	1.431	18.179	1.443	1.137	1.353	1.290	1.252	0.892	1.396
T+ 2.860	1.435	18.283	1.447	1.147	1.359	1.285	1.232	0.884	1.391
T+ 2.870	1.443	18.469	1.453	1.159	1.350	1.275	1.231	0.877	1.382
T+ 2.880	1.447	18.580	1.460	1.168	1.321	1.262	1.227	0.880	1.361
T+ 2.890	1.452	18.700	1.467	1.173	1.306	1.252	1.203	0.888	1.339
T+ 2.900	1.456	18.821	1.467	1.175	1.322	1.246	1.160	0.892	1.332
T+ 2.910	1.461	18.939	1.461	1.173	1.341	1.237	1.104	0.889	1.334
T+ 2.920	1.465	19.054	1.456	1.169	1.333	1.229	1.039	0.892	1.342
T+ 2.930	1.470	19.168	1.457	1.167	1.317	1.231	0.971	0.900	1.347
T+ 2.940	1.475	19.293	1.457	1.171	1.316	1.232	0.918	0.904	1.341
T+ 2.950	1.479	19.407	1.451	1.175	1.323	1.217	0.873	0.904	1.335
T+ 2.960	1.483	19.527	1.441	1.176	1.324	1.194	0.808	0.903	1.343
T+ 2.970	1.488	19.638	1.434	1.177	1.315	1.185	0.740	0.904	1.355
T+ 2.980	1.492	19.752	1.433	1.181	1.311	1.182	0.710	0.907	1.362
T+ 2.990	1.496	19.851	1.435	1.186	1.337	1.166	0.715	0.911	1.370
T+ 3.000	1.501	19.988	1.431	1.191	1.369	1.137	0.731	0.915	1.390
T+ 3.010	1.505	20.100	1.428	1.193	1.377	1.088	0.733	0.919	1.412
T+ 3.020	1.509	20.211	1.428	1.188	1.366	1.008	0.725	0.924	1.424
T+ 3.030	1.513	20.327	1.428	1.184	1.369	0.907	0.720	0.929	1.431
T+ 3.040	1.517	20.430	1.428	1.189	1.391	0.827	0.722	0.930	1.438
T+ 3.050	1.521	20.536	1.432	1.195	1.403	0.800	0.732	0.929	1.441
T+ 3.060	1.525	20.626	1.442	1.194	1.394	0.806	0.738	0.923	1.439
T+ 3.070	1.529	20.745	1.458	1.191	1.385	0.813	0.742	0.920	1.441
T+ 3.080	1.534	20.870	1.472	1.195	1.391	0.812	0.745	0.922	1.449
T+ 3.090	1.537	20.950	1.476	1.200	1.403	0.808	0.748	0.925	1.453
T+ 3.100	1.540	21.056	1.464	1.199	1.410	0.811	0.751	0.930	1.453
T+ 3.110	1.544	21.162	1.451	1.198	1.417	0.818	0.752	0.935	1.455
T+ 3.120	1.548	21.257	1.456	1.198	1.423	0.824	0.757	0.941	1.465
T+ 3.130	1.551	21.346	1.477	1.198	1.418	0.824	0.761	0.945	1.475
T+ 3.140	1.553	21.412	1.498	1.201	1.409	0.822	0.761	0.945	1.485
T+ 3.150	1.557	21.500	1.507	1.209	1.418	0.828	0.765	0.948	1.497

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	TIME	CH MACHINUM	CH 2 DYNAMIC	CH10 PS8/PA	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P
T+	3.160	1.559	21.581	1.513	1.220	1.447	0.838	0.774	0.955	1.502
T+	3.170	1.563	21.668	1.516	1.222	1.468	0.841	0.781	0.958	1.495
T+	3.180	1.565	21.728	1.526	1.214	1.462	0.837	0.781	0.956	1.486
T+	3.190	1.567	21.789	1.540	1.208	1.442	0.833	0.777	0.953	1.480
T+	3.200	1.569	21.855	1.548	1.210	1.435	0.837	0.776	0.956	1.497
T+	3.210	1.571	21.907	1.546	1.221	1.447	0.850	0.777	0.965	1.507
T+	3.220	1.574	21.987	1.539	1.231	1.465	0.863	0.781	0.975	1.519
T+	3.230	1.576	22.044	1.545	1.228	1.478	0.873	0.788	0.979	1.531
T+	3.240	1.578	23.086	1.571	1.219	1.485	0.873	0.797	0.978	1.540
T+	3.250	1.579	22.116	1.595	1.213	1.486	0.868	0.809	0.975	1.540
T+	3.260	1.580	22.166	1.595	1.216	1.479	0.860	0.810	0.973	1.534
T+	3.270	1.582	22.213	1.571	1.226	1.469	0.860	0.803	0.974	1.528
T+	3.280	1.583	22.245	1.548	1.238	1.474	0.873	0.797	0.981	1.530
T+	3.290	1.584	22.276	1.547	1.250	1.494	0.884	0.800	0.991	1.535
T+	3.300	1.585	22.303	1.567	1.251	1.509	0.890	0.808	0.998	1.537
T+	3.310	1.586	22.328	1.594	1.236	1.505	0.887	0.818	0.999	1.543
T+	3.320	1.587	22.359	1.612	1.217	1.492	0.883	0.828	0.999	1.553
T+	3.330	1.588	22.372	1.612	1.213	1.487	0.878	0.834	0.998	1.560
T+	3.340	1.588	22.383	1.588	1.222	1.492	0.868	0.828	0.994	1.557
T+	3.350	1.589	22.399	1.553	1.234	1.492	0.858	0.814	0.989	1.554
T+	3.360	1.589	22.414	1.532	1.246	1.490	0.857	0.809	0.986	1.564
T+	3.370	1.589	22.418	1.547	1.249	1.503	0.869	0.819	0.991	1.574
T+	3.380	1.589	22.398	1.582	1.240	1.525	0.884	0.833	0.994	1.563
T+	3.390	1.589	22.411	1.604	1.226	1.525	0.888	0.839	0.993	1.539
T+	3.400	1.589	22.419	1.592	1.217	1.499	0.885	0.837	0.993	1.532
T+	3.410	1.589	22.410	1.570	1.224	1.486	0.881	0.831	0.999	1.550
T+	3.420	1.589	22.403	1.554	1.236	1.501	0.875	0.824	1.008	1.565
T+	3.430	1.589	22.396	1.545	1.244	1.517	0.867	0.818	1.010	1.561
T+	3.440	1.590	22.428	1.543	1.242	1.510	0.862	0.815	1.002	1.556
T+	3.450	1.587	22.342	1.559	1.237	1.499	0.867	0.825	0.998	1.562
T+	3.460	1.585	22.296	1.588	1.232	1.506	0.873	0.838	1.006	1.566
T+	3.470	1.584	22.262	1.599	1.229	1.511	0.873	0.842	1.015	1.557
T+	3.480	1.583	22.236	1.558	1.234	1.494	0.870	0.837	1.014	1.537
T+	3.490	1.582	22.221	1.451	1.244	1.433	0.875	0.828	1.008	1.477
T+	3.500	1.580	22.162	1.299	1.246	1.309	0.887	0.825	1.005	1.330
T+	3.510	1.579	22.132	1.158	1.236	1.134	0.889	0.830	0.998	1.116
T+	3.520	1.578	22.100	1.067	1.224	0.985	0.870	0.842	0.980	0.912
T+	3.530	1.577	22.056	1.024	1.224	0.905	0.844	0.855	0.961	0.799
T+	3.540	1.575	22.014	1.008	1.235	0.884	0.834	0.863	0.959	0.818
T+	3.550	1.574	21.977	1.007	1.242	0.890	0.848	0.860	0.977	0.902
T+	3.560	1.571	21.897	1.017	1.241	0.886	0.866	0.846	1.002	0.931
T+	3.570	1.571	21.902	1.028	1.234	0.868	0.872	0.833	1.015	0.869
T+	3.580	1.570	21.862	1.028	1.226	0.846	0.867	0.832	1.008	0.790
T+	3.590	1.568	21.831	1.016	1.223	0.831	0.858	0.837	0.988	0.760
T+	3.600	1.567	21.791	1.004	1.224	0.828	0.854	0.843	0.970	0.774

APPENDIX J

Run 5F-F5

Run Date: 13 May 77

Configuration: Angle of Attack = -2° Fins installed "X" Configuration

Motor Firing: Time 2.58 to 3.48 seconds

Remarks:

Motor preheated prior to Run to increase peak thrust. Maximum coefficient of thrust was 29.

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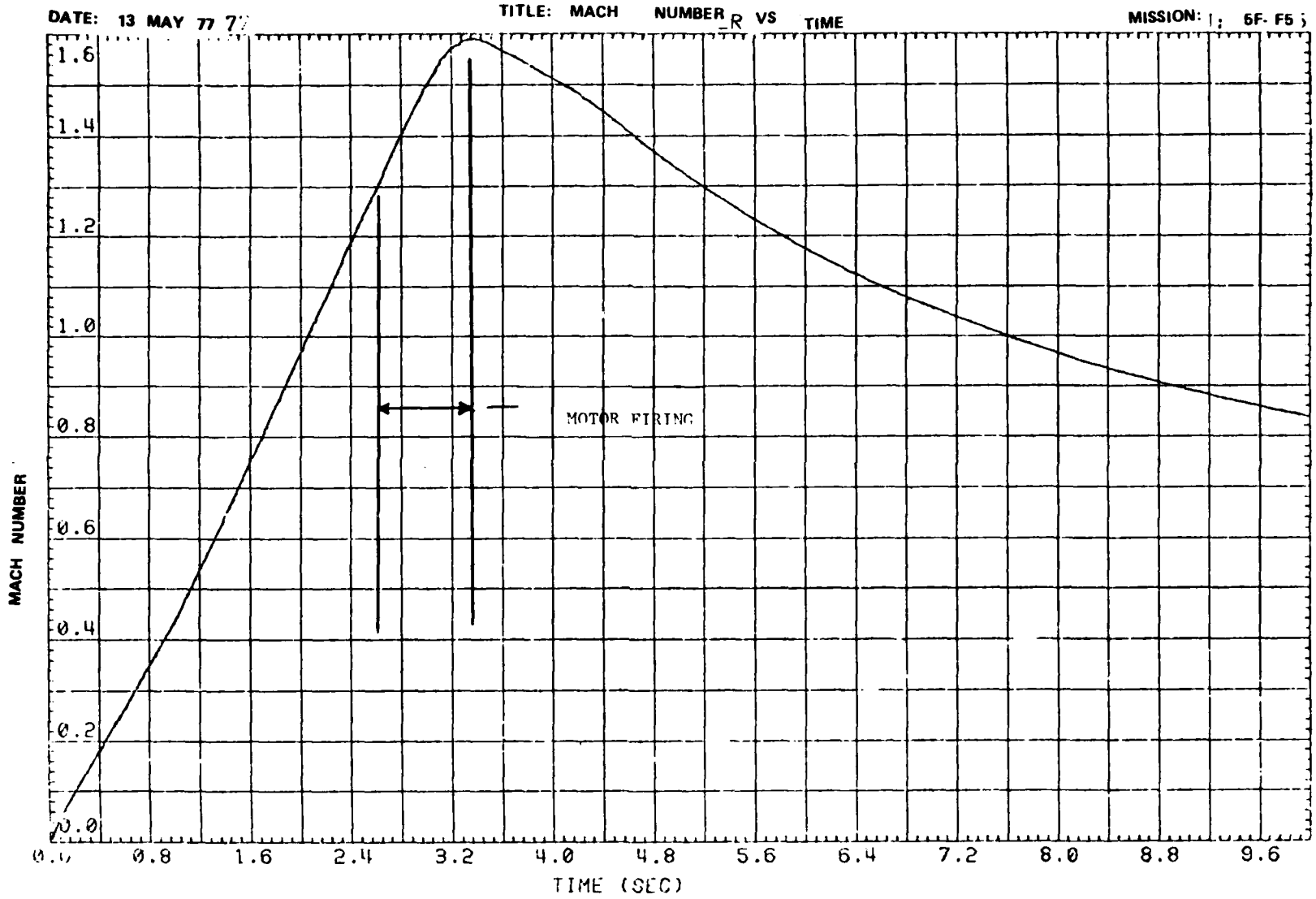

Figure 1. Test trajectory, Run 5F-F5.

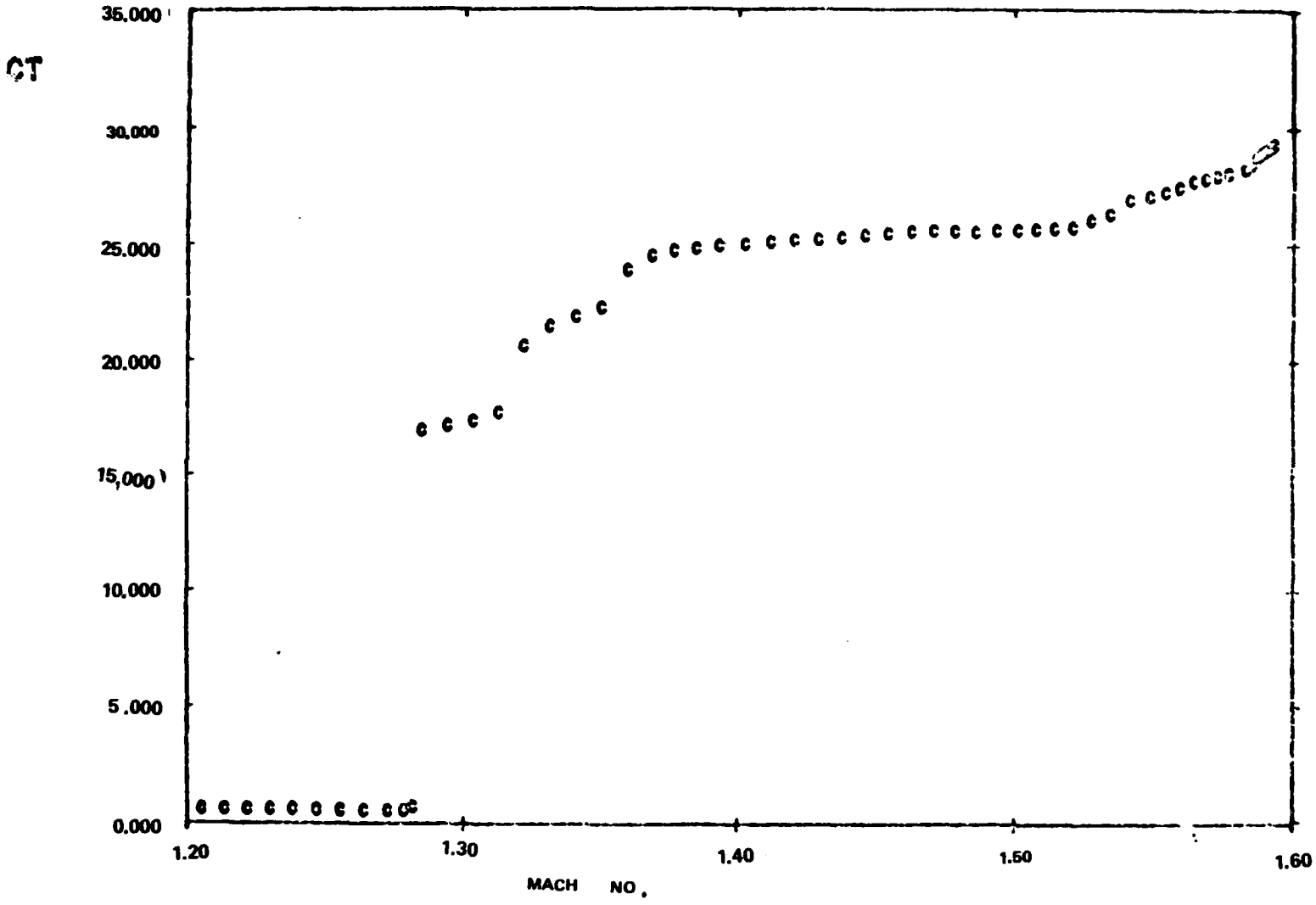

Figure 2. Thrust coefficient, Run 5F-F5.

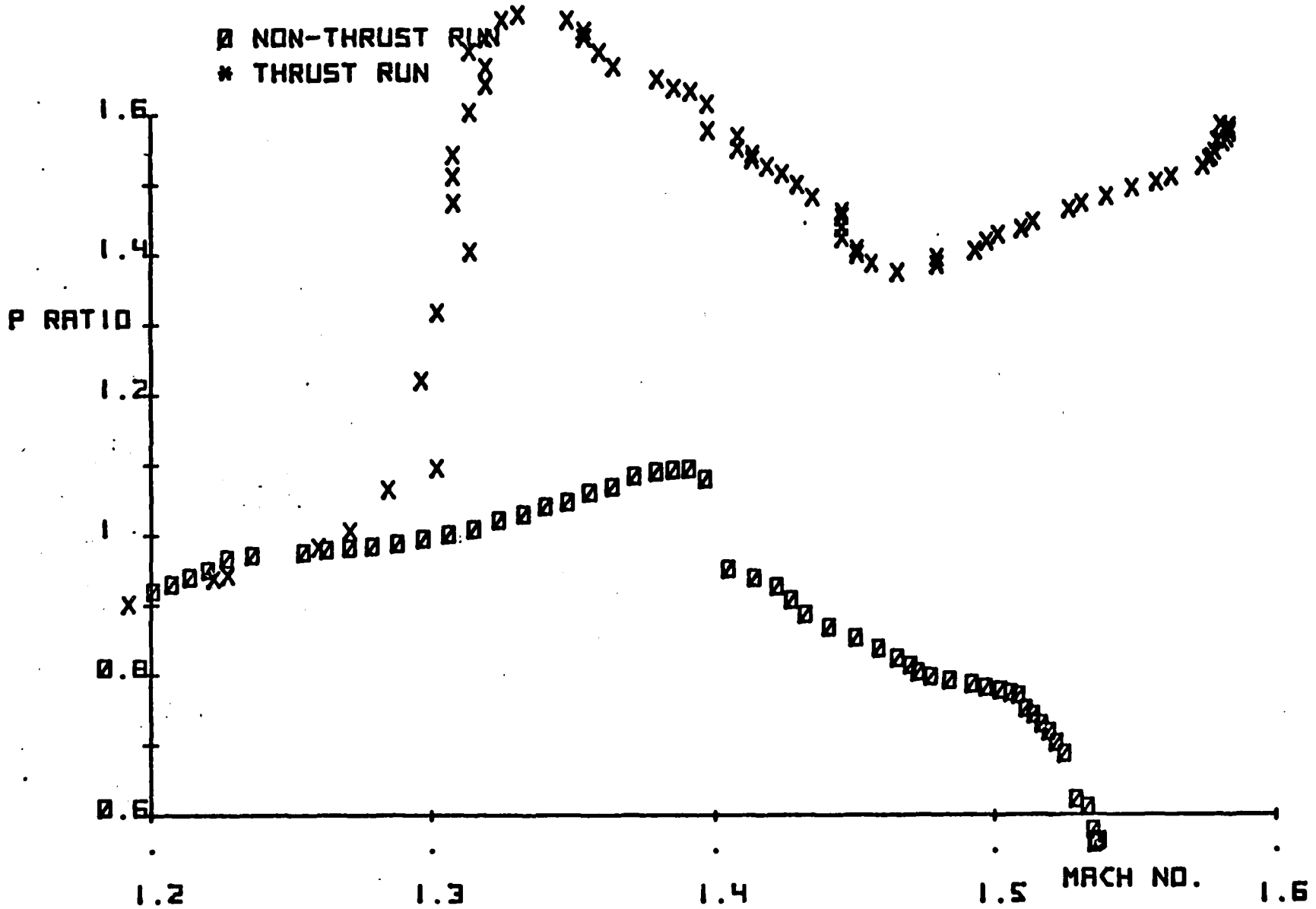

Figure 3. Base pressure/ambient pressure, Run 5F-F5.

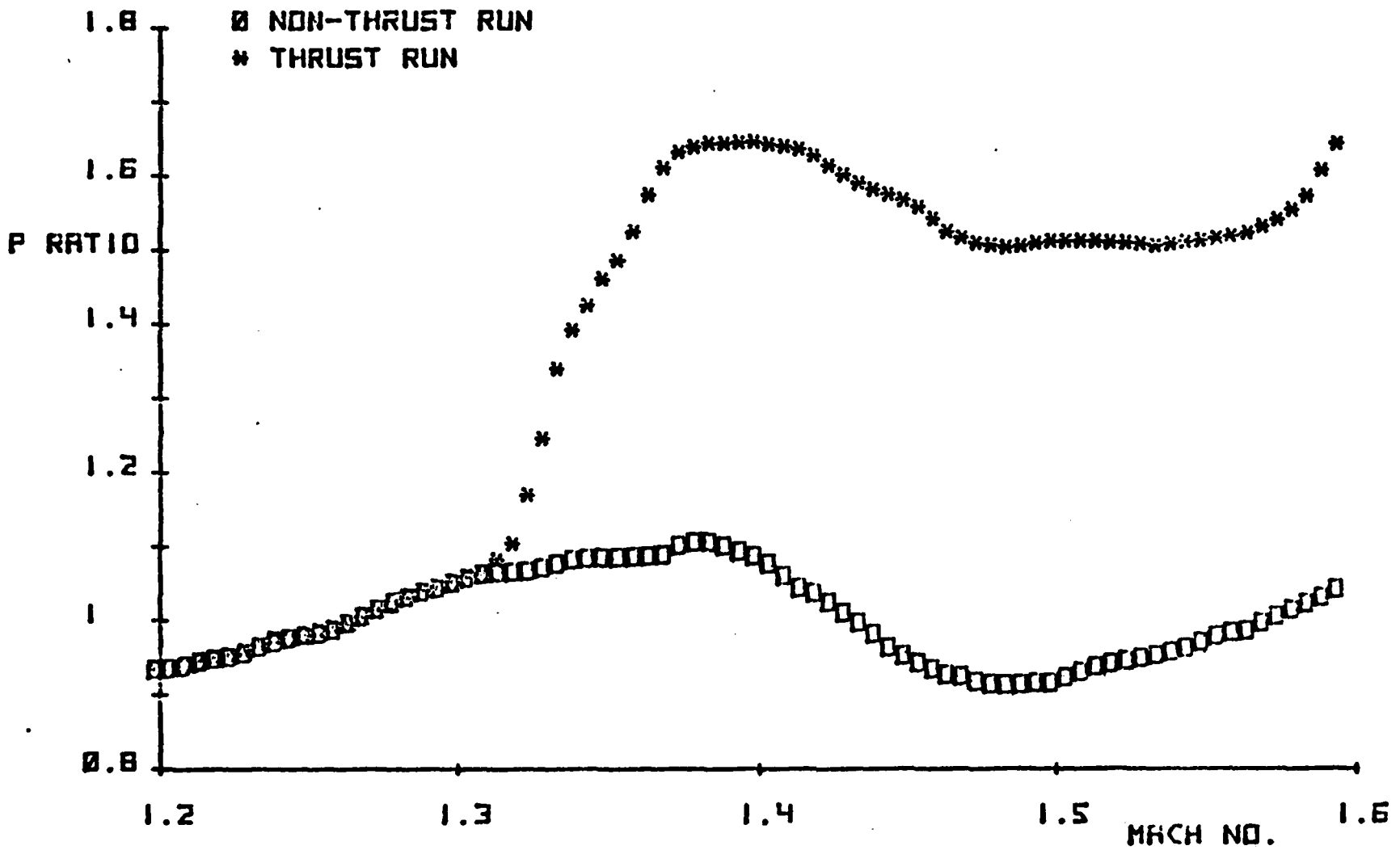

Figure 4. Surface pressure (x/D = 0.2)/ambient pressure, Run 5F-F5.

RUN 5F-F3

	TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PS	CH 8 PS6/PA	CH 9 PS7/PA
T+	2.260	1.112	10.941	0.868	1.008	1.066	1.088	1.095	1.043	1.017
T+	2.270	1.117	11.050	0.872	1.007	1.068	1.088	1.095	1.041	1.019
T+	2.280	1.123	11.158	0.877	1.013	1.071	1.091	1.098	1.039	1.022
T+	2.290	1.128	11.268	0.881	1.025	1.078	1.099	1.106	1.043	1.029
T+	2.300	1.134	11.379	0.884	1.031	1.088	1.110	1.114	1.049	1.039
T+	2.310	1.139	11.490	0.888	1.031	1.096	1.117	1.119	1.052	1.046
T+	2.320	1.145	11.600	0.895	1.036	1.101	1.121	1.124	1.054	1.051
T+	2.330	1.150	11.713	0.900	1.047	1.102	1.122	1.125	1.054	1.053
T+	2.340	1.156	11.826	0.903	1.054	1.105	1.125	1.128	1.055	1.056
T+	2.350	1.161	11.938	0.906	1.054	1.114	1.135	1.135	1.063	1.065
T+	2.360	1.167	12.051	0.910	1.059	1.126	1.149	1.148	1.073	1.077
T+	2.370	1.172	12.160	0.918	1.071	1.135	1.157	1.157	1.081	1.086
T+	2.380	1.178	12.276	0.924	1.077	1.137	1.155	1.156	1.082	1.084
T+	2.390	1.183	12.393	0.927	1.077	1.134	1.152	1.154	1.081	1.081
T+	2.400	1.189	12.507	0.930	1.082	1.140	1.160	1.159	1.084	1.088
T+	2.410	1.194	12.622	0.936	1.092	1.150	1.172	1.169	1.091	1.100
T+	2.420	1.199	12.735	0.942	1.100	1.162	1.181	1.178	1.101	1.110
T+	2.430	1.205	12.851	0.946	1.101	1.167	1.185	1.185	1.110	1.112
T+	2.440	1.210	12.967	0.951	1.107	1.170	1.188	1.191	1.118	1.116
T+	2.450	1.216	13.086	0.957	1.116	1.174	1.194	1.193	1.121	1.123
T+	2.460	1.221	13.205	0.961	1.122	1.179	1.198	1.194	1.121	1.126
T+	2.470	1.226	13.317	0.963	1.123	1.186	1.204	1.200	1.123	1.131
T+	2.480	1.232	13.435	0.968	1.128	1.198	1.216	1.212	1.134	1.143
T+	2.490	1.237	13.555	0.975	1.139	1.211	1.232	1.225	1.145	1.159
T+	2.500	1.243	13.574	0.983	1.145	1.218	1.238	1.231	1.152	1.165
T+	2.510	1.248	13.794	0.987	1.148	1.220	1.238	1.232	1.155	1.165
T+	2.520	1.254	13.918	0.993	1.155	1.225	1.242	1.241	1.164	1.171
T+	2.530	1.259	14.041	1.000	1.165	1.234	1.253	1.253	1.174	1.181
T+	2.540	1.265	14.164	1.006	1.171	1.245	1.265	1.263	1.180	1.190
T+	2.550	1.270	14.286	1.011	1.176	1.254	1.272	1.271	1.185	1.197
T+	2.560	1.276	14.408	1.016	1.186	1.261	1.279	1.278	1.192	1.205
T+	2.570	1.281	14.533	1.023	1.197	1.267	1.286	1.283	1.198	1.215
T+	2.580	1.287	14.665	1.029	1.200	1.268	1.286	1.281	1.198	1.214
T+	2.590	1.293	14.795	1.033	1.203	1.269	1.287	1.282	1.197	1.215
T+	2.600	1.298	14.908	1.040	1.213	1.276	1.297	1.291	1.200	1.225
T+	2.610	1.303	15.034	1.047	1.223	1.287	1.308	1.302	1.201	1.237
T+	2.620	1.309	15.174	1.060	1.230	1.312	1.325	1.316	1.198	1.270
T+	2.630	1.314	15.295	1.095	1.253	1.379	1.378	1.352	1.200	1.354
T+	2.640	1.320	15.416	1.165	1.299	1.500	1.477	1.420	1.218	1.477
T+	2.650	1.325	15.545	1.253	1.361	1.607	1.562	1.483	1.238	1.581
T+	2.660	1.331	15.682	1.335	1.416	1.641	1.582	1.503	1.229	1.639
T+	2.670	1.337	15.825	1.404	1.459	1.625	1.563	1.491	1.189	1.671
T+	2.680	1.343	15.959	1.459	1.492	1.612	1.558	1.477	1.146	1.692
T+	2.690	1.348	16.084	1.504	1.521	1.619	1.569	1.474	1.128	1.698
T+	2.700	1.353	16.207	1.541	1.546	1.636	1.577	1.473	1.129	1.697

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PS	CH 8 PS6/PA	CH 9 PS7/PA
T+ 2.710	1.358	16.331	1.576	1.569	1.650	1.579	1.460	1.124	1.705
T+ 2.720	1.364	16.473	1.606	1.591	1.656	1.581	1.431	1.102	1.715
T+ 2.730	1.370	16.606	1.627	1.607	1.645	1.570	1.398	1.076	1.705
T+ 2.740	1.375	16.731	1.640	1.617	1.622	1.552	1.379	1.068	1.678
T+ 2.750	1.379	16.846	1.644	1.621	1.598	1.536	1.369	1.073	1.653
T+ 2.760	1.385	16.978	1.647	1.617	1.577	1.520	1.341	1.075	1.632
T+ 2.770	1.390	17.100	1.647	1.614	1.559	1.502	1.290	1.073	1.618
T+ 2.780	1.395	17.240	1.643	1.610	1.547	1.492	1.249	1.073	1.609
T+ 2.790	1.401	17.374	1.640	1.605	1.539	1.490	1.235	1.073	1.604
T+ 2.800	1.406	17.489	1.636	1.599	1.529	1.476	1.216	1.067	1.588
T+ 2.810	1.410	17.612	1.627	1.589	1.507	1.439	1.155	1.056	1.556
T+ 2.820	1.415	17.735	1.618	1.577	1.488	1.392	1.071	1.055	1.531
T+ 2.830	1.420	17.853	1.607	1.567	1.481	1.339	1.008	1.067	1.528
T+ 2.840	1.425	17.979	1.597	1.560	1.472	1.265	0.986	1.084	1.532
T+ 2.850	1.429	18.075	1.586	1.552	1.432	1.172	0.986	1.095	1.519
T+ 2.860	1.433	18.176	1.571	1.541	1.365	1.090	0.988	1.096	1.499
T+ 2.870	1.439	18.333	1.559	1.526	1.300	1.048	0.982	1.089	1.486
T+ 2.880	1.444	18.468	1.549	1.511	1.259	1.040	0.973	1.071	1.475
T+ 2.890	1.449	18.582	1.539	1.493	1.235	1.041	0.974	1.057	1.450
T+ 2.900	1.454	18.711	1.530	1.473	1.198	1.034	0.989	1.066	1.414
T+ 2.910	1.458	18.822	1.518	1.444	1.140	1.018	1.003	1.090	1.373
T+ 2.920	1.462	18.922	1.513	1.413	1.077	1.003	1.007	1.107	1.339
T+ 2.930	1.467	19.061	1.513	1.378	1.041	1.001	1.005	1.103	1.312
T+ 2.940	1.471	19.164	1.515	1.343	1.035	1.006	1.004	1.092	1.289
T+ 2.950	1.476	19.294	1.518	1.309	1.036	1.009	1.005	1.091	1.270
T+ 2.960	1.481	19.409	1.522	1.274	1.031	1.007	1.008	1.097	1.254
T+ 2.970	1.485	19.532	1.527	1.239	1.021	1.007	1.013	1.103	1.246
T+ 2.980	1.492	19.704	1.531	1.210	1.018	1.010	1.015	1.106	1.236
T+ 2.990	1.494	19.770	1.532	1.182	1.021	1.012	1.016	1.105	1.217
T+ 3.000	1.499	19.880	1.531	1.155	1.024	1.013	1.018	1.105	1.190
T+ 3.010	1.503	19.994	1.528	1.130	1.026	1.014	1.022	1.107	1.164
T+ 3.020	1.507	20.107	1.526	1.108	1.024	1.018	1.028	1.110	1.141
T+ 3.030	1.511	20.209	1.523	1.090	1.027	1.022	1.031	1.111	1.116
T+ 3.040	1.515	20.329	1.522	1.075	1.032	1.027	1.035	1.112	1.098
T+ 3.050	1.520	20.448	1.524	1.063	1.038	1.029	1.039	1.116	1.092
T+ 3.060	1.523	20.537	1.525	1.054	1.042	1.030	1.040	1.119	1.094
T+ 3.070	1.526	20.625	1.525	1.046	1.041	1.027	1.038	1.115	1.091
T+ 3.080	1.532	20.789	1.523	1.038	1.038	1.026	1.035	1.109	1.076
T+ 3.090	1.536	20.895	1.523	1.034	1.041	1.027	1.040	1.111	1.068
T+ 3.100	1.539	20.969	1.525	1.032	1.047	1.033	1.047	1.118	1.074
T+ 3.110	1.547	21.179	1.528	1.030	1.054	1.036	1.052	1.125	1.079
T+ 3.120	1.551	21.295	1.533	1.030	1.058	1.039	1.056	1.132	1.077
T+ 3.130	1.553	21.356	1.537	1.031	1.059	1.041	1.059	1.138	1.071
T+ 3.140	1.555	21.394	1.540	1.032	1.059	1.042	1.060	1.137	1.063
T+ 3.150	1.556	21.447	1.546	1.032	1.061	1.047	1.063	1.135	1.057

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH 3 PS1/PA	CH 4 PS2/PA	CH 5 PS3/PA	CH 6 PS4/PA	CH 7 PS5/PS	CH 8 PS6/PA	CH 9 PS7/PA
T+ 3.160	1.561	21.582	1.552	1.033	1.068	1.057	1.070	1.140	1.064
T+ 3.170	1.563	21.633	1.560	1.035	1.076	1.063	1.076	1.147	1.089
T+ 3.180	1.566	21.715	1.563	1.036	1.075	1.056	1.072	1.146	1.108
T+ 3.190	1.570	21.816	1.565	1.037	1.067	1.043	1.066	1.140	1.116
T+ 3.200	1.572	21.872	1.568	1.038	1.062	1.039	1.069	1.138	1.125
T+ 3.210	1.573	21.893	1.574	1.041	1.067	1.047	1.082	1.147	1.144
T+ 3.220	1.575	21.953	1.584	1.044	1.081	1.063	1.102	1.171	1.162
T+ 3.230	1.577	22.006	1.595	1.047	1.092	1.070	1.113	1.192	1.174
T+ 3.240	1.578	22.038	1.604	1.051	1.093	1.068	1.108	1.191	1.186
T+ 3.250	1.578	22.036	1.610	1.055	1.087	1.062	1.090	1.169	1.199
T+ 3.260	1.578	22.042	1.614	1.057	1.082	1.062	1.074	1.145	1.205
T+ 3.270	1.582	22.161	1.620	1.058	1.082	1.068	1.074	1.139	1.201
T+ 3.280	1.584	22.202	1.628	1.058	1.091	1.078	1.094	1.158	1.198
T+ 3.290	1.585	22.230	1.640	1.061	1.105	1.086	1.121	1.190	1.210
T+ 3.300	1.586	22.263	1.648	1.068	1.112	1.085	1.131	1.210	1.236
T+ 3.310	1.587	22.284	1.651	1.072	1.106	1.074	1.115	1.199	1.264
T+ 3.320	1.587	22.302	1.653	1.074	1.092	1.064	1.089	1.160	1.290
T+ 3.330	1.588	22.328	1.658	1.075	1.082	1.064	1.066	1.117	1.311
T+ 3.340	1.589	22.340	1.668	1.077	1.084	1.067	1.064	1.101	1.312
T+ 3.350	1.589	22.353	1.677	1.080	1.093	1.071	1.089	1.131	1.277
T+ 3.360	1.589	22.356	1.680	1.083	1.107	1.080	1.129	1.194	1.230
T+ 3.370	1.589	22.362	1.683	1.087	1.123	1.098	1.152	1.240	1.232
T+ 3.380	1.590	22.373	1.689	1.095	1.129	1.112	1.131	1.223	1.302
T+ 3.390	1.590	22.379	1.695	1.110	1.117	1.103	1.072	1.148	1.404
T+ 3.400	1.590	22.380	1.697	1.125	1.097	1.081	1.039	1.099	1.442
T+ 3.410	1.589	22.367	1.696	1.136	1.088	1.068	1.057	1.112	1.405
T+ 3.420	1.589	22.354	1.696	1.136	1.099	1.077	1.110	1.172	1.334
T+ 3.430	1.588	22.339	1.699	1.132	1.119	1.097	1.151	1.221	1.278
T+ 3.440	1.588	22.320	1.709	1.130	1.130	1.111	1.155	1.223	1.263
T+ 3.450	1.587	22.289	1.721	1.137	1.128	1.108	1.132	1.194	1.283
T+ 3.460	1.585	22.251	1.727	1.144	1.118	1.093	1.109	1.167	1.316
T+ 3.470	1.584	22.217	1.725	1.143	1.111	1.087	1.103	1.164	1.329
T+ 3.480	1.584	22.208	1.718	1.135	1.112	1.103	1.117	1.173	1.293
T+ 3.490	1.583	22.174	1.709	1.128	1.120	1.138	1.137	1.178	1.229
T+ 3.500	1.581	22.136	1.693	1.123	1.127	1.157	1.141	1.171	1.173
T+ 3.510	1.580	22.105	1.652	1.119	1.120	1.132	1.116	1.154	1.132
T+ 3.520	1.579	22.065	1.588	1.112	1.098	1.084	1.069	1.132	1.100
T+ 3.530	1.578	22.034	1.509	1.101	1.071	1.055	1.009	1.089	1.067
T+ 3.540	1.577	22.004	1.434	1.087	1.054	1.061	0.945	1.022	1.037
T+ 3.550	1.575	21.955	1.365	1.072	1.053	1.089	0.899	0.965	1.020
T+ 3.560	1.572	21.891	1.304	1.062	1.069	1.106	0.908	0.968	1.024
T+ 3.570	1.571	21.847	1.252	1.060	1.093	1.104	0.978	1.040	1.048
T+ 6.580	1.569	21.808	1.212	1.062	1.109	1.103	1.059	1.122	1.065
T+ 3.590	1.568	21.778	1.180	1.062	1.104	1.120	1.087	1.138	1.051
T+ 3.600	1.568	21.756	1.149	1.058	1.080	1.140	1.048	1.066	1.013

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH10 PS8/PA	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P
T+ 2.260	1.112	10.941	1.007	1.089	0.904	1.080	1.070	1.091	0.838
T+ 2.270	1.117	11.050	1.007	1.091	0.904	1.080	1.068	1.095	0.838
T+ 2.280	1.123	11.158	1.008	1.094	0.908	1.083	1.070	1.101	0.843
T+ 2.290	1.128	11.268	1.014	1.098	0.917	1.092	1.075	1.112	0.853
T+ 2.300	1.134	11.379	1.024	1.108	0.926	1.103	1.083	1.121	0.864
T+ 2.310	1.139	11.490	1.032	1.119	0.932	1.110	1.089	1.127	0.871
T+ 2.320	1.145	11.600	1.037	1.127	0.935	1.113	1.092	1.131	0.869
T+ 2.330	1.150	11.713	1.038	1.131	0.937	1.114	1.093	1.135	0.865
T+ 2.340	1.156	11.826	1.041	1.134	0.941	1.116	1.094	1.141	0.868
T+ 2.350	1.161	11.938	1.050	1.143	0.949	1.129	1.102	1.150	0.882
T+ 2.360	1.167	12.051	1.062	1.157	0.961	1.145	1.116	1.162	0.898
T+ 2.370	1.172	12.160	1.071	1.165	0.967	1.151	1.127	1.167	0.905
T+ 2.380	1.178	12.276	1.068	1.163	0.966	1.147	1.129	1.164	0.904
T+ 2.390	1.183	12.393	1.065	1.157	0.965	1.146	1.124	1.166	0.902
T+ 2.400	1.189	12.507	1.071	1.159	0.971	1.155	1.125	1.179	0.902
T+ 2.410	1.194	12.622	1.082	1.170	0.980	1.167	1.133	1.189	0.905
T+ 2.420	1.199	12.735	1.090	1.181	0.985	1.173	1.146	1.192	0.914
T+ 2.430	1.205	12.851	1.093	1.189	0.991	1.177	1.157	1.193	0.923
T+ 2.440	1.210	12.967	1.096	1.194	0.998	1.183	1.166	1.201	0.930
T+ 2.450	1.216	13.086	1.102	1.197	1.003	1.190	1.169	1.213	0.930
T+ 2.460	1.221	13.205	1.105	1.201	1.005	1.195	1.165	1.220	0.929
T+ 2.470	1.226	13.317	1.112	1.210	1.010	1.202	1.166	1.226	0.936
T+ 2.480	1.232	13.435	1.126	1.229	1.023	1.216	1.181	1.237	0.951
T+ 2.490	1.237	13.555	1.142	1.255	1.030	1.227	1.197	1.248	0.962
T+ 2.500	1.243	13.674	1.150	1.265	1.030	1.228	1.201	1.254	0.960
T+ 2.510	1.248	13.794	1.148	1.261	1.033	1.226	1.198	1.263	0.956
T+ 2.520	1.254	13.918	1.151	1.260	1.043	1.234	1.202	1.282	0.968
T+ 2.530	1.259	14.041	1.159	1.268	1.056	1.248	1.215	1.302	0.986
T+ 2.540	1.265	14.164	1.169	1.279	1.063	1.255	1.222	1.309	0.995
T+ 2.550	1.270	14.286	1.178	1.289	1.070	1.259	1.227	1.312	0.992
T+ 2.560	1.276	14.408	1.186	1.302	1.081	1.267	1.235	1.327	0.989
T+ 2.570	1.281	14.533	1.193	1.312	1.085	1.270	1.241	1.345	0.995
T+ 2.580	1.287	14.665	1.192	1.314	1.080	1.268	1.241	1.353	1.000
T+ 2.590	1.293	14.795	1.194	1.313	1.078	1.268	1.244	1.361	1.008
T+ 2.600	1.298	14.908	1.205	1.319	1.087	1.276	1.255	1.377	1.020
T+ 2.610	1.303	15.034	1.226	1.330	1.110	1.285	1.267	1.389	1.043
T+ 2.620	1.309	15.174	1.290	1.338	1.204	1.304	1.279	1.393	1.135
T+ 2.630	1.314	15.295	1.438	1.333	1.411	1.366	1.311	1.408	1.341
T+ 2.640	1.320	15.416	1.623	1.307	1.647	1.466	1.363	1.429	1.588
T+ 2.650	1.325	15.545	1.744	1.255	1.771	1.541	1.413	1.425	1.739
T+ 2.660	1.331	15.682	1.758	1.184	1.757	1.554	1.436	1.399	1.759
T+ 2.670	1.337	15.825	1.725	1.117	1.711	1.538	1.441	1.386	1.724
T+ 2.680	1.343	15.959	1.706	1.069	1.709	1.533	1.442	1.388	1.706
T+ 2.690	1.348	16.084	1.710	1.044	1.735	1.538	1.439	1.370	1.714
T+ 2.700	1.353	16.207	1.724	1.049	1.759	1.547	1.436	1.314	1.733

TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH10 PS8/PA	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA P
T+ 2.710	1.358	16.331	1.735	1.068	1.769	1.556	1.434	1.245	1.752
T+ 2.720	1.364	16.473	1.737	1.086	1.771	1.562	1.432	1.174	1.756
T+ 2.730	1.370	16.606	1.718	1.093	1.765	1.560	1.421	1.092	1.734
T+ 2.740	1.375	16.731	1.687	1.099	1.769	1.553	1.402	1.008	1.698
T+ 2.750	1.379	16.846	1.662	1.110	1.788	1.547	1.369	0.952	1.668
T+ 2.760	1.385	16.978	1.645	1.122	1.793	1.529	1.311	0.941	1.647
T+ 2.770	1.390	17.100	1.634	1.132	1.764	1.494	1.251	0.952	1.633
T+ 2.780	1.395	17.240	1.626	1.140	1.734	1.461	1.229	0.957	1.626
T+ 2.790	1.401	17.374	1.620	1.144	1.737	1.445	1.238	0.947	1.623
T+ 2.800	1.406	17.489	1.602	1.139	1.738	1.423	1.230	0.930	1.610
T+ 2.810	1.410	17.612	1.569	1.128	1.680	1.378	1.200	0.928	1.581
T+ 2.820	1.415	17.735	1.547	1.123	1.588	1.324	1.182	0.941	1.559
T+ 2.830	1.420	17.853	1.550	1.134	1.526	1.292	1.198	0.956	1.545
T+ 2.840	1.425	17.979	1.554	1.152	1.489	1.284	1.220	0.958	1.518
T+ 2.850	1.429	18.075	1.538	1.160	1.441	1.271	1.219	0.951	1.475
T+ 2.860	1.433	18.176	1.516	1.158	1.378	1.240	1.205	0.950	1.443
T+ 2.870	1.439	18.333	1.510	1.151	1.331	1.214	1.200	0.954	1.438
T+ 2.880	1.444	18.468	1.503	1.145	1.325	1.217	1.194	0.954	1.434
T+ 2.890	1.449	18.582	1.480	1.151	1.335	1.243	1.171	0.947	1.404
T+ 2.900	1.454	18.711	1.451	1.174	1.328	1.261	1.124	0.936	1.363
T+ 2.910	1.458	18.822	1.431	1.202	1.312	1.249	1.040	0.926	1.352
T+ 2.920	1.462	18.922	1.425	1.212	1.311	1.219	0.936	0.923	1.373
T+ 2.930	1.467	19.061	1.421	1.205	1.321	1.203	0.853	0.926	1.384
T+ 2.940	1.471	19.164	1.420	1.195	1.327	1.202	0.802	0.928	1.375
T+ 2.950	1.476	19.294	1.428	1.196	1.322	1.194	0.763	0.926	1.373
T+ 2.960	1.481	19.409	1.441	1.204	1.306	1.168	0.726	0.928	1.383
T+ 2.970	1.485	19.532	1.454	1.210	1.284	1.141	0.703	0.935	1.391
T+ 2.980	1.492	19.704	1.454	1.214	1.274	1.128	0.704	0.943	1.387
T+ 2.990	1.494	19.770	1.442	1.214	1.296	1.117	0.708	0.941	1.391
T+ 3.000	1.499	19.880	1.424	1.216	1.353	1.094	0.698	0.933	1.414
T+ 3.010	1.503	19.994	1.406	1.217	1.403	1.050	0.683	0.929	1.447
T+ 3.020	1.507	20.107	1.395	1.219	1.407	0.987	0.677	0.937	1.469
T+ 3.030	1.511	20.209	1.400	1.220	1.378	0.920	0.685	0.956	1.475
T+ 3.040	1.515	20.329	1.419	1.222	1.361	0.869	0.693	0.969	1.476
T+ 3.050	1.520	20.448	1.428	1.225	1.374	0.847	0.697	0.967	1.473
T+ 3.060	1.523	20.537	1.415	1.230	1.393	0.845	0.700	0.948	1.464
T+ 3.070	1.526	20.625	1.390	1.235	1.397	0.842	0.701	0.928	1.454
T+ 3.080	1.532	20.789	1.372	1.237	1.395	0.838	0.703	0.930	1.447
T+ 3.090	1.536	20.895	1.378	1.236	1.399	0.838	0.707	0.949	1.453
T+ 3.100	1.539	20.969	1.403	1.238	1.407	0.844	0.711	0.961	1.462
T+ 3.110	1.547	21.179	1.417	1.240	1.416	0.850	0.715	0.957	1.474
T+ 3.120	1.551	21.295	1.414	1.242	1.423	0.850	0.720	0.943	1.482
T+ 3.130	1.553	21.356	1.407	1.241	1.428	0.840	0.726	0.936	1.504
T+ 3.140	1.555	21.394	1.405	1.235	1.425	0.828	0.727	0.948	1.536
T+ 3.150	1.556	21.447	1.412	1.231	1.422	0.828	0.728	0.971	1.55[illegible]

	TIME	CH 1 MACH NUM	CH 2 DYNAMIC	CH10 PS8/PA	CH11 PS9/PA	CH12 PS10/PA	CH13 PS11/PA	CH14 PS12/PA	CH15 PS13/PA	CH16 PB/PA . P
T+	3.160	1.561	21.582	1.433	1.233	1.433	0.838	0.736	0.983	1.539
T+	3.170	1.563	21.633	1.464	1.241	1.454	0.847	0.746	0.970	1.522
T+	3.180	1.566	21.715	1.480	1.247	1.463	0.847	0.749	0.944	1.512
T+	3.190	1.570	21.816	1.478	1.248	1.451	0.845	0.744	0.934	1.509
T+	3.200	1.572	21.872	1.482	1.246	1.432	0.851	0.738	0.958	1.508
T+	3.210	1.573	21.898	1.507	1.246	1.426	0.858	0.737	0.996	1.518
T+	3.220	1.575	21.953	1.536	1.246	1.446	0.858	0.742	1.017	1.542
T+	3.230	1.577	22.006	1.544	1.249	1.484	0.858	0.752	1.007	1.559
T+	3.240	1.578	22.038	1.545	1.250	1.508	0.859	0.761	0.978	1.564
T+	3.250	1.578	22.036	1.547	1.249	1.503	0.863	0.769	0.964	1.570
T+	3.260	1.578	22.042	1.544	1.249	1.467	0.862	0.770	0.979	1.576
T+	3.270	1.582	22.161	1.535	1.247	1.424	0.859	0.766	1.006	1.568
T+	3.280	1.584	22.202	1.537	1.246	1.422	0.865	0.765	1.022	1.553
T+	3.290	1.585	22.230	1.563	1.242	1.478	0.877	0.772	1.018	1.558
T+	3.300	1.586	22.263	1.594	1.234	1.540	0.887	0.782	1.007	1.570
T+	3.310	1.587	22.284	1.607	1.222	1.544	0.888	0.790	1.011	1.562
T+	3.320	1.587	22.302	1.604	1.208	1.494	0.886	0.799	1.037	1.542
T+	3.330	1.588	22.328	1.601	1.197	1.446	0.891	0.807	1.061	1.536
T+	3.340	1.589	22.340	1.602	1.191	1.443	0.889	0.809	1.057	1.548
T+	3.350	1.589	22.353	1.583	1.190	1.484	0.881	0.798	1.032	1.567
T+	3.360	1.589	22.356	1.550	1.193	1.527	0.882	0.785	1.026	1.593
T+	3.370	1.589	22.362	1.565	1.195	1.527	0.901	0.790	1.059	1.616
T+	3.380	1.590	22.373	1.642	1.189	1.471	0.921	0.814	1.099	1.593
T+	3.390	1.590	22.379	1.708	1.173	1.407	0.918	0.837	1.102	1.511
T+	3.400	1.590	22.380	1.685	1.161	1.410	0.896	0.841	1.067	1.469
T+	3.410	1.589	22.367	1.614	1.166	1.482	0.877	0.825	1.039	1.507
T+	3.420	1.589	22.354	1.569	1.186	1.534	0.877	0.801	1.051	1.578
T+	3.430	1.588	22.339	1.567	1.202	1.503	0.894	0.783	1.090	1.602
T+	3.440	1.588	22.320	1.585	1.203	1.435	0.908	0.777	1.114	1.570
T+	3.450	1.587	22.289	1.606	1.191	1.436	0.910	0.790	1.104	1.541
T+	3.460	1.585	22.251	1.629	1.181	1.510	0.906	0.813	1.078	1.556
T+	3.470	1.584	22.217	1.632	1.176	1.546	0.904	0.828	1.073	1.596
T+	3.480	1.584	22.208	1.587	1.173	1.473	0.916	0.829	1.107	1.601
T+	3.490	1.583	22.174	1.490	1.171	1.356	0.940	0.827	1.150	1.539
T+	3.500	1.581	22.136	1.353	1.173	1.273	0.952	0.829	1.154	1.418
T+	3.510	1.580	22.105	1.217	1.176	1.196	0.933	0.829	1.103	1.248
T+	3.520	1.579	22.065	1.121	1.180	1.076	0.901	0.823	1.038	1.052
T+	3.530	1.578	22.034	1.068	1.185	0.944	0.892	0.823	1.000	0.878
T+	3.540	1.577	22.004	1.034	1.190	0.867	0.912	0.845	0.992	0.787
T+	3.550	1.575	21.955	1.013	1.195	0.860	0.933	0.871	1.001	0.810
T+	3.560	1.572	21.891	1.018	1.200	0.882	0.929	0.868	1.024	0.879
T+	3.570	1.571	21.847	1.049	1.200	0.892	0.905	0.833	1.060	0.889
T+	3.580	1.569	21.808	1.072	1.194	0.876	0.894	0.806	1.098	0.814
T+	3.590	1.568	21.778	1.055	1.184	0.839	0.919	0.807	1.117	0.721
T+	3.600	1.568	21.756	1.014	1.180	0.804	0.959	0.833	1.105	0.669

XII. APPENDIX K

PRECEDING PAGE BLANK-NOT FILMED

APPENDIX K

Figure 1. Photographs of Plume at Various Conditions

A.	$M=1.42$, $C_T=20.8$	Photograph	-	7 in. diameter body
B.	$M=1.43$, $C_T=25.8$	Photograph	-	7 in. diameter body
C.	$M=1.41$, $C_T=20.7$	Shadowgraph	-	7 in. diameter body
D.	$M=1.42$, $C_T=25.3$	Shadowgraph	-	7 in. diameter body
E.	$M=1.50$, $C_T=21.5$	Shadowgraph	-	7 in. diameter body
F.	$M=1.20$, $C_T=25$	Upper Photo	-	6 in. diameter body
	$C_T=62$	Lower Photo	-	

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Figure 1b. M = 1.43, C_T = 25.8, 7 inch body.

Figure 1c. M = 1.41, C_T = 20.7, 7 inch body.

Figure 1d. $M = 1.42$, $C_T = 25.3$, 7 inch body.

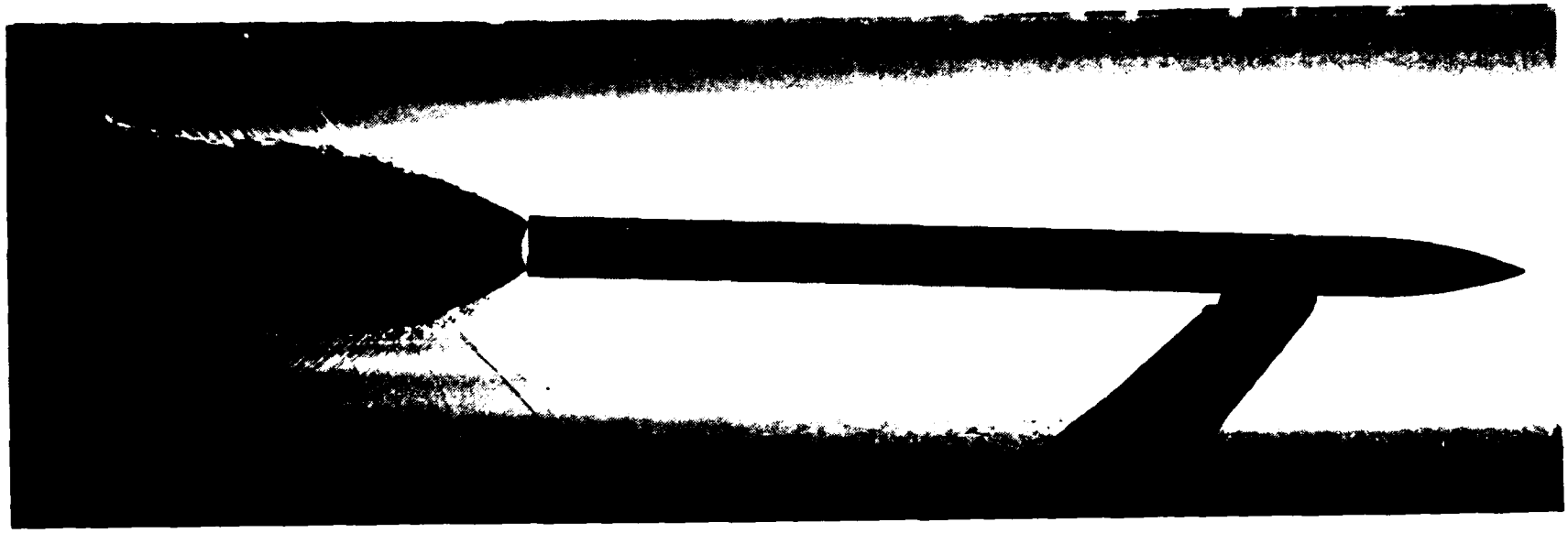

Figure 1e. M = 1.50, C_T = 21.5, 7 inch body.

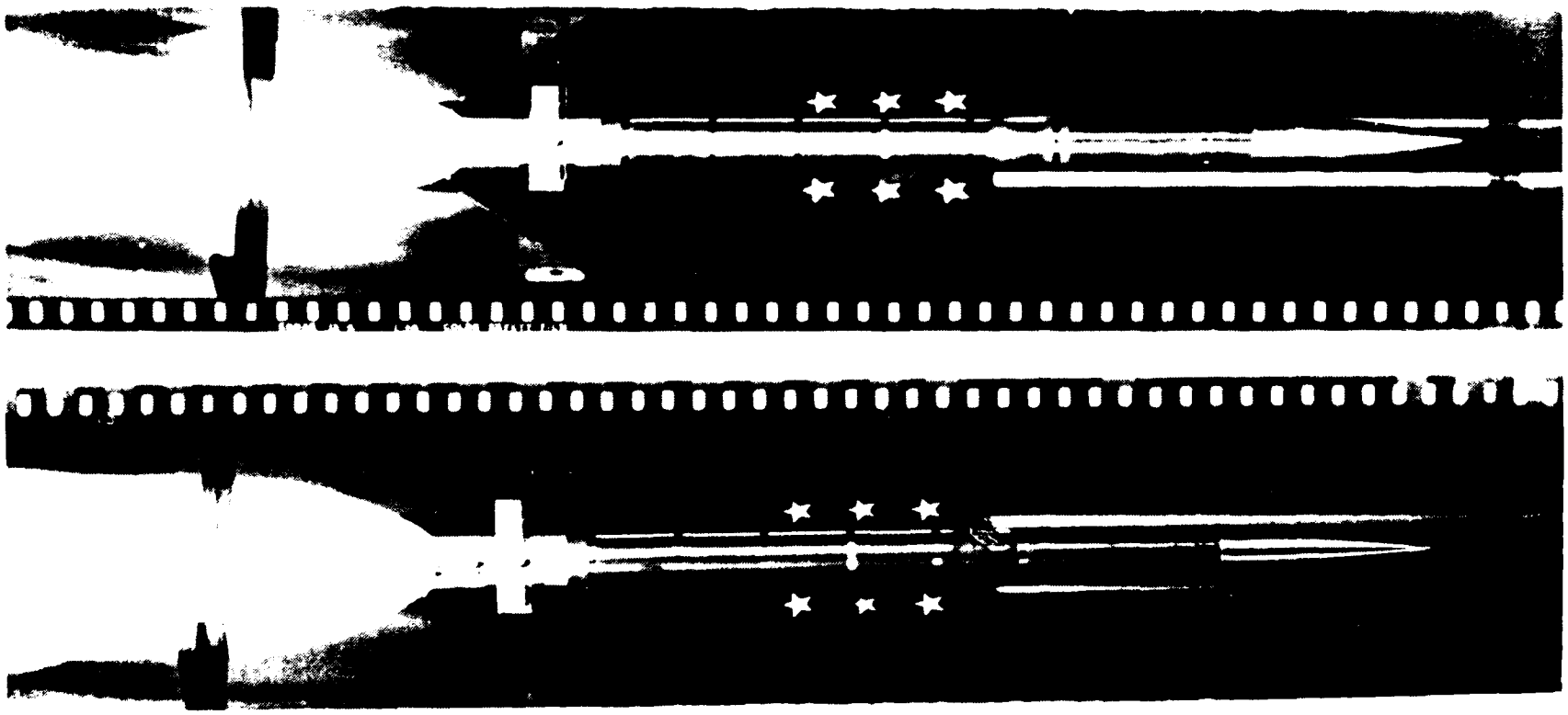

Figure 1f. M = 1.20 C_T = 25 upper, C_T = 62 lower, 6 inch body.

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