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RTR 016-2

TEST DATA FROM SOLID PROPELLANT PLUME AERODYNAMICS TEST PROGRAM IN AMES 6 X 6 FOOT SUPERSONIC WIND TUNNEL

(Shuttle Test FA7)
(Ames Test 033-66)

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by

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FOREWORD

This report presents test data gathered during NASA Ames Research Center 6 X 6 Foot Supersonic Wind Tunnel Test 033-66 (Shuttle Test FA7), relating detailed definition of the test hardware and the test conditions. The work was conducted for Marshall Space Flight Center (MSFC) in response to requirements of Contract NAS8-29751.

The overall NASA Technical Coordination for this study was provided by Mr. Kenneth L. Blackwell of the Experimental Aerodynamics group of the MSFC System Dynamics Laboratory, ED-32 (which was formerly Aero-Astrodynamics Laboratory, S&E-AERO-AAE). Mr. Jack Brownson of Ames Research Center provided technical coordination at the test site, and Mr. Frank Meriwether of ARO, Inc., was the test site Project Engineer.

1. SUMMARY

A supplementary investigation was conducted to measure the aerodynamic effects of plumes from hot combustion gases in the presence of a transonic external flow field. This investigation was one element of a program to advance plume simulation technology, and will extend a previously acquired data base and provide data to compare with the effects observed using cold gas plumes. In this investigation, a variety of underexpanded plumes issuing from the base of a strut-mounted ogive-cylinder body were produced by combusting solid propellant gas generators. The gas generator fired in a short-duration mode (200 to 300 msec). Propellants containing 16 percent and 2 percent Al were used, with chamber pressures from 400-1800 psi. Conical nozzles of 15° half-angle were tested with area ratios of 4 and 8. The model was installed in the Ames Research Center 6 X 6 Foot Supersonic Wind Tunnel, operated at nominal Mach numbers of 0.9, 1.2, and 1.5.

Pressures were measured in the gas generator combustion chamber, along the nozzle wall, on the base, and along the body rear exterior. Schlieren photographs were taken for all tests. This document presents the test data acquired along with the test setup and procedures.

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TABLE OF CONTENTS

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LIST OF TABLES

LIST OF FIGURES

NOMENCLATURE

A	Area
Al	Aluminum
AP	Ammonium perchlorate
b.l.	Boundary layer
CF_4	Tetra fluoromethane ("Freon 14")
CTPB	Carboxy-terminated polybutadiene
D.D.A.S.	Digital data acquisition system
deg	Degree
°F	Degree Fahrenheit
FS	Full scale
ft	Foot
g.g.	Gas generator
in	Inch
inop	Inoperative
lb	Pound
M	Mach number
M.O.C.	Method of characteristics
M.S.	Margin of safety
mm	Millimeter
msec	Millisecond
mv	Millivolt
P	Pressure
PBAN	Polybutadiene-acrylic acid-acrylonitrile
psf	Pounds per square foot
psi	Pounds per square inch
psia	Psi absolute
psig	Psi gauge
q	Dynamic pressure
°R	Degree Rankine
R_N/L	Reynold's number per unit length
RTV	Room temperature vulcanizing rubber
S/N	Serial number
sec	Second
T	Temperature
TAJF	Thermal Acoustic Jet Facility
TOS	Tunnel offset
TWT	Trisonic Wind Tunnel
V	Volt
Xdcr	Transducer
X/D	Distance along body ratioed to body diameter
α	Angle of attack, positive for nose up
γ	Ratio of specific heats
δ	Plume initial slope
ε	Nozzle expansion ratio = A_{ex}/A_*
σ	Standard deviation; stress
#	Pound

Subscripts

1-11	Orifice number: see Fig. 7
amb	Ambient
b	Base
c	Chamber
ex	Exit
j	Jet
max	Maximum
S	Static
T	Total
*	Sonic or throat
∞	Tunnel freestream
w	Tunnel wall

2. INTRODUCTION

It is important to accurately predict the aerodynamic characteristics of the Space Shuttle during ascent to provide the data required for structural and control systems design. Recent studies have shown that induced effects due to the plumes of the propulsion engines can have a significant effect on the aerodynamic characteristics during the portion of the flight where aerodynamic forces are large relative to inertial forces. At the present time, the technology for simulating the Space Shuttle propulsion system plumes in a wind tunnel is inadequate to provide the required confidence in aerodynamic data obtained from model tests where plume induced effects are significant. In order to advance plume simulation technology, a test program was initiated to compare the effects observed using cold gas plumes with those observed when the proper hot combustion gases are used. The first test phase was conducted in the MSFC 14 X 14 Inch Trisonic Wind Tunnel. The first hot firing test was reported in Ref. 1, and the companion cold gas plume test in Ref. 2. The second test phase was conducted in the ARC 6 X 6 Foot Supersonic Wind Tunnel during August 1974. This report presents the data acquired during that second hot firing test phase (denoted as Ames 6 X 6 Test 033-66, Shuttle Test FA7), along with detailed definition of the hardware and test conditions.

There were two major objectives in this test phase. The first objective was to complete the test matrix originally planned for the MSFC phase (where the Mach 0.9 portion was omitted due to plume/freestream interferences). The second objective was to expand the data base to higher values of the ratio of chamber pressure to freestream pressure. In addition, it was

necessary to determine if any tunnel to tunnel difference existed.

The model built for the MSFC test phase was used in this test phase also. The model consists of a strut-mounted ogive-cylinder body with different nozzle area ratios. The solid propellant gas generator fires in a short duration mode (200 to 300 msec). The specific tasks of this test program were to measure combustor, nozzle, and base region pressures for several chamber pressures using two types of solid propellant, operated at four values of chamber pressure, for two nozzle area ratios, at three free-stream Mach numbers. Propellants containing 16 percent and 2 percent Al were used to assess the effects of particles on plume aerodynamic interactions, at chamber pressures from 400-1800 psia. Nozzle area ratios of 4 and 8 were used to vary the plume shape. The wind tunnel was run at Mach numbers of 0.9, 1.2, and 1.5. In addition to the pressures measured, Schlieren photographs were taken of the flow.

Table 1 presents a capsule of the FA7 test series. The discussion of this series starts with a description of the test setup of the various hardware items and an account of the test procedures. The test results are then discussed, along with the accuracy of the data, followed by presentation of data summaries and a guide to the bulk of the data. The complete set of acquired data is presented in Appendices.

3. TEST SETUP

This program was the first use of a solid propellant gas generator in the Ames 6 X 6 Foot Supersonic Wind Tunnel. A broad spectrum of the facility capabilities were utilized, and several special-purpose items were built. Much of the special-purpose equipment was used in the MSFC phase, described in Ref. 1. In this section, the hardware and software unique to this Ames test phase are described in categories of facility, model, gas generator, and instrumentation and data system. The description includes physical and operational aspects. The performance aspects are treated in Section 5, Results.

3.1 FACILITY

The solid propellant plume aerodynamic test was conducted in the 6 X 6 Foot Supersonic Wind Tunnel Facility at Ames Research Center. The tunnel is a continuous, closed-circuit, single return configuration, with aftercooling provided to limit the maximum stagnation temperature. It has an asymmetric, sliding-block nozzle and a test section with perforated floor and ceiling for removal of the boundary layer and for reduction of shock reflection (Fig. 1). The air is driven by an eight-stage, axial-flow compressor which is powered by two electric motors mounted in tandem outside the wind tunnel. The drive system is rated at 60,000 horsepower. More details of the facility are presented in Ref. 3.

3.2 MODEL AND SUPPORT HARDWARE

The model was the same one used for the test described in Ref. 1. The model consists of a strut mounted ogive-cylinder body (Fig. 2), two

interchangeable nozzle configurations, and solid propellant plates which are placed internally. Body exterior geometry is identical to that in Ref. 4, except that the overall length was 15 inches. The body consists of nose, midbody, and afterbody sections. The midbody contains the combustion chamber and tubing ports for pressure leads. Five circumferential grooves in the combustion chamber provide pressure relief between the four longitudinal cavities produced by the propellant plates. The nose section is attached to the midbody and must be removed to install an ignition squib which screws into the midbody forward bulkhead.

Afterbodies for two nozzle area ratios were provided which have geometrically identical interface regions (juncture of the midbody and afterbody) and equal exit areas (Fig. 3). Each afterbody configuration had a single nozzle with a specific area ratio. Each nozzle contour consisted of a circular arc throat with a design curvature four times the throat radius, followed by a 15° conical section. Two nozzles were provided of the $\varepsilon = 8$ configuration (S/N 2 and 5) and one of $\varepsilon = 4$ (S/N = 3).

The midbody support strut exterior geometry was identical to that in Ref. 4. The interior geometry housed ten pressure transducers, thus permitting minimum line length from orifice to transducer. This strut was supported by a sting, mounted to the tunnel model-support system via an adapter. Electrical leads to the transducers and squib were routed through the strut and sting.

A boundary layer transition strip (carborundum grit) was placed on the nose of the model to produce a turbulent boundary layer. The location of this strip was at approximately the same distance (1.0 inch) from the nose tip as used on the cold flow test model of Ref. 4. The width of the

strip was approximately 0.1 inches made with number 60 grit.

A stress analysis was performed for this model in the anticipated test environment, Ref. 5. A summary of that stress analysis is presented in Table 2.

Two of the pneumatic lines leading from surface tap to transducer were inoperative. Orifice No. 5 has been permanently inoperative since original model delivery, due to a plugged line in an inaccessable region of the strut. Orifice No. 2 was inoperative for the Ames test phase because of corrosion during the seven months storage between the MSFC and Ames test phases.

3.3 MODEL INSTALLATION

The installation of the complete model in the wind tunnel is shown in Fig. 4. (Fig. 4c is tentatively identified as Run No. 413.)

3.4 GAS GENERATOR

The gas generators used in this test were identical in design to those used in the MSFC test phase (Ref. 1). The gas generators were developed by Calspan Corporation, Buffalo, New York (Ref. 6), for two propellants: one contained 10% Al, the other contained 2% Al (to assess the effects of particles on plume aerodynamic interactions). Propellant properties are presented in Table 3. The design chamber pressure levels were 400, 800, 1200, and 1600 psia, for two nozzle throat sizes (to produce a variety of plume sizes). Calspan fabricated all of the gas generators, except for five which were fabricated by REMTECH, as a result of changes to the test matrix subsequent to the order to Calspan.

The gas generator installed in the combustion chamber consisted of the solid propellant mounted on plate holders and an electrically fired squib to initiate burning. A set of three metal plates with thin propellant slabs bonded to each side was used for each run. These plates slid into the combustion chamber of the midbody (Fig. 2). The total exposed surface area of the propellant on the three plates determined the combustion chamber operating pressure. The gas generators are described in Table 4. The firing circuit control box provided by Calspan for the test of Ref. 1 was also used in this test.

Mylar diaphragms were required for each run to retain the ignition gases until steady combustion was achieved. The diaphragms were placed between the midbody and afterbody with an RTV coating on the chamber side, to prevent burning. Each diaphragm had the same outer diameter as the model (1.5 inches). A single diaphragm could consist of several Mylar sheets with the overall thickness as specified in Table 4.

Details of propellant operation and safety procedures for the test with respect to the solid propellant gas generator were given in a separate Operation and Safety Procedures report by Calspan (Ref. 7). The sequence used in loading the gas generator charges into the combustion chamber is presented in Table 5. A representative chamber pressure time history during firing is shown in Fig. 5 with the important events labeled. Upon igniter activation, P_c increased a few tens of psi, then subsided for a period of a few hundred milliseconds. (This time period did not appear to be predictable as discussed in Section 5.) The P_c would then begin a very rapid rise, causing the diaphragm to open. Thereafter, the P_c history followed customary solid propellant trends either showing progressive or regressive

characteristics.

Predicted exhaust products (per Ref. 8) for the two types of propellants are shown in Table 6 for two possible limit conditions. The significant amounts of HCl, H_2O, and alumina (Al_2O_3) caused some concern regarding potential harm to personnel and/or potential damage to the wind tunnel hardware. Certain techniques and operations were employed to preclude this possibility, as discussed in Section 4.

3.F DATA SYSTEM AND INSTRUMENTATION

The data system and model instrumentation used in this test were customary for this facility (Fig. 6), and was generally similar to that used in the MSFC test phase (Ref. 1). The unique aspect of this program relative to the data system and instrumentation was the short gas generator operational time (a few hundred milliseconds). Thus, speed and timing were critical.

Existing components of the 6 X 6 Foot tunnel facility data acquisition system were employed to record freestream parameters (Fig. 6). The MSFC furnished solid state Systems Engineering Laboratory (SEL) equipment was used to acquire model pressure along with tunnel total and static pressures (note that tunnel total and static pressures were recorded on both data systems). The SEL equipment multiplexes 12 channels of low level signals, digitizes the multiplexed signal, and punches the data using an IBM summary punch (Model 523). In this test, up to 341 data frames for each of 12 channels at 500 frames/sec. were recorded, for a range of ±3999 counts. (For three runs, Nos. 391, 393, and 396, the sample rate was 1000 frames/sec.) The card output from the IBM 523 became data cards for a data re-

duction program using the Hewlett Packard 9830A computer (Fig. 6). This program produced reduced coefficients as printed tabulations.

Another facility component used for this test was the Schlieren image photography system. A more detailed description of all of the facility data system is given in Ref. 3.

To synchronize the two data systems (Beckman and SEL), controls were manually actuated as follows. First, the Beckman system initiation was actuated. Then, between the second and third (of five) Beckman samples, the firing circuit was actuated. The SEL data system initiation then automatically followed, using a signal from the voltage comparator. This comparator was adjusted to produce the data system start signal when the P_c transducer output reached a specified level. Initially, this level corresponded to 100 psia; after Run No. 404, this level was reset to 200 psia. This signal also triggered the Schlieren photograph. A time delay of about 20 msec. was usually present between P_c reaching the specified level and recording of the first data frame. A time delay of 50-70 msec. was usually present between P_c reaching the specified level and the Schlieren photograph.

In addition to the digitized data, selected pressures and events were monitored in analog form using a facility Brush oscillograph with 8-channel capacity. The Brush oscillograph was initiated manually in coordination with the gas generator firing control switch, in a manner to record data during a time period from shortly before activation of the firing switch until after all plume-induced phenomena had terminated.

Instrumentation on the model consisted of nine static pressure

orifices: one for chamber pressure, two for nozzle wall pressures, and three each for base and body pressures (Fig. 7). (However, due to a shortage of transducers, only two of the body pressures were monitored.) The chamber pressure orifice was located in the bottom of one of the circumferential grooves, a position estimated to have the smallest velocity so that the measured static pressure approached total pressure as nearly as possible. All of these nine pressures were sensed by individual transducers. Kulite Semiconductor Products solid state pressure sensors were selected, primarily for their small size which permitted installation within the model support strut, thus permitting very short lengths and minimizing any lag in measuring pressures. Three transducer models were used, with pertinent characteristics as shown in Table 7. The temperature specifications chosen were special for this test and are about one-half the normal tolerance for the units. To protect the transducers from the hot gas and particles, an optional RTV coating and screen design was specified over the transducer diaphragm.

Instrumentation for tunnel static pressure, total pressure, and total temperature, were the standard facility equipment. The static pressure equipment consists of duplicate instrumentation monitoring a single tap: a conventional transducer and a manometer with follower. An identical setup is provided for total pressure. A summary of the instrumentation and the data system channel assignments is presented in Table 8.

4. TEST PROCEDURES

The goal of this test was to observe the aerodynamic effects of a plume from hot combustion gases under the influence of an external transonic flowfield. In support of this goal, plume-off runs were taken in the external flowfield as a reference and for comparison with previous tests (Ref. 1). The discussion of the tests first treats the test techniques and next presents the design test conditions (the exact test conditions are presented in Section 7, Data). Then a detailed run log is provided, with remarks on anomalies of individual runs.

4.1 TEST TECHNIQUES

The test techniques used in this test were evolved during the MSFC test phase (Ref. 1) from considerations of safety, data quality, and program efficiency. Safety aspects were primarily based on Ref. 7. Data quality aspects were centered on ensuring that the hardware was consistent from run to run. Specifically, this meant close attention to cleaning debris from the exhaust nozzle, frequent pressure transducer calibration and inspection of P_c transducer, and leak checking of orifice plumbing each run. Pressure transducer spans were set using large (10 in. dia.) dial pressure gauges as reference. Program efficiency was provided by job responsibility to specific individuals and by prepared plans for sequence of actions. The sequence of events is tabulated in Table 9 for each run, with the personnel responsible for each action.

As mentioned in Section 3, there was some concern regarding potential harm to personnel and/or potential damage to the wind tunnel from the gas generator exhaust products. Initially, after each run, the tunnel atmosphere was sampled and HCl content measured. The safe level was 5 parts per

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million. If unsafe levels were found, it was possible to reclose the tunnel and dilute to safe levels by pumping the tunnel contents to the outside atmosphere, and refilling with stored air. After several shifts, it was recognized that HCl levels were quite low, so that samples were then taken only every third firing.

4.2 TEST CONDITIONS

The test conditions were selected to cover a range of parameters adequate to fill in gaps in the data base acquired during the MSFC test phase, and to extend that data base regarding the individual effects of flight speed, propellant type, and nozzle under-expansion. The design values of the test conditions for the runs accomplished in this series are summarized in Table 10. Exact values varied with time. The complete time histories are in Appendices; summaries of the values at specific time intervals selected as most appropriate for each run are found in Section 7.

4.3 RUN LOG

During the test, a run log was maintained to record the test configuration and design test conditions, and to permit brief remarks on anomalies. Also, a detailed test log was kept as a source document for this and subsequent formal reports. These logs were in addition to the standard Operators Log and a special Propellant Log maintained by the tunnel staff. The run log is reproduced in Table 11. The effects on test conduct and resulting data, due to the anomalies briefly noted in the run log, are discussed in Section 5.

Run numbers were assigned sequentially as runs were accomplished, beginning with Run 391 (from the Ames viewpoint, this test was a continuation

of the air/CF_4 test of Ref. 4, which accomplished 390 runs). Gaps in the run number sequence resulted from misfires, which were assigned a run number but which did not result in any data.

5. RESULTS

This program was the first use of a solid propellant gas generator in the Ames 6 X 6 Foot Wind Tunnel. It provided adequate data to meet the original program goal, although not all of the originally-planned firings were completed. The results of this program are discussed in this section, beginning with how the model and gas generator components performed on an individual basis, followed by how the combination of model, gas generator, and wind tunnel performed. The data reduction process is next presented, and the procedure of data selection is detailed. Accuracy is discussed in Section 6.

5.1 PERFORMANCE OF MODEL

The model was designed and built specifically for this type of test program with the physical and operational characteristics presented in Section 3. Most of the model components functioned as intended so well that no further comment is needed.

The nozzles performed acceptably in terms of durability. As described in Section 4, Test Procedures, each nozzle was thoroughly cleaned after each firing. This cleaning involved removing a grey frangible substance which, although not scientifically analyzed, appeared to be Al_2O_3. This substance was usually found on the entire nozzle entrance and throat, and downstream of the throat over a significant portion of the nozzle. The majority of this substance was rather easily removed with steel wool. However, a small fraction was tenaciously attached and required several minutes of detailed attention with commercial gun-cleaning tools and steel wool after each shot.

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In spite of the thermal load and the abrasive cleaning methods used, the throat diameters did not enlarge noticeably during the test program. During the test, Nozzle S/N-2 measured approximately .252-.253" dia., Nozzle S/N-5 measured slightly less than .250", and Nozzle S/N-3 measured .349-.352". These values are approximately the same as those measured prior to this test (Fig. 3). Nozzle S/N-2 was used for 12 firings during this test (in addition to .0 firings at MSFC) before it became unservicable. Nozzle S/N-5 was unservicable after 8 firings. Nozzle S/N-3 was still servicable after 12 firings at MSFC and 3 at Ames.

The presence of material in the nozzle throat after each firing could have resulted from a buildup during firing. In that case, it would be expected that P_c would increase during a firing as the slag buildup reduced throat area. Several runs did exhibit such a progressive P_c trace, and there was some correlation of postfire slag quantity with progressive P_c traces. However, many runs were neutral (P_c steady) or regressive (P_c decreased with time). It was concluded that the evidence did not show a consistent trend of slag buildup in the throat during gas generator operation.

During tunnel installation, it was found that Pressure Orifice No. 2 leaked. Inspection revealed that the stainless steel lead tube in the aft end of the center section had several (4-6) small holes. It is surmised that exhaust products (including significant amounts of HCl and water) which had accumulated under the body covers during the MSFC test phase and during the many months of storage between tests, settled to the low point and corroded the P_2 lead. Repair was not feasible at the time, so the line was cut and plugged (to prevent exhaust gases being funneled into that area). After this

test phase, the entire model was completely disassembled and cleaned to enhance the possibility of later reuse. However, refurbishment should be planned, as this type of testing is demanding on hardware.

5.2 PERFORMANCE OF GAS GENERATOR

The gas generators were developed specifically for this type of test program, with the physical and operational characteristics presented in Section 3 and Ref. 6. Gas generators of exactly the same design had been used during the MSFC test phase, where their reliability, repeatability, and neutral P_C trace contributed significantly to the timely completion of that phase. However, during this phase, three changes in the gas generator characteristics caused considerable difficulties: (1) ignition reliability, (2) non-neutral P_C traces, and (3) propellant holders misfit to the combustion chamber.

During the MSFC test phase, there were 3 misfires, 2 of which resulted from ruptured diaphragms due to a too-sharp seal on a nozzle. During this phase there were 6 misfires, only 1 of which could be traced to a ruptured diaphragm. The ignitor (Holex 1196B) was indicated to be the problem. Four steps were taken simultaneously:

- A different ignitor was obtained (Holex 1196A).
- Some of the RTV edge protection on the leading edge of the center propellant slab was removed.
- A booster propellant (Holex HLX-2-1) was glued to the leading edge of the center propellant slab.
- The sides of the propellant slabs were lightly roughened near the leading edge.

This combination eliminated the misfire problem. Only a limited supply of Holex 1196A ignitors were obtainable, so that Run Nos. 422-424 were accomplished with Holex 1196B ignitors and the last three steps just mentioned. Although it is not possible to quantitatively assess the individual contributions of these three steps, it is believed that the booster propellant was the major contributor, and probably that step alone could have insured successful ignition.

Of the 23 gas generators fired, approximately 2/3 showed decidedly non-neutral P_c traces. The cause of this characteristic may have followed from the steps taken to cure the ignition problem. That is, removal of the RTV edge protection (although quite small in extent) could have permitted enough edge burning to significantly affect burning area. Also, the booster propellant could have permitted more rapid slab ignition at the leading edge than elsewhere, thus affecting burning area. However, these possibilities are only conjecture. Postfire inspection of the propellant holders did not indicate any evidence of combustion significantly different than seen in the MSFC test phase, where neither RTV removal nor booster propellant were used.

Considerable difficulty was encountered in sliding the propellant holders into the combustion chamber. To cure this problem, the aluminum holders were filed on a cut-and-try basis until insertion was possible. Not only was this action time-consuming, but the safety aspects of metal removal in intimate proximity of the propellant were undesirable.

The great majority of gas generator assemblies that were fired had been manufactured specifically for this Ames test phase by Calspan Corp., who had also furnished a quantity of unassembled gas generator components for the

MSFC test phase (Table 4). From the unassembled components, several assemblies were produced, to account for changes in the test matrix subsequent to the order to Calspan. Three of these REMTECH-produced assemblies were fired and performed satisfactorily: Run Nos. 410, 414, and 424. Although Nozzle S/N-2 was found to be seriously eroded after firing one of these (Run 414), the recorded P_c had not exceeded the design value of 2000 psia. Thus, it was concluded that this nozzle deterioration was primarily due to the accumulated number of firings (22) rather than to that individual firing.

The actual P_c levels tended to be above the design values (Fig. 8). This situation was not necessarily detrimental to the program goal, especially as repeatability was evidenced.

The time lag from ignitor activation til diaphragm opening, and the P_c level at which the diaphragm opened, were not repeatable. Table 12 shows the measured time lags and approximate P_c at diaphragm opening.

For Run No. 423, a design P_c of 1600 psia was planned, but a value between 2600-2900 psia occurred. Estimates of P_c were obtained from the oscillograph values of P_3 and P_4, and the average ratios of P_c/P_3 and P_c/P_4 from previous shots with 2% Al propellant: Run Nos. 396, 398, and 400. The time lag from ignitor to diaphragm opening was one of the shortest recorded (Table 12). The propellant holders were intact and did not indicate any backside burning. The nozzle throat was not markedly more deteriorated after this run than before. The pressure transducer on Orifice No. 1 had pegged, and was removed and inspected, but no damage was evident. However, subsequent behavior of this transducer indicated it to be inoperative, and the P_c data for Run No. 424 may have an error of ±250 psi. The combustion chamber was carefully inspected for bulges and other damages, but none were found.

5.3 COMBINATION OF MODEL, GAS GENERATOR, AND WIND TUNNEL

The performance obtained from the combination of model, gas generator, and wind tunnel, provided data adequate to meet the minimum program goals. The tunnel was occupied for 20 8-hour shifts during 7 working days. There were a total of 23 valid hot firing runs and 8 plume-off runs in the tunnel, for an overall run rate of about 7 hours per hot firing run.

The exhaust plume had been a significant blockage factor to the primary tunnel flow in the MSFC test phase, causing the $M_\infty = 0.9$ portion of the planned test matrix to be eliminated, after two runs were made to assess the effect. However, in the larger Ames tunnel (approximately 26 times larger flow area), no evidence was noted of the exhaust plume affecting tunnel flow, as monitored by the tunnel wall static pressure tap.

The tunnel model support component (called the "Body Of Revolution", or "BOR") was protected by a fibreglass sheath for the last 22 hot firing runs. This sheath was showing considerable deterioration at the conclusion of testing. For the initial run, plastic tape had been used to protect this component, however, a single hot firing caused extensive deterioration of that material.

5.4 DATA REDUCTION

The data reduction procedure for the pressures on the model was the straightforward process of converting raw counts from the SEL digital data acquisition system into reduced coefficients with pressure in psia or ratios. The equation for this operation was:

$$P \text{ in psia} = P_{amb} + \text{counts/k}$$

In conjunction with this form, P_{amb} was measured for each run, and each pressure transducer was adjusted to read zero counts when exposed to ambient pressure before each run. The "k" gain was chosen for consistency with the individual transducer capabilities and expected pressures:

2 counts/psi for P_1

15 counts/psi for P_3

20 counts/psi for P_4

250 counts/psi for P_6 - P_{11}

All reduced data were output in printed format. The original cards containing the raw counts were kept by the Ames facility staff, and format information for them are available there. On Run No. 396, several frames of data were lost, so that there is a gap in the digital data between 214-256 msec. In fact, on all runs after 396, the SEL system was limited to 213 frames of data. This number of frames (at 2 msec/frame) was adequate for the events of interest. For some runs, the presented data is terminated prior to the 213th frame when P_c has decayed to a near-ambient value. (Data acquired after gas generator firing from transducers in the model strut, should be used with caution because there is the possibility of these transducers being heated rather quickly due to their proximity to the combustion chamber.)

For the tunnel static and total pressures, transducer outputs were used as the primary source during the test, with data reduction procedures similar to that just described for model pressures. The data reduced on line during the test and the oscillograph traces incorporate this transducer information. However, during the latter portions of the test, this

information channel became suspect. The recomputed data used the manometer values of tunnel static and total pressures. Because only one manometer reading was taken (for each pressure) during a run, these tunnel pressures and the tunnel Mach number computed using them, appear with only one value for a given run. It is such recomputed digital data that is presented in this report; the Brush oscillograph traces herein were recorded on-line.

5.5 DATA SELECTION

All of the data were reduced to coefficient or ratio form as described in Section 5.4. These reduced data were then inspected, to select a specific time interval during each hot firing run that would appropriately represent that run. In selecting that time interval, a period of smooth Pc was chosen using the Brush oscillograph traces and the digital data. The specific time interval was then identified with minimum values of $(\sigma)P_c$ for a time spread of ±4 msec. Five data frames were taken on each tare run, and the third frames were arbitrarily selected. The resulting selected reduced data are presented in Section 7.2, Summaries.

There were three operable base pressure orifices on each nozzle. To simplify analysis, it was desired to use only one value for base pressure. From the comparison of the three values (Fig. 9), no clear preference of one orifice over another was evident. For the MSFC test phase, the most extensive set of data were available for Orifice No. 6. It was also selected as adequately representative of base pressure for the Ames test phase, since this choice would provide consistency between the two phases.

6. ACCURACY

The accuracy of data may be assessed by three methods. First, the accuracy of each component or step used in the measuring process may be determined, and the cumulative effect summed. Second, measured data may be compared to equivalent data acquired elsewhere. Third, measured data may be compared to theory.

In applying the first method to this test, the components and steps were:

- Pressure transducer
- Analog-to-digital converter (SEL)
- Calibration procedures

The transducer accuracies specified in Table 7 were duplicated in bench tests at MSFC prior to this Ames test phase. The SEL equipment accuracy is specified as 4 counts due to noise, 2 1/2 counts due to nonlinearity, and 3 counts due to drift (neglected because of frequent re-zeroing during this test). Transducer calibration procedures could introduce errors from two sources: (a) the dial gauge used to set a "known" pressure on the transducer, and (b) the amount of 'dither' accepted in setting the SEL at that "known" pressure. The latter source was probably not more than 1-2 SEL counts: negligible. The dial gauges are specified accurate within 0.1% of full scale. The cumulative effects are shown in Table 7.

In applying the second method, the repeatability of the data is of first concern. As shown in Fig. 10, there were less repeat points available at Ames than MSFC, but essentially equal trends are indicated. Especially for the hot firings, the values measured on repeat runs are satisfactorily

close to the original values. There are two other sources of measured data for comparison: (a) the data acquired during the MSFC phase, and (b) the plume-off data acquired with the air/CF_4 model at Ames. To compare the hot firing Ames data to the MSFC data (adequately for assessing the accuracy of the Ames data) would require matching of Mach and Reynolds numbers, plus P_c/P_∞, ε, and propellant. Such a complete matching was not accomplished, partially since the aim of this phase was to extend (not duplicate) the previous phase. It was possible to compare plume-off data from Ames and MSFC, but this was done to evaluate tunnel-to-tunnel differences as discussed below, rather than basic data accuracy. It was also possible to compare the plume-off data acquired at Ames with that of the air/CF_4 model. The degree of similarity of models is shown in Fig. 11, and the data are compared in Fig. 12. Both models show disturbingly high values of base pressure ratio; body pressures are more conventional, except at M = 0.9. The transducer accuracy (Table 7) is considerably larger than the data scatter shown in Fig. 12, except at M = 0.9. Thus, it appears that, except at M = 0.9, the plume-off data from the two models agree acceptably. At M = 0.9, the model exterior pressures may be unrealistically high.

It was desired to identify any specific tunnel-to-tunnel differences. The most desirable approach would be to compare base pressures taken at identical Mach and Reynold's numbers in the two facilities. However, it was not possible to operate the Ames tunnel at Reynolds numbers as high as those used during the MSFC phase. For M = 1.2, sufficient data were available for a plot of base pressure versus Reynolds number (Fig. 13). For the plume-off case, a reasonably continuous variation is evident, and

the same type of trend is apparent at M = 0.9 and 1.5.

For the plume-on case, an additional variable is needed to quantify the plume effect: P_c/P_∞ is a likely choice. To simultaneously evaluate the effect of two variables upon a third, a carpet plot is convenient. However, such plots of the available data left room for considerable interpretation. It was concluded that suitable assessment of tunnel-to-tunnel differences was not forthcoming for the plume-on case.

Comparing the hot firing model exterior pressure data to theory was not undertaken, primarily because of the developing status of applicable theory. There are operable, fully-coupled, two-phase theories with M.O.C. or equivalent gas flow solutions including various degrees of gas-state chemistry, which would be applicable to the nozzle wall pressure. However, these were not available for this report. Comparisons were made to less sophisticated gas-only analyses, Fig. 14. Gas thermodynamic characteristics were generated by the methods of Ref. 8. Two limiting assumptions of chemical activity are shown.

7. DATA

An extensive body of data was acquired during this test program. It was decided that summaries of the data and samples of each type of data would be of general interest, while the complete collection might be of more limited interest. The data presentation was thus organized for this anticipated usage.

A certain time interval was selected to represent each run. The data for those selected time intervals are summarized in Section 7.1, in tabular and graphical forms. One sample of each of three types of data - oscillograph traces, tabulated output, and Schlieren photogrpahs - are then presented in Section 7.2, along with explanatory remarks. The complete set of data are presented in appendices.

7.1 SUMMARIES

The complete time histories were inspected to select a specific time interval during each run that would appropriately represent that run, using the criteria detailed in Section 5.5. In Table 13 are shown the selected times and the corresponding measured freestream and model parameters. All recorded data are presented, although in several instances there is variation among the three base pressures, and run-to-run scatter in the nozzle pressure ratio data. Where specific circumstances make the recorded data doubtful (as discussed in Sections 5 and 6), a question mark is inserted. The data from Table 13 are plotted in Figs. 14 to 16, along with the associated MSFC phase data.

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For the plume-off runs, the third (of five) time frames was chosen. The tunnel freestream conditions and the model parameters are shown in Table 13. On-line data are included where recomputed data were not provided.

There has been extensive analysis of the air/CF_4 model data (Ref. 9) which has indicated that, for the gas-phase data, certain correlation parameters appear quite promising. These parameters are δ_j for $M_\infty > 1$, and δ_j/γ_j for $M_\infty < 1$. The terms in these correlation parameters must come from analysis, as direct measurement is not practical. There are fully-coupled, two-phase analyses in operation, which would be most suitable for estimating these terms. However, these analyses were not available for this program, so gas-only M.O.C. analyses (using thermodynamic properties from Ref. 8) were used. The resulting correlation parameters are tabulated in Table 14, and plotted in Fig. 17 along with the associated MSFC phase values.

7.2 DATA PRESENTATION

The time histories of the measured parameters were recorded in two forms: oscillograph traces and digital computer tabulations. In addition, a Schlieren photograph was taken of the base flowfield for each run. The complete sets of data are presented in appendices. One representative sample of each type of data presentation is illustrated in this section.

Digital data were recorded on two data systems, as explained in Section 3.5. A sample of the printed data recorded on the SEL system is shown in Table 15. The complete time history recorded for Run No. 398 was edited in compiling Table 15 to show only the amount needed to illustrate

the type of data. Format is straightforward, consistent with the nomenclature of Fig. 7. P and PT are tunnel static and total pressures, respectively. PCAL is local barometric pressure; PREF was not used. The model chamber pressure ("PTC") is in psia, while all other pressures are in psfa. Time is in msec. In the heading, TNTSTP means tunnel/test/phase, and CONF denotes model configuration - either 34 or 38. The first digit (3) in CONF denotes the solid propellant model, and the second digit denotes nozzle nozzle expansion ratio. Note that for all runs (except Nos. 417 and 421) with UTP-3001 propellant, the heading denotes this as "15% Al", instead of the proper "16% Al". Sample rate is in frames per second. The last line of any given run is average tunnel parameters. All runs have identical format; P_2 and P_{10} are deleted as discussed in Section 3.

A sample of the printed data recorded on the Beckman system is shown in Table 16. Format is quite similar to that of the SEL system. TT is tunnel total temperature in °F, and RN/L is Reynolds number per unit length in millions per foot. PREF and PCAL were not used. In the heading, TST P TN means test, phase, tunnel.

In addition to the digitized data, six selected pressures and two events were recorded in analog form on a Brush oscillograph. These traces provide a convenient means to rapidly evaluate several parameters - the general character of P_c; base and body pressure responses to the plume; evidence that the tunnel flowfield is not affected by the plume, as shown by the unaffected wall pressure. A sample oscillograph trace is shown in Fig. 18. (Typical operational events were denoted in Fig. 5.) Note that time increases to the left. The time scales shown are correct increments

(10 cm/sec); the specific values were arbitrarily chosen and provide consistency between the two segments presented. All pressures are in psig. Channel 7 shows a signal when the SEL data system scan was completed. Channel 8 shows a signal when the Schlieren camera lens opened. Note that the model base pressure on Channel 4 is P_6 up through Run No. 414, and is P_8 for Run Nos. 415 and higher.

A Schlieren photograph was taken of each firing (except Run No. 398), and of one plume-off run (No. 391). A sample is shown in Fig. 19. The types of flow phenomena expected in wakes are apparent. Significant interactions of the external flow with the plume are evident. To help interpret this photograph, the relevant model geometry is sketched in relation to the Schlieren image in Fig. 20. However, the general quality of the Schlierens is not high: the complete image has a blurred appearance, as if the camera was not completely in focus, or the camera or mirror were vibrating. In any event, the resulting quality is such that it was decided to omit the Schlierens from this report.

8. REFERENCES

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3. "Characteristics Of Six Research Wind Tunnels Of The Ames Aeronautical Laboratory", NACA, 1957.

4. Andrews, C. D., and Ketter, F. C., "Pretest Information for a Plume Technology Test in the NASA-Ames 6 By 6 Foot Supersonic Wind Tunnel", Lockheed Missiles and Space Company, LMSC-HREC TM D390147, March 1974.

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6. Baran, W. J., "Development of a Miniature Solid Propellant Rocket Motor for Use in Plume Simulation Studies," Calspan Corporation, Report No. AA-4018-W-10, April 1974.

7. Baran, W. J., "Plume Technology Study - Operational and Safety Procedures for Installation of Live Rocket Motor and Rocket Motor Ignitors for Test in the George C. Marshall 14 X 14-Inch Trisonic Wind Tunnel", Calspan Corporation, Informal memo, 1973.

8. Gordon, Sanford and McBride, Bonnie J., "Computer Program for Calculation of Complex Chemical Equilibrium Compositions, Rocket Performance, Incident and Reflected Shocks, and Chapman-Jouguet Detonations," NASA SP-273, Lewis Research Center, National Aeronautics and Space Administration, 1971.

9. Blackledge, Mick L., and Ronald A. Gyorfi, "Plume Technology Program Base Pressure Simulation Parameters", Northrop Services, TN 230-1267, April 1974.

TABLE 1

CAPSULE OF ARC 033-66 (FA7) TEST

Chronology: August 20-28

Tests Accomplished (Design Values)

ε	%Al	M_∞	P_c (psia)				
			400	800	1000	1400	1800
8	16	0.9	X	X		X	X
		1.2	X	X,X,X①		X	X
		1.5	X	X		X	X
	2	0.9	X		X		X
		1.2	X		X		X
4	16	0.9		X			
		1.5		X			
	2	0.9	X				

① Pt_∞ = 13 psia (Pt_∞ = 5 psia for all other runs)

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TABLE 2

MODEL STRESS ANALYSIS SUMMARY

DESIGN LOADS

P_c = 2000 psia (312 # thrust)

27.1 # weight of assembly

Factor of safety = 5.0

Component	Mode	Margin of Safety
Strut	Bending	4.2
Strut/Sting Attachment	Tension	2.1
	Shear	9.9
Sting	Bending	5.3
Sting/Adapter Attachment	Tension	4.4
	Shear	19.5
Adapter	Bending	16.8
Body (Pressure Vessel)	Simple Hoop	3.2
	Longitudinal	0.8
	Shear	6.0
	Fatigue	(Non-Critical)
Ignitor Threads	Shear	240
Nozzle Screws	Tension	.26
BODY BURSTS AT P_c = 18, 400 psia NOZZLE SCREWS FAIL AT P_c = 13, 400 psia		IF THROAT BLOCKED

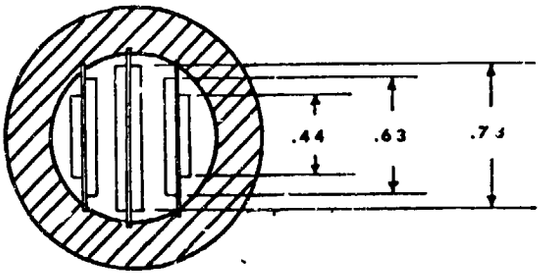
TABLE 3

PROPELLANT PROPERTIES

Designation	UTP-3001	ANB - 3335 - 1
Manufacturer	United Technology Center San Jose, Calif.	Aerojet Solid Propulsion Co. Sacremento, Calif.
Al Content	16%	2%
Oxidizer	AP	AP
Binder	PBAN	CTPB
Flame Temperature	6100°R (at P_c = 300 psia)	5340°R (at P_c = 510 psia)

TABLE 4

GAS GENERATOR CHARACTERISTICS
(All Dimensions in inches)



COMPLETE GAS GENERATOR ASSEMBLIES

Propellant	ε	Design P_c (psia)	Propellant Length		Diaph. Thick.	Quan. Fab. ①
			Side	Center		
ANB-3335-1 (2%Al)	8	400	1.50	5.60	.005	3
		800	1.60	9.50	.007	5
		1200	9.50	1.50	.009	7
	4	400	8.75	1.50	.005	6
UTP-3001 (16%Al)	8	400	1.50	3.15	.005	3
		800	1.50	6.20	.007	8
		1200	1.50	8.60	.009	4
		1600	7.80	1.50	.011	4 ②
	4	400	1.50	8.55	.005	4
		800	9.50	1.50	.007	5

Plus 130 Holex ignitors, No. 1196B
and 16 Holex ignitors, No. 1196A.

① Calspan manufactured unless noted.

② REMTECH manufactured.

TABLE 5

GAS GENERATOR HANDLING AND LOADING SEQUENCE

As Required

1. Obtain significant quantity of charges and ignitors from magazine in Bldg. N208A (Up to 2 lb. of propellant, up to 8 ignitors). Magazine key controlled by ARO Shift Engineer.
2. Store at User's Desk in Control Room of Building N226, with key controlled by REMTECH personnel.
3. Install "No Smoking" signs at entrances to Control Room.

Each Firing

1. Be sure chamber and nozzle are clean.
2. Obtain one charge from User's Desk.
3. Check charge dimensions, record propellant weight.
4. Glue two small (0.06" X 0.10") pieces of Holex HLX-2-1 booster propellant onto forward end of center propellant, after removing some of forward RTV edge coating. Lightly roughen the exposed propellant surfaces. (For Run Nos. ≥ 405.)
5. Insert each of 3 holders into chamber so that approximately 1/2" gap is provided between heat end of chamber and forward end of holder.
6. Assemble correct thickness diaphragm, and coat chamber side of diaphragm with RTV (to prevent diaphragm burning).
7. Install diaphragm, O-rings (on each pressure tap line), and after-body (nozzle) with 6 screws torqued to 18 inch-pounds.
8. Check for leaking and for continuity of pressure taps, by holding suction line to each orifice and monitoring data systems.
9. Obtain one ignitor from User's Desk, and the key to the firing box as a safety procedure. Check continuity of firing circuit leads, and for stray currents.
10. Install ignitor, using special torque wrench.
11. Shunt ignitor leads while attaching firing circuit leads, then check continuity of total circuit.
12. (Ready to activate ignitor as desired.)

TABLE 6

THEORETICAL GAS GENERATOR EXHAUST PRODUCTS
(MASS PERCENTAGES)

CHEMICAL EQUILIBRIUM TO NOZZLE EXIT

PRODUCT	16%AL UTP-3001				2%AL ANB-3335-1 ①		
	ε = 8		ε = 4		ε = 8		ε = 4
	P_c = 400	1600	400	800	400	1200	400
ALCL2			0.18	0.17			
AL2O3(S)	27.39	27.39	14.04	15.13	3.74	3.74	3.75
AL2O3(L)			12.04	14.99			
CO	37.99	37.98	38.84	36.68	15.93	15.89	17.66
CO2	1.30	1.31	1.16	1.09	20.66	20.73	17.95
FECL2	0.38	0.39	0.36	0.36			
HCL	18.57	18.59	18.66	17.67	25.52	25.52	25.49
H2	3.67	3.67	3.72	3.51	1.20	1.21	1.08
H2O	3.23	3.23	3.44	3.24	21.90	21.88	23.01
N2	7.43	7.43	7.58	7.15	10.09	10.09	10.09

CHEMICAL EQUILIBRIUM TO NOZZLE THROAT,
FROZEN CHEMISTRY DOWNSTREAM

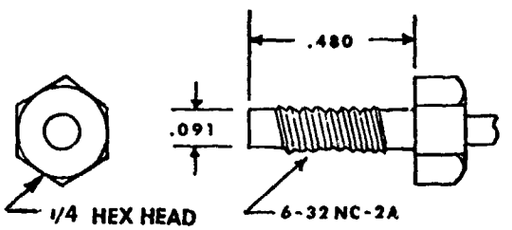
PRODUCT	16%AL UTP-3001		2%AL ANB-3335-1①	
	P_c = 400	1600	400	1200
ALCL	1.71	1.28		
ALCL2	1.68	2.15		
ALOCL	0.28	0.19		
AL2O3(L)	24.89	25.14	3.70	3.69
CO	38.10	38.21	20.10	20.08
CO2	1.16	1.13	14.12	14.14
CL	0.79	0.49	0.72	0.46
FE	0.11			
FECL2	0.13	0.22		
H	0.13			
HCL	15.55	15.76	24.72	24.98
H2	3.49	3.54	0.92	0.92
H2O	4.43	4.44	24.92	24.40
N2	7.43	7.45	10.08	10.08
OH	0.11		0.25	0.16

Trace amounts not shown

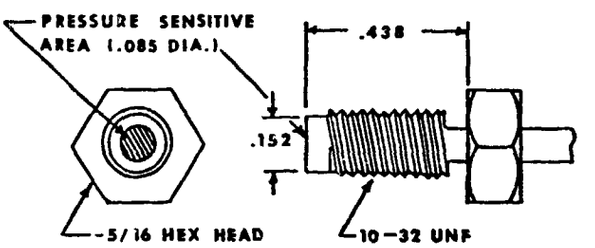
① No FE compounds in this propellant

TABLE 7

PRESSURE TRANSDUCER CHARACTERISTICS



XTS-140



XTS-190

Dimensions in Inches

Maximum Installation Torque: 5 in-lbs.

Maximum Installation Torque: 10 in-lbs.

Location	Chamber	Nozzle	Model Exterior
Model Number	XTS-190-2000	XTS-190-500	XTL-140-25
Pressure (psia)			
Rated	2000	500	25
Maximum	3000	1000	50
Acc. Sens. (%FS/g			
Perpendicular	0.00005	0.00009	0.0003
Transverse	0.00001	0.000018	0.00006
Temp. Effect (%100F)			
Sensitivity	1	1	1
No load output/FS	0.5	0.5	0.5
Combined Non-linearity and Hysteresis (%FS)	0.5	0.5	1
Repeatability	0.25	0.25	0.5
Error due to: (in psia)			
Transducer	10	2.5	.25
SEL	3.5	.47	.028
Calibration	2.5	.5	.100
Total	16	3.47	.378

TABLE 8

INSTRUMENTATION AND DATA SYSTEM CHANNEL ASSIGNMENTS

Parameter	Symbol	Orifice No.	Data System Component		
			SEL Digital Data Acquisition System	Brush Oscillograph	Beckman Digital Data Acquisition System
Tunnel Total ① Pressure	P_{t_∞}		1		X
Tunnel Static ① Pressure	P_{s_∞}		2	6	X
Tunnel Total Temperature	T_{t_∞}				X
Chamber Pressure	P_c	1	3	1	
Nozzle Pressure	P_2	2	4		
	P_3	3	5	2	
	P_4	4	6	3	
Base Pressure	P_6	6	7	4	
	P_7	7	8		
	P_8	8	9		
Body Pressure	P_9	9	10	5	
	P_{10}	10	11		
	P_{11}	11	12		
Time			X	X	
Schlieren Camera Lens Opening				7	
SEL Initiation				8	

① See text, Section 3.5.

TABLE 9

SEQUENCE OF EVENTS FOR EACH RUN

	Event	Project Engr.	Test Engr.	Model Mechanic	Data Engr. (IT)	Data Operator (TA)	Tunnel Op. (BBC)
		Responsible Individual					
PREPARATION	1. Select ε, %Al, P_C, M_∞, P_{T_∞}, P_{S_∞}	X	X				
	2. Obtain g.g. charge (depends on ε, %Al, P_C)		X				
	3. Load g.g. charge (see Table 5)	X					
	(incl. instl. diaphragm which depends on P_C)	↓					
	(incl. selecting nozzle - ε)			X	X		
	(incl. leak check)						
	4. Check condition of b.l. grit on nose	X					
	5. Install nose	X					
	6. Verify data system readiness				X	X	
	7. Close tunnel			X			X
	8. Set up Schlieren camera					X	
OPERATION	1. Start tunnel flow						X
	2. Start Brush stripchart recorder				X		
	3. Activate data acquisition system				X		
	4. Activate gas generator firing circuit				X		
	(incl. gas generator fire)				↓		
	(incl. activating data acquisition)						
	(incl. activating Schlieren camera)						
RECOVERY	1. Stop tunnel flow						X
	2. Open tunnel			X			
	3. Visually inspect nozzle	X					
	4. Remove nozzle, inspect propellant holders	X		X			
	5. Clean nozzle and combustion chamber	X		X			
	6. Check diaphragm for radial leakage	X					
	7. Measure throat diameter	X					
DATA REDUCTION	1. Check IBM-523-punched cards for obvious errors		X			X	
	2. Feed cards thru data reduction deck		X			X	
	3. Review coefficients	X					

TABLE 10

DESIGN TEST CONDITIONS

ε	Nominal		Run Numbers		
	M_∞	P_c (psia)	16% Al (UTP-3001)	2% Al (ANB-3335)	Jet Off
8 S/N-2 (* = S/N-5)	0.9	0			391,393,395,406
		400	405	401	
		800	406		
		1000		396	
		1400	419*		
		1800	410	398	
	1.2	0			399,400,413
		400	407	415*	
		800	411,412Φ,413		
		1000		400	
		1400	420*		
		1800	414	423*	
	1.5	0			416*,418*
		400	417*		
		800	418*		
		1400	421*		
		1800	424*		
4 S/N-3	0.9	400		408	
		800	409		
	1.5	800	422		

Φ P_{T_∞} = 13 psia (P_{T_∞} = 5 psia for all other runs.)

TABLE 11 RUN LOG (Sht. 1 of 3)

GENERAL			DESIGN CONDITIONS				CONFIGURATION			REMARKS
DATE	TIME (PDT)	RUN.NO.	M_∞	ϵ	%Al	P_c (psia)	NOZZLE SERIAL NO.	DIAPH. THICK (in.)	PROP WT. (grams)	
8/21/74	2020	391	0.9	8	-	-	2	-	-	Plume off.
	2045	392			2	400		.005	27.85	No data: misfire - ignitor fired, but g.g. did not. Diaphragm ruptured.
8/22/74	0100	393			-	-		-	-	Plume off.
	0110	394			2	1000		.010	41.9	No data: misfire. Small tear in inner of two-layer diaphragm.
	0305	395			-	-		-	-	Plume off.
	0312	396			2	1000		.010	41.9	Successful firing. SEL at 1000 frames/sec. Did not get data for t = 214-256 msec.
	0945	397				1800		.009	49.8	No data: misfire. Diaphragm intact.
	1300	398	↓	↓	↓	↓		↓	↓	Successful firing. SEL at 500 frames/sec. No Schlieren Photo.
	2030									Changed P_c transducer because of uncontrollable drifting.
8/23/74	0050	399	1.2		-	-		-	-	Plume off.
	0057	400	↓		2	1000		.010	43.5	
	0321	401	0.9	↓	↓	400	↓	↓	27.85	
	0650	402		4		↓	3		44.8	No data: misfire. Diaphragm intact.
	0845	403		↓	↓		↓		↓	No data: misfire. Diaphragm intact.
	1255	404		8	16		2		23.5	No data: misfire. Diaphragm intact.
	1540									Changed voltage comparator to 200 psi.
	1640	405	↓	↓	↓	↓	↓	↓	↓	HLX-2-1 booster propellant on fwd. end of g.g. Successful firing.
8/23/74	1855	406	↓	↓	↓	800	↓	.012	37.35	
	1930									Regritted nose b.l. trip.
	2113	407	1.2	↓	↓	400	↓	.010	?	Substitute side slab; propellant weight was 22.7 g. originally.
	2210									Cleaned P_c port and transducer.

TABLE 11 RUN LOG (Sht. 2 of 3)

GENERAL			DESIGN CONDITIONS				CONFIGURATION			REMARKS
DATE	TIME (PDT)	RUN.NO.	M_∞	ε	%Al	P_c (psia)	NOZZLE SERIAL NO.	DIAPH. THICK (in.)	PROP WT. (grams)	
8/26/74	0302	408	0.9	4	2	400	3	.007	44.8	
	0520	409	↓	↓	16	800	↓	↓	65.9	
	0735	410	↓	↓	8	1800	2	.011	?	REMTECH mfg. g.g. Diaphragm and O-rings badly deteriorated after firing ; possible leak.
	0830		↓	↓	↓	↓	↓	↓	↓	Replaced ignitor firing leads.
	1120	411	1.2	↓	↓	800	↓	.007	36.2	Extensive slag in nozzle.
	1430	412	↓	↓	↓	↓	↓	↓	36.65	P_{T_∞} = 13 psia. Extensive slag in nozzle.
	1650	-	↓	↓	↓	↓	↓	↓	-	No data - attempt to get P_{T_∞}=16 psia.
	1732	413	↓	↓	↓	↓	↓	.010	36.2	
	1820		↓	↓	↓	↓	↓	↓	↓	In cleaning P_c transducer, screen came off. Replaced. New transducer has slight drift.
8/27/74	0052	414	1.2	8	16	1800	2	.011	?	REMTECH mfg. g.g. Extensive slag. Postfire: nozzle throat eroded.
	0520	415	↓	↓	2	400	5	.010	?	G.G. mfg. for MSFC phase. P_6 plugged.
	0845	416	1.5	-	-	-	↓	-	-	Plume off.
	0850	417	↓	↓	16	400	↓	.007	27.7	G.G. originally mfg. for MSFC phase.
	1700	418	↓	↓	↓	800	↓	.009	35.95	P_6 okay after repair.
	1730		↓	↓	↓	↓	↓	↓	↓	Cleaned P_c port and transducer.
	1955	419	0.9	↓	↓	1400	↓	.010	47.1	
	2155	420	1.2	↓	↓	↓	↓	↓	47.1	P_3 covered with and filled by slag. One side propellant holder burned up.
	2300		↓	↓	↓	↓	↓	↓	↓	Cleaned P_c port and transducer.

TABLE 11 RUN LOG (Sht. 3 of 3)

GENERAL			DESIGN CONDITIONS				CONFIGURATION			REMARKS
DATE	TIME (PDT)	RUN.NO.	M_∞	ε	%Al	P_c (psia)	NOZZLE SERIAL NO.	DIAPH. THICK (in.)	PROP WT. (grams)	
8/28/74	0200	421	1.5	8	16	1400	5	.010	?	G.G. mfg. for MSFC phase. Some nozzle erosion.
	0405	422	↓	4	↓	800	3	.009	65.65	Revert back to Holex 1196B ignitor, retaining use of HLX-2-1 booster. Extensive slag. Center propellant holder burned up.
	0450									Cleaned P_c port and transducer. After installation, transducer drifter. Found broken lead wire. Replaced with transducer that had lost its shield (8/26 at 1820), protected with silicone grease.
	1040	423	1.2	8	2	1800	5	.012	49.9	P_c went overscale. Nozzle erosion progressing but still acceptable.
	1200			↓		↓	↓			Cleaned P_c port and transducer, replaced silicone protection.
	1400	424	1.5	↓	16	↓	↓	.012	?	REMTECH mfg. g.g. P_c behavior suspect. Postfire: Nozzle erosion significant.

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TABLE 12

GAS GENERATOR ACTIVATION RESULTS

Propellant	UTP-3001 (16% Al)					ANB-3335-1 (2% Al)			
ε	8				4	8			4
Normal P_c	1800	1400	800	400	800	1800	1000	400	400
Thickness (in.)	.011	.010	.007	.007	.007	.009	.010	.010	.007
$t_{RUPTURE}$ (sec)	.405	.585	.495	.300	.295	.710	.380	.290	.135
	.250	.385	.515				.140	.175	
		.460							
	.012		.009	.010	.009	.012			
	>.640		.420	.260	.370	.180			
			.010						
			.550						
			>.450						
			.012						
			.345						
Thickness (in.)	.011	.010	.007	.007	.007	.009	.010	.010	.007
P_c at opening of diaphragm (psia)	700	350	125	200	150	250	700	250	225
	250	450	100				200	400	
	.012		.009	.010	.009	.012			
	200		300	300	600	500			
			.010						
			150						
			250						
			.012						
			250						

TABLE 13

TEST DATA SUMMARY

Design P_c	Run	ε	S/N	%Al	M_∞	T_{T_∞} (°R)	P_{T_∞} (psf)	P_∞ (psf)	P_c (psia)	P_c/P_∞	Nozzle P_3/P_c	Nozzle P_4/P_c	Base P_6/P_∞	Base P_7/P_∞	Base P_8/P_∞	Body P_9/P_∞	Body P_{11}/P_∞	Time
									Hot Firing Runs									
400	405	8	2	16%	.895	541	633	376	405	178	.0367	.0152	.965	1.000	.975	.948	1.028	250
800	406	↓	↓	↓	.892	537	633	377	1502	382	.0274?	.0143	1.115	1.108	1.111	1.079	1.092	172
1200	419		5		.897	531	632	375	1610	618	.0376	.0166	1.199	1.193	1.206	1.169	1.161	154
1600	410		2		.897	528	634	376	1715	656	.0440	.0148	1.179	1.219	1.194	1.154	1.128	38
800	412				1.210	551	1877	763	968	183	.0419	.0153	.809	.813	.815	.877	.922	168
400	407				1.205	536	637	261	395	218	.0410	.0157	.877	1.054	.906	.875	1.040	136
800	413				1.206	544	638	261	935	543	.0411	.0145	1.214	1.216	1.244	1.136	1.026	180
800	411				1.209	536	639	260	1042	577	.0425	.0172	1.235	.967	1.250	1.164	1.027	176
1200	420		5		1.207	530	637	260	1577	872	.0462	.0161	1.285	1.283	1.340	1.250	1.042	124
1600	414		2		1.212	531	638	259	1988	1105	.0418	.0156	1.456	1.459	1.488	1.392	1.094	80
400	417		5		1.457	538	636	184	384	300	.0412	.0170	-	.871	.865	.896	1.062	250
800	418				1.463	540	636	183	1028	809	.0358	.0162	1.106	1.162	1.235	1.074	1.156	184
1200	421				1.462	531	636	183	1450	1142	.0446	.0180	1.267	1.317	1.355	1.198	1.147	124
1600	424	↓	↓		1.456	536	637	185	1991?	1550?	.0486?	.0200?	1.268	1.430	1.464	1.337	1.125	84
800	409	4	3		.894	528	632	376	964	369	.0875	.0413	1.277	1.281	1.273	1.229	1.183	98
800	422	↓	↓	↓	1.462	530	636	183	1076	847	.0867	.0429	1.506	1.521	1.528	1.443	1.115	62
400	401	8	2	2%	.896	532	631	375	425	163	.0390	.0147	.932	1.047	.941	.918	1.041	276
800	396		↓	↓	.895	531	632	375	883	339	.0410	.0142	1.218	1.194	1.201	1.178	1.201	90
1600	398				.897	537	634	376	1746	668	.0412	.0153	1.319	1.224?	1.327	1.304	1.249	60
400	415		5		1.209	529	639	260	501	277	.0415	.0159	-	.937	.946	.931	1.066	126
800	400		2		1.206	536	638	261	890	491	.0386	.0139	1.142	1.292	1.158	1.058	1.094	148
1600	123	↓	5		1.210	530	640	260	2750?	1520?	.0415?	.0132?	1.364	1.363	1.379	1.295	1.054	108
400	408	4	3	↓	.897	530	633	376	450	173	.0870	.0404	1.120	1.133	1.130	1.079	1.093	70
									Plume-Off Runs									
	391				.895	537	632	375					1.165	1.187	1.164	1.096	1.173	3
	393*				.874		628	381					1.141	1.098	1.123	1.105	1.171	3
	399				1.208	535	638	260					.926	1.032	.904	.913	1.097	6
	406*				.884	537	642	386					.958	.941	.965	.925	1.012	6
	407*				1.187	536	647	271					.829	.946	.823	.844	1.008	6
	413*				1.196	544	653	271					.878	.840	.897	.874	.982	6
	416				1.459	537	636	184						.743	.768	.881	1.047	6
	418*				1.415	540	635	195					.826	.744	.832	.877	1.086	6
	391*				.880	537	626	378					1.158	1.179	1.157	1.089	1.166	3

*From on-line data reduction; otherwise, recomputed.

TABLE 14

CORRELATION DATA SUMMARY

Run No.	% Al	Nozzle	Nom. M_∞	P_b/P_∞	GAS-ONLY EQUILIBRIUM δ_{jb}	GAS-ONLY EQUILIBRIUM $\delta_{j\infty}$	GAS-ONLY EQUILIBRIUM γ_{EX}	GAS-ONLY IDEAL δ_{jb}	GAS-ONLY IDEAL $\delta_{j\infty}$	GAS-ONLY IDEAL γ_{EX}
405	16%	ε =8	0.9	0.965	29.8	29.3	1.2196	28.3	28.1	1.2199
406				1.115	37.0	38.0	1.2225	35.7	36.7	1.2179
419				1.199	42.1	43.4	1.2239	40.6	41.7	1.2168
410				1.179	42.2	43.9	1.2240	40.7	42.2	1.2166
409		ε =4		1.277	51.6	54.3	1.2048	49.3	52.1	1.2180
401	2%	ε =8		0.932	27.7	26.9	1.2326	27.7	26.9	1.2188
396				1.218	33.0	35.3	1.2328	33.0	35.3	1.2178
398				1.319	39.7	42.4	1.2332	39.7	42.4	1.2162
408		ε =4		1.120	41.9	43.3	1.2273	41.9	43.3	1.2182
412	16%	ε =8	1.2	0.809	32.0	29.6	1.2224	30.7	28.2	1.2180
407				0.877	33.2	31.7	1.2191	31.9	30.3	1.2203
413				1.214	39.8	41.8	1.2224	38.4	40.5	1.2180
411				1.235	40.2	42.4	1.2226	39.0	41.0	1.2178
420				1.285	43.8	46.3	1.2238	42.7	45.1	1.2168
414				1.456	44.8	48.4	1.2243	43.8	47.5	1.2162
415	2%			0.946*	33.7	33.1	1.2326	33.7	33.1	1.2186
400				1.143	37.9	39.3	1.2328	37.9	39.3	1.2178
423				1.364	47.5	49.8	1.234	47.5	49.8	1.2145
417	16%	ε =8	1.5	0.865*	37.1	35.5	1.2189	35.7	34.0	1.2204
418				1.106?	44.8	45.8	1.2226	43.5	44.5	1.2179
421				1.267?	46.9	49.1	1.2236	45.6	47.9	1.2170
424				1.464*	48.0	51.7	1.2243	47.1	50.7	1.2162
422		ε =4		1.506	58.8	63.0	1.2058	56.4	60.6	1.2177

* P_8; otherwise, P_6

TABLE 15

TABULATED SEL DATA SAMPLE - RUN NO. 398

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
398	1	66/033/1	38	2%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
1	2	376	634	0.897	395	151.3		0.0249	0.0102	1.143	1.007	1.134	1.117		1.168
2	4	376	634	0.897	478	183.0		0.0258	0.0097	1.157	1.021	1.145	1.126		1.171
3	6	376	634	0.897	573	219.2		0.0271	0.0095	1.171	1.042	1.165	1.145		1.178
4	8	376	634	0.897	671	256.9		0.0283	0.0091	1.180	1.061	1.180	1.159		1.185
5	10	376	634	0.897	775	296.5		0.0298	0.0092	1.188	1.080	1.200	1.175		1.192
6	12	376	634	0.897	878	335.9		0.0312	0.0095	1.198	1.102	1.220	1.195		1.201
7	14	376	634	0.897	978	374.2		0.0324	0.0099	1.209	1.120	1.237	1.209		1.206
8	16	376	634	0.897	1072	410.2		0.0336	0.0105	1.223	1.140	1.253	1.229		1.214
9	18	376	634	0.897	1158	443.3		0.0345	0.0110	1.235	1.159	1.267	1.241		1.218
10	20	376	634	0.897	1236	473.1		0.0354	0.0115	1.246	1.172	1.279	1.253		1.223
11	22	376	634	0.897	1305	499.5		0.0361	0.0119	1.258	1.183	1.290	1.266		1.227
12	24	376	634	0.897	1367	523.1		0.0369	0.0122	1.269	1.192	1.298	1.272		1.230
13	26	376	634	0.897	1420	543.3		0.0374	0.0125	1.278	1.198	1.304	1.279		1.234
14	28	376	634	0.897	1465	560.8		0.0379	0.0128	1.286	1.204	1.310	1.286		1.235
15	30	376	634	0.897	1505	575.9		0.0384	0.0133	1.293	1.212	1.315	1.290		1.238
16	32	376	634	0.897	1537	588.1		0.0388	0.0136	1.296	1.217	1.318	1.293		1.238
17	34	376	634	0.897	1567	599.6		0.0392	0.0140	1.299	1.221	1.321	1.296		1.240
18	36	376	634	0.897	1592	609.4		0.0395	0.0144	1.302	1.224	1.322	1.298		1.241
19	38	376	634	0.897	1615	618.2		0.0397	0.0145	1.304	1.226	1.322	1.298		1.241
20	40	376	634	0.897	1638	627.0		0.0400	0.0147	1.310	1.227	1.325	1.301		1.243
21	42	376	634	0.897	1657	634.2		0.0401	0.0147	1.310	1.226	1.325	1.299		1.243
22	44	376	634	0.897	1676	641.5		0.0402	0.0147	1.313	1.224	1.325	1.301		1.244
23	46	376	634	0.897	1694	648.2		0.0403	0.0148	1.316	1.227	1.327	1.304		1.246
24	48	376	634	0.897	1708	653.6		0.0403	0.0149	1.313	1.224	1.325	1.301		1.244
25	50	376	634	0.897	1722	658.9		0.0405	0.0151	1.315	1.227	1.327	1.302		1.246
26	52	376	634	0.897	1732	662.7		0.0406	0.0152	1.316	1.229	1.327	1.304		1.247
27	54	376	634	0.897	1739	665.4		0.0407	0.0153	1.316	1.227	1.325	1.302		1.246
28	56	376	634	0.897	1744	667.3		0.0409	0.0154	1.319	1.230	1.328	1.307		1.249
29	58	376	634	0.897	1745	667.9		0.0410	0.0153	1.318	1.226	1.327	1.304		1.249
30	60	376	634	0.897	1746	668.3		0.0412	0.0153	1.319	1.224	1.327	1.304		1.249
31	62	376	634	0.897	1745	667.9		0.0414	0.0154	1.321	1.224	1.327	1.307		1.250
32	64	376	634	0.897	1743	667.1		0.0416	0.0154	1.319	1.223	1.325	1.304		1.249
112	224	376	634	0.897	356	136.3		0.0752	0.0276	1.180	1.012	1.123	1.117		1.178
113	226	376	634	0.897	303	116.0		0.0802	0.0291	1.159	0.992	1.108	1.103		1.174
114	228	376	634	0.897	254	97.1		0.0866	0.0310	1.142	0.975	1.094	1.093		1.172
115	230	376	634	0.897	210	80.5		0.0944	0.0336	1.126	0.961	1.082	1.084		1.169
116	232	376	634	0.897	169	64.6		0.1042	0.0365	1.111	0.946	1.070	1.074		1.165
117	234	376	634	0.897	134	51.2		0.1175	0.0420	1.114	0.937	1.062	1.068		1.163
118	236	376	634	0.897	102	39.1		0.1355	0.0500	1.119	0.929	1.056	1.064		1.162
119	238	376	634	0.897	74	28.4		0.1641	0.0608	1.110	0.923	1.051	1.059		1.160
120	240	376	634	0.897	52	19.8		0.2111	0.0776	1.093	0.920	1.051	1.059		1.160
121	242	376	634	0.897	30	11.6		0.3171	0.1163	1.082	0.915	1.050	1.059		1.160
122	244	376	634	0.897	14	5.2		0.6209	0.2308	1.080	0.915	1.051	1.061		1.159

MACH	Q	P	PT	PREF	PCAL
0.897	211.7	376	634	1423	2119

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

REMTECH INCORPORATED RTR 016-2

TABLE 16

TABULATED BECKMAN DATA SAMPLE - RUN NOS. 391-398

TST-033 TN-, TA-66 RUN-391 SEQ-1 IC PRESSCUT2 24 SEP 74@16:35 PAGE 1

RUN:SEQ
391:1

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.895	210.7	375.5	631.9	77.0	1.307	2% AL

PREF	PCAL
1418.8	2115.4

RUN:SEQ
396:9

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.895	210.7	375.5	631.9	71.0	1.326	2% AL

PREF	PCAL
1414.5	2117.6

RUN:SEQ
398:11

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.897	211.7	376.3	634.0	77.4	1.311	2% AL

PREF	PCAL
1422.3	2119.7

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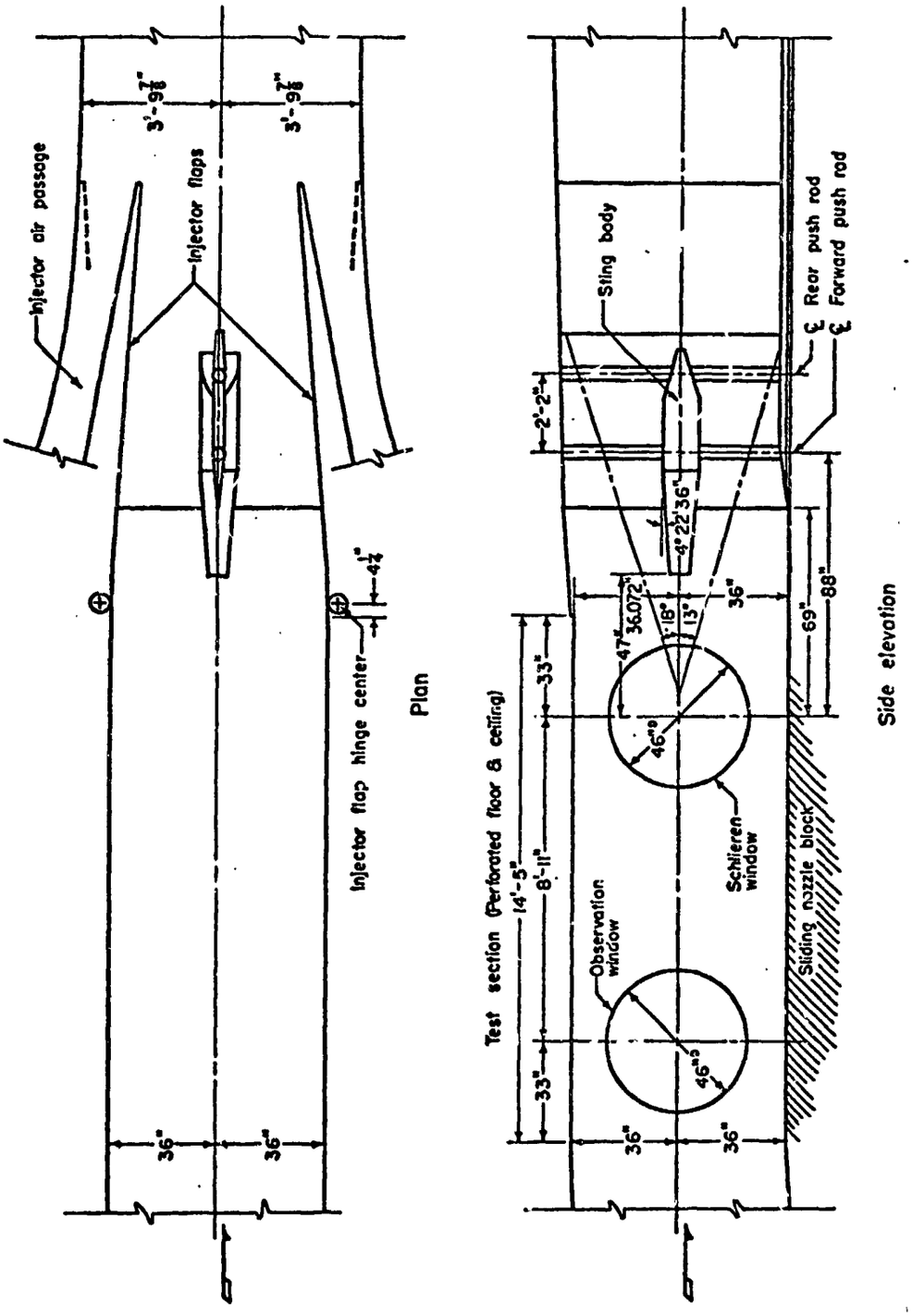


Fig. 1 Ames 6- by 6-Foot Supersonic Wind Tunnel

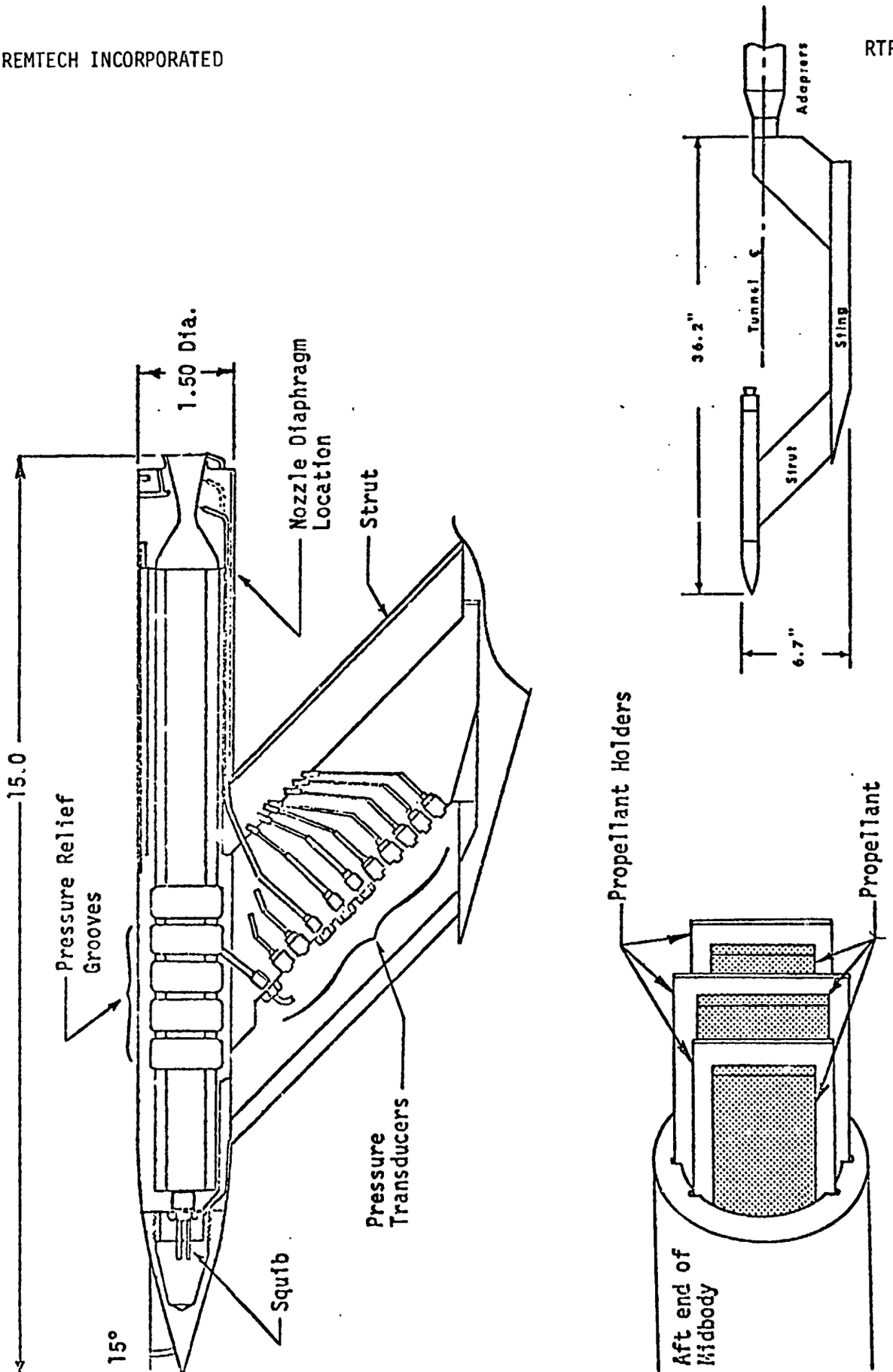
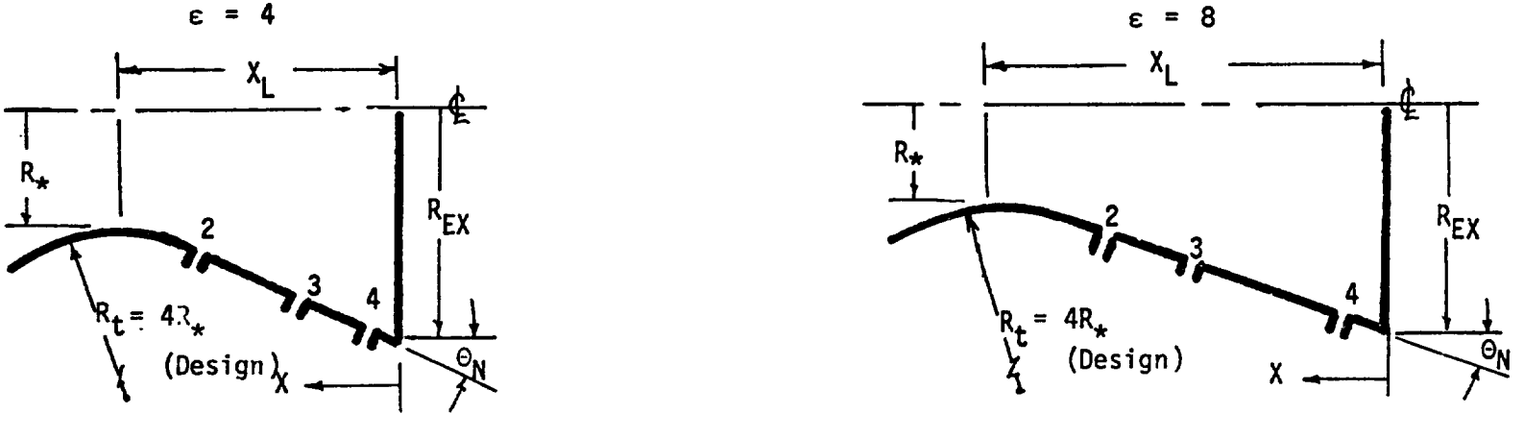


Fig. 2 Model Design



SERIAL NO. (S/N)	BASIS	NOZZLE						INSTRUMENTATION					
		A_{EX}/A_*	R_*	R_{EX}	X_L	R_t	Θ_N	X_2	X_3	X_4	A_2/A_*	A_3/A_*	A_4/A_*
5	DESIGN	8	.124	.350	.910	.496	15°	.752	.406	.060	1.45	3.79	7.29
	MEASURED	8.15	.122	.348	.901	.480	14° 59'		.373	.063		4.15	7.37
2	DESIGN	8	.124	.350	.910	.496	15°	.752	.406	.060	1.45	3.79	7.29
	MEASURED	7.63	.126	.348	.994	.450	14°43'	.759	.376	.047	1.39	3.91	7.10
3	DESIGN	4	.175	.350	.745	.700	15°	.534	.297	.060	1.40	2.38	3.64
	MEASURED	4	.175	.350	.740	.660	15°11'	.542	.263	.043	1.36	2.55	3.74

Fig. 3 Nozzle Geometry

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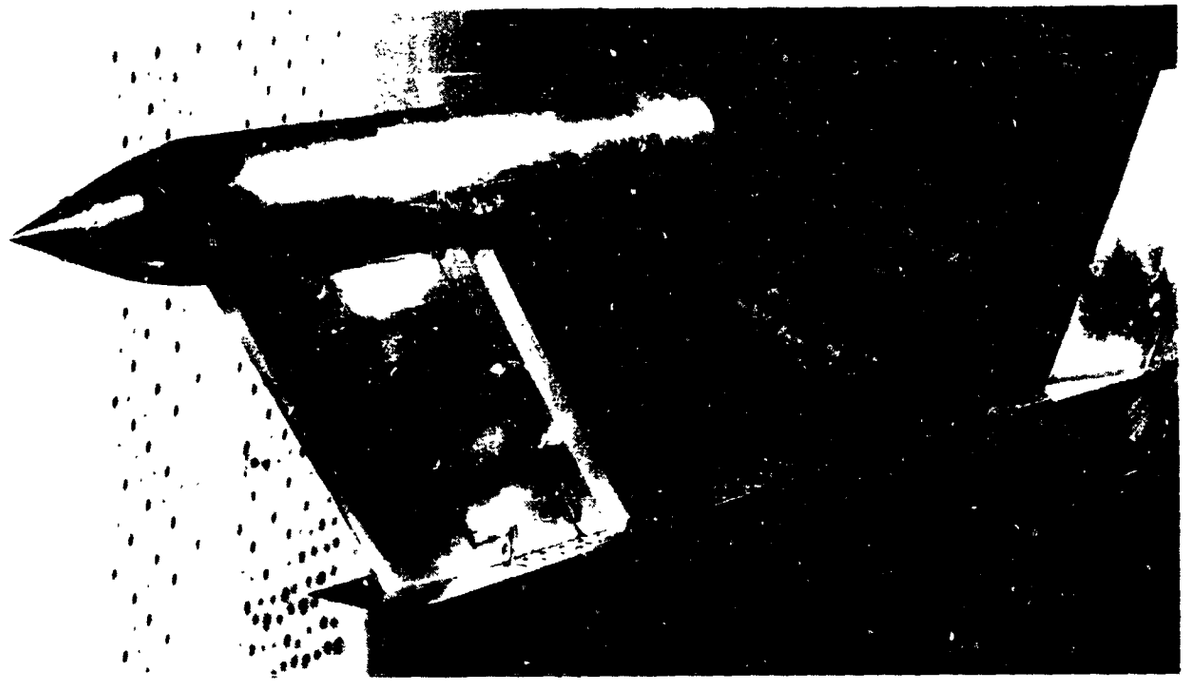

a. Three-Quarter Front View

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b. Three-Quarter Rear View

Fig. 4 Model Installation In Ames 6 X 6 Foot Supersonic Wind Tunnel

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c. Gas Generator In Action

Fig. 4 Model Installation In Ames 6 X 6 Foot Supersonic Wind Tunnel (Concluded)

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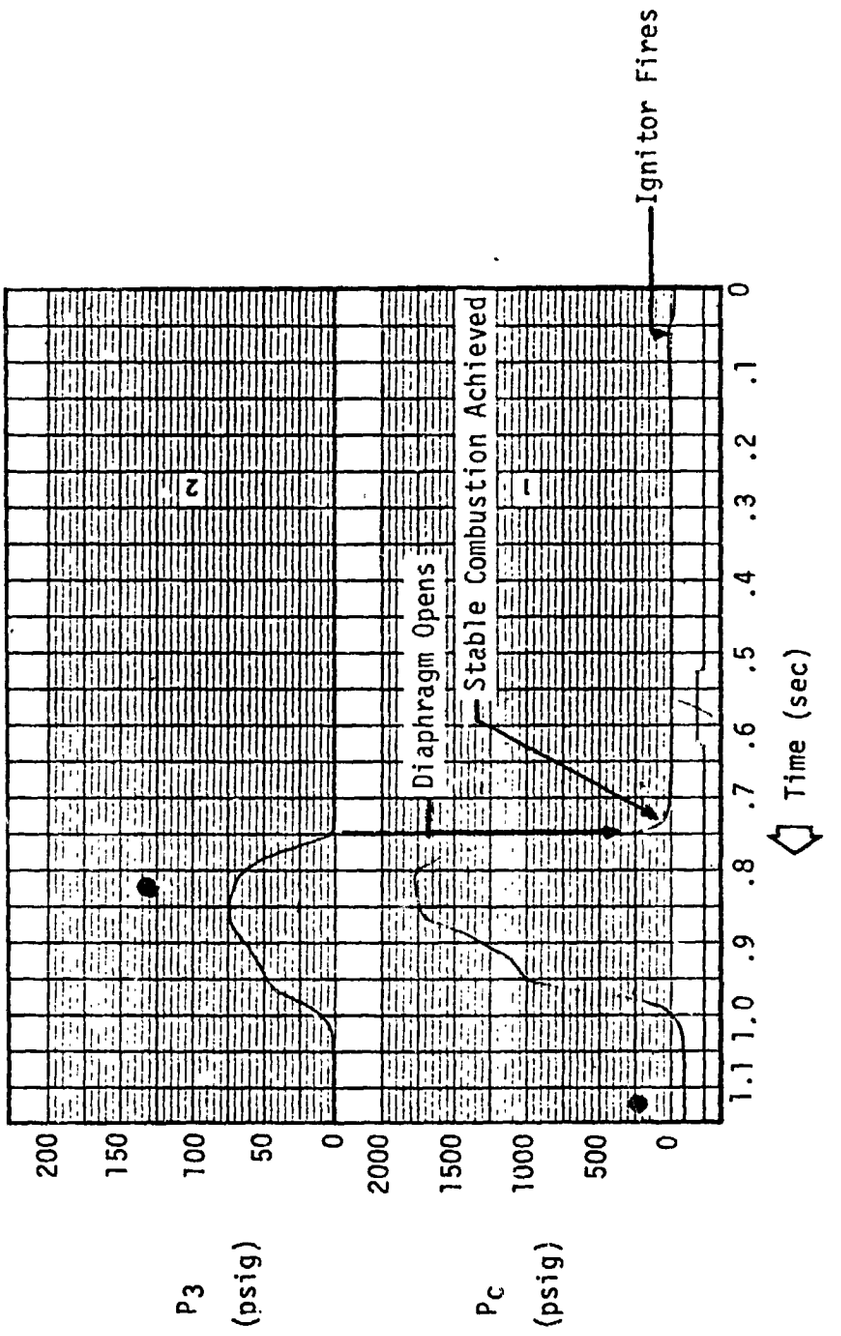

Fig. 5 Gas Generator Operational Events

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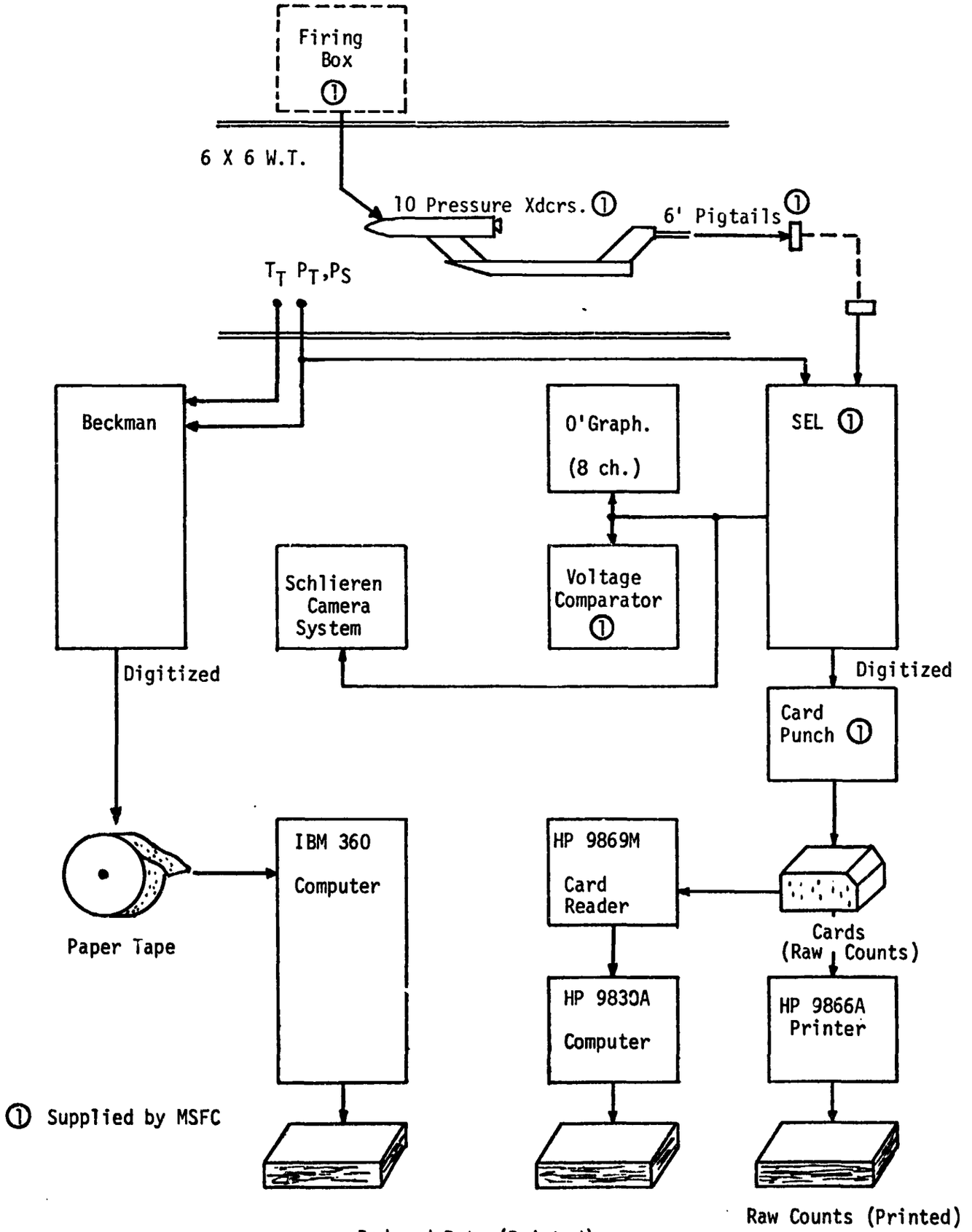
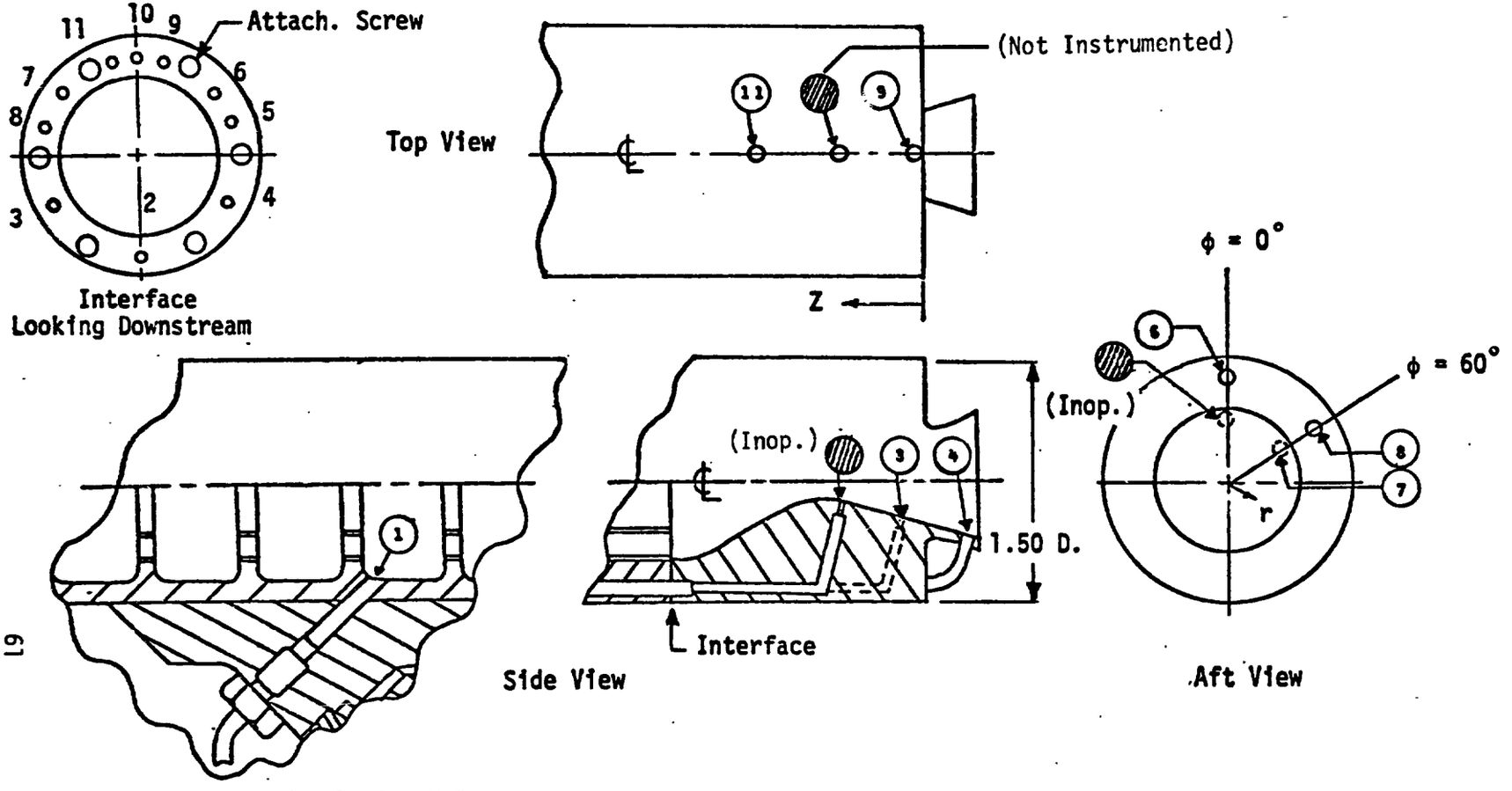


Fig. 6 Data System Schematic



Design Values
Nozzle Orifices

Tube No.	X (in)	r (in)	ϕ (deg)	A_{ex}/A^*
2	.211	.207	180	4
3	.448	.270	120	↓
4	.685	.334	240	↓
2	.158	.149	180	8
3	.504	.241	120	↓
4	.850	.334	240	↓

X = 0 at Nozzle Throat

Side Orifices

Tube No.	Z (in)	ϕ (deg)
9	0.05	0
10	0.50	0
11	1.00	0

Base Orifices

Tube No.	r (in)	ϕ (deg)
5	.390	0
6	.630	0
7	.390	60
8	.630	60

(See Fig. 3 for measured nozzle instrumentation locations)

Fig. 7 Model Instrumentation

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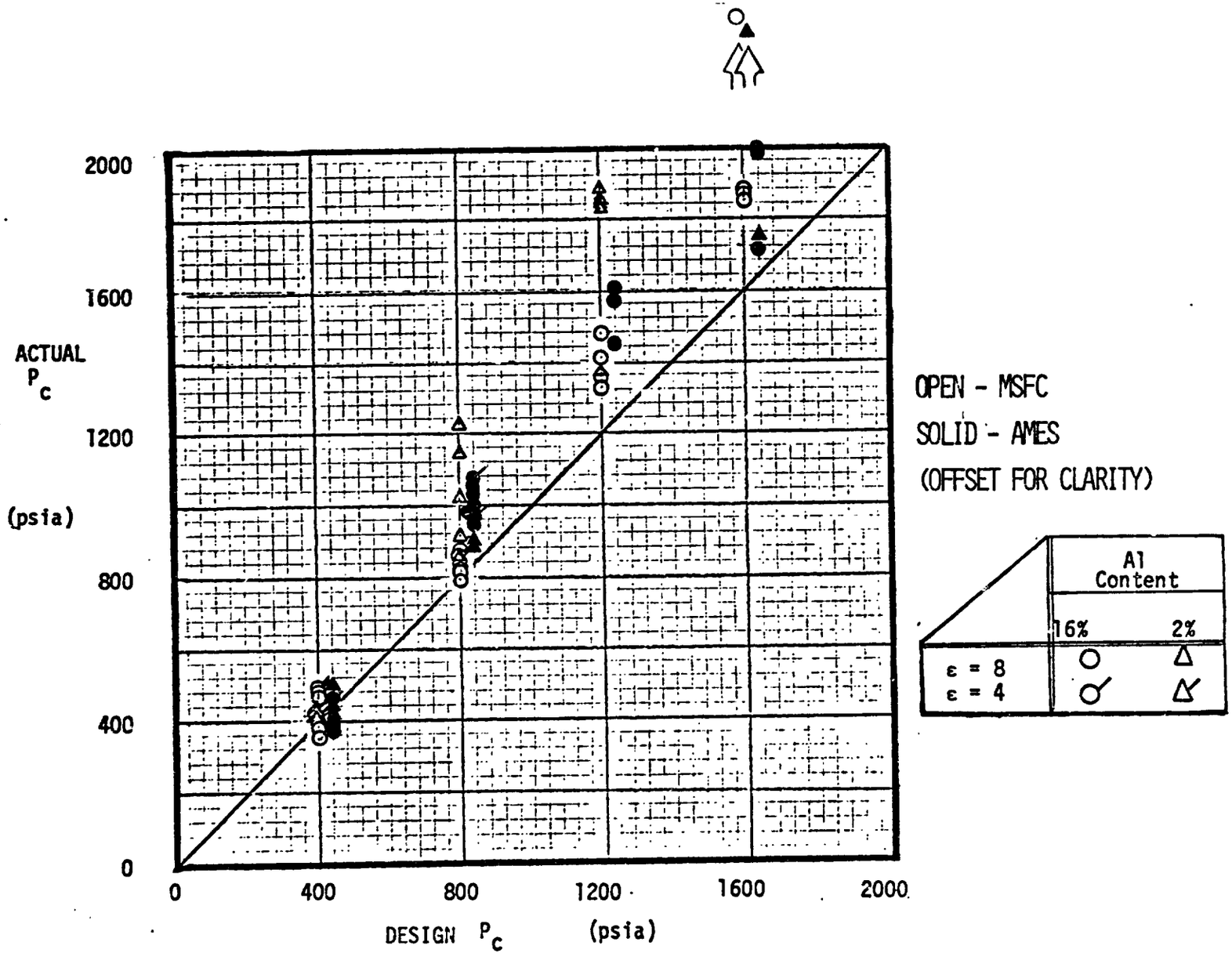

Fig. 8 Actual Chamber Pressures

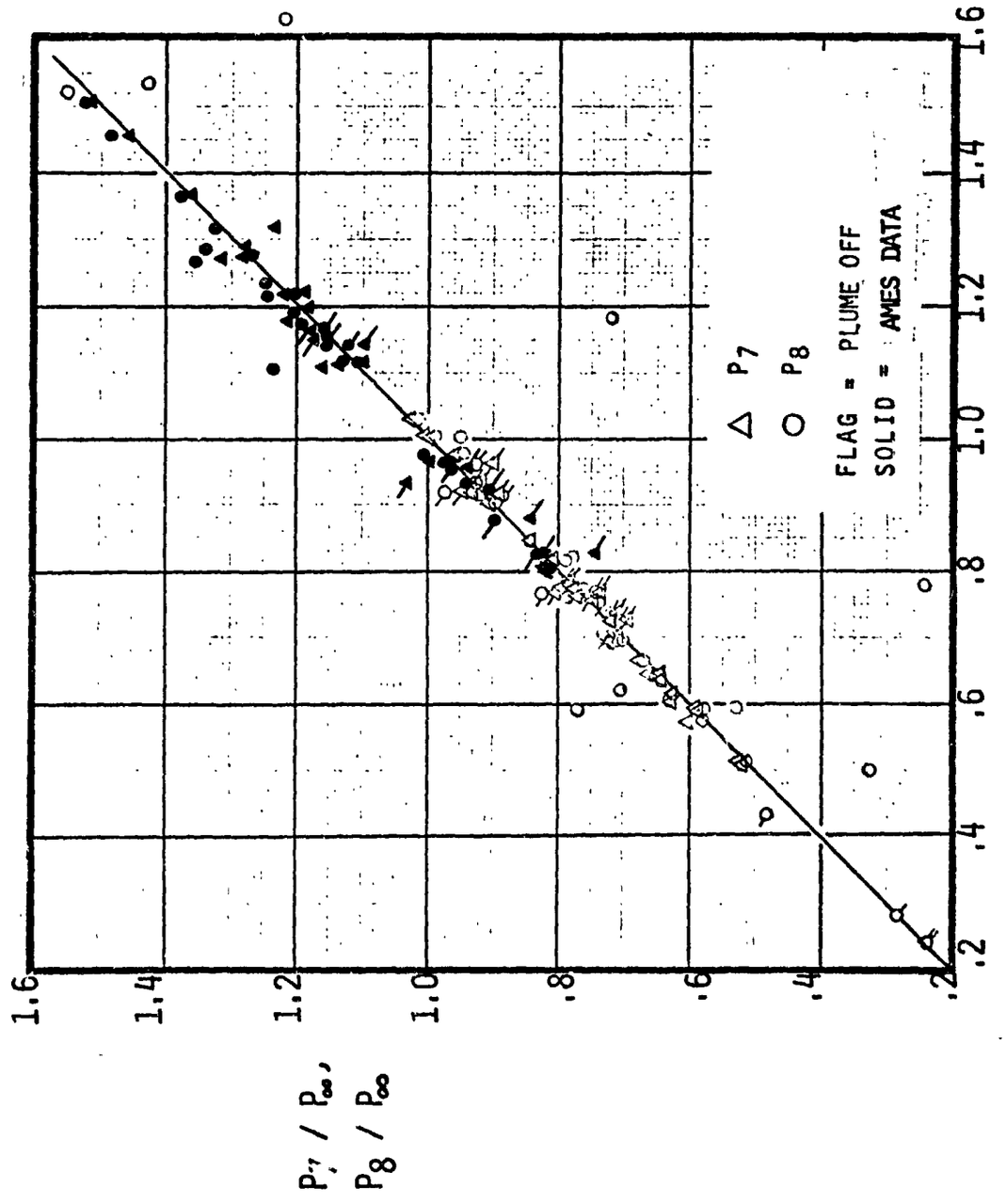

Fig. 9 Selection of Base Pressure Orifice .

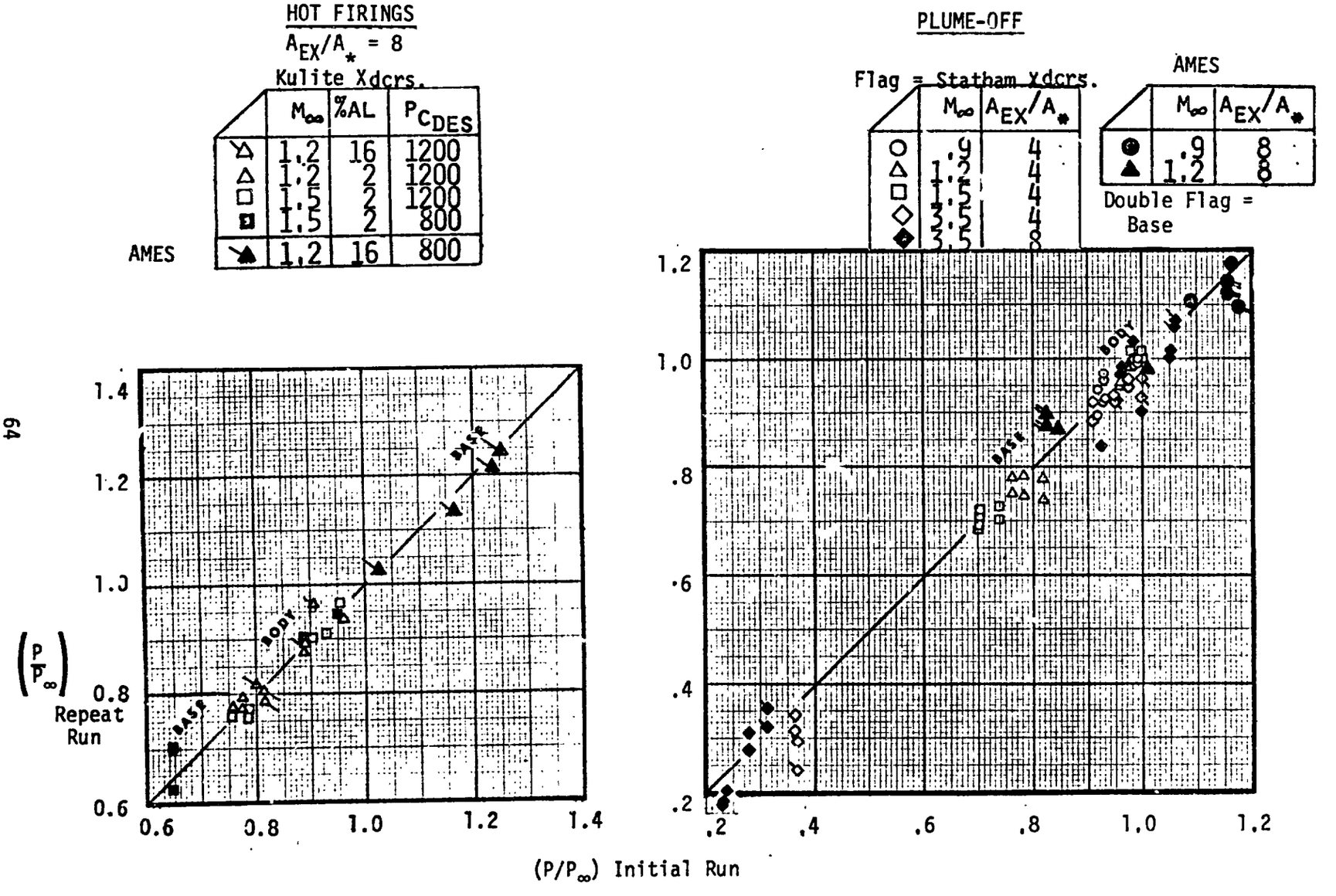

Fig. 10 Repeatability

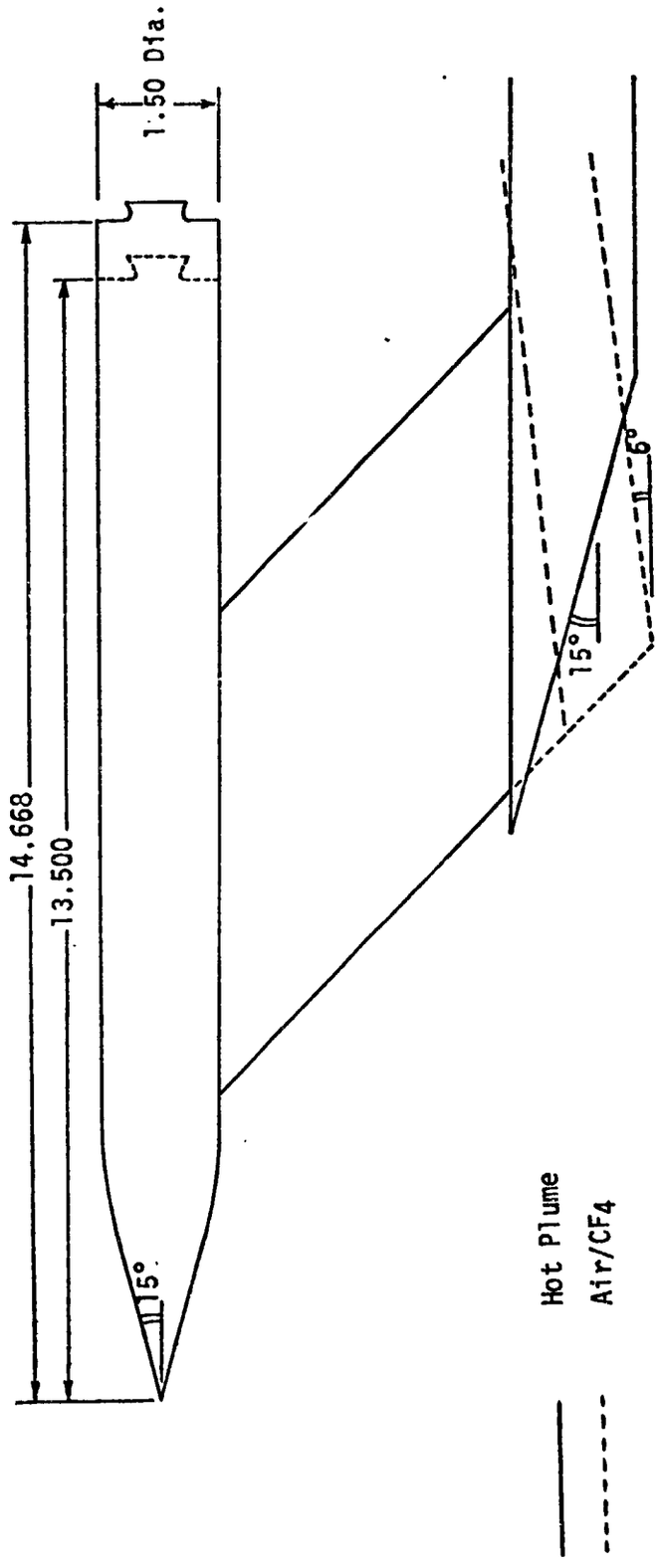

Fig. 11 Model Similarity

NO PLUME

BASE PRESSURES

BODY PRESSURES

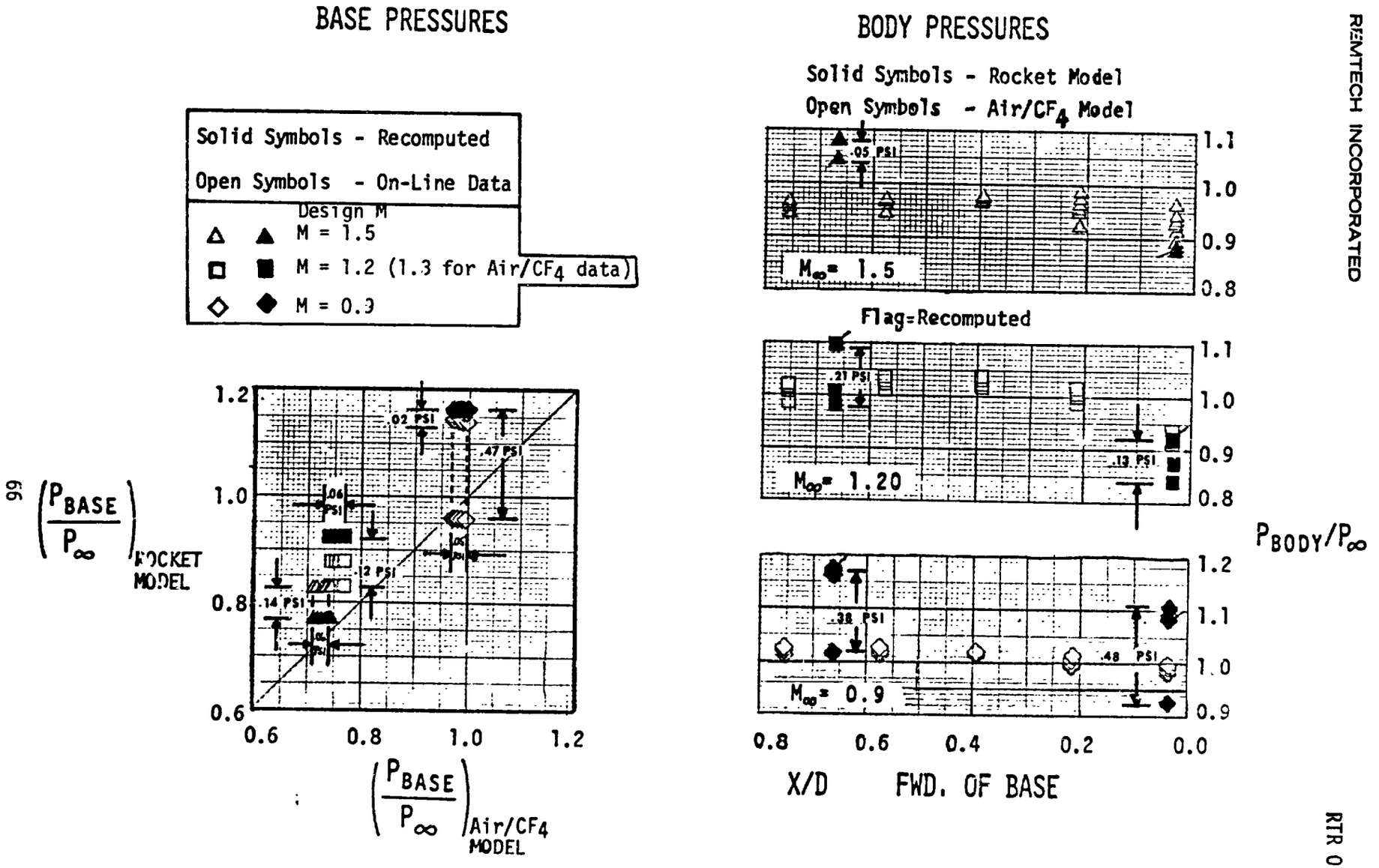

Fig. 12 Conformity to Air/CF_4 Model Data

REMTECH INCORPORATED

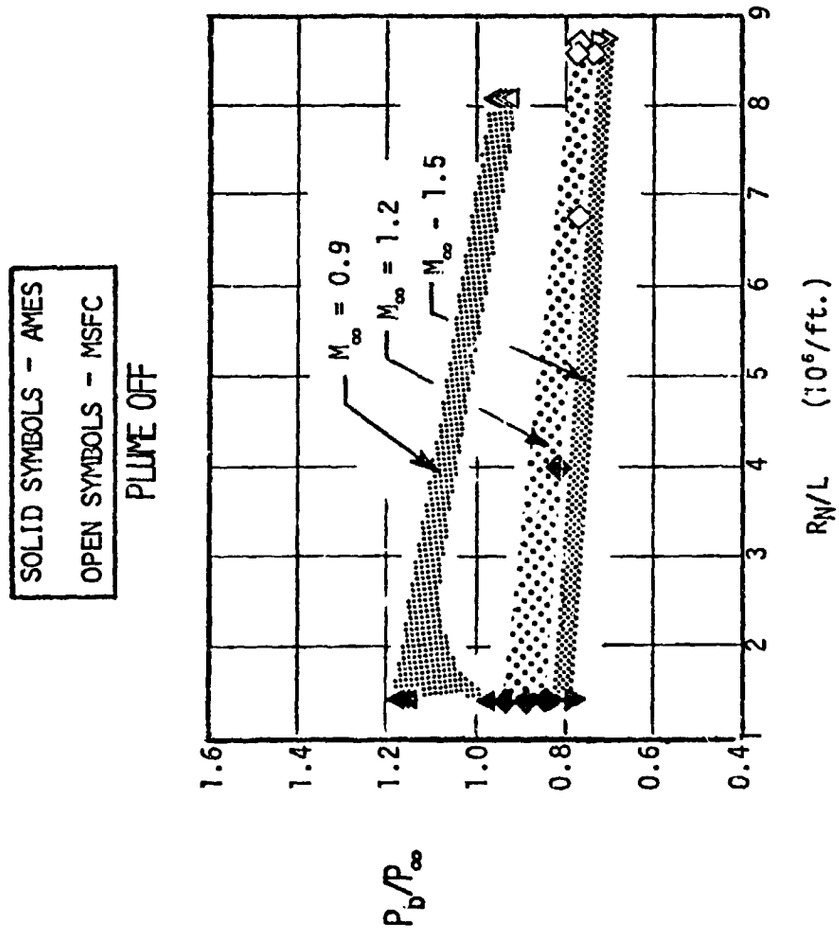

Fig. 13 Tunnel-To-Tunnel Differences

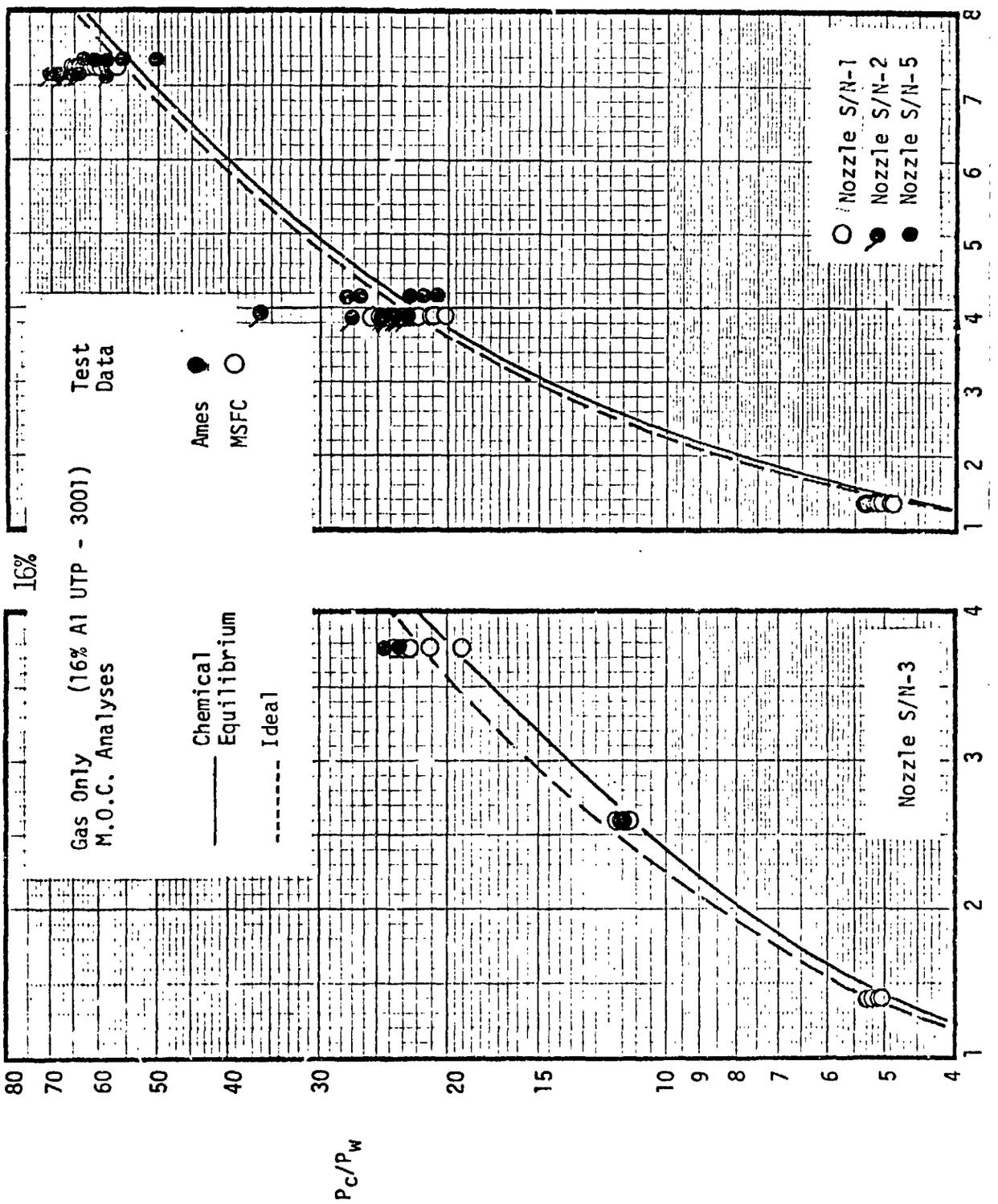

Fig. 14a Nozzle Pressure Data (16% Al UTP - 3001)

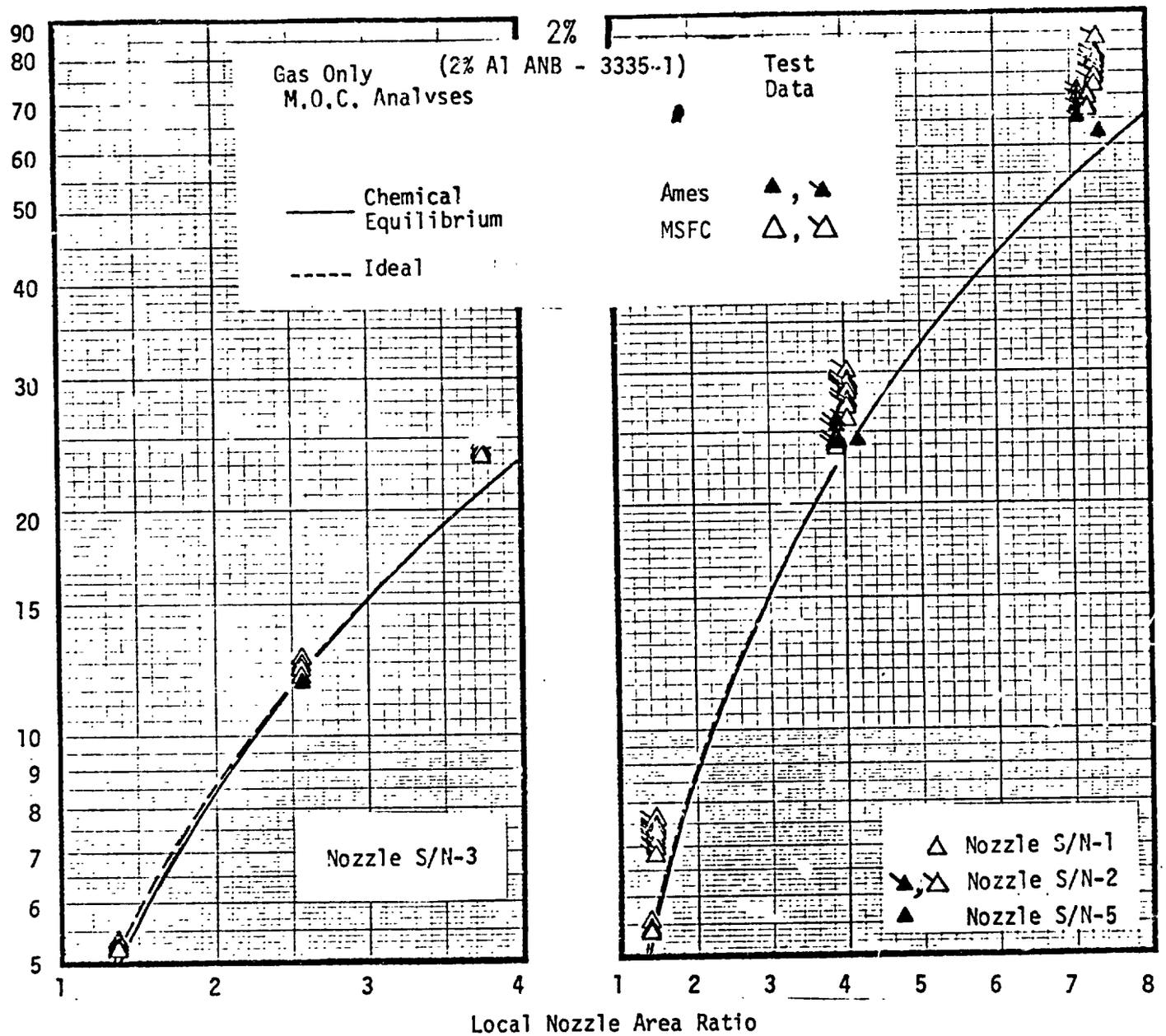

Fig. 14b Nozzle Pressure Data (2% Al ANB - 3335-1)

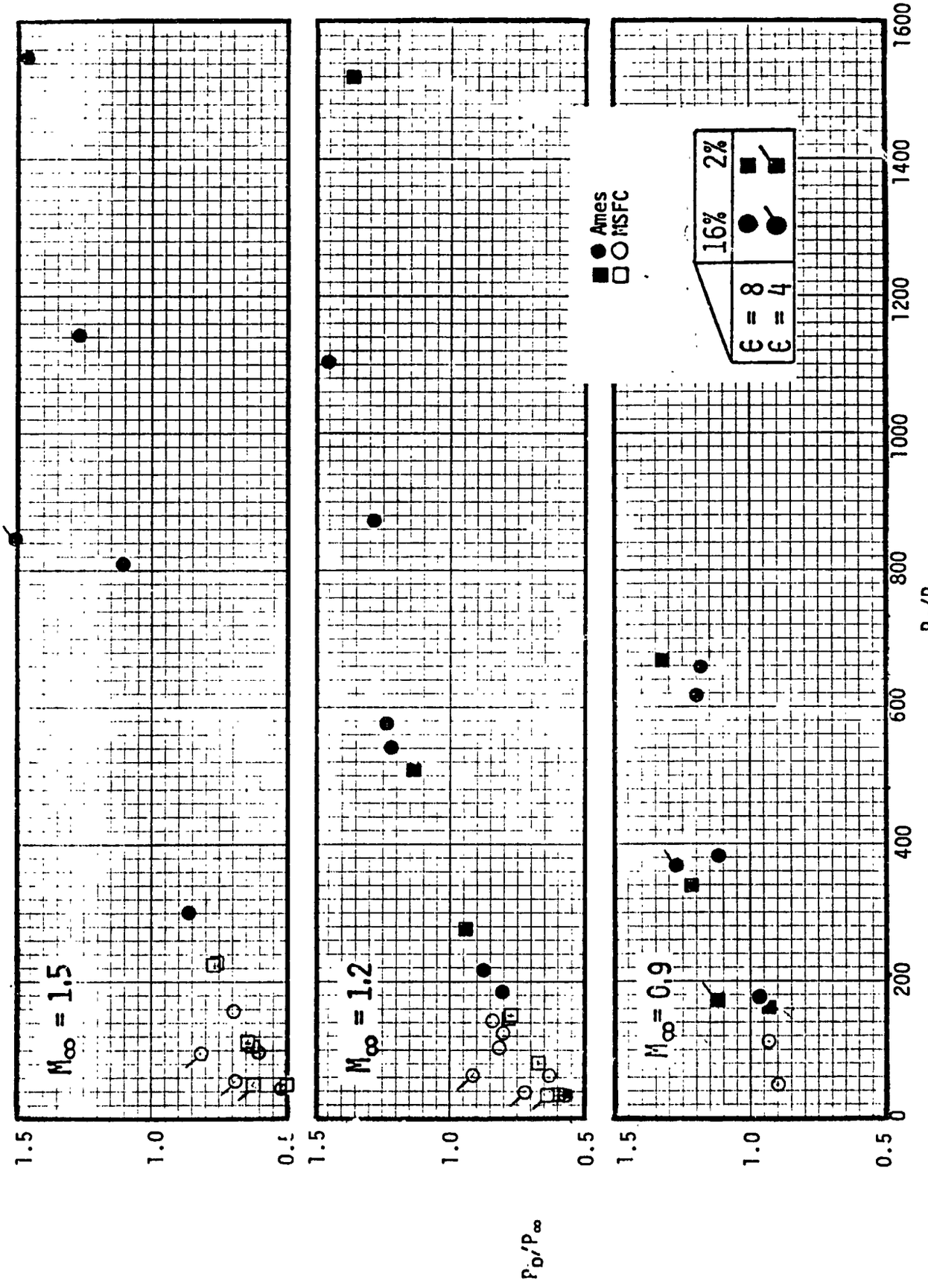

Fig. 15 Base Pressure Test Data

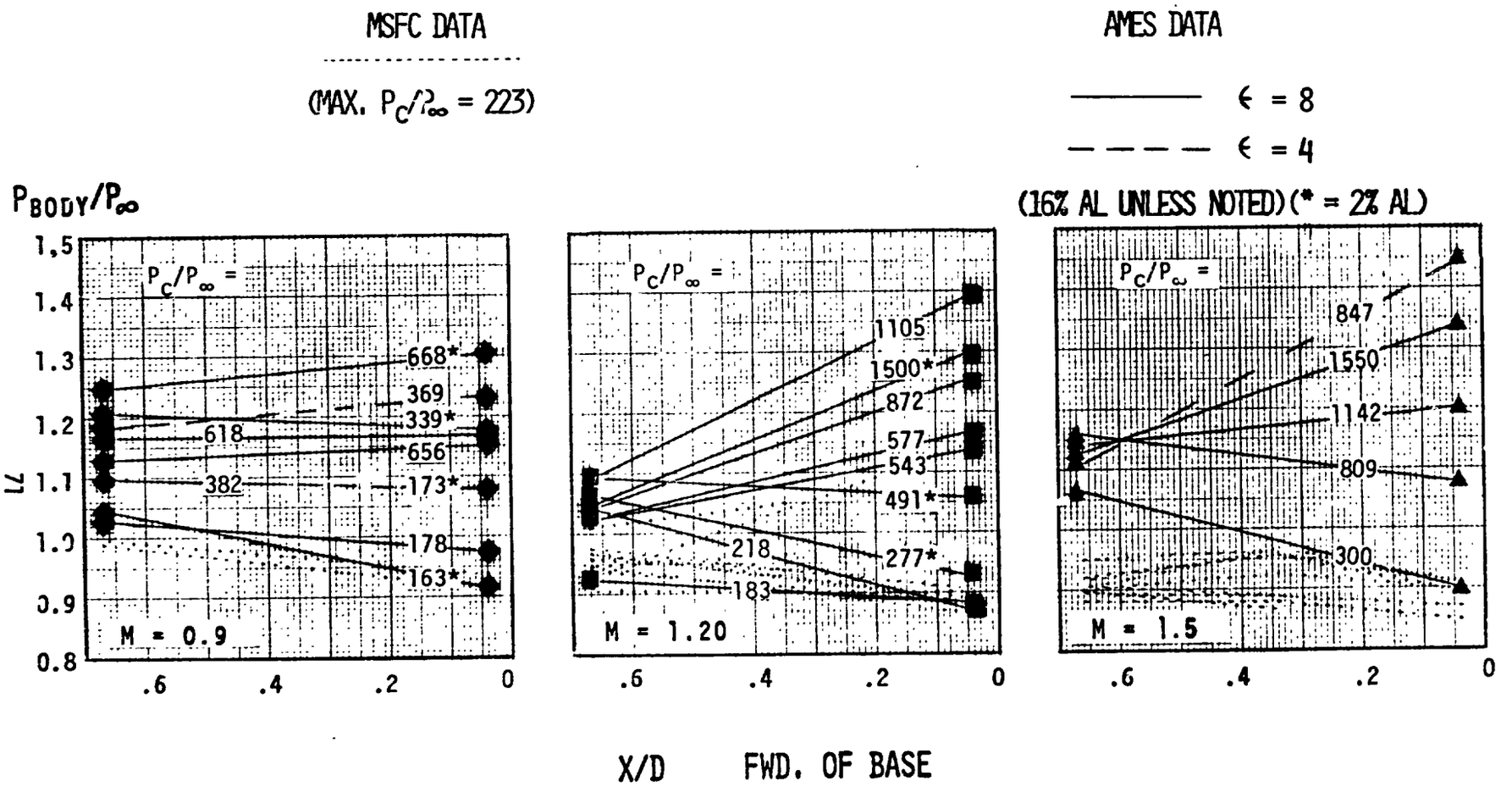

Fig. 16 Body Pressure Test Data

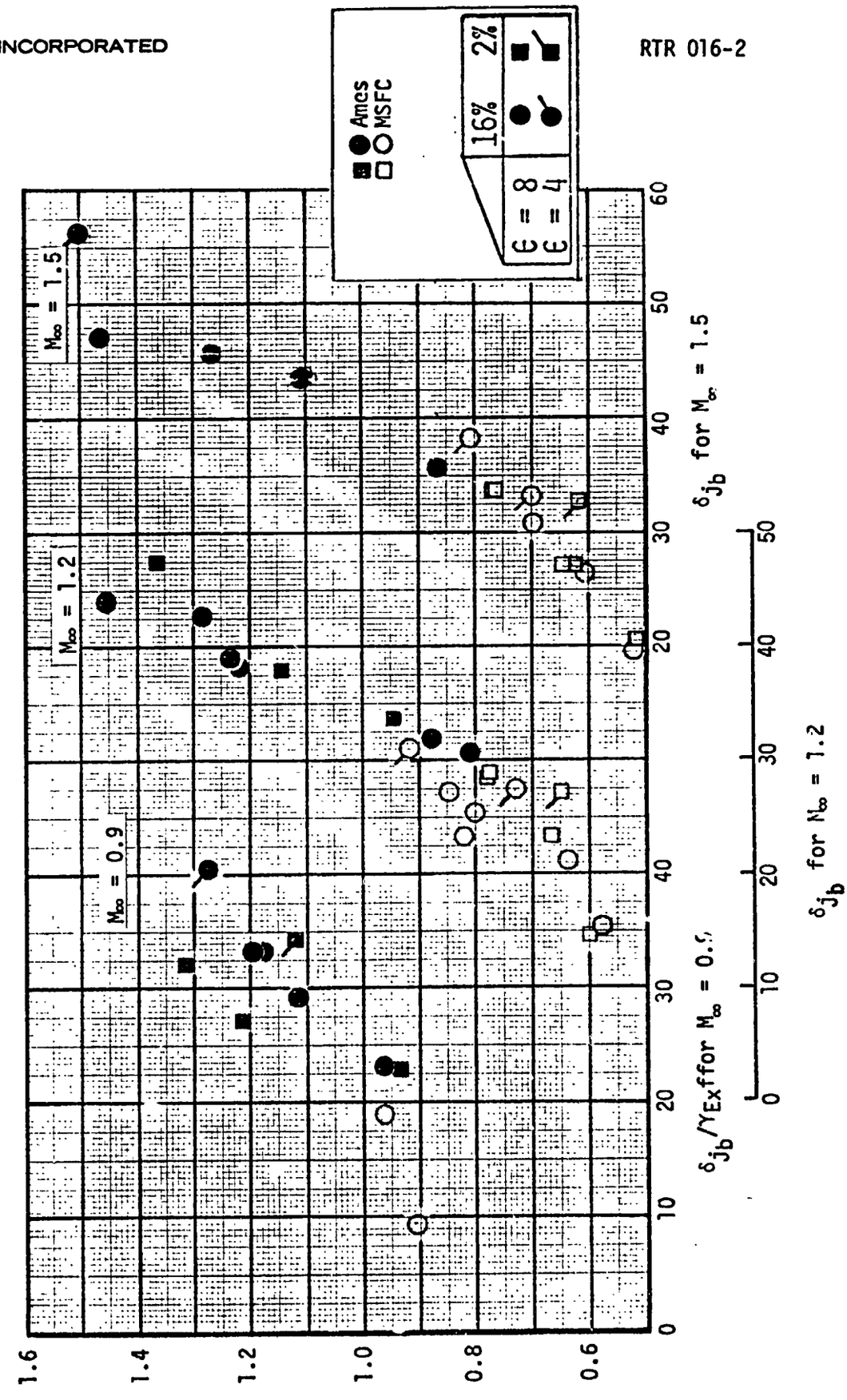

Fig. 17 Correlation of Base Pressure with Plume Initial Slope

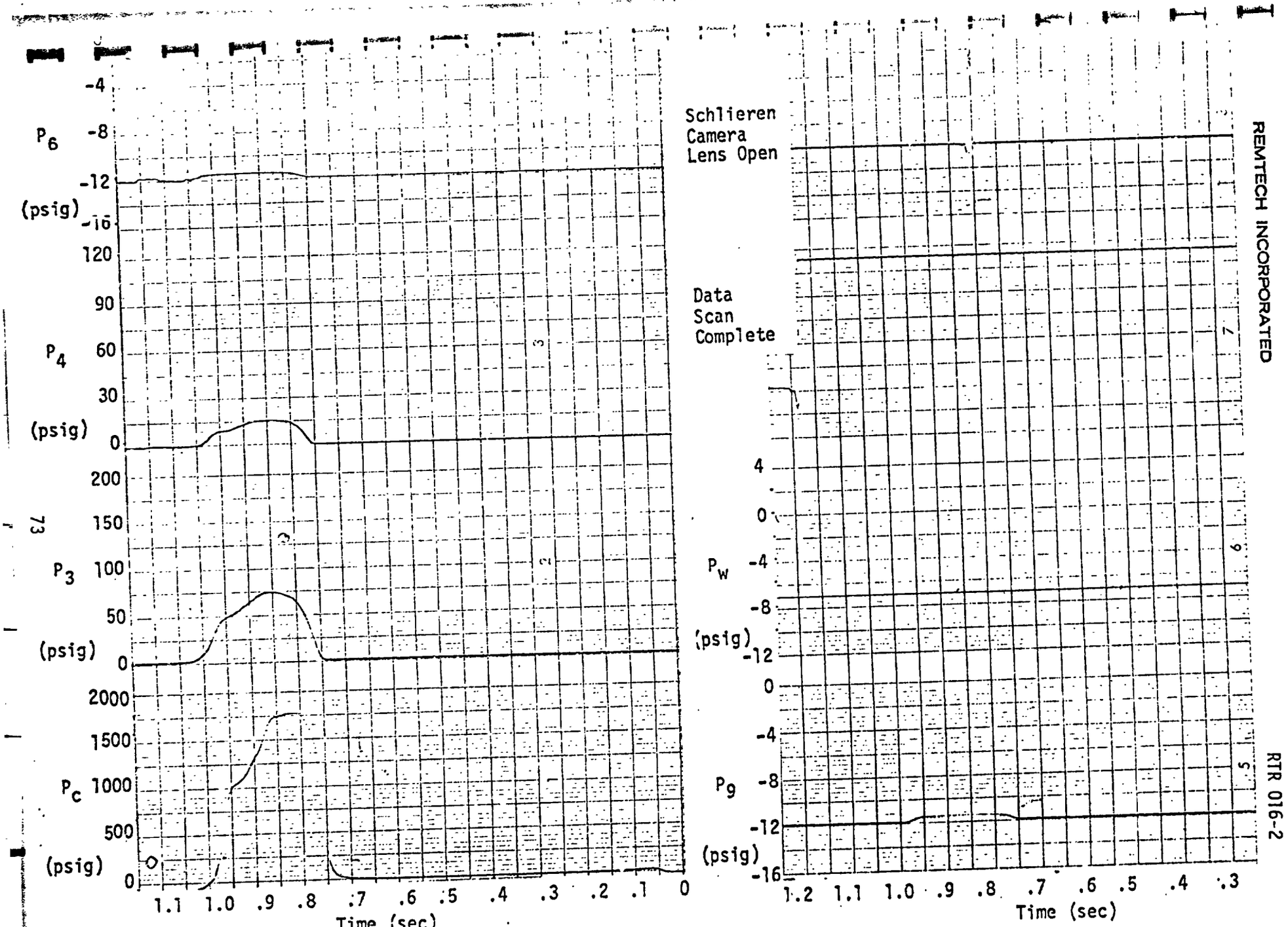

Fig. 18 Brush Oscillograph Time History Sample - Run No. 398

Fig. 19 Schlieren Photograph Sample - Run No. 424

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Fig. 20 Possible Sources of Shocks in Schlieren Photograph

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APPENDIX A

TABULATED TIME HISTORIES OF RECOMPUTED DATA

The tabulated time histories of each run during ARC 033-66 comprise the most detailed record of the measured test data. Complete time histories are presented in this Appendix for 23 hot firings and 3 plume-off runs. The data from the Beckman system is presented first, followed by the data from the SEL system. Within each such grouping, the data are presented in Run No. numerical sequence. The specific run nos. involved are:

Run No.	Hot Firing	Plume-Off Runs
391		X
396	X	
398	X	
399		X
400	X	
401	X	
405	X	
406	X	
407	X	
408	X	
409	X	
410	X	
411	X	
412	X	
413	X	
414	X	
415	X	
416		X
417	X	
418	X	
419	X	
420	X	
421	X	
422	X	
423	X	
424	X	

RUN:SEQ
391:1

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.895	210.7	375.5	631.9	77.0	1.307	2% AL

PREF	PCAL
1418.8	2115.4

RUN:SEQ
396:9

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.895	210.7	375.5	631.9	71.0	1.326	2% AL

PREF	PCAL
1414.5	2117.6

RUN:SEQ
398:11

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.897	211.7	376.3	634.0	77.4	1.311	2% AL

PREF	PCAL
1422.3	2119.7

REMTECH INCORPORATED

RUN:SEQ
399:15

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.208	265.9	260.3	637.8	75.1	1.414	2% AL

PREF	PCAL
1407.5	2118.3

RUN:SEQ
400:17

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.206	265.7	261.0	637.8	75.9	1.411	2% AL

PREF	PCAL
1407.5	2118.3

RUN:SEQ
401:18

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.896	210.6	374.8	631.2	72.1	1.322	2% AL

PREF	PCAL
1406.1	2118.3

REMTECH INCORPORATED

RUN:SEQ
405:26

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.895	210.7	376.2	632.5	81.6	1.294	16% AL

PREF	PCAL
1426.6	2109.8

RUN:SEQ
406:31

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.892	210.4	377.5	633.2	77.4	1.307	16% AL

PREF	PCAL
1425.1	2109.8

RUN:SEQ
407:36

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.205	265.3	261.0	637.1	75.6	1.411	16% AL

PREF	PCAL
1425.0	2111.6

REMTECH INCORPORATED

RUN:SEQ
408:38

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	34	0.897	211.6	375.6	633.3	70.0	1.334	2% AL

PREF	PCAL
1445.7	0.0

RUN:SEQ
409:39

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	34	0.894	210.3	376.1	631.8	68.0	1.335	16% AL

PREF	PCAL
1440.7	2118.3

RUN:SEQ
410:40

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.897	211.7	376.3	634.0	68.3	1.340	16% AL

PREF	PCAL
1445.0	2119.7

REMTECH INCORPORATED

RUN:SEQ
411:43

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	KN/L	PROPELLANT
2	38	1.209	266.2	260.3	638.5	76.7	1.410	16% AL

PREF	PCAL
1452.0	2119.7

RUN:SEQ
412:44

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	KN/L	PROPELLANT
2	38	1.210	782.9	763.4	1876.6	91.2	4.000	16% AL

PREF	PCAL
1451.3	2118.3

RUN:SEQ
413:46

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	KN/L	PROPELLANT
2	38	1.206	265.7	261.0	637.8	84.1	1.383	16% AL

PREF	PCAL
1451.3	2116.2

REMTECH INCORPORATED

RUN:SEQ
414:47

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.212	266.2	259.0	637.8	71.8	1.426	16% AL

PREF	PCAL
1449.2	2113.7

RUN:SEQ
415:48

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.209	266.2	260.3	638.5	69.5	1.435	2% AL

PREF	PCAL
1444.2	2119.0

RUN:SEQ
416:49

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.459	273.1	183.6	635.7	77.8	1.366	16% AL

PREF	PCAL
1452.0	2120.4

REMTECH INCORPORATED

RUN:SEQ
417:50

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/	PROPELLANT
2	38	1.457	273.8	184.3	635.7	78.2	1.365	16% AL

PREF	PCAL
1452.0	2120.4

RUN:SEQ
418:52

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.403	273.9	182.9	636.3	80.4	1.357	16% AL

PREF	PCAL
1447.1	2116.2

RUN:SEQ
419:54

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.897	211.1	374.9	631.9	71.7	1.325	16% AL

PREF	PCAL
1448.5	2116.2

REM:TECH INCORPORATED

RUN:SEQ
420:56

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.207	265.5	260.3	637.1	70.5	1.428	16% AL

PREF	PCAL
1449.2	2117.6

RUN:SEQ
421:57

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.462	273.6	182.9	635.7	71.3	1.387	16% AL

PREF	PCAL
1427.3	2117.6

RUN:SEQ
422:58

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	34	1.462	273.6	182.9	635.7	70.6	1.390	16% AL

PREF	PCAL
1426.6	2116.9

REMTECH INCORPORATED

RUN:SEQ
423:59

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.210	267.0	260.3	639.9	70.6	1.435	2% AL

PREF	PCAL
1420.2	2118.3

RUN:SEQ
424:60

TST	P	TN
33	1	66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.456	274.4	185.0	637.2	76.2	1.375	16% AL

PREF	PCAL
1419.5	2117.6

REMTECH INCORPORATED

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
391	1	66/033/1	38	2%AL	1000

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PPESS. (P9/P)n	(P10/P)n	(P11/P)n
1	1	375	632	0.895	-1	-0.5		-3.2637	-2.1601	1.167	1.187	1.165	1.096		1.173
2	2	375	632	0.895	-2	-0.9		-1.7765	-1.1897	1.164	1.184	1.162	1.093		1.172
3	3	375	632	0.895	-3	-1.1		-1.4625	-1.0148	1.165	1.187	1.164	1.096		1.173
4	4	375	632	0.895	-2	-0.9		-1.8338	-1.2971	1.167	1.188	1.165	1.098		1.173
5	5	375	632	0.895	-2	-0.7		-2.3350	-1.6516	1.167	1.190	1.165	1.098		1.175

MACH	Q	P	PT	PREF	PCAL
0.895	210.7	375	632	1419	2113

02983

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Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2%AL	1000

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	1	375	632	0.895	302	115.7		0.0211	0.0088	1.059	1.074	1.103	1.088		1.166
2	2	375	632	0.895	323	123.9		0.0216	0.0088	1.065	1.075	1.105	1.089		1.168
3	3	375	632	0.895	346	132.6		0.0221	0.0090	1.072	1.082	1.108	1.092		1.169
4	4	375	632	0.895	369	141.4		0.0227	0.0092	1.082	1.085	1.111	1.091		1.169
5	5	375	632	0.895	391	150.0		0.0231	0.0092	1.089	1.086	1.111	1.091		1.168
6	6	375	632	0.895	415	159.2		0.0238	0.0095	1.102	1.092	1.115	1.095		1.171
7	7	375	632	0.895	440	168.6		0.0248	0.0099	1.112	1.098	1.118	1.098		1.172
8	8	375	632	0.895	464	177.8		0.0255	0.0101	1.121	1.103	1.121	1.102		1.174
9	9	375	632	0.895	488	187.0		0.0263	0.0104	1.128	1.108	1.126	1.105		1.175
10	10	375	632	0.895	511	196.0		0.0271	0.0105	1.134	1.114	1.129	1.108		1.177
11	11	375	632	0.895	534	204.9		0.0278	0.0106	1.137	1.118	1.132	1.111		1.177
12	12	375	632	0.895	556	213.1		0.0284	0.0106	1.137	1.121	1.135	1.114		1.178
13	13	375	632	0.895	578	221.7		0.0292	0.0109	1.140	1.129	1.143	1.121		1.183
14	14	375	632	0.895	600	230.0		0.0300	0.0109	1.140	1.132	1.146	1.123		1.183
15	15	375	632	0.895	619	237.5		0.0304	0.0110	1.140	1.135	1.148	1.126		1.184
16	16	375	632	0.895	638	244.7		0.0310	0.0111	1.141	1.138	1.152	1.129		1.186
17	17	375	632	0.895	656	251.6		0.0316	0.0113	1.148	1.143	1.155	1.134		1.187
18	18	375	632	0.895	673	258.2		0.0321	0.0114	1.154	1.146	1.158	1.137		1.189
19	19	375	632	0.895	689	264.3		0.0326	0.0116	1.160	1.151	1.163	1.140		1.191
20	20	375	632	0.895	705	270.2		0.0332	0.0118	1.169	1.157	1.168	1.146		1.194
21	21	375	632	0.895	719	275.6		0.0335	0.0120	1.177	1.158	1.168	1.146		1.192
22	22	375	632	0.895	731	280.2		0.0338	0.0121	1.184	1.160	1.169	1.148		1.194
23	23	375	632	0.895	743	285.0		0.0343	0.0124	1.194	1.164	1.174	1.152		1.195
24	24	375	632	0.895	755	289.6		0.0347	0.0126	1.200	1.169	1.175	1.155		1.195
25	25	375	632	0.895	765	293.4		0.0351	0.0127	1.204	1.171	1.178	1.157		1.197
26	26	375	632	0.895	775	297.1		0.0353	0.0128	1.207	1.174	1.180	1.158		1.198
27	27	375	632	0.895	784	300.5		0.0356	0.0130	1.209	1.175	1.181	1.160		1.198
28	28	375	632	0.895	791	303.4		0.0359	0.0130	1.207	1.177	1.183	1.161		1.198
29	29	375	632	0.895	799	306.3		0.0361	0.0130	1.203	1.178	1.184	1.164		1.200
30	30	375	632	0.895	806	309.2		0.0365	0.0131	1.203	1.183	1.189	1.168		1.201
31	31	375	632	0.895	813	311.7		0.0366	0.0131	1.197	1.181	1.189	1.168		1.201
32	32	375	632	0.895	818	313.6		0.0368	0.0131	1.195	1.181	1.189	1.168		1.201

National Aeronautics and Space Administration
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PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2%Al	1000

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
33	33	375	632	0.895	823	315.5		0.0370	0.0131	1.195	1.183	1.191	1.169		1.201
34	34	375	632	0.895	828	317.4		0.0372	0.0132	1.198	1.183	1.192	1.169		1.201
35	35	375	632	0.895	832	319.1		0.0374	0.0133	1.201	1.184	1.192	1.171		1.201
36	36	375	632	0.895	836	320.7		0.0375	0.0134	1.206	1.186	1.194	1.172		1.203
37	37	375	632	0.895	840	322.2		0.0377	0.0136	1.214	1.189	1.195	1.174		1.203
38	38	375	632	0.895	843	323.2		0.0378	0.0135	1.217	1.186	1.194	1.171		1.201
39	39	375	632	0.895	845	323.9		0.0378	0.0137	1.223	1.187	1.194	1.172		1.201
40	40	375	632	0.895	848	325.1		0.0381	0.0138	1.229	1.191	1.195	1.174		1.203
41	41	375	632	0.895	850	326.0		0.0382	0.0139	1.233	1.191	1.195	1.174		1.203
42	42	375	632	0.895	852	326.8		0.0383	0.0140	1.235	1.192	1.197	1.174		1.201
43	43	375	632	0.895	854	327.4		0.0385	0.0140	1.235	1.192	1.197	1.175		1.201
44	44	375	632	0.895	855	328.0		0.0385	0.0140	1.232	1.192	1.197	1.174		1.201
45	45	375	632	0.895	856	328.3		0.0387	0.0139	1.226	1.191	1.195	1.172		1.201
46	46	375	632	0.895	858	328.9		0.0387	0.0139	1.221	1.192	1.198	1.175		1.203
47	47	375	632	0.895	860	329.9		0.0389	0.0140	1.217	1.194	1.198	1.177		1.203
48	48	375	632	0.895	861	330.1		0.0389	0.0138	1.209	1.191	1.197	1.175		1.201
49	49	375	632	0.895	861	330.3		0.0390	0.0138	1.204	1.191	1.197	1.175		1.201
50	50	375	632	0.895	863	330.8		0.0391	0.0138	1.204	1.191	1.198	1.175		1.201
51	51	375	632	0.895	864	331.2		0.0392	0.0138	1.204	1.191	1.198	1.175		1.201
52	52	375	632	0.895	865	331.6		0.0392	0.0138	1.206	1.191	1.198	1.175		1.203
53	53	375	632	0.895	866	332.0		0.0394	0.0139	1.209	1.194	1.200	1.178		1.204
54	54	375	632	0.895	867	332.6		0.0394	0.0140	1.215	1.194	1.200	1.177		1.201
55	55	375	632	0.895	867	332.6		0.0394	0.0139	1.217	1.191	1.197	1.174		1.201
56	56	375	632	0.895	868	332.9		0.0395	0.0140	1.223	1.192	1.198	1.175		1.201
57	57	375	632	0.895	870	333.5		0.0396	0.0141	1.226	1.195	1.200	1.177		1.203
58	58	375	632	0.895	871	333.9		0.0396	0.0142	1.227	1.194	1.198	1.177		1.203
59	59	375	632	0.895	872	334.3		0.0397	0.0142	1.227	1.194	1.198	1.177		1.201
60	60	375	632	0.895	873	334.7		0.0398	0.0142	1.224	1.194	1.198	1.177		1.201
61	61	375	632	0.895	874	335.1		0.0397	0.0141	1.221	1.194	1.198	1.175		1.201
62	62	375	632	0.895	874	335.1		0.0398	0.0140	1.214	1.192	1.197	1.175		1.201
63	63	375	632	0.895	875	335.6		0.0400	0.0141	1.209	1.194	1.200	1.178		1.203
64	64	375	632	0.895	877	336.2		0.0400	0.0140	1.201	1.192	1.200	1.177		1.201

02984

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2%AL	1000

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
64	64	375	632	0.895	877	336.2		0.0400	0.0140	1.201	1.192	1.200	1.177		1.201
65	65	375	632	0.895	877	336.2		0.0400	0.0139	1.194	1.191	1.198	1.175		1.201
66	66	375	632	0.895	877	336.4		0.0400	0.0138	1.191	1.191	1.198	1.175		1.201
67	67	375	632	0.895	878	336.8		0.0400	0.0138	1.192	1.191	1.198	1.177		1.201
68	68	375	632	0.895	878	336.8		0.0401	0.0138	1.192	1.191	1.198	1.175		1.201
69	69	375	632	0.895	879	337.2		0.0402	0.0138	1.195	1.192	1.200	1.177		1.201
70	70	375	632	0.895	880	337.4		0.0403	0.0139	1.201	1.194	1.201	1.178		1.203
71	71	375	632	0.895	880	337.6		0.0403	0.0140	1.206	1.192	1.200	1.175		1.201
72	72	375	632	0.895	880	337.4		0.0402	0.0139	1.209	1.192	1.198	1.175		1.201
73	73	375	632	0.895	880	337.6		0.0403	0.0141	1.217	1.195	1.200	1.177		1.201
74	74	375	632	0.895	881	337.9		0.0404	0.0141	1.220	1.195	1.201	1.177		1.203
75	75	375	632	0.895	881	337.9		0.0404	0.0141	1.221	1.195	1.200	1.178		1.201
76	76	375	632	0.895	881	337.9		0.0404	0.0142	1.223	1.195	1.201	1.178		1.201
77	77	375	632	0.895	882	338.1		0.0405	0.0142	1.220	1.195	1.201	1.178		1.201
78	78	375	632	0.895	882	338.1		0.0405	0.0141	1.217	1.195	1.200	1.177		1.201
79	79	375	632	0.895	881	337.9		0.0405	0.0140	1.210	1.194	1.200	1.177		1.203
80	80	375	632	0.895	883	338.5		0.0407	0.0141	1.207	1.197	1.203	1.180		1.204
81	81	375	632	0.895	883	338.5		0.0407	0.0140	1.201	1.194	1.201	1.178		1.203
82	82	375	632	0.895	882	338.3		0.0406	0.0139	1.197	1.192	1.200	1.177		1.203
83	83	375	632	0.895	882	338.3		0.0407	0.0139	1.195	1.192	1.200	1.177		1.201
84	84	375	632	0.895	882	338.3		0.0408	0.0139	1.195	1.192	1.201	1.177		1.201
85	85	375	632	0.895	882	338.3		0.0408	0.0139	1.195	1.192	1.201	1.178		1.201
86	86	375	632	0.895	883	338.5		0.0408	0.0139	1.200	1.192	1.201	1.178		1.203
87	87	375	632	0.895	883	338.7		0.0410	0.0140	1.204	1.194	1.203	1.178		1.203
88	88	375	632	0.895	883	338.5		0.0408	0.0140	1.207	1.191	1.200	1.175		1.201
89	89	375	632	0.895	883	338.1		0.0409	0.0141	1.212	1.192	1.200	1.177		1.201
90	90	375	632	0.895	883	338.5		0.0410	0.0142	1.218	1.194	1.201	1.178		1.201
91	91	375	632	0.895	883	338.5		0.0410	0.0142	1.220	1.194	1.201	1.178		1.201
92	92	375	632	0.895	883	338.5		0.0410	0.0143	1.220	1.194	1.201	1.177		1.201
93	93	375	632	0.895	882	338.3		0.0411	0.0143	1.220	1.194	1.201	1.177		1.200
94	94	375	632	0.895	882	338.1		0.0411	0.0143	1.217	1.194	1.200	1.177		1.200
95	95	375	632	0.895	881	337.9		0.0410	0.0142	1.210	1.192	1.200	1.175		1.198

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2%AL	1000

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
96	96	375	632	0.895	881	337.9		0.0411	0.0142	1.206	1.194	1.201	1.178		1.201
97	97	375	632	0.895	882	338.1		0.0412	0.0142	1.201	1.194	1.203	1.178		1.201
98	98	375	632	0.895	881	337.7		0.0412	0.0141	1.194	1.192	1.201	1.177		1.200
99	99	375	632	0.895	880	337.6		0.0412	0.0140	1.191	1.191	1.201	1.177		1.200
100	100	375	632	0.895	880	337.4		0.0413	0.0140	1.191	1.192	1.201	1.177		1.201
101	101	375	632	0.895	880	337.4		0.0413	0.0140	1.192	1.192	1.203	1.177		1.201
102	102	375	632	0.895	879	337.2		0.0414	0.0141	1.195	1.192	1.203	1.178		1.201
103	103	375	632	0.895	879	337.2		0.0414	0.0142	1.200	1.195	1.204	1.180		1.203
104	104	375	632	0.895	879	337.2		0.0414	0.0142	1.204	1.195	1.204	1.178		1.203
105	105	375	632	0.895	878	336.8		0.0413	0.0141	1.207	1.194	1.201	1.175		1.200
106	106	375	632	0.895	878	336.6		0.0414	0.0143	1.215	1.195	1.203	1.178		1.201
107	107	375	632	0.895	878	336.8		0.0415	0.0144	1.220	1.197	1.204	1.178		1.201
108	108	375	632	0.895	878	336.8		0.0415	0.0144	1.221	1.197	1.204	1.178		1.201
109	109	375	632	0.895	878	336.6		0.0415	0.0144	1.221	1.197	1.204	1.178		1.201
110	110	375	632	0.895	878	336.6		0.0415	0.0144	1.220	1.197	1.204	1.178		1.201
111	111	375	632	0.895	878	336.6		0.0414	0.0144	1.217	1.197	1.203	1.178		1.201
112	112	375	632	0.895	877	336.4		0.0414	0.0143	1.209	1.195	1.203	1.177		1.201
113	113	375	632	0.895	878	336.8		0.0415	0.0143	1.204	1.198	1.204	1.181		1.203
114	114	375	632	0.895	879	337.0		0.0415	0.0143	1.198	1.197	1.204	1.180		1.201
115	115	375	632	0.895	878	336.8		0.0415	0.0142	1.192	1.194	1.203	1.178		1.201
116	116	375	632	0.895	878	336.6		0.0415	0.0141	1.191	1.194	1.203	1.178		1.201
117	117	375	632	0.895	878	336.8		0.0415	0.0141	1.189	1.194	1.203	1.178		1.201
118	118	375	632	0.895	878	336.8		0.0416	0.0141	1.192	1.194	1.203	1.178		1.201
119	119	375	632	0.895	879	337.0		0.0415	0.0142	1.195	1.194	1.203	1.178		1.201
120	120	375	632	0.895	879	337.2		0.0416	0.0143	1.201	1.195	1.204	1.180		1.201
121	121	375	632	0.895	879	337.2		0.0416	0.0143	1.204	1.194	1.203	1.177		1.200
122	122	375	632	0.895	878	336.8		0.0415	0.0143	1.209	1.194	1.201	1.177		1.200
123	123	375	632	0.895	879	337.2		0.0415	0.0144	1.215	1.195	1.201	1.178		1.201
124	124	375	632	0.895	880	337.4		0.0416	0.0145	1.220	1.197	1.203	1.178		1.201
125	125	375	632	0.895	880	337.4		0.0416	0.0145	1.221	1.197	1.203	1.178		1.200
126	126	375	632	0.895	880	337.4		0.0416	0.0146	1.223	1.197	1.203	1.178		1.200
127	127	375	632	0.895	880	337.4		0.0416	0.0145	1.220	1.195	1.201	1.177		1.200

02985

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2%AL	1000

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
128	128	375	632	0.895	880	337.4	0.0416	0.0144		1.217	1.195	1.201	1.177		1.200
129	129	375	632	0.895	879	337.0	0.0415	0.0144		1.209	1.195	1.201	1.178		1.200
130	130	375	632	0.895	880	337.6	0.0417	0.0144		1.206	1.197	1.204	1.180		1.201
131	131	375	632	0.895	880	337.6	0.0416	0.0143		1.200	1.195	1.203	1.178		1.201
132	132	375	632	0.895	880	337.4	0.0416	0.0143		1.197	1.194	1.201	1.177		1.201
133	133	375	632	0.895	879	337.2	0.0416	0.0142		1.194	1.192	1.201	1.177		1.200
134	134	375	632	0.895	879	337.2	0.0417	0.0142		1.192	1.192	1.203	1.178		1.200
135	135	375	632	0.895	879	337.2	0.0417	0.0142		1.194	1.192	1.201	1.178		1.201
136	136	375	632	0.895	879	337.2	0.0417	0.0142		1.197	1.194	1.203	1.180		1.201
137	137	375	632	0.895	880	337.4	0.0418	0.0143		1.203	1.195	1.204	1.180		1.201
138	138	375	632	0.895	879	337.0	0.0417	0.0143		1.206	1.192	1.201	1.177		1.200
139	139	375	632	0.895	878	336.6	0.0417	0.0144		1.210	1.194	1.201	1.177		1.200
140	140	375	632	0.895	878	336.8	0.0418	0.0145		1.217	1.195	1.203	1.178		1.201
141	141	375	632	0.895	879	337.0	0.0418	0.0145		1.220	1.195	1.203	1.178		1.200
142	142	375	632	0.895	878	336.8	0.0418	0.0145		1.221	1.195	1.201	1.178		1.200
143	143	375	632	0.895	878	336.6	0.0418	0.0145		1.221	1.195	1.201	1.177		1.200
144	144	375	632	0.895	877	336.4	0.0418	0.0145		1.220	1.194	1.201	1.177		1.200
145	145	375	632	0.895	877	336.2	0.0418	0.0144		1.214	1.192	1.200	1.175		1.198
146	146	375	632	0.895	876	336.0	0.0418	0.0144		1.209	1.194	1.201	1.178		1.201
147	147	375	632	0.895	877	336.2	0.0419	0.0144		1.204	1.195	1.203	1.178		1.200
148	148	375	632	0.895	876	335.8	0.0418	0.0143		1.198	1.192	1.201	1.177		1.200
149	149	375	632	0.895	875	335.6	0.0418	0.0142		1.195	1.192	1.201	1.177		1.200
150	150	375	632	0.895	875	335.4	0.0419	0.0142		1.195	1.192	1.201	1.177		1.200
151	151	375	632	0.895	874	335.3	0.0419	0.0142		1.195	1.192	1.201	1.177		1.200
152	152	375	632	0.895	874	335.1	0.0419	0.0143		1.198	1.192	1.201	1.177		1.200
153	153	375	632	0.895	874	335.1	0.0419	0.0143		1.203	1.194	1.203	1.178		1.201
154	154	375	632	0.895	874	335.1	0.0420	0.0144		1.209	1.194	1.203	1.177		1.201
155	155	375	632	0.895	872	334.3	0.0419	0.0143		1.210	1.192	1.200	1.174		1.200
156	156	375	632	0.895	872	334.3	0.0419	0.0145		1.217	1.194	1.201	1.177		1.200
157	157	375	632	0.895	872	334.3	0.0420	0.0145		1.221	1.195	1.201	1.177		1.200
158	158	375	632	0.895	871	334.1	0.0420	0.0145		1.224	1.195	1.201	1.177		1.201
159	159	375	632	0.895	871	333.9	0.0420	0.0145		1.224	1.195	1.201	1.177		1.200

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2SAL	1000

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
160	160	375	632	0.895	870	333.7		0.0420	0.0145	1.223	1.195	1.201	1.177		1.200
161	161	375	632	0.895	869	333.3		0.0420	0.0146	1.220	1.194	1.200	1.177		1.200
162	162	375	632	0.895	868	332.9		0.0420	0.0145	1.214	1.194	1.200	1.177		1.200
163	163	375	632	0.895	869	333.1		0.0421	0.0144	1.209	1.195	1.203	1.180		1.201
164	164	375	632	0.895	869	333.1		0.0421	0.0144	1.201	1.195	1.201	1.178		1.201
165	165	375	632	0.895	868	332.8		0.0421	0.0143	1.197	1.192	1.201	1.177		1.200
166	166	375	632	0.895	867	332.4		0.0420	0.0142	1.194	1.192	1.201	1.177		1.201
167	167	375	632	0.895	866	332.2		0.0421	0.0143	1.194	1.192	1.200	1.177		1.201
168	168	375	632	0.895	866	332.2		0.0421	0.0143	1.195	1.192	1.201	1.177		1.201
169	169	375	632	0.895	866	332.0		0.0421	0.0143	1.198	1.192	1.201	1.178		1.201
170	170	375	632	0.895	866	332.0		0.0422	0.0144	1.204	1.194	1.203	1.180		1.203
171	171	375	632	0.895	865	331.6		0.0421	0.0144	1.207	1.192	1.200	1.177		1.201
172	172	375	632	0.895	863	331.0		0.0421	0.0144	1.212	1.191	1.198	1.175		1.200
173	173	375	632	0.895	863	330.8		0.0422	0.0145	1.218	1.194	1.200	1.177		1.201
174	174	375	632	0.895	863	330.8		0.0422	0.0145	1.221	1.195	1.200	1.177		1.201
175	175	375	632	0.895	862	330.5		0.0422	0.0146	1.223	1.195	1.200	1.177		1.201
176	176	375	632	0.895	861	330.3		0.0422	0.0146	1.223	1.194	1.200	1.177		1.201
177	177	375	632	0.895	860	329.9		0.0422	0.0146	1.220	1.194	1.200	1.177		1.200
178	178	375	632	0.895	859	329.5		0.0422	0.0145	1.215	1.192	1.198	1.174		1.198
179	179	375	632	0.895	858	328.9		0.0422	0.0145	1.209	1.192	1.200	1.175		1.200
180	180	375	632	0.895	858	328.9		0.0423	0.0145	1.204	1.194	1.201	1.178		1.201
181	181	375	632	0.895	857	328.7		0.0423	0.0144	1.197	1.192	1.200	1.175		1.200
182	182	375	632	0.895	856	328.2		0.0423	0.0143	1.192	1.191	1.198	1.175		1.200
183	183	375	632	0.895	855	327.8		0.0423	0.0143	1.189	1.191	1.198	1.175		1.200
184	184	375	632	0.895	854	327.4		0.0423	0.0143	1.189	1.191	1.198	1.175		1.200
185	185	375	632	0.895	853	327.2		0.0423	0.0142	1.189	1.189	1.198	1.175		1.200
186	186	375	632	0.895	852	326.8		0.0424	0.0143	1.192	1.191	1.200	1.175		1.201
187	187	375	632	0.895	852	326.8		0.0424	0.0144	1.197	1.192	1.200	1.177		1.201
188	188	375	632	0.895	851	326.2		0.0424	0.0143	1.200	1.189	1.197	1.172		1.198
189	189	375	632	0.895	849	325.5		0.0424	0.0144	1.203	1.189	1.197	1.174		1.200
190	190	375	632	0.895	849	325.5		0.0425	0.0146	1.207	1.191	1.198	1.175		1.200
191	191	375	632	0.895	848	325.3		0.0424	0.0146	1.210	1.192	1.197	1.175		1.200

02986

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTF	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2%AL	1000

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS (P9/P)n	(P10/P)n	(P11/P)n
192	192	375	632	0.895	847	324.7		0.0425	0.0146	1.210	1.191	1.197	1.174		1.198
193	193	375	632	0.895	846	324.5		0.0424	0.0146	1.209	1.191	1.197	1.174		1.198
194	194	375	632	0.895	845	323.9		0.0425	0.0146	1.206	1.189	1.195	1.172		1.198
195	195	375	632	0.895	844	323.6		0.0424	0.0145	1.200	1.187	1.194	1.171		1.197
196	196	375	632	0.895	843	323.4		0.0424	0.0145	1.195	1.189	1.195	1.174		1.198
197	197	375	632	0.895	843	323.4		0.0426	0.0145	1.189	1.189	1.197	1.174		1.200
198	198	375	632	0.895	842	322.8		0.0425	0.0143	1.183	1.186	1.195	1.172		1.198
199	199	375	632	0.895	840	322.2		0.0425	0.0142	1.178	1.184	1.194	1.171		1.198
200	200	375	632	0.895	839	321.8		0.0425	0.0142	1.178	1.184	1.194	1.171		1.198
201	201	375	632	0.895	838	321.4		0.0425	0.0143	1.178	1.184	1.194	1.171		1.198
202	202	375	632	0.895	838	321.3		0.0425	0.0143	1.181	1.184	1.194	1.171		1.198
203	203	375	632	0.895	837	320.9		0.0426	0.0143	1.186	1.186	1.195	1.172		1.200
204	204	375	632	0.895	837	320.9		0.0426	0.0144	1.192	1.186	1.195	1.171		1.198
205	205	375	632	0.895	835	320.1		0.0425	0.0143	1.194	1.184	1.192	1.168		1.197
206	206	375	632	0.895	834	319.7		0.0425	0.0145	1.201	1.186	1.194	1.171		1.198
207	207	375	632	0.895	833	319.5		0.0425	0.0146	1.206	1.187	1.194	1.171		1.198
208	208	375	632	0.895	833	319.3		0.0426	0.0146	1.207	1.187	1.194	1.171		1.198
209	209	375	632	0.895	831	318.8		0.0425	0.0146	1.209	1.186	1.192	1.171		1.198
210	210	375	632	0.895	831	318.6		0.0425	0.0146	1.206	1.186	1.192	1.169		1.197
211	211	375	632	0.895	830	318.2		0.0425	0.0146	1.203	1.186	1.191	1.169		1.197
212	212	375	632	0.895	828	317.6		0.0425	0.0144	1.197	1.184	1.191	1.168		1.197
213	213	375	632	0.895	828	317.6		0.0425	0.0145	1.192	1.186	1.192	1.171		1.198

NOTE: FRAMES 214-256 WERE NOT RECORDED.

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2%AL	1000

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
257	257	375	632	0.895	803	307.8		0.0426	0.0145	1.203	1.183	1.189	1.168		1.197
258	258	375	632	0.895	802	307.6		0.0425	0.0145	1.206	1.183	1.189	1.168		1.197
259	259	375	632	0.895	802	307.4		0.0425	0.0145	1.207	1.183	1.189	1.168		1.197
260	260	375	632	0.895	801	307.3		0.0426	0.0146	1.206	1.183	1.189	1.168		1.197
261	261	375	632	0.895	800	306.9		0.0425	0.0146	1.203	1.183	1.189	1.166		1.197
262	262	375	632	0.895	799	306.5		0.0424	0.0145	1.197	1.181	1.189	1.166		1.197
263	263	375	632	0.895	799	306.7		0.0426	0.0145	1.192	1.184	1.191	1.171		1.200
264	264	375	632	0.895	798	306.1		0.0426	0.0144	1.186	1.183	1.191	1.169		1.198
265	265	375	632	0.895	796	305.3		0.0426	0.0143	1.181	1.181	1.189	1.168		1.198
266	266	375	632	0.895	795	304.8		0.0427	0.0143	1.178	1.181	1.189	1.168		1.198
267	267	375	632	0.895	793	304.0		0.0427	0.0143	1.178	1.181	1.189	1.168		1.198
268	268	375	632	0.895	791	303.2		0.0428	0.0144	1.180	1.180	1.187	1.168		1.198
269	269	375	632	0.895	788	302.3		0.0428	0.0144	1.181	1.180	1.187	1.168		1.200
270	270	375	632	0.895	786	301.5		0.0429	0.0145	1.187	1.181	1.189	1.169		1.200
271	271	375	632	0.895	783	300.4		0.0430	0.0146	1.191	1.180	1.186	1.164		1.197
272	272	375	632	0.895	778	298.4		0.0430	0.0145	1.194	1.177	1.184	1.164		1.197
273	273	375	632	0.895	775	297.3		0.0432	0.0147	1.200	1.178	1.184	1.164		1.198
274	274	375	632	0.895	771	295.8		0.0434	0.0148	1.203	1.178	1.183	1.164		1.197
275	275	375	632	0.895	767	294.0		0.0435	0.0149	1.203	1.177	1.181	1.163		1.197
276	276	375	632	0.895	762	292.1		0.0436	0.0150	1.201	1.175	1.180	1.161		1.195
277	277	375	632	0.895	756	290.0		0.0438	0.0149	1.200	1.174	1.178	1.160		1.194
278	278	375	632	0.895	750	287.7		0.0439	0.0149	1.194	1.171	1.177	1.157		1.192
279	279	375	632	0.895	744	285.2		0.0441	0.0149	1.184	1.169	1.175	1.158		1.194
280	280	375	632	0.895	738	283.1		0.0444	0.0150	1.180	1.171	1.177	1.158		1.194
281	281	375	632	0.895	731	280.4		0.0445	0.0148	1.172	1.168	1.174	1.155		1.192
282	282	375	632	0.895	723	277.3		0.0447	0.0148	1.166	1.164	1.171	1.154		1.192
283	283	375	632	0.895	716	274.5		0.0449	0.0148	1.163	1.161	1.169	1.152		1.192
284	284	375	632	0.895	708	271.6		0.0450	0.0148	1.161	1.160	1.168	1.151		1.191
285	285	375	632	0.895	700	268.5		0.0453	0.0149	1.161	1.158	1.166	1.149		1.191
286	286	375	632	0.895	692	265.5		0.0455	0.0150	1.164	1.158	1.164	1.149		1.191
287	287	375	632	0.895	684	262.2		0.0459	0.0151	1.169	1.158	1.164	1.148		1.191
288	288	375	632	0.895	674	258.6		0.0459	0.0151	1.171	1.154	1.158	1.143		1.187

02987

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TRTSTP	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2AAL	1000

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
289	289	375	632	0.895	665	254.9		0.0462	0.0157	1.175	1.152	1.158	1.143		1.187
290	290	375	632	0.895	656	251.6		0.0465	0.0155	1.178	1.152	1.157	1.141		1.187
291	291	375	632	0.895	647	248.0		0.0468	0.0155	1.180	1.149	1.155	1.140		1.187
292	292	375	632	0.895	637	244.2		0.0470	0.0156	1.180	1.148	1.152	1.137		1.186
293	293	375	632	0.895	626	240.1		0.0473	0.0157	1.178	1.145	1.151	1.135		1.186
294	294	375	632	0.895	616	236.3		0.0476	0.0157	1.174	1.141	1.148	1.132		1.184
295	295	375	632	0.895	605	232.1		0.0478	0.0157	1.166	1.138	1.145	1.128		1.183
296	296	375	632	0.895	594	227.9		0.0481	0.0157	1.160	1.137	1.145	1.129		1.184
297	297	375	632	0.895	584	223.8		0.0486	0.0158	1.154	1.134	1.141	1.126		1.183
298	298	375	632	0.895	572	219.2		0.0488	0.0157	1.146	1.129	1.137	1.121		1.181
299	299	375	632	0.895	560	214.6		0.0491	0.0157	1.140	1.125	1.134	1.118		1.180
300	300	375	632	0.895	548	210.0		0.0495	0.0158	1.138	1.121	1.131	1.115		1.180
301	301	375	632	0.895	535	205.2		0.0499	0.0159	1.137	1.118	1.128	1.114		1.180
302	302	375	632	0.895	523	200.5		0.0503	0.0161	1.135	1.115	1.125	1.111		1.178
303	303	375	632	0.895	510	195.5		0.0508	0.0163	1.138	1.114	1.123	1.109		1.178
304	304	375	632	0.895	497	190.7		0.0513	0.0165	1.140	1.109	1.118	1.105		1.177
305	305	375	632	0.895	483	185.1		0.0516	0.0165	1.138	1.103	1.111	1.100		1.175
306	306	375	632	0.895	468	179.6		0.0523	0.0169	1.140	1.102	1.109	1.098		1.175
307	307	375	632	0.895	455	174.4		0.0530	0.0172	1.141	1.097	1.105	1.095		1.174
308	308	375	632	0.895	441	169.0		0.0535	0.0174	1.140	1.092	1.102	1.092		1.174
309	309	375	632	0.895	426	163.4		0.0540	0.0175	1.135	1.088	1.095	1.089		1.172
310	310	375	632	0.895	411	157.7		0.0549	0.0176	1.129	1.083	1.092	1.085		1.171
311	311	375	632	0.895	396	151.9		0.0554	0.0178	1.121	1.077	1.086	1.080		1.169
312	312	375	632	0.895	381	146.0		0.0561	0.0177	1.109	1.071	1.080	1.077		1.169
313	313	375	632	0.895	367	140.6		0.0572	0.0180	1.100	1.068	1.079	1.075		1.169
314	314	375	632	0.895	353	135.*		0.0579	0.0180	1.089	1.062	1.072	1.071		1.168
315	315	375	632	0.895	337	129.1		0.0587	0.0176	1.079	1.054	1.068	1.066		1.166
316	316	375	632	0.895	322	123.4		0.0598	0.0180	1.071	1.049	1.063	1.063		1.166
317	317	375	632	0.895	307	117.8		0.0609	0.0182	1.066	1.045	1.059	1.060		1.166
318	318	375	632	0.895	293	112.2		0.0618	0.0185	1.063	1.040	1.056	1.057		1.164
319	319	375	632	0.895	279	106.9		0.0630	0.0187	1.062	1.036	1.051	1.054		1.164
320	320	375	632	0.895	265	101.7		0.0642	0.0192	1.063	1.033	1.049	1.052		1.166

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2%AL	1000

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
321	321	375	632	0.895	252	96.5		0.0653	0.0195	1.063	1.028	1.043	1.046		1.164
322	322	375	632	0.895	237	91.0		0.0665	0.0196	1.063	1.023	1.039	1.043		1.163
323	323	375	632	0.895	225	86.2		0.0681	0.0205	1.066	1.022	1.039	1.043		1.164
324	324	375	632	0.895	213	81.6		0.0694	0.0212	1.066	1.019	1.036	1.040		1.164
325	325	375	632	0.895	200	76.8		0.0711	0.0215	1.066	1.017	1.033	1.039		1.164
326	326	375	632	0.895	189	72.4		0.0726	0.0220	1.063	1.014	1.031	1.036		1.164
327	327	375	632	0.895	177	68.0		0.0743	0.0226	1.059	1.013	1.029	1.034		1.164
328	328	375	632	0.895	166	63.7		0.0756	0.0226	1.052	1.008	1.026	1.031		1.163
329	329	375	632	0.895	156	59.7		0.0777	0.0228	1.046	1.006	1.026	1.033		1.164
330	330	375	632	0.895	147	56.3		0.0802	0.0239	1.040	1.008	1.028	1.034		1.164
331	331	375	632	0.895	137	52.6		0.0819	0.0237	1.033	1.005	1.026	1.031		1.163
332	332	375	632	0.895	128	49.0		0.0838	0.0239	1.028	1.003	1.026	1.029		1.163
333	333	375	632	0.895	119	45.5		0.0868	0.0244	1.028	1.003	1.026	1.031		1.163
334	334	375	632	0.895	111	42.5		0.0894	0.0257	1.029	1.003	1.028	1.031		1.161
335	335	375	632	0.895	103	39.6		0.0921	0.0267	1.033	1.005	1.029	1.033		1.163
336	336	375	632	0.895	96	36.7		0.0951	0.0282	1.036	1.006	1.031	1.034		1.163
337	337	375	632	0.895	90	34.4		0.0985	0.0307	1.045	1.008	1.033	1.036		1.163
338	338	375	632	0.895	82	31.5		0.1018	0.0316	1.048	1.008	1.031	1.034		1.160
339	339	375	632	0.895	75	28.8		0.1059	0.0346	1.057	1.008	1.033	1.037		1.160
340	340	375	632	0.895	70	26.9		0.1106	0.0378	1.065	1.011	1.036	1.040		1.161

MACH	Q	P	PT	PREF	PCAL
0.895	210.7	375	632	1415	2117

02988

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

C-2

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
398	1	66/033/1	38	2%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
1	2	376	634	0.897	395	151.3		0.0249	0.0102	1.143	1.007	1.134	1.117		1.168
2	4	376	634	0.897	478	183.0		0.0258	0.0097	1.157	1.021	1.145	1.128		1.171
3	6	376	634	0.897	573	219.2		0.0271	0.0095	1.171	1.042	1.165	1.145		1.178
4	8	376	634	0.897	671	256.9		0.0283	0.0091	1.180	1.061	1.180	1.159		1.185
5	10	376	634	0.897	775	296.5		0.0298	0.0092	1.188	1.080	1.200	1.175		1.192
6	12	376	634	0.897	878	335.9		0.0312	0.0095	1.198	1.102	1.220	1.195		1.201
7	14	376	634	0.897	978	374.2		0.0324	0.0099	1.209	1.120	1.237	1.209		1.206
8	16	376	634	0.897	1072	410.2		0.0336	0.0105	1.223	1.140	1.253	1.229		1.214
9	18	376	634	0.897	1158	443.3		0.0345	0.0110	1.235	1.159	1.267	1.241		1.218
10	20	376	634	0.897	1236	473.1		0.0354	0.0115	1.246	1.172	1.279	1.253		1.223
11	22	376	634	0.897	1305	499.5		0.0361	0.0119	1.258	1.183	1.290	1.266		1.227
12	24	376	634	0.897	1367	523.1		0.0369	0.0122	1.269	1.192	1.298	1.272		1.230
13	26	376	634	0.897	1420	543.3		0.0374	0.0125	1.278	1.198	1.304	1.279		1.234
14	28	376	634	0.897	1465	560.8		0.0379	0.0128	1.286	1.204	1.310	1.286		1.235
15	30	376	634	0.897	1505	575.9		0.0384	0.0133	1.293	1.212	1.315	1.290		1.238
16	32	376	634	0.897	1537	588.1		0.0388	0.0136	1.296	1.217	1.318	1.293		1.238
17	34	376	634	0.897	1567	599.6		0.0392	0.0140	1.299	1.221	1.321	1.296		1.240
18	36	376	634	0.897	1592	609.4		0.0395	0.0144	1.302	1.224	1.322	1.298		1.241
19	38	376	634	0.897	1615	618.2		0.0397	0.0145	1.304	1.226	1.322	1.298		1.241
20	40	376	634	0.897	1638	627.0		0.0400	0.0147	1.310	1.227	1.325	1.301		1.243
21	42	376	634	0.897	1657	634.2		0.0401	0.0147	1.310	1.226	1.325	1.299		1.243
22	44	376	634	0.897	1676	641.5		0.0402	0.0147	1.313	1.224	1.325	1.301		1.244
23	46	376	634	0.897	1694	648.2		0.0403	0.0148	1.316	1.227	1.327	1.304		1.246
24	48	376	634	0.897	1708	653.6		0.0403	0.0149	1.313	1.224	1.325	1.301		1.244
25	50	376	634	0.897	1722	658.9		0.0405	0.0151	1.315	1.227	1.327	1.302		1.246
26	52	376	634	0.897	1732	662.7		0.0406	0.0152	1.316	1.229	1.327	1.304		1.247
27	54	376	634	0.897	1739	665.4		0.0407	0.0153	1.316	1.227	1.325	1.302		1.246
28	56	376	634	0.897	1744	667.3		0.0409	0.0154	1.319	1.230	1.328	1.307		1.249
29	58	376	634	0.897	1745	667.9		0.0410	0.0153	1.318	1.226	1.327	1.304		1.249
30	60	376	634	0.897	1746	668.3		0.0412	0.0153	1.319	1.224	1.327	1.304		1.249
31	62	376	634	0.897	1745	667.9		0.0414	0.0154	1.321	1.224	1.327	1.307		1.250
32	64	376	634	0.897	1743	667.1		0.0416	0.0154	1.319	1.223	1.325	1.304		1.249

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TSTSTP	CONF	PROPELLANT	SAMP.RATE
396	1	66/033/1	38	2%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
33	66	376	634	0.897	1741	666.4		0.0418	0.0156	1.319	1.226	1.327	1.307		1.250
34	68	376	634	0.897	1738	665.2		0.0420	0.0157	1.319	1.226	1.327	1.307		1.250
35	70	376	634	0.897	1734	663.7		0.0423	0.0158	1.318	1.226	1.327	1.305		1.249
36	72	376	634	0.897	1731	662.4		0.0425	0.0159	1.318	1.226	1.327	1.307		1.250
37	74	376	634	0.897	1729	661.6		0.0427	0.0158	1.319	1.224	1.327	1.305		1.250
38	76	376	634	0.897	1726	660.6		0.0429	0.0158	1.319	1.223	1.327	1.305		1.250
39	78	376	634	0.897	1725	660.1		0.0431	0.0158	1.321	1.223	1.327	1.307		1.250
40	80	376	634	0.897	1724	659.7		0.0434	0.0159	1.321	1.224	1.328	1.307		1.252
41	82	376	634	0.897	1720	658.3		0.0435	0.0160	1.319	1.223	1.327	1.305		1.250
42	84	376	634	0.897	1718	657.6		0.0438	0.0161	1.318	1.226	1.328	1.307		1.250
43	86	376	634	0.897	1715	656.2		0.0440	0.0162	1.318	1.227	1.327	1.305		1.249
44	88	376	634	0.897	1711	654.7		0.0441	0.0163	1.315	1.226	1.325	1.304		1.247
45	90	376	634	0.897	1708	653.6		0.0443	0.0163	1.318	1.226	1.327	1.305		1.249
46	92	376	634	0.897	1703	651.6		0.0444	0.0162	1.318	1.223	1.325	1.304		1.247
47	94	376	634	0.897	1699	650.1		0.0446	0.0161	1.318	1.221	1.325	1.304		1.247
48	96	376	634	0.897	1695	648.6		0.0448	0.0161	1.319	1.223	1.327	1.307		1.249
49	98	376	634	0.897	1689	646.3		0.0448	0.0161	1.315	1.220	1.324	1.302		1.247
50	100	376	634	0.897	1686	645.3		0.0449	0.0162	1.315	1.223	1.327	1.305		1.247
51	102	376	634	0.897	1683	644.2		0.0450	0.0163	1.315	1.224	1.327	1.304		1.247
52	104	376	634	0.897	1681	643.2		0.0450	0.0163	1.313	1.224	1.325	1.302		1.246
53	106	376	634	0.897	1678	642.3		0.0452	0.0162	1.316	1.226	1.328	1.305		1.249
54	108	376	634	0.897	1674	640.5		0.0452	0.0161	1.315	1.223	1.325	1.302		1.247
55	110	376	634	0.897	1668	638.3		0.0453	0.0161	1.315	1.221	1.327	1.302		1.249
56	112	376	634	0.897	1660	635.2		0.0454	0.0161	1.316	1.221	1.327	1.304		1.249
57	114	376	634	0.897	1649	631.2		0.0455	0.0161	1.315	1.220	1.325	1.301		1.247
58	116	376	634	0.897	1637	626.4		0.0458	0.0163	1.313	1.221	1.325	1.302		1.249
59	118	376	634	0.897	1622	620.6		0.0460	0.0164	1.312	1.221	1.324	1.301		1.247
60	120	376	634	0.897	1603	613.4		0.0462	0.0167	1.310	1.221	1.322	1.299		1.246
61	122	376	634	0.897	1580	604.6		0.0466	0.0170	1.309	1.223	1.321	1.298		1.246
62	124	376	634	0.897	1555	595.0		0.0470	0.0171	1.309	1.221	1.318	1.295		1.244
63	126	376	634	0.897	1527	5[illegible]5		0.0474	0.0173	1.307	1.220	1.315	1.292		1.243
64	128	376	634	0.897	1500	[illegible].0		0.0477	0.0174	1.305	1.220	1.313	1.290		1.241

02989

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
398	1	66/033/1	38	2%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	376	634	0.897	1473	563.6		0.0481	0.0176	1.305	1.218	1.31[illegible]	1.289		1.240
66	132	376	634	0.897	1443	552.3		0.0484	0.0177	1.301	1.215	1.310	1.286		1.238
67	134	376	634	0.897	1416	542.0		0.0487	0.0179	1.299	1.215	1.309	1.284		1.237
68	136	376	634	0.897	1389	531.7		0.0489	0.0180	1.295	1.214	1.305	1.281		1.235
69	138	376	634	0.897	1363	521.5		0.0491	0.0180	1.292	1.209	1.302	1.278		1.234
70	140	376	634	0.897	1340	512.7		0.0493	0.0179	1.293	1.206	1.302	1.278		1.234
71	142	376	634	0.897	1315	503.3		0.0494	0.0177	1.290	1.200	1.298	1.273		1.232
72	144	376	634	0.897	1293	494.7		0.0496	0.0176	1.289	1.197	1.296	1.272		1.230
73	146	376	634	0.897	1272	486.9		0.0497	0.0177	1.289	1.[illegible]95	1.296	1.272		1.230
74	148	376	634	0.897	1251	478.7		0.0497	0.0175	1.283	1.189	1.292	1.267		1.227
75	150	376	634	0.897	1233	471.8		0.0498	0.0177	1.283	1.189	1.292	1.267		1.227
76	152	376	634	0.897	1214	464.5		0.0499	0.0178	1.281	1.188	1.290	1.266		1.226
77	154	376	634	0.897	1195	457.4		0.0500	0.0178	1.279	1.185	1.287	1.263		1.224
78	156	376	634	0.897	1179	451.1		0.0500	0.0177	1.281	1.186	1.289	1.267		1.226
79	158	376	634	0.897	1161	444.4		0.0500	0.0176	1.278	1.178	1.286	1.263		1.224
80	160	376	634	0.897	1145	438.1		0.0501	0.0175	1.276	1.177	1.284	1.261		1.224
81	162	376	634	0.897	1129	432.0		0.0501	0.0176	1.276	1.175	1.283	1.261		1.224
82	164	376	634	0.897	1114	426.2		0.0501	0.0173	1.272	1.171	1.279	1.256		1.223
83	166	376	634	0.897	1099	420.5		0.0502	0.0172	1.269	1.168	1.279	1.256		1.223
84	168	376	634	0.897	1085	415.1		0.0501	0.0171	1.266	1.165	1.278	1.255		1.221
85	170	376	634	0.897	1071	410.0		0.0501	0.0170	1.263	1.163	1.276	1.253		1.221
86	172	376	634	0.897	1059	405.2		0.0500	0.0169	1.263	1.160	1.276	1.253		1.221
87	174	376	634	0.897	1048	401.2		0.0499	0.0167	1.261	1.157	1.275	1.250		1.221
88	176	376	634	0.897	1038	397.1		0.0498	0.0165	1.261	1.155	1.273	1.250		1.220
89	178	376	634	0.897	1028	393.5		0.0497	0.0165	1.261	1.154	1.273	1.250		1.221
90	180	376	634	0.897	1020	390.4		0.0496	0.0165	1.263	1.154	1.273	1.250		1.221
91	182	376	634	0.897	1011	387.0		0.0494	0.0165	1.260	1.154	1.272	1.249		1.221
92	184	376	634	0.897	1004	384.3		0.0494	0.0167	1.260	1.155	1.272	1.249		1.221
93	186	376	634	0.897	997	381.6		0.0493	0.0169	1.258	1.157	1.270	1.249		1.220
94	188	376	634	0.897	991	379.2		0.0491	0.0169	1.256	1.154	1.269	1.247		1.218
95	190	376	634	0.897	986	377.2		0.0492	0.0169	1.260	1.157	1.270	1.249		1.220
96	192	376	634	0.897	979	374.6		0.0490	0.0167	1.258	1.154	1.267	1.247		1.220

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
398	1	66/033/1	38	2%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.	
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
97	194	376	634	0.897	972	372.1		0.0489	0.0167	1.258	1.152	1.267	1.246		1.220
98	196	376	634	0.897	965	369.2		0.0490	0.0168	1.258	1.154	1.269	1.247		1.220
99	198	376	634	0.897	953	364.8		0.0491	0.0169	1.253	1.149	1.264	1.241		1.218
100	200	376	634	0.897	940	359.8		0.0494	0.0172	1.252	1.151	1.264	1.243		1.218
101	202	376	634	0.897	921	352.4		0.0498	0.0176	1.247	1.149	1.261	1.240		1.217
102	204	376	634	0.897	894	342.2		0.0504	0.0179	1.240	1.143	1.255	1.232		1.215
103	206	376	634	0.897	862	329.8		0.0514	0.0184	1.235	1.140	1.250	1.229		1.215
104	208	376	634	0.897	820	313.9		0.0525	0.0187	1.234	1.129	1.240	1.218		1.211
105	210	376	634	0.897	772	295.5		0.0540	0.0192	1.232	1.119	1.229	1.209		1.209
106	212	376	634	0.897	718	274.9		0.0559	0.0199	1.226	1.106	1.218	1.200		1.206
107	214	376	634	0.897	660	252.5		0.0580	0.0207	1.212	1.093	1.203	1.183		1.200
108	216	376	634	0.897	599	229.1		0.0605	0.0222	1.203	1.082	1.189	1.172		1.197
109	218	376	634	0.897	536	205.0		0.0634	0.0236	1.220	1.067	1.174	1.159		1.192
110	220	376	634	0.897	474	181.3		0.0668	0.0252	1.226	1.050	1.157	1.145		1.188
111	222	376	634	0.897	413	158.0		0.0707	0.0264	1.209	1.031	1.140	1.132		1.183
112	224	376	634	0.897	356	136.3		0.0752	0.0276	1.180	1.012	1.123	1.117		1.178
113	226	376	634	0.897	303	116.0		0.0802	0.0291	1.159	0.992	1.108	1.103		1.174
114	228	376	634	0.897	254	97.1		0.0866	0.0310	1.142	0.975	1.094	1.093		1.172
115	230	376	634	0.897	210	80.5		0.0944	0.0336	1.126	0.961	1.082	1.084		1.169
116	232	376	634	0.897	169	64.6		0.1042	0.0365	1.111	0.946	1.070	1.074		1.165
117	234	376	634	0.897	134	51.2		0.1175	0.0420	1.114	0.937	1.062	1.068		1.163
118	236	376	634	0.897	102	39.1		0.1355	0.0500	1.119	0.929	1.056	1.064		1.162
119	238	376	634	0.897	74	28.4		0.1641	0.0608	1.110	0.923	1.051	1.059		1.160
120	240	376	634	0.897	52	19.8		0.2111	0.0776	1.093	0.920	1.051	1.059		1.160
121	242	376	634	0.897	30	11.6		0.3171	0.1163	1.082	0.915	1.050	1.059		1.160
122	244	376	634	0.897	14	5.2		0.6205	0.2308	1.080	0.915	1.051	1.061		1.159

MACH	Q	P	PT	PREF	PCAL
0.897	211.7	376	634	1423	2119

02990

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
399	1	66/033/1	38	2AAL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n
1	2	260	638	1.208	19	10.4
2	4	260	638	1.208	19	10.4
3	6	260	638	1.208	19	10.4
4	8	260	638	1.208	19	10.4
5	10	260	638	1.208	19	10.4

MACH	Q	P	PT	PREF	PCAL
1.208	265.9	260	638	1408	2118

NOZZLE PRESS.			BASE PRESS.			BODY PRESS.	
(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
	0.1912	0.1288	0.924	1.035	0.904	0.911		1.094
	0.1912	0.1315	0.926	1.037	0.906	0.915		1.097
	0.1912	0.1288	0.926	1.032	0.904	0.913		1.097
	0.1912	0.1288	0.926	1.030	0.904	0.913		1.097
	0.1912	0.1315	0.928	1.030	0.904	0.913		1.097

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST#	CONF	PROPELLANT	SAMP.RATE
400	1	66/033/1	38	2GAL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	261	638	1.206	215	118.7		0.0163	0.0107	0.924	1.023	0.904	0.913		1.100
2	4	261	638	1.206	242	133.6		0.0150	0.0095	0.924	1.025	0.904	0.911		1.098
3	6	261	638	1.206	266	146.9		0.0147	0.0091	0.919	1.027	0.904	0.911		1.098
4	8	261	638	1.206	290	160.1		0.0155	0.0038	0.915	1.032	0.904	0.908		1.098
5	10	261	638	1.206	314	173.4		0.0171	0.0088	0.911	1.036	0.904	0.908		1.096
6	12	261	638	1.206	341	188.3		0.0189	0.0087	0.908	1.041	0.908	0.908		1.096
7	14	261	638	1.206	376	207.3		0.0209	0.0091	0.919	1.054	0.922	0.911		1.096
8	16	261	638	1.206	415	228.8		0.0226	0.0091	0.930	1.067	0.937	0.915		1.096
9	18	261	638	1.206	459	253.1		0.0245	0.0093	0.948	1.089	0.957	0.922		1.096
10	20	261	638	1.206	507	279.6		0.0264	0.0096	0.972	1.114	0.981	0.935		1.098
11	22	261	638	1.206	555	305.2		0.0276	0.0097	0.988	1.136	1.003	0.941		1.096
12	24	261	638	1.206	601	331.7		0.0290	0.0101	1.010	1.164	1.027	0.959		1.096
13	26	261	638	1.206	646	356.5		0.0301	0.0104	1.030	1.189	1.050	0.970		1.096
14	28	261	638	1.206	689	380.0		0.0309	0.0106	1.045	1.208	1.069	0.981		1.094
15	30	261	638	1.206	729	402.1		0.0320	0.0111	1.069	1.231	1.092	0.999		1.096
16	32	261	638	1.206	763	420.8		0.0326	0.0112	1.083	1.242	1.105	1.008		1.094
17	34	261	638	1.206	793	437.4		0.0333	0.0116	1.098	1.255	1.120	1.019		1.094
18	36	261	638	1.206	817	450.9		0.0340	0.0119	1.114	1.270	1.133	1.030		1.096
19	38	261	638	1.206	836	461.4		0.0345	0.0120	1.116	1.275	1.138	1.034		1.094
20	40	261	638	1.206	851	469.7		0.0351	0.0124	1.125	1.286	1.149	1.043		1.094
21	42	261	638	1.206	861	475.2		0.0357	0.0127	1.129	1.292	1.153	1.047		1.094
22	44	261	638	1.206	867	478.5		0.0362	0.0129	1.131	1.295	1.156	1.050		1.092
23	46	261	638	1.206	870	480.1		0.0367	0.0132	1.136	1.299	1.160	1.056		1.094
24	48	261	638	1.206	871	480.4		0.0370	0.0133	1.136	1.295	1.158	1.054		1.092
25	50	261	638	1.206	869	479.6		0.0374	0.0135	1.138	1.292	1.158	1.054		1.092
26	52	261	638	1.206	868	478.8		0.0378	0.0137	1.138	1.292	1.158	1.054		1.094
27	54	261	638	1.206	866	477.7		0.0380	0.0138	1.138	1.292	1.156	1.052		1.092
28	56	261	638	1.206	863	476.3		0.0382	0.0139	1.136	1.292	1.156	1.054		1.094
29	58	261	638	1.206	861	475.2		0.0384	0.0139	1.133	1.292	1.153	1.052		1.094
30	60	261	638	1.206	860	474.3		0.0384	0.0140	1.129	1.292	1.151	1.050		1.094
31	62	261	638	1.206	858	473.2		0.0385	0.0140	1.129	1.290	1.149	1.050		1.094
32	64	261	638	1.206	858	473.5		0.0387	0.0141	1.131	1.290	1.149	1.047		1.094

12311

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	DIST	TNTSTE	CONF	PROPELLANT	BASE.RATE
400	1	66/033/1	38	2CAL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	261	638	1.206	858	473.2		0.0387	0.0140	1.129	1.286	1.147	1.047		1.094
34	68	261	638	1.206	859	473.8		0.0386	0.0140	1.131	1.286	1.147	1.047		1.094
35	70	261	638	1.206	860	474.6		0.0387	0.0141	1.133	1.288	1.149	1.050		1.096
36	72	261	638	1.206	861	474.9		0.0386	0.0140	1.129	1.286	1.147	1.047		1.096
37	74	261	638	1.206	863	476.3		0.0387	0.0140	1.129	1.290	1.149	1.050		1.096
38	76	261	638	1.206	865	477.1		0.0387	0.0140	1.129	1.290	1.149	1.047		1.096
39	78	261	638	1.206	866	477.7		0.0386	0.0139	1.127	1.288	1.147	1.045		1.096
40	80	261	638	1.206	868	479.0		0.0388	0.0141	1.133	1.292	1.151	1.052		1.096
41	82	261	638	1.206	868	479.0		0.0386	0.0140	1.131	1.288	1.149	1.050		1.096
42	84	261	638	1.206	870	479.9		0.0386	0.0140	1.133	1.286	1.149	1.050		1.096
43	86	261	638	1.206	871	480.4		0.0386	0.0140	1.136	1.288	1.153	1.052		1.098
44	88	261	638	1.206	871	480.4		0.0386	0.0139	1.131	1.284	1.149	1.047		1.096
45	90	261	638	1.206	872	481.2		0.0386	0.0140	1.133	1.288	1.151	1.052		1.096
46	92	261	638	1.206	873	481.5		0.0386	0.0140	1.131	1.288	1.151	1.052		1.098
47	94	261	638	1.206	873	481.8		0.0386	0.0139	1.129	1.288	1.151	1.050		1.098
48	96	261	638	1.206	874	482.4		0.0386	0.0140	1.133	1.290	1.153	1.054		1.100
49	98	261	638	1.206	875	482.6		0.0386	0.0140	1.131	1.286	1.151	1.050		1.098
50	100	261	638	1.206	875	482.9		0.0386	0.0140	1.133	1.284	1.151	1.050		1.098
51	102	261	638	1.206	876	483.2		0.0386	0.0139	1.136	1.286	1.153	1.052		1.098
52	104	261	638	1.206	877	483.7		0.0386	0.0140	1.136	1.288	1.151	1.050		1.098
53	106	261	638	1.206	877	483.7		0.0386	0.0140	1.136	1.290	1.153	1.052		1.098
54	108	261	638	1.206	878	484.3		0.0386	0.0140	1.136	1.292	1.153	1.054		1.098
55	110	261	638	1.206	878	484.6		0.0385	0.0140	1.133	1.295	1.153	1.052		1.098
56	112	261	638	1.206	879	484.8		0.0384	0.0139	1.133	1.295	1.153	1.054		1.098
57	114	261	638	1.206	881	485.9		0.0385	0.0140	1.138	1.295	1.156	1.054		1.098
58	116	261	638	1.206	881	486.2		0.0385	0.0139	1.138	1.290	1.156	1.054		1.098
59	118	261	638	1.206	882	486.8		0.0385	0.0140	1.140	1.290	1.156	1.054		1.098
60	120	261	638	1.206	884	487.9		0.0386	0.0140	1.142	1.292	1.158	1.058		1.098
61	122	261	638	1.206	884	487.6		0.0384	0.0139	1.138	1.290	1.156	1.054		1.096
62	124	261	638	1.206	885	488.4		0.0385	0.0140	1.138	1.295	1.156	1.056		1.098
63	126	261	638	1.206	886	489.0		0.0386	0.0139	1.138	1.297	1.156	1.056		1.096
64	128	261	638	1.206	886	489.0		0.0385	0.0139	1.136	1.292	1.153	1.054		1.096

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	DIST	ENTRY	CONF	PROPELLANT	SHOT.NO.
400	1	66/033/1	38	2%AL	500

FRAME	TIME	Pn	P1n	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	261	638	1.206	888	490.1		0.0386	0.0140	1.140	1.297	1.158	1.058		1.093
66	132	261	638	1.206	888	489.8		0.0385	0.0139	1.140	1.292	1.156	1.056		1.098
67	134	261	638	1.206	889	490.4		0.0385	0.0140	1.142	1.292	1.156	1.056		1.093
68	136	261	638	1.206	889	490.6		0.0386	0.0140	1.144	1.295	1.160	1.061		1.100
69	138	261	638	1.206	889	490.4		0.0385	0.0139	1.140	1.290	1.156	1.054		1.096
70	140	261	638	1.206	890	490.9		0.0386	0.0139	1.142	1.297	1.160	1.061		1.098
71	142	261	638	1.206	890	490.9		0.0386	0.0139	1.140	1.297	1.158	1.058		1.096
72	144	261	638	1.206	890	490.9		0.0386	0.0139	1.140	1.297	1.158	1.058		1.094
73	146	261	638	1.206	890	490.9		0.0387	0.0140	1.142	1.297	1.160	1.063		1.09 8
74	148	261	638	1.206	890	490.9		0.0386	0.0139	1.142	1.292	1.158	1.058		1.094
75	150	261	638	1.206	890	490.9		0.0386	0.0139	1.142	1.290	1.158	1.058		1.094
76	152	261	638	1.206	890	490.9		0.0386	0.0139	1.144	1.292	1.160	1.061		1.094
77	154	261	638	1.206	890	491.2		0.0387	0.0140	1.144	1.290	1.158	1.058		1.092
78	156	261	638	1.206	889	490.6		0.0387	0.0140	1.142	1.292	1.160	1.061		1.094
79	158	261	638	1.206	889	490.6		0.0387	0.0140	1.142	1.297	1.160	1.061		1.092
80	160	261	638	1.206	889	490.4		0.0388	0.0140	1.140	1.297	1.158	1.061		1.092
81	162	261	638	1.206	888	490.1		0.0387	0.0140	1.140	1.295	1.158	1.061		1.092
82	164	261	638	1.206	889	490.6		0.0387	0.0140	1.144	1.295	1.160	1.061		1.092
83	166	261	638	1.206	889	490.4		0.0388	0.0140	1.144	1.295	1.158	1.061		1.092
84	168	261	638	1.206	889	490.4		0.0388	0.0140	1.147	1.292	1.160	1.061		1.092
85	170	261	638	1.206	890	490.9		0.0389	0.0141	1.149	1.297	1.162	1.063		1.092
86	172	261	638	1.206	888	490.1		0.0387	0.0140	1.142	1.292	1.158	1.061		1.092
87	174	261	638	1.206	889	490.6		0.0387	0.0140	1.144	1.297	1.160	1.063		1.092
88	176	261	638	1.206	889	490.4		0.0388	0.0140	1.142	1.299	1.160	1.061		1.092
89	178	261	638	1.206	888	490.1		0.0387	0.0140	1.140	1.297	1.158	1.058		1.089
90	180	261	638	1.206	889	490.6		0.0389	0.0141	1.144	1.299	1.160	1.063		1.092
91	182	261	638	1.206	888	490.1		0.0388	0.0140	1.142	1.295	1.158	1.058		1.092
92	184	261	638	1.206	888	489.8		0.0388	0.0140	1.144	1.292	1.158	1.058		1.092
93	186	261	638	1.206	888	489.8		0.0389	0.0140	1.147	1.295	1.160	1.061		1.094
94	188	261	638	1.206	887	489.2		0.0387	0.0139	1.140	1.290	1.156	1.054		1.092
95	190	261	638	1.206	887	489.2		0.0388	0.0141	1.142	1.295	1.158	1.058		1.092
96	192	261	638	1.206	886	488.7		0.0389	0.0140	1.140	1.297	1.158	1.058		1.094

12312

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TUNNEL	CONF	PROPELLANT	SAMP.RATE
400	1	66/033/1	38	2AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	261	638	1.206	885	488.4		0.0388	0.0140	1.138	1.297	1.156	1.056		1.092
98	196	261	638	1.206	885	486.1		0.0389	0.0140	1.142	1.301	1.158	1.061		1.094
99	198	261	638	1.206	884	487.6		0.0388	0.0140	1.140	1.295	1.156	1.056		1.092
100	200	261	638	1.206	883	487.3		0.0388	0.0140	1.140	1.295	1.156	1.055		1.092
101	202	261	638	1.206	883	487.0		0.0389	0.0140	1.142	1.295	1.156	1.056		1.094
102	204	261	638	1.206	882	486.8		0.0389	0.0140	1.140	1.295	1.153	1.054		1.092
103	206	261	638	1.206	881	486.2		0.0389	0.0140	1.140	1.297	1.153	1.056		1.092
104	208	261	638	1.206	881	486.2		0.0389	0.0140	1.138	1.299	1.153	1.056		1.092
105	210	261	638	1.206	880	485.7		0.0388	0.0140	1.138	1.299	1.153	1.054		1.092
106	212	261	638	1.206	879	485.1		0.0388	0.0140	1.136	1.299	1.153	1.054		1.092
107	214	261	638	1.206	880	485.4		0.0389	0.0141	1.138	1.297	1.153	1.054		1.092
108	216	261	638	1.206	879	484.8		0.0388	0.0140	1.138	1.295	1.151	1.054		1.092
109	218	261	638	1.206	878	484.3		0.0389	0.0140	1.140	1.295	1.153	1.054		1.092
110	220	261	638	1.206	878	484.6		0.0389	0.0141	1.142	1.297	1.156	1.056		1.092
111	222	261	638	1.206	877	483.7		0.0388	0.0140	1.138	1.295	1.151	1.054		1.092
112	224	261	638	1.206	877	484.0		0.0389	0.0141	1.138	1.299	1.153	1.056		1.092
113	226	261	638	1.206	877	483.7		0.0389	0.0141	1.136	1.299	1.153	1.056		1.092
114	228	261	638	1.206	876	483.2		0.0388	0.0140	1.133	1.297	1.151	1.054		1.089
115	230	261	638	1.206	876	483.5		0.0390	0.0142	1.140	1.301	1.156	1.058		1.094
116	232	261	638	1.206	875	482.6		0.0388	0.0141	1.138	1.297	1.153	1.056		1.092
117	234	261	638	1.206	874	482.4		0.0389	0.0141	1.140	1.297	1.156	1.056		1.092
118	236	261	638	1.206	874	482.4		0.0389	0.0141	1.144	1.297	1.158	1.061		1.096
119	238	261	638	1.206	873	481.5		0.0388	0.0140	1.138	1.295	1.153	1.056		1.092
120	240	261	638	1.206	873	481.5		0.0389	0.0142	1.140	1.299	1.158	1.061		1.092
121	242	261	638	1.206	872	481.0		0.0390	0.0141	1.138	1.299	1.158	1.058		1.092
122	244	261	638	1.206	871	480.4		0.0389	0.0141	1.138	1.299	1.156	1.056		1.089
123	246	261	638	1.206	870	479.9		0.0391	0.0142	1.140	1.301	1.158	1.063		1.092
124	248	261	638	1.206	868	479.0		0.0390	0.0141	1.138	1.295	1.153	1.058		1.089
125	250	261	638	1.206	867	478.2		0.0390	0.0141	1.140	1.292	1.153	1.056		1.089
126	252	261	638	1.206	866	477.7		0.0390	0.0142	1.140	1.292	1.153	1.058		1.089
127	254	261	638	1.206	864	476.8		0.0391	0.0142	1.138	1.290	1.151	1.054		1.087
128	256	261	638	1.206	863	476.0		0.0391	0.0142	1.136	1.292	1.151	1.056		1.087

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SMP.RATE
400	1	66/033/1	38	24AL	500

FRAME	TIME	Pn	PTn	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
129	258	261	638	1.206	861	475.2		0.0391	0.0142	1.136	1.292	1.151	1.054		1.087
130	260	261	638	1.206	859	474.1		0.0391	0.0142	1.131	1.295	1.149	1.054		1.085
131	262	261	638	1.206	857	473.0		0.0391	0.0142	1.131	1.292	1.149	1.054		1.087
132	264	261	638	1.206	857	472.7		0.0392	0.0143	1.133	1.292	1.149	1.052		1.087
133	266	261	638	1.206	855	471.6		0.0391	0.0142	1.133	1.290	1.147	1.052		1.085
134	268	261	638	1.206	853	470.8		0.0391	0.0142	1.133	1.288	1.147	1.052		1.085
135	270	261	638	1.206	853	470.5		0.0392	0.0143	1.136	1.290	1.149	1.052		1.087
136	272	261	638	1.206	850	468.8		0.0391	0.0142	1.129	1.288	1.147	1.050		1.085
137	274	261	638	1.206	850	468.8		0.0391	0.0143	1.131	1.292	1.149	1.050		1.085
138	276	261	638	1.206	848	468.0		0.0391	0.0142	1.129	1.295	1.149	1.050		1.085
139	278	261	638	1.206	847	467.2		0.0391	0.0141	1.129	1.292	1.147	1.047		1.085
140	280	261	638	1.206	847	467.5		0.0392	0.0143	1.133	1.295	1.151	1.052		1.087
141	282	261	638	1.206	846	466.6		0.0391	0.0142	1.131	1.290	1.149	1.050		1.087
142	284	261	638	1.206	845	466.3		0.0390	0.0142	1.133	1.290	1.149	1.050		1.087
143	286	261	638	1.206	845	466.3		0.0391	0.0143	1.136	1.292	1.151	1.052		1.089
144	288	261	638	1.206	844	465.5		0.0390	0.0141	1.131	1.288	1.147	1.047		1.085
145	290	261	638	1.206	844	465.5		0.0391	0.0142	1.133	1.295	1.151	1.052		1.089
146	292	261	638	1.206	843	465.2		0.0390	0.0142	1.133	1.297	1.151	1.050		1.087
147	294	261	638	1.206	842	464.4		0.0390	0.0142	1.131	1.297	1.149	1.050		1.087
148	296	261	638	1.206	841	464.1		0.0391	0.0143	1.133	1.299	1.151	1.054		1.092
149	298	261	638	1.206	840	463.6		0.0391	0.0142	1.133	1.292	1.149	1.050		1.089
150	300	261	638	1.206	839	463.0		0.0391	0.0142	1.133	1.292	1.147	1.050		1.089
151	302	261	638	1.206	839	462.8		0.0391	0.0143	1.136	1.290	1.149	1.052		1.092
152	304	261	638	1.206	838	462.5		0.0390	0.0142	1.133	1.290	1.147	1.047		1.089
153	306	261	638	1.206	836	461.4		0.0391	0.0142	1.131	1.292	1.147	1.050		1.092
154	308	261	638	1.206	835	460.8		0.0392	0.0143	1.131	1.292	1.147	1.050		1.092
155	310	261	638	1.206	832	458.9		0.0392	0.0143	1.127	1.292	1.144	1.047		1.089
156	312	261	638	1.206	827	456.1		0.0392	0.0143	1.125	1.288	1.142	1.047		1.092
157	314	261	638	1.206	822	453.7		0.0395	0.0144	1.125	1.286	1.140	1.045		1.089
158	316	261	638	1.206	814	449.0		0.0396	0.0144	1.120	1.279	1.136	1.041		1.092
159	318	261	638	1.206	804	443.5		0.0399	0.0144	1.116	1.275	1.129	1.039		1.092
160	320	261	638	1.206	790	436.0		0.0404	0.0146	1.114	1.270	1.125	1.036		1.092

12313

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TUNSTP	CONF	PROPELLANT	SAMP.RATE
400	1	66/033/1	38	2.1AL	500

FRAME	TIME	Pn	PTn	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	261	638	1.206	771	425.5		0.0407	0.0147	1.100	1.259	1.114	1.027		1.089
162	324	261	638	1.206	751	414.2		0.0414	0.0149	1.092	1.253	1.107	1.021		1.089
163	326	261	638	1.206	724	399.6		0.0420	0.0151	1.076	1.239	1.094	1.012		1.089
164	328	261	638	1.206	693	382.5		0.0428	0.0152	1.061	1.224	1.074	1.001		1.087
165	330	261	638	1.206	660	364.0		0.0433	0.0156	1.047	1.208	1.061	0.994		1.089
166	332	261	638	1.206	621	342.8		0.0447	0.0158	1.027	1.184	1.039	0.981		1.087
167	334	261	638	1.206	580	320.1		0.0459	0.0161	1.008	1.162	1.019	0.968		1.087
168	336	261	638	1.206	538	297.0		0.0473	0.0166	0.990	1.140	0.999	0.959		1.092
169	338	261	638	1.206	494	272.4		0.0483	0.0168	0.961	1.111	0.970	0.941		1.087
170	340	261	638	1.206	451	248.7		0.0499	0.0176	0.939	1.094	0.950	0.933		1.089
171	342	261	638	1.206	407	224.7		0.0513	0.0180	0.913	1.072	0.924	0.922		1.092
172	344	261	638	1.206	365	201.5		0.0529	0.0185	0.888	1.045	0.897	0.911		1.092
173	346	261	638	1.206	325	179.4		0.0547	0.0194	0.866	1.023	0.875	0.906		1.094
174	348	261	638	1.206	288	158.7		0.0560	0.0198	0.844	0.994	0.849	0.895		1.092
175	350	261	638	1.206	253	139.4		0.0579	0.0208	0.822	0.970	0.827	0.888		1.094
176	352	261	638	1.206	221	122.1		0.0596	0.0217	0.805	0.950	0.807	0.884		1.094
177	354	261	638	1.206	193	106.3		0.0611	0.0226	0.785	0.928	0.785	0.877		1.094
178	356	261	638	1.206	167	92.0		0.0630	0.0238	0.765	0.908	0.767	0.877		1.094
179	358	261	638	1.206	144	79.6		0.0646	0.0250	0.747	0.893	0.749	0.875		1.092
180	360	261	638	1.206	124	68.3		0.0666	0.0268	0.734	0.882	0.738	0.875		1.092
181	362	261	638	1.206	106	58.6		0.0682	0.0279	0.727	0.875	0.732	0.873		1.092
182	364	261	638	1.206	92	50.9		0.0713	0.0305	0.732	0.871	0.734	0.873		1.092
183	366	261	638	1.206	79	43.7		0.0729	0.0323	0.736	0.871	0.736	0.875		1.089
184	368	261	638	1.206	69	37.9		0.0763	0.0351	0.747	0.873	0.743	0.875		1.089
185	370	261	638	1.206	60	33.2		0.0793	0.0392	0.760	0.882	0.752	0.880		1.089
186	372	261	638	1.206	52	28.5		0.0808	0.0418	0.769	0.886	0.758	0.877		1.089
187	374	261	638	1.206	46	25.5		0.0846	0.0457	0.783	0.897	0.769	0.882		1 .089
188	376	261	638	1.206	41	22.5		0.0895	0.0506	0.794	0.903	0.780	0.882		1.089
189	378	261	638	1.206	36	19.7		0.0927	0.0549	0.802	0.913	0.781	0.882		1.08 9
190	380	261	638	1.206	33	18.3		0.0997	0.0620	0.818	0.930	0.802	0.888		1.092
191	382	261	638	1.206	29	16.1		0.1065	0.0671	0.827	0.93[illegible]	0.809	0.888		1.092
192	384	261	638	1.206	27	14.7		0.1115	0.0734	0.835	[illegible]	0.818	0.891		1.092

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TUNSTP	CONF	PROPELLANT	SAMP.RATE
400	1	66/033/1	38	2AAL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P5/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
193	386	261	638	1.206	25	13.9		0.1207	0.0817	0.849	0.955	0.829	0.895		1.094
194	388	261	638	1.206	23	12.5		0.1252	0.0841	0.851	0.959	0.835	0.891		1.092
195	390	261	638	1.206	22	12.0		0.1371	0.0949	0.860	0.972	0.842	0.895		1.094
196	392	261	638	1.206	20	11.2		0.1473	0.1019	0.862	0.981	0.847	0.897		1.094
197	394	261	638	1.206	19	10.3		0.1591	0.1101	0.864	0.988	0.851	0.895		1.092
198	396	261	638	1.206	18	10.0		0.1671	0.1159	0.873	0.997	0.860	0.899		1.094
199	398	261	638	1.206	17	9.5		0.1730	0.1197	0.873	0.997	0.862	0.895		1.092
200	400	261	638	1.206	16	8.9		0.1878	0.1302	0.877	0.999	0.866	0.897		1.094
201	402	261	638	1.206	16	8.7		0.1980	0.1343	0.884	1.005	0.871	0.897		1.094
202	404	261	638	1.206	16	8.7		0.1980	0.1343	0.886	1.010	0.875	0.895		1.094
203	406	261	638	1.206	15	8.1		0.2160	0.1469	0.888	1.016	0.882	0.899		1.094
204	408	261	638	1.206	15	8.1		0.2160	0.1469	0.891	1.023	0.886	0.899		1.094
205	410	261	638	1.206	14	7.8		0.2236	0.1520	0.893	1.027	0.891	0.899		1.094
206	412	261	638	1.206	13	7.3		0.2354	0.1635	0.895	1.030	0.893	0.899		1.094
207	414	261	638	1.206	14	7.6		0.2366	0.1612	0.899	1.034	0.897	0.899		1.094
208	416	261	638	1.206	13	7.3		0.2405	0.1635	0.902	1.036	0.902	0.902		1.094
209	418	261	638	1.206	13	7.0		0.2552	0.1739	0.906	1.039	0.906	0.902		1.094
210	420	261	638	1.206	13	7.3		0.2506	0.1711	0.913	1.045	0.913	0.904		1.094
211	422	261	638	1.206	12	6.5		0.2713	0.1845	0.911	1.047	0.913	0.902		1.092
212	424	261	638	1.206	12	6.7		0.2711	0.1810	0.915	1.054	0.919	0.906		1.092
213	426	261	638	1.206	12	6.7		0.2711	0.1851	0.915	1.058	0.922	0.906		1.089

MACH	Q	P	PT	PRMP	PCAL
1.206	265.7	261	638	1407	2118

12314

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
401	1	66/033/1	38	2%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	375	631	0.896	239	91.9		0.0177	0.0132	0.952	1.046	0.951	0.926		1.035
2	4	375	631	0.896	274	105.2		0.0167	0.0119	0.951	1.047	0.949	0.926		1.035
3	6	375	631	0.896	309	118.6		0.0170	0.0112	0.947	1.049	0.949	0.924		1.037
4	8	375	631	0.896	342	131.5		0.0179	0.0108	0.947	1.052	0.951	0.927		1.040
5	10	375	631	0.896	373	143.2		0.0194	0.0108	0.946	1.050	0.949	0.924		1.040
6	12	375	631	0.896	397	152.6		0.0213	0.0110	0.946	1.050	0.949	0.926		1.040
7	14	375	631	0.896	417	160.1		0.0231	0.0113	0.946	1.050	0.949	0.926		1.041
8	16	375	631	0.896	431	165.7		0.0251	0.0117	0.944	1.050	0.947	0.926		1.043
9	18	375	631	0.896	439	168.5		0.0270	0.0121	0.940	1.050	0.946	0.924		1.043
10	20	375	631	0.896	444	170.5		0.0288	0.0125	0.937	1.050	0.944	0.923		1.043
11	22	375	631	0.896	445	170.8		0.0305	0.0128	0.934	1.049	0.943	0.921		1.043
12	24	375	631	0.896	442	169.9		0.0321	0.0131	0.929	1.046	0.940	0.918		1.043
13	26	375	631	0.896	440	169.1		0.0337	0.0138	0.931	1.044	0.940	0.918		1.043
14	28	375	631	0.896	434	166.8		0.0348	0.0140	0.927	1.040	0.935	0.915		1.04
15	30	375	631	0.896	429	164.9		0.0360	0.0142	0.926	1.037	0.935	0.914		1.043
16	32	375	631	0.896	424	162.8		0.0372	0.0147	0.926	1.037	0.935	0.915		1.043
17	34	375	631	0.896	417	160.3		0.0377	0.0145	0.920	1.034	0.931	0.909		1.041
18	36	375	631	0.896	413	158.6		0.0386	0.0149	0.920	1.035	0.932	0.911		1.041
19	38	375	631	0.896	408	156.8		0.0390	0.0150	0.918	1.035	0.931	0.909		1.040
20	40	375	631	0.896	404	155.3		0.0394	0.0149	0.917	1.035	0.929	0.906		1.040
21	42	375	631	0.896	402	154.3		0.0398	0.0152	0.918	1.037	0.931	0.909		1.041
22	44	375	631	0.896	398	153.0		0.0398	0.0150	0.917	1.032	0.927	0.904		1.038
23	46	375	631	0.896	396	152.2		0.0400	0.0149	0.917	1.030	0.926	0.904		1.038
24	48	375	631	0.896	396	152.0		0.0400	0.0149	0.917	1.032	0.927	0.904		1.040
25	50	375	631	0.896	395	151.6		0.0398	0.0148	0.915	1.029	0.924	0.901		1.037
26	52	375	631	0.896	395	151.6		0.0400	0.0148	0.915	1.032	0.927	0.904		1.038
27	54	375	631	0.896	395	151.8		0.0399	0.0148	0.915	1.034	0.927	0.903		1.037
28	56	375	631	0.896	396	152.2		0.0397	0.0147	0.915	1.034	0.927	0.903		1.037
29	58	375	631	0.896	397	152.4		0.0396	0.0146	0.915	1.034	0.929	0.906		1.038
30	60	375	631	0.896	398	153.0		0.0395	0.0145	0.917	1.032	0.927	0.904		1.037
31	62	375	631	0.896	399	153.2		0.0394	0.0144	0.917	1.030	0.927	0.904		1.037
32	64	375	631	0.896	400	153.6		0.0395	0.0144	0.918	1.030	0.929	0.906		1.038

02992

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST#	CONF	PROPELLANT	SAMP.RATE
401	1	66/033/1	38	2%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
33	66	375	631	0.896	402	154.3		0.0394	0.0145	0.920	1.032	0.931	0.906		1.038
34	68	375	631	0.896	402	154.3		0.0394	0.0143	0.918	1.034	0.931	0.906		1.038
35	70	375	631	0.896	403	154.9		0.0395	0.0144	0.918	1.037	0.932	0.908		1.038
36	72	375	631	0.896	404	155.3		0.0394	0.0143	0.918	1.038	0.932	0.908		1.038
37	74	375	631	0.896	404	155.3		0.0392	0.0143	0.917	1.037	0.931	0.906		1.037
38	76	375	631	0.896	407	156.2		0.0394	0.0144	0.921	1.038	0.934	0.909		1.038
39	78	375	631	0.896	406	156.1		0.0393	0.0143	0.921	1.037	0.932	0.908		1.038
40	80	375	631	0.896	407	156.4		0.0392	0.0143	0.921	1.037	0.934	0.909		1.038
41	82	375	631	0.896	409	157.0		0.0394	0.0145	0.924	1.038	0.935	0.912		1.040
42	84	375	631	0.896	408	156.6		0.0392	0.0141	0.920	1.035	0.932	0.908		1.037
43	86	375	631	0.896	410	157.4		0.0393	0.0143	0.921	1.038	0.934	0.911		1.038
44	88	375	631	0.896	410	157.6		0.0393	0.0143	0.920	1.040	0.934	0.909		1.037
45	90	375	631	0.896	410	157.6		0.0393	0.0143	0.918	1.038	0.932	0.908		1.035
46	92	375	631	0.896	411	158.0		0.0395	0.0145	0.923	1.041	0.935	0.912		1.038
47	94	375	631	0.896	411	158.0		0.0392	0.0143	0.921	1.037	0.934	0.909		1.037
48	96	375	631	0.896	411	158.0		0.0393	0.0144	0.923	1.037	0.934	0.909		1.038
49	98	375	631	0.896	412	158.4		0.0394	0.0143	0.924	1.038	0.935	0.912		1.038
50	100	375	631	0.896	412	158.4		0.0392	0.0142	0.923	1.037	0.934	0.909		1.037
51	102	375	631	0.896	413	158.6		0.0394	0.0144	0.924	1.041	0.937	0.912		1.038
52	104	375	631	0.896	413	158.7		0.0393	0.0144	0.924	1.043	0.937	0.912		1.038
53	106	375	631	0.896	413	158.7		0.0393	0.0144	0.923	1.044	0.937	0.912		1.038
54	108	375	631	0.896	414	158.9		0.0393	0.0144	0.924	1.046	0.940	0.915		1.041
55	110	375	631	0.896	414	159.1		0.0394	0.0144	0.926	1.044	0.938	0.914		1.041
56	112	375	631	0.896	414	158.9		0.0393	0.0144	0.927	1.044	0.938	0.915		1.041
57	114	375	631	0.896	414	159.1		0.0394	0.0144	0.929	1.044	0.940	0.915		1.043
58	116	375	631	0.896	415	159.3		0.0395	0.0145	0.931	1.044	0.941	0.915		1.043
59	118	375	631	0.896	414	158.9		0.0393	0.0144	0.927	1.044	0.940	0.917		1.043
60	120	375	631	0.896	414	158.9		0.0394	0.0144	0.927	1.046	0.940	0.917		1.043
61	122	375	631	0.896	413	158.7		0.0395	0.0144	0.927	1.046	0.940	0.917		1.043
62	124	375	631	0.896	412	158.4		0.0394	0.0143	0.924	1.044	0.938	0.915		1.043
63	126	375	631	0.896	413	158.7		0.0396	0.0145	0.927	1.046	0.940	0.917		1.043
64	128	375	631	0.896	412	158.2		0.0395	0.0144	0.927	1.043	0.938	0.915		1.043

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONT	PROPELLANT	SAMP.RATE
401	1	66/033/1	38	2%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
65	130	375	631	0.896	412	158.2		0.0395	0.0144	0.927	1.041	0.937	0.915		1.043
66	132	375	631	0.896	412	158.4		0.0396	0.0146	0.929	1.044	0.940	0.917		1.044
67	134	375	631	0.896	411	157.8		0.0394	0.0143	0.926	1.041	0.937	0.914		1.041
68	136	375	631	0.896	411	158.0		0.0395	0.0145	0.926	1.044	0.938	0.915		1.043
69	138	375	631	0.896	411	158.0		0.0395	0.0144	0.926	1.046	0.937	0.915		1.043
70	140	375	631	0.896	411	157.8		0.0394	0.0143	0.924	1.044	0.935	0.912		1.041
71	142	375	631	0.896	411	158.0		0.0397	0.0145	0.927	1.047	0.938	0.917		1.043
72	144	375	631	0.896	410	157.6		0.0393	0.0143	0.924	1.043	0.937	0.914		1.041
73	146	375	631	0.896	410	157.4		0.0395	0.0143	0.926	1.041	0.937	0.914		1.041
74	148	375	631	0.896	410	157.6		0.0394	0.0144	0.927	1.043	0.937	0.915		1.043
75	150	375	631	0.896	410	157.4		0.0393	0.0142	0.924	1.041	0.934	0.912		1.041
76	152	375	631	0.896	410	157.4		0.0395	0.0144	0.926	1.043	0.937	0.914		1.041
77	154	375	631	0.896	410	157.6		0.0393	0.0144	0.924	1.044	0.935	0.914		1.041
78	156	375	631	0.896	410	157.4		0.0393	0.0143	0.923	1.043	0.935	0.912		1.040
79	158	375	631	0.896	410	157.4		0.0393	0.0143	0.923	1.043	0.935	0.914		1.041
80	160	375	631	0.896	411	157.8		0.0391	0.0143	0.924	1.040	0.935	0.911		1.040
81	162	375	631	0.896	411	157.8		0.0391	0.0143	0.924	1.038	0.935	0.911		1.040
82	164	375	631	0.896	411	158.0		0.0392	0.0143	0.926	1.037	0.935	0.912		1.040
83	166	375	631	0.896	412	158.4		0.0391	0.0143	0.927	1.038	0.935	0.912		1.040
84	168	375	631	0.896	412	158.2		0.0390	0.0142	0.926	1.038	0.937	0.912		1.040
85	170	375	631	0.896	413	158.6		0.0390	0.0143	0.927	1.040	0.937	0.914		1.040
86	172	375	631	0.896	413	158.7		0.0390	0.0143	0.927	1.041	0.937	0.914		1.041
87	174	375	631	0.896	413	158.7		0.0388	0.0142	0.927	1.040	0.937	0.914		1.041
88	176	375	631	0.896	415	159.3		0.0392	0.0144	0.931	1.041	0.938	0.917		1.043
89	178	375	631	0.896	414	159.1		0.0389	0.0143	0.931	1.040	0.938	0.915		1.041
90	180	375	631	0.896	415	159.3		0.0390	0.0144	0.932	1.038	0.938	0.917		1.043
91	182	375	631	0.896	416	159.7		0.0392	0.0145	0.935	1.040	0.940	0.918		1.044
92	184	375	631	0.896	415	159.5		0.0388	0.0142	0.931	1.037	0.937	0.915		1.041
93	186	375	631	0.896	417	160.1		0.0390	0.0144	0.931	1.040	0.938	0.917		1.043
94	188	375	631	0.896	417	160.1		0.0390	0.0144	0.929	1.041	0.938	0.917		1.041
95	190	375	631	0.896	417	160.1		0.0390	0.0143	0.927	1.040	0.937	0.914		1.041
96	192	375	631	0.896	418	160.5		0.0392	0.0146	0.932	1.041	0.940	0.918		1.043

02993

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
401	1	66/033/1	38	2%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
97	194	375	631	0.896	417	160.3		0.0389	0.0144	0.931	1.037	0.938	0.915		1.041
98	196	375	631	0.896	417	160.3		0.0391	0.0145	0.931	1.035	0.937	0.915		1.041
99	198	375	631	0.896	418	160.5		0.0392	0.0145	0.931	1.035	0.938	0.917		1.041
100	200	375	631	0.896	418	160.5		0.0390	0.0144	0.927	1.034	0.935	0.912		1.040
101	202	375	631	0.896	418	160.7		0.0392	0.0145	0.929	1.035	0.937	0.915		1.040
102	204	375	631	0.896	418	160.7		0.0392	0.0145	0.927	1.037	0.937	0.914		1.040
103	206	375	631	0.896	418	160.7		0.0390	0.0145	0.927	1.037	0.935	0.914		1.038
104	208	375	631	0.896	418	160.7		0.0392	0.0146	0.929	1.037	0.937	0.915		1.040
105	210	375	631	0.896	419	160.9		0.0391	0.0145	0.929	1.034	0.935	0.914		1.040
106	212	375	631	0.896	419	160.9		0.0391	0.0145	0.929	1.034	0.935	0.914		1.040
107	214	375	631	0.896	419	160.9		0.0391	0.0145	0.931	1.034	0.935	0.915		1.040
108	216	375	631	0.896	420	161.2		0.0392	0.0146	0.932	1.035	0.937	0.915		1.041
109	218	375	631	0.896	419	160.9		0.0390	0.0145	0.931	1.037	0.937	0.915		1.041
110	220	375	631	0.896	420	161.2		0.0390	0.0144	0.931	1.038	0.938	0.917		1.041
111	222	375	631	0.896	420	161.2		0.0390	0.0144	0.931	1.040	0.940	0.917		1.043
112	224	375	631	0.896	419	161.1		0.0389	0.0143	0.929	1.040	0.940	0.917		1.043
113	226	375	631	0.896	421	161.6		0.0391	0.0145	0.934	1.041	0.941	0.918		1.044
114	228	375	631	0.896	420	161.4		0.0390	0.0144	0.932	1.040	0.941	0.918		1.044
115	230	375	631	0.896	420	161.4		0.0390	0.0144	0.934	1.040	0.941	0.918		1.044
116	232	375	631	0.896	421	161.8		0.0392	0.0146	0.937	1.043	0.943	0.920		1.046
117	234	375	631	0.896	420	161.4		0.0388	0.0143	0.932	1.041	0.940	0.918		1.044
118	236	375	631	0.896	421	161.8		0.0390	0.0145	0.934	1.044	0.943	0.920		1.044
119	238	375	631	0.896	421	161.8		0.0390	0.0145	0.932	1.046	0.941	0.920		1.044
120	240	375	631	0.896	421	161.8		0.0389	0.0144	0.931	1.046	0.940	0.917		1.043
121	242	375	631	0.896	422	162.2		0.0391	0.0147	0.934	1.049	0.943	0.921		1.044
122	244	375	631	0.896	422	162.0		0.0388	0.0145	0.932	1.044	0.941	0.918		1.043
123	246	375	631	0.896	422	162.0		0.0390	0.0145	0.934	1.043	0.940	0.918		1.043
124	248	375	631	0.896	422	162.2		0.0389	0.0146	0.934	1.043	0.940	0.920		1.044
125	250	375	631	0.896	422	162.2		0.0388	0.0145	0.931	1.041	0.937	0.915		1.041
126	252	375	631	0.896	422	162.2		0.0389	0.0146	0.931	1.044	0.938	0.917		1.041
127	254	375	631	0.896	423	162.4		0.0389	0.0146	0.929	1.043	0.938	0.917		1.040
128	256	375	631	0.896	422	162.2		0.0389	0.0146	0.927	1.043	0.937	0.915		1.038

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
401	1	66/033/1	38	2%AL	500

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
129	258	375	631	0.896	422	162.2		0.0389	0.0146	0.929	1.041	0.937	0.917		1.040
130	260	375	631	0.896	422	162.2		0.0389	0.0146	0.929	1.040	0.935	0.914		1.038
131	262	375	631	0.896	422	162.2		0.0388	0.0146	0.931	1.038	0.937	0.914		1.038
132	264	375	631	0.896	422	162.2		0.0389	0.0146	0.931	1.040	0.937	0.915		1.040
133	266	375	631	0.896	423	162.6		0.0390	0.0147	0.932	1.041	0.938	0.915		1.040
134	268	375	631	0.896	422	162.2		0.0389	0.0146	0.931	1.041	0.938	0.915		1.040
135	270	375	631	0.896	423	162.6		0.0390	0.0147	0.931	1.044	0.940	0.917		1.040
136	272	375	631	0.896	424	162.8		0.0388	0.0147	0.929	1.047	0.940	0.917		1.040
137	274	375	631	0.896	423	162.6		0.0387	0.0146	0.929	1.046	0.940	0.915		1.040
138	276	375	631	0.896	425	163.2		0.0390	0.0147	0.932	1.047	0.941	0.918		1.041
139	278	375	631	0.896	424	162.8		0.0388	0.0147	0.931	1.046	0.940	0.917		1.041
140	280	375	631	0.896	424	162.8		0.0388	0.0147	0.932	1.047	0.941	0.917		1.041
141	282	375	631	0.896	424	163.0		0.0391	0.0148	0.935	1.049	0.943	0.920		1.044
142	284	375	631	0.896	423	162.4		0.0387	0.0145	0.931	1.047	0.940	0.917		1.041
143	286	375	631	0.896	424	162.8		0.0390	0.0148	0.932	1.050	0.941	0.918		1.043
144	288	375	631	0.896	423	162.6		0.0390	0.0147	0.931	1.050	0.941	0.918		1.043
145	290	375	631	0.896	423	162.4		0.0389	0.0146	0.929	1.049	0.940	0.917		1.041
146	292	375	631	0.896	424	162.8		0.0391	0.0149	0.932	1.050	0.941	0.920		1.043
147	294	375	631	0.896	422	162.2		0.0389	0.0146	0.931	1.046	0.938	0.917		1.041
148	296	375	631	0.896	422	162.2		0.0391	0.0147	0.932	1.044	0.938	0.917		1.043
149	298	375	631	0.896	422	162.2		0.0391	0.0147	0.934	1.046	0.940	0.918		1.044
150	300	375	631	0.896	421	161.8		0.0390	0.0146	0.931	1.043	0.938	0.915		1.041
151	302	375	631	0.896	421	161.8		0.0392	0.0147	0.932	1.046	0.940	0.918		1.043
152	304	375	631	0.896	421	161.8		0.0392	0.0147	0.931	1.047	0.938	0.918		1.043
153	306	375	631	0.896	421	161.8		0.0392	0.0146	0.929	1.046	0.938	0.917		1.041
154	308	375	631	0.896	421	161.8		0.0392	0.0147	0.931	1.047	0.940	0.918		1.043
155	310	375	631	0.896	422	162.0		0.0392	0.0146	0.931	1.046	0.938	0.917		1.043
156	312	375	631	0.896	421	161.8		0.0392	0.0146	0.931	1.043	0.940	0.917		1.041
157	314	375	631	0.896	422	162.0		0.0392	0.0147	0.929	1.043	0.940	0.917		1.043
158	316	375	631	0.896	422	162.2		0.0393	0.0147	0.931	1.043	0.940	0.915		1.041
159	318	375	631	0.896	421	161.8		0.0392	0.0146	0.927	1.043	0.940	0.915		1.041
160	320	375	631	0.896	422	162.0		0.0392	0.0147	0.927	1.044	0.938	0.915		1.040

02994

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST#	CONF	PROPELLANT	SAMP.RATE
401	1	66/053/1	38	2%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	375	631	0.896	421	161.8		0.0392	0.0147	0.926	1.046	0.938	0.914		1.040
162	324	375	631	0.896	420	161.4		0.0391	0.0147	0.924	1.044	0.937	0.914		1.038
163	326	375	631	0.896	421	161.8		0.0394	0.0149	0.927	1.046	0.938	0.915		1.040
164	328	375	631	0.896	420	161.4		0.0391	0.0147	0.927	1.044	0.938	0.914		1.040
165	330	375	631	0.896	420	161.4		0.0391	0.0148	0.929	1.043	0.938	0.915		1.040
166	332	375	631	0.896	420	161.4		0.0394	0.0149	0.932	1.047	0.941	0.917		1.043
167	334	375	631	0.896	419	160.9		0.0391	0.0146	0.929	1.044	0.938	0.915		1.040
168	336	375	631	0.896	420	161.2		0.0393	0.0148	0.931	1.049	0.941	0.917		1.043
169	338	375	631	0.896	419	161.1		0.0392	0.0148	0.929	1.049	0.940	0.917		1.041
170	340	375	631	0.896	418	160.7		0.0392	0.0147	0.927	1.047	0.938	0.915		1.041
171	342	375	631	0.896	419	160.9		0.0394	0.0150	0.931	1.049	0.940	0.920		1.043
172	344	375	631	0.896	417	160.3		0.0393	0.0148	0.929	1.044	0.937	0.915		1.041
173	346	375	631	0.896	417	160.1		0.0393	0.0148	0.929	1.043	0.937	0.915		1.041
174	348	375	631	0.896	416	159.9		0.0393	0.0148	0.931	1.044	0.937	0.917		1.041
175	350	375	631	0.896	415	159.5		0.0393	0.0147	0.926	1.041	0.934	0.912		1.040
176	352	375	631	0.896	415	159.3		0.0395	0.0149	0.927	1.044	0.935	0.915		1.040
177	354	375	631	0.896	414	158.9		0.0394	0.0149	0.926	1.044	0.935	0.914		1.040
178	356	375	631	0.896	413	158.6		0.0395	0.0148	0.924	1.044	0.934	0.912		1.038
179	358	375	631	0.896	412	158.2		0.0396	0.0148	0.924	1.046	0.935	0.914		1.040
180	360	375	631	0.896	411	158.0		0.0395	0.0149	0.924	1.043	0.932	0.911		1.038
181	362	375	631	0.896	410	157.6		0.0394	0.0148	0.924	1.041	0.931	0.911		1.038
182	364	375	631	0.896	410	157.4		0.0395	0.0149	0.926	1.040	0.932	0.911		1.038
183	366	375	631	0.896	409	157.2		0.0397	0.0149	0.926	1.040	0.932	0.911		1.037
184	368	375	631	0.896	408	156.6		0.0395	0.0147	0.924	1.040	0.931	0.911		1.037
185	370	375	631	0.896	408	156.6		0.0395	0.0149	0.923	1.041	0.931	0.911		1.037
186	372	375	631	0.896	407	156.4		0.0396	0.0149	0.923	1.041	0.931	0.911		1.037
187	374	375	631	0.896	405	155.7		0.0394	0.0147	0.921	1.040	0.929	0.909		1.037
188	376	375	631	0.896	405	155.7		0.0398	0.0150	0.924	1.040	0.932	0.911		1.038
189	378	375	631	0.896	403	154.7		0.0397	0.0148	0.923	1.037	0.931	0.909		1.037
190	380	375	631	0.896	401	153.9		0.0397	0.0149	0.924	1.037	0.931	0.911		1.038
191	382	375	631	0.896	398	153.0		0.0401	0.0151	0.926	1.038	0.932	0.912		1.040
192	384	375	631	0.896	393	151.1		0.0400	0.0149	0.921	1.034	0.927	0.909		1.038

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TMTSTP	CONF	PROPELLANT	SAMP.RATE
401	1	66/033/1	38	2%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
193	386	375	631	0.896	389	149.5		0.0404	0.0152	0.921	1.035	0.927	0.909		1.040
194	388	375	631	0.896	383	147.2		0.0408	0.0152	0.920	1.034	0.926	0.909		1.040
195	390	375	631	0.896	376	144.5		0.0411	0.0152	0.915	1.030	0.921	0.904		1.038
196	392	375	631	0.896	370	142.0		0.0416	0.0156	0.915	1.029	0.921	0.908		1.040
197	394	375	631	0.896	361	138.6		0.0419	0.0154	0.911	1.021	0.915	0.901		1.038
198	396	375	631	0.896	352	135.3		0.0423	0.0155	0.908	1.017	0.914	0.898		1.037
199	398	375	631	0.896	343	131.9		0.0429	0.0158	0.904	1.014	0.911	0.897		1.038
200	400	375	631	0.896	333	128.0		0.0429	0.0156	0.898	1.007	0.903	0.891		1.035
201	402	375	631	0.896	323	124.2		0.0437	0.0160	0.894	1.004	0.901	0.889		1.035
202	404	375	631	0.896	313	120.1		0.0441	0.0160	0.889	1.001	0.897	0.884		1.034
203	406	375	631	0.896	302	116.1		0.0445	0.0161	0.884	0.997	0.892	0.881		1.032
204	408	375	631	0.896	291	111.7		0.0451	0.0164	0.881	0.992	0.888	0.880		1.032
205	410	375	631	0.896	280	107.5		0.0454	0.0163	0.877	0.986	0.881	0.874		1.030
206	412	375	631	0.896	268	102.8		0.0460	0.0165	0.874	0.980	0.878	0.869		1.030
207	414	375	631	0.896	256	98.4		0.0465	0.0166	0.871	0.975	0.874	0.868		1.030
208	416	375	631	0.896	245	94.0		0.0473	0.0170	0.869	0.972	0.869	0.863		1.029
209	418	375	631	0.896	232	89.0		0.0477	0.0171	0.863	0.969	0.864	0.861		1.029
210	420	375	631	0.896	220	84.6		0.0483	0.0173	0.860	0.967	0.861	0.858		1.027
211	422	375	631	0.896	208	79.8		0.0490	0.0176	0.855	0.964	0.857	0.855		1.027
212	424	375	631	0.896	195	75.0		0.0497	0.0177	0.852	0.961	0.854	0.852		1.026
213	426	375	631	0.896	185	71.0		0.0508	0.0185	0.854	0.961	0.855	0.852		1.027

MACH	Q	P	PT	PREF	PCAL
0.896	210.6	375	631	1406	2118

02995

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TMTSTP	COLP	PROPELLANT	SAMP.RATE
405	1	66/033/1	38	15%AL	50C

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	376	633	0.895	438	167.5		0.0283	0.0127	0.949	0.980	0.957	0.933		1.014
2	4	376	633	0.895	437	167.3		0.0303	0.0132	0.946	0.979	0.956	0.931		1.015
3	6	376	633	0.895	432	165.2		0.0318	0.0135	0.940	0.975	0.951	0.926		1.014
4	8	376	633	0.895	427	163.3		0.0334	0.0138	0.937	0.977	0.949	0.923		1.014
5	10	376	633	0.895	421	161.0		0.0348	0.0142	0.934	0.975	0.948	0.922		1.012
6	12	376	633	0.895	414	158.4		0.0359	0.0143	0.931	0.975	0.946	0.917		1.012
7	14	376	633	0.895	410	156.8		0.0372	0.0148	0.936	0.979	0.949	0.920		1.014
8	16	376	633	0.895	404	154.5		0.0378	0.0149	0.936	0.977	0.948	0.919		1.014
9	18	376	633	0.895	401	153.6		0.0385	0.0151	0.939	0.979	0.951	0.920		1.014
10	20	376	633	0.895	399	152.8		0.0391	0.0154	0.943	0.982	0.954	0.925		1.017
11	22	376	633	0.895	398	152.2		0.0392	0.0152	0.942	0.982	0.954	0.922		1.015
12	24	376	633	0.895	398	152.4		0.0398	0.0156	0.946	0.988	0.959	0.926		1.017
13	26	376	633	0.895	399	152.8		0.0399	0.0157	0.948	0.991	0.962	0.930		1.017
14	28	376	633	0.895	400	153.2		0.0400	0.0158	0.949	0.994	0.963	0.931		1.017
15	30	376	633	0.895	403	154.1		0.0404	0.0160	0.956	0.998	0.969	0.937		1.020
16	32	376	633	0.895	405	154.9		0.0403	0.0160	0.959	0.998	0.971	0.937		1.020
17	34	376	633	0.895	407	155.9		0.0404	0.0161	0.962	0.998	0.974	0.942		1.021
18	36	376	633	0.895	409	156.6		0.0407	0.0163	0.965	1.000	0.975	0.943		1.023
19	38	376	633	0.895	411	157.2		0.0410	0.0163	0.963	0.998	0.974	0.943		1.021
20	40	376	633	0.895	411	157.4		0.0412	0.0164	0.962	1.000	0.974	0.945		1.023
21	42	376	633	0.895	411	157.2		0.0414	0.0165	0.962	1.000	0.972	0.945		1.023
22	44	376	633	0.895	410	156.8		0.0415	0.0164	0.959	0.998	0.971	0.943		1.023
23	46	376	633	0.895	408	156.1		0.0415	0.0163	0.957	0.997	0.969	0.943		1.023
24	48	376	633	0.895	407	155.9		0.0417	0.0163	0.957	0.995	0.968	0.942		1.023
25	50	376	633	0.895	405	155.1		0.0418	0.0162	0.956	0.992	0.965	0.939		1.021
26	52	376	633	0.895	404	154.7		0.0417	0.0162	0.956	0.989	0.963	0.939		1.021
27	54	376	633	0.895	404	154.5		0.0418	0.0162	0.956	0.989	0.965	0.939		1.021
28	56	376	633	0.895	402	153.8		0.0415	0.0159	0.953	0.988	0.963	0.936		1.020
29	58	376	633	0.895	402	154.0		0.0416	0.0159	0.953	0.991	0.963	0.936		1.020
30	60	376	633	0.895	402	154.0		0.0414	0.0158	0.951	0.991	0.963	0.936		1.020
31	62	376	633	0.895	402	153.8		0.0411	0.0157	0.949	0.989	0.963	0.934		1.020
32	64	376	633	0.895	403	154.3		0.0415	0.0159	0.954	0.992	0.966	0.937		1.021

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TETSTP	CONF	PROPELLANT	SAMP.RATE
405	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.	
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
33	66	376	633	0.895	403	154.1		0.0412	0.0157	0.954	0.989	0.965	0.936		1.021
34	68	376	633	0.895	403	154.3		0.0411	0.0158	0.954	0.989	0.966	0.937		1.021
35	70	376	633	0.895	404	154.5		0.0413	0.0159	0.957	0.992	0.969	0.939		1.023
36	72	376	633	0.895	403	154.3		0.0410	0.0156	0.954	0.991	0.966	0.936		1.021
37	74	376	633	0.895	404	154.7		0.0414	0.0159	0.956	0.995	0.971	0.939		1.023
38	76	376	633	0.895	404	154.7		0.0412	0.0159	0.956	0.998	0.971	0.940		1.024
39	78	376	633	0.895	404	154.7		0.0412	0.0159	0.956	0.998	0.971	0.939		1.023
40	80	376	633	0.895	405	154.9		0.0415	0.0161	0.959	1.002	0.974	0.943		1.026
41	82	376	633	0.895	404	154.7		0.0412	0.0159	0.957	0.998	0.974	0.940		1.026
42	84	376	633	0.895	404	154.7		0.0414	0.0160	0.959	0.998	0.974	0.942		1.026
43	86	376	633	0.895	404	154.7		0.0414	0.0160	0.960	0.998	0.975	0.943		1.028
44	88	376	633	0.895	405	154.9		0.0413	0.0160	0.959	0.998	0.974	0.940		1.026
45	90	376	633	0.895	404	154.7		0.0414	0.0161	0.959	1.002	0.975	0.943		1.028
46	92	376	633	0.895	405	154.9		0.0413	0.0161	0.959	1.003	0.975	0.943		1.028
47	94	376	633	0.895	405	154.9		0.0412	0.0161	0.957	1.003	0.974	0.943		1.026
48	96	376	633	0.895	404	154.7		0.0412	0.0161	0.956	1.002	0.974	0.943		1.028
49	98	376	633	0.895	405	155.1		0.0411	0.0162	0.957	1.002	0.974	0.942		1.026
50	100	376	633	0.895	405	155.1		0.0411	0.0161	0.957	0.998	0.972	0.942		1.026
51	102	376	633	0.895	406	155.3		0.0411	0.0162	0.959	0.998	0.974	0.942		1.026
52	104	376	633	0.895	407	155.7		0.0411	0.0162	0.960	1.000	0.974	0.942		1.028
53	106	376	633	0.895	406	155.3		0.0409	0.0160	0.957	0.998	0.972	0.940		1.026
54	108	376	633	0.895	407	155.7		0.0410	0.0161	0.957	1.002	0.974	0.940		1.024
55	110	376	633	0.895	407	155.7		0.0410	0.0161	0.956	1.005	0.974	0.940		1.024
56	112	376	633	0.895	407	155.7		0.0406	0.0159	0.954	1.002	0.972	0.937		1.023
57	114	376	633	0.895	408	156.1		0.0410	0.0162	0.957	1.003	0.975	0.940		1.026
58	116	376	633	0.895	407	155.7		0.0406	0.0160	0.957	1.000	0.974	0.939		1.024
59	118	376	633	0.895	407	155.7		0.0406	0.0159	0.957	0.998	0.975	0.939		1.026
60	120	376	633	0.895	407	155.9		0.0407	0.0161	0.960	1.000	0.977	0.942		1.028
61	122	376	633	0.895	407	155.7		0.0405	0.0156	0.956	0.997	0.974	0.937		1.024
62	124	376	633	0.895	408	156.1		0.0405	0.0158	0.959	1.000	0.977	0.940		1.026
63	126	376	633	0.895	408	156.1		0.0405	0.0158	0.957	1.002	0.977	0.940		1.026
64	128	376	633	0.895	408	156.1		0.0404	0.0157	0.956	1.000	0.975	0.939		1.024

02996

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TRTSTP	CONF	PROPELLANT	SAMP.RATE
405	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
65	130	376	633	0.895	409	156.4		0.0404	0.0158	0.959	1.003	0.979	0.943		1.028
66	132	376	633	0.895	409	156.4		0.0403	0.0156	0.957	0.998	0.975	0.940		1.026
67	134	376	633	0.895	409	156.6		0.0402	0.0157	0.959	0.998	0.977	0.940		1.026
68	136	376	633	0.895	410	157.0		0.0401	0.0156	0.960	0.998	0.979	0.942		1.028
69	138	376	633	0.895	412	157.6		0.0400	0.0154	0.960	0.998	0.977	0.940		1.026
70	140	376	633	0.895	412	157.8		0.0401	0.0154	0.960	1.000	0.979	0.942		1.028
71	142	376	633	0.895	413	158.2		0.0400	0.0155	0.959	1.002	0.979	0.942		1.028
72	144	376	633	0.895	415	158.7		0.0398	0.0153	0.959	1.002	0.979	0.942		1.026
73	146	376	633	0.895	415	158.7		0.0398	0.0153	0.957	1.002	0.979	0.942		1.028
74	148	376	633	0.895	417	159.5		0.0400	0.0153	0.960	1.000	0.979	0.942		1.026
75	150	376	633	0.895	417	159.5		0.0400	0.0153	0.960	0.998	0.979	0.942		1.026
76	152	376	633	0.895	418	160.1		0.0398	0.0152	0.962	0.998	0.979	0.942		1.028
77	154	376	633	0.895	420	160.6		0.0400	0.0153	0.963	1.000	0.980	0.945		1.028
78	156	376	633	0.895	420	160.6		0.0398	0.0149	0.962	0.998	0.979	0.943		1.028
79	158	376	633	0.895	421	161.2		0.0399	0.0150	0.962	1.002	0.979	0.945		1.028
80	160	376	633	0.895	422	161.6		0.0398	0.0148	0.962	1.003	0.979	0.945		1.028
81	162	376	633	0.895	422	161.6		0.0396	0.0146	0.959	1.002	0.977	0.943		1.026
82	164	376	633	0.895	425	162.6		0.0400	0.0149	0.963	1.005	0.980	0.946		1.028
83	166	376	633	0.895	425	162.6		0.0397	0.0145	0.963	1.002	0.979	0.945		1.028
84	168	376	633	0.895	426	162.9		0.0398	0.0143	0.965	1.002	0.980	0.946		1.029
85	170	376	633	0.895	427	163.5		0.0399	0.0144	0.969	1.006	0.983	0.949		1.031
86	172	376	633	0.895	428	163.7		0.0396	0.0140	0.966	1.003	0.982	0.948		1.029
87	174	376	633	0.895	430	164.5		0.0397	0.0141	0.968	1.009	0.983	0.951		1.032
88	176	376	633	0.895	431	164.9		0.0396	0.0139	0.968	1.009	0.983	0.951		1.032
89	178	376	633	0.895	432	165.4		0.0395	0.0138	0.966	1.009	0.982	0.949		1.031
90	180	376	633	0.895	434	166.2		0.0394	0.0138	0.969	1.012	0.985	0.953		1.034
91	182	376	633	0.895	435	166.6		0.0392	0.0136	0.969	1.008	0.983	0.951		1.032
92	184	376	633	0.895	437	167.2		0.0391	0.0135	0.969	1.008	0.983	0.951		1.032
93	186	376	633	0.895	439	167.9		0.0389	0.0136	0.971	1.008	0.985	0.953		1.034
94	188	376	633	0.895	441	168.7		0.0386	0.0134	0.971	1.006	0.983	0.951		1.031
95	190	376	633	0.895	442	169.1		0.0383	0.0134	0.969	1.008	0.985	0.953		1.032
96	192	376	633	0.895	444	169.8		0.0381	0.0134	0.969	1.009	0.985	0.953		1.031

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN LIST TRISTE CONF PROPELLANT SAMP.RATE
405 1 66/033/1 36 15%AL 500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	376	633	0.895	445	170.2		0.0378	0.0134	0.968	1.009	0.983	0.953		1.031
98	196	376	633	0.895	446	170.6		0.0374	0.0134	0.968	1.009	0.985	0.953		1.032
99	198	376	633	0.895	4[illegible]	171.6		0.0372	0.0133	0.969	1.009	0.985	0.951		1.031
100	200	376	633	0.895	449	171.8		0.0368	0.0134	0.969	1.008	0.985	0.951		1.031
101	202	376	633	0.895	450	172.3		0.0366	0.0135	0.969	1.006	0.985	0.951		1.031
102	204	376	633	0.895	453	173.3		0.0364	0.0135	0.971	1.009	0.986	0.953		1.031
103	206	376	633	0.895	453	173.3		0.0359	0.0134	0.968	1.008	0.985	0.951		1.029
104	208	376	633	0.895	455	174.0		0.0356	0.0135	0.968	1.011	0.985	0.951		1.031
105	210	376	633	0.895	456	174.4		0.0355	0.0136	0.966	1.011	0.985	0.951		1.029
106	212	376	633	0.895	456	174.4		0.0352	0.0135	0.965	1.009	0.982	0.949		1.029
107	214	376	633	0.895	458	175.4		0.0355	0.0139	0.968	1.011	0.985	0.951		1.029
108	216	376	633	0.895	458	175.2		0.0351	0.0138	0.966	1.006	0.982	0.949		1.029
109	218	376	633	0.895	459	175.6		0.0352	0.0139	0.966	1.005	0.982	0.948		1.029
110	220	376	633	0.895	460	176.0		0.0352	0.0142	0.968	1.006	0.982	0.949		1.029
111	222	376	633	0.895	459	175.8		0.0350	0.0140	0.963	1.002	0.979	0.946		1.028
112	224	376	633	0.895	461	176.5		0.0351	0.0142	0.965	1.005	0.980	0.948		1.028
113	226	376	633	0.895	461	176.5		0.0351	0.0143	0.963	1.006	0.979	0.948		1.026
114	228	376	633	0.895	462	176.7		0.0351	0.0143	0.962	1.005	0.977	0.945		1.026
115	230	376	633	0.895	462	177.1		0.0354	0.0145	0.965	1.008	0.980	0.949		1.028
116	232	376	633	0.895	463	177.1		0.0353	0.0145	0.965	1.003	0.977	0.946		1.026
117	234	376	633	0.895	463	177.3		0.0354	0.0146	0.965	1.003	0.977	0.946		1.028
118	236	376	633	0.895	464	177.5		0.0356	0.0147	0.968	1.003	0.979	0.948		1.029
119	238	376	633	0.895	464	177.7		0.0357	0.0147	0.966	1.002	0.977	0.946		1.028
120	240	376	633	0.895	464	177.7		0.0359	0.0149	0.966	1.005	0.979	0.949		1.028
121	242	376	633	0.895	465	177.9		0.0361	0.0150	0.966	1.006	0.979	0.949		1.028
122	244	376	633	0.895	465	177.9		0.0363	0.0150	0.965	1.006	0.977	0.948		1.028
123	246	376	633	0.895	465	177.9		0.0363	0.0150	0.965	1.005	0.977	0.949		1.028
124	248	376	633	0.895	465	178.1		0.0367	0.0152	0.965	1.002	0.977	0.948		1.028
125	250	376	633	0.895	465	178.1		0.0367	0.0152	0.965	1.000	0.975	0.948		1.028
126	252	376	633	0.895	465	177.9		0.0369	0.0153	0.965	0.998	0.977	0.948		1.028
127	254	376	633	0.895	466	178.3		0.0371	0.0155	0.966	1.000	0.977	0.949		1.028
128	256	376	633	0.895	464	177.7		0.0370	0.0154	0.963	0.998	0.975	0.948		1.028

02997

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
405	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
129	258	376	633	0.895	465	177.9		0.0373	0.0155	0.963	1.002	0.977	0.948		1.028
130	260	376	633	0.895	464	177.7		0.0375	0.0155	0.962	1.002	0.975	0.948		1.028
131	262	376	633	0.895	463	177.3		0.0374	0.0155	0.962	1.002	0.975	0.946		1.026
132	264	376	633	0.895	464	177.7		0.0378	0.0157	0.965	1.003	0.979	0.949		1.029
133	266	376	633	0.895	463	177.1		0.0377	0.0156	0.963	1.000	0.975	0.948		1.029
134	268	376	633	0.895	463	177.1		0.0379	0.0157	0.965	1.000	0.977	0.948		1.029
135	270	376	633	0.895	463	177.1		0.0382	0.0158	0.963	1.002	0.979	0.951		1.031
136	272	376	633	0.895	461	176.5		0.0380	0.0156	0.965	1.000	0.975	0.946		1.029
137	274	376	633	0.895	462	176.9		0.0383	0.0158	0.966	1.005	0.977	0.951		1.029
138	276	376	633	0.895	461	176.5		0.0386	0.0158	0.966	1.005	0.979	0.951		1.031
139	278	376	633	0.895	461	176.3		0.0388	0.0159	0.966	1.006	0.977	0.949		1.028
140	280	376	633	0.895	460	176.2		0.0391	0.0160	0.969	1.008	0.980	0.954		1.031
141	282	376	633	0.895	459	175.6		0.0392	0.0158	0.968	1.005	0.977	0.951		1.031
142	284	376	633	0.895	457	175.0		0.0395	0.0160	0.969	1.003	0.977	0.951		1.031
143	286	376	633	0.895	455	174.2		0.0400	0.0161	0.969	1.003	0.977	0.953		1.031
144	288	376	633	0.895	453	173.3		0.0402	0.0160	0.968	1.000	0.975	0.949		1.029
145	290	376	633	0.895	449	171.9		0.0408	0.0162	0.966	1.002	0.974	0.951		1.029
146	292	376	633	0.895	446	170.6		0.0411	0.0162	0.963	1.002	0.972	0.949		1.029
147	294	376	633	0.895	441	168.7		0.0417	0.0162	0.962	1.002	0.971	0.946		1.028
148	296	376	633	0.895	435	166.4		0.0423	0.0162	0.959	0.998	0.968	0.946		1.029
149	298	376	633	0.895	430	164.5		0.0431	0.0164	0.959	0.995	0.966	0.943		1.028
150	300	376	633	0.895	423	161.8		0.0437	0.0165	0.956	0.991	0.963	0.940		1.026
151	302	376	633	0.895	416	159.1		0.0444	0.0165	0.956	0.988	0.962	0.939		1.026
152	304	376	633	0.895	409	156.4		0.0452	0.0167	0.954	0.988	0.960	0.937		1.024
153	306	376	633	0.895	399	152.8		0.0457	0.0166	0.949	0.983	0.956	0.934		1.024
154	308	376	633	0.895	392	149.9		0.0464	0.0167	0.946	0.983	0.954	0.931		1.023
155	310	376	633	0.895	382	146.3		0.0472	0.0168	0.942	0.980	0.951	0.930		1.023
156	312	376	633	0.895	372	142.5		0.0476	0.0167	0.937	0.975	0.946	0.925		1.021
157	314	376	633	0.895	363	139.0		0.0486	0.0171	0.937	0.974	0.945	0.925		1.021
158	316	376	633	0.895	352	134.6		0.0493	0.0169	0.934	0.968	0.942	0.920		1.021
159	318	376	633	0.895	341	130.6		0.0498	0.0170	0.933	0.965	0.940	0.919		1.021
160	320	376	633	0.895	331	126.6		0.0506	0.0173	0.933	0.963	0.940	0.919		1.023

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
405	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	376	633	0.895	319	122.0		0.0510	0.0170	0.925	0.959	0.934	0.911		1.020
162	324	376	633	0.895	309	118.2		0.0518	0.0174	0.923	0.959	0.933	0.911		1.020
163	326	376	633	0.895	298	114.1		0.0525	0.0175	0.919	0.957	0.931	0.910		1.020
164	328	376	633	0.895	288	110.1		0.0528	0.0174	0.914	0.953	0.926	0.905		1.017
165	330	376	633	0.895	278	106.3		0.0537	0.0179	0.916	0.953	0.926	0.907		1.020
166	332	376	633	0.895	267	102.3		0.0539	0.0176	0.911	0.946	0.922	0.902		1.017
167	334	376	633	0.895	257	98.4		0.0544	0.0177	0.910	0.942	0.919	0.899		1.017
168	336	376	633	0.895	247	94.6		0.0550	0.0180	0.910	0.939	0.917	0.899		1.017
169	338	376	633	0.895	238	91.0		0.0555	0.0179	0.907	0.936	0.914	0.894		1.015
170	340	376	633	0.895	227	87.0		0.0560	0.0183	0.905	0.936	0.913	0.896		1.015
171	342	376	633	0.895	217	82.9		0.0566	0.0185	0.900	0.933	0.910	0.894		1.015
172	344	376	633	0.895	206	78.7		0.0573	0.0188	0.896	0.931	0.908	0.891		1.014
173	346	376	633	0.895	194	74.3		0.0580	0.0191	0.894	0.928	0.907	0.891		1.014
174	348	376	633	0.895	184	70.3		0.0591	0.0196	0.893	0.925	0.905	0.888		1.014
175	350	376	633	0.895	171	65.5		0.0603	0.0202	0.893	0.922	0.904	0.887		1.012
176	352	376	633	0.895	159	60.9		0.0615	0.0208	0.891	0.920	0.902	0.887		1.014
177	354	376	633	0.895	148	56.5		0.0636	0.0224	0.894	0.920	0.902	0.887		1.014
178	356	376	633	0.895	135	51.5		0.0648	0.0231	0.894	0.919	0.899	0.887		1.012
179	358	376	633	0.895	123	47.1		0.0676	0.0252	0.897	0.922	0.899	0.888		1.012
180	360	376	633	0.895	112	42.7		0.0698	0.0269	0.899	0.923	0.897	0.890		1.011
181	362	376	633	0.895	100	38.1		0.0721	0.0287	0.902	0.920	0.894	0.890		1.011
182	364	376	633	0.895	91	34.9		0.0752	0.0324	0.908	0.922	0.896	0.894		1.012
183	366	376	633	0.895	80	30.7		0.0789	0.0356	0.908	0.919	0.894	0.894		1.012
184	368	376	633	0.895	72	27.4		0.0827	0.0392	0.908	0.917	0.894	0.894		1.012
185	370	376	633	0.895	64	24.6		0.0882	0.0437	0.908	0.920	0.899	0.897		1.014
186	372	376	633	0.895	56	21.5		0.0912	0.0482	0.902	0.920	0.899	0.893		1.011
187	374	376	633	0.895	51	19.4		0.0972	0.0544	0.902	0.928	0.907	0.896		1.011
188	376	376	633	0.895	45	17.3		0.1031	0.0610	0.900	0.933	0.911	0.894		1.011
189	378	376	633	0.895	40	15.4		0.1077	0.0686	0.900	0.937	0.916	0.893		1.009
190	380	376	633	0.895	36	13.8		0.1177	0.0790	0.905	0.945	0.925	0.897		1.011
191	382	376	633	0.895	32	12.3		0.1241	0.0873	0.907	0.945	0.928	0.896		1.009
192	384	376	633	0.895	29	11.2		0.1323	0.0980	0.914	0.946	0.933	0.899		1.009

02999

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TMTSTP	CONF	PROPELLANT	SAMP.RATE
405	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
193	386	376	633	0.895	27	10.2		0.1397	0.1090	0.922	0.951	0.939	0.904		1.011
194	388	376	633	0.895	25	9.4		0.1483	0.1179	0.928	0.954	0.942	0.905		1.009
195	390	376	633	0.895	23	8.9		0.1550	0.1298	0.934	0.960	0.948	0.913		1.011
196	392	376	633	0.895	22	8.3		0.1627	0.1388	0.940	0.966	0.951	0.916		1.011
197	394	376	633	0.895	20	7.7		0.1748	0.1491	0.945	0.971	0.956	0.920		1.011
198	396	376	633	0.895	19	7.1		0.1853	0.1611	0.948	0.974	0.959	0.923		1.012
199	398	376	633	0.895	19	7.1		0.1888	0.1638	0.951	0.977	0.963	0.925		1.012
200	400	376	633	0.895	17	6.6		0.2053	0.1781	0.951	0.979	0.966	0.925		1.011
201	402	376	633	0.895	17	6.4		0.2155	0.1865	0.951	0.980	0.968	0.925		1.012
202	404	376	633	0.895	17	6.6		0.2131	0.1840	0.949	0.983	0.971	0.926		1.012
203	406	376	633	0.895	15	5.8		0.2368	0.2016	0.945	0.983	0.971	0.923		1.011
204	408	376	633	0.895	16	6.0		0.2335	0.1984	0.943	0.986	0.972	0.923		1.011
205	410	376	633	0.895	15	5.8		0.2412	0.2049	0.940	0.988	0.971	0.922		1.009
206	412	376	633	0.895	14	5.4		0.2536	0.2124	0.937	0.986	0.969	0.920		1.009
207	414	376	633	0.895	15	5.8		0.2500	0.2082	0.940	0.988	0.972	0.922		1.011
208	416	376	633	0.895	14	5.2		0.2677	0.2238	0.939	0.985	0.969	0.920		1.009
209	418	376	633	0.895	14	5.2		0.2726	0.2238	0.940	0.983	0.968	0.920		1.009
210	420	376	633	0.895	14	5.2		0.2824	0.2311	0.942	0.985	0.969	0.923		1.012
211	422	376	633	0.895	13	4.8		0.2889	0.2415	0.939	0.980	0.966	0.920		1.011
212	424	376	633	0.895	13	5.0		0.2951	0.2361	0.942	0.983	0.968	0.925		1.012
213	426	376	633	0.895	13	4.8		0.2994	0.2454	0.942	0.985	0.968	0.925		1.012

MACH	Q	P	PT	PREF	PCAL
0.895	210.8	376	633	1427	2110

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
406	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	377	633	0.892	778	296.9		0.0235	0.0104	1.040	1.048	1.050	1.008		1.054
2	4	377	633	0.892	821	313.1		0.0257	0.0111	1.051	1.060	1.062	1.019		1.059
3	6	377	633	0.892	852	324.9		0.0275	0.0116	1.059	1.066	1.068	1.028		1.063
4	8	377	633	0.892	876	334.3		0.0294	0.0122	1.068	1.073	1.076	1.036		1.066
5	10	377	633	0.892	895	341.3		0.0313	0.0127	1.076	1.082	1.083	1.044		1.071
6	12	377	633	0.892	906	345.5		0.0328	0.0131	1.076	1.085	1.085	1.047		1.071
7	14	377	633	0.892	915	349.1		0.0344	0.0136	1.082	1.091	1.091	1.053		1.074
8	16	377	633	0.892	920	350.9		0.0359	0.0140	1.083	1.094	1.092	1.056		1.076
9	18	377	633	0.892	922	351.6		0.0372	0.0143	1.085	1.095	1.092	1.056		1.076
10	20	377	633	0.892	923	352.2		0.0385	0.0147	1.091	1.098	1.098	1.063		1.080
11	22	377	633	0.892	922	351.6		0.0395	0.0149	1.091	1.097	1.098	1.062		1.082
12	24	377	633	0.892	920	351.0		0.0407	0.0151	1.095	1.097	1.100	1.063		1.083
13	26	377	633	0.892	918	350.3		0.0418	0.0153	1.098	1.098	1.102	1.066		1.086
14	28	377	633	0.892	916	349.5		0.0427	0.0154	1.097	1.098	1.100	1.065		1.085
15	30	377	633	0.892	914	348.6		0.0435	0.0155	1.098	1.102	1.103	1.068		1.088
16	32	377	633	0.892	912	347.8		0.0442	0.0156	1.097	1.103	1.103	1.068		1.088
17	34	377	633	0.892	909	346.7		0.0447	0.0156	1.095	1.103	1.103	1.068		1.088
18	36	377	633	0.892	906	345.7		0.0452	0.0157	1.097	1.103	1.103	1.069		1.089
19	38	377	633	0.892	905	345.1		0.0453	0.0157	1.097	1.102	1.103	1.066		1.089
20	40	377	633	0.892	902	344.2		0.0453	0.0157	1.097	1.100	1.103	1.066		1.091
21	42	377	633	0.892	900	343.4		0.0452	0.0157	1.098	1.100	1.103	1.066		1.091
22	44	377	633	0.892	899	343.0		0.0450	0.0157	1.098	1.102	1.103	1.066		1.091
23	46	377	633	0.892	896	341.9		0.0446	0.0157	1.097	1.102	1.102	1.066		1.091
24	48	377	633	0.892	895	341.5		0.0442	0.0157	1.097	1.103	1.103	1.066		1.091
25	50	377	633	0.892	893	340.7		0.0439	0.0156	1.095	1.105	1.103	1.066		1.091
26	52	377	633	0.892	891	340.0		0.0434	0.0155	1.095	1.103	1.102	1.065		1.091
27	54	377	633	0.892	891	339.8		0.0433	0.0156	1.098	1.103	1.103	1.068		1.094
28	56	377	633	0.892	889	339.0		0.0430	0.0155	1.098	1.100	1.102	1.066		1.092
29	58	377	633	0.892	888	338.6		0.0427	0.0155	1.098	1.100	1.103	1.066		1.094
30	60	377	633	0.892	887	338.5		0.0425	0.0156	1.102	1.102	1.105	1.069		1.095
31	62	377	633	0.892	885	337.7		0.0422	0.0154	1.097	1.098	1.102	1.066		1.094
32	64	377	633	0.892	886	338.1		0.0421	0.0155	1.098	1.102	1.103	1.068		1.095

12226

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST	CONF	PROPELLANT	SAMP.RATE
406	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PCn	MaCHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	377	633	0.892	886	337.9		0.0419	0.0154	1.097	1.102	1.103	1.068		1.094
34	68	377	633	0.892	886	337.9		0.0418	0.0154	1.095	1.098	1.102	1.065		1.094
35	70	377	633	0.892	887	338.5		0.0417	0.0154	1.098	1.102	1.105	1.069		1.095
36	72	377	633	0.892	887	338.5		0.0415	0.0153	1.097	1.095	1.103	1.066		1.094
37	74	377	633	0.892	888	338.8		0.0415	0.0153	1.097	1.095	1.103	1.066		1.094
38	76	377	633	0.892	889	339.2		0.0415	0.0152	1.098	1.095	1.103	1.068		1.095
39	78	377	633	0.892	890	339.6		0.0415	0.0152	1.097	1.094	1.102	1.063		1.092
40	80	377	633	0.892	892	340.2		0.0416	0.0152	1.097	1.097	1.103	1.066		1.094
41	82	377	633	0.892	894	340.9		0.0415	0.0152	1.095	1.098	1.103	1.065		1.092
42	84	377	633	0.892	895	341.5		0.0415	0.0151	1.095	1.100	1.103	1.065		1.091
43	86	377	633	0.892	897	342.1		0.0415	0.0151	1.095	1.100	1.105	1.066		1.092
44	88	377	633	0.892	899	343.0		0.0414	0.0150	1.097	1.098	1.103	1.065		1.091
45	90	377	633	0.892	901	343.6		0.0413	0.0149	1.097	1.097	1.103	1.065		1.091
46	92	377	633	0.892	903	344.6		0.0412	0.0148	1.098	1.095	1.103	1.065		1.091
47	94	377	633	0.892	906	345.5		0.0411	0.0149	1.098	1.097	1.103	1.063		1.089
48	96	377	633	0.892	907	345.9		0.0410	0.0147	1.095	1.097	1.103	1.063		1.089
49	98	377	633	0.892	909	346.8		0.0410	0.0147	1.095	1.098	1.103	1.063		1.088
50	100	377	633	0.892	911	347.6		0.0410	0.0147	1.094	1.098	1.103	1.063		1.088
51	102	377	633	0.892	913	348.2		0.0408	0.0145	1.092	1.098	1.102	1.062		1.086
52	104	377	633	0.892	916	349.5		0.0410	0.0146	1.097	1.100	1.103	1.063		1.088
53	106	377	633	0.892	917	349.9		0.0409	0.0145	1.095	1.095	1.102	1.062		1.086
54	108	377	633	0.892	920	350.9		0.0409	0.0145	1.097	1.095	1.102	1.063		1.086
55	110	377	633	0.892	923	352.0		0.0411	0.0146	1.098	1.097	1.103	1.065		1.088
56	112	377	633	0.892	924	352.4		0.0411	0.0145	1.095	1.094	1.102	1.062		1.086
57	114	377	633	0.892	928	353.9		0.0413	0.0145	1.097	1.097	1.103	1.065		1.086
58	116	377	633	0.892	930	354.9		0.0414	0.0145	1.095	1.098	1.102	1.065		1.086
59	118	377	633	0.892	933	356.0		0.0415	0.0144	1.095	1.097	1.102	1.063		1.086
60	120	377	633	0.892	937	357.5		0.0417	0.0145	1.098	1.100	1.105	1.068		1.088
61	122	377	633	0.892	940	358.5		0.0417	0.0143	1.098	1.097	1.103	1.065		1.088
62	124	377	633	0.892	943	359.8		0.0418	0.0143	1.102	1.097	1.103	1.066		1.089
63	126	377	633	0.892	946	361.0		0.0420	0.0143	1.103	1.098	1.106	1.069		1.091
64	128	377	633	0.892	950	362.3		0.0420	0.0143	1.103	1.098	1.105	1.066		1.089

National Aeronautics and Space Administration
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PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
406	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
65	130	377	633	0.892	953	363.6		0.0420	0.0143	1.105	1.102	1.106	1.071		1.091
66	132	377	633	0.892	957	365.0		0.0419	0.0143	1.105	1.105	1.108	1.071		1.091
67	134	377	633	0.892	960	366.1		0.0417	0.0142	1.105	1.106	1.108	1.073		1.091
68	136	377	633	0.892	963	367.3		0.0414	0.0142	1.106	1.108	1.109	1.076		1.094
69	138	377	633	0.892	966	368.6		0.0409	0.0142	1.108	1.106	1.109	1.074		1.092
70	140	377	633	0.892	969	369.7		0.0402	0.0142	1.109	1.105	1.109	1.074		1.092
71	142	377	633	0.892	972	370.9		0.0394	0.0142	1.111	1.103	1.111	1.076		1.094
72	144	377	633	0.892	976	372.2		0.0385	0.0142	1.112	1.105	1.112	1.076		1.094
73	146	377	633	0.892	978	373.0		0.0373	0.0141	1.109	1.105	1.112	1.076		1.094
74	148	377	633	0.892	981	374.3		0.0361	0.0142	1.111	1.108	1.112	1.077		1.094
75	150	377	633	0.892	984	375.5		0.0348	0.0141	1.109	1.106	1.112	1.077		1.094
76	152	377	633	0.892	986	376.2		0.0334	0.0141	1.109	1.106	1.112	1.077		1.092
77	154	377	633	0.892	991	377.9		0.0323	0.0142	1.112	1.109	1.114	1.079		1.094
78	156	377	633	0.892	992	378.5		0.0312	0.0142	1.112	1.108	1.114	1.079		1.094
79	158	377	633	0.892	995	379.5		0.0302	0.0142	1.114	1.106	1.114	1.079		1.094
80	160	377	633	0.892	997	380.4		0.0295	0.0142	1.117	1.109	1.115	1.082		1.095
81	162	377	633	0.892	998	380.6		0.0287	0.0141	1.114	1.108	1.112	1.079		1.094
82	164	377	633	0.892	1000	381.4		0.0284	0.0143	1.115	1.111	1.114	1.080		1.094
83	166	377	633	0.892	1001	381.8		0.0280	0.0142	1.114	1.111	1.114	1.080		1.094
84	168	377	633	0.892	1001	381.8		0.0277	0.0142	1.112	1.111	1.111	1.077		1.092
85	170	377	633	0.892	1002	382.3		0.0277	0.0144	1.117	1.112	1.114	1.082		1.095
86	172	377	633	0.892	1002	382.1		0.0274	0.0143	1.115	1.108	1.111	1.079		1.092
87	174	377	633	0.892	1002	382.1		0.0273	0.0144	1.115	1.108	1.111	1.079		1.092
88	176	377	633	0.892	1002	382.3		0.0273	0.0145	1.117	1.108	1.112	1.080		1.094
89	178	377	633	0.892	1001	381.9		0.0273	0.0146	1.114	1.105	1.111	1.076		1.091
90	180	377	633	0.892	1001	381.9		0.0274	0.0147	1.115	1.108	1.112	1.079		1.092
91	182	377	633	0.892	1000	381.6		0.0274	0.0148	1.114	1.109	1.111	1.079		1.091
92	184	377	633	0.892	999	381.2		0.0275	0.0149	1.112	1.106	1.111	1.077		1.091
93	186	377	633	0.892	998	380.6		0.0276	0.0150	1.112	1.109	1.112	1.079		1.092
94	188	377	633	0.892	997	380.2		0.0277	0.0152	1.112	1.106	1.111	1.077		1.091
95	190	377	633	0.892	995	379.5		0.0279	0.0152	1.114	1.106	1.111	1.077		1.091
96	192	377	633	0.892	993	378.9		0.0280	0.0154	1.114	1.105	1.111	1.077		1.091

12227

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSF	CONF	PROPELLANT	SAMP.RATE
406	1	66/053/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	377	633	0.892	991	378.1		0.0281	0.0155	1.114	1.108	1.112	1.077		1.092
98	196	377	633	0.892	988	377.0		0.0282	0.0156	1.112	1.108	1.112	1.077		1.092
99	198	377	633	0.892	986	376.2		0.0284	0.0157	1.111	1.109	1.112	1.076		1.092
100	200	377	633	0.892	984	375.3		0.0284	0.0158	1.109	1.111	1.111	1.076		1.091
101	202	377	633	0.892	980	373.9		0.0286	0.0158	1.106	1.109	1.111	1.074		1.091
102	204	377	633	0.892	979	373.4		0.0287	0.0159	1.109	1.111	1.112	1.074		1.091
103	206	377	633	0.892	975	372.0		0.0288	0.0159	1.108	1.108	1.111	1.073		1.091
104	208	377	633	0.892	972	370.9		0.0289	0.0160	1.108	1.106	1.111	1.073		1.091
105	210	377	633	0.892	969	369.7		0.0292	0.0161	1.109	1.108	1.112	1.074		1.091
106	212	377	633	0.892	964	367.8		0.0292	0.0161	1.105	1.105	1.108	1.069		1.088
107	214	377	633	0.892	961	366.5		0.0294	0.0162	1.105	1.106	1.109	1.071		1.088
108	216	377	633	0.892	955	364.2		0.0297	0.0163	1.103	1.106	1.109	1.069		1.088
109	218	377	633	0.892	948	361.7		0.0298	0.0163	1.100	1.105	1.106	1.068		1.086
110	220	377	633	0.892	942	359.2		0.0301	0.0164	1.102	1.106	1.108	1.069		1.086
111	222	377	633	0.892	933	355.8		0.0304	0.0164	1.100	1.100	1.105	1.066		1.086
112	224	377	633	0.892	923	352.2		0.0307	0.0164	1.098	1.098	1.103	1.065		1.086
113	226	377	633	0.892	912	348.0		0.0311	0.0165	1.098	1.097	1.102	1.065		1.086
114	228	377	633	0.892	899	343.0		0.0315	0.0165	1.092	1.092	1.097	1.059		1.083
115	230	377	633	0.892	885	337.5		0.0321	0.0166	1.091	1.092	1.095	1.059		1.083
116	232	377	633	0.892	867	330.8		0.0327	0.0166	1.086	1.089	1.091	1.056		1.082
117	234	377	633	0.892	847	323.0		0.0335	0.0167	1.080	1.085	1.086	1.050		1.079
118	236	377	633	0.892	823	314.0		0.0345	0.0168	1.077	1.080	1.082	1.048		1.080
119	238	377	633	0.892	798	304.3		0.0355	0.0169	1.071	1.071	1.076	1.040		1.077
120	240	377	633	0.892	769	293.4		0.0368	0.0170	1.065	1.063	1.069	1.036		1.074
121	242	377	633	0.892	738	281.6		0.0384	0.0172	1.059	1.056	1.062	1.030		1.073
122	244	377	633	0.892	707	269.6		0.0401	0.0173	1.053	1.048	1.054	1.022		1.069
123	246	377	633	0.892	672	256.2		0.0420	0.0174	1.042	1.040	1.045	1.016		1.068
124	248	377	633	0.892	637	242.9		0.0443	0.0176	1.033	1.033	1.036	1.003		1.065
125	250	377	633	0.892	601	229.2		0.0467	0.0176	1.022	1.022	1.025	0.999		1.062
126	252	377	633	0.892	563	214.8		0.0493	0.0177	1.010	1.010	1.013	0.989		1.059
127	254	377	633	0.892	527	201.1		0.0526	0.0180	1.001	0.999	1.002	0.981		1.056
128	256	377	633	0.892	489	186.4		0.0560	0.0180	0.989	0.986	0.990	0.969		1.053

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST#	CONF	PROPELLANT	SAMP.RATE
406	1	66/C33/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
129	258	377	633	0.892	451	172.1		0.0598	0.0182	0.978	0.972	0.976	0.956		1.050
130	260	377	633	0.892	415	158.2		0.0643	0.0185	0.967	0.960	0.966	0.949		1.048
131	262	377	633	0.892	376	143.5		0.0687	0.0183	0.950	0.944	0.950	0.935		1.044
132	264	377	633	0.892	341	130.2		0.0740	0.0186	0.940	0.934	0.940	0.926		1.040
133	266	377	633	0.892	306	116.8		0.0794	0.0189	0.929	0.921	0.928	0.915		1.037
134	268	377	633	0.892	273	104.0		0.0853	0.0191	0.920	0.909	0.915	0.905		1.034
135	270	377	633	0.892	242	92.2		0.0921	0.0199	0.917	0.903	0.911	0.902		1.034
136	272	377	633	0.892	211	80.6		0.0991	0.0201	0.909	0.892	0.903	0.892		1.031
137	274	377	633	0.892	184	70.3		0.1071	0.0212	0.905	0.886	0.899	0.888		1.030
138	276	377	633	0.892	160	61.1		0.1152	0.0225	0.902	0.883	0.899	0.886		1.030
139	278	377	633	0.892	138	52.5		0.1239	0.0240	0.897	0.880	0.897	0.880		1.027
140	280	377	633	0.892	118	45.1		0.1342	0.0271	0.897	0.883	0.902	0.883		1.027
141	282	377	633	0.892	101	38.8		0.1441	0.0300	0.897	0.886	0.905	0.883		1.025
142	284	377	633	0.892	87	33.1		0.1552	0.0335	0.899	0.891	0.909	0.885		1.025
143	286	377	633	0.892	74	28.1		0.1672	0.0394	0.903	0.897	0.915	0.889		1.025
144	288	377	633	0.892	64	24.3		0.1778	0.0448	0.909	0.902	0.921	0.891		1.024
145	290	377	633	0.892	55	20.8		0.1888	0.0513	0.917	0.906	0.928	0.896		1.025
146	292	377	633	0.892	48	18.2		0.1997	0.0598	0.924	0.912	0.934	0.900		1.025
147	294	377	633	0.892	43	16.3		0.2060	0.0680	0.932	0.918	0.938	0.906		1.025
148	296	377	633	0.892	37	14.2		0.2149	0.0767	0.935	0.924	0.943	0.911		1.025
149	298	377	633	0.892	34	12.8		0.2214	0.0877	0.941	0.929	0.946	0.915		1.025
150	300	377	633	0.892	31	11.7		0.2257	0.0963	0.944	0.935	0.949	0.918		1.025
151	302	377	633	0.892	28	10.5		0.2309	0.1049	0.947	0.937	0.950	0.921		1.025
152	304	377	633	0.892	27	10.4		0.2253	0.1124	0.953	0.940	0.953	0.926		1.027
153	306	377	633	0.892	25	9.4		0.2292	0.1217	0.955	0.938	0.955	0.928		1.025
154	308	377	633	0.892	24	9.0		0.2277	0.1290	0.957	0.940	0.957	0.929		1.027
155	310	377	633	0.892	23	8.8		0.2268	0.1361	0.960	0.943	0.960	0.932		1.027
156	312	377	633	0.892	21	8.1		0.2294	0.1419	0.957	0.941	0.958	0.931		1.025
157	314	377	633	0.892	22	8.3		0.2210	0.1432	0.960	0.946	0.961	0.932		1.025
158	316	377	633	0.892	21	7.9		0.2252	0.1502	0.958	0.949	0.961	0.934		1.025
159	318	377	633	0.892	20	7.7		0.2209	0.1539	0.958	0.947	0.961	0.932		1.024
160	320	377	633	0.892	21	7.9		0.2188	0.1550	0.963	0.952	0.964	0.937		1.025

12228

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
406	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	377	633	0.892	19	7.3		0.2255	0.1619	0.963	0.949	0.964	0.935		1.025
162	324	377	633	0.892	19	7.1		0.2279	0.1690	0.966	0.949	0.966	0.935		1.025
163	326	377	633	0.892	19	7.1		0.2279	0.1716	0.969	0.950	0.969	0.938		1.027
164	328	377	633	0.892	18	6.9		0.2269	0.1709	0.967	0.950	0.967	0.937		1.024
165	330	377	633	0.892	18	6.7		0.2333	0.1814	0.970	0.955	0.970	0.941		1.025
166	332	377	633	0.892	18	6.7		0.2333	0.1814	0.970	0.957	0.972	0.941		1.025
167	334	377	633	0.892	17	6.5		0.2362	0.1867	0.970	0.957	0.972	0.941		1.025
168	336	377	633	0.892	17	6.4		0.2433	0.1923	0.972	0.958	0.975	0.944		1.027
169	338	377	633	0.892	17	6.4		0.2433	0.1923	0.975	0.957	0.976	0.943		1.025
170	340	377	633	0.892	16	6.2		0.2467	0.1951	0.976	0.957	0.976	0.944		1.027
171	342	377	633	0.892	16	6.2		0.2467	0.1982	0.979	0.957	0.979	0.946		1.027
172	344	377	633	0.892	17	6.4		0.2433	0.1923	0.981	0.957	0.979	0.946		1.027
173	346	377	633	0.892	15	5.8		0.2630	0.2080	0.979	0.958	0.981	0.947		1.027
174	348	377	633	0.892	16	6.0		0.2546	0.2045	0.979	0.961	0.982	0.947		1.027
175	350	377	633	0.892	15	5.8		0.2630	0.2113	0.979	0.961	0.982	0.947		1.028
176	352	377	633	0.892	15	5.6		0.2674	0.2117	0.978	0.960	0.982	0.947		1.028

MACH	Q	P	PT	PREF	PCAL
0.892	210.4	377	633	1425	2110

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
407	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
1	2	261	637	1.205	494	272.6		0.0265	0.0106	0.908	1.080	0.930	0.892		1.045
2	4	261	637	1.205	496	273.8		0.0287	0.0115	0.908	1.087	0.932	0.895		1.043
3	6	261	637	1.205	493	272.1		0.0306	0.0120	0.901	1.084	0.930	0.892		1.040
4	8	261	637	1.205	488	269.1		0.0330	0.0130	0.906	1.087	0.934	0.895		1.043
5	10	261	637	1.205	478	263.8		0.0347	0.0134	0.899	1.080	0.928	0.890		1.040
6	12	261	637	1.205	468	258.3		0.0364	0.0140	0.899	1.076	0.926	0.888		1.040
7	14	261	637	1.205	458	252.5		0.0380	0.0145	0.897	1.073	0.926	0.888		1.043
8	16	261	637	1.205	447	246.4		0.0392	0.0146	0.888	1.067	0.917	0.881		1.040
9	18	261	637	1.205	437	241.2		0.0405	0.0152	0.888	1.067	0.919	0.886		1.043
10	20	261	637	1.205	428	236.0		0.0414	0.0154	0.884	1.065	0.915	0.884		1.043
11	22	261	637	1.205	419	231.0		0.0421	0.0156	0.879	1.058	0.910	0.879		1.040
12	24	261	637	1.205	412	227.1		0.0429	0.0159	0.879	1.056	0.910	0.884		1.045
13	26	261	637	1.205	406	223.8		0.0430	0.0158	0.875	1.047	0.906	0.879		1.045
14	28	261	637	1.205	400	220.8		0.0434	0.0158	0.875	1.045	0.903	0.877		1.045
15	30	261	637	1.205	396	218.6		0.0435	0.0159	0.875	1.040	0.903	0.879		1.047
16	32	261	637	1.205	393	216.9		0.0437	0.0159	0.875	1.040	0.903	0.877		1.047
17	34	261	637	1.205	390	215.3		0.0435	0.0159	0.873	1.040	0.903	0.877		1.049
18	36	261	637	1.205	389	214.7		0.0434	0.0158	0.870	1.043	0.903	0.877		1.049
19	38	261	637	1.205	388	213.9		0.0434	0.0157	0.870	1.045	0.901	0.877		1.049
20	40	261	637	1.205	386	213.1		0.0431	0.0156	0.868	1.043	0.901	0.877		1.047
21	42	261	637	1.205	387	213.3		0.0432	0.0158	0.873	1.045	0.901	0.877		1.047
22	44	261	637	1.205	386	213.1		0.0429	0.0156	0.873	1.040	0.901	0.875		1.047
23	46	261	637	1.205	387	213.3		0.0427	0.0156	0.875	1.040	0.901	0.875		1.047
24	48	261	637	1.205	388	214.2		0.0427	0.0157	0.877	1.045	0.903	0.877		1.047
25	50	261	637	1.205	387	213.6		0.0423	0.0153	0.873	1.043	0.899	0.875		1.045
26	52	261	637	1.205	389	214.4		0.0425	0.0155	0.873	1.047	0.903	0.875		1.045
27	54	261	637	1.205	390	215.0		0.0424	0.0155	0.873	1.049	0.903	0.875		1.045
28	56	261	637	1.205	390	215.3		0.0420	0.0152	0.873	1.047	0.901	0.873		1.043
29	58	261	637	1.205	392	216.4		0.0423	0.0157	0.877	1.051	0.906	0.877		1.045
30	60	261	637	1.205	392	216.1		0.0420	0.0154	0.875	1.045	0.903	0.875		1.043
31	62	261	637	1.205	393	216.6		0.0420	0.0154	0.877	1.045	0.903	0.875		1.043
32	64	261	637	1.205	393	216.9		0.0422	0.0155	0.879	1.047	0.908	0.877		1.043

12229

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TETSTP	CONF	PROPELLANT	SAMP.RATE
407	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
33	66	261	637	1.205	393	216.9		0.0418	0.0154	0.875	1.043	0.901	0.873		1.040
34	68	261	637	1.205	394	217.2		0.0419	0.0155	0.877	1.047	0.906	0.877		1.043
35	70	261	637	1.205	394	217.2		0.0419	0.0155	0.877	1.049	0.903	0.877		1.040
36	72	261	637	1.205	394	217.2		0.0419	0.0155	0.875	1.051	0.903	0.875		1.040
37	74	261	637	1.205	394	217.2		0.0419	0.0156	0.877	1.054	0.908	0.879		1.043
38	76	261	637	1.205	394	217.5		0.0417	0.0155	0.877	1.049	0.906	0.877		1.040
39	78	261	637	1.205	394	217.2		0.0418	0.0155	0.879	1.047	0.906	0.877		1.040
40	80	261	637	1.205	394	217.5		0.0417	0.0155	0.879	1.047	0.906	0.879		1.040
41	82	261	637	1.205	395	217.7		0.0417	0.0156	0.879	1.047	0.906	0.877		1.040
42	84	261	637	1.205	394	217.2		0.0418	0.0156	0.877	1.047	0.908	0.879		1.040
43	86	261	637	1.205	395	217.7		0.0417	0.0156	0.877	1.049	0.906	0.879		1.040
44	88	261	637	1.205	394	217.5		0.0415	0.0156	0.875	1.049	0.906	0.879		1.040
45	90	261	637	1.205	394	217.2		0.0414	0.0155	0.873	1.047	0.903	0.879		1.040
46	92	261	637	1.205	395	217.7		0.0417	0.0157	0.877	1.047	0.906	0.879		1.040
47	94	261	637	1.205	394	217.5		0.0415	0.0156	0.877	1.045	0.906	0.877		1.040
48	96	261	637	1.205	394	217.5		0.0414	0.0156	0.877	1.043	0.906	0.877		1.043
49	98	261	637	1.205	395	218.0		0.0416	0.0158	0.881	1.045	0.908	0.879		1.045
50	100	261	637	1.205	394	217.2		0.0413	0.0155	0.875	1.043	0.903	0.875		1.043
51	102	261	637	1.205	395	217.7		0.0415	0.0157	0.875	1.045	0.906	0.877		1.043
52	104	261	637	1.205	395	217.7		0.0415	0.0157	0.873	1.043	0.906	0.877		1.043
53	106	261	637	1.205	394	217.5		0.0412	0.0156	0.870	1.038	0.903	0.875		1.040
54	108	261	637	1.205	395	218.0		0.0416	0.0158	0.875	1.043	0.908	0.879		1.045
55	110	261	637	1.205	394	217.2		0.0414	0.0156	0.873	1.036	0.903	0.875		1.043
56	112	261	637	1.205	394	217.2		0.0413	0.0157	0.875	1.036	0.903	0.875		1.043
57	114	261	637	1.205	394	217.2		0.0414	0.0159	0.877	1.038	0.906	0.879		1.045
58	116	261	637	1.205	393	216.9		0.0411	0.0155	0.873	1.036	0.901	0.870		1.040
59	118	261	637	1.205	394	217.2		0.0414	0.0157	0.873	1.043	0.903	0.875		1.043
60	120	261	637	1.205	393	216.9		0.0413	0.0157	0.870	1.047	0.903	0.875		1.043
61	122	261	637	1.205	393	216.9		0.0411	0.0156	0.870	1.047	0.901	0.873		1.040
62	124	261	637	1.205	393	216.9		0.0413	0.0157	0.873	1.051	0.903	0.877		1.043
63	126	261	637	1.205	394	217.2		0.0411	0.0156	0.873	1.047	0.901	0.873		1.040
64	128	261	637	1.205	394	217.2		0.0411	0.0156	0.875	1.047	0.903	0.873		1.040

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
407	1	66/035/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	261	637	1.205	394	217.2		0.0411	0.0157	0.877	1.047	0.903	0.875		1.043
66	132	261	637	1.205	395	217.7		0.0412	0.0157	0.877	1.049	0.906	0.875		1.040
67	134	261	637	1.205	395	217.7		0.0410	0.0156	0.877	1.051	0.906	0.875		1.040
68	136	261	637	1.205	395	217.7		0.0410	0.0157	0.877	1.054	0.906	0.875		1.040
69	138	261	637	1.205	395	218.0		0.0409	0.0157	0.875	1.054	0.906	0.875		1.040
70	140	261	637	1.205	395	217.7		0.0408	0.0156	0.875	1.051	0.906	0.875		1.040
71	142	261	637	1.205	396	218.3		0.0411	0.0156	0.877	1.051	0.906	0.875		1.040
72	144	261	637	1.205	395	218.0		0.0409	0.0155	0.877	1.047	0.903	0.875		1.040
73	146	261	637	1.205	395	218.0		0.0409	0.0155	0.879	1.047	0.903	0.875		1.040
74	148	261	637	1.205	396	218.6		0.0410	0.0156	0.881	1.049	0.908	0.877		1.043
75	150	261	637	1.205	395	217.7		0.0408	0.0154	0.877	1.047	0.903	0.875		1.040
76	152	261	637	1.205	396	218.3		0.0409	0.0155	0.879	1.054	0.906	0.877		1.043
77	154	261	637	1.205	396	218.3		0.0409	0.0155	0.877	1.054	0.906	0.877		1.043
78	156	261	637	1.205	395	218.0		0.0408	0.0153	0.877	1.051	0.903	0.873		1.040
79	158	261	637	1.205	397	218.9		0.0409	0.0156	0.881	1.054	0.908	0.879		1.045
80	160	261	637	1.205	396	218.3		0.0407	0.0154	0.881	1.049	0.906	0.875		1.045
81	162	261	637	1.205	396	218.3		0.0409	0.0154	0.884	1.049	0.906	0.877		1.047
82	164	261	637	1.205	396	218.6		0.0408	0.0155	0.886	1.051	0.910	0.879		1.049
83	166	261	637	1.205	395	218.0		0.0406	0.0153	0.881	1.047	0.906	0.875		1.047
84	168	261	637	1.205	396	218.3		0.0409	0.0155	0.884	1.054	0.908	0.879		1.049
85	170	261	637	1.205	396	218.3		0.0409	0.0154	0.881	1.054	0.908	0.879		1.049
86	172	261	637	1.205	395	218.0		0.0408	0.0154	0.879	1.054	0.906	0.877		1.047
87	174	261	637	1.205	395	217.7		0.0410	0.0156	0.881	1.054	0.910	0.881		1.049
88	176	261	637	1.205	395	217.7		0.0408	0.0153	0.879	1.049	0.903	0.877		1.047
89	178	261	637	1.205	394	217.5		0.0409	0.0153	0.879	1.047	0.903	0.877		1.047
90	180	261	637	1.205	394	217.2		0.0409	0.0153	0.881	1.045	0.903	0.877		1.047
91	182	261	637	1.205	394	217.5		0.0409	0.0153	0.881	1.045	0.903	0.875		1.045
92	184	261	637	1.205	394	217.2		0.0408	0.0153	0.879	1.047	0.903	0.877		1.045
93	186	261	637	1.205	394	217.2		0.0408	0.0153	0.879	1.049	0.906	0.877		1.043
94	188	261	637	1.205	394	217.2		0.0408	0.0153	0.879	1.051	0.906	0.877		1.040
95	190	261	637	1.205	393	216.9		0.0406	0.0152	0.877	1.049	0.906	0.879		1.040
96	192	261	637	1.205	394	217.5		0.0407	0.0153	0.881	1.049	0.908	0.879		1.040

12230

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST	CONF	PROPELLANT	SAMP.RATE
407	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.	
FRAME	TIME	Pm	PTm	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
97	194	261	637	1.205	394	217.2		0.0406	0.0152	0.881	1.045	0.906	0.877		1.040
98	196	261	637	1.205	394	217.2		0.0406	0.0153	0.881	1.045	0.906	0.879		1.040
99	198	261	637	1.205	395	217.7		0.0408	0.0154	0.886	1.047	0.908	0.879		1.040
100	200	261	637	1.205	394	217.2		0.0404	0.0152	0.879	1.045	0.906	0.877		1.040
101	202	261	637	1.205	395	217.7		0.0406	0.0154	0.881	1.047	0.908	0.879		1.040
102	204	261	637	1.205	394	217.5		0.0405	0.0153	0.879	1.049	0.906	0.879		1.040
103	206	261	637	1.205	394	217.5		0.0404	0.0152	0.877	1.047	0.903	0.877		1.038
104	208	261	637	1.205	395	218.0		0.0408	0.0155	0.884	1.051	0.908	0.881		1.043
105	210	261	637	1.205	395	217.7		0.0405	0.0153	0.881	1.047	0.906	0.877		1.043
106	212	261	637	1.205	395	217.7		0.0405	0.0153	0.884	1.045	0.906	0.879		1.043
107	214	261	637	1.205	395	218.0		0.0406	0.0154	0.886	1.047	0.908	0.881		1.045
108	216	261	637	1.205	395	217.7		0.0403	0.0152	0.881	1.043	0.903	0.875		1.043
109	218	261	637	1.205	395	218.0		0.0404	0.0153	0.884	1.049	0.908	0.879		1.045
110	220	261	637	1.205	395	218.0		0.0404	0.0153	0.881	1.051	0.908	0.879		1.045
111	222	261	637	1.205	395	218.0		0.0404	0.0153	0.881	1.051	0.906	0.877		1.043
112	224	261	637	1.205	395	218.0		0.0404	0.0154	0.884	1.054	0.910	0.881		1.045
113	226	261	637	1.205	395	218.0		0.0404	0.0152	0.881	1.049	0.906	0.877		1.043
114	228	261	637	1.205	395	217.7		0.0403	0.0152	0.884	1.047	0.908	0.879		1.043
115	230	261	637	1.205	395	217.7		0.0405	0.0153	0.886	1.047	0.908	0.879		1.043
116	232	261	637	1.205	395	218.0		0.0404	0.0152	0.884	1.047	0.908	0.877		1.040
117	234	261	637	1.205	395	217.7		0.0403	0.0152	0.884	1.049	0.908	0.879		1.040
118	236	261	637	1.205	395	218.0		0.0403	0.0152	0.884	1.051	0.908	0.879		1.038
119	238	261	637	1.205	395	218.0		0.0403	0.0152	0.881	1.054	0.908	0.879		1.038
120	240	261	637	1.205	395	217.7		0.0401	0.0151	0.881	1.051	0.908	0.879		1.036
121	242	261	637	1.205	396	218.3		0.0402	0.0153	0.884	1.054	0.908	0.879		1.036
122	244	261	637	1.205	396	218.3		0.0400	0.0150	0.884	1.051	0.908	0.879		1.036
123	246	261	637	1.205	396	218.6		0.0400	0.0151	0.886	1.049	0.908	0.879		1.038
124	248	261	637	1.205	397	218.9		0.0403	0.0152	0.890	1.054	0.912	0.881		1.038
125	250	261	637	1.205	396	218.3		0.0399	0.0150	0.884	1.051	0.908	0.877		1.036
126	252	261	637	1.205	397	218.9		0.0401	0.0151	0.886	1.054	0.908	0.879		1.036
127	254	261	637	1.205	397	218.9		0.0401	0.0151	0.884	1.054	0.908	0.877		1.036
128	256	261	637	1.205	396	218.6		0.0398	0.0150	0.879	1.051	0.906	0.875		1.034

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
407	1	66/033/1	38	1541	500

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTOn	(PTO/P)n	(P2/PTO)n	(P3/PTO)n	(P4/PTO)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
129	258	261	637	1.205	397	219.1		0.0402	0.0152	0.886	1.056	0.910	0.879		1.036
130	260	261	637	1.205	396	218.6		0.0398	0.0150	0.884	1.049	0.906	0.875		1.034
131	262	261	637	1.205	396	218.6		0.0400	0.0151	0.884	1.047	0.908	0.875		1.036
132	264	261	637	1.205	397	218.9		0.0401	0.0152	0.886	1.049	0.908	0.879		1.038
133	266	261	637	1.205	396	218.6		0.0398	0.0149	0.881	1.045	0.903	0.875		1.034
134	268	261	637	1.205	396	218.6		0.0400	0.0151	0.884	1.049	0.908	0.877		1.036
135	270	261	637	1.205	396	218.6		0.0400	0.0151	0.881	1.049	0.906	0.877		1.036
136	272	261	637	1.205	396	218.3		0.0399	0.0150	0.879	1.051	0.903	0.875		1.036
137	274	261	637	1.205	395	218.0		0.0401	0.0152	0.881	1.051	0.908	0.879		1.038
138	276	261	637	1.205	394	217.5		0.0400	0.0151	0.881	1.047	0.906	0.875		1.038
139	278	261	637	1.205	393	216.9		0.0401	0.0151	0.881	1.045	0.903	0.877		1.040
140	280	261	637	1.205	392	216.4		0.0402	0.0152	0.884	1.045	0.906	0.877		1.040
141	282	261	637	1.205	391	215.8		0.0403	0.0152	0.881	1.045	0.903	0.877		1.040
142	284	261	637	1.205	386	214.2		0.0403	0.0152	0.881	1.045	0.905	0.879		1.040
143	286	261	637	1.205	386	213.1		0.0405	0.0153	0.879	1.047	0.901	0.879		1.040
144	288	261	637	1.205	383	211.1		0.0407	0.0153	0.875	1.045	0.899	0.877		1.038
145	290	261	637	1.205	378	208.6		0.0408	0.0152	0.870	1.040	0.897	0.875		1.038
146	292	261	637	1.205	374	206.4		0.0413	0.0155	0.870	1.036	0.895	0.875		1.036
147	294	261	637	1.205	368	202.8		0.0415	0.0153	0.866	1.029	0.888	0.873		1.038
148	296	261	637	1.205	360	198.7		0.0420	0.0155	0.864	1.023	0.884	0.870		1.038
149	298	261	637	1.205	352	194.3		0.0427	0.0157	0.859	1.020	0.879	0.870		1.040
150	300	261	637	1.205	340	187.7		0.0430	0.0156	0.848	1.009	0.868	0.866		1.038
151	302	261	637	1.205	329	181.6		0.0439	0.0159	0.839	1.005	0.862	0.866		1.040
152	304	261	637	1.205	316	174.2		0.0445	0.0160	0.826	0.998	0.851	0.862		1.038
153	306	261	637	1.205	300	165.6		0.0450	0.0161	0.815	0.985	0.837	0.857		1.038
154	308	261	637	1.205	286	157.6		0.0464	0.0166	0.809	0.976	0.828	0.859		1.040
155	310	261	637	1.205	268	147.9		0.0469	0.0166	0.793	0.956	0.813	0.853		1.038
156	312	261	637	1.205	252	138.8		0.0481	0.0169	0.782	0.939	0.800	0.851		1.038
157	314	261	637	1.205	235	129.7		0.0492	0.0172	0.769	0.926	0.789	0.851		1.043
158	316	261	637	1.205	218	120.4		0.0500	0.0169	0.749	0.903	0.769	0.842		1.036
159	318	261	637	1.205	203	111.8		0.0512	0.0177	0.736	0.892	0.756	0.844		1.038
160	320	261	637	1.205	187	103.0		0.0524	0.0179	0.718	0.877	0.740	0.839		1.036

12231

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TITSTP	CONF	PROPELLANT	BASE.PLATE
407	1	66/033/1	3C	15[illegible]	50C

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	261	637	1.205	172	95.0		0.0533	0.0180	0.700	0.859	0.723	0.837		1.036
162	324	261	637	1.205	158	87.0		0.0548	0.0187	0.687	0.846	0.709	0.839		1.040
163	326	261	637	1.205	145	79.8		0.0556	0.0186	0.674	0.826	0.694	0.835		1.038
164	328	261	637	1.205	132	72.9		0.0568	0.0192	0.661	0.811	0.678	0.835		1.040
165	330	261	637	1.205	121	66.8		0.0576	0.0197	0.652	0.800	0.672	0.833		1.040
166	332	261	637	1.205	111	61.3		0.0592	0.0202	0.647	0.793	0.663	0.831		1.040
167	334	261	637	1.205	101	55.8		0.0604	0.0207	0.645	0.793	0.663	0.831		1.040
168	336	261	637	1.205	93	51.1		0.0616	0.0215	0.650	0.798	0.667	0.831		1.040
169	338	261	637	1.205	85	46.7		0.0627	0.0223	0.656	0.804	0.674	0.831		1.040
170	340	261	637	1.205	77	42.3		0.0640	0.0234	0.667	0.813	0.681	0.833		1.040
171	342	261	637	1.205	71	39.3		0.0662	0.0259	0.685	0.822	0.694	0.835		1.040
172	344	261	637	1.205	65	35.7		0.0666	0.0277	0.700	0.831	0.705	0.835		1.040
173	346	261	637	1.205	60	32.9		0.0678	0.0300	0.716	0.842	0.716	0.837		1.040
174	348	261	637	1.205	56	30.7		0.0702	0.0331	0.734	0.855	0.729	0.842		1.043
175	350	261	637	1.205	50	27.4		0.0720	0.0351	0.742	0.864	0.738	0.842		1.040
176	352	261	637	1.205	47	25.7		0.0752	0.0384	0.756	0.879	0.749	0.844		1.043
177	354	261	637	1.205	43	23.8		0.0782	0.0415	0.764	0.892	0.760	0.846		1.043
178	356	261	637	1.205	40	21.9		0.0801	0.0439	0.773	0.899	0.764	0.846		1.040
179	358	261	637	1.205	38	20.8		0.0861	0.0502	0.789	0.910	0.778	0.851		1.045
180	360	261	637	1.205	35	19.1		0.0878	0.0532	0.793	0.912	0.782	0.848		1.043
181	362	261	637	1.205	32	17.7		0.0946	0.0573	0.802	0.919	0.789	0.851		1.043
182	364	261	637	1.205	31	16.9		0.0993	0.0634	0.813	0.928	0.798	0.855		1.043
183	366	261	637	1.205	28	15.5		0.1033	0.0654	0.813	0.930	0.798	0.851		1.040
184	368	261	637	1.205	28	15.3		0.1076	0.0702	0.822	0.943	0.809	0.857		1.040
185	370	261	637	1.205	26	14.4		0.1138	0.0743	0.824	0.952	0.815	0.857		1.040
186	372	261	637	1.205	25	13.6		0.1207	0.0768	0.826	0.956	0.820	0.855		1.038
187	374	261	637	1.205	24	13.0		0.1286	0.0842	0.831	0.965	0.828	0.859		1.040
188	376	261	637	1.205	23	12.5		0.1314	0.0835	0.831	0.963	0.831	0.857		1.038
189	378	261	637	1.205	22	12.2		0.1344	0.0877	0.831	0.967	0.833	0.857		1.038
190	380	261	637	1.205	21	11.7		0.1439	0.0918	0.833	0.970	0.837	0.857		1.038
191	382	261	637	1.205	21	11.7		0.1470	0.0942	0.835	0.972	0.839	0.855		1.038
192	384	261	637	1.205	20	11.1		0.1510	0.0964	0.835	0.979	0.846	0.859		1.038

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TITSTP	CONF	PROPELLANT	SAMP.RATE
407	1	66/033/1	38	15%AL	50

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTOn	(PTO/P)n	(P2/PTO)n	(P3/PTO)n	(P4/PTO)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
193	386	261	637	1.205	20	10.3		0.1582	0.1014	0.837	0.985	0.851	0.859		1.038
194	388	261	637	1.205	19	10.6		0.1624	0.1040	0.839	0.994	0.857	0.862		1.038
195	390	261	637	1.205	18	10.0		0.1677	0.1070	0.844	0.998	0.864	0.862		1.040
196	392	261	637	1.205	19	10.3		0.1703	0.1095	0.853	1.003	0.870	0.864		1.040
197	394	261	637	1.205	18	9.7		0.1762	0.1129	0.857	1.005	0.875	0.866		1.040
198	396	261	637	1.205	18	9.7		0.1800	0.1129	0.864	1.009	0.879	0.868		1.040
199	398	261	637	1.205	18	10.0		0.1787	0.1153	0.870	1.016	0.884	0.875		1.043
200	400	261	637	1.205	17	9.2		0.1868	0.1197	0.866	1.016	0.884	0.870		1.040
201	402	261	637	1.205	17	9.5		0.1852	0.1191	0.873	1.020	0.888	0.873		1.040
202	404	261	637	1.205	17	9.2		0.1908	0.1227	0.873	1.023	0.888	0.875		1.040
203	406	261	637	1.205	16	8.6		0.1987	0.1273	0.873	1.020	0.886	0.873		1.038
204	408	261	637	1.205	17	9.5		0.1930	0.1249	0.877	1.025	0.888	0.877		1.043
205	410	261	637	1.205	16	8.6		0.2030	0.1305	0.877	1.016	0.886	0.875		1.043
206	412	261	637	1.205	16	8.6		0.2030	0.1305	0.879	1.014	0.884	0.875		1.043
207	414	261	637	1.205	16	8.6		0.2072	0.1337	0.879	1.016	0.886	0.879		1.047
208	416	261	637	1.205	15	8.4		0.2053	0.1315	0.875	1.009	0.879	0.873		1.043
209	418	261	637	1.205	15	8.4		0.2141	0.1381	0.877	1.014	0.881	0.877		1.045
210	420	261	637	1.205	15	8.4		0.2141	0.1348	0.873	1.014	0.881	0.875		1.045
211	422	261	637	1.205	15	8.1		0.2214	0.1394	0.868	1.012	0.877	0.873		1.040
212	424	261	637	1.205	15	8.1		0.2214	0.1428	0.868	1.014	0.879	0.877		1.045
213	426	261	637	1.205	15	8.1		0.2214	0.1394	0.866	1.007	0.877	0.875		1.045

MACH	Q	P	PT	PREF	PCAL
1.205	265.3	261	637	1425	2108

12232

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST	CONF	PROPELLANT	SAMP.RATE
406	1	66/033/1	34	2%AL	20

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	376	633	0.897	428	164.2		0.0600	0.0306	1.087	1.103	1.105	1.048		1.071
2	4	376	633	0.897	440	168.8		0.0639	0.0323	1.096	1.113	1.114	1.056		1.076
3	6	376	633	0.897	447	171.5		0.0670	0.0335	1.099	1.114	1.117	1.059		1.076
4	8	376	633	0.897	453	173.8		0.0701	0.0347	1.105	1.117	1.120	1.064		1.079
5	10	376	633	0.897	457	175.3		0.0730	0.0358	1.110	1.123	1.125	1.070		1.082
6	12	376	633	0.897	459	176.1		0.0752	0.0365	1.108	1.122	1.125	1.068		1.080
7	14	376	633	0.897	461	176.8		0.0774	0.0374	1.111	1.128	1.128	1.073		1.082
8	16	376	633	0.897	461	176.6		0.0794	0.0380	1.111	1.128	1.128	1.073		1.084
9	18	376	633	0.897	460	176.2		0.0809	0.0385	1.110	1.128	1.126	1.071		1.082
10	20	376	633	0.897	459	175.9		0.0824	0.0392	1.113	1.130	1.128	1.076		1.085
11	22	376	633	0.897	457	175.1		0.0833	0.0393	1.113	1.126	1.126	1.071		1.084
12	24	376	633	0.897	455	174.3		0.0844	0.0396	1.113	1.125	1.125	1.071		1.084
13	26	376	633	0.897	453	173.8		0.0850	0.0398	1.114	1.125	1.125	1.073		1.085
14	28	376	633	0.897	452	173.4		0.0855	0.0399	1.114	1.125	1.123	1.070		1.084
15	30	376	633	0.897	451	172.8		0.0859	0.0401	1.114	1.126	1.125	1.073		1.087
16	32	376	633	0.897	450	172.4		0.0862	0.0402	1.113	1.130	1.125	1.073		1.087
17	34	376	633	0.897	449	172.0		0.0863	0.0402	1.114	1.130	1.125	1.073		1.087
18	36	376	633	0.897	443	171.6		0.0865	0.0402	1.114	1.131	1.125	1.074		1.088
19	38	376	633	0.897	448	171.8		0.0865	0.0403	1.116	1.130	1.126	1.073		1.088
20	40	376	633	0.897	447	171.5		0.0866	0.0403	1.116	1.130	1.126	1.073		1.088
21	42	376	633	0.897	447	171.5		0.0866	0.0403	1.117	1.128	1.126	1.073		1.090
22	44	376	633	0.897	448	171.8		0.0865	0.0403	1.119	1.130	1.128	1.074		1.090
23	46	376	633	0.897	447	171.5		0.0866	0.0402	1.116	1.128	1.126	1.073		1.088
24	48	376	633	0.897	448	171.8		0.0865	0.0402	1.116	1.130	1.126	1.074		1.090
25	50	376	633	0.897	449	172.0		0.0864	0.0401	1.116	1.130	1.126	1.074		1.088
26	52	376	633	0.897	448	171.8		0.0864	0.0401	1.114	1.128	1.125	1.073		1.088
27	54	376	633	0.897	450	172.4		0.0865	0.0403	1.119	1.130	1.128	1.076		1.090
28	56	376	633	0.897	449	172.2		0.0865	0.0401	1.117	1.126	1.126	1.074		1.090
29	58	376	633	0.897	450	172.4		0.0865	0.0402	1.119	1.126	1.128	1.074		1.090
30	60	376	633	0.897	450	172.6		0.0866	0.0402	1.120	1.128	1.130	1.077		1.091
31	62	376	633	0.897	449	172.2		0.0865	0.0401	1.117	1.125	1.126	1.073		1.090
32	64	376	633	0.897	450	172.6		0.0867	0.0402	1.119	1.130	1.128	1.076		1.091

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	DIST	TESTP	CONF	PROPELLANT	SAMP.RATE
408	1	66/033/1	34	2,AL	20

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS (P2/PTC)n	NOZZLE PRESS (P3/PTC)n	NOZZLE PRESS (P4/PTC)n	BASE PRESS. (P6/P)n	BASE PRESS. (P7/P)n	BASE PRESS. (P8/P)n	BODY PRESS. (P9/P)n	BODY PRESS. (P10/P)n	BODY PRESS. (P11/P)n
33	66	376	633	0.897	450	172.6		0.0867	0.0402	1.117	1.131	1.126	1.073		1.091
34	68	376	633	0.897	450	172.4		0.0868	0.0403	1.117	1.131	1.126	1.076		1.090
35	70	376	633	0.897	450	172.6		0.0870	0.0404	1.120	1.133	1.130	1.079		1.093
36	72	376	633	0.897	450	172.4		0.0870	0.0403	1.119	1.130	1.123	1.076		1.091
37	74	376	633	0.897	450	172.4		0.0871	0.0403	1.120	1.130	1.128	1.077		1.093
38	76	376	633	0.897	450	172.4		0.0871	0.0403	1.122	1.130	1.128	1.079		1.094
39	78	376	633	0.897	450	172.4		0.0871	0.0402	1.120	1.128	1.126	1.076		1.093
40	80	376	633	0.897	449	172.2		0.0872	0.0403	1.119	1.130	1.128	1.077		1.093
41	82	376	633	0.897	450	172.4		0.0873	0.0402	1.119	1.130	1.128	1.077		1.093
42	84	376	633	0.897	449	172.2		0.0872	0.0402	1.117	1.130	1.126	1.076		1.091
43	86	376	633	0.897	448	171.8		0.0873	0.0402	1.117	1.130	1.126	1.077		1.093
44	88	376	633	0.897	449	172.0		0.0873	0.0401	1.119	1.130	1.126	1.076		1.093
45	90	376	633	0.897	448	171.6		0.0874	0.0401	1.119	1.128	1.126	1.076		1.093
46	92	376	633	0.897	447	171.5		0.0873	0.0400	1.119	1.128	1.126	1.076		1.093
47	94	376	633	0.897	448	171.6		0.0874	0.0401	1.120	1.130	1.128	1.077		1.093
48	96	376	633	0.897	446	170.9		0.0873	0.0400	1.117	1.128	1.126	1.076		1.093
49	98	376	633	0.897	446	171.1		0.0874	0.0400	1.117	1.130	1.126	1.076		1.093
50	100	376	633	0.897	446	170.9		0.0873	0.0400	1.116	1.130	1.126	1.076		1.093
51	102	376	633	0.897	445	170.5		0.0872	0.0398	1.114	1.128	1.125	1.073		1.091
52	104	376	633	0.897	446	171.1		0.0872	0.0399	1.117	1.130	1.126	1.076		1.093
53	106	376	633	0.897	445	170.7		0.0871	0.0398	1.116	1.128	1.123	1.073		1.091
54	108	376	633	0.897	445	170.7		0.0871	0.0398	1.117	1.126	1.125	1.073		1.091
55	110	376	633	0.897	446	170.9		0.0871	0.0398	1.119	1.130	1.126	1.074		1.093
56	112	376	633	0.897	445	170.5		0.0869	0.0396	1.114	1.128	1.123	1.071		1.090
57	114	376	633	0.897	446	170.9		0.0870	0.0397	1.116	1.131	1.125	1.073		1.091
58	116	376	633	0.897	445	170.7		0.0869	0.0397	1.114	1.133	1.125	1.073		1.090
59	118	376	633	0.897	445	170.5		0.0870	0.0396	1.113	1.133	1.125	1.071		1.090
60	120	376	633	0.897	445	170.7		0.0869	0.0398	1.116	1.136	1.128	1.076		1.091
61	122	376	633	0.897	445	170.5		0.0869	0.0396	1.116	1.131	1.126	1.073		1.091
62	124	376	633	0.897	445	170.5		0.0869	0.0396	1.116	1.131	1.126	1.073		1.091
63	126	376	633	0.897	445	170.5		0.0869	0.0396	1.117	1.131	1.128	1.074		1.091
64	128	376	633	0.897	445	170.5		0.0870	0.0396	1.116	1.130	1.126	1.073		1.090

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

12233

ORIGINAL PAGE IS
OF POOR QUALITY

RUN	LIST	TRNSTP	CONF	PROPELLANT	SAMP.RATE
408	1	66/033/1	34	2%AL	20

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
65	130	376	633	0.897	444	170.3		0.0871	0.0396	1.116	1.133	1.128	1.074		1.091
66	132	376	633	0.897	444	170.3		0.0871	0.0396	1.116	1.133	1.128	1.073		1.091
67	134	376	633	0.897	444	170.1		0.0872	0.0397	1.114	1.134	1.126	1.073		1.091
68	136	376	633	0.897	443	169.9		0.0873	0.0397	1.114	1.133	1.126	1.074		1.091
69	138	376	633	0.897	444	170.1		0.0875	0.0397	1.116	1.133	1.128	1.073		1.091
70	140	376	633	0.897	443	169.9		0.0875	0.0397	1.116	1.131	1.126	1.073		1.091
71	142	376	633	0.897	443	169.9		0.0876	0.0397	1.117	1.131	1.128	1.074		1.093
72	144	376	633	0.897	444	170.1		0.0876	0.0398	1.119	1.133	1.128	1.074		1.093
73	145	376	633	0.897	442	169.5		0.0878	0.0397	1.116	1.131	1.126	1.073		1.093
74	148	376	633	0.897	443	169.9		0.0879	0.0397	1.116	1.133	1.126	1.074		1.093
75	150	376	633	0.897	443	169.7		0.0880	0.0398	1.114	1.133	1.125	1.074		1.091
76	152	376	633	0.897	442	169.5		0.0880	0.0396	1.113	1.130	1.123	1.073		1.090
77	154	376	633	0.897	444	170.1		0.0881	0.0398	1.116	1.131	1.123	1.074		1.091
78	156	376	633	0.897	443	169.7		0.0880	0.0397	1.114	1.128	1.122	1.073		1.090
79	158	376	633	0.897	443	169.7		0.0882	0.0398	1.116	1.126	1.122	1.073		1.090
80	160	376	633	0.897	444	170.1		0.0881	0.0398	1.117	1.128	1.123	1.074		1.091
81	162	376	633	0.897	443	169.7		0.0880	0.0397	1.113	1.125	1.120	1.071		1.088
82	164	376	633	0.897	444	170.1		0.0881	0.0398	1.114	1.128	1.122	1.073		1.090
83	166	376	633	0.897	444	170.1		0.0880	0.0398	1.114	1.130	1.122	1.073		1.090
84	168	376	633	0.897	444	170.1		0.0878	0.0397	1.113	1.128	1.122	1.071		1.088
85	170	376	633	0.897	445	170.5		0.0879	0.0398	1.116	1.130	1.123	1.076		1.091
86	172	376	633	0.897	444	170.3		0.0877	0.0398	1.114	1.125	1.120	1.073		1.090
87	174	376	633	0.897	445	170.5		0.0878	0.0398	1.114	1.123	1.120	1.073		1.090
88	176	376	633	0.897	445	170.7		0.0878	0.0398	1.116	1.123	1.122	1.074		1.091
89	178	376	633	0.897	445	170.7		0.0878	0.0398	1.116	1.122	1.120	1.073		1.088
90	180	376	633	0.897	445	170.7		0.0878	0.0399	1.116	1.125	1.122	1.074		1.090
91	182	376	633	0.897	446	170.9		0.0879	0.0400	1.114	1.126	1.122	1.074		1.090
92	184	376	633	0.897	445	170.7		0.0878	0.0400	1.114	1.126	1.122	1.074		1.090
93	186	376	633	0.897	445	170.5		0.0879	0.0400	1.114	1.125	1.122	1.076		1.090
94	188	376	633	0.897	445	170.7		0.0880	0.0400	1.114	1.125	1.120	1.074		1.090
95	190	376	633	0.897	444	170.3		0.0880	0.0401	1.116	1.122	1.120	1.073		1.090
96	192	376	633	0.897	444	170.1		0.0881	0.0401	1.116	1.122	1.120	1.074		1.090

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	ENTRY	CONE	PROPELLANT	SAMP.RATE
406	1	66/033/1	54	2%	20

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	376	633	0.897	444	170.3		0.0883	0.0403	1.117	1.123	1.122	1.074		1.090
98	196	376	633	0.897	442	169.5		0.0884	0.0403	1.114	1.123	1.120	1.073		1.090
99	198	376	633	0.897	442	169.5		0.0886	0.0404	1.114	1.125	1.120	1.074		1.090
100	200	376	633	0.897	442	169.3		0.0885	0.0403	1.114	1.126	1.120	1.074		1.090
101	202	376	633	0.897	440	168.8		0.0885	0.0403	1.113	1.125	1.119	1.073		1.088
102	204	376	633	0.897	441	169.0		0.0887	0.0405	1.114	1.126	1.122	1.074		1.090
103	206	376	633	0.897	439	168.2		0.0887	0.0405	1.113	1.123	1.119	1.071		1.088
104	208	376	633	0.897	438	168.0		0.0885	0.0405	1.113	1.122	1.119	1.071		1.088
105	210	376	633	0.897	438	168.0		0.0885	0.0406	1.114	1.123	1.120	1.073		1.090
106	212	376	633	0.897	437	167.4		0.0882	0.0406	1.110	1.120	1.117	1.068		1.087
107	214	376	633	0.897	437	167.4		0.0882	0.0408	1.111	1.123	1.117	1.070		1.087
108	216	376	633	0.897	436	167.0		0.0879	0.0408	1.110	1.123	1.117	1.068		1.085
109	218	376	633	0.897	435	166.9		0.0877	0.0407	1.107	1.123	1.114	1.067		1.084
110	220	376	633	0.897	435	166.9		0.0876	0.0406	1.110	1.125	1.117	1.070		1.085
111	222	376	633	0.897	434	166.5		0.0874	0.0407	1.108	1.120	1.114	1.067		1.084
112	224	376	633	0.897	433	166.1		0.0874	0.0407	1.108	1.119	1.114	1.067		1.084
113	226	376	633	0.897	433	165.9		0.0875	0.0406	1.108	1.119	1.114	1.067		1.085
114	228	376	633	0.897	432	165.7		0.0872	0.0405	1.108	1.117	1.113	1.064		1.082
115	230	376	633	0.897	431	165.3		0.0873	0.0405	1.107	1.120	1.114	1.065		1.084
116	232	376	633	0.897	431	165.1		0.0872	0.0404	1.105	1.120	1.114	1.065		1.082
117	234	376	633	0.897	430	164.7		0.0873	0.0404	1.105	1.120	1.113	1.064		1.082
118	236	376	633	0.897	429	164.4		0.0872	0.0403	1.103	1.120	1.113	1.065		1.082
119	238	376	633	0.897	429	164.4		0.0872	0.0403	1.105	1.119	1.111	1.064		1.082
120	240	376	633	0.897	428	164.0		0.0872	0.0401	1.105	1.117	1.111	1.064		1.082
121	242	376	633	0.897	428	164.0		0.0871	0.0401	1.107	1.117	1.111	1.064		1.082
122	244	376	633	0.897	428	164.0		0.0872	0.0402	1.107	1.119	1.113	1.064		1.082
123	246	376	633	0.897	426	163.4		0.0871	0.0400	1.105	1.117	1.111	1.062		1.082
124	248	376	633	0.897	427	163.6		0.0871	0.0401	1.105	1.119	1.111	1.064		1.082
125	250	376	633	0.897	426	163.4		0.0871	0.0400	1.105	1.120	1.111	1.062		1.082
126	252	376	633	0.897	426	163.2		0.0870	0.0400	1.102	1.117	1.110	1.061		1.080
127	254	376	633	0.897	427	163.6		0.0871	0.0401	1.105	1.119	1.113	1.064		1.082
128	256	376	633	0.897	425	163.0		0.0871	0.0400	1.103	1.116	1.111	1.062		1.080

12234

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	MISSILE	CONF	PROPELLANT	SAMP.RATE
408	1	66/033/1	34	2/AL	20

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
129	258	376	633	0.897	425	163.0		0.0871	0.0401	1.105	1.114	1.113	1.062		1.082
130	260	376	633	0.897	426	163.2		0.0872	0.0402	1.107	1.116	1.114	1.065		1.084
131	262	376	633	0.897	425	162.8		0.0871	0.0399	1.103	1.113	1.111	1.062		1.082
132	264	376	633	0.897	426	163.2		0.0872	0.0401	1.105	1.117	1.114	1.064		1.082
133	266	376	633	0.897	426	163.2		0.0872	0.0401	1.105	1.119	1.114	1.064		1.082
134	268	376	633	0.897	426	163.2		0.0870	0.0401	1.103	1.119	1.113	1.062		1.080
135	270	376	633	0.897	426	163.4		0.0872	0.0401	1.107	1.120	1.114	1.067		1.082
136	272	376	633	0.897	426	163.2		0.0870	0.0401	1.103	1.114	1.111	1.062		1.080
137	274	376	633	0.897	425	163.0		0.0871	0.0401	1.103	1.113	1.111	1.062		1.080
138	276	376	633	0.897	425	162.8		0.0872	0.0402	1.105	1.113	1.111	1.062		1.082
139	278	376	633	0.897	424	162.6		0.0872	0.0401	1.102	1.113	1.110	1.061		1.079
140	280	376	633	0.897	423	162.3		0.0874	0.0402	1.102	1.114	1.111	1.062		1.080
141	282	376	633	0.897	423	162.1		0.0873	0.0402	1.100	1.114	1.110	1.061		1.079
142	284	376	633	0.897	422	161.9		0.0873	0.0402	1.099	1.114	1.108	1.059		1.079
143	286	376	633	0.897	421	161.3		0.0874	0.0402	1.099	1.113	1.108	1.061		1.080
144	288	376	633	0.897	421	161.3		0.0876	0.0402	1.100	1.111	1.108	1.059		1.079
145	290	376	633	0.897	420	160.9		0.0876	0.0402	1.100	1.110	1.108	1.059		1.079
146	292	376	633	0.897	419	160.7		0.0877	0.0402	1.100	1.110	1.108	1.059		1.080
147	294	376	633	0.897	420	160.9		0.0878	0.0402	1.102	1.110	1.110	1.059		1.080
148	296	376	633	0.897	418	160.1		0.0877	0.0401	1.099	1.110	1.108	1.057		1.079
149	298	376	633	0.897	418	160.3		0.0878	0.0401	1.099	1.111	1.110	1.057		1.079
150	300	376	633	0.897	418	160.1		0.0879	0.0401	1.097	1.113	1.110	1.057		1.079
151	302	376	633	0.897	417	159.8		0.0879	0.0400	1.096	1.111	1.108	1.056		1.079
152	304	376	633	0.897	418	160.1		0.0882	0.0401	1.100	1.113	1.111	1.059		1.080
153	306	376	633	0.897	417	159.8		0.0881	0.0400	1.099	1.110	1.108	1.057		1.080
154	308	376	633	0.897	417	159.8		0.0883	0.0400	1.100	1.108	1.108	1.057		1.080
155	310	376	633	0.897	417	160.0		0.0883	0.0401	1.102	1.110	1.110	1.059		1.082
156	312	376	633	0.897	416	159.6		0.0882	0.0398	1.099	1.107	1.107	1.056		1.079
157	314	376	633	0.897	417	159.8		0.0886	0.0400	1.099	1.111	1.108	1.057		1.079
158	316	376	633	0.897	417	159.8		0.0886	0.0400	1.097	1.111	1.108	1.057		1.079
159	318	376	633	0.897	416	159.6		0.0887	0.0400	1.096	1.110	1.107	1.056		1.077
160	320	376	633	0.897	417	160.0		0.0888	0.0402	1.099	1.113	1.110	1.059		1.079

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	FIRST	CONF	PROPELLANT	SAMP.RATE
406	1	66/033/1	34	2AL	20

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	376	633	0.897	417	159.8		0.0889	0.0400	1.097	1.108	1.107	1.056		1.077
162	324	376	633	0.897	417	160.0		0.0889	0.0399	1.099	1.108	1.107	1.056		1.077
163	326	376	633	0.897	417	160.0		0.0891	0.0401	1.099	1.110	1.108	1.057		1.079
164	328	376	633	0.897	418	160.1		0.0892	0.0400	1.099	1.108	1.107	1.054		1.077
165	330	376	633	0.897	418	160.3		0.0892	0.0401	1.099	1.111	1.108	1.057		1.077
166	332	376	633	0.897	418	160.3		0.0894	0.0401	1.099	1.113	1.108	1.057		1.077
167	334	376	633	0.897	419	160.5		0.0893	0.0400	1.097	1.113	1.107	1.057		1.077
168	336	376	633	0.897	419	160.5		0.0893	0.0400	1.099	1.114	1.108	1.059		1.077
169	338	376	633	0.897	420	160.9		0.0892	0.0401	1.100	1.113	1.108	1.059		1.077
170	340	376	633	0.897	420	160.9		0.0892	0.0402	1.100	1.113	1.107	1.059		1.077
171	342	376	633	0.897	420	160.9		0.0892	0.0402	1.102	1.113	1.108	1.059		1.079
172	344	376	633	0.897	421	161.5		0.0891	0.0403	1.103	1.113	1.110	1.061		1.079
173	346	376	633	0.897	420	160.9		0.0889	0.0403	1.100	1.113	1.107	1.059		1.077
174	348	376	633	0.897	421	161.3		0.0888	0.0403	1.100	1.114	1.108	1.059		1.077
175	350	376	633	0.897	420	161.1		0.0888	0.0405	1.099	1.114	1.107	1.059		1.077
176	352	376	633	0.897	419	160.5		0.0888	0.0405	1.096	1.113	1.105	1.056		1.076
177	354	376	633	0.897	419	160.5		0.0889	0.0407	1.099	1.113	1.107	1.057		1.077
178	356	376	633	0.897	416	159.6		0.0890	0.0407	1.097	1.110	1.105	1.056		1.076
179	358	376	633	0.897	413	158.4		0.0893	0.0410	1.096	1.108	1.105	1.054		1.076
180	360	376	633	0.897	410	157.3		0.0898	0.0415	1.097	1.108	1.105	1.056		1.077
181	362	376	633	0.897	405	155.2		0.0900	0.0414	1.091	1.102	1.099	1.050		1.074
182	364	376	633	0.897	400	153.2		0.0908	0.0419	1.090	1.103	1.097	1.048		1.074
183	366	376	633	0.897	393	150.6		0.0914	0.0423	1.084	1.099	1.094	1.045		1.073
184	368	376	633	0.897	384	147.3		0.0921	0.0425	1.079	1.093	1.088	1.039		1.070
185	370	376	633	0.897	376	144.0		0.0929	0.0430	1.076	1.090	1.085	1.038		1.071
186	372	376	633	0.897	365	140.0		0.0934	0.0432	1.068	1.079	1.077	1.028		1.067
187	374	376	633	0.897	354	135.8		0.0942	0.0435	1.062	1.073	1.070	1.022		1.065
188	376	376	633	0.897	343	131.6		0.0949	0.0437	1.056	1.065	1.065	1.016		1.064
189	378	376	633	0.897	331	127.0		0.0955	0.0440	1.048	1.056	1.056	1.007		1.059
190	380	376	633	0.897	319	122.2		0.0964	0.0443	1.041	1.051	1.050	1.001		1.057
191	382	376	633	0.897	307	117.6		0.0969	0.0444	1.031	1.044	1.042	0.993		1.054
192	384	376	633	0.897	294	112.8		0.0974	0.0444	1.024	1.036	1.034	0.985		1.051

12235

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
408	1	66/033/1	34	2,4L	20

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
193	386	376	633	0.897	281	107.8		0.0978	0.0447	1.016	1.028	1.027	0.979		1.051
194	388	376	633	0.897	270	103.4		0.0985	0.0447	1.010	1.019	1.019	0.970		1.048
195	390	376	633	0.897	257	98.6		0.0987	0.0448	1.002	1.008	1.011	0.962		1.047
196	392	376	633	0.897	246	94.2		0.0989	0.0446	0.995	0.999	1.004	0.955		1.045
197	394	376	633	0.897	235	90.0		0.0993	0.0448	0.987	0.993	0.996	0.949		1.042
198	396	376	633	0.897	223	85.4		0.0996	0.0445	0.978	0.984	0.987	0.939		1.041
199	398	376	633	0.897	213	81.6		0.0996	0.0445	0.970	0.978	0.979	0.933		1.039
200	400	376	633	0.897	202	77.5		0.0998	0.0443	0.962	0.970	0.972	0.927		1.036
201	402	376	633	0.897	192	73.7		0.0998	0.0438	0.953	0.959	0.962	0.918		1.034
202	404	376	633	0.897	184	70.4		0.1004	0.0439	0.952	0.953	0.958	0.915		1.034
203	406	376	633	0.897	174	66.6		0.1004	0.0435	0.944	0.941	0.950	0.907		1.033
204	408	376	633	0.897	165	63.3		0.1007	0.0433	0.938	0.932	0.942	0.903		1.031
205	410	376	633	0.897	157	60.3		0.1012	0.0433	0.935	0.926	0.939	0.900		1.031
206	412	376	633	0.897	148	56.6		0.1014	0.0427	0.927	0.916	0.930	0.892		1.028
207	414	376	633	0.897	141	53.9		0.1022	0.0427	0.926	0.913	0.929	0.890		1.028
208	416	376	633	0.897	133	51.1		0.1019	0.0425	0.923	0.910	0.924	0.887		1.028
209	418	376	633	0.897	125	48.0		0.1026	0.0426	0.919	0.904	0.919	0.883		1.027
210	420	376	633	0.897	119	45.5		0.1037	0.0422	0.921	0.903	0.919	0.886		1.027
211	422	376	633	0.897	111	42.6		0.1041	0.0419	0.919	0.896	0.916	0.881		1.025
212	424	376	633	0.897	105	40.1		0.1048	0.0412	0.923	0.896	0.916	0.883		1.025
213	426	376	633	0.897	99	37.8		0.1056	0.0411	0.927	0.898	0.919	0.886		1.025

MACH	Q	P	PT	PREF	PCAL
0.897	211.7	376	633	1446	2118

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LISC	TUNNEL	CONF	PROPELLANT	SAMP.RATE
409	1	66/033/1	34	15;M.L	500

FRAME	TIME	Pn	Pon	MACHn	PCOn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	376	632	0.894	710	271.9		0.0625	0.0335	1.188	1.198	1.194	1.142		1.122
2	4	376	632	0.894	767	293.7		0.0667	0.0355	1.206	1.218	1.212	1.160		1.133
3	6	376	632	0.894	817	312.7		0.0706	0.0372	1.220	1.235	1.226	1.179		1.140
4	8	376	632	0.894	858	328.6		0.0747	0.0386	1.232	1.249	1.238	1.192		1.149
5	10	376	632	0.894	894	342.2		0.0787	0.0398	1.244	1.260	1.249	1.205		1.156
6	12	376	632	0.894	920	352.3		0.0824	0.0406	1.252	1.266	1.255	1.212		1.160
7	14	376	632	0.894	940	360.0		0.086	0.0415	1.260	1.272	1.261	1.218		1.165
8	16	376	632	0.894	954	365.3		0.0897	0.0423	1.267	1.280	1.267	1.226		1.171
9	18	376	632	0.894	961	368.0		0.0928	0.0429	1.267	1.283	1.269	1.228		1.172
10	20	376	632	0.894	966	369.9		0.0959	0.0436	1.272	1.289	1.272	1.231		1.175
11	22	376	632	0.894	967	370.3		0.0987	0.0441	1.273	1.292	1.273	1.232		1.177
12	24	376	632	0.894	965	369.5		0.1013	0.0445	1.272	1.290	1.272	1.231		1.179
13	26	376	632	0.894	963	368.6		0.1041	0.0448	1.277	1.293	1.275	1.234		1.182
14	28	376	632	0.894	957	366.5		0.1068	0.0449	1.275	1.289	1.273	1.231		1.180
15	30	376	632	0.894	953	364.9		0.1094	0.0449	1.277	1.287	1.273	1.231		1.182
16	32	376	632	0.894	949	363.2		0.1121	0.0449	1.278	1.289	1.275	1.232		1.183
17	34	376	632	0.894	944	361.3		0.1146	0.0447	1.275	1.286	1.270	1.226		1.182
18	36	376	632	0.894	941	360.4		0.1168	0.0447	1.277	1.290	1.273	1.231		1.183
19	38	376	632	0.894	939	359.4		0.1185	0.0447	1.275	1.290	1.273	1.229		1.183
20	40	376	632	0.894	936	358.4		0.1194	0.0447	1.275	1.292	1.273	1.229		1.185
21	42	376	632	0.894	935	357.9		0.1195	0.0449	1.278	1.295	1.277	1.232		1.188
22	44	376	632	0.894	933	357.3		0.1188	0.0450	1.278	1.292	1.275	1.231		1.186
23	46	376	632	0.894	932	356.7		0.1173	0.0452	1.280	1.290	1.277	1.231		1.188
24	48	376	632	0.894	931	356.5		0.1152	0.0454	1.281	1.292	1.277	1.232		1.189
25	50	376	632	0.894	931	356.5		0.1125	0.0455	1.281	1.292	1.277	1.231		1.189
26	52	376	632	0.894	930	356.1		0.1097	0.0455	1.280	1.292	1.278	1.232		1.191
27	54	376	632	0.894	930	356.1		0.1067	0.0453	1.280	1.293	1.278	1.232		1.191
28	56	376	632	0.894	930	356.1		0.1036	0.0451	1.280	1.293	1.278	1.232		1.191
29	58	376	632	0.894	930	356.1		0.1007	0.0448	1.278	1.292	1.277	1.232		1.191
30	60	376	632	0.894	932	356.7		0.0981	0.0445	1.281	1.293	1.278	1.234		1.191
31	62	376	632	0.894	932	356.7		0.0959	0.0442	1.281	1.290	1.278	1.232		1.191
32	64	376	632	0.894	933	357.3		0.0941	0.0439	1.283	1.290	1.278	1.232		1.191

12236

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTS	CONF	PROPELLANT	SAMP.RATE
409	1	66/C33/1	34	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	376	632	0.894	936	358.2		0.0926	0.0438	1.284	1.292	1.280	1.234		1.192
34	68	376	632	0.894	936	358.4		0.0912	0.0435	1.280	1.289	1.277	1.232		1.191
35	70	376	632	0.894	940	360.0		0.0900	0.0433	1.280	1.292	1.278	1.232		1.191
36	72	376	632	0.894	943	361.1		0.0890	0.0430	1.280	1.290	1.278	1.232		1.189
37	74	376	632	0.894	946	362.1		0.0882	0.0427	1.276	1.290	1.277	1.231		1.188
38	76	376	632	0.894	950	363.6		0.0878	0.0424	1.281	1.292	1.280	1.234		1.189
39	78	376	632	0.894	952	364.4		0.0874	0.0421	1.280	1.287	1.277	1.232		1.188
40	80	376	632	0.894	954	365.3		0.0874	0.0418	1.231	1.286	1.277	1.232		1.188
41	82	376	632	0.894	956	366.1		0.0876	0.0416	1.281	1.287	1.278	1.234		1.189
42	84	376	632	0.894	958	366.7		0.0878	0.0414	1.278	1.284	1.275	1.229		1.185
43	86	376	632	0.894	960	367.4		0.0880	0.0413	1.278	1.286	1.277	1.231		1.186
44	88	376	632	0.894	961	368.0		0.0879	0.0412	1.277	1.286	1.275	1.231		1.185
45	90	376	632	0.894	962	368.4		0.0878	0.0412	1.275	1.286	1.273	1.226		1.183
46	92	376	632	0.894	963	368.8		0.0878	0.0412	1.275	1.286	1.275	1.231		1.185
47	94	376	632	0.894	964	369.0		0.0876	0.0411	1.275	1.283	1.273	1.228		1.183
48	96	376	632	0.894	964	369.0		0.0876	0.0412	1.275	1.281	1.273	1.228		1.182
49	98	376	632	0.894	964	369.0		0.0875	0.0413	1.277	1.281	1.273	1.229		1.183
50	100	376	632	0.894	964	369.2		0.0874	0.0414	1.277	1.281	1.273	1.228		1.182
51	102	376	632	0.894	963	368.8		0.0873	0.0415	1.275	1.283	1.273	1.228		1.182
52	104	376	632	0.894	963	368.6		0.0872	0.0418	1.275	1.283	1.273	1.228		1.182
53	106	376	632	0.894	962	368.2		0.0873	0.0419	1.273	1.284	1.272	1.228		1.180
54	108	376	632	0.894	960	367.6		0.0872	0.0419	1.273	1.285	1.272	1.226		1.182
55	110	376	632	0.894	961	367.8		0.0871	0.0419	1.277	1.281	1.273	1.228		1.182
56	112	376	632	0.894	960	367.4		0.0869	0.0416	1.277	1.280	1.272	1.228		1.182
57	114	376	632	0.894	960	367.4		0.0869	0.0414	1.278	1.280	1.273	1.228		1.183
58	116	376	632	0.894	961	367.8		0.0871	0.0413	1.281	1.283	1.275	1.231		1.185
59	118	376	632	0.894	960	367.4		0.0873	0.0412	1.278	1.281	1.273	1.229		1.183
60	120	376	632	0.894	960	367.4		0.0876	0.0412	1.278	1.284	1.275	1.231		1.185
61	122	376	632	0.894	958	366.7		0.0880	0.0411	1.278	1.286	1.275	1.231		1.185
62	124	376	632	0.894	955	365.5		0.0884	0.0410	1.275	1.286	1.272	1.229		1.183
63	126	376	632	0.894	952	364.4		0.0892	0.0412	1.280	1.287	1.275	1.232		1.185
64	128	376	632	0.894	947	362.5		0.0900	0.0412	1.277	1.284	1.272	1.229		1.183

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National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	ENTSTP	CONF	PROPELLANT	SAMP.RATE
409	1	66/033/1	34	15%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
65	130	376	632	0.894	942	360.7		0.0909	0.0412	1.278	1.283	1.272	1.229		1.183
66	132	376	632	0.894	938	359.2		0.0918	0.0414	1.280	1.286	1.273	1.231		1.186
67	134	376	632	0.894	934	357.5		0.0924	0.0414	1.275	1.284	1.270	1.228		1.185
68	136	376	632	0.894	930	356.1		0.0926	0.0415	1.278	1.289	1.272	1.229		1.185
69	138	376	632	0.894	927	355.0		0.0926	0.0416	1.277	1.289	1.272	1.228		1.185
70	140	376	632	0.894	924	353.7		0.0929	0.0417	1.275	1.290	1.270	1.228		1.183
71	142	376	632	0.894	921	352.7		0.0928	0.0419	1.278	1.292	1.273	1.231		1.186
72	144	376	632	0.894	919	351.9		0.0926	0.0420	1.277	1.289	1.272	1.228		1.185
73	146	376	632	0.894	917	351.2		0.0924	0.0422	1.277	1.287	1.272	1.228		1.185
74	148	376	632	0.894	915	350.4		0.0924	0.0424	1.278	1.286	1.272	1.228		1.186
75	150	376	632	0.894	915	350.2		0.0922	0.0425	1.277	1.284	1.272	1.226		1.185
76	152	376	632	0.894	912	349.1		0.0923	0.0428	1.275	1.284	1.272	1.228		1.185
77	154	376	632	0.894	910	348.5		0.0924	0.0430	1.273	1.284	1.272	1.226		1.183
78	156	376	632	0.894	908	347.7		0.0925	0.0432	1.272	1.283	1.269	1.224		1.183
79	158	376	632	0.894	906	346.8		0.0925	0.0432	1.270	1.281	1.269	1.224		1.182
80	160	376	632	0.894	905	346.4		0.0923	0.0434	1.272	1.280	1.269	1.224		1.182
81	162	376	632	0.894	902	345.4		0.0920	0.0433	1.272	1.277	1.267	1.221		1.180
82	164	376	632	0.894	900	344.7		0.0915	0.0432	1.273	1.275	1.267	1.221		1.180
83	166	376	632	0.894	899	344.3		0.0911	0.0429	1.273	1.277	1.269	1.224		1.182
84	168	376	632	0.894	896	343.1		0.0905	0.0426	1.270	1.275	1.267	1.221		1.180
85	170	376	632	0.894	896	342.9		0.0900	0.0423	1.270	1.277	1.267	1.221		1.179
86	172	376	632	0.894	894	342.2		0.0897	0.0420	1.270	1.277	1.267	1.221		1.179
87	174	376	632	0.894	892	341.6		0.0894	0.0417	1.267	1.275	1.266	1.220		1.177
88	176	376	632	0.894	892	341.4		0.0895	0.0417	1.270	1.278	1.269	1.225		1.179
89	178	376	632	0.894	890	340.6		0.0896	0.0415	1.269	1.273	1.266	1.221		1.177
90	180	376	632	0.894	888	340.1		0.0898	0.0414	1.270	1.272	1.266	1.220		1.177
91	182	376	632	0.894	887	339.7		0.0900	0.0413	1.270	1.273	1.267	1.223		1.179
92	184	376	632	0.894	885	338.9		0.0900	0.0410	1.267	1.270	1.264	1.218		1.175
93	186	376	632	0.894	884	338.5		0.0901	0.0409	1.267	1.273	1.266	1.220		1.175
94	188	376	632	0.894	882	337.8		0.0902	0.0407	1.266	1.273	1.264	1.220		1.175
95	190	376	632	0.894	880	336.8		0.0904	0.0406	1.264	1.273	1.264	1.218		1.174
96	192	376	632	0.894	879	336.4		0.0906	0.0406	1.267	1.275	1.264	1.221		1.175

12237

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National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TUNNEL	CONF	PROPELLANT	SAMPLING
409	1	66/063/1	34	15%AI	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	376	632	0.894	877	335.7		0.0907	0.0406	1.267	1.270	1.265	1.218		1.174
98	196	376	632	0.894	875	335.1		0.0908	0.0406	1.267	1.269	1.264	1.218		1.174
99	198	376	632	0.894	874	334.7		0.0908	0.0407	1.269	1.270	1.264	1.220		1.175
100	200	376	632	0.894	873	334.3		0.0907	0.0409	1.269	1.270	1.264	1.218		1.175
101	202	376	632	0.894	871	333.4		0.0908	0.0411	1.267	1.272	1.264	1.220		1.175
102	204	376	632	0.894	869	332.8		0.0908	0.0413	1.267	1.272	1.264	1.220		1.174
103	206	376	632	0.894	867	331.8		0.0905	0.0415	1.266	1.273	1.264	1.218		1.174
104	208	376	632	0.894	863	330.5		0.0908	0.0418	1.264	1.272	1.263	1.217		1.174
105	210	376	632	0.894	860	329.2		0.0909	0.0422	1.266	1.272	1.265	1.217		1.174
106	212	376	632	0.894	854	326.9		0.0910	0.0425	1.264	1.267	1.261	1.215		1.172
107	214	376	632	0.894	846	324.0		0.0912	0.0430	1.264	1.266	1.261	1.214		1.172
108	216	376	632	0.894	837	320.3		0.0915	0.0435	1.264	1.264	1.261	1.214		1.171
109	218	376	632	0.894	822	314.8		0.0916	0.0439	1.257	1.260	1.255	1.208		1.169
110	220	376	632	0.894	806	308.7		0.0918	0.0444	1.254	1.258	1.254	1.205		1.166
111	222	376	632	0.894	785	300.6		0.0921	0.0448	1.247	1.252	1.247	1.200		1.163
112	224	376	632	0.894	760	290.9		0.0924	0.0450	1.240	1.243	1.238	1.191		1.159
113	226	376	632	0.894	732	280.3		0.0928	0.0453	1.235	1.237	1.234	1.186		1.157
114	228	376	632	0.894	700	267.9		0.0931	0.0451	1.224	1.224	1.221	1.175		1.149
115	230	376	632	0.894	667	255.3		0.0933	0.0449	1.217	1.214	1.214	1.166		1.145
116	232	376	632	0.894	632	242.0		0.0936	0.0448	1.209	1.205	1.205	1.159		1.142
117	234	376	632	0.894	597	228.6		0.0938	0.0443	1.195	1.189	1.189	1.145		1.133
118	236	376	632	0.894	564	215.8		0.0943	0.0440	1.185	1.180	1.177	1.134		1.128
119	238	376	632	0.894	531	203.2		0.0945	0.0435	1.171	1.166	1.163	1.120		1.120
120	240	376	632	0.894	499	190.9		0.0949	0.0429	1.157	1.153	1.149	1.107		1.114
121	242	376	632	0.894	469	179.6		0.0953	0.0423	1.146	1.140	1.137	1.097		1.110
122	244	376	632	0.894	441	168.9		0.0954	0.0415	1.134	1.122	1.122	1.081		1.102
123	246	376	632	0.894	414	158.6		0.0960	0.0409	1.122	1.108	1.110	1.067		1.096
124	248	376	632	0.894	390	149.2		0.0963	0.0402	1.110	1.094	1.097	1.056		1.091
125	250	376	632	0.894	366	140.2		0.0966	0.0396	1.097	1.082	1.084	1.042		1.085
126	252	376	632	0.894	344	131.6		0.0967	0.0390	1.084	1.070	1.073	1.030		1.082
127	254	376	632	0.894	323	123.6		0.0972	0.0385	1.071	1.059	1.061	1.018		1.076
128	256	376	632	0.894	302	115.7		0.0974	0.0379	1.058	1.047	1.047	1.005		1.073

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National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TAPE	CONF	PROPELLANT	RATE
409	1	66/033/1	34	[illegible]AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
129	258	376	632	0.894	282	108.0		0.0975	0.0374	1.044	1.032	1.035	0.995		1.068
130	260	376	632	0.894	264	101.2		0.0978	0.0369	1.033	1.018	1.024	0.983		1.065
131	262	376	632	0.894	245	93.9		0.0983	0.0365	1.021	1.002	1.012	0.970		1.062
132	264	376	632	0.894	228	87.4		0.0983	0.0362	1.010	0.990	1.001	0.960		1.059
133	266	376	632	0.894	212	81.2		0.0985	0.0359	1.001	0.979	0.992	0.950		1.058
134	268	376	632	0.894	195	74.5		0.0986	0.0352	0.986	0.966	0.978	0.938		1.053
135	270	376	632	0.894	180	69.0		0.0990	0.0350	0.978	0.956	0.970	0.930		1.050
136	272	376	632	0.894	166	63.4		0.0992	0.0345	0.969	0.946	0.961	0.921		1.047
137	274	376	632	0.894	152	58.1		0.0992	0.0337	0.958	0.934	0.952	0.911		1.044
138	276	376	632	0.894	140	53.7		0.0997	0.0340	0.955	0.927	0.949	0.907		1.044
139	278	376	632	0.894	127	48.7		0.0994	0.0331	0.947	0.918	0.941	0.900		1.041
140	280	376	632	0.894	117	44.7		0.0998	0.0326	0.944	0.912	0.938	0.895		1.039
141	282	376	632	0.894	107	40.9		0.1004	0.0324	0.943	0.911	0.938	0.894		1.039
142	284	376	632	0.894	97	37.0		0.0997	0.0316	0.938	0.906	0.935	0.888		1.036
143	286	376	632	0.894	89	34.0		0.1012	0.0322	0.940	0.909	0.935	0.891		1.036
144	288	376	632	0.894	81	31.1		0.1015	0.0321	0.938	0.909	0.935	0.891		1.035
145	290	376	632	0.894	74	28.2		0.2972	0.0327	0.937	0.909	0.935	0.889		1.035
146	292	376	632	0.894	68	25.9		0.1030	0.0341	0.940	0.911	0.937	0.894		1.035
147	294	376	632	0.894	62	23.8		0.1036	0.0339	0.944	0.909	0.937	0.892		1.033
148	296	376	632	0.894	57	21.9		0.1045	0.0360	0.949	0.911	0.940	0.895		1.033
149	298	376	632	0.894	53	20.2		0.1063	0.0381	0.956	0.912	0.943	0.901		1.035
150	300	376	632	0.894	50	19.0		0.1095	0.0394	0.963	0.915	0.946	0.904		1.033
151	302	376	632	0.894	46	17.5		0.1135	0.0429	0.969	0.920	0.952	0.911		1.035
152	304	376	632	0.894	44	16.7		0.1139	0.0448	0.975	0.924	0.955	0.915		1.035
153	306	376	632	0.894	41	15.8		0.1175	0.0476	0.979	0.929	0.958	0.921		1.035
154	308	376	632	0.894	39	14.8		0.1200	0.0506	0.986	0.930	0.961	0.926		1.035
155	310	376	632	0.894	38	14.6		0.1233	0.0539	0.992	0.934	0.966	0.930		1.036
156	312	376	632	0.894	36	13.9		0.1282	0.0569	0.996	0.935	0.967	0.934		1.035
157	314	376	632	0.894	35	13.5		0.1319	0.0599	0.999	0.938	0.970	0.936		1.036
158	316	376	632	0.894	35	13.5		0.1357	0.0628	1.004	0.945	0.973	0.943		1.036
159	318	376	632	0.894	33	12.7		0.1378	0.0635	1.001	0.943	0.972	0.941		1.035
160	320	376	632	0.894	33	12.7		0.1418	0.0666	1.001	0.947	0.975	0.945		1.035

12238

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST#	CONF	PROPELLANT	SAMP.RATE
409	1	66/033/1	34	15,AL	500

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.	
FRAME	TIME	Pr	PTr	MACHr	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
161	322	376	632	0.894	33	12.5		0.1460	0.0676	0.998	0.952	0.975	0.944		1.035
162	324	376	632	0.894	32	12.1		0.1485	0.0681	0.995	0.952	0.975	0.941		1.035
163	326	376	632	0.894	33	12.5		0.1501	0.0706	0.999	0.958	0.979	0.947		1.036
164	328	376	632	0.894	31	11.9		0.1552	0.0724	0.998	0.958	0.979	0.941		1.035
165	330	376	632	0.894	31	11.9		0.1573	0.0724	0.999	0.961	0.984	0.943		1.035
166	332	376	632	0.894	31	11.9		0.1595	0.0740	1.004	0.969	0.990	0.940		1.038
167	334	376	632	0.894	31	11.8		0.1599	0.0756	1.004	0.972	0.992	0.944		1.036
168	336	376	632	0.894	31	11.9		0.1616	0.0756	1.009	0.979	0.999	0.950		1.039
169	338	376	632	0.894	31	11.8		0.1642	0.0752	1.012	0.984	1.004	0.953		1.041
170	340	376	632	0.894	30	11.6		0.1669	0.0765	1.013	0.989	1.005	0.955		1.041
171	342	376	632	0.894	31	11.8		0.1664	0.0785	1.016	0.992	1.009	0.960		1.044
172	344	376	632	0.894	30	11.6		0.1669	0.0781	1.015	0.989	1.009	0.956		1.042
173	346	376	632	0.894	30	11.6		0.1692	0.0781	1.016	0.989	1.009	0.956		1.042
174	348	376	632	0.894	30	11.6		0.1692	0.0781	1.016	0.990	1.010	0.956		1.044
175	350	376	632	0.894	31	11.8		0.1686	0.0785	1.015	0.990	1.010	0.955		1.042
176	352	376	632	0.894	30	11.4		0.1720	0.0794	1.013	0.995	1.010	0.956		1.044
177	354	376	632	0.894	30	11.6		0.1714	0.0781	1.013	0.995	1.012	0.956		1.042
178	356	376	632	0.894	30	11.6		0.1714	0.0781	1.012	0.995	1.010	0.955		1.042
179	358	376	632	0.894	29	11.2		0.1749	0.0808	1.010	0.993	1.009	0.953		1.042
180	360	376	632	0.894	30	11.6		0.1714	0.0798	1.010	0.992	1.009	0.955		1.042
181	362	376	632	0.894	30	11.4		0.1720	0.0794	1.010	0.990	1.009	0.952		1.041
182	364	376	632	0.894	30	11.6		0.1714	0.0781	1.010	0.989	1.009	0.952		1.041
183	366	376	632	0.894	31	11.8		0.1707	0.0801	1.012	0.992	1.010	0.952		1.041
184	368	376	632	0.894	29	11.2		0.1727	0.0791	1.007	0.989	1.007	0.950		1.039
185	370	376	632	0.894	30	11.6		0.1714	0.0798	1.009	0.992	1.009	0.952		1.041
186	372	376	632	0.894	30	11.6		0.1714	0.0781	1.007	0.992	1.009	0.950		1.039
187	374	376	632	0.894	30	11.4		0.1720	0.0778	1.005	0.990	1.007	0.949		1.039
188	376	376	632	0.894	31	11.8		0.1707	0.0801	1.010	0.992	1.010	0.953		1.041
189	378	376	632	0.894	30	11.4		0.1720	0.0794	1.009	0.989	1.009	0.950		1.039
190	380	376	632	0.894	30	11.4		0.1720	0.0794	1.012	0.989	1.010	0.952		1.039
191	382	376	632	0.894	30	11.6		0.1714	0.0798	1.015	0.990	1.013	0.955		1.042
192	384	376	632	0.89	30	11.4		0.1696	0.0778	1.012	0.989	1.010	0.952		1.039

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TUNNEL	SCAN	PROPELLANT	SAMPLE RATE
409	1	66/035/1	34	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P5/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
193	386	376	632	0.894	30	11.4		0.1742	0.0811	1.013	0.992	1.012	0.956		1.041
194	388	376	632	0.894	30	11.6		0.1714	0.0798	1.015	0.993	1.012	0.956		1.039
195	390	376	632	0.894	30	11.4		0.1742	0.0794	1.012	0.993	1.012	0.955		1.039
196	392	376	632	0.894	30	11.4		0.1742	0.0828	1.015	0.995	1.013	0.956		1.042
197	394	376	632	0.894	30	11.4		0.1720	0.0794	1.015	0.992	1.010	0.956		1.041
198	396	376	632	0.894	30	11.4		0.1720	0.0794	1.016	0.990	1.012	0.955		1.039
199	398	376	632	0.894	30	11.4		0.1742	0.0811	1.016	0.990	1.012	0.956		1.041
200	400	376	632	0.894	30	11.6		0.1714	0.0798	1.016	0.990	1.010	0.955		1.041
201	402	376	632	0.894	30	11.4		0.1720	0.0811	1.015	0.992	1.010	0.956		1.041
202	404	376	632	0.894	30	11.6		0.1714	0.0798	1.015	0.993	1.010	0.956		1.039
203	406	376	632	0.894	30	11.4		0.1720	0.0794	1.013	0.993	1.010	0.955		1.039
204	408	376	632	0.894	29	11.2		0.1727	0.0808	1.013	0.993	1.010	0.956		1.039
205	410	376	632	0.894	30	11.6		0.1714	0.0798	1.016	0.993	1.012	0.956		1.039
206	412	376	632	0.894	30	11.4		0.1720	0.0794	1.015	0.992	1.012	0.955		1.039
207	414	376	632	0.894	30	11.4		0.1742	0.0794	1.016	0.990	1.012	0.955		1.039
208	416	376	632	0.894	30	11.6		0.1736	0.0814	1.018	0.993	1.015	0.958		1.041
209	418	376	632	0.894	29	11.2		0.1727	0.0808	1.015	0.993	1.013	0.955		1.041
210	420	376	632	0.894	30	11.6		0.1714	0.0798	1.016	0.996	1.015	0.955		1.041
211	422	376	632	0.894	30	11.4		0.1742	0.0811	1.016	0.998	1.015	0.958		1.041
212	424	376	632	0.894	30	11.4		0.1720	0.0778	1.013	0.996	1.013	0.956		1.041
213	426	376	632	0.894	31	11.8		0.1707	0.0801	1.018	0.999	1.016	0.960		1.042

MACH	Q	P	PT	PREF	PCAL
0.894	210.3	376	632	1441	2118

12239

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Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	DISC	TUNNEL	CONF	PROPELLANT	SAMP.RATE
413	1	66/033/1	38	15%AL	500

FRAME	TIME	Tn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	376	634	0.897	927	354.7		0.0196	0.0087	1.056	1.086	1.08[illegible]	1.027		1.065
2	4	376	634	0.897	1028	393.3		0.0213	0.0093	1.073	1.107	1.096	1.044		1.073
3	6	376	634	0.897	1123	429.9		0.0231	0.0099	1.088	1.124	.108	1.059		1.079
4	8	376	634	0.897	1214	464.5		0.0250	0.0106	1.105	1.144	1.127	1.078		1.088
5	10	376	634	0.897	1295	495.7		0.0267	0.0111	1.118	1.154	1.136	1.090		1.095
6	12	376	634	0.897	1370	524.2		0.0286	0.0116	1.131	1.167	1.148	1.102		1.101
7	14	376	634	0.897	1436	549.7		0.0304	0.0121	1.142	1.177	1.159	1.116		1.107
8	16	376	634	0.897	1494	571.7		0.0323	0.0125	1.150	1.186	1.163	1.122		1.110
9	18	376	634	0.897	1543	590.6		0.0342	0.0129	1.157	1.196	1.173	1.131		1.116
10	20	376	634	0.897	1585	606.5		0.0362	0.0133	1.162	1.203	1.179	1.137		1.119
11	22	376	634	0.897	1618	619.3		0.0383	0.0136	1.165	1.209	1.182	1.142		1.122
12	24	376	634	0.897	1646	629.8		0.0405	0.0138	1.170	1.212	1.186	1.147		1.127
13	26	376	634	0.897	1668	638.3		0.0422	0.0141	1.173	1.214	1.188	1.148		1.128
14	28	376	634	0.897	1684	644.4		0.0433	0.0143	1.176	1.214	1.191	1.150		1.130
15	30	376	634	0.897	1696	649.2		0.0439	0.0144	1.177	1.216	1.193	1.151		1.131
16	32	376	634	0.897	1706	652.8		0.0443	0.0146	1.179	1.217	1.193	1.153		1.133
17	34	376	634	0.897	1710	654.5		0.0443	0.0147	1.177	1.219	1.193	1.153		1.131
18	36	376	634	0.897	1714	655.9		0.0442	0.0148	1.179	1.220	1.194	1.153		1.130
19	38	376	634	0.897	1715	656.2		0.0440	0.0148	1.179	1.219	1.194	1.154		1.128
20	40	376	634	0.897	1713	655.7		0.0436	0.0149	1.177	1.217	1.194	1.153		1.122
21	42	376	634	0.897	1713	655.5		0.0433	0.0150	1.180	1.217	1.196	1.156		1.113
22	44	376	634	0.897	1709	654.1		0.0429	0.0150	1.180	1.214	1.196	1.156		1.098
23	46	376	634	0.897	1706	652.8		0.0425	0.0150	1.182	1.211	1.196	1.156		1.075
24	48	376	634	0.897	1702	651.5		0.0422	0.0151	1.183	1.209	1.196	1.157		1.052
25	50	376	634	0.897	1697	649.4		0.0418	0.0150	1.177	1.203	1.189	1.154		1.023
26	52	376	634	0.897	1693	647.8		0.0417	0.0151	1.177	1.203	1.189	1.154		0.997
27	54	376	634	0.897	1688	646.1		0.0415	0.0151	1.174	1.200	1.185	1.153		0.971
28	56	376	634	0.897	1683	644.0		0.0413	0.0151	1.170	1.196	1.179	1.150		0.948
29	58	376	634	0.897	1679	642.5		0.0413	0.0152	1.170	1.194	1.177	1.150		0.926
30	60	376	634	0.897	1673	640.4		0.0411	0.0151	1.165	1.185	1.171	1.145		0.905
31	62	376	634	0.897	1669	638.6		0.0410	0.0151	1.163	1.180	1.168	1.144		0.885
32	64	376	634	0.897	1664	636.7		0.0410	0.0152	1.162	1.179	1.167	1.142		0.866

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LINE	TUNNEL	CONE	PROPELLANT	SAMP.RATE
410	1	66/355/1	38	15%AL	500

FRAME	TIME	P1	P2n	MACHn	PTCn	(PTC/P)n	NOSE PRESS. (P2/PTC)n	(P5/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	376	634	0.897	1659	635.0		0.0410	0.0151	1.157	1.176	1.162	1.137		0.848
34	68	376	634	0.897	1655	633.3		0.0411	0.0152	1.157	1.177	1.163	1.137		0.836
35	70	376	634	0.897	1650	631.4		0.0412	0.0152	1.156	1.176	1.162	1.136		0.825
36	72	376	634	0.897	1645	629.5		0.0412	0.0152	1.154	1.176	1.160	1.133		0.814
37	74	376	634	0.897	1640	627.5		0.0412	0.0152	1.153	1.173	1.160	1.131		0.808
38	76	376	634	0.897	1635	625.6		0.0413	0.0152	1.151	1.170	1.157	1.127		0.802
39	78	376	634	0.897	1629	623.5		0.0412	0.0152	1.150	1.165	1.155	1.124		0.798
40	80	376	634	0.897	1625	621.8		0.0412	0.0152	1.147	1.160	1.150	1.121		0.798
41	82	376	634	0.897	1621	620.3		0.0412	0.0153	1.144	1.157	1.147	1.114		0.798
42	84	376	634	0.897	1616	618.4		0.0412	0.0153	1.139	1.153	1.142	1.110		0.798
43	86	376	634	0.897	1613	617.4		0.0412	0.0153	1.134	1.150	1.137	1.104		0.799
44	88	376	634	0.897	1610	616.2		0.0411	0.0153	1.130	1.145	1.133	1.098		0.799
45	90	376	634	0.897	1606	614.7		0.0410	0.0152	1.124	1.139	1.127	1.092		0.799
46	92	376	634	0.897	1604	614.0		0.0410	0.0153	1.125	1.139	1.125	1.088		0.799
47	94	376	634	0.897	1600	612.4		0.0409	0.0152	1.122	1.133	1.121	1.084		0.795
48	96	376	634	0.897	1596	610.9		0.0409	0.0152	1.124	1.130	1.119	1.082		0.791
49	98	376	634	0.897	1593	609.6		0.0408	0.0153	1.124	1.130	1.119	1.084		0.788
50	100	376	634	0.897	1587	607.3		0.0407	0.0152	1.121	1.125	1.116	1.081		0.784
51	102	376	634	0.897	1584	606.1		0.0407	0.0152	1.124	1.130	1.119	1.084		0.781
52	104	376	634	0.897	1579	604.2		0.0406	0.0152	1.124	1.130	1.119	1.085		0.778
53	106	376	634	0.897	1574	602.3		0.0405	0.0152	1.124	1.130	1.119	1.085		0.776
54	108	376	634	0.897	1570	600.9		0.0406	0.0152	1.127	1.133	1.122	1.092		0.778
55	110	376	634	0.897	1566	599.2		0.0404	0.0151	1.127	1.131	1.121	1.090		0.776
56	112	376	634	0.897	1562	597.9		0.0404	0.0151	1.128	1.131	1.122	1.093		0.779
57	114	376	634	0.897	1560	596.9		0.0403	0.0150	1.130	1.137	1.124	1.096		0.784
58	116	376	634	0.897	1557	595.8		0.0402	0.0149	1.128	1.151	1.123	1.095		0.785
59	118	376	634	0.897	1554	594.6		0.0402	0.0149	1.125	1.211	1.121	1.096		0.795
60	120	376	634	0.897	1550	593.3		0.0401	0.0148	1.119	1.315	1.116	1.093		0.802
61	122	376	634	0.897	1547	591.9		0.0399	0.0148	1.111	1.447	1.110	1.090		0.810
62	124	376	634	0.897	1542	590.2		0.0398	0.0148	1.107	1.591	1.105	1.087		0.824
63	126	376	634	0.897	1538	588.7		0.0396	0.0147	1.099	1.728	1.098	1.082		0.833
64	128	376	634	0.897	1534	587.0		0.0395	0.0147	1.095	1.845	1.092	1.078		0.842

12249

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National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN LIST CONFIG COMP PROPELLANT SLIP.R.TB
410 1 66/033/1 38 15/AL 500

FRAME	TIME	Pn	PTn	MACHn	PCCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	376	634	0.897	1530	535.4		0.0395	0.0146	1.090	1.930	1.087	1.076		0.885
66	132	376	634	0.897	1526	534.1		0.0391	0.0149	1.087	1.992	1.084	1.073		0.882
67	134	376	634	0.897	1522	532.4		0.0386	0.0149	1.082	2.035	1.081	1.077		0.886
68	136	376	634	0.897	1519	531.2		0.0386	0.0149	1.081	2.057	1.079	1.072		0.876
69	138	376	634	0.897	1516	530.1		0.0385	0.0150	1.079	2.057	1.079	1.072		0.876
70	140	376	634	0.897	1512	528.7		0.0383	0.0150	1.079	2.027	1.079	1.073		0.877
71	142	376	634	0.897	1511	528.4		0.0383	0.0151	1.084	1.972	1.082	1.076		0.880
72	144	376	634	0.897	1508	527.2		0.0382	0.0151	1.084	1.894	1.081	1.073		0.882
73	146	376	634	0.897	1506	526.4		0.0382	0.0151	1.085	1.805	1.082	1.076		0.883
74	148	376	634	0.897	1505	525.9		0.0383	0.0152	1.090	1.706	1.084	1.081		0.885
75	150	376	634	0.897	1501	524.5		0.0382	0.0151	1.087	1.607	1.082	1.079		0.880
76	152	376	634	0.897	1499	523.6		0.0385	0.0152	1.090	1.517	1.085	1.082		0.879
77	154	376	634	0.897	1495	522.0		0.0387	0.0152	1.092	1.435	1.085	1.084		0.876
78	156	376	634	0.897	1490	520.1		0.0388	0.0152	1.092	1.356	1.087	1.084		0.875
79	158	376	634	0.897	1484	517.8		0.0391	0.0152	1.093	1.294	1.092	1.090		0.875
80	160	376	634	0.897	1475	514.4		0.0395	0.0150	1.096	1.234	1.088	1.087		0.870
81	162	376	634	0.897	1465	510.8		0.0397	0.0149	1.098	1.186	1.088	1.087		0.866
82	164	376	634	0.897	1454	506.4		0.0400	0.0148	1.099	1.153	1.090	1.090		0.866
83	166	376	634	0.897	1440	501.0		0.0404	0.0147	1.098	1.124	1.088	1.085		0.862
84	168	376	634	0.897	1424	495.1		0.0409	0.0146	1.098	1.107	1.090	1.088		0.860
85	170	376	634	0.897	1406	488.2		0.0415	0.0145	1.096	1.093	1.090	1.087		0.859
86	172	376	634	0.897	1386	480.8		0.0421	0.0144	1.095	1.085	1.090	1.085		0.859
87	174	376	634	0.897	1363	471.5		0.0428	0.0144	1.096	1.081	1.093	1.087		0.863
88	176	376	634	0.897	1337	461.0		0.0437	0.0143	1.098	1.078	1.093	1.092		0.868
89	178	376	634	0.897	1309	451.1		0.0445	0.0143	1.098	1.078	1.095	1.092		0.874
90	180	376	634	0.897	1278	439.2		0.0455	0.0142	1.099	1.081	1.096	1.092		0.882
91	182	376	634	0.897	1245	426.6		0.0465	0.0142	1.099	1.085	1.098	1.099		0.888
92	184	376	634	0.897	1207	411.8		0.0475	0.0142	1.096	1.088	1.096	1.098		0.896
93	186	376	634	0.897	1167	396.5		0.0486	0.0142	1.095	1.092	1.098	1.096		0.905
94	188	376	634	0.897	1122	379.5		0.0497	0.0142	1.092	1.095	1.095	1.092		0.915
95	190	376	634	0.897	1074	360.9		0.0507	0.0143	1.085	1.092	1.090	1.087		0.926
96	192	376	634	0.897	1024	341.8		0.0517	0.0144	1.082	1.090	1.087	1.082		0.940

ORIGINAL PAGE IS
OF POOR QUALITY

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	DATESTP	CONF	PROPELLANT	BASE.RATE
410	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)r	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	376	634	0.897	969	370.9		0.0523	0.0144	1.075	1.082	1.079	1.055		0.951
98	196	376	634	0.897	914	349.7		0.0527	0.0145	1.067	1.075	1.072	1.047		0.961
99	198	376	634	0.897	857	327.9		0.0530	0.0147	1.061	1.070	1.064	1.043		0.975
100	200	376	634	0.897	797	305.1		0.0529	0.0146	1.046	1.059	1.052	1.029		0.984
101	202	376	634	0.897	739	282.9		0.0530	0.0148	1.036	1.052	1.043	1.021		0.997
102	204	376	634	0.897	681	260.5		0.0529	0.0149	1.024	1.041	1.030	1.009		1.006
103	206	376	634	0.897	623	238.5		0.0525	0.0150	1.009	1.027	1.015	0.997		1.013
104	208	376	634	0.897	569	217.3		0.0525	0.0152	1.000	1.018	1.004	0.987		1.024
105	210	376	634	0.897	516	197.6		0.0519	0.0151	0.984	1.000	0.987	0.972		1.029
106	212	376	634	0.897	467	178.8		0.0515	0.0151	0.972	0.986	0.974	0.958		1.032
107	214	376	634	0.897	422	161.6		0.0511	0.0152	0.960	0.974	0.961	0.948		1.036
108	216	376	634	0.897	381	145.7		0.0504	0.0150	0.945	0.960	0.949	0.934		1.036
109	218	376	634	0.897	344	131.5		0.0500	0.0150	0.934	0.951	0.941	0.926		1.038
110	220	376	634	0.897	310	118.5		0.0497	0.0149	0.923	0.941	0.932	0.915		1.038
111	222	376	634	0.897	280	107.1		0.0495	0.0149	0.912	0.932	0.925	0.908		1.036
112	224	376	634	0.897	254	97.1		0.0488	0.0149	0.906	0.925	0.920	0.902		1.036
113	226	376	634	0.897	231	88.3		0.0488	0.0148	0.900	0.915	0.914	0.894		1.035
114	228	376	634	0.897	210	80.3		0.0486	0.0146	0.894	0.909	0.911	0.889		1.032
115	230	376	634	0.897	191	73.2		0.0487	0.0150	0.891	0.903	0.909	0.886		1.032
116	232	376	634	0.897	175	67.1		0.0494	0.0155	0.889	0.902	0.909	0.883		1.029
117	234	376	634	0.897	159	60.9		0.0493	0.0158	0.886	0.900	0.908	0.882		1.029
118	236	376	634	0.897	146	56.0		0.0505	0.0166	0.886	0.900	0.909	0.882		1.026
119	238	376	634	0.897	133	51.0		0.0514	0.0174	0.888	0.900	0.909	0.883		1.026
120	240	376	634	0.897	121	46.4		0.0521	0.0183	0.889	0.900	0.911	0.883		1.024
121	242	376	634	0.897	112	42.9		0.0539	0.0202	0.896	0.905	0.914	0.883		1.024
122	244	376	634	0.897	102	38.9		0.0556	0.0218	0.899	0.905	0.914	0.889		1.024
123	246	376	634	0.897	93	35.5		0.0574	0.0239	0.902	0.905	0.915	0.893		1.024
124	248	376	634	0.897	85	32.4		0.0612	0.0274	0.905	0.908	0.917	0.899		1.026
125	250	376	634	0.897	76	29.2		0.0628	0.0265	0.902	0.905	0.914	0.897		1.023
126	252	376	634	0.897	70	26.9		0.0682	0.0323	0.903	0.908	0.915	0.900		1.023
127	254	376	634	0.897	64	24.4		0.0730	0.0356	0.903	0.909	0.914	0.900		1.023
128	256	376	634	0.897	58	22.1		0.0733	0.0385	0.902	0.909	0.914	0.899		1.021

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

12250

RUN	[illegible]	[illegible]	CONF	PROPELLANT	SAMP.RATE
410	1	66/055/1	[illegible]	15.[illegible]	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
129	258	376	634	0.897	54	20.6		0.0866	0.0441	0.906	0.912	0.920	0.903		1.023
130	260	376	634	0.897	43	18.5		0.0924	0.0481	0.905	0.911	0.920	0.900		1.021
131	262	376	634	0.897	45	17.1		0.1011	0.0519	0.908	0.912	0.923	0.900		1.021
132	264	376	634	0.397	41	15.8		0.1097	0.0575	0.911	0.915	0.926	0.902		1.023
133	266	376	634	0.897	38	14.6		0.1165	0.0607	0.911	0.917	0.928	0.900		1.021
134	268	376	634	0.897	36	13.7		0.1264	0.0678	0.915	0.925	0.934	0.903		1.023
135	270	376	634	0.897	33	12.7		0.1381	0.0728	0.915	0.929	0.937	0.905		1.021
136	272	376	634	0.897	31	11.9		0.1469	0.0775	0.919	0.934	0.940	0.905		1.021
137	274	376	634	0.897	30	11.4		0.1566	0.0831	0.922	0.938	0.946	0.908		1.023
138	276	376	634	0.897	29	11.0		0.1620	0.0860	0.925	0.940	0.948	0.908		1.021
139	278	376	634	0.897	27	10.4		0.1710	0.0907	0.928	0.941	0.951	0.909		1.021
140	280	376	634	0.897	26	10.0		0.1775	0.0942	0.931	0.945	0.952	0.912		1.023
141	282	376	634	0.897	26	10.0		0.1826	0.0961	0.935	0.948	0.955	0.915		1.023
142	284	376	634	0.897	24	9.3		0.1921	0.1040	0.937	0.951	0.957	0.917		1.023
143	286	376	634	0.897	24	9.3		0.1976	0.1040	0.940	0.955	0.960	0.920		1.023
144	288	376	634	0.897	24	9.1		0.1990	0.1062	0.943	0.958	0.961	0.923		1.023
145	290	376	634	0.897	22	8.5		1.1155	0.1134	0.943	0.960	0.963	0.923		1.023
146	292	376	634	0.897	23	8.9		0.2061	0.1128	0.948	0.963	0.966	0.926		1.023
147	294	376	634	0.897	22	8.5		0.2124	0.1157	0.949	0.961	0.966	0.926		1.023
148	296	376	634	0.897	22	8.3		0.2204	0.1183	0.952	0.963	0.968	0.929		1.023
149	298	376	634	0.897	22	8.5		0.2184	0.1179	0.957	0.966	0.969	0.932		1.024
150	300	376	634	0.897	21	7.9		0.2278	0.1216	0.955	0.968	0.969	0.931		1.021
151	302	376	634	0.897	21	8.1		0.2256	0.1211	0.958	0.972	0.972	0.934		1.023
152	304	376	634	0.897	21	8.1		0.2256	0.1211	0.958	0.974	0.972	0.934		1.021
153	306	376	634	0.397	21	7.9		0.2310	0.1240	0.958	0.975	0.972	0.934		1.021
154	308	376	634	0.897	21	8.1		0.2319	0.1258	0.963	0.978	0.977	0.938		1.023
155	310	376	634	0.897	20	7.7		0.2367	0.1271	0.963	0.975	0.975	0.937		1.023
156	312	376	634	0.897	20	7.7		0.2367	0.1271	0.966	0.974	0.975	0.938		1.021
157	314	376	634	0.897	20	7.7		0.2400	0.1296	0.969	0.975	0.977	0.941		1.023
158	316	376	634	0.897	20	7.5		0.2427	0.1303	0.963	0.974	0.975	0.930		1.021
159	318	376	634	0.897	20	7.7		0.2400	0.1296	0.971	0.977	0.973	0.943		1.023
160	320	376	634	0.897	20	7.7		0.2400	0.1296	0.971	0.978	0.980	0.943		1.023

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

ORIGINAL PAGE IS
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RUN	LIST	TEST	CONF	PROPELLANT	SAMP.RATE
410	1	66/C33/1	35	15.AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(P[illegible]/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	376	634	0.897	20	7.5		0.2461	0.1329	0.971	0.930	0.961	0.943		1.021
162	324	376	634	0.897	20	7.5		0.2427	0.1329	0.972	0.931	0.965	0.946		1.024
163	326	376	634	0.897	20	7.5		0.2461	0.1329	0.972	0.930	0.965	0.945		1.025
164	328		634	0.897	20	7.5		0.2427	0.1329	0.975	0.978	0.964	0.946		1.025
165	330		634	0.897	20	7.5		0.2461	0.1329	0.977	0.930	0.966	0.946		1.024
166	332	376	634	0.897	20	7.7		0.2433	0.1320	0.973	0.930	0.967	0.946		1.026
167	334	376	634	0.897	19	7.4		0.2490	0.1363	0.977	0.930	0.966	0.949		1.026
168	336	376	634	0.897	20	7.5		0.2461	0.1329	0.977	0.931	0.966	0.945		1.026
169	338	376	634	0.897	20	7.5		0.2461	0.1329	0.975	0.931	0.966	0.949		1.025
170	340	376	634	0.897	19	7.2		0.2557	0.1373	0.972	0.978	0.964	0.948		1.024
171	342	376	634	0.897	20	7.7		0.2433	0.1296	0.974	0.978	0.984	0.943		1.026
172	344	376	634	0.897	19	7.4		0.2490	0.1363	0.974	0.977	0.984	0.946		1.024
173	346	376	634	0.897	19	7.4		0.2525	0.1363	0.975	0.977	0.984	0.946		1.026
174	348	376	634	0.897	20	7.7		0.2433	0.1320	0.978	0.980	0.987	0.949		1.027
175	350	376	634	0.897	19	7.2		0.2521	0.1346	0.974	0.977	0.964	0.946		1.025
176	352	376	634	0.897	20	7.5		0.2461	0.1329	0.975	0.980	0.966	0.948		1.027
177	354	376	634	0.897	20	7.5		0.2461	0.1329	0.975	0.980	0.966	0.948		1.026
178	356	376	634	0.897	19	7.2		0.2557	0.1373	0.975	0.980	0.984	0.946		1.024
179	358	376	634	0.897	20	7.7		0.2466	0.1320	0.976	0.931	0.989	0.949		1.027
180	360	376	634	0.897	19	7.4		0.2490	0.1337	0.977	0.978	0.967	0.948		1.026
181	362	376	634	0.897	19	7.4		0.2525	0.1337	0.977	0.978	0.969	0.943		1.029
182	364	376	634	0.897	20	7.5		0.2461	0.1329	0.978	0.980	0.992	0.949		1.029
183	366	376	634	0.897	19	7.4		0.2490	0.1311	0.974	0.976	0.989	0.945		1.026
184	368	376	634	0.897	19	7.4		0.2525	0.1363	0.972	0.981	0.990	0.946		1.027
185	370	376	634	0.897	20	7.5		0.2461	0.1329	0.971	0.981	0.990	0.945		1.026
186	372	376	634	0.897	19	7.4		0.2525	0.1337	0.968	0.981	0.989	0.943		1.026
187	374	376	634	0.897	19	7.4		0.2525	0.1363	0.963	0.981	0.990	0.943		1.026
188	376	376	634	0.897	20	7.5		0.2461	0.1305	0.968	0.970	0.987	0.940		1.024
189	378	376	634	0.897	19	7.4		0.2525	0.1337	0.968	0.977	0.966	0.940		1.024
190	380	376	634	0.897	19	7.4		0.2525	0.1337	0.968	0.975	0.966	0.940		1.024
191	382	376	634	0.897	20	7.5		0.2495	0.1329	0.969	0.975	0.984	0.940		1.024
192	384	376	634	0.897	19	7.2		0.2557	0.1373	0.968	0.974	0.983	0.940		1.024
193	386	376	634	0.897	19	7.4		0.2525	0.1363	0.968	0.975	0.933	0.941		1.025
194	388	376	634	0.897	19	7.4		0.2525	0.1337	0.966	0.977	0.935	0.940		1.025

MACH	Q	P	PT	PREP	PCAL
0.597	211.7	376	631	1444	2120

12251

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	DISC	NOZZLE	CONF	PROPELLANT	SAMP.RATE
411	1	66/C35/1	35	15%L	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P6/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	260	639	1.209	603	333.7		0.0353	0.0135	1.040	0.644	1.034	1.035		1.035
2	4	260	639	1.209	641	354.5		0.0359	0.0136	1.060	0.666	1.102	1.040		1.023
3	6	260	639	1.209	674	373.0		0.0364	0.0139	1.080	0.690	1.118	1.049		1.027
4	8	260	639	1.209	705	390.1		0.0368	0.0141	1.098	0.717	1.133	1.058		1.029
5	10	260	639	1.209	733	405.6		0.0373	0.0143	1.111	0.744	1.142	1.062		1.027
6	12	260	639	1.209	757	418.6		0.0375	0.0144	1.118	0.766	1.151	1.069		1.027
7	14	260	639	1.209	779	430.8		0.0378	0.0145	1.126	0.788	1.160	1.069		1.027
8	16	260	639	1.209	798	441.3		0.0379	0.0146	1.131	0.806	1.164	1.071		1.027
9	18	260	639	1.209	813	449.6		0.0380	0.0147	1.133	0.821	1.166	1.071		1.027
10	20	260	639	1.209	827	457.4		0.0383	0.0148	1.140	0.834	1.168	1.073		1.027
11	22	260	639	1.209	837	462.9		0.0383	0.0148	1.140	0.841	1.171	1.071		1.027
12	24	260	639	1.209	845	467.3		0.0383	0.0148	1.142	0.848	1.173	1.071		1.027
13	26	260	639	1.209	851	470.9		0.0385	0.0149	1.146	0.861	1.177	1.073		1.029
14	28	260	639	1.209	855	472.9		0.0384	0.0149	1.142	0.863	1.175	1.071		1.029
15	30	260	639	1.209	859	475.1		0.0386	0.0150	1.146	0.872	1.177	1.073		1.029
16	32	260	639	1.209	862	476.7		0.0387	0.0151	1.144	0.876	1.177	1.073		1.029
17	34	260	639	1.209	863	477.6		0.0387	0.0150	1.142	0.876	1.175	1.071		1.027
18	36	260	639	1.209	866	479.2		0.0389	0.0152	1.149	0.883	1.180	1.076		1.031
19	38	260	639	1.209	867	479.5		0.0390	0.0151	1.146	0.879	1.177	1.073		1.029
20	40	260	639	1.209	869	480.6		0.0391	0.0150	1.146	0.876	1.175	1.073		1.031
21	42	260	639	1.209	871	481.7		0.0393	0.0151	1.149	0.879	1.177	1.076		1.033
22	44	260	639	1.209	872	482.3		0.0394	0.0149	1.142	0.874	1.171	1.069		1.029
23	46	260	639	1.209	874	483.6		0.0397	0.0149	1.144	0.879	1.175	1.073		1.031
24	48	260	639	1.209	876	484.7		0.0399	0.0147	1.142	0.876	1.171	1.071		1.031
25	50	260	639	1.209	878	485.6		0.0401	0.0147	1.137	0.876	1.166	1.069		1.029
26	52	260	639	1.209	880	486.7		0.0404	0.0146	1.140	0.876	1.168	1.071		1.031
27	54	260	639	1.209	882	488.1		0.0406	0.0144	1.137	0.870	1.164	1.067		1.029
28	56	260	639	1.209	884	489.2		0.0408	0.0143	1.137	0.867	1.162	1.067		1.029
29	58	260	639	1.209	886	490.3		0.0409	0.0142	1.140	0.865	1.164	1.067		1.031
30	60	260	639	1.209	889	491.9		0.0409	0.0141	1.140	0.865	1.164	1.064		1.031
31	62	260	639	1.209	891	492.8		0.0408	0.0140	1.137	0.867	1.164	1.067		1.031
32	64	260	639	1.209	894	494.4		0.0407	0.0139	1.137	0.870	1.166	1.067		1.031

ORIGINAL PAGE IS
OF POOR QUALITY

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TITSTP	CONF	PROPELLANT	SALT/LITE
411	1	66/035/1	38	15%AL	FDI

FRAME	TIME	Zn	PTn	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	260	639	1.209	987	498.1		0.0405	0.0138	1.157	0.870	1.168	1.069		1.031
34	68	260	639	1.209	899	497.5		0.0402	0.0137	1.157	0.870	1.166	1.069		1.031
35	70	260	639	1.209	904	500.2		0.0402	0.0137	1.144	0.872	1.171	1.071		1.033
36	72	260	639	1.209	907	501.9		0.0400	0.0136	1.144	0.870	1.173	1.071		1.033
37	74	260	639	1.209	911	504.1		0.0399	0.0135	1.149	0.872	1.175	1.073		1.033
38	76	260	639	1.209	916	506.9		0.0399	0.0135	1.153	0.876	1.130	1.078		1.036
39	78	260	639	1.209	919	508.5		0.0399	0.0135	1.149	0.874	1.177	1.076		1.035
40	80	260	639	1.209	925	511.8		0.0401	0.0134	1.153	0.881	1.180	1.080		1.035
41	82	260	639	1.209	929	513.8		0.0401	0.0133	1.153	0.883	1.180	1.082		1.033
42	84	260	639	1.209	933	516.0		0.0402	0.0132	1.151	0.883	1.180	1.082		1.031
43	86	260	639	1.209	938	518.8		0.0404	0.0134	1.160	0.887	1.184	1.087		1.036
44	88	260	639	1.209	941	520.7		0.0405	0.0132	1.157	0.883	1.182	1.087		1.036
45	90	260	639	1.209	945	522.9		0.0403	0.0132	1.160	0.883	1.182	1.087		1.036
46	92	260	639	1.209	949	525.1		0.0405	0.0133	1.162	0.885	1.184	1.091		1.038
47	94	260	639	1.209	953	527.1		0.0405	0.0132	1.160	0.883	1.182	1.087		1.036
48	96	260	639	1.209	957	529.3		0.0411	0.0133	1.160	0.890	1.184	1.091		1.038
49	98	260	639	1.209	960	531.2		0.0412	0.0134	1.160	0.890	1.184	1.091		1.038
50	100	260	639	1.209	964	533.2		0.0411	0.0134	1.160	0.890	1.182	1.089		1.036
51	102	260	639	1.209	967	535.1		0.0412	0.0136	1.162	0.894	1.186	1.093		1.038
52	104	260	639	1.209	970	536.8		0.0412	0.0137	1.162	0.892	1.184	1.091		1.036
53	106	260	639	1.209	974	538.7		0.0413	0.0138	1.166	0.892	1.186	1.093		1.036
54	108	260	639	1.209	977	540.4		0.0413	0.0139	1.171	0.894	1.191	1.098		1.036
55	110	260	639	1.209	981	542.6		0.0415	0.0141	1.173	0.896	1.191	1.098		1.033
56	112	260	639	1.209	984	544.2		0.0415	0.0142	1.173	0.901	1.193	1.102		1.033
57	114	260	639	1.209	987	545.2		0.0416	0.0143	1.175	0.905	1.195	1.104		1.031
58	116	260	639	1.209	990	547.0		0.0417	0.0144	1.175	0.907	1.197	1.106		1.029
59	118	260	639	1.209	993	548.9		0.0419	0.0144	1.175	0.907	1.197	1.106		1.027
60	120	260	639	1.209	997	551.4		0.0422	0.0145	1.182	0.912	1.202	1.111		1.027
61	122	260	639	1.209	999	552.5		0.0424	0.0145	1.182	0.910	1.204	1.111		1.027
62	124	260	639	1.209	1002	554.2		0.0423	0.0146	1.186	0.912	1.208	1.113		1.027
63	126	260	639	1.209	1005	556.1		0.0432	0.0147	1.191	0.916	1.210	1.118		1.027
64	128	260	639	1.209	1006	556.7		0.0434	0.0147	1.186	0.916	1.208	1.118		1.025

12253

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

[illegible]	[illegible]	[illegible]	CONF	PROPELLANT	[illegible]
[illegible]	[illegible]	66/[illegible]/1	33	15[illegible]	50[illegible]

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
[illegible]	[illegible]	260	639	1.209	1010	558.6		0.0456	0.0143	1.191	0.923	1.213	1.122		1.025
[illegible]	[illegible]	260	639	1.209	1012	559.7		0.0442	0.0149	1.193	0.925	1.215	1.124		1.025
[illegible]	[illegible]	260	639	1.209	1014	560.8		0.0444	0.0150	1.191	0.925	1.215	1.122		1.022
[illegible]	[illegible]	260	639	1.209	1017	562.5		0.0449	0.0153	1.199	0.934	1.222	1.131		1.027
[illegible]	[illegible]	260	639	1.209	1018	563.0		0.0451	0.0153	1.199	0.929	1.222	1.131		1.025
[illegible]	[illegible]	260	639	1.209	1020	564.1		0.0454	0.0155	1.204	0.929	1.224	1.133		1.022
[illegible]	[illegible]	260	639	1.209	1022	565.2		0.0457	0.0156	1.206	0.934	1.226	1.137		1.027
[illegible]	144	260	639	1.209	1023	565.6		0.0457	0.0157	1.204	0.934	1.226	1.135		1.022
[illegible]	146	260	639	1.209	1025	566.9		0.0459	0.0159	1.206	0.941	1.230	1.142		1.025
74	148	260	639	1.209	1026	567.7		0.0459	0.0160	1.208	0.945	1.230	1.142		1.025
75	150	260	639	1.209	1027	568.3		0.0458	0.0161	1.208	0.945	1.230	1.144		1.022
76	152	260	639	1.209	1029	569.1		0.0457	0.0163	1.213	0.947	1.235	1.149		1.027
77	154	260	639	1.209	1030	569.9		0.0455	0.0163	1.213	0.945	1.233	1.146		1.025
78	156	260	639	1.209	1032	570.8		0.0453	0.0164	1.215	0.945	1.235	1.149		1.025
79	158	260	639	1.209	1033	571.6		0.0451	0.0165	1.217	0.947	1.237	1.151		1.027
80	160	260	639	1.209	1035	572.7		0.0448	0.0166	1.219	0.947	1.239	1.149		1.027
81	162	260	639	1.209	1036	573.0		0.0445	0.0167	1.219	0.952	1.239	1.151		1.027
82	164	260	639	1.209	1037	573.8		0.0443	0.0167	1.222	0.956	1.241	1.151		1.025
83	166	260	639	1.209	1038	574.4		0.0440	0.0168	1.222	0.960	1.244	1.153		1.025
84	168	260	639	1.209	1038	574.4		0.0437	0.0168	1.222	0.965	1.244	1.155		1.025
85	170	260	639	1.209	1041	575.6		0.0434	0.0170	1.228	0.965	1.248	1.160		1.027
86	172	260	639	1.209	1041	575.8		0.0430	0.0170	1.228	0.963	1.248	1.160		1.025
87	174	260	639	1.209	1041	576.0		0.0427	0.0171	1.230	0.963	1.248	1.160		1.027
88	176	260	639	1.209	1042	576.6		0.0425	0.0172	1.235	0.967	1.250	1.164		1.027
89	178	260	639	1.209	1041	575.8		0.0421	0.0172	1.228	0.965	1.246	1.164		1.025
90	180	260	639	1.209	1041	575.8		0.0421	0.0173	1.230	0.969	1.248	1.166		1.025
91	182	260	639	1.209	1039	574.9		0.0419	0.0173	1.230	0.969	1.248	1.166		1.025
92	184	260	639	1.209	1037	573.5		0.0417	0.0173	1.226	0.965	1.244	1.164		1.022
93	186	260	639	1.209	1035	572.7		0.0418	0.0175	1.235	0.967	1.248	1.168		1.027
94	188	260	639	1.209	1031	570.5		0.0417	0.0175	1.228	0.960	1.244	1.166		1.027
95	190	260	639	1.209	1028	568.6		0.0419	0.0176	1.230	0.958	1.244	1.166		1.027
96	192	260	639	1.209	1024	566.5		0.0421	0.0177	1.233	0.958	1.246	1.168		1.029

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

ORIGINAL PAGE IS
OF POOR QUALITY

RUN	DESC	TUNNEL	CONF	PROPELLANT	SAMP.RATE
411	1	65/C55/1	38	15%AL	50C

FRAME	CELL	Pi	PTn	MACHn	PTCn	(PTC/P)n	NOSE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	260	639	1.209	1019	563.6		0.0421	0.0177	1.226	0.954	1.239	1.163		1.025
98	196	260	639	1.209	1015	561.4		0.0423	0.0178	1.226	0.958	1.241	1.164		1.027
99	198	260	639	1.209	1009	558.1		0.0425	0.0179	1.224	0.956	1.239	1.164		1.027
100	200	260	639	1.209	1002	554.5		0.0428	0.0179	1.222	0.954	1.237	1.163		1.025
101	202	260	639	1.209	995	550.3		0.0431	0.0180	1.222	0.954	1.237	1.162		1.029
102	204	260	639	1.209	986	545.6		0.0435	0.0181	1.217	0.947	1.230	1.155		1.027
103	206	260	639	1.209	976	539.8		0.0439	0.0181	1.215	0.941	1.226	1.151		1.027
104	208	260	639	1.209	964	533.2		0.0445	0.0182	1.213	0.938	1.224	1.149		1.027
105	210	260	639	1.209	950	525.7		0.0451	0.0183	1.206	0.932	1.217	1.142		1.027
106	212	260	639	1.209	934	516.6		0.0458	0.0183	1.199	0.927	1.213	1.137		1.027
107	214	260	639	1.209	915	506.3		0.0467	0.0184	1.191	0.923	1.206	1.131		1.027
108	216	260	639	1.209	894	494.4		0.0477	0.0185	1.182	0.916	1.197	1.122		1.027
109	218	260	639	1.209	869	480.6		0.0488	0.0185	1.171	0.901	1.184	1.113		1.025
110	220	260	639	1.209	842	465.7		0.0503	0.0187	1.160	0.890	1.173	1.102		1.027
111	222	260	639	1.209	810	448.0		0.0520	0.0188	1.144	0.870	1.157	1.089		1.025
112	224	260	639	1.209	775	428.6		0.0540	0.0189	1.129	0.850	1.140	1.075		1.025
113	226	260	639	1.209	737	407.6		0.0565	0.0191	1.111	0.830	1.122	1.060		1.027
114	228	260	639	1.209	695	384.3		0.0592	0.0190	1.087	0.803	1.096	1.038		1.025
115	230	260	639	1.209	653	361.1		0.0625	0.0192	1.062	0.785	1.076	1.022		1.025
116	232	260	639	1.209	609	337.0		0.0662	0.0192	1.038	0.759	1.051	1.002		1.022
117	234	260	639	1.209	565	312.7		0.0703	0.0191	1.011	0.730	1.022	0.985		1.022
118	236	260	639	1.209	524	290.0		0.0749	0.0193	0.991	0.708	1.002	0.969		1.027
119	238	260	639	1.209	482	266.5		0.0800	0.0190	0.963	0.677	0.976	0.949		1.027
120	240	260	639	1.209	443	244.9		0.0855	0.0189	0.941	0.651	0.952	0.934		1.027
121	242	260	639	1.209	406	224.5		0.0917	0.0189	0.916	0.628	0.929	0.925		1.029
122	244	260	639	1.209	370	204.8		0.0981	0.0184	0.890	0.602	0.905	0.909		1.027
123	246	260	639	1.209	338	187.1		0.1056	0.0184	0.870	0.584	0.885	0.896		1.029
124	248	260	639	1.209	308	170.2		0.1135	0.0181	0.845	0.564	0.865	0.887		1.027
125	250	260	639	1.209	279	154.2		0.1224	0.0177	0.823	0.540	0.841	0.879		1.025
126	252	260	639	1.209	252	139.5		0.1324	0.0177	0.803	0.518	0.823	0.876		1.027
127	254	260	639	1.209	227	125.7		0.1431	0.0173	0.781	0.489	0.797	0.865		1.025
128	256	260	639	1.209	205	113.5		0.1553	0.0170	0.759	0.463	0.775	0.863		1.025

12254

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LISS	SHTSEP	CONF	PROPELLANT	SAMP.RATE
411	1	66/055/1	30	15%AL	500

FRAME	TIME	Fn	PTn	MACH	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
129	256	260	639	1.209	103	101.4		0.1691	0.0168	0.739	0.438	0.752	0.861		1.025
130	260	260	639	1.209	164	90.9		0.1542	0.0166	0.719	0.416	0.735	0.856		1.022
131	262	260	639	1.209	146	80.6		0.2021	0.0163	0.702	0.396	0.717	0.856		1.022
132	264	260	639	1.209	130	72.0		0.2206	0.0163	0.688	0.385	0.710	0.856		1.022
133	266	260	639	1.209	116	64.0		0.2418	0.0162	0.682	0.378	0.706	0.856		1.022
134	268	260	639	1.209	102	56.6		0.2660	0.0158	0.679	0.374	0.710	0.856		1.022
135	270	260	639	1.209	92	50.7		0.2906	0.0171	0.688	0.381	0.721	0.859		1.022
136	272	260	639	1.209	81	44.7		0.3211	0.0170	0.697	0.385	0.733	0.859		1.022
137	274	260	639	1.209	72	40.0		0.3506	0.0176	0.710	0.396	0.748	0.861		1.025
138	276	260	639	1.209	65	36.1		0.3800	0.0202	0.726	0.414	0.766	0.865		1.027
139	278	260	639	1.209	57	31.7		0.4192	0.0204	0.739	0.425	0.777	0.863		1.025
140	280	260	639	1.209	53	29.2		0.4461	0.0231	0.755	0.443	0.792	0.867		1.025
141	282	260	639	1.209	48	26.4		0.4805	0.0256	0.770	0.458	0.803	0.870		1.025
142	284	260	639	1.209	43	23.9		0.5164	0.0259	0.783	0.469	0.812	0.867		1.025
143	286	260	639	1.209	41	22.5		0.5399	0.0324	0.803	0.487	0.825	0.876		1.027
144	288	260	639	1.209	37	20.3		0.5806	0.0332	0.814	0.494	0.834	0.874		1.025
145	290	260	639	1.209	35	19.2		0.6006	0.0366	0.828	0.502	0.843	0.876		1.022
146	292	260	639	1.209	33	18.1		0.6251	0.0405	0.843	0.516	0.850	0.881		1.025
147	294	260	639	1.209	31	17.0		0.6463	0.0413	0.848	0.520	0.854	0.879		1.022
148	296	260	639	1.209	30	16.4		0.6568	0.0461	0.859	0.531	0.861	0.885		1.022
149	298	260	639	1.209	28	15.6		0.6775	0.0485	0.865	0.540	0.865	0.885		1.022
150	300	260	639	1.209	27	14.8		0.6901	0.0513	0.870	0.547	0.870	0.885		1.020
151	302	260	639	1.209	26	14.5		0.6962	0.0542	0.879	0.553	0.876	0.890		1.025
152	304	260	639	1.209	25	14.0		0.7079	0.0545	0.881	0.555	0.879	0.887		1.022
153	306	260	639	1.209	25	13.7		0.7060	0.0574	0.887	0.558	0.881	0.890		1.022
154	308	260	639	1.209	24	13.4		0.7069	0.0586	0.892	0.560	0.885	0.892		1.025
155	310	260	639	1.209	24	13.4		0.6931	0.0607	0.894	0.564	0.890	0.890		1.025
156	312	260	639	1.209	23	12.8		0.7057	0.0633	0.894	0.571	0.892	0.894		1.025
157	314	260	639	1.209	23	12.8		0.6942	0.0633	0.896	0.575	0.896	0.894		1.025
158	316	260	639	1.209	22	12.3		0.7105	0.0662	0.896	0.580	0.898	0.894		1.025
159	318	260	639	1.209	21	11.7		0.7251	0.0669	0.894	0.582	0.901	0.894		1.022
160	320	260	639	1.209	22	12.3		0.6035	0.0684	0.901	0.584	0.905	0.894		1.025

12255

ORIGINAL PAGE IS OF POOR QUALITY

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	[illegible]	CONF	PROPELLANT	SAMP.RATE
411	1	66/033/1	36	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	260	639	1.209	21	11.7		0.6968	0.0693	0.901	0.584	0.907	0.894		1.022
162	324	260	639	1.209	21	11.7		0.6874	0.0693	0.903	0.586	0.910	0.894		1.022
163	326	260	639	1.209	21	11.7		0.6780	0.0740	0.905	0.591	0.914	0.898		1.025
164	328	260	639	1.209	20	10.9		0.7059	0.0745	0.901	0.589	0.912	0.894		1.022
165	330	260	639	1.209	21	11.5		0.6654	0.0734	0.901	0.593	0.914	0.896		1.022
166	332	260	639	1.209	20	11.2		0.6686	0.0752	0.898	0.595	0.914	0.894		1.022
167	334	260	639	1.209	19	10.6		0.6861	0.0759	0.894	0.593	0.912	0.894		1.020
168	336	260	639	1.209	20	11.2		0.6489	0.0776	0.898	0.598	0.916	0.890		1.025
169	338	260	639	1.209	19	10.6		0.6655	0.0765	0.896	0.591	0.912	0.894		1.022
170	340	260	639	1.209	19	10.6		0.6549	0.0765	0.896	0.589	0.912	0.894		1.022
171	342	260	639	1.209	19	10.6		0.6445	0.0791	0.898	0.589	0.914	0.896		1.027
172	344	260	639	1.209	18	10.1		0.6615	0.0779	0.892	0.584	0.907	0.892		1.022
173	346	260	639	1.209	19	10.4		0.6405	0.0812	0.894	0.589	0.910	0.896		1.025
174	348	260	639	1.209	19	10.4		0.6261	0.0785	0.894	0.589	0.910	0.896		1.022
175	350	260	639	1.209	19	10.4		0.6154	0.0785	0.892	0.586	0.905	0.894		1.022
176	352	260	639	1.209	18	10.1		0.6250	0.0834	0.894	0.586	0.907	0.898		1.025
177	354	260	639	1.209	18	10.1		0.6103	0.0807	0.894	0.580	0.903	0.894		1.022
178	356	260	639	1.209	18	10.1		0.6030	0.0807	0.894	0.575	0.903	0.894		1.022
179	358	260	639	1.209	18	10.1		0.5957	0.0834	0.896	0.575	0.903	0.894		1.025
180	360	260	639	1.209	19	10.4		0.5691	0.0785	0.896	0.575	0.903	0.894		1.025
181	362	260	639	1.209	18	9.8		0.5937	0.0830	0.896	0.575	0.903	0.896		1.027
182	364	260	639	1.209	18	10.1		0.5701	0.0834	0.896	0.575	0.903	0.894		1.027
183	366	260	639	1.209	18	9.8		0.5749	0.0830	0.894	0.575	0.901	0.894		1.027
184	368	260	639	1.209	17	9.5		0.5799	0.0825	0.894	0.575	0.901	0.894		1.027
185	370	260	639	1.209	17	9.5		0.5799	0.0825	0.894	0.575	0.901	0.894		1.027
186	372	260	639	1.209	17	9.5		0.5645	0.0854	0.896	0.571	0.901	0.894		1.027
187	374	260	639	1.209	18	9.8		0.5410	0.0850	0.898	0.569	0.901	0.894		1.029
188	376	260	639	1.209	18	10.1		0.5262	0.0862	0.901	0.573	0.903	0.890		1.031
189	378	260	639	1.209	17	9.2		0.5534	0.0849	0.894	0.569	0.898	0.894		1.029
190	380	260	639	1.209	18	9.8		0.5222	0.0830	0.896	0.573	0.901	0.896		1.029
191	382	260	639	1.209	18	9.8		0.5147	0.0830	0.894	0.573	0.896	0.896		1.029
192	384	260	639	1.209	17	9.5		0.5180	0.0825	0.890	0.571	0.896	0.894		1.027

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST	CODE	PROPELLANT	SAMP.RATE
411	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
193	386	260	639	1.209	18	10.1		0.4932	0.0862	0.896	0.575	0.896	0.898		1.029
194	388	260	639	1.209	17	9.5		0.5103	0.0854	0.894	0.569	0.896	0.896		1.027
195	390	260	639	1.209	18	9.8		0.4883	0.0830	0.894	0.567	0.896	0.896		1.027
196	392	260	639	1.209	18	9.8		0.4846	0.0858	0.896	0.569	0.898	0.898		1.029
197	394	260	639	1.209	17	9.5		0.4870	0.0825	0.890	0.562	0.892	0.894		1.027
198	396	260	639	1.209	17	9.5		0.4870	0.0883	0.892	0.567	0.894	0.898		1.029
199	398	260	639	1.209	17	9.5		0.4793	0.0854	0.890	0.564	0.892	0.896		1.031
200	400	260	639	1.209	17	9.5		0.4715	0.0854	0.887	0.562	0.887	0.894		1.029
201	402	260	639	1.209	17	9.5		0.4715	0.0883	0.890	0.562	0.890	0.896		1.033
202	404	260	639	1.209	17	9.5		0.4638	0.0854	0.887	0.558	0.885	0.894		1.031
203	406	260	639	1.209	17	9.5		0.4599	0.0825	0.890	0.555	0.885	0.894		1.031
204	408	260	639	1.209	17	9.5		0.4561	0.0854	0.890	0.555	0.885	0.896		1.033
205	410	260	639	1.209	18	9.8		0.4394	0.0830	0.890	0.555	0.885	0.894		1.031
206	412	260	639	1.209	17	9.2		0.4577	0.0879	0.890	0.555	0.885	0.894		1.033
207	414	260	639	1.209	17	9.5		0.4406	0.0854	0.887	0.558	0.885	0.894		1.033
208	416	260	639	1.209	17	9.5		0.4367	0.0854	0.885	0.560	0.885	0.894		1.033
209	418	260	639	1.209	17	9.2		0.4418	0.0849	0.885	0.558	0.885	0.894		1.036
210	420	260	639	1.209	18	9.8		0.4169	0.0858	0.887	0.560	0.885	0.894		1.036
211	422	260	639	1.209	17	9.2		0.4378	0.0849	0.887	0.558	0.885	0.892		1.036
212	424	260	639	1.209	17	9.5		0.4173	0.0854	0.890	0.558	0.887	0.894		1.036
213	426	260	639	1.209	18	9.8		0.4093	0.0858	0.892	0.560	0.890	0.896		1.036

MACH	Q	P	PT	PREF	PCAL
1.209	266.2	260	639	1453	2120

12256

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSEP	COMP	PROPELLANT	SAMP.RATE
412	1	66/033/1	38	15[illegible]	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTOn	(PTO/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
1	2	763	1877	1.210	575	108.5		0.0408	0.0154	0.716	0.725	0.729	0.857		0.925
2	4	763	1877	1.210	610	115.1		0.0412	0.0154	0.725	0.734	0.739	0.857		0.925
3	6	763	1877	1.210	643	121.2		0.0416	0.0154	0.735	0.745	0.748	0.859		0.925
4	8	763	1877	1.210	673	126.9		0.0420	0.0156	0.744	0.755	0.758	0.861		0.925
5	10	763	1877	1.210	697	131.5		0.0421	0.0156	0.750	0.759	0.764	0.861		0.925
6	12	763	1877	1.210	721	136.0		0.0426	0.0156	0.756	0.768	0.771	0.863		0.925
7	14	763	1877	1.210	742	139.9		0.0429	0.0158	0.762	0.775	0.778	0.864		0.925
8	16	763	1877	1.210	759	143.1		0.0433	0.0158	0.765	0.779	0.781	0.864		0.925
9	18	763	1877	1.210	775	146.1		0.0438	0.0160	0.771	0.785	0.787	0.866		0.927
10	20	763	1877	1.210	787	148.5		0.0440	0.0160	0.774	0.787	0.789	0.865		0.927
11	22	763	1877	1.210	799	150.7		0.0445	0.0160	0.777	0.789	0.791	0.865		0.927
12	24	763	1877	1.210	809	152.5		0.0449	0.0160	0.780	0.792	0.794	0.867		0.927
13	26	763	1877	1.210	817	154.0		0.0452	0.0159	0.780	0.793	0.794	0.866		0.925
14	28	763	1877	1.210	824	155.5		0.0456	0.0159	0.781	0.795	0.796	0.867		0.925
15	30	763	1877	1.210	830	156.5		0.0457	0.0159	0.781	0.796	0.796	0.867		0.925
16	32	763	1877	1.210	835	157.4		0.0456	0.0158	0.781	0.797	0.795	0.867		0.925
17	34	763	1877	1.210	839	158.3		0.0455	0.0157	0.781	0.798	0.796	0.869		0.925
18	36	763	1877	1.210	843	158.9		0.0451	0.0156	0.781	0.796	0.795	0.869		0.924
19	38	763	1877	1.210	845	159.4		0.0448	0.0156	0.781	0.796	0.796	0.870		0.925
20	40	763	1877	1.210	848	159.9		0.0444	0.0155	0.782	0.796	0.796	0.870		0.923
21	42	763	1877	1.210	850	160.3		0.0441	0.0155	0.781	0.795	0.795	0.871		0.922
22	44	763	1877	1.210	851	[illegible]		0.0438	0.0154	0.781	0.795	0.794	0.872		0.922
23	46	763	1877	1.210	852	160.6		0.0436	0.0153	0.779	0.794	0.793	0.872		0.921
24	48	763	1877	1.210	853	[illegible]		0.0434	0.0153	0.778	0.793	0.792	0.871		0.920
25	50	763	1877	1.210	852	160.7		0.0432	0.0151	0.776	0.791	0.790	0.870		0.920
26	52	763	1877	1.210	854	161.0		0.0432	0.0152	0.776	0.790	0.790	0.870		0.921
27	54	763	1877	1.210	853	160.9		0.0433	0.0151	0.775	0.787	0.789	0.869		0.920
28	56	763	1877	1.210	853	160.9		0.0433	0.0150	0.774	0.785	0.787	0.869		0.921
29	58	763	1877	1.210	854	161.0		0.0436	0.0151	0.775	0.785	0.787	0.869		0.921
30	60	763	1877	1.210	852	160.7		0.0437	0.0149	0.772	0.784	0.786	0.867		0.920
31	62	763	1877	1.210	853	160.8		0.0441	0.0149	0.772	0.784	0.786	0.868		0.921
32	64	763	1877	1.210	853	160.8		0.0445	0.0148	0.771	0.784	0.785	0.867		0.920

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	DIST	NOZZLE	CONF	PROPELLANT	SAMP.RATE
412	1	63/035/1	30	15NAM	500

POINT	TIME	Pn	PTn	MACHn	PCn	(PC/P)n	NOZZLE PRESS. (P2/PC)n	(P3/PC)n	(P4/PC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	763	1877	1.210	852	160.8		0.0449	0.0147	0.770	0.753	0.784	0.867		0.919
34	68	763	1877	1.210	853	160.9		0.0454	0.0148	0.771	0.764	0.785	0.868		0.921
35	70	763	1877	1.210	852	160.6		0.0457	0.0147	0.771	0.782	0.784	0.867		0.921
36	72	763	1877	1.210	852	160.7		0.0459	0.0147	0.772	0.781	0.784	0.867		0.921
37	74	763	1877	1.210	853	160.8		0.0459	0.0147	0.772	0.782	0.784	0.868		0.922
38	76	763	1877	1.210	852	160.7		0.0456	0.0146	0.771	0.781	0.785	0.867		0.920
39	78	763	1877	1.210	853	160.9		0.0453	0.0147	0.772	0.784	0.784	0.869		0.921
40	80	763	1877	1.210	854	161.1		0.0447	0.0146	0.772	0.784	0.784	0.869		0.919
41	82	763	1877	1.210	855	161.2		0.0440	0.0146	0.771	0.785	0.784	0.869		0.919
42	84	763	1877	1.210	856	161.5		0.0433	0.0146	0.774	0.787	0.786	0.870		0.920
43	86	763	1877	1.210	857	161.7		0.0426	0.0145	0.774	0.785	0.786	0.869		0.920
44	88	763	1877	1.210	859	162.1		0.0419	0.0145	0.775	0.786	0.787	0.870		0.920
45	90	763	1877	1.210	861	162.4		0.0412	0.0145	0.776	0.786	0.787	0.870		0.921
46	92	763	1877	1.210	864	162.9		0.0407	0.0145	0.777	0.787	0.788	0.869		0.920
47	94	763	1877	1.210	866	163.3		0.0402	0.0145	0.777	0.787	0.789	0.870		0.920
48	96	763	1877	1.210	869	163.9		0.0399	0.0145	0.778	0.790	0.790	0.870		0.920
49	98	763	1877	1.210	871	164.3		0.0397	0.0145	0.778	0.791	0.792	0.870		0.919
50	100	763	1877	1.210	874	164.9		0.0395	0.0144	0.778	0.791	0.793	0.870		0.919
51	102	763	1877	1.210	879	165.7		0.0397	0.0144	0.780	0.791	0.794	0.870		0.919
52	104	763	1877	1.210	882	166.3		0.0397	0.0143	0.781	0.791	0.795	0.870		0.919
53	106	763	1877	1.210	886	167.1		0.0400	0.0142	0.782	0.792	0.797	0.870		0.920
54	108	763	1877	1.210	890	167.9		0.0404	0.0142	0.784	0.794	0.799	0.871		0.922
55	110	763	1877	1.210	893	168.5		0.0407	0.0140	0.784	0.795	0.800	0.870		0.921
56	112	763	1877	1.210	899	169.5		0.0411	0.0139	0.784	0.796	0.802	0.872		0.922
57	114	763	1877	1.210	903	170.4		0.0415	0.0137	0.786	0.799	0.803	0.872		0.922
58	116	763	1877	1.210	907	171.1		0.0417	0.0135	0.786	0.799	0.803	0.872		0.921
59	118	763	1877	1.210	913	172.2		0.0421	0.0135	0.789	0.801	0.805	0.873		0.922
60	120	763	1877	1.210	917	172.9		0.0422	0.0133	0.789	0.799	0.805	0.873		0.921
61	122	763	1877	1.210	922	173.8		0.0423	0.0132	0.791	0.800	0.806	0.873		0.921
62	124	763	1877	1.210	926	174.7		0.0424	0.0131	0.793	0.802	0.807	0.873		0.922
63	126	763	1877	1.210	930	175.5		0.0423	0.0130	0.791	0.802	0.805	0.871		0.920
64	128	763	1877	1.210	935	176.3		0.0424	0.0131	0.792	0.804	0.806	0.872		0.921

12257

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

ORIGINAL PAGE IS
OF POOR QUALITY

RUN	LIST	INDEX	CONF	PROPELLANT	SHIP.RATE
412	1	66/033/1	38	15;AI	500

FRAME	TIME	Pt	PTn	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P5/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	765	1877	1.210	939	177.1		0.0424	0.0151	0.792	0.804	0.806	0.872		0.921
66	132	763	1877	1.210	942	177.6		0.0423	0.0151	0.792	0.805	0.805	0.872		0.920
67	134	765	1877	1.210	945	178.2		0.0423	0.0151	0.793	0.805	0.805	0.873		0.921
68	136	765	1877	1.210	948	178.8		0.0422	0.0151	0.793	0.804	0.805	0.873		0.920
69	138	763	1877	1.210	950	179.2		0.0421	0.0153	0.795	0.803	0.805	0.873		0.921
70	140	765	1877	1.210	953	179.7		0.0421	0.0153	0.796	0.804	0.805	0.873		0.921
71	142	765	1877	1.210	955	180.1		0.0421	0.0155	0.796	0.804	0.805	0.875		0.920
72	144	765	1877	1.210	956	180.3		0.0421	0.0156	0.796	0.805	0.805	0.874		0.919
73	146	765	1877	1.210	958	180.6		0.0420	0.0157	0.798	0.807	0.806	0.875		0.919
74	148	765	1877	1.210	959	180.9		0.0420	0.0158	0.799	0.808	0.807	0.875		0.919
75	150	763	1877	1.210	960	181.0		0.0420	0.0159	0.799	0.808	0.808	0.876		0.919
76	152	765	1877	1.210	962	181.5		0.0421	0.0141	0.802	0.808	0.808	0.876		0.919
77	154	763	1877	1.210	963	181.6		0.0421	0.0142	0.802	0.806	0.806	0.877		0.919
78	156	765	1877	1.210	964	181.8		0.0422	0.0144	0.804	0.808	0.809	0.877		0.919
79	158	763	1877	1.210	966	182.1		0.0422	0.0146	0.805	0.809	0.811	0.876		0.920
80	160	763	1877	1.210	965	182.1		0.0422	0.0146	0.805	0.808	0.811	0.876		0.920
81	162	763	1877	1.210	966	182.2		0.0423	0.0149	0.807	0.811	0.812	0.877		0.921
82	164	763	1877	1.210	967	182.3		0.0422	0.0155	0.807	0.812	0.813	0.876		0.922
83	166	765	1877	1.210	967	182.3		0.0420	0.0154	0.807	0.811	0.813	0.876		0.921
84	168	765	1877	1.210	968	182.5		0.0419	0.0155	0.809	0.813	0.815	0.877		0.922
85	170	765	1877	1.210	966	182.2		0.0414	0.0154	0.808	0.811	0.814	0.876		0.922
86	172	763	1877	1.210	966	182.2		0.0408	0.0155	0.808	0.811	0.815	0.876		0.922
87	174	763	1877	1.210	966	182.1		0.0403	0.0157	0.809	0.811	0.816	0.876		0.922
88	176	763	1877	1.210	964	181.9		0.0390	0.0157	0.807	0.810	0.814	0.875		0.921
89	178	765	1877	1.210	964	181.8		0.0381	0.0159	0.807	0.811	0.815	0.876		0.921
90	180	763	1877	1.210	963	181.6		0.0369	0.0160	0.805	0.811	0.815	0.876		0.920
91	182	763	1877	1.210	961	181.3		0.0357	0.0161	0.805	0.811	0.814	0.875		0.919
92	184	763	1877	1.210	960	181.0		0.0346	0.0162	0.805	0.812	0.815	0.876		0.919
93	186	765	1877	1.210	958	180.7		0.0334	0.0163	0.805	0.811	0.814	0.875		0.919
94	188	763	1877	1.210	956	180.4		0.0324	0.0164	0.805	0.811	0.815	0.875		0.918
95	190	763	1877	1.210	955	180.2		0.0315	0.0164	0.805	0.811	0.815	0.876		0.919
96	192	765	1877	1.210	954	179.9		0.0306	0.0165	0.805	0.812	0.816	0.876		0.918

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
412	1	66/053/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	763	1877	1.210	952	179.5		0.0296	0.0166	0.805	0.814	0.817	0.873		0.919
98	196	763	1377	1.210	950	179.2		0.0293	0.0166	0.806	0.816	0.818	0.878		0.918
99	198	763	1377	1.210	949	178.9		0.0288	0.0166	0.807	0.816	0.818	0.879		0.913
100	200	763	1877	1.210	946	178.5		0.0284	0.0166	0.807	0.818	0.819	0.879		0.918
101	202	763	1877	1.210	946	178.4		0.0282	0.0166	0.808	0.819	0.821	0.880		0.918
102	204	763	1877	1.210	943	177.6		0.0281	0.0166	0.808	0.819	0.821	0.880		0.918
103	206	763	1877	1.210	941	177.5		0.0281	0.0165	0.809	0.818	0.821	0.881		0.918
104	208	763	1877	1.210	939	177.1		0.0282	0.0165	0.810	0.819	0.821	0.882		0.918
105	210	763	1677	1.210	935	176.5		0.0281	0.0164	0.808	0.818	0.819	0.880		0.918
106	212	763	1877	1.210	932	175.8		0.0283	0.0164	0.807	0.818	0.819	0.880		0.918
107	214	763	1677	1.210	928	175.0		0.0285	0.0163	0.805	0.818	0.818	0.879		0.918
108	216	763	1677	1.210	925	174.0		0.0287	0.0163	0.803	0.816	0.815	0.878		0.917
109	218	763	1877	1.210	919	173.3		0.0290	0.0164	0.804	0.816	0.816	0.879		0.918
110	220	763	1877	1.210	912	172.0		0.0292	0.0165	0.802	0.812	0.817	0.876		0.918
111	222	763	1877	1.210	905	170.6		0.0294	0.0163	0.800	0.810	0.812	0.876		0.918
112	224	763	1877	1.210	896	169.0		0.0299	0.0164	0.799	0.808	0.811	0.876		0.919
113	226	763	1877	1.210	886	167.2		0.0301	0.0163	0.794	0.803	0.806	0.875		0.918
114	228	763	1377	1.210	875	165.1		0.0307	0.0164	0.791	0.802	0.804	0.874		0.919
115	230	763	1877	1.210	862	162.6		0.0311	0.0164	0.786	0.797	0.799	0.874		0.919
116	232	763	1377	1.210	846	159.6		0.0317	0.0164	0.781	0.792	0.794	0.873		0.919
117	234	763	1877	1.210	828	156.2		0.0325	0.0166	0.775	0.787	0.790	0.873		0.919
118	236	763	1877	1.210	808	152.[illegible]		0.0332	0.0165	0.768	0.773	0.781	0.871		0.919
119	238	763	1377	1.210	784	147.8		0.0342	0.0165	0.761	0.768	0.775	0.870		0.918
120	240	763	1877	1.210	757	142.0		0.0354	0.0166	0.751	0.759	0.764	0.870		0.919
121	242	763	1377	1.210	728	137.4		0.0368	0.0166	0.741	0.747	0.753	0.868		0.913
122	244	763	1877	1.210	696	131.3		0.0385	0.0166	0.728	0.736	0.742	0.867		0.919
123	246	763	1877	1.210	663	125.1		0.0402	0.0166	0.716	0.724	0.729	0.867		0.918
124	248	763	1877	1.210	629	118.6		0.0422	0.0166	0.702	0.710	0.716	0.865		0.918
125	250	763	1377	1.210	595	111.0		0.0445	0.0166	0.686	0.695	0.701	0.864		0.917
126	252	763	1877	1.210	558	105.2		0.0469	0.0165	0.674	0.679	0.687	0.862		0.918
127	254	763	1877	1.210	521	98.3		0.0496	0.0164	0.659	0.661	0.671	0.860		0.917
128	256	763	1877	1.210	485	91.5		0.0524	0.0163	0.643	0.644	0.655	0.858		0.918

12258

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.
PRELIMINARY DATA

ORIGINAL PAGE IS
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RUN	TEST	CONFIG	CONF	PROPELLANT	SLTE...
412	1	63/133/1	38	15,...	300

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS. (P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
129	258	763	1877	1.210	430	84.3		0.0558	0.0163	0.628	0.628	0.639	0.857		0.916
130	260	763	1877	1.210	414	78.1		0.0590	0.0160	0.612	0.611	0.622	0.854		0.917
131	262	763	1877	1.210	381	71.9		0.0627	0.0159	0.602	0.600	0.611	0.854		0.917
132	264	763	1877	1.210	349	65.7		0.0668	0.0158	0.594	0.593	0.605	0.851		0.917
133	266	763	1877	1.210	316	59.6		0.0708	0.0157	0.591	0.591	0.604	0.850		0.916
134	268	763	1877	1.210	286	54.3		0.0755	0.0162	0.598	0.596	0.612	0.851		0.917
135	270	763	1877	1.210	259	48.8		0.0801	0.0165	0.607	0.602	0.619	0.851		0.917
136	272	763	1877	1.210	233	44.0		0.0840	0.0170	0.622	0.613	0.631	0.851		0.917
137	274	763	1877	1.210	210	39.6		0.0902	0.0182	0.640	0.627	0.645	0.852		0.918
138	276	763	1877	1.210	188	35.4		0.0951	0.0192	0.657	0.640	0.658	0.851		0.918
139	278	763	1877	1.210	169	31.8		0.1010	0.0214	0.677	0.657	0.675	0.854		0.918
140	280	763	1877	1.210	151	28.5		0.1065	0.0235	0.697	0.673	0.690	0.856		0.916
141	282	763	1877	1.210	135	25.5		0.1127	0.0260	0.715	0.688	0.705	0.857		0.915
142	284	763	1877	1.210	122	23.0		0.1137	0.0297	0.734	0.705	0.720	0.861		0.916
143	286	763	1877	1.210	110	20.7		0.1244	0.0329	0.750	0.714	0.732	0.861		0.915
144	288	763	1877	1.210	99	18.7		0.1301	0.0369	0.764	0.726	0.744	0.864		0.916
145	290	763	1877	1.210	90	17.0		0.1357	0.0417	0.776	0.738	0.755	0.866		0.916
146	292	763	1877	1.210	83	15.6		0.1416	0.0467	0.787	0.747	0.764	0.867		0.916
147	294	763	1877	1.210	76	14.3		0.1459	0.0516	0.795	0.756	0.772	0.869		0.917
148	296	763	1877	1.210	70	13.2		0.1516	0.0571	0.803	0.764	0.779	0.871		0.918
149	298	763	1877	1.210	65	12.3		0.1550	0.0623	0.808	0.772	0.786	0.872		0.918
150	300	763	1877	1.210	61	11.5		0.1588	0.0669	0.811	0.778	0.790	0.873		0.918
151	302	763	1877	1.210	58	11.0		0.1611	0.0715	0.813	0.781	0.794	0.874		0.919
152	304	763	1877	1.210	55	10.3		0.1641	0.0760	0.813	0.785	0.798	0.874		0.919
153	306	763	1877	1.210	52	9.8		0.1656	0.0806	0.814	0.790	0.802	0.875		0.919
154	308	763	1877	1.210	51	9.6		0.1673	0.0860	0.817	0.796	0.808	0.876		0.919
155	310	763	1877	1.210	47	8.9		0.1713	0.0902	0.817	0.801	0.811	0.876		0.918
156	312	763	1877	1.210	46	8.7		0.1726	0.0944	0.818	0.807	0.816	0.877		0.918
157	314	763	1877	1.210	45	8.4		0.1724	0.0986	0.820	0.811	0.820	0.878		0.918
158	316	763	1877	1.210	43	8.2		0.1723	0.1009	0.820	0.814	0.821	0.877		0.916
159	318	763	1877	1.210	43	8.2		0.1723	0.1044	0.823	0.817	0.825	0.880		0.917
160	320	763	1877	1.210	41	7.8		0.1742	0.1070	0.824	0.816	0.826	0.879		0.916

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

ORIGINAL PAGE IS
OF POOR QUALITY

RUN	LIST	ENGINE	CONF	PROPELLANT	SAMP.RATE
412	1	66/135/1	33	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	763	1877	1.210	40	7.6		0.1752	0.1109	0.824	0.815	0.827	0.879		0.916
162	324	763	1877	1.210	39	7.4		0.1779	0.1150	0.825	0.816	0.827	0.881		0.916
163	326	763	1877	1.210	38	7.1		0.1779	0.1156	0.824	0.813	0.825	0.878		0.916
164	328	763	1877	1.210	38	7.1		0.1779	0.1183	0.824	0.814	0.826	0.879		0.916
165	330	763	1877	1.210	37	6.9		0.1792	0.1215	0.825	0.812	0.826	0.878		0.916
166	332	763	1877	1.210	36	6.8		0.1798	0.1219	0.821	0.811	0.824	0.877		0.916
167	334	763	1877	1.210	35	6.6		0.1830	0.1267	0.821	0.810	0.824	0.876		0.917
168	336	763	1877	1.210	35	6.5		0.1818	0.1271	0.820	0.806	0.824	0.875		0.916
169	338	763	1877	1.210	34	6.5		0.1825	0.1275	0.819	0.805	0.824	0.874		0.916
170	340	763	1877	1.210	34	6.4		0.1832	0.1308	0.819	0.804	0.824	0.873		0.917
171	342	763	1877	1.210	34	6.4		0.1832	0.1293	0.818	0.802	0.822	0.872		0.916
172	344	763	1877	1.210	33	6.2		0.1848	0.1333	0.818	0.801	0.821	0.871		0.916
173	346	763	1877	1.210	33	6.2		0.1848	0.1333	0.817	0.800	0.820	0.870		0.915
174	348	763	1877	1.210	32	6.1		0.1856	0.1354	0.816	0.799	0.816	0.870		0.916
175	350	763	1877	1.210	31	5.9		0.1872	0.1381	0.815	0.798	0.817	0.869		0.916
176	352	763	1877	1.210	32	6.0		0.1864	0.1375	0.816	0.798	0.818	0.869		0.917
177	354	763	1877	1.210	31	5.8		0.1903	0.1404	0.815	0.797	0.818	0.868		0.916
178	356	763	1877	1.210	31	5.8		0.1903	0.1404	0.814	0.796	0.818	0.860		0.916
179	358	763	1877	1.210	31	5.9		0.1872	0.1413	0.816	0.797	0.819	0.869		0.916
180	360	763	1877	1.210	30	5.6		0.1900	0.1451	0.814	0.796	0.818	0.869		0.914
181	362	763	1877	1.210	30	5.7		0.1912	0.1443	0.816	0.796	0.817	0.870		0.914
182	364	763	1877	1.210	30	5.7		0.1890	0.1445	0.814	0.796	0.816	0.871		0.913
183	366	763	1877	1.210	29	5.5		0.1932	0.1476	0.813	0.796	0.815	0.870		0.913
184	368	763	1877	1.210	30	5.7		0.1912	0.1460	0.814	0.798	0.817	0.873		0.913
185	370	763	1877	1.210	29	5.5		0.1932	0.1476	0.813	0.796	0.815	0.873		0.913
186	372	763	1877	1.210	29	5.5		0.1932	0.1493	0.814	0.795	0.814	0.873		0.913
187	374	763	1877	1.210	29	5.5		0.1932	0.1510	0.816	0.795	0.814	0.875		0.915
188	376	763	1877	1.210	29	5.4		0.1919	0.1501	0.814	0.792	0.811	0.873		0.914
189	378	763	1877	1.210	29	5.4		0.1942	0.1519	0.816	0.793	0.811	0.876		0.916
190	380	763	1877	1.210	29	5.4		0.1942	0.1519	0.814	0.791	0.808	0.876		0.916
191	382	763	1877	1.210	28	5.3		0.1953	0.1546	0.813	0.790	0.808	0.876		0.916
192	384	763	1877	1.210	28	5.3		0.1977	0.1563	0.814	0.791	0.808	0.876		0.917

12259

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

ORIGINAL PAGE IS
OF POOR QUALITY

RUN	LIST	TESTSP	CONF	PROPELLANT	CAL.RATE
412	1	66/055/1	36	15%AL	[illegible]

FRAME	TIME	Pn	PTn	MACHn	PCCn	(PB?/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
193	386	763	1877	1.210	28	[illegible]		0.1953	0.1546	0.813	0.789	0.807	0.875		0.917
194	388	763	1377	1.210	28	[illegible]		0.1955	0.1528	0.813	0.788	0.807	0.875		0.913
195	390	763	1877	1.210	28	[illegible]		0.1953	0.1546	0.813	0.789	0.808	0.875		0.919
196	392	763	1377	1.210	23	[illegible]		0.1953	0.1546	0.813	0.789	0.808	0.873		0.919
197	394	763	1877	1.210	28	[illegible]		0.1989	0.1574	0.815	0.790	0.809	0.873		0.919
198	396	763	1877	1.210	28	[illegible]		0.1955	0.1546	0.813	0.791	0.809	0.873		0.920
199	398	763	1877	1.210	28	[illegible]		0.1964	0.1574	0.813	0.792	0.808	0.872		0.921
200	400	763	1877	1.210	27	[illegible]		0.1976	0.1584	0.812	0.790	0.808	0.872		0.921
201	402	763	1877	1.210	28	5.5		0.1955	0.1546	0.814	0.790	0.807	0.872		0.922
202	404	763	1877	1.210	27	5.1		0.2001	0.1584	0.814	0.787	0.805	0.870		0.922
203	406	763	1877	1.210	28	5.2		0.1964	0.1555	0.814	0.787	0.805	0.870		0.923
204	408	763	1877	1.210	28	[illegible]		0.1955	0.1563	0.815	0.787	0.805	0.870		0.924
205	410	763	1377	1.210	27	[illegible]		0.2013	0.1595	0.813	0.785	0.802	0.869		0.922
206	412	763	1377	1.210	28	5.2		0.1964	0.1555	0.814	0.787	0.803	0.870		0.922
207	414	763	1877	1.210	27	5.1		0.2001	0.1534	0.814	0.787	0.803	0.870		0.922
208	416	763	1377	1.210	27	5.0		0.2015	0.1595	0.814	0.785	0.802	0.870		0.921
209	418	763	1877	1.210	28	[illegible]		0.1953	0.1563	0.817	0.787	0.804	0.873		0.922
210	420	763	1377	1.210	27	5.1		0.1976	0.1566	0.817	0.785	0.805	0.872		0.922
211	422	763	1077	1.210	27	5.1		0.1976	0.1584	0.813	0.786	0.805	0.873		0.921
212	424	763	1877	1.210	27	5.1		0.1976	0.1602	0.810	0.787	0.803	0.873		0.921
213	426	763	1377	1.210	27	[illegible]		0.1980	0.1595	0.816	0.787	0.807	0.872		0.919

MACH	Q	P	PT	PRIF	FOAL
1.210	782.9	763	1077	1451	2118

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	[illegible]	[illegible]	COMP	PROPELLANT	[illegible]
[illegible]	1	66/[illegible]/1	38	15,[illegible]	500

POINT	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	261	638	1.206	592	326.5		0.0360	0.0136	1.097	1.094	1.152	1.0[illegible]		1.028
2	4	261	638	1.206	625	345.0		0.0375	0.0141	1.112	1.112	1.147	1.057		1.020
3	6	261	638	1.206	655	361.2		0.0382	0.0146	1.125	1.125	1.161	1.0[illegible]		1.028
4	8	261	638	1.206	679	374.7		0.0391	0.0149	1.132	1.139	1.172	1.055		1.028
5	10	261	638	1.206	702	387.2		0.0397	0.0153	1.139	1.150	1.180	1.061		1.028
6	12	261	638	1.206	720	397.4		0.0403	0.0155	1.145	1.158	1.187	1.066		1.026
7	14	261	638	1.206	736	405.9		0.0406	0.0158	1.150	1.165	1.192	1.07[illegible]		1.026
8	16	261	638	1.206	751	414.2		0.0411	0.0160	1.156	1.169	1.198	1.07[illegible]		1.026
9	18	261	638	1.206	762	420.5		0.0413	0.0161	1.161	1.169	1.200	1.079		1.024
10	20	261	638	1.205	773	426.3		0.0415	0.0162	1.165	1.172	1.205	1.085		1.024
11	22	261	638	1.206	782	431.6		0.0418	0.0164	1.169	1.176	1.207	1.083		1.026
12	24	261	638	1.206	789	435.2		0.0417	0.0162	1.165	1.176	1.205	1.086		1.022
13	26	261	638	1.206	797	439.6		0.0419	0.0163	1.167	1.180	1.209	1.088		1.022
14	28	261	638	1.206	803	443.2		0.0418	0.0163	1.167	1.185	1.209	1.090		1.022
15	30	261	638	1.206	809	446.2		0.0417	0.0162	1.165	1.180	1.207	1.090		1.019
16	32	261	638	1.206	815	449.5		0.0418	0.0163	1.172	1.185	1.214	1.092		1.022
17	34	261	638	1.206	819	451.7		0.0416	0.0161	1.169	1.178	1.209	1.090		1.022
18	36	261	638	1.206	823	454.2		0.0414	0.0161	1.172	1.178	1.209	1.092		1.022
19	38	261	638	1.206	828	456.7		0.0413	0.0161	1.174	1.180	1.211	1.094		1.026
20	40	261	638	1.206	831	458.3		0.0410	0.0159	1.169	1.176	1.209	1.090		1.022
21	42	261	638	1.206	834	460.3		0.0410	0.0159	1.172	1.180	1.211	1.09[illegible]		1.024
22	44	261	638	1.206	837	461.9		0.0408	0.0158	1.169	1.180	1.211	1.092		1.024
23	46	261	638	1.206	839	463.0		0.0406	0.0158	1.167	1.180	1.209	1.090		1.022
24	48	261	638	1.206	842	464.4		0.0405	0.0157	1.169	1.180	1.211	1.094		1.024
25	50	261	638	1.206	844	465.5		0.0403	0.0156	1.167	1.176	1.209	1.090		1.024
26	52	261	638	1.206	845	466.1		0.0402	0.0156	1.169	1.174	1.207	1.090		1.024
27	54	261	638	1.206	846	466.9		0.0401	0.0155	1.172	1.174	1.209	1.092		1.026
28	56	261	638	1.206	848	467.7		0.0401	0.0155	1.172	1.174	1.207	1.090		1.024
29	58	261	638	1.206	848	468.0		0.0400	0.0154	1.169	1.176	1.207	1.092		1.024
30	60	261	638	1.206	849	468.5		0.0400	0.0154	1.167	1.176	1.207	1.092		1.024
31	62	261	638	1.206	850	469.1		0.0399	0.0153	1.167	1.176	1.207	1.090		1.024
32	64	261	638	1.206	850	469.1		0.0399	0.0152	1.165	1.174	1.207	1.090		1.026

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

ORIGINAL PAGE IS OF POOR QUALITY

RUN	TEST	SERIES	CONF	PROPELLANT	AMB.PRES
415	1	66/055/1	58	15.[illegible]	500

FRAME	TIME	Pn	PTn	MACHn	TT0n	(PT0/P)n	NOZZLE PRESS. (P2/PT0)n	(P3/PT0)n	(P4/PT0)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BOAT PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	261	638	1.206	852	[illegible]		0.0400	0.0153	1.169	1.176	1.209	1.092		1.026
34	68	261	638	1.206	852	469.9		0.0399	0.0151	1.169	1.172	1.209	1.090		1.026
35	70	261	638	1.206	853	470.5		0.0399	0.0151	1.172	1.172	1.209	1.090		1.026
36	72	261	638	1.206	854	471.3		0.0400	0.0152	1.174	1.174	1.211	1.094		1.028
37	74	261	638	1.206	854	471.[illegible]		0.0399	0.0150	1.169	1.172	1.209	1.090		1.028
38	76	261	638	1.206	855	471.9		0.0399	0.0150	1.172	1.176	1.209	1.092		1.026
39	78	261	638	1.206	856	472.4		0.0400	0.0149	1.169	1.176	1.209	1.092		1.026
40	80	261	638	1.206	857	472.7		0.0399	0.0149	1.167	1.176	1.207	1.090		1.024
41	82	261	638	1.206	859	474.1		0.0400	0.0150	1.174	1.178	1.211	1.097		1.026
42	84	261	638	1.206	859	474.1		0.0398	0.0148	1.169	1.174	1.209	1.092		1.024
43	86	261	638	1.206	861	474.9		0.0398	0.0147	1.172	1.172	1.209	1.092		1.024
44	88	261	638	1.206	863	476.0		0.0398	0.0147	1.176	1.174	1.211	1.094		1.026
45	90	261	638	1.206	864	476.5		0.0396	0.0145	1.172	1.172	1.209	1.090		1.024
46	92	261	638	1.206	866	477.9		0.0397	0.0145	1.174	1.178	1.211	1.094		1.026
47	94	261	638	1.206	868	479.0		0.0397	0.0144	1.174	1.180	1.211	1.094		1.024
48	96	261	638	1.206	870	480.1		0.0396	0.0143	1.174	1.185	1.214	1.094		1.024
49	98	261	638	1.206	873	481.5		0.0398	0.0143	1.176	1.187	1.216	1.101		1.026
50	100	261	638	1.206	875	482.9		0.0398	0.0142	1.178	1.183	1.216	1.099		1.026
51	102	261	638	1.206	878	484.3		0.0398	0.0141	1.180	1.183	1.218	1.099		1.026
52	104	261	638	1.206	881	485.9		0.0399	0.0141	1.183	1.185	1.218	1.101		1.026
53	106	261	638	1.206	884	487.9		0.0400	0.0141	1.183	1.183	1.218	1.101		1.02[illegible]
54	108	261	638	1.206	886	489.0		0.0399	0.0141	1.180	1.185	1.218	1.101		1.020
55	110	261	638	1.206	890	490.9		0.0399	0.0142	1.180	1.187	1.220	1.101		1.020
56	112	261	638	1.206	895	492.3		0.0399	0.0142	1.180	1.187	1.218	1.101		1.026
57	114	261	638	1.206	896	494.2		0.0399	0.0141	1.178	1.187	1.218	1.101		1.026
58	116	261	638	1.206	900	496.7		0.0399	0.0142	1.183	1.187	1.220	1.103		1.028
59	118	261	638	1.206	905	498.1		0.0399	0.0142	1.185	1.185	1.218	1.101		1.028
60	120	261	638	1.206	907	500.3		0.0400	0.0143	1.187	1.185	1.218	1.103		1.028
61	122	261	638	1.206	911	502.5		0.0402	0.0144	1.189	1.189	1.222	1.105		1.030
62	124	261	638	1.206	913	503.9		0.0403	0.0143	1.195	1.187	1.218	1.105		1.02[illegible]
63	126	261	638	1.206	918	506.6		0.0405	0.0145	1.187	1.192	1.220	1.105		1.028
64	128	261	638	1.206	922	508.6		0.0407	0.0145	1.187	1.194	1.222	1.105		1.020

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN 413 | TEST 1 | CONFIG 66/C33/1 | CODE 33 | PROFILE 15/ALL | BASE PLATE

POINT	TIME	Pn	P0n	MACH n	P00n	(P00/P)n	HOUSING PRESS. (P2/P00)n	(P3/P00)n	(P4/P00)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	261	638	1.206	925	510.2	0.0400	0.0145		1.185	1.194	1.220	1.105		1.024
66	132	261	638	1.206	930	513.2	0.0411	0.0147		1.194	1.196	1.225	1.112		1.028
67	134	261	638	1.206	933	514.8	0.0411	0.0146		1.192	1.194	1.222	1.110		1.026
68	136	261	638	1.206	937	516.8	0.0412	0.0147		1.194	1.194	1.225	1.110		1.026
69	138	261	638	1.206	941	519.0	0.0413	0.0148		1.196	1.196	1.227	1.114		1.028
70	140	261	638	1.206	944	521.1	0.0413	0.0147		1.194	1.192	1.222	1.112		1.024
71	142	261	638	1.206	948	523.2	0.0414	0.0148		1.198	1.198	1.227	1.116		1.028
72	144	261	638	1.206	952	525.4	0.0414	0.0147		1.198	1.200	1.229	1.119		1.028
73	146	261	638	1.206	955	526.9	0.0413	0.0147		1.196	1.203	1.227	1.119		1.026
74	148	261	638	1.206	956	526.4	0.0413	0.0146		1.200	1.205	1.231	1.125		1.030
75	150	261	638	1.206	961	530.3	0.0412	0.0146		1.203	1.200	1.229	1.121		1.028
76	152	261	638	1.206	964	531.7	0.0411	0.0148		1.205	1.198	1.231	1.123		1.030
77	154	261	638	1.206	967	533.4	0.0411	0.0148		1.207	1.200	1.231	1.125		1.033
78	156	261	638	1.206	970	535.0	0.0410	0.0148		1.209	1.200	1.233	1.125		1.030
79	158	261	638	1.206	971	535.9	0.0409	0.0148		1.207	1.203	1.236	1.128		1.030
80	160	261	638	1.206	974	537.2	0.0410	0.0148		1.207	1.207	1.238	1.130		1.030
81	162	261	638	1.206	976	538.3	0.0409	0.0149		1.207	1.207	1.236	1.130		1.030
82	164	261	638	1.206	977	538.9	0.0408	0.0148		1.207	1.207	1.238	1.130		1.028
83	166	261	638	1.206	979	540.0	0.0409	0.0149		1.211	1.209	1.240	1.132		1.030
84	168	261	638	1.206	980	540.6	0.0409	0.0147		1.211	1.207	1.240	1.132		1.028
85	170	261	638	1.206	980	541.7	0.0410	0.0147		1.214	1.207	1.240	1.132		1.028
86	172	261	638	1.206	983	542.3	0.0411	0.0147		1.218	1.211	1.244	1.136		1.030
87	174	261	638	1.206	983	542.2	0.0411	0.0146		1.214	1.209	1.240	1.134		1.028
88	176	261	638	1.206	985	543.2	0.0412	0.0146		1.216	1.216	1.244	1.136		1.028
89	178	261	638	1.206	985	543.2	0.0412	0.0146		1.216	1.218	1.244	1.139		1.028
90	180	261	638	1.206	985	543.5	0.0411	0.0145		1.214	1.216	1.244	1.136		1.026
91	182	261	638	1.206	986	543.9	0.0412	0.0147		1.220	1.222	1.249	1.143		1.030
92	184	261	638	1.206	985	543.2	0.0409	0.0146		1.220	1.218	1.247	1.141		1.028
93	186	261	638	1.206	984	542.6	0.0406	0.0146		1.220	1.216	1.247	1.141		1.028
94	188	261	638	1.206	984	542.8	0.0401	0.0146		1.222	1.218	1.251	1.145		1.030
95	190	261	638	1.206	982	541.9	0.0394	0.0146		1.220	1.216	1.247	1.139		1.028
96	192	261	638	1.206	982	541.7	0.0387	0.0147		1.222	1.222	1.249	1.143		1.030

12261

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National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	BASE	PRESS	BODY PROFILE	SAMP.RATE
413	1	30/033/1	90 15,11	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	En	PTn	MACHn	PSOn	(PTO/P)n	(P2/PTO)n	(P3/PTO)n	(P4/PTO)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
97	194	261	630	1.206	980	546.6		0.0373	0.0147	1.220	1.222	1.251	1.145		1.032
98	196	261	630	1.206	978	539.7		0.0369	0.0147	1.220	1.222	1.249	1.142		1.030
99	198	261	630	1.206	976	538.6		0.0360	0.0148	1.222	1.225	1.251	1.145		1.032
100	200	261	630	1.206	975	537.8		0.0350	0.0148	1.220	1.220	1.249	1.142		1.031
101	202	261	630	1.206	973	536.7		0.0341	0.0147	1.222	1.218	1.251	1.145		1.035
102	204	261	630	1.206	970	535.5		0.0335	0.0147	1.222	1.218	1.249	1.142		1.027
103	206	261	630	1.206	968	534.2		0.0325	0.0148	1.222	1.220	1.249	1.145		1.032
104	208	261	630	1.206	965	532.5		0.0319	0.0147	1.220	1.222	1.249	1.142		1.027
105	210	261	630	1.206	962	530.8		0.0314	0.0147	1.220	1.222	1.249	1.145		1.027
106	212	261	630	1.206	958	528.7		0.0310	0.0147	1.218	1.222	1.249	1.145		1.027
107	214	261	630	1.206	954	526.2		0.0306	0.0147	1.214	1.220	1.247	1.139		1.025
108	216	261	630	1.206	950	524.3		0.0306	0.0148	1.216	1.218	1.247	1.141		1.025
109	218	261	630	1.206	944	521.0		0.0304	0.0147	1.214	1.214	1.242	1.136		1.022
110	220	261	630	1.206	938	517.7		0.0304	0.0146	1.214	1.209	1.240	1.134		1.025
111	222	261	630	1.206	931	513.5		0.0306	0.0146	1.211	1.209	1.240	1.132		1.025
112	224	261	630	1.206	920	507.4		0.0307	0.0147	1.205	1.200	1.231	1.125		1.025
113	226	261	630	1.206	908	501.1		0.0311	0.0148	1.196	1.196	1.227	1.121		1.025
114	228	261	630	1.206	893	492.5		0.0316	0.0147	1.187	1.189	1.218	1.114		1.025
115	230	261	630	1.206	874	482.1		0.0322	0.0146	1.174	1.176	1.205	1.101		1.025
116	232	261	630	1.206	852	470.2		0.0331	0.0148	1.167	1.169	1.196	1.097		1.025
117	234	261	630	1.206	826	455.6		0.0340	0.0146	1.152	1.150	1.180	1.081		1.020
118	236	261	630	1.206	797	439.6		0.0353	0.0146	1.139	1.132	1.165	1.066		1.020
119	238	261	630	1.206	765	422.2		0.0366	0.0146	1.121	1.116	1.147	1.057		1.023
120	240	261	630	1.206	731	403.2		0.0382	0.0145	1.099	1.092	1.123	1.037		1.028
121	242	261	630	1.206	695	383.6		0.0401	0.0145	1.079	1.077	1.105	1.026		1.020
122	244	261	630	1.206	658	362.9		0.0422	0.0144	1.055	1.055	1.081	1.008		1.026
123	246	261	630	1.206	620	341.9		0.0445	0.0144	1.030	1.030	1.055	0.991		1.026
124	248	261	630	1.206	582	321.0		0.0470	0.0143	1.003	1.003	1.055	0.969		1.028
125	250	261	630	1.206	544	300.3		0.0493	0.0140	0.986	0.982	1.008	0.962		1.026
126	252	261	630	1.206	507	279.8		0.0529	0.0139	0.964	0.955	0.986	0.949		1.026
127	254	261	630	1.206	472	260.3		0.0562	0.0138	0.944	0.953	0.964	0.936		1.026
128	256	261	630	1.206	438	241.5		0.0596	0.0136	0.922	0.909	0.942	0.924		1.026

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

ORIGINAL PAGE IS
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[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] SAMP.RATE
[illegible] 1 [illegible] 38 [illegible] 500

[illegible]	[illegible]	[illegible]	[illegible]	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
129	256	261	638	1.206	404	223.0		0.0634	0.0135	0.898	0.889	0.922	0.916		1.026
130	260	261	638	1.206	374	206.2		0.0675	0.0132	0.878	0.869	0.902	0.909		1.026
131	262	261	638	1.206	345	190.2		0.0716	0.0129	0.856	0.849	0.880	0.900		1.026
132	264	261	638	1.206	317	174.7		0.0759	0.0125	0.834	0.825	0.860	0.896		1.026
133	266	261	638	1.206	293	161.8		0.0801	0.0124	0.816	0.805	0.843	0.894		1.026
134	268	261	638	1.206	269	148.5		0.0846	0.0121	0.796	0.779	0.821	0.887		1.026
135	270	261	638	1.206	248	36.7		0.0895	0.0119	0.779	0.757	0.801	0.887		1.026
136	272	261	638	1.206	229	126.2		0.0945	0.0120	0.765	0.739	0.785	0.887		1.026
137	274	261	638	1.206	209	115.4		0.0986	0.0112	0.743	0.721	0.768	0.885		1.026
138	276	261	638	1.206	194	106.9		0.1034	0.0116	0.732	0.713	0.759	0.885		1.026
139	278	261	638	1.206	179	98.6		0.1084	0.0114	0.726	0.706	0.755	0.883		1.028
140	280	261	638	1.206	165	90.9		0.1127	0.0109	0.724	0.702	0.755	0.880		1.026
141	282	261	638	1.206	154	84.8		0.1175	0.0120	0.732	0.708	0.766	0.887		1.030
142	284	261	638	1.206	142	78.2		0.1216	0.0116	0.737	0.710	0.774	0.885		1.030
143	286	261	638	1.206	132	72.9		0.1253	0.0124	0.748	0.719	0.788	0.887		1.028
144	288	261	638	1.206	124	68.2		0.1290	0.0133	0.761	0.735	0.805	0.889		1.030
145	290	261	638	1.206	115	63.6		0.1322	0.0130	0.770	0.745	0.816	0.887		1.028
146	292	261	638	1.206	109	60.0		0.1358	0.0147	0.785	0.763	0.834	0.894		1.030
147	294	261	638	1.206	102	56.4		0.1392	0.0156	0.799	0.779	0.847	0.894		1.030
148	296	261	638	1.206	97	53.4		0.1409	0.0165	0.814	0.794	0.856	0.896		1.030
149	298	261	638	1.206	91	50.5		0.1443	0.0180	0.834	0.807	0.869	0.902		1.033
150	300	261	638	1.206	87	48.1		0.1456	0.0189	0.849	0.816	0.876	0.900		1.033
151	302	261	638	1.206	83	45.9		0.1470	0.0198	0.865	0.823	0.885	0.902		1.030
152	304	261	638	1.206	79	45.7		0.1494	0.0214	0.880	0.834	0.899	0.907		1.030
153	306	261	638	1.206	76	42.0		0.1500	0.0229	0.891	0.841	0.896	0.907		1.030
154	308	261	638	1.206	73	40.1		0.1508	0.0240	0.900	0.847	0.900	0.911		1.030
155	310	261	638	1.206	71	39.0		0.1515	0.0247	0.909	0.856	0.905	0.913		1.030
156	312	261	638	1.206	68	37.6		0.1519	0.0256	0.913	0.863	0.909	0.916		1.030
157	314	261	638	1.206	65	36.0		0.1520	0.0260	0.916	0.865	0.911	0.918		1.028
158	316	261	638	1.206	64	35.4		0.1521	0.0267	0.924	0.871	0.920	0.918		1.030
159	318	261	638	1.206	62	34.0		0.1520	0.0291	0.927	0.874	0.922	0.918		1.030
160	320	261	638	1.206	60	33.2		0.1522	0.0293	0.929	0.878	0.925	0.920		1.030

-12262

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN LIST NOZZLE COMP PROPELLANT SAMP.RATE
413 1 66/035/1 53 15%AL 500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	CELL	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
161	322	261	638	1.206	59	32.7		0.1525	0.0320	0.933	0.887	0.936	0.924		1.030
162	324	261	638	1.206	56	31.0		0.1524	0.0320	0.927	0.887	0.938	0.920		1.028
163	326	261	638	1.206	56	30.7		0.1525	0.0340	0.929	0.896	0.944	0.922		1.028
164	328	261	638	1.206	55	30.2		0.1517	0.0337	0.929	0.900	0.947	0.922		1.028
165	330	261	638	1.206	53	29.4		0.1509	0.0338	0.927	0.902	0.947	0.920		1.026
166	332	261	638	1.206	53	29.4		0.1497	0.0366	0.931	0.909	0.955	0.927		1.030
167	334	261	638	1.206	51	28.2		0.1490	0.0360	0.931	0.907	0.955	0.922		1.028
168	336	261	638	1.206	50	27.7		0.1495	0.0368	0.931	0.907	0.955	0.922		1.028
169	338	261	638	1.206	50	27.4		0.1481	0.0381	0.936	0.911	0.960	0.927		1.030
170	340	261	638	1.206	48	26.6		0.1472	0.0375	0.931	0.909	0.958	0.922		1.026
171	342	261	638	1.206	48	26.6		0.1472	0.0395	0.933	0.916	0.962	0.924		1.026
172	344	261	638	1.206	48	26.3		0.1460	0.0397	0.931	0.916	0.962	0.924		1.028
173	346	261	638	1.206	47	25.8		0.1448	0.0406	0.931	0.916	0.962	0.922		1.026
174	348	261	638	1.206	46	25.5		0.1435	0.0410	0.933	0.918	0.964	0.927		1.028
175	350	261	638	1.206	46	25.2		0.1421	0.0415	0.936	0.913	0.962	0.922		1.026
176	352	261	638	1.206	45	24.7		0.1423	0.0424	0.936	0.911	0.960	0.922		1.024
177	354	261	638	1.206	45	24.7		0.1409	0.0424	0.938	0.909	0.960	0.922		1.026
178	356	261	638	1.206	44	24.4		0.1409	0.0429	0.938	0.909	0.958	0.920		1.024
179	358	261	638	1.206	43	23.8		0.1396	0.0439	0.936	0.909	0.958	0.922		1.024
180	360	261	638	1.206	43	23.8		0.1380	0.0439	0.936	0.909	0.955	0.922		1.024
181	362	261	638	1.206	43	23.6		0.1365	0.0444	0.933	0.909	0.955	0.920		1.024
182	364	261	638	1.206	42	23.0		0.1366	0.0431	0.931	0.905	0.951	0.920		1.022
183	366	261	638	1.206	43	23.6		0.1334	0.0444	0.933	0.905	0.951	0.920		1.024
184	368	261	638	1.206	41	22.7		0.1350	0.0448	0.931	0.898	0.949	0.918		1.024
185	370	261	638	1.206	41	22.7		0.1334	0.0460	0.931	0.894	0.949	0.918		1.024
186	372	261	638	1.206	41	22.7		0.1334	0.0472	0.933	0.896	0.949	0.920		1.026
187	374	261	638	1.206	40	21.9		0.1317	0.0452	0.927	0.891	0.944	0.913		1.024
188	376	261	638	1.206	40	22.2		0.1317	0.0472	0.927	0.894	0.947	0.916		1.024
189	378	261	638	1.206	40	21.9		0.1317	0.0473	0.924	0.894	0.944	0.916		1.024
190	380	261	638	1.206	39	21.6		0.1300	0.0450	0.920	0.889	0.942	0.911		1.022
191	382	261	638	1.206	40	21.9		0.1300	0.0490	0.927	0.891	0.944	0.910		1.026
192	384	261	638	1.206	39	21.4		0.1282	0.0477	0.924	0.887	0.942	0.913		1.024

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.
PRELIMINARY DATA

ORIGINAL PAGE IS
OF POOR QUALITY

RUN	TEST	MODEL	CONF	PROPELLANT	SAMP.RATE
413	1	66/335/1	38	15/LI	500

FRAME	TIME	PTn	PCn	MACHn	PCOn	(PCO/P)n	(P2/PCO)n	NOZZLE PRESS. (P3/PCO)n	(P4/PCO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
193	386	261	658	1.206	39	21.4		0.1265	0.0477	0.927	0.885	0.942	0.913		1.022
194	388	261	658	1.206	39	21.4		0.1265	0.0490	0.929	0.885	0.944	0.916		1.026
195	390	261	658	1.206	38	21.1		0.1247	0.0470	0.927	0.880	0.930	0.911		1.022
196	392	261	658	1.206	38	21.1		0.1264	0.0496	0.927	0.887	0.940	0.911		1.022
197	394	261	658	1.206	38	21.1		0.1247	0.0483	0.927	0.887	0.938	0.911		1.022
198	396	261	658	1.206	38	[illegible]		0.1223	0.0490	0.922	0.887	0.936	0.913		1.022
199	398	261	658	1.206	37	20.5		0.1244	0.0510	0.924	0.889	0.938	0.911		1.022
200	400	261	658	1.206	37	20.5		0.1227	0.0496	0.922	0.885	0.935	0.911		1.022
201	402	261	658	1.206	37	20.5		0.1227	0.0496	0.924	0.885	0.933	0.911		1.022
202	404	261	658	1.206	37	20.5		0.1209	0.0496	0.927	0.885	0.936	0.911		1.024
203	406	261	658	1.206	37	20.5		0.1209	0.0510	0.927	0.885	0.936	0.911		1.024
204	408	261	658	1.206	37	20.2		0.1139	0.0505	0.927	0.885	0.936	0.911		1.026
205	410	261	658	1.206	37	20.2		0.1207	0.0503	0.927	0.887	0.935	0.911		1.026
206	412	261	658	1.206	37	20.2		0.1189	0.0503	0.924	0.887	0.933	0.911		1.026
207	414	261	658	1.206	36	19.7		0.1185	0.0503	0.922	0.885	0.935	0.911		1.026
208	416	261	658	1.206	37	20.2		0.1169	0.0517	0.927	0.885	0.935	0.911		1.026
209	418	261	658	1.206	36	20.0		0.1168	0.0510	0.924	0.880	0.933	0.911		1.026
210	420	261	658	1.206	36	20.0		0.1166	0.0510	0.924	0.878	0.931	0.911		1.026
211	422	261	658	1.206	37	20.2		0.1171	0.0517	0.924	0.880	0.935	0.913		1.028
212	424	261	658	1.206	35	19.4		0.1164	0.0510	0.920	0.876	0.929	0.909		1.026
213	426	261	658	1.206	36	20.0		0.1160	0.0524	0.920	0.878	0.931	0.911		1.026

MACH	Q	P	PT	PREF	PCAL
1.206	265.7	261	638	1451	2116

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.
PRELIMINARY DATA

12263

RUN	[illegible]	[illegible]	CONF	PROPELLANT	[illegible]
414	1	66/[illegible]/1	[illegible]	15[illegible]	500

FRAME	TIME	Pn	PCn	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	[illegible]	259	[illegible]	1.212	1061	601.2		0.0274	0.0065	1.232	1.183	1.265	1.169		1.089
2	4	259	638	1.212	1206	670.7		0.0265	0.0074	1.270	1.225	1.303	[illegible]		1.089
3	6	259	638	1.212	1320	734.1		0.0295	0.0083	1.298	1.258	1.332	1.232		1.087
4	[illegible]	259	[illegible]	1.212	1425	792.5		0.0305	0.0092	1.327	1.294	1.361	1.258		1.087
5	10	259	638	1.212	1520	845.0		0.0316	0.0100	1.352	1.325	1.387	1.285		1.089
6	12	259	638	1.212	1600	889.5		0.0326	0.0107	1.365	1.347	1.403	[illegible]		1.087
7	14	259	638	1.212	1669	928.2		0.0338	0.0115	1.383	1.372	1.421	1.316		1.087
8	16	259	638	1.212	1726	959.6		0.0350	0.0121	1.394	1.392	1.434	[illegible]		1.083
9	18	259	638	1.212	1771	984.9		0.0362	0.0127	1.403	1.403	1.443	[illegible]		1.083
10	20	259	638	1.212	1808	1005.5		0.0373	0.0132	1.416	1.419	1.456	1.352		1.085
11	22	259	638	1.212	1835	1020.2		0.0382	0.0135	1.419	1.423	1.459	1.354		1.085
12	24	259	638	1.212	1855	1031.6		0.0388	0.0138	1.425	1.427	1.463	1.361		1.085
13	26	259	638	1.212	1869	1039.4		0.0393	0.0142	1.432	1.436	1.470	1.367		1.089
14	28	259	638	1.212	1878	1044.4		0.0395	0.0144	1.430	1.436	1.465	1.363		1.085
15	[illegible]	259	638	1.212	1885	1048.0		0.0398	0.0147	1.434	1.443	1.470	1.370		1.087
16	[illegible]	259	636	1.212	1888	1049.9		0.0399	0.0149	1.434	1.445	1.470	1.370		1.087
17	34	259	638	1.212	1890	1050.8		0.0399	0.0150	1.432	1.445	1.470	1.367		1.087
18	36	259	638	1.212	1892	1051.9		0.0399	0.0150	1.434	1.445	1.472	1.372		1.089
19	38	259	638	1.212	1894	1053.0		0.0398	0.0150	1.434	1.439	1.467	1.367		1.089
20	40	259	638	1.212	1896	1054.1		0.0398	0.0149	1.434	1.436	1.470	1.367		1.089
21	42	259	638	1.212	1899	1055.8		0.0398	0.0149	1.436	1.439	1.470	1.370		1.089
22	44	259	638	1.212	1902	1057.7		0.0399	0.0150	1.436	1.439	1.470	1.367		1.089
23	46	259	638	1.212	1905	1059.1		0.0400	0.0150	1.436	1.439	1.470	1.370		1.089
24	48	259	638	1.212	1908	1061.1		0.0401	0.0151	1.436	1.441	1.472	1.370		1.089
25	50	259	638	1.212	1912	1063.3		0.0401	0.0151	1.434	1.443	1.472	1.370		1.087
26	52	259	638	1.212	1916	1065.5		0.0401	0.0151	1.434	1.443	1.470	1.372		1.087
27	54	259	638	1.212	1922	1068.8		0.0402	0.0151	1.439	1.445	1.472	1.372		1.087
28	56	259	638	1.212	1927	1071.3		0.0402	0.0150	1.439	1.443	1.474	1.372		1.087
29	58	259	638	1.212	1932	1074.4		0.0403	0.0150	1.441	1.441	1.474	1.374		1.087
30	60	259	638	1.212	1939	1078.0		0.0405	0.0150	1.445	1.445	1.479	1.379		1.089
31	62	259	638	1.212	1945	1080.5		0.0405	0.0149	1.441	1.443	1.474	1.376		1.087
32	64	259	638	1.212	1951	1084.7		0.0406	0.0150	1.443	1.447	1.479	1.379		1.087

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

ORIGINAL PAGE IS OF POOR QUALITY

RUN	DISC	NOZZLE	CONF	PROPELLANT	SAMP.RATE
414	1	66/033/1	5S	15%AL	500

FRAME	TIME	Pc	PCn	MACHn	REn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	259	638	1.212	1957	[illegible]		0.0407	0.0151	1.443	1.450	1.479	1.381		1.087
34	68	259	638	1.212	1955	1091.6		0.0408	0.0151	1.443	1.450	1.479	1.381		1.087
35	70	259	638	1.212	1970	1095.5		0.0410	0.0152	1.450	1.454	1.483	1.385		1.089
36	72	259	638	1.212	1975	1098.0		0.0411	0.0151	1.450	1.452	1.481	1.385		1.089
37	74	259	638	1.212	1980	1100.8		0.0412	0.0152	1.452	1.452	1.483	1.385		1.092
38	76	259	638	1.212	1984	1103.0		0.0414	0.0153	1.456	1.454	1.485	1.392		1.096
39	78	259	638	1.212	1986	1104.2		0.0416	0.0155	1.452	1.452	1.483	1.387		1.092
40	80	259	638	1.212	1988	1105.3		0.0418	0.0156	1.456	1.459	1.488	1.392		1.094
41	82	259	638	1.212	1988	1105.3		0.0420	0.0157	1.456	1.461	1.490	1.392		1.096
42	84	259	633	1.212	1985	1103.6		0.0421	0.0160	1.454	1.463	1.488	1.392		1.094
43	86	259	638	1.212	1980	1101.1		0.0423	0.0162	1.459	1.465	1.490	1.394		1.096
44	88	259	638	1.212	1973	1097.2		0.0424	0.0164	1.459	1.461	1.488	1.392		1.094
45	90	259	638	1.212	1963	1091.6		0.0426	0.0165	1.459	1.461	1.485	1.392		1.096
46	92	259	638	1.212	1951	1085.0		0.0428	0.0166	1.461	1.459	1.485	1.394		1.096
47	94	259	638	1.212	1938	1077.7		0.0431	0.0167	1.461	1.459	1.483	1.392		1.096
48	96	259	638	1.212	1922	1068.8		0.0433	0.0168	1.459	1.461	1.481	1.394		1.096
49	98	259	638	1.212	1905	1059.4		0.0437	0.0169	1.456	1.459	1.481	1.392		1.094
50	100	259	638	1.212	1887	1049.4		0.0439	0.0168	1.454	1.459	1.479	1.390		1.092
51	102	259	638	1.212	1868	1038.5		0.0440	0.0167	1.452	1.456	1.474	1.390		1.089
52	104	259	638	1.212	1850	1028.5		0.0442	0.0166	1.452	1.452	1.474	1.387		1.089
53	106	259	638	1.212	1829	1017.1		0.0442	0.0164	1.452	1.447	1.472	1.385		1.087
54	108	259	638	1.212	1809	1006.0		0.0441	0.0163	1.452	1.445	1.472	1.385		1.087
55	110	259	638	1.212	1790	995.4		0.0439	0.0162	1.452	1.447	1.474	1.385		1.089
56	112	259	638	1.212	1769	983.5		0.0434	0.0162	1.447	1.445	1.470	1.381		1.087
57	114	259	638	1.212	1750	973.2		0.0430	0.0162	1.447	1.447	1.472	1.381		1.087
58	116	259	638	1.212	1731	962.6		0.0426	0.0163	1.445	1.447	1.470	1.379		1.087
59	118	259	638	1.212	1712	952.1		0.0422	0.0163	1.441	1.445	1.467	1.376		1.085
60	120	259	638	1.212	1696	942.9		0.0419	0.0163	1.445	1.447	1.472	1.381		1.085
61	122	259	638	1.212	1678	932.9		0.0415	0.0162	1.445	1.441	1.470	1.376		1.087
62	124	259	638	1.212	1661	923.7		0.0413	0.0162	1.445	1.439	1.470	1.376		1.087
63	126	259	638	1.212	1646	915.1		0.0412	0.0162	1.447	1.441	1.472	1.379		1.092
64	128	259	638	1.212	1651	906.8		0.0411	0.0163	1.441	1.436	1.467	1.372		1.087

12264

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN [illegible] ALPHA CONT PROPELLANT SAMP.RATE
414 [illegible] 33/[illegible] 33 15[illegible] 500

POINT	TIME	Tn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS. (P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	259	638	1.212	1617	899.0		0.0412	0.0165	1.443	1.439	1.470	1.379		1.089
66	132	259	638	1.212	1605	891.2		0.0415	0.0166	1.443	1.439	1.470	1.376		1.089
67	134	259	638	1.212	1589	883.4		0.0415	0.0167	1.441	1.439	1.467	1.376		1.087
68	136	259	638	1.212	1574	875.3		0.0418	0.0169	1.443	1.441	1.470	1.381		1.089
69	138	259	638	1.212	1560	867.3		0.0420	0.0169	1.441	1.436	1.465	[illegible]		1.087
70	140	259	638	1.212	1544	858.7		0.0424	0.0170	1.443	1.434	1.465	1.379		1.087
71	142	259	638	1.212	1528	849.5		0.0428	0.0171	1.445	1.436	1.467	1.381		1.089
72	144	259	638	1.212	1510	839.8		0.0433	0.0175	1.447	1.436	1.467	1.379		1.087
73	146	259	638	1.212	1490	828.6		0.0439	0.0176	1.445	1.439	1.467	1.381		1.089
74	148	259	638	1.212	1470	817.2		0.0445	0.0178	1.443	1.439	1.465	1.379		1.089
75	150	259	638	1.212	1446	804.2		0.0451	0.0180	1.439	1.439	1.465	1.376		1.089
76	152	259	638	1.212	1421	790.0		0.0457	0.0181	1.436	1.434	1.461	1.374		1.089
77	154	259	638	1.212	1395	775.5		0.0464	0.0182	1.436	1.430	1.461	1.370		[illegible]
78	156	259	638	1.212	1364	758.6		0.0471	0.0181	1.432	1.425	1.454	1.363		1.089
79	158	259	638	1.212	1332	740.5		0.0480	0.0182	1.427	1.419	1.452	1.359		1.089
80	160	259	638	1.212	1296	720.8		0.0491	0.0183	1.425	1.414	1.447	1.354		1.092
81	162	259	638	1.212	1256	698.2		0.0499	0.0184	1.414	1.405	1.439	1.343		1.089
82	[illegible]	259	638	1.212	1215	675.4		0.0512	0.0187	1.407	1.403	1.434	[illegible]		1.089
[illegible]	166	259	638	1.212	1170	650.7		0.0525	0.0188	1.401	1.399	1.427	[illegible]		1.087
[illegible]	168	259	638	1.212	1122	624.0		0.0539	0.0190	1.390	1.387	1.416	1.31[illegible]		1.087
[illegible]	170	259	638	1.212	1073	596.8		0.0556	0.0193	1.385	1.381	1.410	1.31[illegible]		1.092
86	172	259	638	1.212	1020	567.0		0.0574	0.0192	1.370	1.365	1.394	1.296		1.089
87	174	259	638	1.212	965	536.4		0.0597	0.0193	1.356	1.345	1.379	1.281		1.089
88	176	259	638	1.212	900	505.0		0.0622	0.0195	1.338	1.330	1.361	1.26[illegible]		1.092
89	178	259	638	1.212	849	471.9		0.0649	0.0197	1.312	1.303	1.332	1.23[illegible]		1.087
90	180	259	638	1.212	738	438.3		0.0684	0.0202	1.287	1.283	1.310	1.214		1.089
91	182	259	638	1.212	726	403.8		0.0724	0.0205	1.258	1.254	1.270	1.187		1.089
92	184	259	638	1.212	665	368.0		0.0771	0.0209	1.227	1.223	1.247	1.158		1.087
93	186	259	638	1.212	601	334.5		0.0827	0.0211	1.196	1.194	1.210	1.132		1.089
94	188	259	638	1.212	540	300.1		0.0893	0.0211	1.163	1.154	1.181	1.130		1.087
95	190	259	638	1.212	480	267.0		0.0974	0.0212	1.132	1.116	1.147	1.072		1.087
96	192	259	638	1.212	425	235.0		0.1070	0.0214	1.093	1.035	1.112	1.047		1.087

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PRELIMINARY DATA

ORIGINAL PAGE IS
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National Aeronautics and Space Administration
Ames Research Center, MOFFETT FIELD, CALIF.

PRELIMINARY DATA

12265

ORIGINAL PAGE IS
OF POOR QUALITY

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
410	1	33/133/1	[illegible] 1	500

[illegible]	[illegible]	[illegible]	[illegible]	MACH	[illegible]	(P20/P)	[illegible] PRESS. (P2/P20)	(P3/P20)	(P4/P20)	BASE PRESS. (P6/P)	(P7/P)	(P8/P)	BODY PRESS. (P9/P)	(P10/P)	(P11/P)
129	[illegible]	[illegible]	[illegible]	1.212	-50	-29.0		-0.3059	-0.0271	0.951	0.896	0.954	0.949		1.065
130	[illegible]	259	638	1.212	-50	-27.7		-0.3023	-0.0294	0.965	0.905	0.933	0.947		1.065
131	[illegible]	[illegible]	[illegible]	1.212	-52	-28.3		-0.2790	-0.0273	0.967	0.907	0.937	0.947		1.063
132	[illegible]	[illegible]	[illegible]	1.212	-52	-29.0		-0.2739	-0.0318	0.974	0.916	0.974	0.949		1.063
133	[illegible]	[illegible]	[illegible]	1.212	-52	-29.1		-0.2549	-0.0320	0.970	0.920	0.970	0.949		1.065
134	[illegible]	[illegible]	638	1.212	-55	-29.6		-0.2511	-0.0322	0.978	0.925	0.980	0.947		1.060
135	[illegible]	[illegible]	[illegible]	1.212	-53	-29.4		-0.2510	-0.0325	0.987	0.929	0.979	0.954		1.063
136	[illegible]	[illegible]	[illegible]	1.212	-54	-29.9		-0.2378	-0.0291	0.989	0.927	[illegible]	0.949		[illegible]
137	[illegible]	259	638	1.212	-54	-30.2		-0.2293	-0.0279	0.992	0.929	0.992	0.951		1.063
138	276	259	638	1.212	-54	-30.2		-0.2244	-0.0268	0.996	0.934	0.996	0.956		1.065
139	278	259	638	1.212	-56	-31.0		-0.2112	-0.0272	0.992	0.951	0.994	0.949		1.063
140	280	259	638	1.212	-55	-30.7		-0.2107	-0.0319	0.992	0.950	0.998	0.954		1.063
141	282	259	638	1.212	-56	-31.0		-0.2040	-0.0354	0.992	0.943	0.993	0.951		[illegible]
142	284	259	638	1.212	-56	-31.0		-0.1993	-0.0343	0.987	0.943	0.993	0.951		1.080
143	286	259	638	1.212	-56	-31.3		-0.1939	-0.0351	0.989	0.947	1.000	0.956		1.083
144	288	259	638	1.212	-56	-31.3		-0.1892	-0.0296	0.987	0.943	0.998	0.951		1.080
145	290	259	638	1.212	-57	-31.6		-0.1828	-0.0276	0.985	0.940	0.998	0.951		1.078
146	292	259	638	1.212	-57	-31.6		-0.1793	-0.0267	0.985	0.943	0.998	0.951		1.080
147	294	259	638	1.212	-56	-31.3		-0.1773	-0.0269	0.983	0.940	0.998	0.949		1.080
148	296	259	638	1.212	-57	-31.6		-0.1723	-0.0284	0.980	0.940	0.996	0.951		1.083
149	298	259	638	1.212	-57	-31.6		-0.1699	-0.0311	0.980	0.940	0.994	0.949		1.080
150	300	259	638	1.212	-57	-31.6		-0.1664	-0.0320	0.970	0.930	0.993	0.949		1.080
151	302	259	638	1.212	-58	-32.1		-0.1509	-0.0305	0.975	0.936	0.987	0.949		1.085
152	304	259	638	1.212	-57	-31.6		-0.1605	-0.0293	0.978	0.931	0.987	0.947		1.085
153	306	259	638	1.212	-57	-31.9		-0.1556	-0.0264	0.976	0.927	0.983	0.947		1.083
154	308	259	638	1.212	-57	-31.9		-0.1533	-0.0247	0.976	0.925	0.983	0.947		1.083
155	310	259	638	1.212	-56	-31.3		-0.1548	-0.0269	0.978	0.927	0.985	0.949		1.085
156	312	259	638	1.212	-58	-32.1		-0.1462	-0.0254	0.971	0.923	0.980	0.945		1.080
157	314	259	638	1.212	-57	-31.6		-0.1476	-0.0293	0.969	0.925	0.983	0.945		1.083
158	316	259	638	1.212	-57	-31.9		-0.1440	-0.0299	0.967	0.925	0.983	0.945		1.083
159	318	259	638	1.212	-58	-32.1		-0.1393	-0.0280	0.963	0.923	0.978	0.940		1.080
160	320	259	638	1.212	-56	-31.3		-0.1442	-0.0237	0.967	0.925	0.983	0.945		1.083

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PRELIMINARY DATA

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[illegible]	[illegible]	[illegible]	[illegible]
414	1	66/0[illegible]/1	500

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	(P02/P)n	NOZZLE PRESS. (P2/P20)n	(P3/P20)n	(P4/P20)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	259	638	1.212	-58	-32.1		-0.1358	-0.0236	0.965	0.910	0.978	0.940		1.080
162	324	259	638	1.212	-57	-31.9		-0.1347	-0.0221	0.965	0.916	0.976	0.940		1.080
163	326	259	638	1.212	-57	-31.9		-0.1335	-0.0221	0.967	0.918	0.978	0.945		1.085
164	328	259	638	1.212	-58	-32.1		-0.1289	-0.0219	0.963	0.914	0.971	0.938		1.080
165	330	259	638	1.212	-57	-31.9		-0.1300	-0.0264	0.965	0.910	0.974	0.940		1.085
166	332	259	638	1.212	-57	-31.9		-0.1289	-0.0222	0.963	0.910	0.974	0.940		1.085
167	334	259	638	1.212	-58	-32.1		-0.1254	-0.0227	0.958	0.910	0.974	0.950		1.085
168	336	259	638	1.212	-58	-32.1		-0.1243	-0.0227	0.960	0.921	0.973	0.943		1.085
169	338	259	638	1.212	-58	-32.1		-0.1220	-0.0254	0.958	0.913	0.974	0.938		1.083
170	340	259	638	1.212	-58	-32.1		-0.1208	-0.0245	0.958	0.914	0.971	0.938		1.083
171	342	259	638	1.212	-58	-32.1		-0.1197	-0.0250	0.960	0.914	0.971	0.950		1.085
172	344	259	638	1.212	-57	-31.9		-0.1196	-0.0247	0.960	0.914	0.971	0.953		1.085
173	346	259	638	1.212	-58	-32.4		-0.1134	-0.0260	0.960	0.914	0.971	0.950		1.087
174	348	259	638	1.212	-58	-32.1		-0.1132	-0.0263	0.960	0.914	0.971	0.950		1.083
175	350	259	638	1.212	-58	-32.1		-0.1151	-0.0297	0.958	0.914	0.969	0.938		1.085
176	352	259	638	1.212	-59	-32.7		-0.1108	-0.0235	0.958	0.911	0.967	0.938		1.087
177	354	259	638	1.212	-58	-32.1		-0.1139	-0.0280	0.965	0.911	0.967	0.940		1.089
178	356	259	638	1.212	-58	-32.4		-0.1106	-0.0251	0.965	0.907	0.965	0.940		1.089
179	358	259	638	1.212	-58	-32.4		-0.1095	-0.0234	0.965	0.905	0.965	0.940		1.092
180	360	259	638	1.212	-57	-31.9		-0.1126	-0.0251	0.969	0.907	0.965	0.943		1.094
181	362	259	638	1.212	-59	-32.7		-0.1052	-0.0241	0.963	0.905	0.963	0.940		1.092
182	364	259	638	1.212	-58	-32.1		-0.1091	-0.0244	0.965	0.903	0.965	0.940		1.094
183	366	259	638	1.212	-58	-32.1		-0.1070	-0.0305	0.963	0.911	0.965	0.940		1.092
184	368	259	638	1.212	-59	-32.7		-0.1029	-0.0307	0.960	0.909	0.963	0.938		1.089
185	370	259	638	1.212	-57	-31.9		-0.1079	-0.0317	0.965	0.914	0.969	0.943		1.092
186	372	259	638	1.212	-58	-32.4		-0.1026	-0.0277	0.965	0.909	0.967	0.940		1.092
187	374	259	638	1.212	-58	-32.4		-0.1026	-0.0299	0.965	0.909	0.967	0.933		1.092
188	376	259	638	1.212	-58	-32.1		-0.1035	-0.0271	0.965	0.911	0.971	0.940		1.092
189	378	259	638	1.212	-59	-32.7		-0.0995	-0.0258	0.958	0.907	0.969	0.936		1.089
190	380	259	638	1.212	-58	-32.4		-0.1015	-0.0303	0.960	0.914	0.971	0.938		1.087
191	382	259	638	1.212	-58	-32.4		-0.1003	-0.0311	0.958	0.914	0.971	0.936		1.087
192	384	259	638	1.212	-58	-32.4		-0.0992	-0.0320	0.956	0.914	0.971	0.936		1.085

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National Aëronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.
PRELIMINARY DATA

RUN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
414	1	56/330/1	30	15,42	3..

POINT	TIME	P	PT	MACH	PCR	(P??/Q)	NOZZLE PRESS. (P2/PTO)	(P3/PTO)	(P4/PTO)	BASE PRESS. (P6/P)	(P7/P)	(P8/P)	BODY PRESS. (P9/P)	(P10/P)	(P11/P)
193	386	259	630	1.212	-58	-32.4		-0.0992	-0.0311	0.960	0.916	0.974	0.940		1.003
194	388	259	638	1.212	-58	-32.4		-0.0931	-0.0277	0.958	0.905	0.969	0.936		1.003
195	390	259	638	1.212	-58	-32.4		-0.0969	-0.0260	0.960	0.907	0.967	0.936		1.005
196	392	259	638	1.212	-58	-32.4		-0.0969	-0.0251	0.965	0.907	0.967	0.938		1.005
197	394	259	630	1.212	-58	-32.4		-0.0978	-0.0254	0.965	0.905	0.967	0.936		1.085
198	396	259	633	1.212	-58	-32.4		-0.0958	-0.0289	0.960	0.907	0.965	0.938		1.005
199	398	259	638	1.212	-58	-32.4		-0.0958	-0.0286	0.960	0.905	0.965	0.936		1.005
200	400	259	638	1.212	-58	-32.4		-0.0958	-0.0309	0.958	0.907	0.965	0.938		1.085
201	402	259	638	1.212	-59	-32.7		-0.0927	-0.0283	0.958	0.905	0.960	0.936		1.085
202	404	259	638	1.212	-58	-32.1		-0.0954	-0.0260	0.965	0.905	0.965	0.938		1.005
203	406	259	638	1.212	-58	-32.4		-0.0935	-0.0251	0.960	0.900	0.960	0.936		1.005
204	408	259	638	1.212	-59	-32.4		-0.0935	-0.0254	0.965	0.898	0.960	0.936		1.085
205	410	259	638	1.212	-58	-32.1		-0.0954	-0.0245	0.965	0.900	0.965	0.940		1.087
206	412	259	638	1.212	-59	-33.0		-0.0997	-0.0222	0.958	0.898	0.958	0.938		1.085
207	414	259	633	1.212	-58	-32.4		-0.0935	-0.0260	0.960	0.905	0.960	0.938		1.005
208	416	259	638	1.212	-1905	-1105.6		0.1786	0.1307	7.944	-0.712	7.960	7.686		0.992
209	418	259	630	1.212	-59	-33.0		-0.0305	-0.0256	0.956	0.905	0.965	0.936		1.003
210	420	259	638	1.212	-58	-32.4		-0. 955	-0.0269	0.960	0.907	0.967	0.940		1.085
211	422	259	633	1.212	-59	-33.0		-0.0885	-0.0222	0.958	0.905	0.967	0.938		1.085
212	424	259	638	1.212	-59	-33.2		-0.0805	-0.0213	0.960	0.905	0.967	0.938		1.037
213	426	259	630	1.212	-59	-32.7		-0.0904	-0.0215	0.963	0.907	0.971	0.940		1.009

MACH	Q	P	PT	PREF	TOLD
1.212	266.2	259	638	1449	2119

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PRELIMINARY DATA

RUN	FIRST	TUNNEL	CONF	PROPELLANT	SAMP.RATE
415	1	66/033/1	38	2.5%	500

FRAME	TIME	Tn	Pin	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	260	639	1.209	606	355.4		0.0233	0.0099		0.970	0.975	0.948		1.061
2	4	260	639	1.209	627	347.0		0.0255	0.0109		0.979	0.982	0.953		1.065
3	6	260	639	1.209	639	353.4		0.0274	0.0116		0.979	0.982	0.948		1.059
4	8	260	639	1.209	645	355.8		0.0295	0.0125		0.986	0.986	0.953		1.061
5	10	260	639	1.209	641	354.7		0.0314	0.0133		0.988	0.984	0.951		1.061
6	12	260	639	1.209	634	350.6		0.0332	0.0138		0.986	0.979	0.948		1.061
7	14	260	639	1.209	623	344.8		0.0348	0.0145		0.984	0.977	0.951		1.061
8	16	260	639	1.209	611	337.9		0.0363	0.0149		0.975	0.970	0.944		1.059
9	18	260	639	1.209	597	330.1		0.0377	0.0154		0.968	0.966	0.942		1.059
10	20	260	639	1.209	585	322.4		0.0389	0.0157		0.962	0.962	0.940		1.057
11	22	260	639	1.209	570	315.2		0.0400	0.0160		0.959	0.957	0.937		1.057
12	24	260	639	1.209	556	307.4		0.0406	0.0162		0.955	0.953	0.935		1.057
13	26	260	639	1.209	544	301.1		0.0414	0.0164		0.953	0.951	0.935		1.057
14	28	260	639	1.209	533	295.0		0.0418	0.0164		0.951	0.946	0.933		1.057
15	30	260	639	1.209	524	289.7		0.0421	0.0163		0.946	0.942	0.931		1.055
16	32	260	639	1.209	517	285.9		0.0425	0.0165		0.944	0.942	0.931		1.057
17	34	260	639	1.209	509	281.7		0.0425	0.0164		0.940	0.937	0.928		1.057
18	36	260	639	1.209	504	278.9		0.0425	0.0164		0.937	0.937	0.928		1.057
19	38	260	639	1.209	501	277.0		0.0427	0.0164		0.940	0.940	0.931		1.059
20	40	260	639	1.209	496	274.5		0.0423	0.0161		0.935	0.935	0.926		1.057
21	42	260	639	1.209	495	274.0		0.0424	0.0162		0.940	0.937	0.928		1.057
22	44	260	639	1.209	493	272.9		0.0423	0.0161		0.942	0.937	0.928		1.057
23	46	260	639	1.209	492	272.3		0.0421	0.0160		0.942	0.935	0.924		1.055
24	48	260	639	1.209	492	272.3		0.0422	0.0161		0.944	0.940	0.931		1.057
25	50	260	639	1.209	491	271.8		0.0419	0.0159		0.940	0.937	0.926		1.057
26	52	260	639	1.209	491	271.5		0.0418	0.0159		0.937	0.940	0.926		1.057
27	54	260	639	1.209	491	271.8		0.0418	0.0159		0.937	0.942	0.931		1.061
28	56	260	639	1.209	491	271.5		0.0417	0.0157		0.935	0.937	0.924		1.057
29	58	260	639	1.209	491	271.8		0.0418	0.0159		0.940	0.942	0.929		1.061
30	60	260	639	1.209	491	271.8		0.0418	0.0158		0.942	0.942	0.926		1.061
31	62	260	639	1.209	491	271.8		0.0416	0.0158		0.942	0.942	0.928		1.059
32	64	260	639	1.209	491	271.8		0.0418	0.0159		0.942	0.942	0.933		1.063

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	INTERP	CONF	PROPELLANT	SAMP.RATE
415	1	66/033/1	38	2GAL	500

FRAME	TIME	Pn	PTn	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	260	639	1.209	491	271.8		0.0416	0.0158		0.940	0.942	0.928		1.061
34	68	260	639	1.209	491	271.8		0.0416	0.0158		0.937	0.942	0.928		1.061
35	70	260	639	1.209	492	272.0		0.0417	0.0159		0.940	0.942	0.931		1.063
36	72	260	639	1.209	493	272.6		0.0418	0.0159		0.942	0.942	0.931		1.063
37	74	260	639	1.209	492	272.3		0.0417	0.0159		0.944	0.942	0.931		1.066
38	76	260	639	1.209	493	272.9		0.0417	0.0158		0.948	0.942	0.933		1.066
39	78	260	639	1.209	493	272.9		0.0417	0.0158		0.948	0.942	0.933		1.065
40	80	260	639	1.209	493	272.6		0.0415	0.0158		0.948	0.940	0.931		1.066
41	82	260	639	1.209	494	273.1		0.0418	0.0159		0.948	0.942	0.933		1.066
42	84	260	639	1.209	493	272.9		0.0417	0.0158		0.944	0.942	0.933		1.066
43	86	260	639	1.209	493	272.9		0.0417	0.0158		0.942	0.940	0.933		1.066
44	88	260	639	1.209	494	273.1		0.0418	0.0160		0.946	0.942	0.935		1.068
45	90	260	639	1.209	493	272.6		0.0416	0.0158		0.942	0.940	0.928		1.066
46	92	260	639	1.209	494	273.4		0.0416	0.0159		0.946	0.942	0.933		1.066
47	94	260	639	1.209	494	273.4		0.0416	0.0159		0.948	0.942	0.933		1.066
48	96	260	639	1.209	495	273.7		0.0416	0.0158		0.946	0.940	0.928		1.063
49	98	260	639	1.209	496	274.2		0.0418	0.0160		0.948	0.944	0.935		1.068
50	100	260	639	1.209	496	274.2		0.0415	0.0158		0.942	0.940	0.931		1.066
51	102	260	639	1.209	496	274.5		0.0415	0.0158		0.940	0.940	0.931		1.068
52	104	260	639	1.209	497	274.8		0.0416	0.0159		0.940	0.942	0.933		1.070
53	106	260	639	1.209	497	275.1		0.0414	0.0157		0.935	0.937	0.928		1.068
54	108	260	639	1.209	498	275.6		0.0414	0.0159		0.942	0.942	0.933		1.070
55	110	260	639	1.209	498	275.6		0.0414	0.0159		0.942	0.940	0.933		1.070
56	112	260	639	1.209	499	275.9		0.0414	0.0158		0.940	0.940	0.928		1.068
57	114	260	639	1.209	499	276.2		0.0415	0.0158		0.940	0.942	0.933		1.070
58	116	260	639	1.209	500	276.5		0.0414	0.0158		0.933	0.940	0.928		1.068
59	118	260	639	1.209	500	276.7		0.0414	0.0158		0.933	0.942	0.931		1.068
60	120	260	639	1.209	501	277.0		0.0414	0.0158		0.931	0.942	0.931		1.068
61	122	260	639	1.209	501	277.3		0.0415	0.0159		0.933	0.944	0.931		1.066
62	124	260	639	1.209	501	277.0		0.0414	0.0158		0.933	0.944	0.931		1.066
63	126	260	639	1.209	501	277.3		0.0415	0.0159		0.937	0.946	0.931		1.066
64	128	260	639	1.209	502	277.6		0.0414	0.0159		0.940	0.946	0.931		1.063

12315

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	THRSTR	CONF	PROPELLANT	SAMP.RATE
415	1	66/035/1	38	2%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
65	130	260	639	1.209	501	277.3		0.0413	0.0158		0.937	0.946	0.928		1.063
66	132	260	639	1.209	503	278.1		0.0415	0.0159		0.957	0.948	0.931		1.066
67	134	260	639	1.209	502	277.8		0.0414	0.0158		0.935	0.946	0.928		1.066
68	136	260	639	1.209	503	278.1		0.0413	0.0158		0.933	0.946	0.931		1.066
69	138	260	639	1.209	503	278.4		0.0414	0.0159		0.957	0.948	0.933		1.068
70	140	260	639	1.209	502	277.6		0.0413	0.0158		0.935	0.944	0.928		1.066
71	142	260	639	1.209	502	277.8		0.0415	0.0159		0.940	0.948	0.931		1.066
72	144	260	639	1.209	502	277.6		0.0414	0.0159		0.942	0.946	0.931		1.066
73	146	260	639	1.209	501	277.0		0.0414	0.0158		0.942	0.944	0.928		1.066
74	148	260	639	1.209	501	277.3		0.0416	0.0160		0.944	0.948	0.933		1.068
75	150	260	639	1.209	500	276.5		0.0414	0.0158		0.940	0.946	0.931		1.068
76	152	260	639	1.209	499	276.2		0.0415	0.0158		0.940	0.946	0.933		1.068
77	154	260	639	1.209	499	276.2		0.0415	0.0159		0.940	0.946	0.935		1.070
78	156	260	639	1.209	498	275.6		0.0414	0.0158		0.937	0.944	0.928		1.068
79	158	260	639	1.[illegible]	498	275.6		0.0416	0.0159		0.942	0.944	0.933		1.068
80	160	260	639	1.209	498	275.3		0.0415	0.0159		0.944	0.944	0.933		1.066
81	162	260	639	1.209	497	275.1		0.0414	0.0158		0.944	0.942	0.931		1.066
82	164	260	639	1.209	497	274.8		0.0414	0.0159		0.946	0.944	0.935		1.066
83	166	260	639	1.209	497	274.8		0.0414	0.0158		0.942	0.942	0.931		1.063
84	168	260	639	1.209	496	274.5		0.0413	0.0158		0.942	0.942	0.931		1.061
85	170	260	639	1.209	496	274.2		0.0414	0.0159		0.942	0.942	0.933		1.061
86	172	260	639	1.209	496	274.5		0.0415	0.0159		0.944	0.944	0.933		1.061
87	174	260	639	1.209	495	274.0		0.0414	0.0159		0.944	0.942	0.933		1.061
88	176	260	639	1.209	495	274.0		0.0414	0.0159		0.946	0.942	0.933		1.061
89	178	260	639	1.209	495	273.7		0.0415	0.0159		0.948	0.942	0.933		1.059
90	180	260	639	1.209	494	273.1		0.0413	0.0158		0.946	0.942	0.933		1.059
91	182	260	639	1.209	494	273.4		0.0415	0.0159		0.944	0.944	0.933		1.059
92	184	260	639	1.209	493	272.6		0.0414	0.0159		0.940	0.942	0.931		1.059
93	186	260	639	1.209	492	272.5		0.0414	0.0159		0.940	0.940	0.931		1.061
94	188	260	639	1.209	493	272.6		0.0415	0.0160		0.942	0.942	0.933		1.061
95	190	260	639	1.209	491	271.5		0.0413	0.0157		0.937	0.937	0.928		1.059
96	192	260	639	1.209	491	271.8		0.0415	0.0158		0.942	0.940	0.933		1.061

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TMESTP	CONF	PROPELLANT	SAMP.RATE
415	1	36/033/1	38	2;AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PT')n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	260	639	1.209	491	271.5		0.0414	0.0158		0.942	0.940	0.951		1.061
98	196	260	633	1.209	490	271.2		0.0413	0.0155		0.942	0.955	0.923		1.059
99	198	260	639	1.209	491	271.5		0.0415	0.0159		0.944	0.940	0.933		1.065
100	200	260	639	1.209	490	270.9		0.0413	0.0157		0.940	0.937	0.951		1.061
101	202	260	639	1.209	490	270.9		0.0413	0.0157		0.940	0.937	0.931		1.061
102	204	260	639	1.209	490	271.2		0.0414	0.0157		0.942	0.940	0.935		1.061
103	206	260	639	1.209	490	270.9		0.0413	0.0156		0.937	0.955	0.923		1.057
104	208	260	639	1.209	490	271.2		0.0414	0.0157		0.942	0.940	0.933		1.059
105	210	260	639	1.209	490	271.2		0.0414	0.0157		0.944	0.940	0.933		1.059
106	212	260	639	1.209	490	270.9		0.0413	0.0157		0.942	0.937	0.931		1.057
107	214	260	639	1.209	490	270.9		0.0413	0.0157		0.944	0.940	0.935		1.059
108	216	260	639	1.209	490	270.9		0.0413	0.0157		0.940	0.937	0.931		1.057
109	218	260	639	1.209	489	270.5		0.0414	0.0157		0.937	0.937	0.931		1.057
110	220	260	639	1.209	489	270.4		0.0414	0.0158		0.937	0.937	0.931		1.059
111	222	260	639	1.209	489	270.6		0.0415	0.0158		0.937	0.937	0.931		1.059
112	224	260	639	1.209	488	270.1		0.0413	0.0157		0.940	0.935	0.931		1.061
113	226	260	639	1.209	488	270.1		0.0415	0.0158		0.942	0.937	0.931		1.061
114	228	260	639	1.209	488	269.8		0.0415	0.0157		0.944	0.935	0.931		1.061
115	230	260	639	1.209	487	269.3		0.0413	0.0156		0.942	0.935	0.928		1.061
116	232	260	639	1.209	483	269.8		0.0415	0.0158		0.942	0.937	0.931		1.061
117	234	260	639	1.209	486	269.0		0.0415	0.0158		0.940	0.935	0.928		1.061
118	236	260	639	1.209	486	268.7		0.0415	0.0157		0.937	0.935	0.923		1.061
119	238	260	639	1.209	485	268.4		0.0417	0.0159		0.940	0.937	0.933		1.061
120	240	260	639	1.209	482	266.8		0.0416	0.0157		0.935	0.933	0.926		1.059
121	242	260	639	1.209	482	266.5		0.0417	0.0158		0.940	0.935	0.928		1.061
122	244	260	639	1.209	479	265.1		0.0418	0.0159		0.942	0.933	0.923		1.061
123	246	260	639	1.209	476	263.5		0.0419	0.0158		0.937	0.928	0.924		1.059
124	248	260	639	1.209	475	262.6		0.0422	0.0160		0.940	0.933	0.931		1.063
125	250	260	639	1.209	471	260.4		0.0422	0.0158		0.933	0.928	0.926		1.061
126	252	260	639	1.209	468	258.7		0.0423	0.0160		0.931	0.923	0.926		1.061
127	254	260	639	1.209	465	257.1		0.0424	0.0161		0.931	0.928	0.928		1.063
128	256	260	639	1.209	461	254.9		0.0425	0.0159		0.926	0.924	0.924		1.059

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

ORIGINAL PAGE IS
OF POOR QUALITY

12316

RUN	LIST	TUNNEL	CONF	PROPELLANT	SAMP.RATE
415	1	66/033/1	38	2;AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
129	258	260	639	1.209	457	252.9		0.0428	0.0161		0.931	0.926	0.928		1.061
130	260	260	639	1.209	454	251.0		0.0429	0.0161		0.931	0.924	0.928		1.061
131	262	260	639	1.209	450	249.1		0.0429	0.0160		0.931	0.922	0.926		1.059
132	264	260	639	1.209	447	247.4		0.0430	0.0161		0.931	0.922	0.928		1.065
133	266	260	639	1.209	444	245.7		0.0430	0.0160		0.924	0.917	0.924		1.061
134	268	260	639	1.209	441	244.1		0.0430	0.0160		0.920	0.915	0.924		1.061
135	270	260	639	1.209	439	242.7		0.0431	0.0161		0.917	0.915	0.924		1.063
136	272	260	639	1.209	437	241.9		0.0431	0.0160		0.915	0.913	0.922		1.061
137	274	260	639	1.209	434	240.2		0.0431	0.0160		0.915	0.911	0.924		1.063
138	276	260	639	1.209	433	239.7		0.0430	0.0161		0.917	0.911	0.922		1.061
139	278	260	639	1.209	432	238.8		0.0430	0.0160		0.917	0.911	0.922		1.061
140	280	260	639	1.209	430	237.7		0.0429	0.0158		0.913	0.909	0.920		1.061
141	282	260	639	1.209	430	237.7		0.0431	0.0160		0.913	0.909	0.922		1.061
142	284	260	639	1.209	428	236.6		0.0430	0.0159		0.911	0.909	0.920		1.061
143	286	260	639	1.209	426	235.8		0.0430	0.0160		0.909	0.909	0.920		1.061
144	288	260	639	1.209	426	235.5		0.0430	0.0161		0.911	0.911	0.922		1.065
145	290	260	639	1.209	423	233.9		0.0428	0.0159		0.909	0.906	0.920		1.061
146	292	260	639	1.209	422	233.6		0.0431	0.0160		0.913	0.909	0.922		1.061
147	294	260	639	1.209	420	232.5		0.0431	0.0161		0.913	0.906	0.922		1.063
148	296	260	639	1.209	418	231.4		0.0430	0.0159		0.911	0.904	0.917		1.061
149	298	260	639	1.209	417	230.8		0.0432	0.0162		0.913	0.906	0.924		1.063
150	300	260	639	1.209	415	229.4		0.0432	0.0161		0.906	0.904	0.920		1.063
151	302	260	639	1.209	413	228.6		0.0432	0.0160		0.904	0.904	0.920		1.063
152	304	260	639	1.209	412	227.8		0.0433	0.0162		0.902	0.904	0.922		1.066
153	306	260	639	1.209	410	226.7		0.0432	0.0160		0.900	0.900	0.917		1.061
154	308	260	639	1.209	409	226.1		0.0433	0.0162		0.904	0.902	0.920		1.065
155	310	260	639	1.209	407	225.3		0.0433	0.0161		0.904	0.902	0.920		1.063
156	312	260	639	1.209	406	224.7		0.0433	0.0160		0.904	0.900	0.920		1.061
157	314	260	639	1.209	405	224.2		0.0434	0.0162		0.904	0.902	0.922		1.066
158	316	260	639	1.209	405	223.9		0.0433	0.0160		0.900	0.900	0.920		1.063
159	318	260	639	1.209	404	223.6		0.0433	0.0160		0.900	0.900	0.920		1.063
160	320	260	639	1.209	404	223.6		0.0432	0.0160		0.900	0.902	0.920		1.063

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	TUNNEL	CONF	PROBE/DRAFT	SAMP.RATE
415	6/033/1	38	2.42	500

FRAME	TIME	Pn	PTn	MACHn	PTOn	(PTO/P)n	NOSE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
161	322	260	639	1.209	405	225.9		0.0435	0.0161		0.900	0.904	0.920		1.065
162	324	260	639	1.209	404	223.3		0.0430	0.0160		0.902	0.904	0.922		1.063
163	326	260	639	1.209	405	225.9		0.0431	0.0160		0.904	0.904	0.922		1.061
164	328	260	639	1.209	405	225.9		0.0431	0.0160		0.906	0.902	0.922		1.061
165	330	260	639	1.209	404	223.6		0.0428	0.0159		0.904	0.902	0.920		1.061
166	332	260	639	1.209	405	224.2		0.0430	0.0159		0.904	0.902	0.922		1.061
167	334	260	639	1.209	404	223.3		0.0430	0.0159		0.900	0.900	0.920		1.061
168	336	260	639	1.209	403	222.8		0.0431	0.0159		0.897	0.900	0.920		1.061
169	338	260	639	1.209	402	222.5		0.0434	0.0162		0.902	0.902	0.922		1.063
170	340	260	639	1.209	399	220.6		0.0432	0.0160		0.897	0.897	0.917		1.061
171	342	260	639	1.209	397	219.7		0.0436	0.0161		0.900	0.897	0.920		1.061
172	344	260	639	1.209	394	218.1		0.0437	0.0161		0.900	0.897	0.920		1.059
173	346	260	639	1.209	391	216.2		0.0438	0.0162		0.897	0.891	0.915		1.057
174	348	260	639	1.209	388	214.5		0.0441	0.0165		0.897	0.895	0.922		1.061
175	350	260	639	1.209	382	211.4		0.0442	0.0164		0.889	0.889	0.917		1.059
176	352	260	639	1.209	377	208.7		0.0445	0.0165		0.886	0.886	0.917		1.059
177	354	260	639	1.209	371	205.4		0.0450	0.0166		0.884	0.884	0.920		1.059
178	356	260	639	1.209	365	201.8		0.0451	0.0165		0.878	0.875	0.913		1.057
179	358	260	639	1.209	357	197.6		0.0457	0.0168		0.880	0.873	0.917		1.059
180	360	260	639	1.209	349	192.9		0.0462	0.0169		0.875	0.869	0.915		1.057
181	362	260	639	1.209	339	187.4		0.0468	0.0170		0.869	0.860	0.913		1.057
182	364	260	639	1.209	328	181.6		0.0475	0.0174		0.862	0.855	0.915		1.059
183	366	260	639	1.209	316	174.9		0.0480	0.0174		0.849	0.844	0.911		1.057
184	368	260	639	1.209	303	167.7		0.0487	0.0177		0.838	0.836	0.909		1.059
185	370	260	639	1.209	289	160.0		0.0497	0.0178		0.827	0.827	0.909		1.059
186	372	260	639	1.209	275	152.0		0.0506	0.0182		0.816	0.816	0.906		1.059
187	374	260	639	1.209	258	142.8		0.0518	0.0184		0.805	0.805	0.906		1.059
188	376	260	639	1.209	242	133.7		0.0531	0.0187		0.793	0.793	0.906		1.059
189	378	260	639	1.209	225	124.6		0.0544	0.0189		0.782	0.780	0.904		1.057
190	380	260	639	1.209	207	114.6		0.0559	0.0191		0.765	0.765	0.902		1.057
191	382	260	639	1.209	192	106.1		0.0576	0.0199		0.749	0.754	0.902		1.057
192	384	260	639	1.209	174	96.4		0.0592	0.0201		0.729	0.738	0.900		1.057

12317

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST#	CONF	PROPELLANT	SAMP.RATE
415	1	66/033/1	38	2%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	MODEL PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
193	386	260	639	1.209	159	87.8		0.0612	0.0205		0.712	0.725	0.900		1.057
194	388	260	639	1.209	144	79.8		0.0636	0.0212		0.701	0.714	0.902		1.059
195	390	260	639	1.209	129	71.2		0.0651	0.0211		0.687	0.701	0.897		1.057
196	392	260	639	1.209	117	64.6		0.0678	0.0219		0.685	0.698	0.900		1.057
197	394	260	639	1.209	104	57.7		0.0708	0.0226		0.685	0.698	0.897		1.055
198	396	260	639	1.209	93	51.6		0.0727	0.0226		0.685	0.698	0.895		1.052
199	398	260	639	1.209	84	46.6		0.0775	0.0245		0.692	0.712	0.902		1.057
200	400	260	639	1.209	75	41.5		0.0786	0.0241		0.694	0.718	0.897		1.055
201	402	260	639	1.209	68	37.5		0.0824	0.0253		0.705	0.729	0.900		1.057
202	404	260	639	1.209	61	33.9		0.0857	0.0263		0.716	0.743	0.904		1.059
203	406	260	639	1.209	55	30.3		0.0885	0.0267		0.723	0.747	0.900		1.057
204	408	260	639	1.209	50	27.8		0.0938	0.0301		0.738	0.760	0.904		1.059
205	410	260	639	1.209	46	25.3		0.0972	0.0319		0.751	0.769	0.906		1.061
206	412	260	639	1.209	42	23.4		0.1005	0.0334		0.760	0.778	0.906		1.059
207	414	260	639	1.209	39	21.4		0.1062	0.0364		0.774	0.789	0.911		1.063
208	416	260	639	1.209	36	20.0		0.1080	0.0389		0.778	0.796	0.909		1.061
209	418	260	639	1.209	33	18.4		0.1157	0.0410		0.787	0.805	0.911		1.061
210	420	260	639	1.209	31	17.3		0.1210	0.0452		0.793	0.813	0.911		1.061
211	422	260	639	1.209	30	16.4		0.1271	0.0491		0.802	0.820	0.911		1.061
212	424	260	639	1.209	27	15.1		0.1339	0.0518		0.811	0.827	0.913		1.061
213	426	260	639	1.209	26	14.2		0.1417	0.0568		0.820	0.833	0.915		1.059

MACH	Q	P	PT	PREF	PCAL
1.209	266.2	260	639	1444	2118

12318

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	ENTRY	CONF	PROPELLANT	SAMP.RATE
416	1	66/033/1	38	16/AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	184	636	1.459	24	19.0		0.1314	0.0584		0.752	0.774	0.884		1.050
2	4	184	636	1.459	23	18.2		0.1313	0.0567		0.743	0.771	0.881		1.047
3	6	184	636	1.459	23	18.2		0.1313	0.0567		0.743	0.768	0.881		1.047
4	8	184	636	1.459	24	18.6		0.1314	0.0597		0.746	0.774	0.887		1.050
5	10	184	635	1.459	23	17.8		0.1313	0.0557		0.743	0.765	0.878		1.044

MACH	Q	P	PT	PREP	POAL
1.459	273.7	184	636	1452	2119

12319

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTP	COMP	PROPELLANT	SAMP.RATE
417	1	66/035/1	38	16%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
1	2	184	636	1.457	433	338.1		0.0288	0.0127		0.790	0.806	0.877		1.049
2	4	184	636	1.457	435	340.0		0.0304	0.0134		0.790	0.809	0.877		1.049
3	6	184	636	1.457	436	340.4		0.0322	0.0140		0.793	0.815	0.877		1.049
4	8	184	636	1.457	435	339.6		0.0340	0.0146		0.802	0.821	0.884		1.052
5	10	184	636	1.457	430	336.1		0.0354	0.0149		0.802	0.821	0.877		1.046
6	12	184	636	1.457	427	333.8		0.0371	0.0155		0.812	0.824	0.884		1.049
7	14	184	636	1.457	422	329.5		0.0385	0.0159		0.818	0.827	0.881		1.046
8	16	184	636	1.457	416	325.2		0.0395	0.0161		0.821	0.827	0.877		1.046
9	18	184	636	1.457	412	321.6		0.0411	0.0167		0.827	0.834	0.887		1.049
10	20	184	636	1.457	405	316.6		0.0417	0.0167		0.821	0.831	0.884		1.049
11	22	184	636	1.457	400	312.7		0.0426	0.0169		0.821	0.834	0.884		1.049
12	24	184	636	1.457	396	309.1		0.0434	0.0172		0.821	0.837	0.887		1.052
13	26	184	636	1.457	391	305.2		0.0436	0.0171		0.815	0.831	0.881		1.046
14	28	184	636	1.457	387	302.5		0.0444	0.0173		0.821	0.834	0.887		1.049
15	30	184	636	1.457	384	299.8		0.0445	0.0174		0.824	0.834	0.887		1.049
16	32	184	636	1.457	381	297.4		0.0448	0.0172		0.824	0.831	0.884		1.049
17	34	184	636	1.457	379	295.9		0.0450	0.0175		0.824	0.837	0.890		1.052
18	36	184	636	1.457	377	294.3		0.0451	0.0173		0.818	0.834	0.887		1.049
19	38	184	636	1.457	376	293.5		0.0450	0.0172		0.812	0.834	0.887		1.052
20	40	184	636	1.457	375	292.7		0.0451	0.0173		0.812	0.834	0.887		1.052
21	42	184	636	1.457	375	292.7		0.0451	0.0173		0.812	0.834	0.887		1.052
22	44	184	636	1.457	374	292.0		0.0451	0.0172		0.815	0.837	0.890		1.052
23	46	184	636	1.457	375	292.7		0.0450	0.0171		0.821	0.837	0.890		1.052
24	48	184	636	1.457	375	292.7		0.0448	0.0171		0.821	0.837	0.890		1.052
25	50	184	636	1.457	374	292.4		0.0447	0.0169		0.821	0.837	0.887		1.056
26	52	184	636	1.457	376	293.5		0.0448	0.0171		0.821	0.840	0.890		1.056
27	54	184	636	1.457	376	293.5		0.0445	0.0169		0.821	0.837	0.887		1.056
28	56	184	636	1.457	376	293.9		0.0444	0.0171		0.821	0.840	0.887		1.059
29	58	184	636	1.457	377	294.7		0.0447	0.0171		0.824	0.843	0.890		1.059
30	60	184	636	1.457	[illegible]	293.9		0.0443	0.0169		0.821	0.840	0.884		1.056
31	62	184	636	1.457	378	295.1		0.0444	0.0170		0.827	0.843	0.890		1.056
32	64	184	636	1.457	378	295.5		0.0444	0.0171		0.834	0.843	0.890		1.056

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	DISK	TMSEP	CONF	PROPELLANT	SAMP.RATE
417	1	63/033/1	38	16,AL	500

FRM	TIME	Tn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	184	636	1.457	378	295.5		0.0442	0.0170		0.851	0.840	0.887		1.052
34	68	184	636	1.457	379	296.3		0.0444	0.0172		0.834	0.846	0.896		1.059
35	70	184	636	1.457	379	295.9		0.0441	0.0169		0.827	0.843	0.890		1.056
36	72	184	636	1.457	379	296.3		0.0443	0.0170		0.824	0.843	0.893		1.056
37	74	184	636	1.457	380	296.6		0.0442	0.0172		0.824	0.846	0.896		1.059
38	[illegible]	184	636	1.457	379	[illegible]		0.0441	0.0169		0.821	0.840	0.887		1.056
39	[illegible]	184	636	1.457	380	296.6		0.0444	0.0172		0.827	0.846	0.896		1.059
40	[illegible]	184	636	1.457	380	296.6		0.0442	0.0172		0.831	0.846	0.893		1.056
41	[illegible]	184	636	1.457	380	296.6		0.0442	0.0170		0.831	0.843	0.890		1.056
42	84	184	636	1.457	380	296.6		0.0442	0.0172		0.834	0.849	0.896		1.059
43	86	184	636	1.457	380	296.6		0.0440	0.0170		0.824	0.846	0.893		1.056
44	88	184	636	1.457	380	296.6		0.0440	0.0170		0.824	0.846	0.893		1.056
45	90	184	636	1.457	380	297.0		0.0440	0.0170		0.821	0.846	0.893		1.059
46	92	184	636	1.457	381	297.4		0.0441	0.0171		0.821	0.846	0.890		1.056
47	94	184	636	1.457	380	296.6		0.0440	0.0170		0.824	0.846	0.893		1.059
48	96	184	636	1.457	380	297.0		0.0440	0.0171		0.827	0.846	0.893		1.059
49	98	184	636	1.457	380	297.0		0.0440	0.0170		0.827	0.846	0.890		1.059
50	100	184	636	1.457	380	296.6		0.0438	0.0169		0.821	0.846	0.890		1.059
51	102	184	636	1.457	381	[illegible]		0.0440	0.0171		0.821	0.846	0.893		1.059
52	104	184	636	1.457	381	297.4		0.0439	0.0170		0.818	0.846	0.890		1.059
53	106	184	636	1.457	381	297.4		0.0439	0.0170		0.815	0.846	0.890		1.062
54	108	184	636	1.457	382	298.6		0.0439	0.0172		0.819	0.852	0.896		1.065
55	110	184	636	1.457	381	297.4		0.0437	0.0170		0.815	0.846	0.890		1.062
56	112	184	636	1.457	382	298.2		0.0438	0.0171		0.821	0.849	0.893		1.065
57	114	184	636	1.457	382	298.2		0.0438	0.0171		0.824	0.849	0.893		1.062
58	116	184	636	1.457	382	298.2		0.0436	0.0169		0.821	0.846	0.887		1.059
59	118	184	636	1.457	383	299.4		0.0440	0.0173		0.827	0.852	0.896		1.065
60	120	184	636	1.457	382	298.6		0.0437	0.0170		0.821	0.849	0.890		1.062
61	122	184	636	1.457	383	299.0		0.0437	0.0170		0.818	0.849	0.893		1.062
62	124	184	636	1.457	383	299.4		0.0438	0.0171		0.821	0.852	0.896		1.065
63	126	184	636	1.457	383	[illegible]		0.0436	0.0169		0.818	0.846	0.887		1.059
64	128	184	636	1.457	383	299.4		0.0438	0.0171		0.827	0.852	0.896		1.062

12320

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

2-3

RUN	LIST	TUNNEL	CONF	PROPELLANT	SAMP.ALT
417	1	66/033/1	38	16[illegible]	500

SAMP	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	TOWING PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	184	636	1.457	384	299.8		0.0437	0.0170		0.851	0.852	0.893		1.059
66	132	184	636	1.457	383	299.4		0.0438	0.0170		0.851	0.849	0.890		1.059
67	134	184	636	1.457	384	299.8		0.0437	0.0171		0.834	0.852	0.896		1.062
68	136	184	636	1.457	384	299.8		0.0437	0.0170		0.827	0.849	0.890		1.059
69	138	184	636	1.457	384	299.8		0.0437	0.0170		0.824	0.849	0.893		1.059
70	140	184	636	1.457	384	299.8		0.0437	0.0170		0.824	0.852	0.893		1.059
71	142	184	636	1.457	384	300.2		0.0439	0.0171		0.827	0.852	0.893		1.059
72	144	184	636	1.457	383	299.4		0.0438	0.0170		0.851	0.852	0.896		1.059
73	146	184	636	1.457	384	299.8		0.0439	0.0171		0.834	0.852	0.896		1.059
74	148	184	636	1.457	383	299.4		0.0440	0.0171		0.834	0.852	0.896		1.059
75	150	184	636	1.457	382	298.6		0.0437	0.0170		0.834	0.849	0.896		1.059
76	152	184	636	1.457	383	299.4		0.0440	0.0171		0.834	0.852	0.896		1.059
77	154	184	636	1.457	382	298.6		0.0439	0.0170		0.827	0.849	0.896		1.059
78	156	184	636	1.457	382	298.2		0.0440	0.0171		0.827	0.852	0.896		1.059
79	158	184	636	1.457	382	298.6		0.0441	0.0173		0.831	0.856	0.899		1.065
80	160	184	636	1.457	381	297.4		0.0439	0.0170		0.824	0.852	0.893		1.059
81	162	184	636	1.457	381	297.8		0.0440	0.0172		0.831	0.852	0.896		1.062
82	164	184	636	1.457	381	297.8		0.0440	0.0171		0.834	0.856	0.896		1.062
83	166	184	636	1.457	381	297.4		0.0439	0.0170		0.834	0.852	0.890		1.059
84	168	184	636	1.457	381	297.8		0.0442	0.0174		0.840	0.859	0.899		1.062
85	170	184	636	1.457	381	297.4		0.0439	0.0170		0.834	0.856	0.893		1.059
86	172	184	636	1.457	381	297.4		0.0441	0.0171		0.834	0.856	0.893		1.062
87	174	184	636	1.457	381	297.4		0.0443	0.0171		0.834	0.859	0.896		1.065
88	176	184	636	1.457	380	297.0		0.0440	0.0169		0.827	0.856	0.890		1.056
89	178	184	636	1.457	381	297.4		0.0443	0.0171		0.834	0.859	0.896		1.059
90	180	184	636	1.457	381	297.4		0.0443	0.0171		0.834	0.859	0.893		1.059
91	182	184	636	1.457	381	297.4		0.0441	0.0170		0.834	0.856	0.890		1.056
92	184	184	636	1.457	381	297.4		0.0443	0.0171		0.834	0.862	0.896		1.059
93	186	184	636	1.457	381	297.4		0.0441	0.0170		0.827	0.859	0.890		1.056
94	188	184	636	1.457	381	297.4		0.0441	0.0170		0.824	0.859	0.893		1.059
95	190	184	636	1.457	381	297.4		0.0441	0.0170		0.824	0.862	0.896		1.059
96	192	184	636	1.457	381	297.8		0.0442	0.0171		0.821	0.862	0.893		1.056

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	TEST	TUNNEL	CONF	PROPELLANT	SWEEP ANGLE
417	1	66/053/1	38	16/45	500

POINT	TIME	Pn	PTn	MACHn	PDCn	(PTC/P)n	NOZZLE PRESS. (P2/P1)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	184	636	1.457	381	297.4		0.0441	0.0170	0.824	0.862	0.896			1.059
98	196	184	636	1.457	381	297.4		0.0441	0.0170	0.827	0.862	0.896			1.059
99	198	184	636	1.457	381	297.4		0.0441	0.0170	0.851	0.859	0.893			1.059
100	200	184	636	1.457	380	297.0		0.0438	0.0169	0.827	0.859	0.893			1.059
101	202	184	636	1.457	381	297.8		0.0440	0.0170	0.851	0.859	0.893			1.059
102	204	184	636	1.457	381	297.4		0.0439	0.0169	0.827	0.859	0.893			1.059
103	206	184	636	1.457	381	297.4		0.0437	0.0169	0.827	0.859	0.893			1.059
104	208	184	636	1.457	382	298.2		0.0440	0.0171	0.834	0.865	0.896			1.062
105	210	184	636	1.457	381	297.4		0.0436	0.0167	0.834	0.859	0.893			1.059
106	212	184	636	1.457	382	298.2		0.0438	0.0169	0.843	0.862	0.896			1.059
107	214	184	636	1.457	381	297.8		0.0438	0.0168	0.843	0.862	0.896			1.059
108	216	184	636	1.457	381	297.8		0.0435	0.0168	0.840	0.859	0.893			1.056
109	218	184	636	1.457	382	298.6		0.0439	0.0170	0.843	0.868	0.899			1.062
110	220	184	636	1.457	381	297.8		0.0437	0.0168	0.834	0.862	0.896			1.059
111	222	184	636	1.457	382	298.2		0.0438	0.0168	0.831	0.862	0.896			1.059
112	224	184	636	1.457	382	298.2		0.0438	0.0169	0.834	0.865	0.896			1.062
113	226	184	636	1.457	382	298.2		0.0436	0.0167	0.827	0.862	0.890			1.059
114	228	184	636	1.457	382	298.6		0.0439	0.0169	0.840	0.865	0.896			1.062
115	230	184	636	1.457	382	298.6		0.0439	0.0169	0.846	0.865	0.896			1.062
116	232	184	636	1.457	382	298.6		0.0437	0.0168	0.849	0.862	0.893			1.059
117	234	184	636	1.457	382	298.6		0.0441	0.0169	0.852	0.868	0.899			1.062
118	236	184	636	1.457	383	299.0		0.0440	0.0169	0.846	0.865	0.896			1.062
119	238	184	636	1.457	383	299.0		0.0440	0.0169	0.843	0.865	0.896			1.062
120	240	184	636	1.457	383	299.4		0.0441	0.0170	0.840	0.865	0.896			1.062
121	242	184	636	1.457	384	300.2		0.0442	0.0170	0.849	0.865	0.896			1.062
122	244	184	636	1.457	384	299.8		0.0443	0.0170	0.856	0.868	0.896			1.065
123	246	184	636	1.457	385	300.6		0.0443	0.0171	0.865	0.868	0.896			1.065
124	248	184	636	1.457	385	300.6		0.0443	0.0171	0.871	0.868	0.896			1.065
125	250	184	636	1.457	384	300.2		0.0442	0.0170	0.871	0.865	0.896			1.062
126	252	184	636	1.457	385	300.9		0.0444	0.0172	0.871	0.868	0.896			1.065
127	254	184	636	1.457	384	300.2		0.0444	0.0171	0.865	0.868	0.896			1.062
128	256	184	636	1.457	384	300.2		0.0445	0.0171	0.865	0.868	0.896			1.065

12321

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TUNNEL	CONF	PROJECTILE	SAMP.RATE
417	1	56/055/1	38	15.[illegible]	500

FRAME	TIME	Pn	P1n	M1n	P20n	(P20/P)n	(P2/P20)n	(P3/P20)n	(P4/P20)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
129	253	184	636	1.457	385	300.6		0.0447	0.0172		0.865	0.871	0.899		1.065
130	260	184	636	1.457	383	299.0		0.0445	0.0170		0.859	0.868	0.893		1.062
131	262	184	636	1.457	385	299.0		0.0449	0.0172		0.865	0.868	0.896		1.062
132	264	184	636	1.457	382	298.2		0.0450	0.0172		0.865	0.868	0.896		1.062
133	266	184	636	1.457	380	295.6		0.0449	0.0170		0.859	0.865	0.890		1.056
134	268	184	636	1.457	379	296.3		0.0455	0.0173		0.862	0.868	0.896		1.062
135	270	184	636	1.457	376	295.9		0.0453	0.0172		0.846	0.865	0.893		1.059
136	272	184	636	1.457	374	292.4		0.0456	0.0171		0.843	0.862	0.893		1.059
137	274	184	636	1.457	371	290.0		0.0459	0.0174		0.843	0.865	0.896		1.062
138	276	184	636	1.457	367	286.9		0.0461	0.0172		0.834	0.859	0.890		1.059
139	278	184	636	1.457	364	284.1		0.0467	0.0175		0.840	0.859	0.896		1.059
140	280	184	636	1.457	359	280.2		0.0470	0.0175		0.843	0.856	0.893		1.059
141	282	184	636	1.457	353	275.6		0.0474	0.0175		0.840	0.852	0.890		1.056
142	284	184	636	1.457	346	270.5		0.0479	0.0177		0.837	0.852	0.896		1.059
143	286	184	636	1.457	339	265.0		0.0483	0.0177		0.815	0.843	0.890		1.059
144	288	184	636	1.457	331	258.4		0.0487	0.0179		0.802	0.837	0.893		1.056
145	290	184	636	1.457	322	251.7		0.0494	0.0180		0.793	0.834	0.893		1.059
146	292	184	636	1.457	313	244.3		0.0500	0.0181		0.784	0.824	0.890		1.056
147	294	184	636	1.457	302	235.7		0.0505	0.0183		0.777	0.815	0.890		1.059
148	296	184	636	1.457	291	227.5		0.0512	0.0184		0.771	0.809	0.890		1.056
149	298	184	636	1.457	279	218.1		0.0517	0.0185		0.765	0.796	0.887		1.056
150	300	184	636	1.457	266	208.0		0.0523	0.0187		0.752	0.787	0.887		1.056
151	302	184	636	1.457	254	198.6		0.0534	0.0191		0.746	0.777	0.887		1.059
152	304	184	636	1.457	240	187.5		0.0542	0.0193		0.731	0.765	0.884		1.059
153	306	184	636	1.457	225	175.9		0.0553	0.0196		0.718	0.752	0.884		1.059
154	308	184	636	1.457	211	165.0		0.0567	0.0202		0.709	0.743	0.887		1.062
155	310	184	636	1.457	195	152.5		0.0573	0.0201		0.693	0.724	0.881		1.056
156	312	184	636	1.457	181	141.6		0.0591	0.0208		0.687	0.715	0.884		1.056
157	314	184	636	1.457	167	130.2		0.0603	0.0211		0.674	0.699	0.884		1.056
158	316	184	636	1.457	152	118.9		0.0616	0.0211		0.659	0.681	0.877		1.052
159	318	184	636	1.457	140	109.2		0.0638	0.0223		0.649	0.674	0.884		1.056
160	320	184	636	1.457	126	98.2		0.0651	0.0220		0.627	0.656	0.877		1.052

ORIGINAL PAGE IS
OF POOR QUALITY

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	[illegible]	[illegible]	CONF	PROPELLANT	SAMP.RATE
417	1	66/035/1	38	16%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
[illegible]	[illegible]	Pn	PTn	MACHn	PT0n	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
161	322	184	636	1.457	114	88.8		0.0673	0.0226		0.612	0.640	0.877		1.052
162	324	184	636	1.457	103	80.2		0.0693	0.0235		0.599	0.627	0.881		1.056
163	326	184	636	1.457	92	71.7		0.0710	0.0231		0.577	0.609	0.871		1.052
164	328	184	636	1.457	83	64.6		0.0747	0.0244		0.571	0.596	0.877		1.052
165	330	184	636	1.457	74	57.6		0.0775	0.0253		0.556	0.581	0.877		1.052
166	332	184	636	1.457	66	51.3		0.0809	0.0253		0.545	0.568	0.874		1.049
167	334	184	636	1.457	58	45.5		0.0856	0.0269		0.534	0.552	0.877		1.052
168	336	184	636	1.457	52	40.8		0.0890	0.0271		0.527	0.556	0.871		1.049
169	338	184	636	1.457	46	36.1		0.0934	0.0285		0.534	0.565	0.871		1.049
170	340	184	636	1.457	41	32.2		0.0998	0.0295		0.546	0.574	0.874		1.052
171	342	184	636	1.457	37	29.1		0.1052	0.0313		0.559	0.587	0.871		1.049
172	344	184	636	1.457	32	25.2		0.1153	0.0346		0.577	0.602	0.877		1.049
173	346	184	636	1.457	29	22.8		0.1203	0.0382		0.596	0.618	0.877		1.049
174	348	184	636	1.457	26	20.1		0.1289	0.0414		0.615	0.631	0.877		1.046
175	350	184	636	1.457	23	17.7		0.1371	0.0447		0.624	0.643	0.877		1.046
176	352	184	636	1.457	21	16.6		0.1468	0.0526		0.637	0.662	0.877		1.046
177	354	184	636	1.457	18	14.2		0.1637	0.0535		0.643	0.671	0.877		1.046
178	356	184	636	1.457	17	13.1		0.1744	0.0637		0.656	0.684	0.877		1.046
179	358	184	636	1.457	16	12.7		0.1839	0.0688		0.671	0.699	0.884		1.049
180	360	184	636	1.457	15	10.5		0.2055	0.0756		0.677	0.706	0.877		1.046
181	362	184	636	1.457	15	10.5		0.2155	0.0844		0.693	0.718	0.881		1.046
182	364	184	636	1.457	12	9.5		0.2277	0.0913		0.706	0.727	0.881		1.043
183	366	184	636	1.457	11	8.4		0.2534	0.1041		0.712	0.731	0.877		1.040
184	368	184	636	1.457	11	8.8		0.2599	0.1085		0.721	0.743	0.884		1.043
185	370	184	636	1.457	10	7.6		0.2865	0.1148		0.721	0.746	0.881		1.043
186	372	184	636	1.457	9	7.2		0.3019	0.1264		0.727	0.756	0.881		1.040
187	374	184	636	1.457	9	7.2		0.3091	0.1319		0.737	0.755	0.884		1.043
188	376	184	636	1.457	8	6.4		0.3386	0.1357		0.737	0.765	0.877		1.040
189	378	184	636	1.457	8	6.4		0.3467	0.1479		0.749	0.774	0.884		1.040
190	380	184	636	1.457	8	6.4		0.3467	0.1479		0.752	0.781	0.884		1.040
191	382	184	636	1.457	8	6.0		0.3692	0.1575		0.746	0.781	0.881		1.040
192	384	184	636	1.457	7	5.6		0.4040	0.1755		0.746	0.790	0.887		1.040

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

12322

ORIGINAL PAGE IS
OF POOR QUALITY

RUN	TEST	[illegible]	CONF	PROPELLANT	[illegible]
417	1	66/033/1	38	16JAL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P5/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
193	336	184	636	1.457	7	5.6		0.3948	0.1684		0.740	0.790	0.881		1.040
194	388	184	636	1.457	7	5.6		0.3948	0.1684		0.737	0.790	0.881		1.040
195	390	184	636	1.457	7	5.2		0.4341	0.1810		0.737	0.795	0.881		1.040
196	392	184	636	1.457	7	5.6		0.4040	0.1753		0.745	0.799	0.877		1.040
197	394	184	636	1.457	7	5.2		0.4341	0.1810		0.745	0.799	0.881		1.040
198	396	184	636	1.457	7	5.2		0.4341	0.1884		0.759	0.802	0.881		1.040
199	398	184	636	1.457	7	5.2		0.4341	0.1884		0.765	0.806	0.881		1.040
200	400	184	636	1.457	6	4.5		0.4984	0.2126		0.765	0.806	0.881		1.040
201	402	184	636	1.457	7	5.2		0.4440	0.1958		0.771	0.812	0.884		1.043
202	404	184	636	1.457	6	4.5		0.5101	0.2214		0.771	0.812	0.881		1.040
203	406	184	636	1.457	6	4.5		0.5101	0.2214		0.771	0.812	0.884		1.043
204	408	184	636	1.457	6	4.9		0.4798	0.2196		0.777	0.818	0.887		1.046
205	410	184	636	1.457	5	3.7		0.6041	0.2577		0.774	0.815	0.884		1.043
206	412	184	636	1.457	6	4.5		0.5217	0.2301		0.784	0.818	0.884		1.046
207	414	184	636	1.457	6	4.5		0.5101	0.2214		0.787	0.818	0.884		1.046
208	416	184	636	1.457	5	4.1		0.5462	0.2330		0.784	0.815	0.881		1.040
209	418	184	636	1.457	5	4.9		0.4905	0.2196		0.790	0.818	0.887		1.046
210	420	184	636	1.457	5	4.1		0.5462	0.2426		0.781	0.815	0.884		1.046
211	422	184	636	1.457	5	4.1		0.5590	0.2426		0.777	0.812	0.884		1.046
212	424	184	636	1.457	6	4.5		0.5217	0.2301		0.777	0.815	0.890		1.049
213	426	184	636	1.457	5	4.1		0.5462	0.2330		0.771	0.806	0.881		1.046

MACH	Q	P	PT	PREF	PCAL
1.457	273.8	184	636	1452	2119

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
418	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
1	2	183	636	1.463	721	567.4		0.0254	0.0105	0.869	1.036	1.039	0.932		1.165
2	4	183	636	1.463	763	600.4		0.0274	0.0115	0.869	1.055	1.062	0.939		1.162
3	6	183	636	1.463	800	629.5		0.0296	0.0125	0.882	1.077	1.090	0.954		1.165
4	8	183	636	1.463	828	651.6		0.0315	0.0132	0.885	1.080	1.109	0.961		1.165
5	10	183	636	1.463	852	670.9		0.0332	0.0138	0.891	1.090	1.128	0.973		1.162
6	12	183	636	1.463	872	686.2		0.0350	0.0146	0.898	1.099	1.147	0.989		1.165
7	14	183	636	1.463	887	698.0		0.0365	0.0150	0.895	1.102	1.153	0.989		1.162
8	16	183	636	1.463	899	707.9		0.0381	0.0156	0.904	1.118	1.169	1.002		1.162
9	18	183	636	1.463	908	715.0		0.0396	0.0160	0.904	1.121	1.178	1.008		1.162
10	20	183	636	1.463	915	720.5		0.0407	0.0163	0.907	1.124	1.181	1.011		1.156
11	22	183	636	1.463	920	724.0		0.0416	0.0167	0.914	1.124	1.191	1.024		1.162
12	24	183	636	1.463	923	726.4		0.0423	0.0169	0.917	1.115	1.187	1.021		1.159
13	26	183	636	1.463	924	727.6		0.0429	0.0170	0.920	1.112	1.191	1.024		1.159
14	28	183	636	1.463	924	727.6		0.0433	0.0172	0.926	1.109	1.191	1.027		1.159
15	30	183	636	1.463	924	727.6		0.0436	0.0173	0.929	1.106	1.191	1.027		1.156
16	32	183	636	1.463	922	725.6		0.0437	0.0173	0.932	1.109	1.191	1.030		1.159
17	34	183	636	1.463	920	724.4		0.0439	0.0174	0.932	1.109	1.191	1.030		1.156
18	36	183	636	1.463	918	722.8		0.0439	0.0174	0.936	1.109	1.191	1.030		1.156
19	38	183	636	1.463	915	720.1		0.0439	0.0173	0.939	1.106	1.187	1.030		1.153
20	40	183	636	1.463	914	719.3		0.0440	0.0174	0.945	1.106	1.187	1.030		1.153
21	42	183	636	1.463	910	716.5		0.0440	0.0174	0.948	1.099	1.184	1.030		1.150
22	44	183	636	1.463	908	715.0		0.0440	0.0173	0.951	1.096	1.184	1.030		1.153
23	46	183	636	1.463	907	713.8		0.0441	0.0174	0.958	1.099	1.184	1.030		1.156
24	48	183	636	1.463	903	711.0		0.0440	0.0173	0.954	1.093	1.178	1.027		1.153
25	50	183	636	1.463	902	710.2		0.0442	0.0173	0.958	1.099	1.181	1.027		1.156
26	52	183	636	1.463	900	708.7		0.0442	0.0173	0.958	1.099	1.178	1.024		1.156
27	54	183	636	1.463	898	707.1		0.0443	0.0171	0.958	1.096	1.175	1.021		1.156
28	56	183	636	1.463	898	706.7		0.0445	0.0173	0.970	1.099	1.178	1.027		1.159
29	58	183	636	1.463	895	704.7		0.0446	0.0171	0.967	1.093	1.175	1.024		1.156
30	60	183	636	1.463	895	704.3		0.0447	0.0172	0.973	1.093	1.175	1.021		1.159
31	62	183	636	1.463	894	703.9		0.0450	0.0172	0.980	1.096	1.181	1.027		1.162
32	64	183	636	1.463	893	702.8		0.0451	0.0171	0.973	1.093	1.175	1.021		1.159

12277

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
418	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.	
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)
33	66	183	636	1.463	893	702.8		0.0454	0.0171	0.980	1.099	1.178	1.027		1.162
34	68	183	636	1.463	893	702.8		0.0456	0.0171	0.983	1.102	1.178	1.024		1.162
35	70	183	636	1.463	893	702.8		0.0458	0.0171	0.983	1.102	1.178	1.024		1.159
36	72	183	636	1.463	893	703.2		0.0461	0.0172	0.989	1.106	1.184	1.030		1.162
37	74	183	636	1.463	894	703.5		0.0463	0.0171	0.989	1.099	1.181	1.024		1.159
38	76	183	636	1.463	895	704.3		0.0465	0.0172	0.992	1.099	1.184	1.027		1.159
39	78	183	636	1.463	896	705.5		0.0468	0.0171	0.999	1.099	1.187	1.030		1.159
40	80	183	636	1.463	899	707.9		0.0470	0.0171	0.999	1.102	1.187	1.030		1.156
41	82	183	636	1.463	901	709.1		0.0472	0.0171	0.999	1.106	1.191	1.033		1.156
42	84	183	636	1.463	904	711.4		0.0474	0.0171	1.002	1.112	1.191	1.033		1.156
43	86	183	636	1.463	906	713.0		0.0477	0.0171	1.002	1.115	1.194	1.036		1.156
44	88	183	636	1.463	907	713.8		0.0478	0.0170	1.002	1.115	1.194	1.036		1.156
45	90	183	636	1.463	910	716.1		0.0481	0.0170	1.011	1.118	1.194	1.036		1.156
46	92	183	636	1.463	911	716.9		0.0483	0.0170	1.011	1.112	1.194	1.036		1.156
47	94	183	636	1.463	912	718.1		0.0485	0.0169	1.017	1.112	1.194	1.036		1.156
48	96	183	636	1.463	915	720.1		0.0487	0.0170	1.024	1.115	1.197	1.039		1.156
49	98	183	636	1.463	915	720.5		0.0488	0.0169	1.017	1.112	1.194	1.036		1.156
50	100	183	636	1.463	918	722.8		0.0490	0.0170	1.021	1.118	1.197	1.036		1.156
51	102	183	636	1.463	921	724.8		0.0491	0.0170	1.024	1.121	1.197	1.036		1.156
52	104	183	636	1.463	923	726.8		0.0491	0.0170	1.021	1.118	1.194	1.033		1.153
53	106	183	636	1.463	927	729.9		0.0493	0.0171	1.030	1.121	1.197	1.043		1.159
54	108	183	636	1.463	930	731.9		0.0492	0.0170	1.030	1.115	1.194	1.036		1.156
55	110	183	636	1.463	934	735.0		0.0493	0.0170	1.036	1.115	1.197	1.036		1.159
56	112	183	636	1.463	937	737.8		0.0493	0.0170	1.039	1.118	1.200	1.039		1.162
57	114	183	636	1.463	941	740.5		0.0491	0.0170	1.036	1.112	1.194	1.033		1.156
58	116	183	636	1.463	945	744.1		0.0490	0.0170	1.039	1.121	1.200	1.039		1.159
59	118	183	636	1.463	949	747.2		0.0488	0.0170	1.039	1.124	1.200	1.039		1.159
60	120	183	636	1.463	953	750.4		0.0486	0.0169	1.039	1.124	1.200	1.036		1.156
61	122	183	636	1.463	957	753.5		0.0484	0.0170	1.046	1.124	1.206	1.043		1.159
62	124	183	636	1.463	962	757.1		0.0482	0.0169	1.046	1.121	1.203	1.039		1.156
63	126	183	636	1.463	966	760.2		0.0480	0.0169	1.049	1.118	1.203	1.039		1.159
64	128	183	636	1.463	970	763.8		0.0478	0.0169	1.055	1.121	1.206	1.043		1.159

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
418	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	183	636	1.463	975	767.3		0.0476	0.0168	1.055	1.121	1.206	1.039		1.159
66	132	183	636	1.463	978	770.1		0.0473	0.0168	1.055	1.124	1.206	1.043		1.162
67	134	183	636	1.463	983	773.6		0.0470	0.0167	1.055	1.131	1.206	1.043		1.159
68	136	183	636	1.463	986	776.4		0.0467	0.0167	1.055	1.131	1.210	1.046		1.159
69	138	183	636	1.463	990	779.1		0.0464	0.0166	1.055	1.131	1.210	1.046		1.159
70	140	183	636	1.463	994	782.7		0.0462	0.0166	1.062	1.131	1.213	1.049		1.159
71	142	183	636	1.463	997	785.0		0.0460	0.0165	1.065	1.128	1.210	1.049		1.159
72	144	183	636	1.463	1001	787.8		0.0458	0.0164	1.068	1.128	1.216	1.049		1.159
73	146	183	636	1.463	1005	790.9		0.0457	0.0164	1.074	1.134	1.219	1.055		1.162
74	148	183	636	1.463	1006	792.1		0.0454	0.0162	1.068	1.131	1.216	1.052		1.156
75	150	183	636	1.463	1010	794.9		0.0454	0.0163	1.071	1.140	1.222	1.058		1.159
76	152	183	636	1.463	1012	796.8		0.0453	0.0162	1.071	1.147	1.222	1.058		1.156
77	154	183	636	1.463	1014	798.4		0.0451	0.0161	1.071	1.143	1.219	1.055		1.156
78	156	183	636	1.463	1017	800.8		0.0453	0.0162	1.080	1.150	1.225	1.065		1.159
79	158	183	636	1.463	1018	801.2		0.0451	0.0161	1.080	1.143	1.225	1.062		1.156
80	160	183	636	1.463	1020	802.7		0.0449	0.0161	1.084	1.143	1.225	1.062		1.156
81	162	183	636	1.463	1021	803.9		0.0448	0.0161	1.090	1.147	1.228	1.068		1.159
82	164	183	636	1.463	1022	804.7		0.0443	0.0160	1.084	1.143	1.225	1.062		1.153
83	166	183	636	1.463	1024	805.9		0.0438	0.0161	1.090	1.150	1.228	1.068		1.156
84	168	183	636	1.463	1025	806.7		0.0431	0.0161	1.090	1.153	1.228	1.068		1.156
85	170	183	636	1.463	1025	806.7		0.0424	0.0161	1.090	1.153	1.228	1.065		1.153
86	172	183	636	1.463	1026	807.5		0.0416	0.0161	1.096	1.159	1.232	1.071		1.156
87	174	183	636	1.463	1026	807.9		0.0406	0.0160	1.096	1.153	1.232	1.068		1.156
88	176	183	636	1.463	1027	808.3		0.0396	0.0161	1.099	1.150	1.232	1.068		1.153
89	178	183	636	1.463	1027	808.6		0.0386	0.0161	1.102	1.150	1.235	1.071		1.156
90	180	183	636	1.463	1028	809.4		0.0376	0.0161	1.106	1.153	1.235	1.068		1.153
91	182	183	636	1.463	1028	809.0		0.0367	0.0162	1.106	1.156	1.235	1.074		1.156
92	184	183	636	1.463	1028	809.4		0.0358	0.0162	1.106	1.162	1.235	1.074		1.156
93	186	183	636	1.463	1029	809.8		0.0351	0.0162	1.106	1.165	1.235	1.074		1.153
94	188	183	636	1.463	1028	809.4		0.0345	0.0162	1.109	1.165	1.238	1.074		1.153
95	190	183	636	1.463	1029	810.2		0.0341	0.0163	1.115	1.165	1.238	1.074		1.153
96	192	183	636	1.463	1028	809.4		0.0337	0.0162	1.115	1.162	1.238	1.074		1.153

12278

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
418	1	66/033/1	38	15%AL	.500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	183	636	1.463	1028	809.4		0.0335	0.0163	1.118	1.162	1.238	1.074		1.153
98	196	183	636	1.463	1029	809.8		0.0333	0.0164	1.124	1.165	1.241	1.080		1.156
99	198	183	636	1.463	1026	807.9		0.0332	0.0163	1.118	1.162	1.235	1.074		1.150
100	200	183	636	1.463	1026	807.9		0.0332	0.0163	1.121	1.169	1.238	1.077		1.150
101	202	183	636	1.463	1024	806.3		0.0332	0.0164	1.121	1.172	1.238	1.077		1.150
102	204	183	636	1.463	1022	804.3		0.0332	0.0163	1.118	1.165	1.232	1.074		1.147
103	206	183	636	1.463	1020	803.1		0.0335	0.0165	1.128	1.169	1.238	1.080		1.150
104	208	183	636	1.463	1015	799.2		0.0336	0.0164	1.128	1.159	1.232	1.074		1.150
105	210	183	636	1.463	1010	795.3		0.0338	0.0164	1.131	1.156	1.232	1.074		1.150
106	212	183	636	1.463	1004	790.1		0.0341	0.0165	1.137	1.156	1.232	1.077		1.153
107	214	183	636	1.463	994	782.3		0.0345	0.0165	1.131	1.150	1.222	1.068		1.147
108	216	183	636	1.463	982	772.8		0.0350	0.0167	1.134	1.153	1.225	1.071		1.150
109	218	183	636	1.463	965	759.8		0.0356	0.0167	1.134	1.150	1.219	1.068		1.150
110	220	183	636	1.463	944	743.3		0.0365	0.0168	1.134	1.143	1.210	1.062		1.147
111	222	183	636	1.463	919	723.6		0.0375	0.0170	1.137	1.137	1.203	1.062		1.153
112	224	183	636	1.463	890	700.4		0.0387	0.0171	1.137	1.118	1.187	1.052		1.150
113	226	183	636	1.463	857	674.4		0.0402	0.0173	1.140	1.106	1.175	1.043		1.150
114	228	183	636	1.463	821	646.5		0.0419	0.0175	1.140	1.090	1.162	1.036		1.153
115	230	183	636	1.463	785	617.7		0.0439	0.0177	1.140	1.074	1.147	1.024		1.150
116	232	183	636	1.463	746	587.4		0.0461	0.0178	1.137	1.062	1.131	1.017		1.153
117	234	183	636	1.463	709	558.3		0.0485	0.0178	1.137	1.049	1.115	1.008		1.153
118	236	183	636	1.463	672	529.2		0.0510	0.0179	1.134	1.030	1.099	0.999		1.153
119	238	183	636	1.463	637	501.2		0.0536	0.0178	1.128	1.008	1.084	0.989		1.153
120	240	183	636	1.463	605	476.0		0.0564	0.0179	1.131	0.986	1.068	0.983		1.153
121	242	183	636	1.463	573	451.2		0.0591	0.0178	1.131	0.964	1.055	0.973		1.153
122	244	183	636	1.463	544	428.0		0.0620	0.0177	1.131	0.945	1.039	0.970		1.153
123	246	183	636	1.463	517	406.8		0.0651	0.0178	1.131	0.936	1.030	0.967		1.156
124	248	183	636	1.463	488	384.3		0.0679	0.0176	1.121	0.917	1.011	0.958		1.153
125	250	183	636	1.463	462	363.9		0.0712	0.0176	1.118	0.910	0.999	0.958		1.153
126	252	183	636	1.463	435	342.6		0.0745	0.0177	1.115	0.901	0.986	0.954		1.153
127	254	183	636	1.463	408	321.0		0.0782	0.0175	1.112	0.882	0.967	0.945		1.150
128	256	183	636	1.463	381	300.1		0.0826	0.0180	1.115	0.873	0.958	0.951		1.153

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LL	TNTSTP	CONF	PROPELLANT	SAMP.RATE
418	1	66/033/1	38	15%AL	500

FRAME	TIME	P_n	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
129	258	183	636	1.463	352	277.3		0.0872	0.0179	1.112	0.851	0.939	0.942		1.150
130	260	183	636	1.463	324	255.2		0.0926	0.0182	1.109	0.832	0.923	0.942		1.153
131	262	183	636	1.463	297	233.6		0.0988	0.0185	1.109	0.822	0.910	0.942		1.156
132	264	183	636	1.463	269	211.9		0.1054	0.0186	1.099	0.800	0.885	0.932		1.150
133	266	183	636	1.463	244	191.8		0.1134	0.0191	1.099	0.791	0.873	0.936		1.153
134	268	183	636	1.463	218	171.8		0.1227	0.0195	1.096	0.775	0.857	0.932		1.150
135	270	183	636	1.463	194	152.9		0.1330	0.0198	1.090	0.756	0.838	0.929		1.150
136	272	183	636	1.463	173	136.0		0.1446	0.0206	1.090	0.740	0.822	0.936		1.153
137	274	183	636	1.463	152	119.8		0.1575	0.0207	1.084	0.715	0.800	0.929		1.153
138	276	183	636	1.463	134	105.3		0.1723	0.0213	1.080	0.690	0.781	0.929		1.153
139	278	183	636	1.463	117	91.9		0.1894	0.0223	1.077	0.671	0.762	0.929		1.153
140	280	183	636	1.463	102	80.5		0.2065	0.0230	1.074	0.652	0.743	0.926		1.153
141	282	183	636	1.463	88	69.4		0.2241	0.0238	1.068	0.640	0.728	0.929		1.153
142	284	183	636	1.463	77	60.4		0.2369	0.0248	1.062	0.627	0.715	0.929		1.153
143	286	183	636	1.463	66	52.1		0.2472	0.0264	1.055	0.611	0.696	0.926		1.153
144	288	183	636	1.463	56	44.2		0.2580	0.0267	1.049	0.592	0.677	0.926		1.150
145	290	183	636	1.463	50	39.1		0.2569	0.0292	1.046	0.580	0.671	0.929		1.153
146	292	183	636	1.463	42	33.2		0.2599	0.0308	1.043	0.567	0.662	0.926		1.156
147	294	183	636	1.463	36	28.1		0.2642	0.0336	1.036	0.564	0.662	0.926		1.156
148	296	183	636	1.463	32	25.0		0.2555	0.0379	1.036	0.573	0.671	0.929		1.159
149	298	183	636	1.463	25	19.8		0.2659	0.0397	1.027	0.577	0.674	0.926		1.156
150	300	183	636	1.463	23	17.9		0.2541	0.0463	1.024	0.595	0.687	0.929		1.156
151	302	183	636	1.463	19	14.7		0.2620	0.0535	1.017	0.608	0.699	0.926		1.156
152	304	183	636	1.463	15	12.0		0.2698	0.0592	1.008	0.621	0.712	0.923		1.153
153	306	183	636	1.463	14	11.2		0.2606	0.0704	1.014	0.640	0.731	0.929		1.156
154	308	183	636	1.463	11	8.4		0.2960	0.0841	1.005	0.646	0.743	0.923		1.153
155	310	183	636	1.463	9	7.2		0.3152	0.0979	1.005	0.655	0.759	0.923		1.153
156	312	183	636	1.463	8	6.1		0.3593	0.1234	1.005	0.671	0.775	0.929		1.156
157	314	183	636	1.463	6	4.5		0.4386	0.1492	0.995	0.680	0.784	0.923		1.153
158	316	183	636	1.463	5	4.1		0.4936	0.1828	0.992	0.699	0.797	0.929		1.153
159	318	183	636	1.463	4	2.9		0.6937	0.2568	0.989	0.715	0.806	0.929		1.153
160	320	183	636	1.463	3	2.1		0.9259	0.3520	0.983	0.725	0.813	0.926		1.150
161	322	183	636	1.463	2	1.7		1.1666	0.4546	0.986	0.734	0.825	0.932		1.153
162	324	183	636	1.463	1	0.9		2.1940	0.7917	0.983	0.734	0.828	0.926		1.150
163	326	183	636	1.463	0	0.2		13.4744	4.9918	0.980	0.743	0.841	0.929		1.150
164	328	183	636	1.463	-0	-0.2		-9.2362	-3.3393	0.980	0.753	0.854	0.929		1.153

MACH	Q	P	PT	PREP	PCAL
1.463	273.9	183	636	1447	2117

12279

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
419	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	375	632	0.897	871	334.5		0.0251	0.0117	1.017	1.070	1.092	1.046		1.093
2	4	375	632	0.897	956	367.3		0.0268	0.0124	1.020	1.087	1.104	1.057		1.097
3	6	375	632	0.897	1035	397.5		0.0283	0.0130	1.024	1.104	1.118	1.070		1.103
4	8	375	632	0.897	1106	424.7		0.0297	0.0136	1.030	1.113	1.127	1.078		1.107
5	10	375	632	0.897	1169	448.9		0.0311	0.0141	1.035	1.126	1.138	1.090		1.112
6	12	375	632	0.897	1224	470.2		0.0323	0.0146	1.041	1.135	1.149	1.100		1.117
7	14	375	632	0.897	1272	488.7		0.0334	0.0151	1.047	1.144	1.156	1.107		1.121
8	16	375	632	0.897	1312	503.9		0.0344	0.0155	1.052	1.153	1.163	1.117		1.124
9	18	375	632	0.897	1345	516.7		0.0354	0.0159	1.057	1.161	1.169	1.123		1.127
10	20	375	632	0.897	1372	527.1		0.0363	0.0163	1.061	1.169	1.175	1.129		1.130
11	22	375	632	0.897	1393	535.2		0.0370	0.0166	1.066	1.172	1.178	1.132		1.133
12	24	375	632	0.897	1412	542.3		0.0377	0.0170	1.075	1.175	1.184	1.138		1.138
13	26	375	632	0.897	1425	547.3		0.0383	0.0172	1.080	1.176	1.186	1.141		1.140
14	28	375	632	0.897	1436	551.5		0.0389	0.0175	1.086	1.178	1.189	1.144		1.143
15	30	375	632	0.897	1445	554.9		0.0394	0.0178	1.093	1.181	1.192	1.147		1.146
16	32	375	632	0.897	1450	556.9		0.0397	0.0179	1.095	1.178	1.190	1.147		1.146
17	34	375	632	0.897	1455	559.0		0.0402	0.0181	1.101	1.183	1.192	1.149		1.147
18	36	375	632	0.897	1458	560.1		0.0406	0.0182	1.104	1.183	1.192	1.150		1.147
19	38	375	632	0.897	1460	560.9		0.0409	0.0182	1.107	1.181	1.190	1.147		1.147
20	40	375	632	0.897	1462	561.7		0.0412	0.0183	1.117	1.184	1.195	1.153		1.150
21	42	375	632	0.897	1462	561.7		0.0413	0.0182	1.118	1.179	1.193	1.150		1.149
22	44	375	632	0.897	1463	561.9		0.0414	0.0182	1.124	1.179	1.195	1.152		1.150
23	46	375	632	0.897	1463	562.1		0.0416	0.0182	1.129	1.181	1.196	1.153		1.153
24	48	375	632	0.897	1463	562.1		0.0416	0.0181	1.130	1.178	1.195	1.150		1.152
25	50	375	632	0.897	1464	562.2		0.0417	0.0181	1.135	1.184	1.198	1.153		1.153
26	52	375	632	0.897	1464	562.2		0.0417	0.0181	1.138	1.184	1.198	1.153		1.153
27	54	375	632	0.897	1464	562.2		0.0416	0.0181	1.140	1.186	1.196	1.152		1.153
28	56	375	632	0.897	1464	562.2		0.0416	0.0182	1.144	1.186	1.198	1.153		1.155
29	58	375	632	0.897	1465	562.8		0.0416	0.0182	1.147	1.183	1.198	1.152		1.155
30	60	375	632	0.897	1466	563.0		0.0416	0.0182	1.150	1.181	1.196	1.152		1.155
31	62	375	632	0.897	1468	563.8		0.0415	0.0182	1.153	1.181	1.196	1.153		1.155
32	64	375	632	0.897	1470	564.7		0.0415	0.0181	1.156	1.181	1.198	1.152		1.155

12280

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TMTSTP	CONF	PROPELLANT	SAMP.RATE
419	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	375	632	0.897	1472	565.3		0.0414	0.0180	1.156	1.181	1.196	1.153		1.155
34	68	375	632	0.897	1475	566.7		0.0413	0.0179	1.160	1.183	1.198	1.153		1.155
35	70	375	632	0.897	1478	567.8		0.0412	0.0178	1.161	1.184	1.198	1.155		1.155
36	72	375	632	0.897	1481	569.0		0.0412	0.0176	1.161	1.184	1.198	1.155		1.156
37	74	375	632	0.897	1486	570.7		0.0411	0.0176	1.167	1.184	1.199	1.156		1.156
38	76	375	632	0.897	1489	571.8		0.0410	0.0174	1.169	1.183	1.199	1.156		1.156
39	78	375	632	0.897	1492	573.2		0.0410	0.0174	1.172	1.184	1.201	1.156		1.158
40	80	375	632	0.897	1496	574.7		0.0410	0.0173	1.176	1.187	1.204	1.160		1.160
41	82	375	632	0.897	1499	575.7		0.0408	0.0171	1.173	1.186	1.201	1.156		1.158
42	84	375	632	0.897	1504	577.6		0.0408	0.0171	1.176	1.189	1.203	1.160		1.160
43	86	375	632	0.897	1507	579.0		0.0408	0.0170	1.178	1.192	1.203	1.160		1.158
44	88	375	632	0.897	1511	580.3		0.0407	0.0169	1.176	1.192	1.201	1.156		1.156
45	90	375	632	0.897	1516	582.2		0.0408	0.0169	1.183	1.195	1.204	1.161		1.160
46	92	375	632	0.897	1519	583.4		0.0408	0.0168	1.181	1.190	1.203	1.158		1.158
47	94	375	632	0.897	1523	584.9		0.0409	0.0168	1.184	1.190	1.203	1.160		1.160
48	96	375	632	0.897	1527	586.4		0.0410	0.0168	1.187	1.192	1.204	1.161		1.160
49	98	375	632	0.897	1530	587.6		0.0411	0.0167	1.184	1.189	1.203	1.156		1.158
50	100	375	632	0.897	1534	589.1		0.0413	0.0168	1.187	1.193	1.204	1.160		1.160
51	102	375	632	0.897	1536	590.1		0.0415	0.0168	1.187	1.195	1.204	1.160		1.158
52	104	375	632	0.897	1539	591.1		0.0416	0.0168	1.187	1.195	1.203	1.158		1.156
53	106	375	632	0.897	1541	592.0		0.0418	0.0169	1.189	1.195	1.204	1.160		1.158
54	108	375	632	0.897	1544	593.0		0.0418	0.0169	1.189	1.192	1.203	1.156		1.156
55	110	375	632	0.897	1546	593.7		0.0419	0.0170	1.190	1.190	1.201	1.156		1.156
56	112	375	632	0.897	1549	594.9		0.0420	0.0170	1.192	1.190	1.203	1.156		1.156
57	114	375	632	0.897	1552	596.2		0.0420	0.0171	1.193	1.190	1.203	1.156		1.155
58	116	375	632	0.897	1554	597.0		0.0421	0.0171	1.192	1.192	1.203	1.156		1.155
59	118	375	632	0.897	1558	598.5		0.0420	0.0172	1.193	1.193	1.203	1.156		1.155
60	120	375	632	0.897	1562	599.9		0.0419	0.0172	1.192	1.195	1.201	1.156		1.155
61	122	375	632	0.897	1565	601.0		0.0416	0.0172	1.192	1.193	1.201	1.156		1.153
62	124	375	632	0.897	1570	603.2		0.0412	0.0172	1.193	1.193	1.203	1.158		1.155
63	126	375	632	0.897	1574	604.5		0.0407	0.0172	1.195	1.192	1.201	1.156		1.155
64	128	375	632	0.897	1578	606.2		0.0401	0.0172	1.195	1.192	1.203	1.158		1.155

National Aeronautics and Space Administration
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PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
419	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	375	632	0.897	1583	608.1		0.0395	0.0173	1.198	1.193	1.206	1.160		1.156
66	132	375	632	0.897	1586	609.3		0.0388	0.0172	1.195	1.192	1.204	1.158		1.155
67	134	375	632	0.897	1591	611.2		0.0383	0.0173	1.196	1.195	1.206	1.161		1.156
68	136	375	632	0.897	1595	612.6		0.0378	0.0172	1.195	1.196	1.206	1.163		1.156
69	138	375	632	0.897	1598	613.7		0.0374	0.0171	1.193	1.193	1.204	1.161		1.156
70	140	375	632	0.897	1602	615.3		0.0373	0.0171	1.198	1.196	1.207	1.166		1.160
71	142	375	632	0.897	1603	615.8		0.0371	0.0170	1.196	1.192	1.206	1.164		1.158
72	144	375	632	0.897	1605	616.6		0.0371	0.0169	1.198	1.190	1.206	1.166		1.160
73	146	375	632	0.897	1607	617.2		0.0371	0.0168	1.201	1.192	1.207	1.169		1.161
74	148	375	632	0.897	1608	617.6		0.0372	0.0167	1.198	1.189	1.204	1.166		1.160
75	150	375	632	0.897	1609	617.9		0.0373	0.0167	1.201	1.192	1.207	1.169		1.161
76	152	375	632	0.897	1609	618.1		0.0375	0.0166	1.199	1.193	1.207	1.169		1.161
77	154	375	632	0.897	1610	618.3		0.0376	0.0166	1.199	1.193	1.206	1.169		1.161
78	156	375	632	0.897	1609	617.9		0.0378	0.0166	1.201	1.193	1.207	1.172		1.163
79	158	375	632	0.897	1608	617.8		0.0379	0.0166	1.203	1.189	1.206	1.169		1.161
80	160	375	632	0.897	1606	617.0		0.0381	0.0166	1.203	1.186	1.204	1.169		1.161
81	162	375	632	0.897	1604	616.0		0.0382	0.0167	1.204	1.184	1.204	1.170		1.161
82	164	375	632	0.897	1600	614.7		0.0383	0.0168	1.206	1.184	1.204	1.169		1.160
83	166	375	632	0.897	1594	612.4		0.0385	0.0169	1.204	1.184	1.203	1.169		1.160
84	168	375	632	0.897	1588	610.1		0.0387	0.0170	1.204	1.184	1.201	1.169		1.160
85	170	375	632	0.897	1580	607.0		0.0388	0.0171	1.204	1.184	1.201	1.169		1.158
86	172	375	632	0.897	1571	603.3		0.0390	0.0172	1.204	1.183	1.199	1.167		1.156
87	174	375	632	0.897	1562	600.1		0.0394	0.0174	1.207	1.183	1.199	1.169		1.158
88	176	375	632	0.897	1550	595.3		0.0400	0.0176	1.207	1.179	1.198	1.166		1.158
89	178	375	632	0.897	1537	590.3		0.0407	0.0177	1.207	1.179	1.198	1.164		1.156
90	180	375	632	0.897	1523	584.9		0.0416	0.0178	1.210	1.181	1.199	1.166		1.158
91	182	375	632	0.897	1505	578.2		0.0424	0.0177	1.206	1.179	1.195	1.160		1.156
92	184	375	632	0.897	1488	571.7		0.0433	0.0177	1.206	1.181	1.195	1.160		1.155
93	186	375	632	0.897	1468	564.0		0.0442	0.0177	1.204	1.183	1.193	1.156		1.153
94	188	375	632	0.897	1447	555.7		0.0451	0.0175	1.201	1.179	1.189	1.150		1.150
95	190	375	632	0.897	1425	547.3		0.0461	0.0175	1.204	1.179	1.190	1.150		1.150
96	192	375	632	0.897	1399	537.3		0.0469	0.0174	1.201	1.172	1.186	1.144		1.147

12281

National Aeronautics and Space Administration
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PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
419	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	375	632	0.897	1372	526.9		0.0478	0.0173	1.201	1.169	1.183	1.141		1.146
98	196	375	632	0.897	1342	515.4		0.0487	0.0173	1.201	1.167	1.181	1.140		1.147
99	198	375	632	0.897	1308	502.3		0.0493	0.0172	1.198	1.161	1.175	1.132		1.143
100	200	375	632	0.897	1270	487.7		0.0499	0.0174	1.196	1.161	1.173	1.130		1.143
101	202	375	632	0.897	1226	471.0		0.0501	0.0174	1.193	1.156	1.167	1.126		1.140
102	204	375	632	0.897	1176	451.6		0.0503	0.0176	1.190	1.150	1.160	1.120		1.136
103	206	375	632	0.897	1118	429.5		0.0504	0.0179	1.190	1.143	1.152	1.115		1.136
104	208	375	632	0.897	1054	404.9		0.0505	0.0182	1.187	1.127	1.140	1.104		1.132
105	210	375	632	0.897	984	377.9		0.0506	0.0185	1.186	1.113	1.126	1.093		1.127
106	212	375	632	0.897	909	349.1		0.0510	0.0189	1.183	1.098	1.113	1.083		1.123
107	214	375	632	0.897	831	319.3		0.0514	0.0194	1.179	1.083	1.097	1.069		1.118
108	216	375	632	0.897	751	288.6		0.0520	0.0198	1.173	1.066	1.081	1.057		1.113
109	218	375	632	0.897	674	258.8		0.0528	0.0202	1.169	1.050	1.064	1.041		1.109
110	220	375	632	0.897	598	229.6		0.0536	0.0207	1.164	1.034	1.046	1.026		1.103
111	222	375	632	0.897	525	201.7		0.0545	0.0211	1.156	1.015	1.030	1.012		1.098
112	224	375	632	0.897	460	176.6		0.0556	0.0217	1.155	0.997	1.015	1.000		1.095
113	226	375	632	0.897	398	152.8		0.0567	0.0221	1.149	0.978	1.000	0.984		1.092
114	228	375	632	0.897	343	131.6		0.0580	0.0226	1.143	0.963	0.987	0.974		1.087
115	230	375	632	0.897	294	113.0		0.0599	0.0234	1.138	0.951	0.978	0.964		1.086
116	232	375	632	0.897	250	95.9		0.0612	0.0236	1.129	0.937	0.967	0.952		1.081
117	234	375	632	0.897	213	81.7		0.0634	0.0244	1.124	0.931	0.961	0.947		1.080
118	236	375	632	0.897	180	69.0		0.0662	0.0253	1.117	0.924	0.954	0.941		1.077
119	238	375	632	0.897	151	57.9		0.0687	0.0258	1.109	0.917	0.949	0.937		1.073
120	240	375	632	0.897	128	49.0		0.0733	0.0281	1.107	0.915	0.949	0.938		1.073
121	242	375	632	0.897	106	40.8		0.0774	0.0291	1.100	0.908	0.944	0.937		1.070
122	244	375	632	0.897	89	34.1		0.0837	0.0315	1.095	0.906	0.944	0.938		1.069
123	246	375	632	0.897	74	28.5		0.0911	0.0356	1.092	0.908	0.947	0.941		1.069
124	248	375	632	0.897	61	23.5		0.0995	0.0391	1.084	0.906	0.946	0.941		1.066
125	250	375	632	0.897	51	19.7		0.1125	0.0467	1.081	0.912	0.951	0.947		1.066
126	252	375	632	0.897	42	16.2		0.1286	0.0543	1.077	0.917	0.954	0.951		1.064
127	254	375	632	0.897	35	13.3		0.1487	0.0646	1.072	0.920	0.955	0.954		1.064
128	256	375	632	0.897	29	11.0		0.1728	0.0798	1.070	0.923	0.960	0.960		1.066

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
419	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.	
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
129	258	375	632	0.897	24	9.3		0.1994	0.0947	1.067	0.923	0.961	0.961		1.064
130	260	375	632	0.897	20	7.6		0.2382	0.1189	1.064	0.924	0.964	0.966		1.064
131	262	375	632	0.897	17	6.4		0.2770	0.1462	1.064	0.928	0.969	0.969		1.064
132	264	375	632	0.897	14	5.5		0.3258	0.1755	1.061	0.932	0.972	0.971		1.064
133	266	375	632	0.897	11	4.3		0.4072	0.2270	1.058	0.937	0.975	0.975		1.066
134	268	375	632	0.897	10	3.7		0.4703	0.2673	1.055	0.941	0.978	0.977		1.066
135	270	375	632	0.897	8	3.1		0.5554	0.3224	1.054	0.944	0.980	0.978		1.064
136	272	375	632	0.897	6	2.4		0.7254	0.4265	1.050	0.946	0.980	0.978		1.064
137	274	375	632	0.897	6	2.4		0.7469	0.4427	1.050	0.947	0.983	0.978		1.064
138	276	375	632	0.897	5	1.8		0.9716	0.5843	1.049	0.944	0.981	0.975		1.064
139	278	375	632	0.897	4	1.6		1.0875	0.6659	1.047	0.944	0.981	0.974		1.064
140	280	375	632	0.897	4	1.6		1.1193	0.6898	1.047	0.947	0.984	0.974		1.064
141	282	375	632	0.897	2	0.6		2.6957	1.6507	1.041	0.944	0.981	0.969		1.064
142	284	375	632	0.897	2	0.8		2.1412	1.3195	1.040	0.949	0.983	0.969		1.064
143	286	375	632	0.897	2	0.6		2.7745	1.7098	1.037	0.952	0.984	0.967		1.064
144	288	375	632	0.897	1	0.3		6.6956	4.1133	1.034	0.952	0.983	0.966		1.061
145	290	375	632	0.897	1	0.5		4.0517	2.5119	1.035	0.955	0.989	0.969		1.064
146	292	375	632	0.897	-0	-0.1		-15.1596	-9.3422	1.032	0.954	0.989	0.966		1.063
147	294	375	632	0.897	-1	-0.3		-5.8774	-3.5712	1.030	0.955	0.992	0.969		1.063
148	296	375	632	0.897	-1	-0.3		-5.8774	-3.6330	1.032	0.960	0.997	0.972		1.064
149	298	375	632	0.897	-2	-0.7		-2.5923	-1.5699	1.027	0.960	0.997	0.972		1.063
150	300	375	632	0.897	-1	-0.5		-3.6331	-2.2457	1.027	0.969	1.001	0.977		1.064

MACH	Q	P	PT	PREF	PCAL
0.897	211.1	375	632	1449	2115

12283

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
420	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	260	637	1.207	911	504.1		0.0250	0.0106	0.918	0.999	1.081	0.997		1.048
2	4	260	637	1.207	990	547.5		0.0269	0.0115	0.924	1.033	1.117	1.022		1.048
3	6	260	637	1.207	1060	586.5		0.0284	0.0122	0.926	1.068	1.150	1.046		1.048
4	8	260	637	1.207	1126	622.8		0.0300	0.0130	0.933	1.101	1.179	1.070		1.048
5	10	260	637	1.207	1184	654.9		0.0314	0.0136	0.938	1.132	1.205	1.092		1.048
6	12	260	637	1.207	1235	683.1		0.0326	0.0140	0.944	1.159	1.227	1.112		1.048
7	14	260	637	1.207	1282	709.1		0.0339	0.0146	0.955	1.185	1.250	1.134		1.050
8	16	260	637	1.207	1320	730.1		0.0349	0.0150	0.962	1.201	1.265	1.150		1.050
9	18	260	637	1.207	1353	748.6		0.0360	0.0153	0.973	1.216	1.278	1.163		1.050
10	20	260	637	1.207	1382	764.4		0.0369	0.0157	0.984	1.232	1.294	1.179		1.053
11	22	260	637	1.207	1404	776.6		0.0376	0.0158	0.988	1.238	1.298	1.183		1.048
12	24	260	637	1.207	1424	787.6		0.0383	0.0161	0.999	1.252	1.307	1.194		1.048
13	26	260	637	1.207	1439	795.9		0.0389	0.0163	1.008	1.261	1.311	1.199		1.046
14	28	260	637	1.207	1451	802.6		0.0393	0.0165	1.015	1.263	1.314	1.203		1.044
15	30	260	637	1.207	1461	808.4		0.0398	0.0167	1.030	1.267	1.320	1.212		1.046
16	32	260	637	1.207	1467	811.7		0.0400	0.0169	1.037	1.261	1.318	1.212		1.044
17	34	260	637	1.207	1473	814.7		0.0403	0.0170	1.046	1.258	1.318	1.214		1.044
18	36	260	637	1.207	1477	817.0		0.0406	0.0172	1.057	1.258	1.320	1.216		1.046
19	38	260	637	1.207	1479	818.3		0.0408	0.0173	1.061	1.254	1.316	1.212		1.042
20	40	260	637	1.207	1482	819.7		0.0411	0.0176	1.070	1.256	1.320	1.216		1.044
21	42	260	637	1.207	1484	820.8		0.0414	0.0177	1.079	1.256	1.318	1.216		1.044
22	44	260	637	1.207	1485	821.7		0.0416	0.0179	1.086	1.256	1.318	1.216		1.044
23	46	260	637	1.207	1487	822.5		0.0419	0.0181	1.095	1.256	1.318	1.219		1.046
24	48	260	637	1.207	1489	823.6		0.0421	0.0182	1.103	1.252	1.318	1.216		1.044
25	50	260	637	1.207	1490	824.4		0.0424	0.0182	1.110	1.250	1.318	1.219		1.046
26	52	260	637	1.207	1492	825.5		0.0426	0.0182	1.121	1.247	1.318	1.219		1.046
27	54	260	637	1.207	1495	826.9		0.0429	0.0181	1.128	1.250	1.320	1.221		1.046
28	56	260	637	1.207	1495	827.2		0.0431	0.0180	1.132	1.250	1.320	1.221		1.046
29	58	260	637	1.207	1497	828.3		0.0434	0.0178	1.139	1.254	1.323	1.223		1.046
30	60	260	637	1.207	1498	828.8		0.0438	0.0176	1.146	1.256	1.323	1.223		1.046
31	62	260	637	1.207	1499	829.4		0.0440	0.0173	1.150	1.256	1.323	1.223		1.046
32	64	260	637	1.207	1502	830.8		0.0444	0.0172	1.161	1.258	1.325	1.225		1.048

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
420	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	260	637	1.207	1502	830.8		0.0447	0.0169	1.165	1.254	1.323	1.223		1.048
34	68	260	637	1.207	1503	831.3		0.0450	0.0168	1.174	1.252	1.323	1.225		1.050
35	70	260	637	1.207	1504	831.9		0.0453	0.0167	1.183	1.256	1.325	1.230		1.053
36	72	260	637	1.207	1503	831.6		0.0455	0.0165	1.183	1.252	1.323	1.225		1.048
37	74	260	637	1.207	1505	832.7		0.0458	0.0164	1.190	1.258	1.325	1.227		1.050
38	76	260	637	1.207	1506	833.3		0.0460	0.0164	1.194	1.261	1.325	1.230		1.048
39	78	260	637	1.207	1507	833.8		0.0463	0.0163	1.196	1.261	1.323	1.227		1.046
40	80	260	637	1.207	1510	835.2		0.0466	0.0163	1.205	1.265	1.329	1.234		1.050
41	82	260	637	1.207	1511	836.0		0.0468	0.0163	1.207	1.261	1.327	1.230		1.046
42	84	260	637	1.207	1514	837.4		0.0471	0.0163	1.214	1.263	1.329	1.232		1.046
43	86	260	637	1.207	1517	839.4		0.0474	0.0163	1.221	1.265	1.331	1.236		1.048
44	88	260	637	1.207	1520	841.0		0.0476	0.0163	1.223	1.263	1.329	1.232		1.044
45	90	260	637	1.207	1524	843.2		0.0480	0.0163	1.227	1.267	1.334	1.236		1.046
46	92	260	637	1.207	1528	845.4		0.0483	0.0164	1.232	1.272	1.331	1.236		1.046
47	94	260	637	1.207	1533	847.9		0.0486	0.0164	1.234	1.274	1.334	1.236		1.044
48	96	260	637	1.207	1537	850.1		0.0491	0.0164	1.238	1.278	1.336	1.241		1.048
49	98	260	637	1.207	1541	852.6		0.0495	0.0164	1.243	1.274	1.334	1.238		1.046
50	100	260	637	1.207	1545	854.9		0.0500	0.0164	1.247	1.272	1.334	1.238		1.046
51	102	260	637	1.207	1549	857.1		0.0506	0.0164	1.252	1.272	1.334	1.241		1.046
52	104	260	637	1.207	1554	859.8		0.0511	0.0164	1.256	1.272	1.336	1.241		1.046
53	106	260	637	1.207	1558	861.8		0.0517	0.0163	1.258	1.276	1.336	1.243		1.046
54	108	260	637	1.207	1562	864.0		0.0523	0.0163	1.261	1.281	1.336	1.243		1.044
55	110	260	637	1.207	1565	865.9		0.0526	0.0163	1.263	1.285	1.336	1.243		1.044
56	112	260	637	1.207	1567	867.0		0.0524	0.0162	1.265	1.283	1.334	1.243		1.042
57	114	260	637	1.207	1571	869.2		0.0518	0.0162	1.272	1.285	1.338	1.245		1.044
58	116	260	637	1.207	1573	870.1		0.0509	0.0161	1.272	1.281	1.336	1.243		1.042
59	118	260	637	1.207	1574	870.9		0.0499	0.0161	1.276	1.278	1.338	1.245		1.044
60	120	260	637	1.207	1576	872.0		0.0487	0.0162	1.283	1.281	1.340	1.250		1.044
61	122	260	637	1.207	1576	871.7		0.0474	0.0161	1.281	1.278	1.338	1.245		1.042
62	124	260	637	1.207	1577	872.3		0.0462	0.0161	1.285	1.283	1.340	1.250		1.042
63	126	260	637	1.207	1576	871.7		0.0451	0.0161	1.285	1.287	1.342	1.250		1.042
64	128	260	637	1.207	1574	870.6		0.0440	0.0161	1.285	1.285	1.340	1.247		1.039

12284

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
420	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	260	637	1.207	1573	870.3		0.0431	0.0161	1.292	1.289	1.345	1.254		1.042
66	132	260	637	1.207	1570	868.7		0.0420	0.0160	1.292	1.283	1.342	1.250		1.042
67	134	260	637	1.207	1568	867.6		0.0410	0.0161	1.296	1.278	1.345	1.250		1.042
68	136	260	637	1.207	1567	866.7		0.0400	0.0160	1.300	1.276	1.347	1.254		1.044
69	138	260	637	1.207	1565	865.6		0.0390	0.0160	1.298	1.272	1.342	1.247		1.042
70	140	260	637	1.207	1564	865.1		0.0382	0.0160	1.300	1.274	1.347	1.252		1.042
71	142	260	637	1.207	1562	864.3		0.0374	0.0160	1.300	1.274	1.345	1.250		1.042
72	144	260	637	1.207	1561	863.7		0.0368	0.0160	1.300	1.272	1.345	1.250		1.039
73	146	260	637	1.207	1560	863.1		0.0363	0.0160	1.303	1.272	1.345	1.252		1.042
74	148	260	637	1.207	1560	862.9		0.0360	0.0161	1.305	1.267	1.345	1.247		1.042
75	150	260	637	1.207	1559	862.6		0.0357	0.0161	1.307	1.265	1.345	1.250		1.039
76	152	260	637	1.207	1559	862.3		0.0356	0.0161	1.309	1.263	1.345	1.250		1.039
77	154	260	637	1.207	1559	862.3		0.0356	0.0162	1.311	1.265	1.347	1.250		1.039
78	156	260	637	1.207	1557	861.5		0.0356	0.0162	1.309	1.267	1.345	1.250		1.039
79	158	260	637	1.207	1557	861.2		0.0357	0.0162	1.311	1.272	1.347	1.250		1.039
80	160	260	637	1.207	1556	860.7		0.0358	0.0163	1.311	1.276	1.347	1.250		1.037
81	162	260	637	1.207	1553	859.3		0.0359	0.0164	1.309	1.276	1.347	1.250		1.039
82	164	260	637	1.207	1552	858.7		0.0361	0.0165	1.316	1.278	1.349	1.252		1.039
83	166	260	637	1.207	1549	856.8		0.0363	0.0166	1.316	1.276	1.349	1.252		1.039
84	168	260	637	1.207	1546	855.4		0.0364	0.0167	1.318	1.278	1.349	1.254		1.042
85	170	260	637	1.207	1543	853.7		0.0367	0.0168	1.323	1.283	1.354	1.258		1.044
86	172	260	637	1.207	1538	850.7		0.0368	0.0168	1.318	1.281	1.349	1.254		1.042
87	174	260	637	1.207	1534	848.8		0.0370	0.0169	1.320	1.285	1.351	1.256		1.042
88	176	260	637	1.207	1529	845.7		0.0372	0.0170	1.320	1.289	1.351	1.256		1.042
89	178	260	637	1.207	1522	842.1		0.0374	0.0171	1.318	1.287	1.347	1.254		1.042
90	180	260	637	1.207	1516	838.8		0.0376	0.0172	1.325	1.289	1.351	1.258		1.044
91	182	260	637	1.207	1508	834.1		0.0377	0.0173	1.323	1.283	1.347	1.254		1.044
92	184	260	637	1.207	1499	829.4		0.0379	0.0174	1.325	1.281	1.347	1.254		1.044
93	186	260	637	1.207	1490	824.1		0 0382	0.0175	1.327	1.281	1.349	1.254		1.044
94	188	260	637	1.207	1478	817.5		0.0384	0.0176	1.325	1.276	1.342	1.247		1.042
95	190	260	637	1.207	1465	810.3		0.0387	0.0178	1.327	1.278	1.345	1.250		1.042
96	192	260	637	1.207	1449	801.5		0.0390	0.0180	1.325	1.278	1.340	1.247		1.042

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
420	1	66/033/1	38	15%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
97	194	260	637	1.207	1429	790.4		0.0394	0.0182	1.323	1.276	1.338	1.241		1.042
98	196	260	637	1.207	1405	777.1		0.0399	0.0184	1.325	1.272	1.334	1.241		1.044
99	198	260	637	1.207	1375	760.8		0.0405	0.0187	1.325	1.261	1.327	1.232		1.042
100	200	260	637	1.207	1340	741.2		0.0413	0.0190	1.325	1.250	1.318	1.223		1.042
101	202	260	637	1.207	1299	718.5		0.0423	0.0193	1.325	1.238	1.309	1.214		1.044
102	204	260	637	1.207	1251	692.2		0.0435	0.0197	1.323	1.225	1.296	1.199		1.042
103	206	260	637	1.207	1195	661.2		0.0449	0.0201	1.318	1.212	1.278	1.185		1.044
104	208	260	637	1.207	1134	627.5		0.0467	0.0205	1.314	1.199	1.258	1.165		1.044
105	210	260	637	1.207	1067	590.4		0.0487	0.0209	1.309	1.181	1.234	1.146		1.044
106	212	260	637	1.207	995	550.6		0.0512	0.0213	1.303	1.157	1.207	1.121		1.044
107	214	260	637	1.207	922	509.9		0.0543	0.0218	1.300	1.130	1.181	1.099		1.044
108	216	260	637	1.207	846	467.9		0.0577	0.0222	1.292	1.097	1.150	1.072		1.044
109	218	260	637	1.207	771	426.4		0.0616	0.0226	1.285	1.064	1.119	1.048		1.044
110	220	260	637	1.207	698	386.3		0.0663	0.0230	1.281	1.033	1.088	1.028		1.046
111	222	260	637	1.207	627	346.7		0.0713	0.0231	1.265	0.997	1.055	1.002		1.042
112	224	260	637	1.207	562	310.7		0.0772	0.0236	1.258	0.971	1.026	0.984		1.044
113	226	260	637	1.207	500	276.7		0.0836	0.0238	1.245	0.942	0.997	0.964		1.042
114	228	260	637	1.207	443	245.2		0.0909	0.0239	1.232	0.911	0.966	0.946		1.039
115	230	260	637	1.207	393	217.2		0.0992	0.0243	1.227	0.887	0.944	0.938		1.042
116	232	260	637	1.207	346	191.2		0.1081	0.0241	1.214	0.853	0.913	0.922		1.039
117	234	260	637	1.207	304	168.0		0.1184	0.0243	1.203	0.822	0.889	0.911		1.042
118	236	260	637	1.207	266	147.3		0.1298	0.0246	1.194	0.796	0.867	0.904		1.044
119	238	260	637	1.207	233	128.7		0.1422	0.0242	1.179	0.767	0.838	0.893		1.039
120	240	260	637	1.207	203	112.4		0.1566	0.0248	1.168	0.747	0.818	0.891		1.042
121	242	260	637	1.207	177	97.8		0.1729	0.0248	1.154	0.723	0.794	0.887		1.042
122	244	260	637	1.207	153	84.5		0.1918	0.0248	1.141	0.699	0.772	0.884		1.042
123	246	260	637	1.207	132	72.9		0.2138	0.0254	1.130	0.679	0.756	0.884		1.044
124	248	260	637	1.207	114	62.9		0.2371	0.0254	1.119	0.656	0.735	0.880		1.042
125	250	260	637	1.207	98	54.0		0.2650	0.0260	1.108	0.641	0.732	0.880		1.042
126	252	260	637	1.207	84	46.3		0.2974	0.0268	1.099	0.634	0.732	0.880		1.044
127	254	260	637	1.207	72	39.9		0.3328	0.0276	1.088	0.634	0.734	0.880		1.044
128	256	260	637	1.207	61	33.6		0.3794	0.0287	1.077	0.639	0.741	0.882		1.044

12286

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TIPTSTP	CONF	PROPELLANT	SAMP.RATE
420	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
129	258	260	637	1.207	52	28.9		0.4245	0.0305	1.066	0.650	0.752	0.884		1.042
130	260	260	637	1.207	44	24.4		0.4833	0.0326	1.055	0.661	0.760	0.884		1.042
131	262	260	637	1.207	37	20.6		0.5510	0.0347	1.044	0.672	0.772	0.887		1.042
132	264	260	637	1.207	33	18.1		0.6084	0.0410	1.039	0.685	0.785	0.889		1.042
133	266	260	637	1.207	27	15.0		0.7021	0.0456	1.033	0.694	0.796	0.891		1.042
134	268	260	637	1.207	24	13.1		0.7777	0.0524	1.026	0.705	0.807	0.893		1.042
135	270	260	637	1.207	21	11.7		0.8443	0.0609	1.022	0.721	0.820	0.898		1.044
136	272	260	637	1.207	17	9.2		1.0280	0.0683	1.011	0.727	0.827	0.895		1.042
137	274	260	637	1.207	15	8.4		1.0987	0.0817	1.008	0.745	0.838	0.900		1.042
138	276	260	637	1.207	14	7.6		1.1802	0.0943	1.002	0.754	0.845	0.902		1.042
139	278	260	637	1.207	12	6.5		1.3308	0.1061	0.995	0.763	0.851	0.900		1.039
140	280	260	637	1.207	11	6.2		1.3604	0.1243	0.995	0.774	0.860	0.907		1.044
141	282	260	637	1.207	9	5.1		1.5984	0.1404	0.991	0.774	0.862	0.904		1.042
142	284	260	637	1.207	8	4.5		1.7366	0.1698	0.988	0.776	0.867	0.907		1.044
143	286	260	637	1.207	8	4.3		1.7975	0.1873	0.986	0.783	0.873	0.911		1.046
144	288	260	637	1.207	7	3.7		1.9964	0.2078	0.980	0.783	0.873	0.907		1.042
145	290	260	637	1.207	7	3.7		1.9566	0.2228	0.980	0.794	0.880	0.911		1.044
146	292	260	637	1.207	6	3.4		2.0500	0.2327	0.975	0.800	0.884	0.911		1.044
147	294	260	637	1.207	6	3.1		2.1715	0.2619	0.973	0.807	0.889	0.911		1.044
148	296	260	637	1.207	5	2.9		2.3165	0.2968	0.973	0.814	0.895	0.915		1.046
149	298	260	637	1.207	5	2.9		2.2523	0.2872	0.971	0.814	0.898	0.911		1.044
150	300	260	637	1.207	5	2.6		2.4213	0.3178	0.968	0.818	0.900	0.913		1.046
151	302	260	637	1.207	5	2.6		2.3644	0.3284	0.968	0.822	0.907	0.913		1.046
152	304	260	637	1.207	5	2.6		2.3218	0.3391	0.968	0.827	0.909	0.913		1.044
153	306	260	637	1.207	4	2.0		2.8606	0.4174	0.964	0.831	0.913	0.915		1.044
154	308	260	637	1.207	4	2.3		2.4716	0.3796	0.962	0.838	0.915	0.913		1.044
155	310	260	637	1.207	4	2.3		2.4079	0.3676	0.960	0.840	0.918	0.913		1.044
156	312	260	637	1.207	3	1.8		3.0581	0.4829	0.955	0.842	0.918	0.913		1.042
157	314	260	637	1.207	4	2.3		2.3125	0.3796	0.957	0.842	0.922	0.913		1.042
158	316	260	637	1.207	4	2.0		2.5535	0.4174	0.955	0.840	0.922	0.911		1.042
159	318	260	637	1.207	4	2.0		2.4993	0.4310	0.955	0.840	0.924	0.911		1.042
160	320	260	637	1.207	4	2.3		2.1852	0.3915	0.957	0.842	0.926	0.915		1.042
161	322	260	637	1.207	3	1.5		3.2548	0.5540	0.951	0.838	0.922	0.911		1.039
162	324	260	637	1.207	4	2.0		2.3729	0.4310	0.951	0.842	0.924	0.911		1.039
163	326	260	637	1.207	4	2.0		2.3187	0.4310	0.949	0.845	0.924	0.911		1.039
164	328	260	637	1.207	3	1.8		2.5985	0.4829	0.944	0.842	0.920	0.909		1.037

MACH	Q	P	PT	PREP	PCAL
1.207	265.5	260	637	1450	2115

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTS	CONF	PROPELLANT	SAMP.RATE
421	1	66/033/1	38	16/AL	500

FRAME	TIME	Pn	PTn	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P5/PTO)n	(P4/PTO)n	DISC PRESS. (P6/P)n	(P7/P)n	(P3/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	183	636	1.462	836	658.3		0.0237	0.0094	0.864	0.945	1.040	0.968		1.150
2	4	183	636	1.462	908	715.0		0.0259	0.0105	0.873	0.984	1.075	0.987		1.150
3	6	183	636	1.462	971	764.2		0.0277	0.0113	0.876	1.015	1.103	0.996		1.154
4	8	183	636	1.462	1025	807.1		0.0294	0.0121	0.883	1.043	1.125	1.002		1.150
5	10	183	636	1.462	1074	845.5		0.0310	0.0129	0.895	1.075	1.154	1.021		1.154
6	12	183	636	1.462	1114	876.7		0.0323	0.0134	0.902	1.094	1.169	1.028		1.150
7	14	183	636	1.462	1149	904.7		0.0335	0.0140	0.911	1.113	1.188	1.037		1.154
8	16	183	636	1.462	1181	929.5		0.0345	0.0145	0.924	1.135	1.207	1.050		1.157
9	18	183	636	1.462	1207	950.0		0.0353	0.0148	0.927	1.147	1.213	1.050		1.150
10	20	183	636	1.462	1231	968.9		0.0362	0.0152	0.939	1.172	1.229	1.065		1.150
11	22	183	636	1.462	1251	985.0		0.0368	0.0155	0.949	1.188	1.239	1.072		1.150
12	24	183	636	1.462	1269	998.8		0.0374	0.0157	0.958	1.201	1.245	1.075		1.147
13	26	183	636	1.462	1285	1011.4		0.0379	0.0159	0.971	1.213	1.254	1.087		1.150
14	28	183	636	1.462	1299	1022.4		0.0383	0.0160	0.980	1.217	1.257	1.087		1.147
15	30	183	636	1.462	1311	1031.8		0.0386	0.0161	0.990	1.220	1.261	1.094		1.147
16	32	183	636	1.462	1322	1040.5		0.0389	0.0162	1.006	1.220	1.264	1.100		1.150
17	34	183	636	1.462	1332	1048.8		0.0392	0.0163	1.015	1.223	1.267	1.100		1.147
18	36	183	636	1.462	1340	1055.1		0.0393	0.0164	1.021	1.226	1.267	1.103		1.147
19	38	183	636	1.462	1348	1061.0		0.0396	0.0164	1.031	1.229	1.267	1.103		1.147
20	40	183	636	1.462	1353	1065.3		0.0396	0.0165	1.037	1.232	1.267	1.103		1.147
21	42	183	636	1.462	1357	1068.4		0.0397	0.0166	1.043	1.229	1.264	1.103		1.147
22	44	183	636	1.462	1361	1071.6		0.0397	0.0167	1.059	1.226	1.267	1.103		1.147
23	46	183	636	1.462	1363	1073.2		0.0396	0.0168	1.065	1.217	1.264	1.100		1.144
24	48	183	636	1.462	1365	1074.3		0.0396	0.0170	1.075	1.210	1.264	1.100		1.144
25	50	183	636	1.462	1367	1075.9		0.0395	0.0172	1.084	1.210	1.270	1.106		1.147
26	52	183	636	1.462	1367	1075.9		0.0394	0.0173	1.084	1.207	1.264	1.100		1.144
27	54	183	636	1.462	1369	1077.9		0.0393	0.0176	1.094	1.213	1.270	1.106		1.144
28	56	183	636	1.462	1371	1079.5		0.0393	0.0177	1.100	1.220	1.270	1.106		1.144
29	58	183	636	1.462	1373	1080.3		0.0392	0.0179	1.103	1.220	1.270	1.103		1.144
30	60	183	636	1.462	1377	1083.8		0.0392	0.0181	1.119	1.229	1.280	1.113		1.147
31	62	183	636	1.462	1379	1085.4		0.0391	0.0181	1.122	1.223	1.276	1.113		1.147
32	64	183	636	1.462	1383	1088.5		0.0392	0.0182	1.128	1.223	1.280	1.116		1.147

12323

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	DIST	DESIG	COMP	PROPELLANT	SAMP.RATE
421	1	66/033/1	38	16%AL	500

							NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
33	66	183	636	1.462	1387	1092.1		0.0392	0.0185	1.141	1.229	1.286	1.122		1.150
34	68	183	636	1.462	1391	1094.8		0.0393	0.0183	1.138	1.229	1.283	1.119		1.147
35	70	183	636	1.462	1396	1098.7		0.0395	0.0184	1.147	1.239	1.289	1.123		1.150
36	72	183	636	1.462	1400	1102.3		0.0396	0.0184	1.154	1.245	1.292	1.128		1.150
37	74	183	636	1.462	1404	1105.4		0.0397	0.0183	1.157	1.248	1.292	1.128		1.147
38	76	183	636	1.462	1409	1109.0		0.0398	0.0182	1.166	1.254	1.298	1.133		1.150
39	78	183	636	1.462	1413	1112.1		0.0399	0.0181	1.169	1.248	1.295	1.135		1.150
40	80	183	636	1.462	1417	1115.3		0.0399	0.0179	1.176	1.248	1.298	1.133		1.150
41	82	183	636	1.462	1421	1118.8		0.0399	0.0178	1.185	1.251	1.305	1.141		1.154
42	84	183	636	1.462	1426	1122.8		0.0400	0.0176	1.188	1.257	1.308	1.144		1.150
43	86	183	636	1.462	1430	1125.5		0.0402	0.0175	1.191	1.267	1.314	1.154		1.150
44	88	183	636	1.462	1434	1129.1		0.0403	0.0174	1.198	1.273	1.317	1.157		1.150
45	90	183	636	1.462	1438	1131.8		0.0404	0.0173	1.201	1.276	1.317	1.160		1.150
46	92	183	636	1.462	1440	1133.8		0.0406	0.0172	1.201	1.276	1.317	1.163		1.150
47	94	183	636	1.462	1444	1136.5		0.0409	0.0172	1.210	1.276	1.324	1.166		1.150
48	96	183	636	1.462	1445	1137.3		0.0411	0.0172	1.217	1.273	1.321	1.166		1.150
49	98	183	636	1.462	1446	1138.1		0.0414	0.0172	1.223	1.273	1.327	1.169		1.150
50	100	183	636	1.462	1447	1139.3		0.0418	0.0173	1.229	1.280	1.333	1.172		1.154
51	102	183	636	1.462	1446	1138.5		0.0421	0.0174	1.229	1.280	1.333	1.169		1.154
52	104	183	636	1.462	1447	1139.3		0.0426	0.0175	1.235	1.292	1.336	1.176		1.154
53	106	183	636	1.462	1447	1139.3		0.0430	0.0176	1.235	1.298	1.342	1.182		1.154
54	108	183	636	1.462	1447	1139.3		0.0433	0.0177	1.239	1.298	1.342	1.179		1.150
55	110	183	636	1.462	1449	1140.9		0.0437	0.0178	1.248	1.308	1.352	1.188		1.154
56	112	183	636	1.462	1449	1140.5		0.0439	0.0178	1.248	1.302	1.349	1.188		1.150
57	114	183	636	1.462	1450	1141.3		0.0441	0.0179	1.254	1.302	1.352	1.191		1.150
58	116	183	636	1.462	1451	1142.0		0.0443	0.0180	1.261	1.303	1.355	1.198		1.154
59	118	183	636	1.462	1451	1142.0		0.0443	0.0180	1.261	1.302	1.352	1.191		1.147
60	120	183	636	1.462	1452	1142.8		0.0445	0.0181	1.267	1.311	1.358	1.193		1.150
61	122	183	636	1.462	1451	1142.4		0.0445	0.0181	1.257	1.314	1.358	1.198		1.150
62	124	183	636	1.462	1450	1141.7		0.0443	0.0180	1.267	1.317	1.355	1.198		1.147
63	126	183	636	1.462	1449	1140.5		0.0447	0.0181	1.273	1.320	1.358	1.201		1.150
64	128	183	636	1.462	1446	1138.1		0.0448	0.0180	1.276	1.311	1.355	1.198		1.147

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

ORIGINAL PAGE IS
OF POOR QUALITY

RUN	DISK	NUMBER	CONF	PROPELLANT	SAMP.RATE
421	1	66/033/1	58	15,HE	500

FRAME	TIME	Tn	TTn	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	183	636	1.462	1445	1135.7		0.0451	0.0180	1.280	1.308	1.355	1.193		1.147
66	132	183	636	1.462	1439	1132.6		0.0454	0.0180	1.286	1.305	1.352	1.201		1.147
67	134	183	636	1.462	1435	1129.4		0.0457	0.0180	1.289	1.305	1.349	1.198		1.144
68	136	183	636	1.462	1429	1125.1		0.0460	0.0181	1.286	1.305	1.349	1.193		1.147
69	138	183	636	1.462	1424	1121.2		0.0462	0.0181	1.289	1.308	1.349	1.196		1.147
70	140	183	636	1.462	1418	1116.1		0.0463	0.0182	1.289	1.308	1.346	1.194		1.144
71	142	183	636	1.462	1411	1110.6		0.0465	0.0183	1.289	1.308	1.342	1.191		1.144
72	144	183	636	1.462	1405	1106.2		0.0463	0.0184	1.295	1.305	1.342	1.188		1.144
73	146	183	636	1.462	1398	1100.5		0.0461	0.0185	1.295	1.298	1.336	1.185		1.144
74	148	183	636	1.462	1391	1094.6		0.0459	0.0186	1.298	1.298	1.336	1.182		1.144
75	150	183	636	1.462	1383	1088.9		0.0457	0.0187	1.302	1.298	1.339	1.185		1.147
76	152	183	636	1.462	1374	1081.4		0.0453	0.0188	1.295	1.295	1.333	1.179		1.144
77	154	183	636	1.462	1366	1075.5		0.0451	0.0189	1.298	1.302	1.333	1.179		1.144
78	156	183	636	1.462	1358	1069.2		0.0449	0.0191	1.295	1.302	1.333	1.179		1.144
79	158	183	636	1.462	1349	1062.1		0.0447	0.0192	1.292	1.302	1.330	1.172		1.141
80	160	183	636	1.462	1343	1057.0		0.0447	0.0194	1.298	1.308	1.336	1.182		1.144
81	162	183	636	1.462	1336	1051.5		0.0445	0.0194	1.295	1.302	1.336	1.179		1.144
82	164	183	636	1.462	1332	1048.4		0.0444	0.0195	1.298	1.302	1.339	1.182		1.147
83	166	183	636	1.462	1329	1046.0		0.0443	0.0196	1.302	1.305	1.346	1.191		1.150
84	168	183	636	1.462	1325	1042.9		0.0442	0.0196	1.298	1.298	1.336	1.185		1.147
85	170	183	636	1.462	1321	1039.7		0.0442	0.0197	1.302	1.308	1.339	1.191		1.150
86	172	183	636	1.462	1314	1034.6		0.0443	0.0197	1.302	1.305	1.336	1.188		1.150
87	174	183	636	1.462	1306	1027.9		0.0445	0.0198	1.298	1.302	1.330	1.182		1.147
88	176	183	636	1.462	1296	1020.0		0.0447	0.0200	1.302	1.302	1.330	1.185		1.154
89	178	183	636	1.462	1284	1010.6		0.0449	0.0200	1.302	1.286	1.317	1.172		1.150
90	180	183	636	1.462	1270	999.9		0.0452	0.0202	1.302	1.276	1.311	1.166		1.147
91	182	183	636	1.462	1256	988.5		0.0455	0.0203	1.298	1.267	1.305	1.160		1.150
92	184	183	636	1.462	1241	976.7		0.0459	0.0204	1.298	1.254	1.295	1.147		1.147
93	186	183	636	1.462	1224	963.7		0.0462	0.0205	1.292	1.251	1.292	1.144		1.147
94	188	183	636	1.462	1208	951.1		0.0465	0.0206	1.289	1.248	1.285	1.135		1.147
95	190	183	636	1.462	1192	938.2		0.0468	0.0207	1.283	1.245	1.280	1.128		1.147
96	192	183	636	1.462	1174	924.0		0.0471	0.0208	1.280	1.239	1.275	1.122		1.147

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

12324

ORIGINAL PAGE IS

RUN	TEST	TUNNEL	CONF	PROPELLANT	SAFE.PRESS
421	1	63/033/1	38	16,AL	500

FRAME	TIME	Pt	P2n	MACHn	P20n	(P10/P)n	PITOT PRESS. (P2/P10)n	(P3/P10)n	(P4/P10)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	183	636	1.462	1159	912.6		0.0474	0.0210	1.285	1.235	1.275	1.122		1.147
98	196	183	636	1.462	1145	901.2		0.0474	0.0211	1.276	1.232	1.275	1.119		1.147
99	198	183	636	1.462	1132	891.3		0.0475	0.0211	1.280	1.229	1.280	1.122		1.147
100	200	183	636	1.462	1119	881.1		0.0477	0.0211	1.280	1.235	1.280	1.125		1.150
101	202	183	636	1.462	1102	867.7		0.0477	0.0209	1.270	1.226	1.273	1.119		1.144
102	204	183	636	1.462	1083	852.7		0.0481	0.0207	1.270	1.226	1.267	1.119		1.144
103	206	183	636	1.462	1059	832.7		0.0485	0.0204	1.264	1.220	1.251	1.115		1.144
104	208	183	636	1.462	1025	807.1		0.0495	0.0201	1.257	1.207	1.245	1.103		1.141
105	210	183	636	1.462	988	777.6		0.0507	0.0200	1.261	1.198	1.235	1.100		1.144
106	212	183	636	1.462	942	741.7		0.0522	0.0196	1.254	1.176	1.213	1.084		1.144
107	214	183	636	1.462	892	702.0		0.0542	0.0195	1.251	1.150	1.194	1.072		1.144
108	216	183	636	1.462	837	659.1		0.0567	0.0194	1.248	1.132	1.179	1.059		1.147
109	218	183	636	1.462	779	613.0		0.0595	0.0191	1.235	1.103	1.144	1.037		1.144
110	220	183	636	1.462	720	566.6		0.0629	0.0192	1.229	1.087	1.122	1.028		1.144
111	222	183	636	1.462	659	518.9		0.0669	0.0191	1.220	1.062	1.094	1.009		1.147
112	224	183	636	1.462	600	472.5		0.0714	0.0191	1.210	1.057	1.062	0.990		1.144
113	226	183	636	1.462	543	427.2		0.0766	0.0192	1.201	1.015	1.057	0.984		1.147
114	228	183	636	1.462	488	383.9		0.0825	0.0191	1.191	0.977	1.002	0.961		1.147
115	230	183	636	1.462	436	343.4		0.0890	0.0190	1.179	0.945	0.974	0.952		1.147
116	232	183	636	1.462	388	305.5		0.0964	0.0192	1.169	0.914	0.945	0.945		1.147
117	234	183	636	1.462	344	270.6		0.1049	0.0192	1.160	0.889	0.921	0.933		1.144
118	236	183	636	1.462	302	237.5		0.1146	0.0192	1.147	0.864	0.895	0.950		1.147
119	238	183	636	1.462	265	208.4		0.1253	0.0195	1.135	0.845	0.870	0.924		1.147
120	240	183	636	1.462	231	181.6		0.1374	0.0195	1.122	0.820	0.845	0.917		1.144
121	242	183	636	1.462	199	156.8		0.1518	0.0196	1.106	0.795	0.823	0.917		1.144
122	244	183	636	1.462	173	136.0		0.1681	0.0200	1.100	0.769	0.804	0.914		1.144
123	246	183	636	1.462	148	116.5		0.1867	0.0200	1.084	0.758	0.779	0.914		1.144
124	248	183	636	1.462	126	99.0		0.2093	0.0207	1.075	0.715	0.757	0.914		1.144
125	250	183	636	1.462	108	84.8		0.2337	0.0219	1.069	0.688	0.738	0.914		1.144
126	252	183	636	1.462	90	70.6		0.2657	0.0212	1.048	0.659	0.710	0.908		1.141
127	254	183	636	1.462	76	60.0		0.2997	0.0224	1.037	0.640	0.688	0.911		1.141
128	256	183	636	1.462	64	50.2		0.3407	0.0228	1.021	0.621	0.669	0.908		1.141
129	258	183	636	1.462	53	41.9		0.3879	0.0227	1.005	0.602	0.647	0.905		1.141
130	260	183	636	1.462	45	35.6		0.4403	0.0256	1.002	0.593	0.647	0.911		1.141
131	262	183	636	1.462	37	28.9		0.5132	0.0260	0.987	0.580	0.637	0.905		1.141
132	264	183	636	1.462	31	24.2		0.5875	0.0273	0.977	0.577	0.640	0.905		1.141
133	266	183	636	1.462	26	20.2		0.6732	0.0313	0.968	0.584	0.653	0.911		1.144
134	268	183	636	1.462	21	16.7		0.7752	0.0309	0.952	0.587	0.662	0.905		1.138
135	270	183	636	1.462	18	14.3		0.8737	0.0387	0.946	0.612	0.683	0.911		1.141
136	272	183	636	1.462	15	12.0		1.0022	0.0451	0.933	0.634	0.706	0.911		1.141
137	274	183	636	1.462	13	10.0		1.1522	0.0476	0.924	0.656	0.725	0.908		1.141

MACH	Q	P	PT	PREP	PCAL
1.462	273.7	183	636	1428	2118

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	ENTSTP	CONF	PROPELLANT	SAMP.RATE
422	1	66/033/1	34	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	183	636	1.462	605	476.0		0.0435	0.0239	1.131	1.099	1.172	1.080		1.124
2	4	183	636	1.462	656	516.6		0.0496	0.0272	1.184	1.159	1.228	1.124		1.118
3	6	183	636	1.462	707	556.7		0.0556	0.0303	1.244	1.225	1.288	1.181		1.121
4	8	183	636	1.462	754	593.7		0.0610	0.0331	1.291	1.285	1.339	1.228		1.121
5	10	183	636	1.462	798	628.0		0.0661	0.0355	1.332	1.335	1.330	1.269		1.118
6	12	183	636	1.462	836	658.3		0.0710	0.0379	1.373	1.383	1.420	1.313		1.121
7	14	183	636	1.462	870	684.7		0.0759	0.0398	1.402	1.411	1.446	1.339		1.118
8	16	183	636	1.462	898	706.7		0.0808	0.0413	1.427	1.436	1.468	1.364		1.118
9	18	183	636	1.462	921	725.2		0.0850	0.0424	1.449	1.455	1.483	1.383		1.118
10	20	183	636	1.462	940	740.2		0.0881	0.0431	1.461	1.471	1.496	1.398		1.118
11	22	183	636	1.462	954	751.2		0.0902	0.0435	1.468	1.487	1.506	1.411		1.118
12	24	183	636	1.462	966	760.2		0.0916	0.0439	1.474	1.496	1.512	1.417		1.118
13	26	183	636	1.462	975	767.3		0.0924	0.0441	1.477	1.506	1.515	1.420		1.115
14	28	183	636	1.462	982	772.8		0.0926	0.0443	1.480	1.509	1.515	1.424		1.115
15	30	183	636	1.462	991	780.3		0.0924	0.0442	1.487	1.512	1.518	1.427		1.115
16	32	183	636	1.462	999	786.2		0.0921	0.0440	1.490	1.506	1.518	1.427		1.115
17	34	183	636	1.462	1007	792.9		0.0915	0.0438	1.493	1.502	1.518	1.427		1.115
18	36	183	636	1.462	1016	800.0		0.0908	0.0435	1.499	1.506	1.521	1.430		1.115
19	38	183	636	1.462	1024	805.9		0.0898	0.0431	1.493	1.502	1.518	1.427		1.112
20	40	183	636	1.462	1032	812.6		0.0892	0.0428	1.496	1.509	1.521	1.430		1.115
21	42	183	636	1.462	1040	818.5		0.0883	0.0426	1.493	1.512	1.521	1.430		1.112
22	44	183	636	1.462	1046	823.2		0.0876	0.0423	1.490	1.509	1.518	1.427		1.112
23	46	183	636	1.462	1053	829.1		0.0871	0.0422	1.496	1.515	1.524	1.433		1.115
24	48	183	636	1.462	1058	833.1		0.0867	0.0420	1.493	1.506	1.521	1.430		1.112
25	50	183	636	1.462	1063	837.0		0.0864	0.0420	1.496	1.506	1.524	1.430		1.112
26	52	183	636	1.462	1067	840.1		0.0863	0.0422	1.502	1.506	1.528	1.436		1.115
27	54	183	636	1.462	1070	842.5		0.0862	0.0423	1.496	1.502	1.521	1.430		1.112
28	56	183	636	1.462	1074	845.3		0.0862	0.0425	1.502	1.509	1.528	1.436		1.115
29	58	183	636	1.462	1075	846.4		0.0863	0.0426	1.502	1.512	1.528	1.436		1.112
30	60	183	636	1.462	1076	847.2		0.0865	0.0427	1.502	1.515	1.524	1.436		1.112
31	62	183	636	1.462	1076	847.2		0.0867	0.0429	1.506	1.521	1.528	1.443		1.115
32	64	183	636	1.462	1075	846.4		0.0868	0.0429	1.509	1.515	1.524	1.439		1.112

12290

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	ZETSEE	CONF	PROPELLANT	SAMP.RATE
422	1	66/033/1	34	15%AL	500

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.		
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n (P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
33	66	183	636	1.462	1074	845.6		0.0870 0.0429	1.509	1.515	1.524	1.439		1.112
34	68	183	636	1.462	1072	844.1		0.0871 0.0428	1.512	1.515	1.528	1.443		1.112
35	70	183	636	1.462	1071	843.3		0.0872 0.0427	1.515	1.515	1.528	1.443		1.112
36	72	183	636	1.462	1068	840.9		0.0872 0.0426	1.512	1.518	1.528	1.446		1.112
37	74	183	636	1.462	1066	839.3		0.0873 0.0426	1.512	1.521	1.528	1.446		1.115
38	76	183	636	1.462	1064	837.4		0.0874 0.0425	1.512	1.524	1.528	1.446		1.115
39	78	183	636	1.462	1060	834.6		0.0875 0.0426	1.509	1.524	1.524	1.443		1.115
40	80	183	636	1.462	1058	833.1		0.0877 0.0428	1.512	1.524	1.528	1.443		1.115
41	82	183	636	1.462	1055	830.3		0.0880 0.0428	1.512	1.521	1.528	1.443		1.112
42	84	183	636	1.462	1052	827.9		0.0882 0.0428	1.515	1.521	1.528	1.443		1.109
43	86	183	636	1.462	1050	826.4		0.0883 0.0429	1.518	1.528	1.531	1.446		1.112
44	88	183	636	1.462	1045	822.8		0.0883 0.0428	1.512	1.521	1.528	1.439		1.106
45	90	183	636	1.462	1043	821.2		0.0884 0.0428	1.512	1.528	1.531	1.443		1.109
46	92	183	636	1.462	1040	818.9		0.0885 0.0428	1.512	1.534	1.528	1.443		1.109
47	94	183	636	1.462	1037	816.5		0.0887 0.0428	1.506	1.531	1.524	1.439		1.106
48	96	183	636	1.462	1036	815.3		0.0890 0.0430	1.512	1.537	1.531	1.446		1.112
49	98	183	636	1.462	1032	812.6		0.0891 0.0430	1.509	1.528	1.528	1.443		1.109
50	100	183	636	1.462	1030	810.6		0.0892 0.0430	1.509	1.524	1.531	1.443		1.112
51	102	183	636	1.462	1028	809.4		0.0893 0.0429	1.515	1.528	1.534	1.446		1.115
52	104	183	636	1.462	1026	807.9		0.0890 0.0427	1.509	1.521	1.528	1.436		1.112
53	106	183	636	1.462	1025	806.7		0.0890 0.0426	1.509	1.524	1.534	1.443		1.112
54	108	183	636	1.462	1023	805.1		0.0889 0.0424	1.506	1.528	1.534	1.443		1.112
55	110	183	636	1.462	1020	803.1		0.0889 0.0422	1.502	1.531	1.531	1.439		1.112
56	112	183	636	1.462	1018	801.2		0.0890 0.0422	1.506	1.534	1.534	1.443		1.115
57	114	183	636	1.462	1016	799.6		0.0891 0.0421	1.502	1.524	1.531	1.436		1.109
58	116	183	636	1.462	1014	798.0		0.0893 0.0420	1.506	1.521	1.531	1.433		1.109
59	118	183	636	1.462	1013	797.6		0.0895 0.0419	1.509	1.521	1.534	1.436		1.112
60	120	183	636	1.462	1015	798.8		0.0896 0.0418	1.509	1.521	1.534	1.433		1.109
61	122	183	636	1.462	1015	799.2		0.0898 0.0418	1.506	1.524	1.534	1.436		1.109
62	124	183	636	1.462	1017	800.8		0.0899 0.0418	1.506	1.528	1.537	1.439		1.109
63	126	183	636	1.462	1018	801.6		0.0899 0.0418	1.502	1.531	1.534	1.439		1.109
64	128	183	636	1.462	1017	800.4		0.0899 0.0419	1.499	1.524	1.534	1.439		1.109

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TUNNEL	CONF	PROPELLANT	SAMP. RATE
422	1	66/033/1	34	15%AL	500

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.	
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P11/P)n
65	130	183	636	1.462	1016	799.6	0.0900	0.0420	1.502	1.524	1.534	1.439	1.112
66	132	183	636	1.462	1012	796.8	0.0899	0.0422	1.502	1.518	1.528	1.439	1.109
67	134	183	636	1.462	1009	794.1	0.0899	0.0424	1.502	1.518	1.528	1.439	1.109
68	136	183	636	1.462	1005	791.3	0.0900	0.0425	1.506	1.518	1.528	1.443	1.112
69	138	183	636	1.462	999	786.6	0.0898	0.0425	1.496	1.512	1.521	1.436	1.109
70	140	183	636	1.462	995	783.1	0.0898	0.0427	1.496	1.518	1.521	1.436	1.109
71	142	183	636	1.462	989	778.7	0.0898	0.0427	1.493	1.521	1.521	1.433	1.109
72	144	183	636	1.462	983	773.6	0.0899	0.0427	1.487	1.518	1.515	1.430	1.106
73	146	183	636	1.462	977	769.3	0.0902	0.0428	1.493	1.521	1.521	1.433	1.109
74	148	183	636	1.462	970	763.8	0.0903	0.0428	1.490	1.512	1.515	1.427	1.109
75	150	183	636	1.462	963	758.3	0.0906	0.0428	1.490	1.509	1.518	1.424	1.109
76	152	183	636	1.462	956	752.8	0.0910	0.0429	1.490	1.509	1.521	1.427	1.112
77	154	183	636	1.462	948	746.1	0.0913	0.0428	1.483	1.502	1.515	1.417	1.109
78	156	183	636	1.462	940	739.8	0.0918	0.0430	1.483	1.509	1.518	1.420	1.109
79	158	183	636	1.462	930	731.9	0.0923	0.0431	1.480	1.509	1.518	1.417	1.109
80	160	183	636	1.462	919	723.2	0.0929	0.0433	1.477	1.506	1.515	1.414	1.106
81	162	183	636	1.462	907	713.8	0.0937	0.0436	1.477	1.506	1.518	1.417	1.109
82	164	183	636	1.462	894	703.6	0.0945	0.0437	1.474	1.493	1.512	1.408	1.109
83	166	183	636	1.462	879	692.1	0.0954	0.0438	1.471	1.483	1.506	1.405	1.109
84	168	183	636	1.462	864	679.9	0.0963	0.0439	1.468	1.474	1.502	1.393	1.109
85	170	183	636	1.462	848	667.3	0.0972	0.0438	1.458	1.465	1.496	1.389	1.106
86	172	183	636	1.462	830	653.2	0.0980	0.0438	1.452	1.458	1.487	1.386	1.106
87	174	183	636	1.462	812	639.4	0.0986	0.0438	1.443	1.455	1.480	1.373	1.109
88	176	183	636	1.462	794	625.2	0.0992	0.0438	1.433	1.449	1.471	1.367	1.109
89	178	183	636	1.462	777	611.4	0.0995	0.0438	1.424	1.439	1.461	1.358	1.109
90	180	183	636	1.462	763	600.4	0.0995	0.0438	1.424	1.433	1.458	1.351	1.109
91	182	183	636	1.462	748	589.0	0.0994	0.0437	1.417	1.420	1.452	1.342	1.109
92	184	183	636	1.462	736	579.6	0.0990	0.0436	1.414	1.414	1.449	1.339	1.109
93	186	183	636	1.462	727	572.1	0.0985	0.0435	1.414	1.414	1.449	1.339	1.112
94	188	183	636	1.462	716	563.8	0.0979	0.0432	1.405	1.405	1.443	1.329	1.109
95	190	183	636	1.462	709	558.3	0.0972	0.0431	1.405	1.411	1.443	1.329	1.112
96	192	183	636	1.462	702	552.8	0.0966	0.0429	1.402	1.411	1.439	1.326	1.112

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTE	CONF	PROPELLANT	SAMP.RATE
422	1	66/033/1	34	15%AL	500

							NOZZLE PRESS.		BASE PRESS.			BODY PRESS.	
FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	(P5/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P11/P)n
97	194	183	636	1.462	696	547.7	0.0958	0.0427	1.395	1.411	1.436	1.320	1.109
98	196	183	636	1.462	691	543.7	0.0953	0.0427	1.405	1.417	1.443	1.326	1.112
99	198	183	636	1.462	683	537.8	0.0948	0.0425	1.398	1.408	1.433	1.320	1.112
100	200	183	636	1.462	676	532.3	0.0944	0.0426	1.398	1.402	1.433	1.317	1.115
101	202	183	636	1.462	669	526.8	0.0939	0.0427	1.398	1.398	1.430	1.317	1.118
102	204	183	636	1.462	661	520.5	0.0933	0.0427	1.389	1.389	1.420	1.301	1.112
103	206	183	636	1.462	653	514.2	0.0929	0.0429	1.386	1.392	1.420	1.304	1.115
104	208	183	636	1.462	645	507.9	0.0921	0.0431	1.380	1.389	1.417	1.298	1.115
105	210	183	636	1.462	637	501.6	0.0913	0.0433	1.373	1.389	1.411	1.291	1.115
106	212	183	636	1.462	630	495.7	0.0904	0.0436	1.373	1.386	1.411	1.291	1.118
107	214	183	636	1.462	622	489.8	0.0893	0.0438	1.367	1.376	1.405	1.282	1.115
108	216	183	636	1.462	615	484.3	0.0880	0.0440	1.364	1.370	1.398	1.279	1.115
109	218	183	636	1.462	609	479.2	0.0867	0.0442	1.364	1.364	1.395	1.276	1.115
110	220	183	636	1.462	603	474.9	0.0852	0.0443	1.361	1.361	1.392	1.269	1.115
111	222	183	636	1.462	597	469.7	0.0834	0.0446	1.354	1.361	1.392	1.272	1.115
112	224	183	636	1.462	591	465.0	0.0818	0.0449	1.354	1.364	1.389	1.269	1.112
113	226	183	636	1.462	584	459.5	0.0800	0.0451	1.348	1.364	1.386	1.266	1.112
114	228	183	636	1.462	576	453.2	0.0781	0.0453	1.345	1.361	1.383	1.260	1.112
115	230	183	636	1.462	567	446.5	0.0766	0.0458	1.342	1.354	1.380	1.257	1.112
116	232	183	636	1.462	555	437.1	0.0750	0.0461	1.335	1.342	1.367	1.247	1.109
117	234	183	636	1.462	542	426.8	0.0735	0.0465	1.326	1.329	1.358	1.238	1.109
118	236	183	636	1.462	527	415.0	0.0724	0.0469	1.313	1.313	1.345	1.228	1.112
119	238	183	636	1.462	508	399.7	0.0714	0.0472	1.288	1.291	1.323	1.206	1.106
120	240	183	636	1.462	488	383.9	0.0709	0.0478	1.272	1.279	1.307	1.187	1.109
121	242	183	636	1.462	464	365.4	0.0706	0.0483	1.247	1.257	1.285	1.165	1.106
122	244	183	636	1.462	438	344.6	0.0704	0.0487	1.219	1.228	1.257	1.140	1.102
123	246	183	636	1.462	410	322.9	0.0711	0.0494	1.200	1.203	1.235	1.121	1.109
124	248	183	636	1.462	380	298.9	0.0714	0.0496	1.169	1.165	1.200	1.090	1.106
125	250	183	636	1.462	350	275.3	0.0723	0.0500	1.140	1.131	1.169	1.052	1.106
126	252	183	636	1.462	319	251.3	0.0738	0.0508	1.112	1.102	1.140	1.039	1.109
127	254	183	636	1.462	289	227.3	0.0756	0.0509	1.074	1.052	1.099	1.005	1.106
128	256	183	636	1.462	260	204.8	0.0788	0.0517	1.046	1.036	1.074	0.986	1.106

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	INTERP	CONF	PROPELLANT	SAMP.RATE
422	1	66/033/1	34	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PT3)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
129	258	183	636	1.462	232	182.8		0.0831	0.0523	1.011	1.002	1.039	0.961		1.106
130	260	183	636	1.462	206	162.3		0.0878	0.0529	0.973	0.967	1.005	0.936		1.106
131	262	183	636	1.462	182	143.4		0.0939	0.0535	0.942	0.939	0.973	0.920		1.112
132	264	183	636	1.462	160	125.7		0.1008	0.0542	0.910	0.898	0.939	0.898		1.109
133	266	183	636	1.462	139	109.6		0.1085	0.0550	0.879	0.863	0.904	0.879		1.109
134	268	183	636	1.462	121	95.0		0.1179	0.0559	0.854	0.828	0.876	0.866		1.112
135	270	183	636	1.462	105	82.4		0.1270	0.0568	0.822	0.800	0.847	0.854		1.109
136	272	183	636	1.462	90	70.6		0.1379	0.0580	0.794	0.775	0.819	0.847		1.112
137	274	183	636	1.462	77	60.8		0.1498	0.0596	0.766	0.750	0.794	0.838		1.112
138	276	183	636	1.462	66	51.7		0.1629	0.0609	0.740	0.728	0.769	0.832		1.109
139	278	183	636	1.462	55	43.5		0.1781	0.0625	0.715	0.703	0.743	0.825		1.109
140	280	183	636	1.462	48	37.6		0.1936	0.0650	0.699	0.680	0.725	0.825		1.112
141	282	183	636	1.462	40	31.3		0.2124	0.0680	0.677	0.652	0.703	0.822		1.109
142	284	183	636	1.462	33	26.1		0.2360	0.0723	0.658	0.630	0.680	0.822		1.112
143	286	183	636	1.462	28	22.2		0.2589	0.0780	0.643	0.614	0.665	0.825		1.112
144	288	183	636	1.462	22	17.5		0.2988	0.0834	0.618	0.589	0.643	0.819		1.109
145	290	183	636	1.462	19	14.7		0.3369	0.0909	0.605	0.583	0.630	0.822		1.112
146	292	183	636	1.462	15	12.0		0.3838	0.1020	0.589	0.573	0.618	0.825		1.112
147	294	183	636	1.462	12	9.2		0.4644	0.1154	0.577	0.564	0.608	0.822		1.109
148	296	183	636	1.462	10	8.0		0.5131	0.1324	0.583	0.567	0.614	0.828		1.115
149	298	183	636	1.462	7	5.3		0.7214	0.1717	0.583	0.564	0.614	0.825		1.112
150	300	183	636	1.462	5	4.1		0.8910	0.2116	0.595	0.567	0.624	0.828		1.112

MACH	Q	P	PT	PREF	PCAL
1.462	273.7	183	636	1427	2117

12292

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TESTSTP	CONF	PROPELLANT	SAMP.RATE
423	1	66/033/1	38	2%AL	500

FRAME	TIME	Pn	P2n	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	260	640	1.210	1153	637.9		0.0340	0.0136	0.952	1.189	1.209	1.118		1.052
2	4	260	640	1.210	1266	700.4		0.0349	0.0141	0.970	1.222	1.242	1.149		1.054
3	6	260	640	1.210	1368	756.6		0.0357	0.0143	0.981	1.242	1.264	1.169		1.054
4	8	260	640	1.210	1461	808.3		0.0364	0.0146	0.996	1.264	1.286	1.189		1.054
5	10	260	640	1.210	1546	855.3		0.0371	0.0148	1.012	1.286	1.308	1.211		1.056
6	12	260	640	1.210	1622	897.4		0.0376	0.0150	1.023	1.297	1.319	1.222		1.052
7	14	260	640	1.210	1692	936.1		0.0382	0.0152	1.038	1.317	1.335	1.240		1.052
8	16	260	640	1.210	1755	970.9		0.0388	0.0153	1.052	1.331	1.346	1.251		1.052
9	18	260	640	1.210	1812	1002.5		0.0392	0.0154	1.065	1.342	1.355	1.260		1.052
10	20	260	640	1.210	1862	1029.8		0.0397	0.0155	1.081	1.350	1.364	1.271		1.054
11	22	260	640	1.210	1904	1053.1		0.0402	0.0156	1.094	1.350	1.366	1.275		1.052
12	24	260	640	1.210	1937	1071.6		0.0408	0.0157	1.107	1.355	1.370	1.282		1.052
13	26	260	640	1.210	1965	1087.1		0.0413	0.0158	1.123	1.357	1.375	1.286		1.054
14	28	260	640	1.210	1990	1100.6		0.0419	0.0159	1.136	1.359	1.377	1.289		1.054
15	30	260	640	1.210	2009	1111.2		0.0424	0.0159	1.147	1.362	1.379	1.293		1.054
16	32	260	640	1.210	2014	1114.2		0.0431	0.0161	1.160	1.360	1.381	1.295		1.054
17	34	260	640	1.210	2014	1114.2		0.0438	0.0163	1.169	1.366	1.381	1.295		1.054
18	36	260	640	1.210	2014	1114.2		0.0445	0.0164	1.178	1.364	1.381	1.295		1.054
19	38	260	640	1.210	2014	1114.2		0.0451	0.0165	1.193	1.364	1.381	1.297		1.054
20	40	260	640	1.210	2014	1114.2		0.0456	0.0166	1.202	1.357	1.379	1.295		1.054
21	42	260	640	1.210	2014	1114.2		0.0462	0.0167	1.213	1.355	1.379	1.295		1.054
22	44	260	640	1.210	2014	1114.2		0.0467	0.0168	1.227	1.355	1.381	1.297		1.056
23	46	260	640	1.210	2014	1114.2		0.0470	0.0168	1.231	1.350	1.377	1.293		1.052
24	48	260	640	1.210	2014	1114.2		0.0474	0.0169	1.240	1.355	1.379	1.295		1.052
25	50	260	640	1.210	2014	1114.2		0.0477	0.0169	1.249	1.357	1.379	1.293		1.052
26	52	260	640	1.210	2014	1114.2		0.0479	0.0169	1.253	1.357	1.377	1.291		1.052
27	54	260	640	1.210	2014	1114.2		0.0485	0.0170	1.266	1.362	1.381	1.297		1.054
28	56	260	640	1.210	2014	1114.2		0.0484	0.0170	1.271	1.357	1.377	1.293		1.054
29	58	260	640	1.210	2014	1114.2		0.0486	0.0171	1.280	1.355	1.377	1.293		1.054
30	60	260	640	1.210	2014	1114.2		0.0488	0.0171	1.289	1.355	1.379	1.297		1.058
31	62	260	640	1.210	2014	1114.2		0.0488	0.0171	1.291	1.350	1.373	1.291		1.054
32	64	260	640	1.210	2014	1114.2		0.0490	0.0172	1.300	1.355	1.377	1.295		1.056

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
423	1	66/033/1	38	2CAL	500

FRAME	TIME	Pn	PTn	MACHn	PTOn	(PTO/P)n	NOZZLE PRESS. (P2/PTO)n	(P3/PTO)n	(P4/PTO)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	260	640	1.210	2014	1114.2		0.0492	0.0173	1.302	1.357	1.377	1.295		1.056
34	68	260	640	1.210	2014	1114.2		0.0493	0.0173	1.306	1.359	1.375	1.293		1.054
35	70	260	640	1.210	2014	1114.2		0.0495	0.0174	1.313	1.362	1.379	1.297		1.058
36	72	260	640	1.210	2014	1114.2		0.0497	0.0174	1.317	1.359	1.377	1.295		1.056
37	74	260	640	1.210	2014	1114.2		0.0499	0.0175	1.322	1.359	1.379	1.297		1.056
38	76	260	640	1.210	2014	1114.2		0.0502	0.0176	1.328	1.359	1.381	1.300		1.058
39	78	260	640	1.210	2014	1114.2		0.0505	0.0176	1.333	1.362	1.381	1.300		1.058
40	80	260	640	1.210	2014	1114.2		0.0507	0.0177	1.335	1.364	1.381	1.302		1.058
41	82	260	640	1.210	2014	1114.2		0.0510	0.0177	1.337	1.368	1.384	1.304		1.061
42	84	260	640	1.210	2014	1114.2		0.0513	0.0178	1.339	1.373	1.384	1.304		1.061
43	86	260	640	1.210	2014	1114.2		0.0515	0.0178	1.342	1.370	1.384	1.304		1.058
44	88	260	640	1.210	2014	1114.2		0.0519	0.0178	1.348	1.373	1.386	1.304		1.061
45	90	260	640	1.210	2014	1114.2		0.0521	0.0178	1.350	1.368	1.384	1.304		1.058
46	92	260	640	1.210	2014	1114.2		0.0524	0.0178	1.353	1.366	1.384	1.304		1.058
47	94	260	640	1.210	2014	1114.2		0.0527	0.0179	1.357	1.368	1.386	1.306		1.061
48	96	260	640	1.210	2014	1114.2		0.0529	0.0178	1.355	1.364	1.384	1.302		1.058
49	98	260	640	1.210	2014	1114.2		0.0532	0.0178	1.357	1.368	1.386	1.302		1.058
50	100	260	640	1.210	2014	1114.2		0.0534	0.0178	1.357	1.370	1.384	1.302		1.056
51	102	260	640	1.210	2014	1114.2		0.0537	0.0177	1.357	1.368	1.381	1.297		1.054
52	104	260	640	1.210	2014	1114.2		0.0540	0.0177	1.364	1.373	1.386	1.302		1.056
53	106	260	640	1.210	2014	1114.2		0.0541	0.0177	1.362	1.366	1.379	1.297		1.054
54	108	260	640	1.210	2014	1114.2		0.0543	0.0176	1.364	1.362	1.379	1.295		1.054
55	110	260	640	1.210	2014	1114.2		0.0545	0.0176	1.366	1.362	1.379	1.297		1.056
56	112	260	640	1.210	2014	1114.2		0.0545	0.0174	1.364	1.357	1.373	1.291		1.052
57	114	260	640	1.210	2014	1114.2		0.0547	0.0174	1.364	1.359	1.373	1.291		1.054
58	116	260	640	1.210	2014	1114.2		0.0547	0.0172	1.362	1.359	1.368	1.289		1.054
59	118	260	640	1.210	2014	1114.2		0.0547	0.0171	1.359	1.355	1.364	1.284		1.052
60	120	260	640	1.210	2014	1114.2		0.0546	0.0170	1.362	1.355	1.364	1.284		1.054
61	122	260	640	1.210	2014	1114.2		0.0545	0.0168	1.359	1.346	1.359	1.275		1.052
62	124	260	640	1.210	2014	1114.2		0.0543	0.0167	1.359	1.339	1.355	1.273		1.052
63	126	260	640	1.210	2014	1114.2		0.0541	0.0165	1.359	1.335	1.353	1.271		1.052
64	128	260	640	1.210	2014	1114.2		0.0539	0.0163	1.357	1.333	1.350	1.264		1.052

12293

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
423	1	66/033/1	38	2%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	260	640	1.210	2000	1106.2		0.0540	0.0162	1.353	1.328	1.346	1.262		1.052
66	132	260	640	1.210	1969	1089.3		0.0546	0.0162	1.350	1.328	1.344	1.255		1.050
67	134	260	640	1.210	1937	1071.6		0.0553	0.0163	1.348	1.326	1.337	1.251		1.050
68	136	260	640	1.210	1906	1054.2		0.0559	0.0163	1.342	1.322	1.333	1.246		1.050
69	138	260	640	1.210	1877	1038.1		0.0566	0.0163	1.344	1.317	1.331	1.242		1.052
70	140	260	640	1.210	1846	1021.0		0.0573	0.0163	1.339	1.308	1.326	1.238		1.050
71	142	260	640	1.210	1816	1004.4		0.0581	0.0164	1.337	1.304	1.322	1.233		1.052
72	144	260	640	1.210	1787	988.6		0.0589	0.0164	1.337	1.302	1.322	1.231		1.054
73	146	260	640	1.210	1758	972.3		0.0597	0.0164	1.331	1.295	1.315	1.224		1.052
74	148	260	640	1.210	1733	958.5		0.0607	0.0165	1.328	1.295	1.313	1.222		1.054
75	150	260	640	1.210	1708	944.9		0.0615	0.0165	1.324	1.293	1.311	1.220		1.052
76	152	260	640	1.210	1684	931.6		0.0622	0.0165	1.317	1.289	1.304	1.213		1.052
77	154	260	640	1.210	1663	919.8		0.0623	0.0166	1.319	1.291	1.306	1.215		1.054
78	156	260	640	1.210	1640	907.0		0.0617	0.0166	1.315	1.280	1.300	1.209		1.052
79	158	260	640	1.210	1618	895.1		0.0608	0.0166	1.313	1.275	1.295	1.207		1.052
80	160	260	640	1.210	1597	883.5		0.0595	0.0167	1.313	1.273	1.293	1.204		1.056
81	162	260	640	1.210	1574	870.5		0.0579	0.0167	1.306	1.264	1.284	1.193		1.052
82	164	260	640	1.210	1548	856.4		0.0564	0.0167	1.304	1.264	1.280	1.193		1.052
83	166	260	640	1.210	1519	840.1		0.0549	0.0168	1.300	1.258	1.271	1.185		1.052
84	168	260	640	1.210	1485	821.6		0.0534	0.0168	1.293	1.251	1.262	1.176		1.050
85	170	260	640	1.210	1444	798.9		0.0521	0.0170	1.291	1.242	1.253	1.167		1.052
86	172	260	640	1.210	1396	772.1		0.0511	0.0171	1.286	1.227	1.235	1.151		1.052
87	174	260	640	1.210	1339	740.8		0.0504	0.0173	1.282	1.207	1.220	1.138		1.050
88	176	260	640	1.210	1277	706.5		0.0499	0.0175	1.275	1.189	1.200	1.123		1.052
89	178	260	640	1.210	1207	667.8		0.0497	0.0178	1.269	1.167	1.178	1.100		1.050
90	180	260	640	1.210	1130	624.9		0.0497	0.0181	1.260	1.145	1.151	1.081		1.050
91	182	260	640	1.210	1049	580.1		0.0500	0.0184	1.249	1.123	1.125	1.061		1.050
92	184	260	640	1.210	965	533.6		0.0504	0.0187	1.240	1.096	1.096	1.038		1.050
93	186	260	640	1.210	879	486.1		0.0510	0.0191	1.227	1.067	1.065	1.019		1.050
94	188	260	640	1.210	795	439.9		0.0520	0.0196	1.220	1.038	1.036	0.999		1.050
95	190	260	640	1.210	712	394.0		0.0530	0.0199	1.209	1.003	1.005	0.979		1.050
96	192	260	640	1.210	634	350.5		0.0543	0.0204	1.196	0.970	0.977	0.963		1.050

National Aeronautics and Space Administration
Ames Research Center MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	ENTSTP	CONF	PROPELLANT	SAMP.RATE
423	1	66/033/1	38	2AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
97	194	260	640	1.210	560	309.9		0.0560	0.0211	1.187	0.943	0.952	0.952		1.052
98	196	260	640	1.210	490	271.2		0.0575	0.0214	1.169	0.908	0.923	0.937		1.050
99	198	260	640	1.210	429	237.1		0.0595	0.0222	1.158	0.886	0.899	0.928		1.050
100	200	260	640	1.210	373	206.2		0.0615	0.0228	1.145	0.859	0.875	0.919		1.050
101	202	260	640	1.210	322	178.0		0.0637	0.0233	1.129	0.833	0.850	0.910		1.047
102	204	260	640	1.210	278	153.6		0.0666	0.0245	1.120	0.811	0.833	0.910		1.052
103	206	260	640	1.210	237	130.9		0.0697	0.0252	1.105	0.782	0.811	0.901		1.050
104	208	260	640	1.210	201	111.3		0.0734	0.0264	1.092	0.757	0.791	0.899		1.050
105	210	260	640	1.210	170	94.2		0.0786	0.0279	1.081	0.738	0.777	0.899		1.052
106	212	260	640	1.210	142	78.7		0.0837	0.0289	1.063	0.715	0.755	0.892		1.050
107	214	260	640	1.210	119	65.7		0.0913	0.0316	1.052	0.700	0.742	0.897		1.050
108	216	260	640	1.210	99	54.6		0.0990	0.0340	1.038	0.684	0.726	0.895		1.050
109	218	260	640	1.210	81	44.9		0.1088	0.0364	1.025	0.669	0.713	0.895		1.047
110	220	260	640	1.210	66	36.3		0.1234	0.0412	1.012	0.658	0.704	0.897		1.050
111	222	260	640	1.210	52	28.9		0.1425	0.0461	1.001	0.647	0.698	0.895		1.047
112	224	260	640	1.210	40	22.0		0.1722	0.0555	0.990	0.640	0.698	0.895		1.047
113	226	260	640	1.210	29	16.2		0.2182	0.0687	0.979	0.642	0.700	0.897		1.047
114	228	260	640	1.210	20	11.2		0.2956	0.0943	0.970	0.647	0.707	0.897		1.047
115	230	260	640	1.210	11	6.2		0.4913	0.1567	0.959	0.658	0.715	0.899		1.047
116	232	260	640	1.210	5	2.9		1.0064	0.3180	0.948	0.671	0.726	0.899		1.047
117	234	260	640	1.210	-1	-0.4		-6.2566	-1.9572	0.939	0.684	0.738	0.901		1.045
118	236	260	640	1.210	-6	-3.5		-0.7369	-0.2312	0.930	0.698	0.746	0.901		1.045

MACH	Q	P	PT	PREF	PCAL
1.210	267.0	260	640	1420	2118

12294

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

PRELIMINARY DATA

RUN	LIST	TEST#	CONF	PROPELLANT	SAMP.RATE
424	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
1	2	185	637	1.456	806	627.1		0.0370	0.0147	0.848	1.128	1.091	0.966		1.119
2	4	185	637	1.456	901	701.4		0.0385	0.0154	0.860	1.168	1.134	0.997		1.122
3	6	185	637	1.456	996	774.9		0.0397	0.0160	0.866	1.200	1.175	1.025		1.122
4	8	185	637	1.456	1088	846.5		0.0408	0.0164	0.876	1.228	1.212	1.055		1.122
5	10	185	637	1.456	1175	914.6		0.0418	0.0168	0.891	1.249	1.246	1.084		1.125
6	12	185	637	1.456	1259	979.6		0.0427	0.0171	0.904	1.265	1.271	1.106		1.122
7	14	185	637	1.456	1335	1039.1		0.0436	0.0173	0.919	1.277	1.296	1.131		1.122
8	16	185	637	1.456	1405	1093.2		0.0445	0.0176	0.932	1.290	1.321	1.156		1.122
9	18	185	637	1.456	1468	1142.7		0.0454	0.0178	0.947	1.305	1.340	1.178		1.122
10	20	185	637	1.456	1523	1185.5		0.0463	0.0180	0.957	1.315	1.352	1.195		1.122
11	22	185	637	1.456	1573	1224.4		0.0469	0.0182	0.969	1.327	1.365	1.209		1.122
12	24	185	637	1.456	1616	1257.5		0.0475	0.0184	0.979	1.337	1.374	1.218		1.119
13	26	185	637	1.456	1651	1285.1		0.0479	0.0185	0.988	1.340	1.377	1.228		1.119
14	28	185	637	1.456	1683	1310.0		0.0483	0.0187	1.007	1.349	1.386	1.237		1.122
15	30	185	637	1.456	1706	1327.5		0.0486	0.0188	1.016	1.343	1.386	1.243		1.119
16	32	185	637	1.456	1725	1342.3		0.0488	0.0190	1.031	1.346	1.389	1.246		1.119
17	34	185	637	1.456	1740	1354.5		0.0491	0.0191	1.047	1.349	1.396	1.256		1.122
18	36	185	637	1.456	1750	136. 1		0.0492	0.0192	1.050	1.346	1.389	1.249		1.119
19	38	185	637	1.456	1761	1370.3		0.0494	0.0193	1.063	1.355	1.393	1.256		1.119
20	40	185	637	1.456	1768	1375.7		0.0493	0.0194	1.072	1.358	1.396	1.256		1.119
21	42	185	637	1.456	1774	1380.8		0.0491	0.0194	1.078	1.355	1.393	1.252		1.116
22	44	185	637	1.456	1781	1385.9		0.0489	0.0195	1.097	1.361	1.399	1.262		1.119
23	46	185	637	1.456	1784	1388.6		0.0487	0.0195	1.100	1.355	1.396	1.256		1.116
24	48	185	637	1.456	1789	1392.5		0.0485	0.0196	1.112	1.355	1.399	1.259		1.116
25	50	185	637	1.456	1795	1396.8		0.0483	0.0196	1.125	1.358	1.402	1.262		1.116
26	52	185	637	1.456	1802	1402.2		0.0481	0.0197	1.131	1.358	1.399	1.259		1.109
27	54	185	637	1.456	1811	1409.2		0.0479	0.0198	1.140	1.368	1.405	1.265		1.112
28	56	185	637	1.456	1822	1418.2		0.0477	0.0198	1.150	1.374	1.408	1.268		1.112
29	58	185	637	1.456	1835	1427.9		0.0476	0.0199	1.156	1.377	1.408	1.271		1.112
30	60	185	637	1.456	1848	1438.0		0.0475	0.0199	1.165	1.380	1.411	1.274		1.116
31	62	185	637	1.456	1863	1449.7		0.0473	0.0200	1.175	1.380	1.411	1.274		1.116
32	64	185	637	1.456	1877	1461.0		0.0473	0.0200	1.184	1.380	1.414	1.281		1.116

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

- PRELIMINARY DATA

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
424	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	185	637	1.456	1893	1473.0		0.0472	0.0200	1.196	1.380	1.421	1.284		1.119
34	68	185	637	1.456	1909	1485.5		0.0472	0.0200	1.206	1.386	1.427	1.287		1.119
35	70	185	637	1.456	1923	1496.4		0.0472	0.0199	1.209	1.389	1.427	1.293		1.119
36	72	185	637	1.456	1938	1508.1		0.0471	0.0198	1.215	1.399	1.433	1.296		1.119
37	74	185	637	1.456	1950	1517.8		0.0471	0.0198	1.221	1.405	1.433	1.299		1.119
38	76	185	637	1.456	1960	1525.6		0.0471	0.0197	1.228	1.405	1.433	1.302		1.119
39	78	185	637	1.456	1970	1533.3		0.0473	0.0198	1.240	1.414	1.442	1.309		1.122
40	80	185	637	1.456	1977	1538.8		0.0477	0.0199	1.246	1.417	1.449	1.318		1.119
41	82	185	637	1.456	1985	1545.0		0.0481	0.0199	1.256	1.421	1.455	1.327		1.122
42	84	185	637	1.456	1991	1549.7		0.0486	0.0200	1.268	1.430	1.464	1.337		1.125
43	86	185	637	1.456	1990	1548.9		0.0491	0.0201	1.265	1.430	1.464	1.337		1.119
44	88	185	637	1.456	1986	1545.4		0.0497	0.0202	1.277	1.442	1.470	1.346		1.119
45	90	185	637	1.456	1972	1534.9		0.0505	0.0203	1.281	1.445	1.470	1.349		1.119
46	92	185	637	1.456	1952	1519.0		0.0513	0.0205	1.287	1.442	1.467	1.349		1.116
47	94	185	637	1.456	1925	1498.3		0.0523	0.0207	1.299	1.445	1.474	1.358		1.122
48	96	185	637	1.456	1891	1471.9		0.0532	0.0209	1.302	1.436	1.464	1.349		1.116
49	98	185	637	1.456	1853	1442.3		0.0543	0.0211	1.312	1.430	1.461	1.349		1.119
50	100	185	637	1.456	1811	1409.6		0.0555	0.0213	1.318	1.421	1.455	1.346		1.119
51	102	185	637	1.456	1765	1373.8		0.0566	0.0215	1.321	1.414	1.445	1.333		1.116
52	104	185	637	1.456	1718	1336.8		0.0577	0.0218	1.327	1.417	1.445	1.333		1.119
53	106	185	637	1.456	1670	1299.5		0.0589	0.0220	1.327	1.417	1.442	1.324		1.116
54	108	185	637	1.456	1622	1262.1		0.0601	0.0223	1.330	1.417	1.436	1.318		1.116
55	110	185	637	1.456	1575	1225.5		0.0614	0.0225	1.337	1.417	1.436	1.315		1.119
56	112	185	637	1.456	1529	1190.1		0.0626	0.0228	1.340	1.414	1.433	1.305		1.116
57	114	185	637	1.456	1484	1155.1		0.0639	0.0230	1.343	1.411	1.430	1.302		1.116
58	116	185	637	1.456	1442	1122.0		0.0654	0.0233	1.349	1.411	1.430	1.299		1.119
59	118	185	637	1.456	1403	1092.1		0.0670	0.0236	1.352	1.411	1.430	1.296		1.119
60	120	185	637	1.456	1365	1062.5		0.0685	0.0238	1.352	1.411	1.427	1.293		1.119
61	122	185	637	1.456	1333	1037.2		0.0700	0.0240	1.352	1.411	1.424	1.293		1.119
62	124	185	637	1.456	1302	1013.5		0.0713	0.0242	1.355	1.408	1.417	1.287		1.119
63	126	185	637	1.456	1274	991.3		0.0726	0.0243	1.352	1.402	1.411	1.277		1.119
64	128	185	637	1.456	1250	972.6		0.0738	0.0245	1.358	1.402	1.414	1.277		1.122

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.
PRELIMINARY DATA

12295

RUN	LIST	TNTSTP	CONF	PROPELLANT	SAMP.RATE
424	1	66/033/1	38	15%AL	500

FRAME	TIME	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (P2/PTC)n	(P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BODY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	185	637	1.456	1224	952.8		0.0749	0.0246	1.358	1.396	1.411	1.271		1.122
66	132	185	637	1.456	1201	934.5		0.0760	0.0248	1.361	1.386	1.408	1.268		1.122
67	134	185	637	1.456	1178	917.0		0.0771	0.0251	1.368	1.386	1.408	1.268		1.125
68	136	185	637	1.456	1153	897.5		0.0781	0.0252	1.358	1.374	1.396	1.256		1.122
69	138	185	637	1.456	1131	880.0		0.0790	0.0255	1.361	1.374	1.393	1.252		1.125
70	140	185	637	1.456	1107	861.7		0.0799	0.0257	1.358	1.368	1.383	1.243		1.122
71	142	185	637	1.456	1084	843.4		0.0807	0.0258	1.355	1.358	1.371	1.228		1.119
72	144	185	637	1.456	1061	825.5		0.0816	0.0261	1.361	1.355	1.371	1.228		1.125
73	146	185	637	1.456	1036	806.1		0.0825	0.0263	1.358	1.343	1.361	1.215		1.122
74	148	185	637	1.456	1010	786.2		0.0836	0.0265	1.358	1.333	1.358	1.206		1.122
75	150	185	637	1.456	984	766.0		0.0848	0.0268	1.358	1.327	1.355	1.203		1.125
76	152	185	637	1.456	957	745.0		0.0862	0.0270	1.352	1.321	1.349	1.190		1.122
77	154	185	637	1.456	930	723.9		0.0878	0.0274	1.352	1.321	1.349	1.190		1.122
78	156	185	637	1.456	904	703.3		0.0893	0.0276	1.349	1.321	1.346	1.187		1.119
79	158	185	637	1.456	877	682.3		0.0911	0.0278	1.346	1.318	1.340	1.181		1.119
80	160	185	637	1.456	849	660.9		0.0929	0.0281	1.343	1.312	1.337	1.178		1.119
81	162	185	637	1.456	823	640.3		0.0949	0.0284	1.340	1.299	1.327	1.168		1.116
82	164	185	637	1.456	795	618.5		0.0971	0.0287	1.340	1.287	1.318	1.159		1.116
83	166	185	637	1.456	767	596.7		0.0995	0.0290	1.337	1.277	1.312	1.153		1.116
84	168	185	637	1.456	738	574.1		0.1024	0.0295	1.337	1.271	1.305	1.144		1.116
85	170	185	637	1.456	705	548.4		0.1055	0.0299	1.330	1.256	1.290	1.134		1.116
86	172	185	637	1.456	670	521.2		0.1095	0.0307	1.324	1.249	1.281	1.125		1.116
87	174	185	637	1.456	629	489.7		0.1137	0.0316	1.318	1.234	1.262	1.112		1.116
88	176	185	637	1.456	583	453.5		0.1181	0.0326	1.312	1.212	1.237	1.094		1.112
89	178	185	637	1.456	532	414.2		0.1228	0.0343	1.312	1.190	1.218	1.081		1.116
90	180	185	637	1.456	475	369.4		0.1283	0.0362	1.302	1.156	1.187	1.063		1.112
91	182	185	637	1.456	414	322.0		0.1355	0.0388	1.299	1.122	1.153	1.044		1.112
92	184	185	637	1.456	351	273.3		0.1449	0.0426	1.296	1.091	1.122	1.028		1.116
93	186	185	637	1.456	286	222.4		0.1588	0.0473	1.277	1.047	1.078	1.003		1.112
94	188	185	637	1.456	224	174.1		0.1799	0.0550	1.271	1.013	1.044	0.991		1.112
95	190	185	637	1.456	163	126.6		0.2158	0.0673	1.259	0.975	1.003	0.972		1.112
96	192	185	637	1.456	105	81.9		0.2874	0.0913	1.246	0.932	0.963	0.954		1.112
97	194	185	637	1.456	53	41.0		0.4928	0.1604	1.243	0.898	0.929	0.947		1.116
98	196	185	637	1.456	3	2.1		8.0725	2.6634	1.228	0.851	0.885	0.932		1.112

MACH	Q	P	PT	PREP	PCAL
1.456	274.4	185	637	1420	2118

National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.

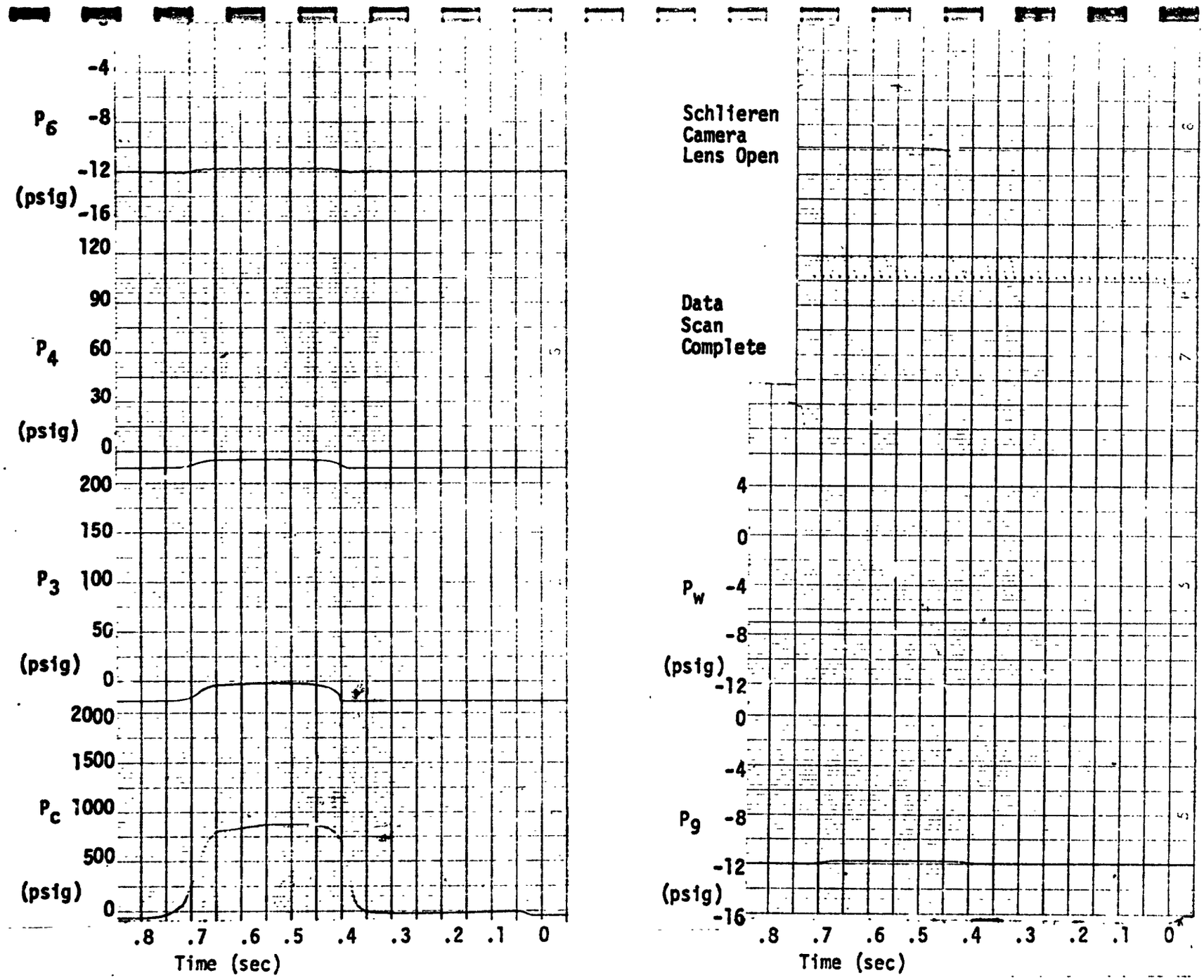
PRELIMINARY DATA

APPENDIX B

OSCILLOGRAPH TIME HISTORIES OF PRESSURES

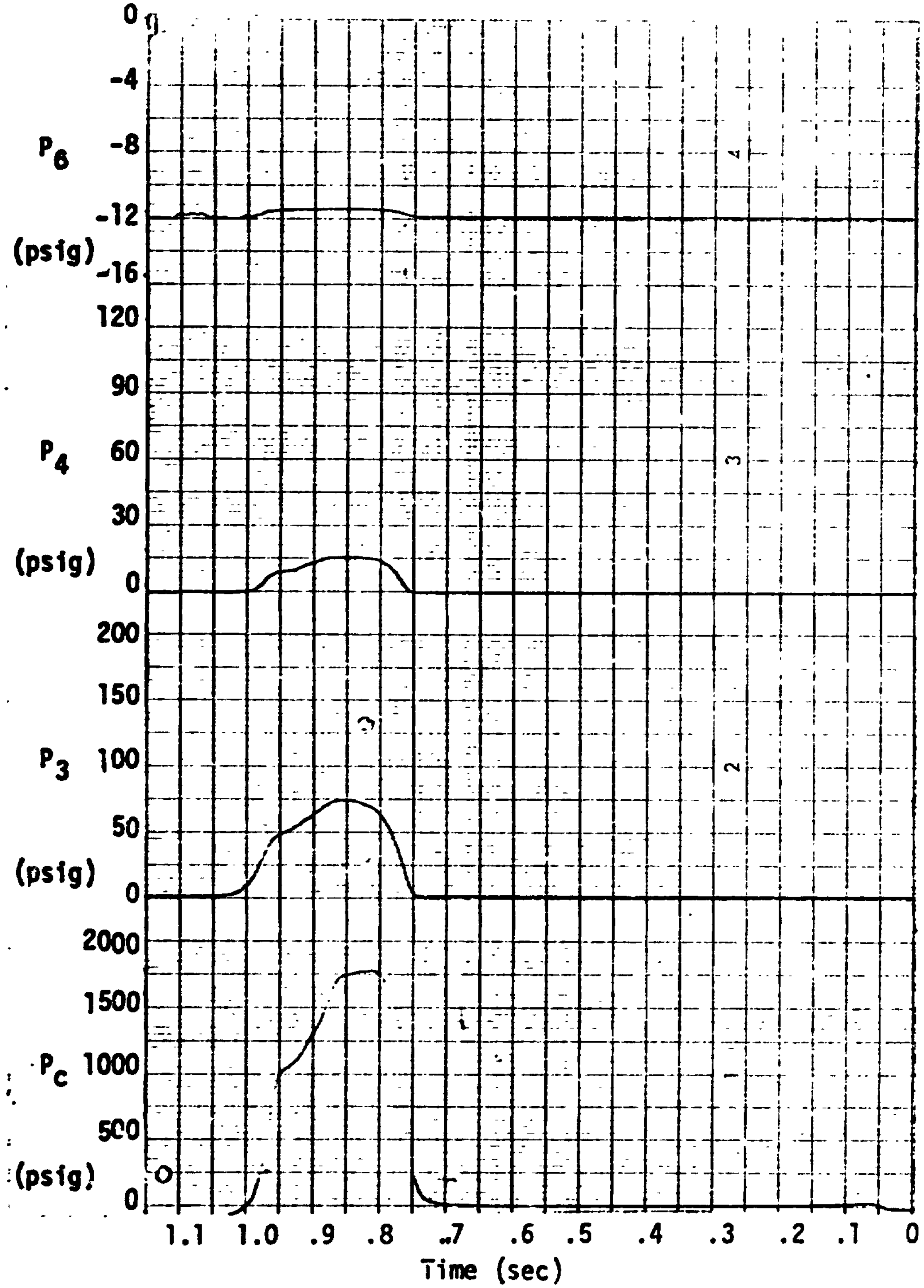
The oscillograph time histories of each hot firing during ARC 033-66 comprises a convenient means to rapidly evaluate several important pressures, provide the only time history of events before initiation of the digital data acquisition systems, and also provide the only record of Schlieren camera initiation. Complete oscillograph time histories are presented in this Appendix for 23 successful hot firings and for 3 misfires, in Run No. numerical sequence. The specific run nos. involved are:

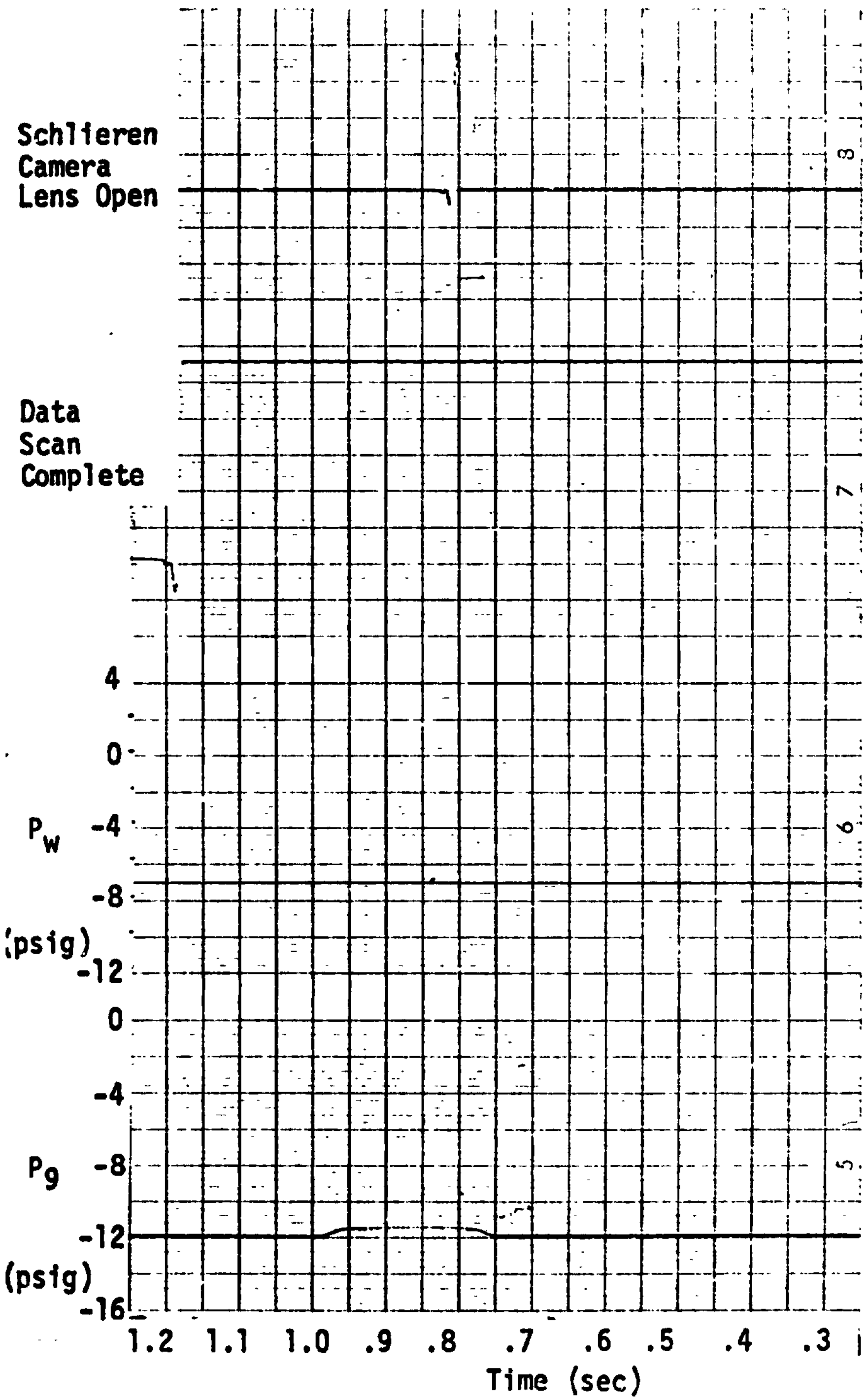
Run No.	Successful	Misfire
396	X	
398	X	
400	X	
401	X	
402		X
403		X
404		X
405	X	
406	X	
407	X	
408	X	
409	X	
410	X	
411	X	
412	X	
413	X	
414	X	
415	X	
417	X	
418	X	
419	X	
420	X	
421	X	
422	X	
423	X	
424	X	



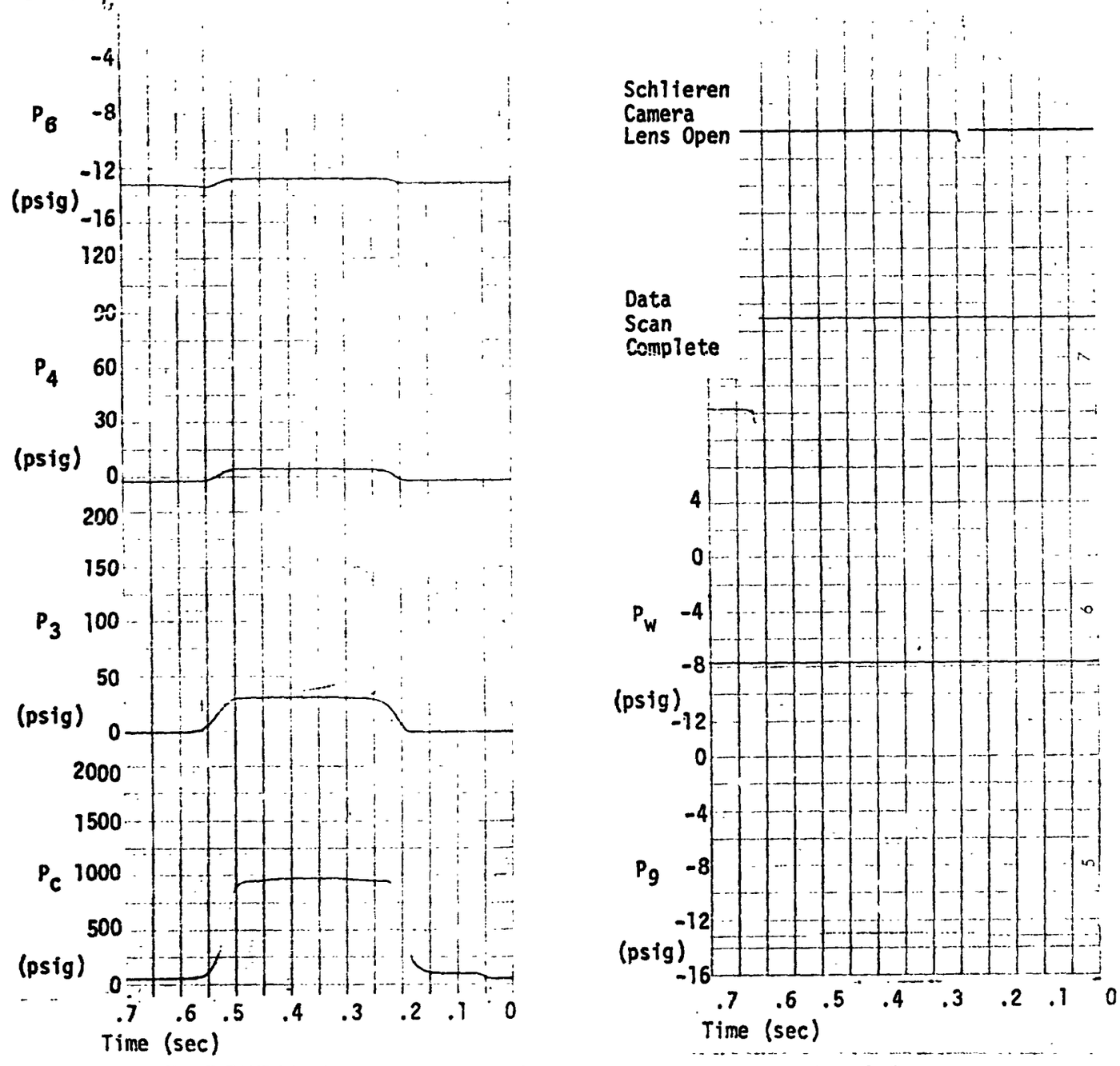
Run No. 396 2% Al ANB-3335 ε = 8 M_∞ = 0.9

REMTECH INCORPORATED



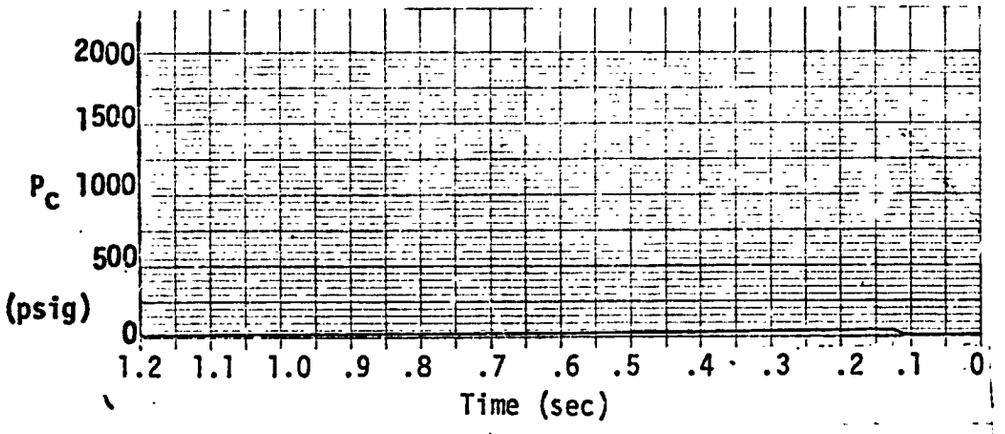


R[illegible] [illegible] AT [illegible]-3[illegible] = M_∞ = [illegible].9

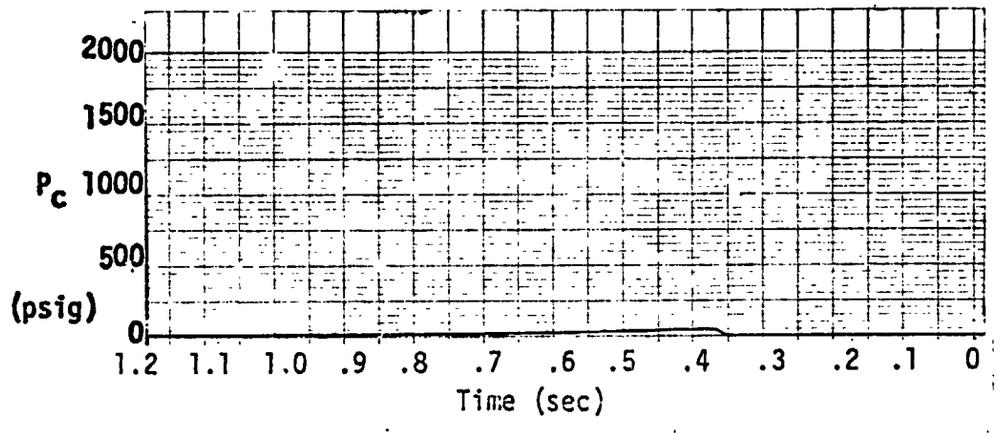


Run No. 400 2% Al ANB-3335 ε = 8 M_∞ = 1.2

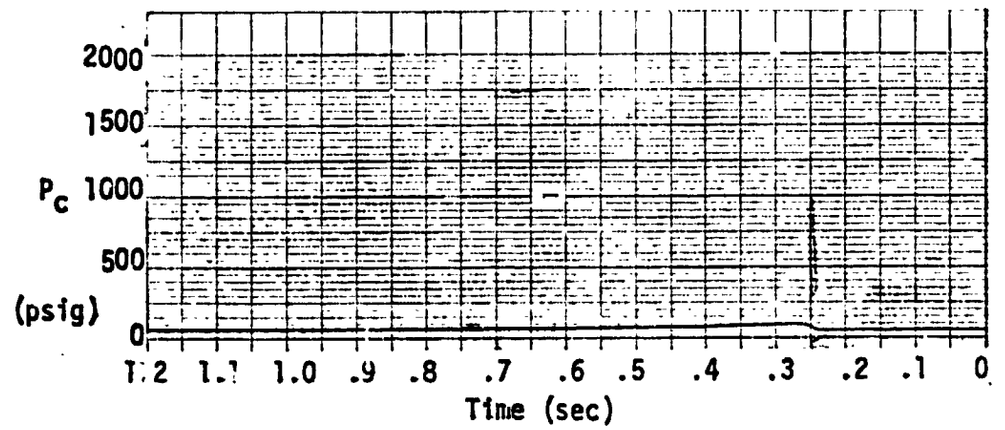
REMTECH INCORPORATED



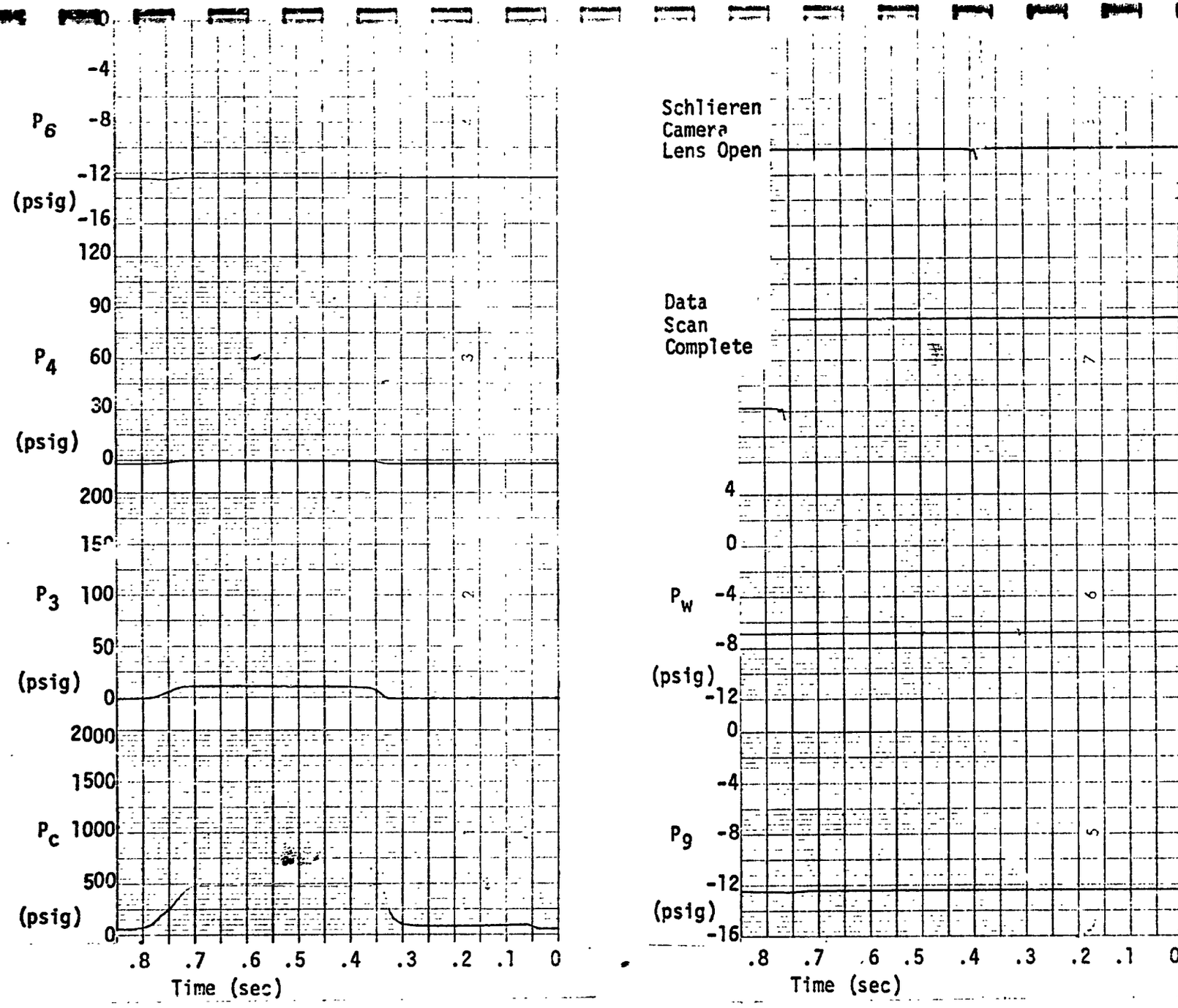
Run No. 402



Run No. 403

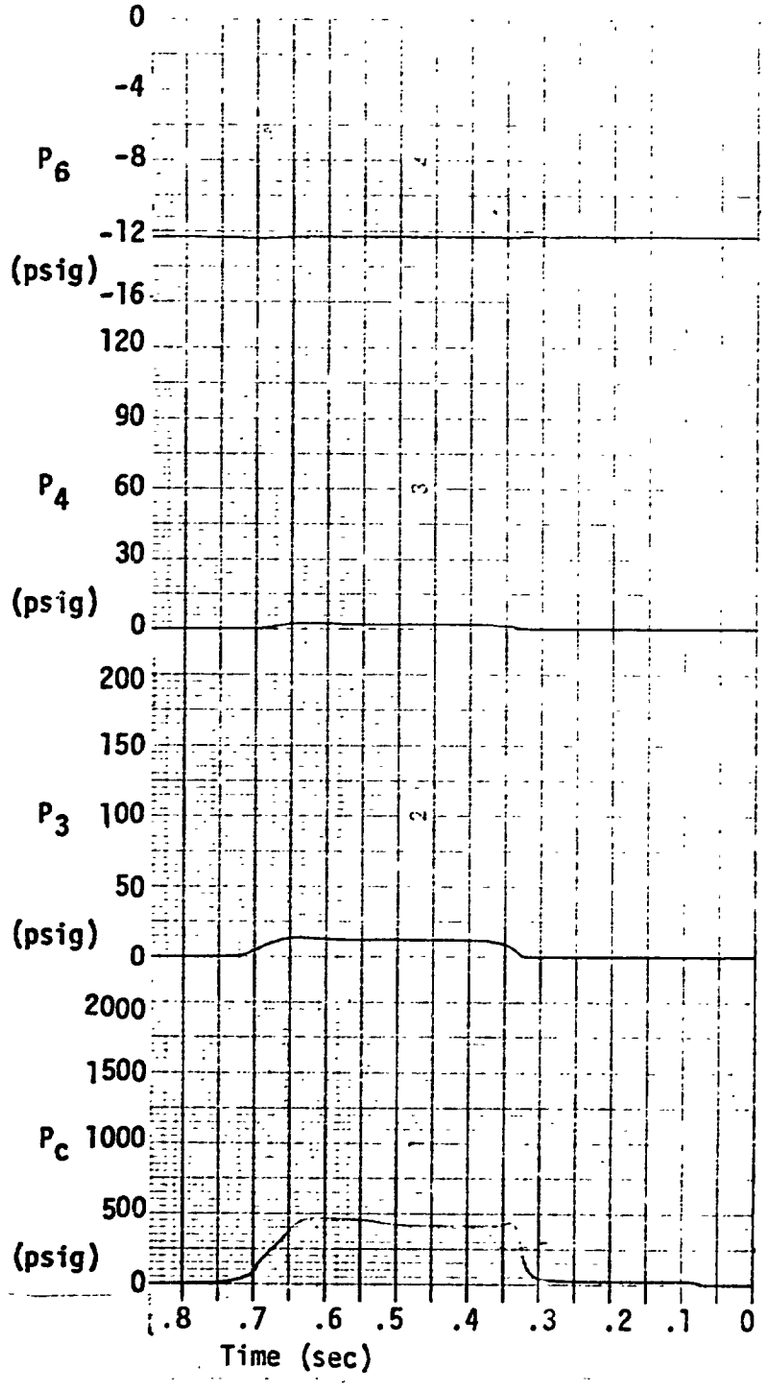


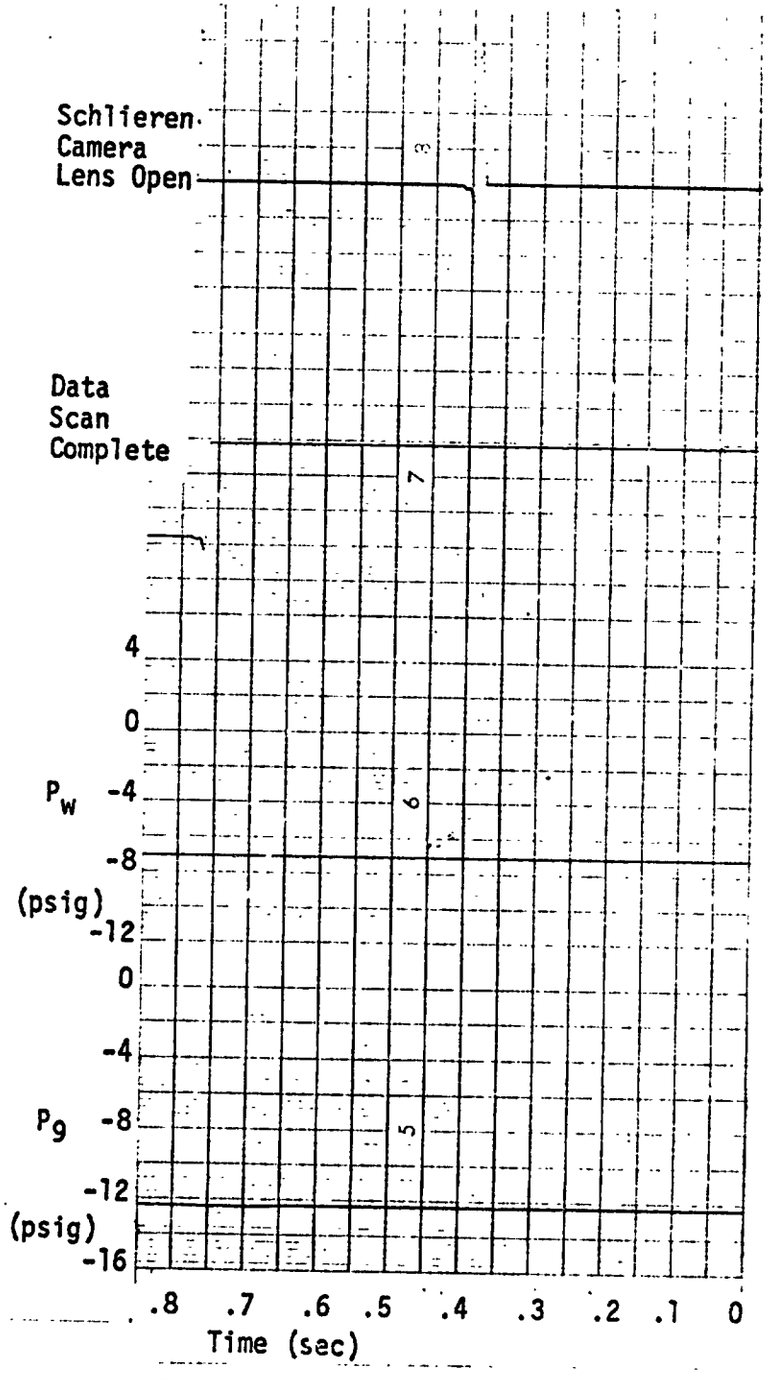
Run No. 404



REMTECH INCORPORATED

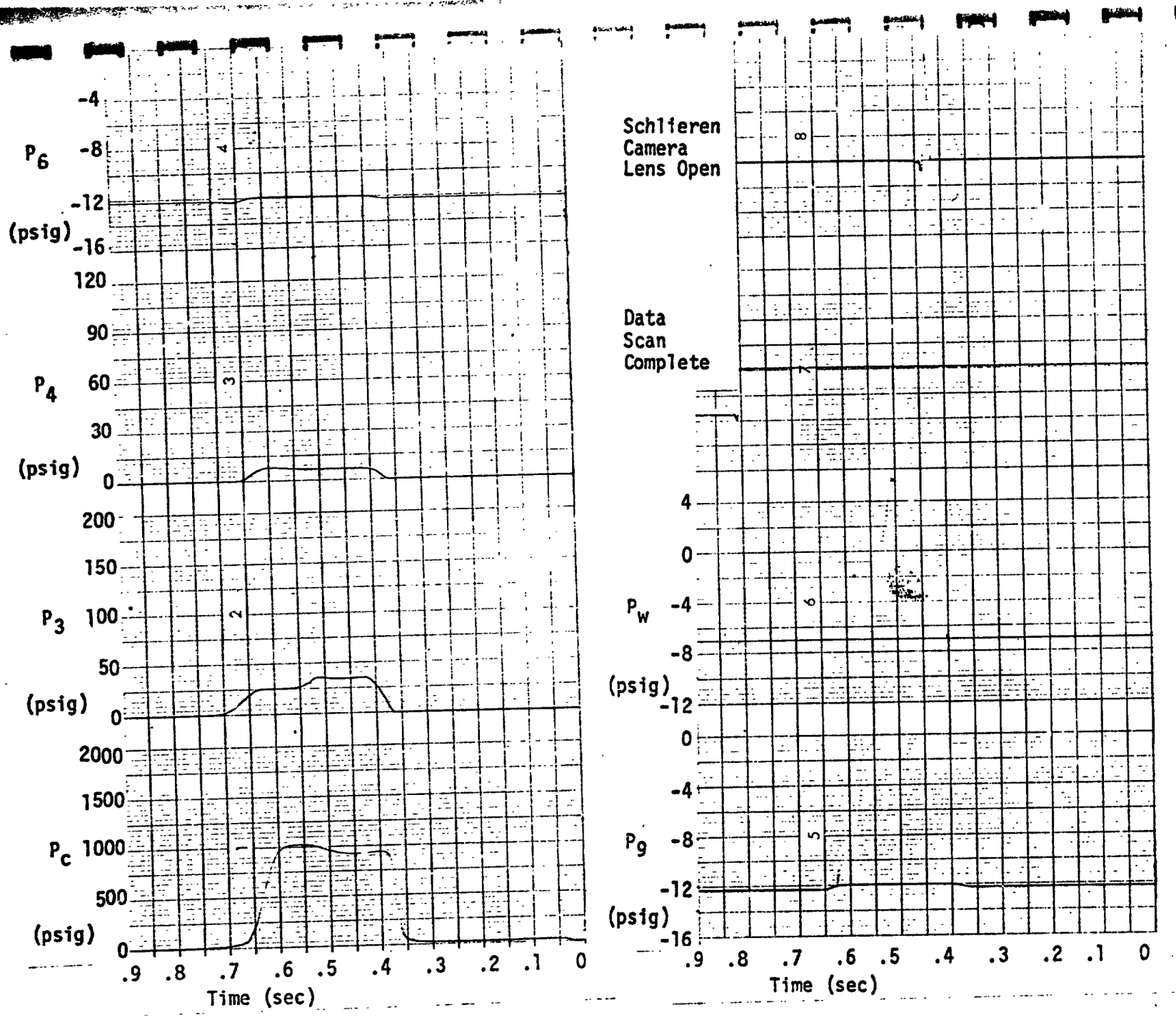
Run No. 401 2% Al ANB-3335 $\varepsilon = \delta$ $M_\infty = 0.9$





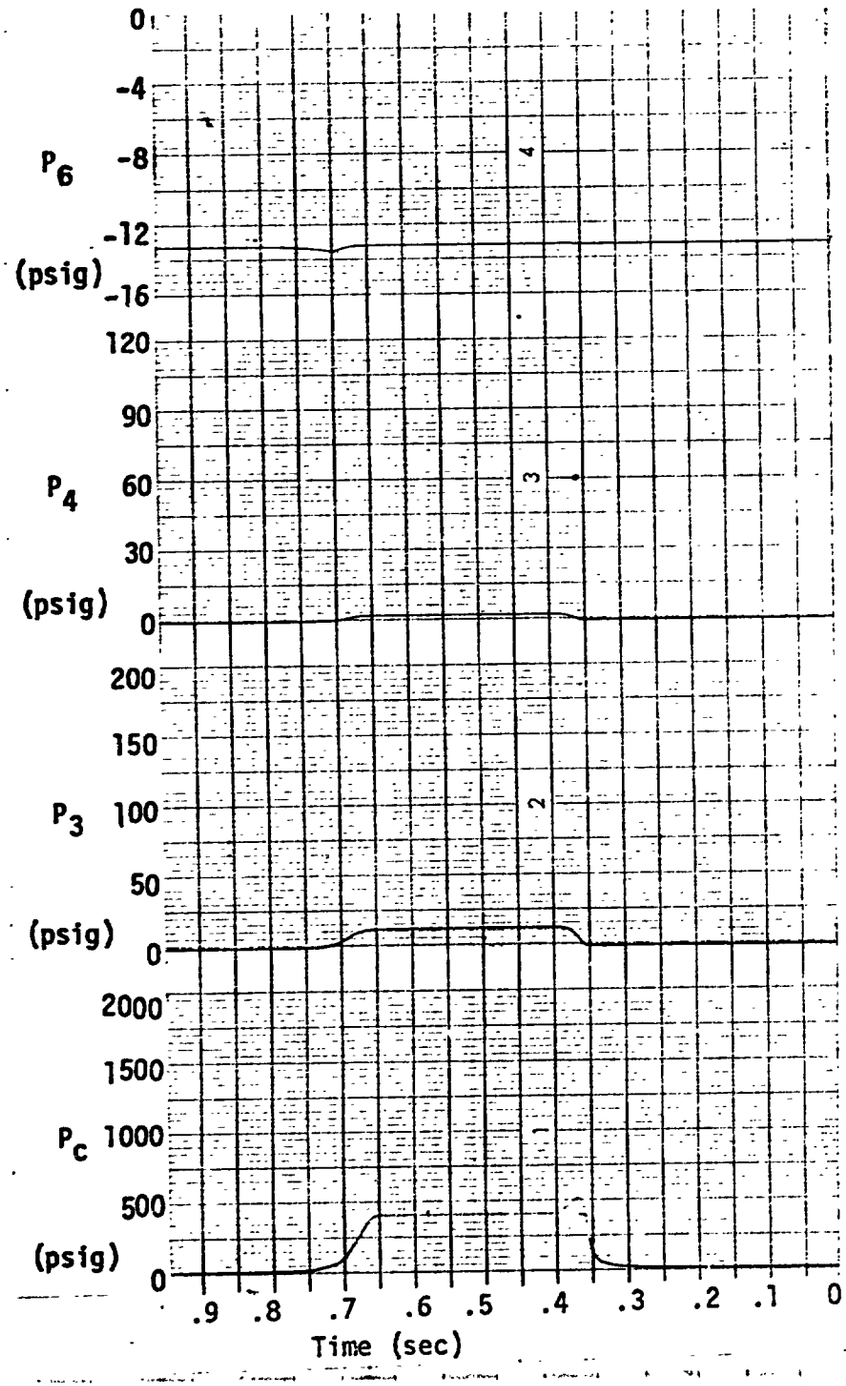
REMTECH INCORPORATED

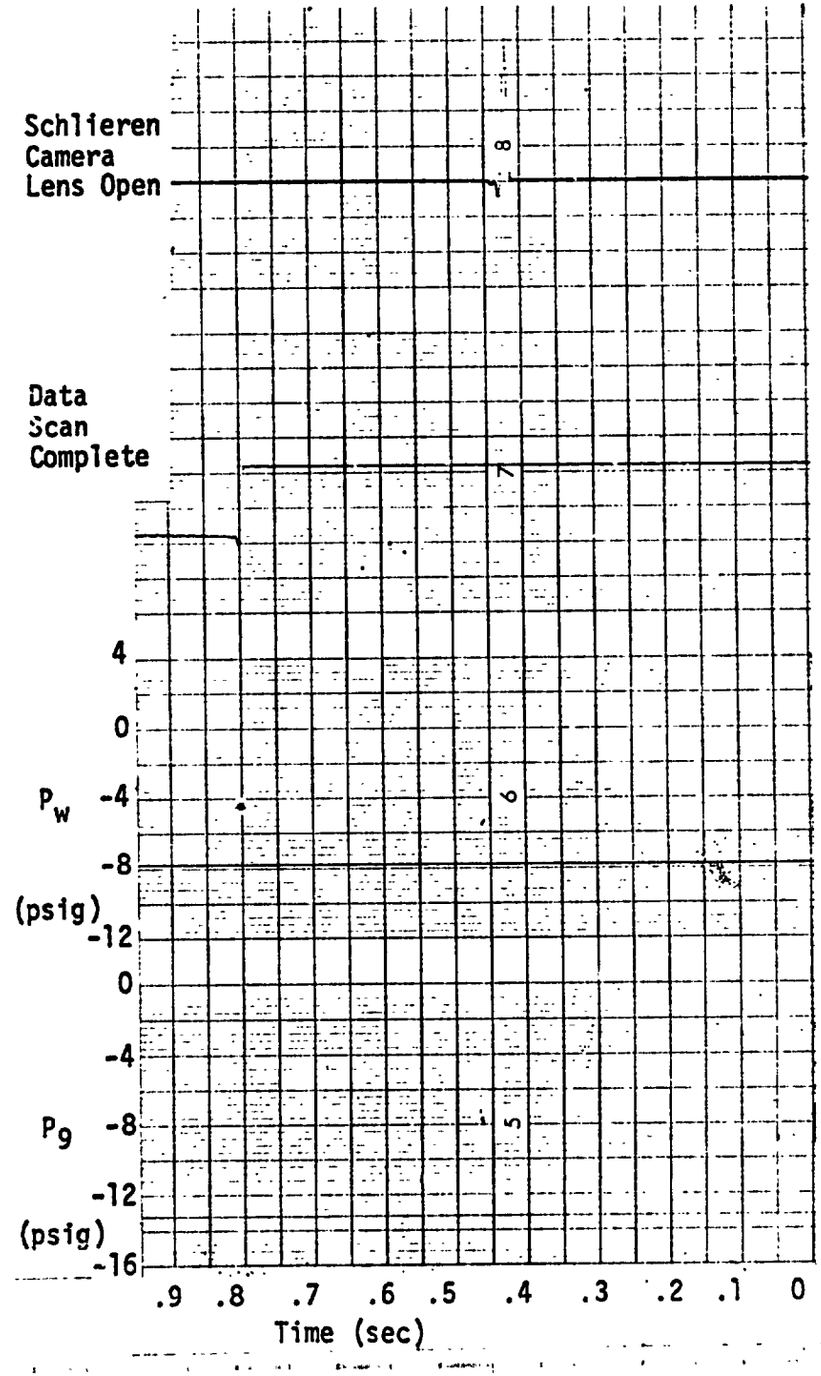
Run . 4 ; A1 -3 = 8



Run No. 406 16% Al UTP-3001 $\varepsilon = 8$ $M_\infty = 0.9$

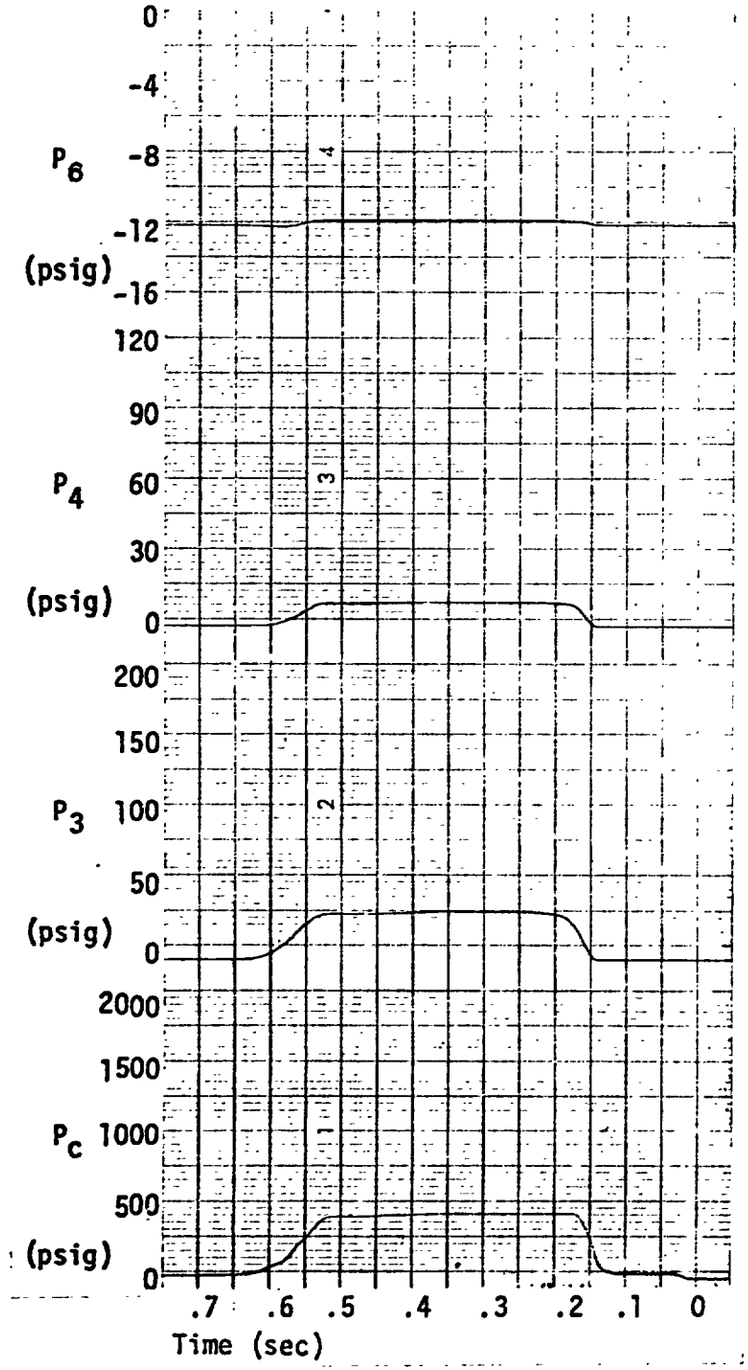
REMTECH INCORPORATED

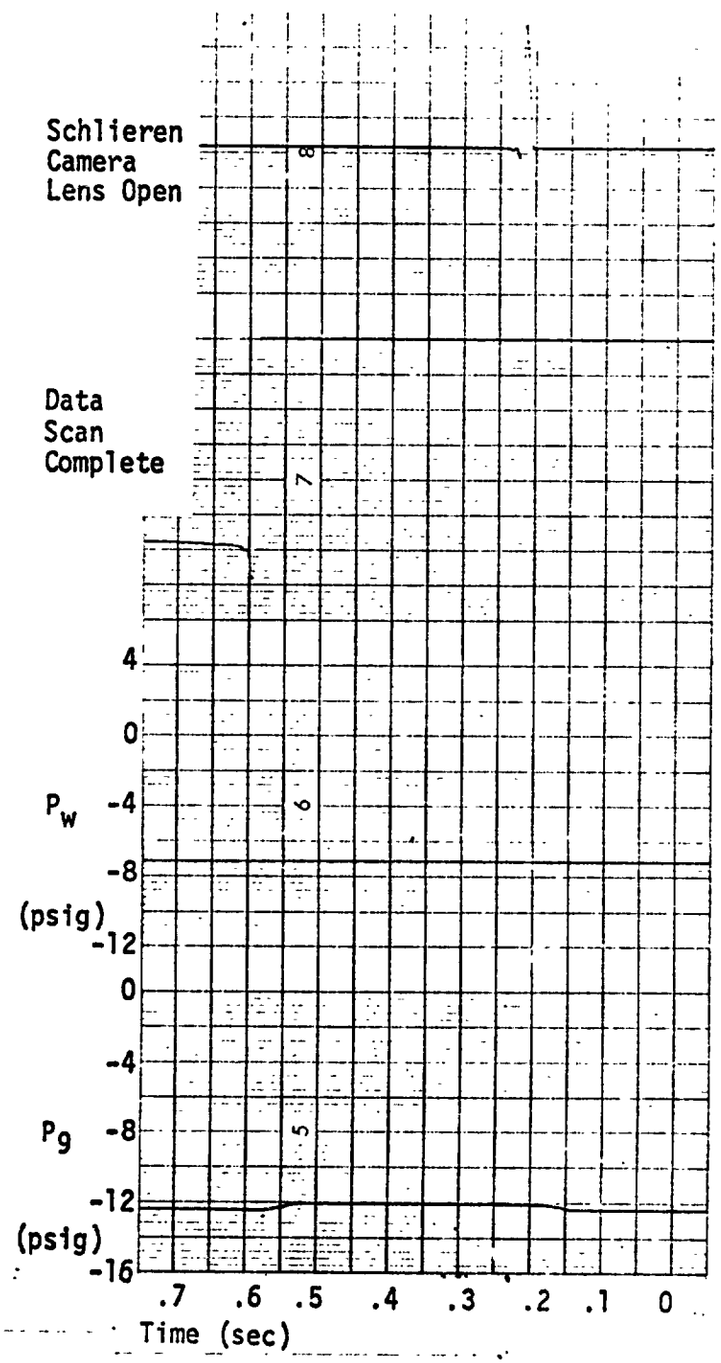




Run No. 407 16% Al UTP-3001 $\varepsilon = 8$ $M_\infty = 1.2$

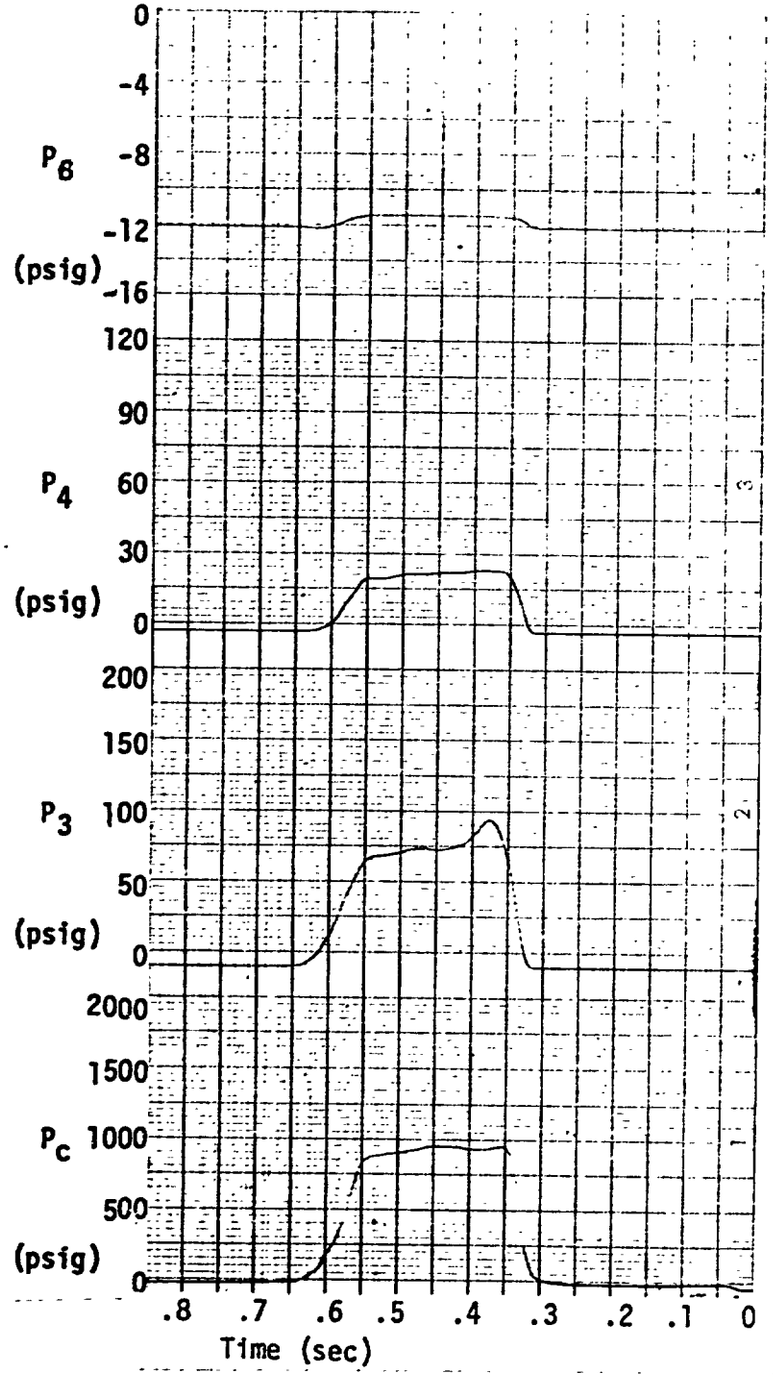
REMTECH INCORPORATED

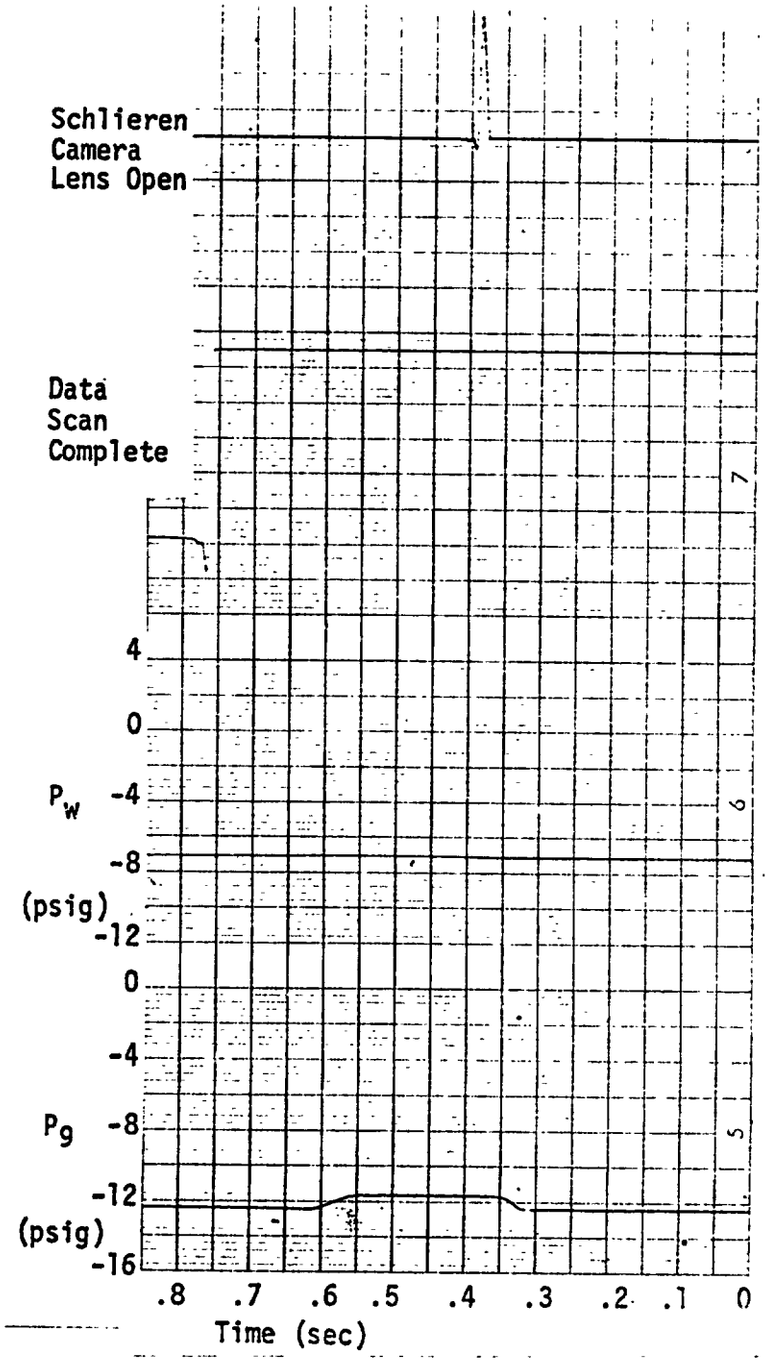




REMTECH INCORPORATED

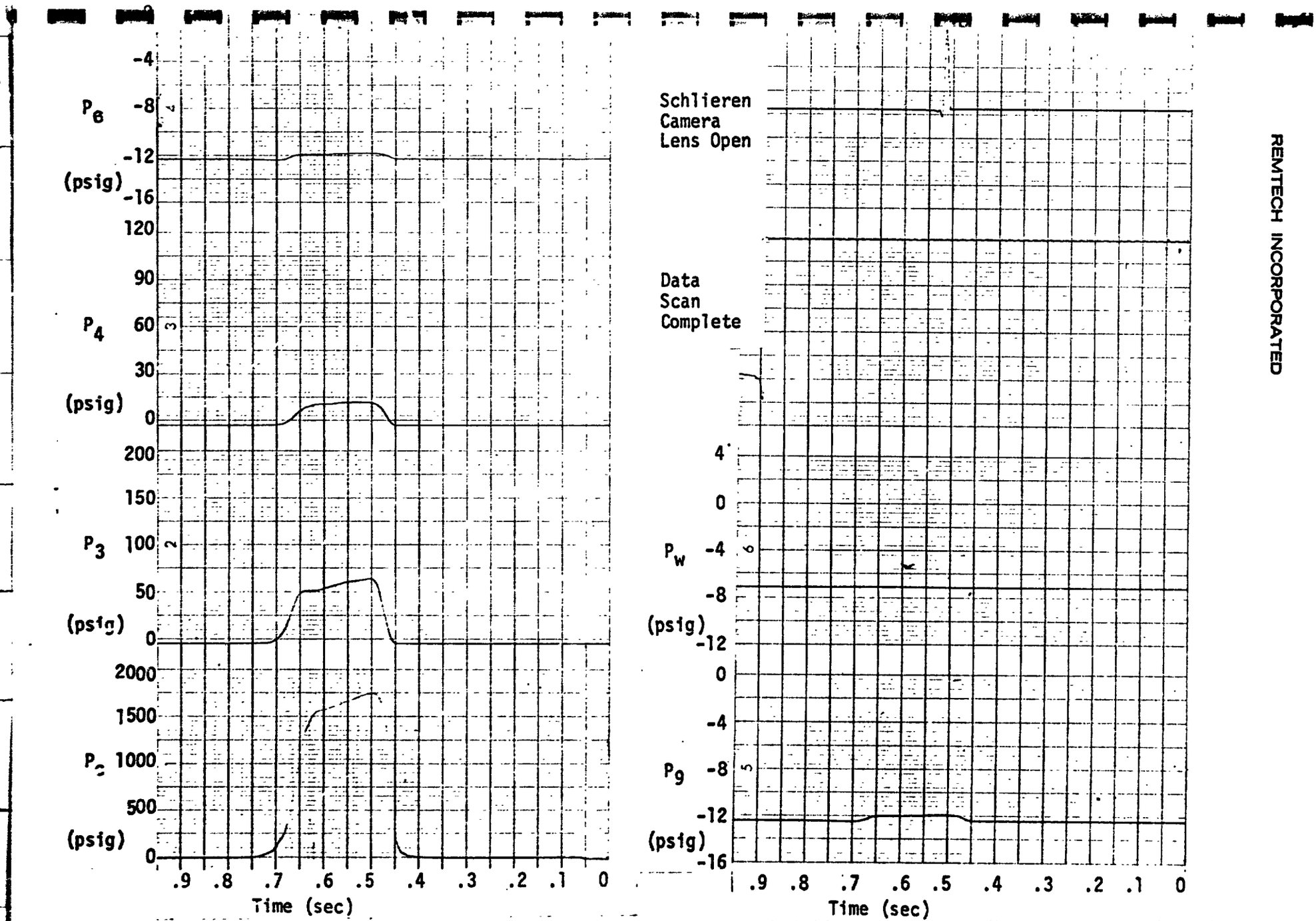
Run No. 408 2% Al ANB-3335 ϵ = 4 M_∞ = 0.9





REMTECH INCORPORATED

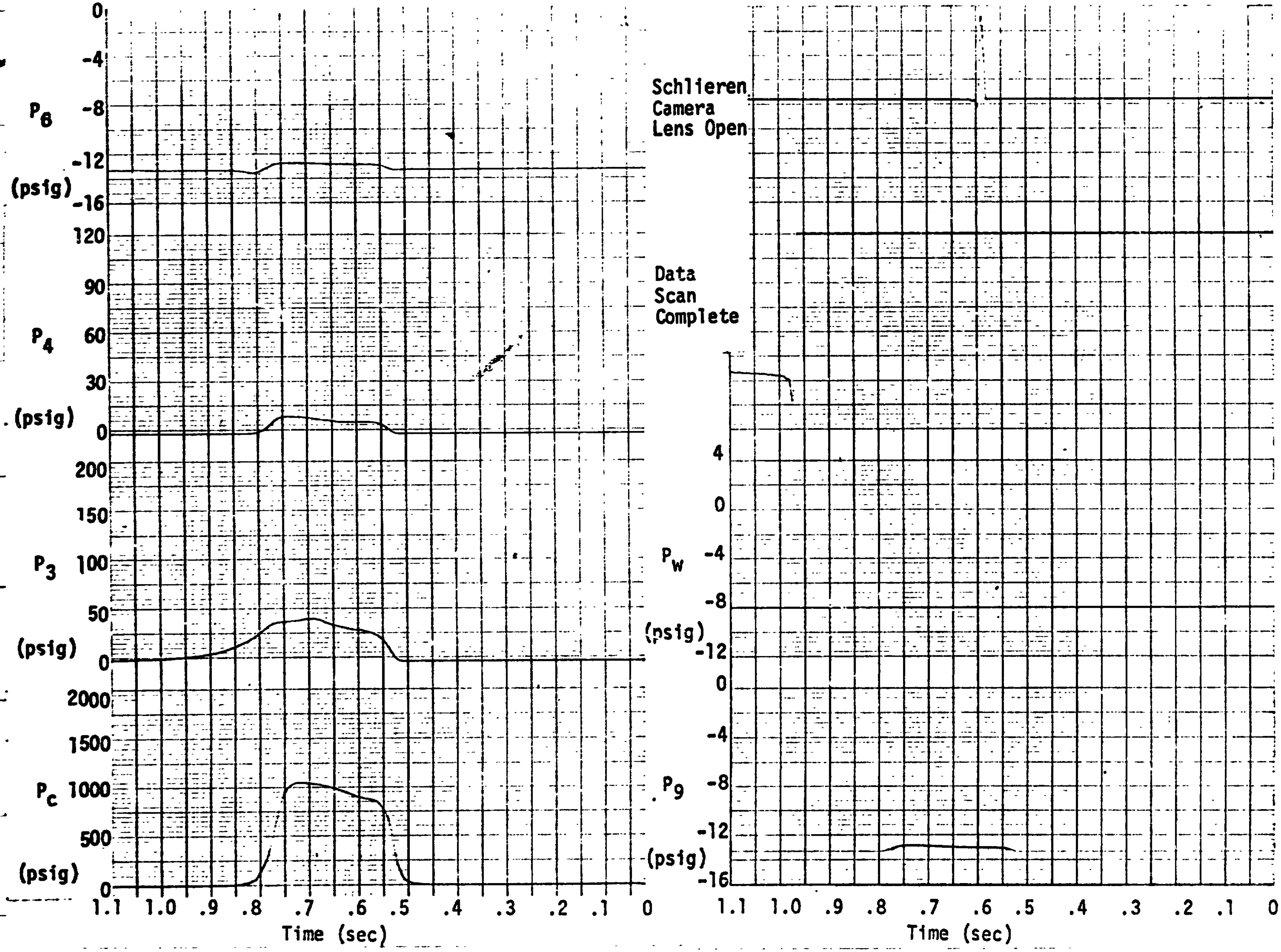
No. 16% JTP 1 = .4 = 0



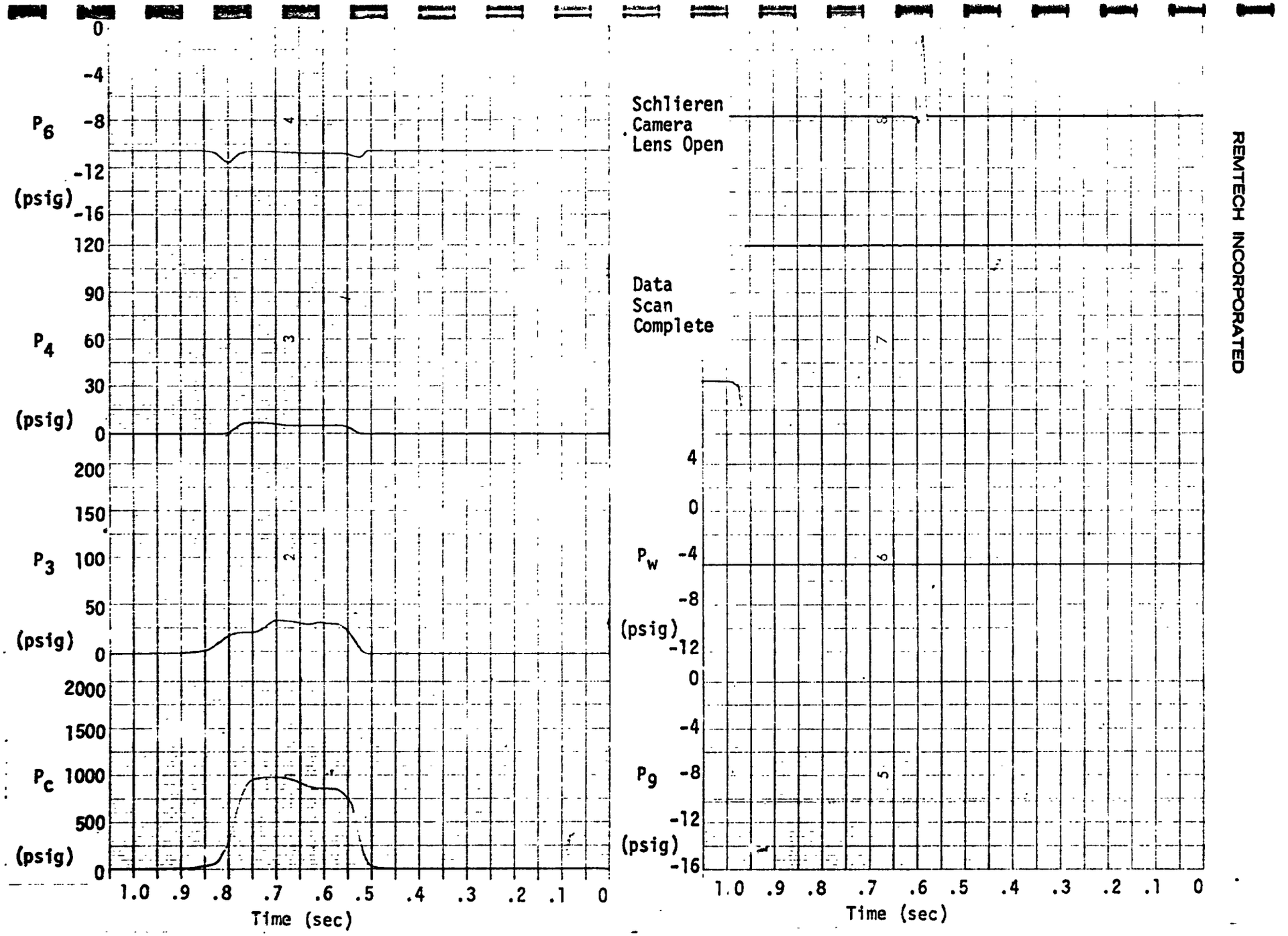
Run No. 410 16% Al UTP-3001 ε = 8 M_∞ = 0.9

REMTECH INCORPORATED

REMTECH INCORPORATED

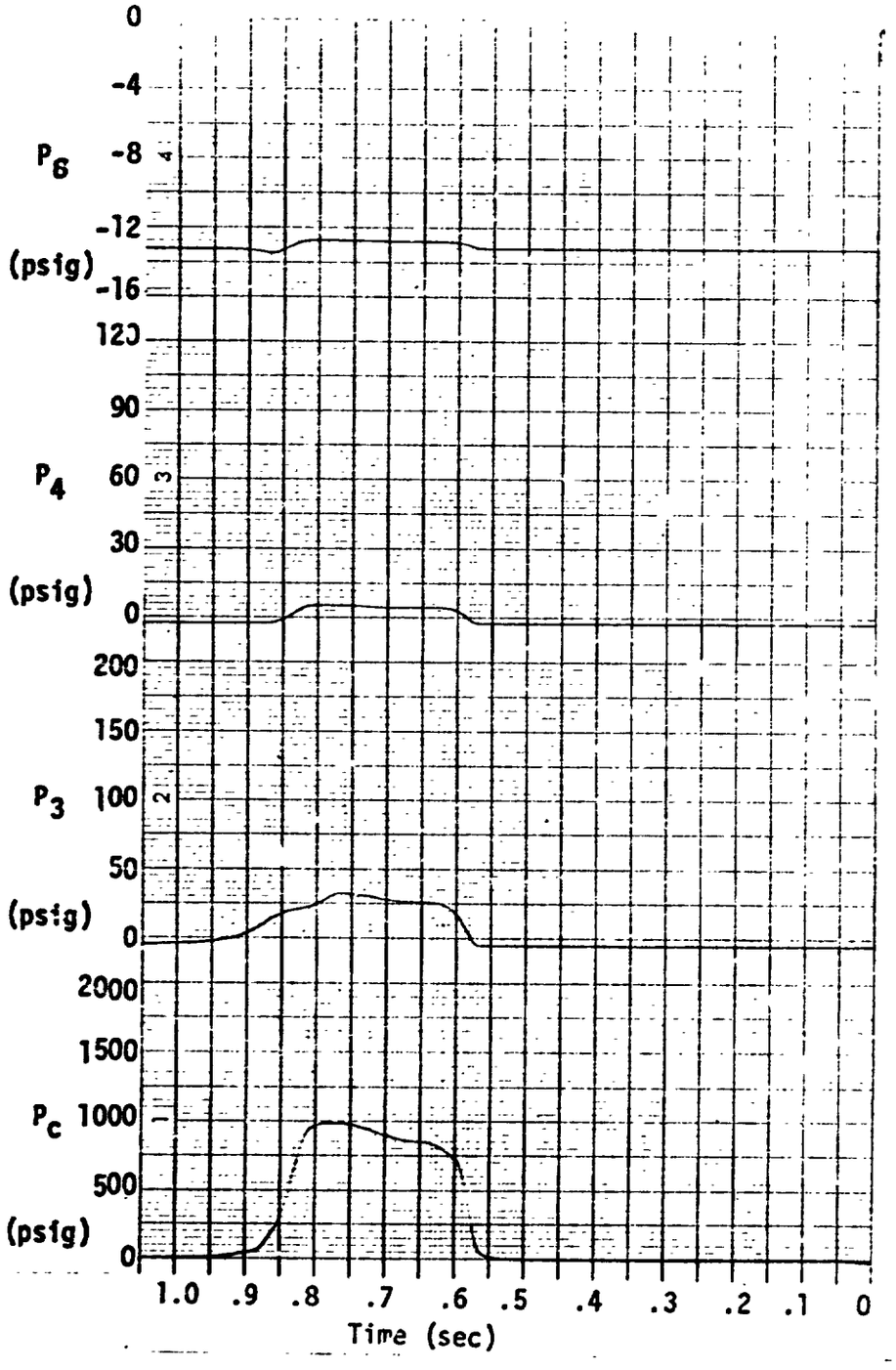


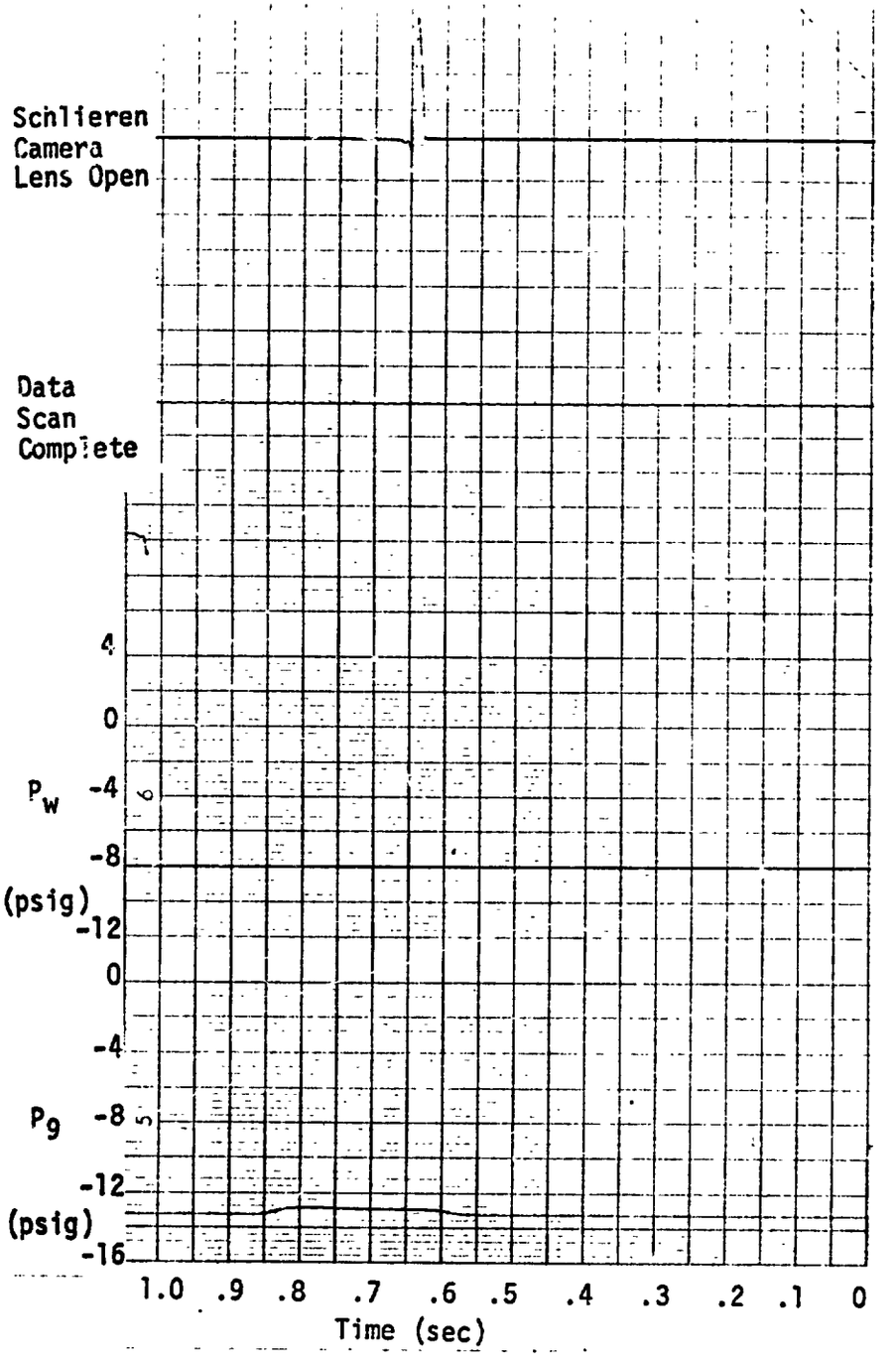
Run No. 4[illegible] [illegible]% Al [illegible]P-3[illegible] ε = 8 M_∞ = 1.2



Run No. 412 16% Al UTP-3001 ε = 8 M_∞ = 1.2

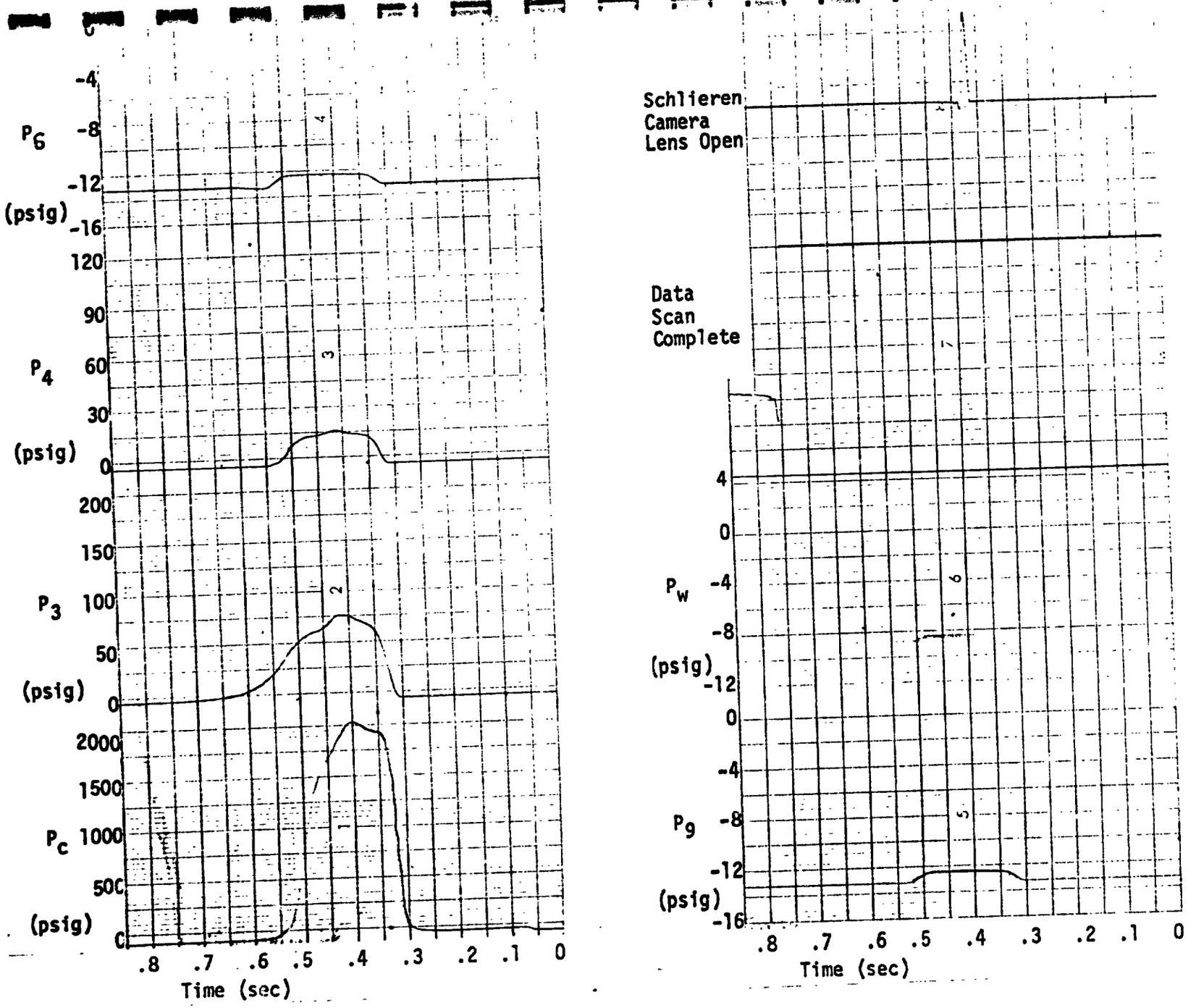
REMTECH INCORPORATED





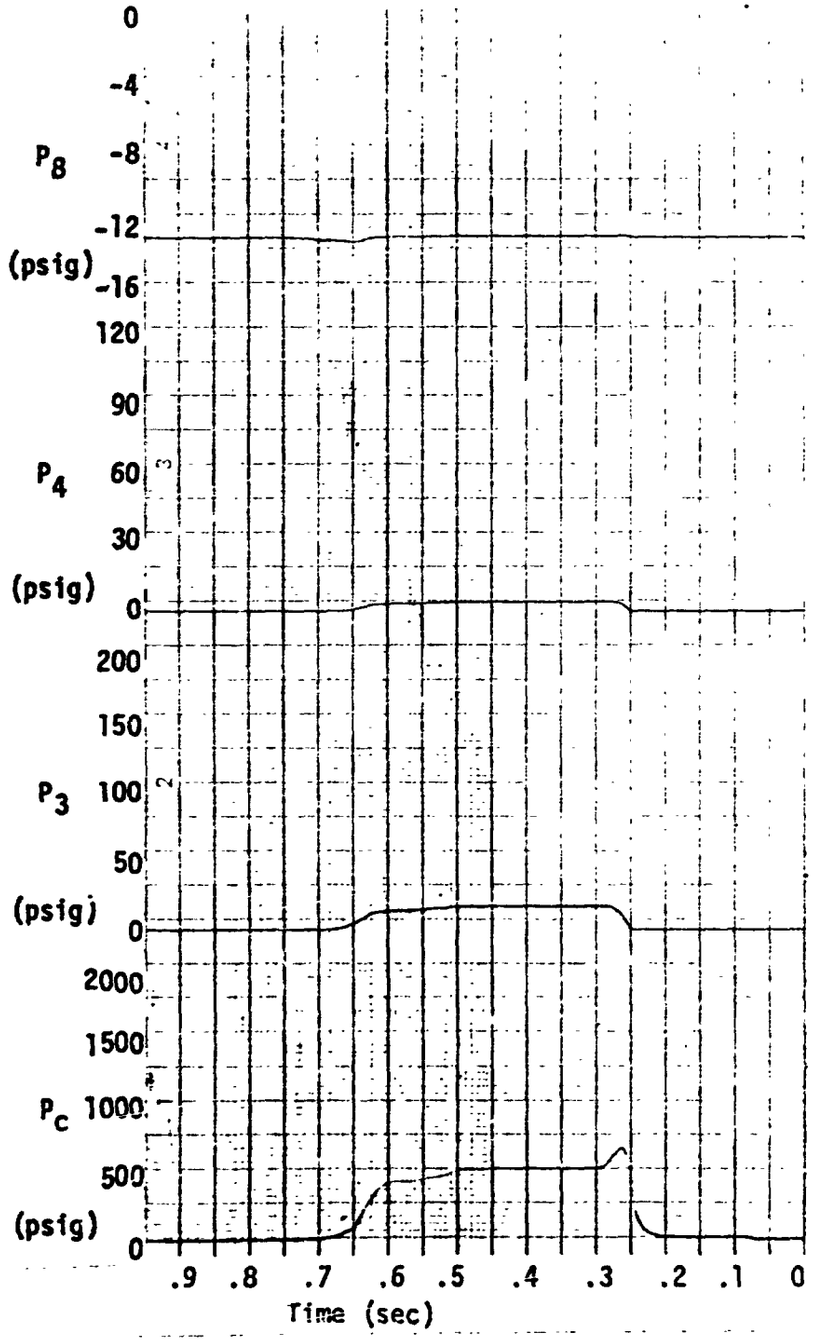
REMTECH INCORPORATED

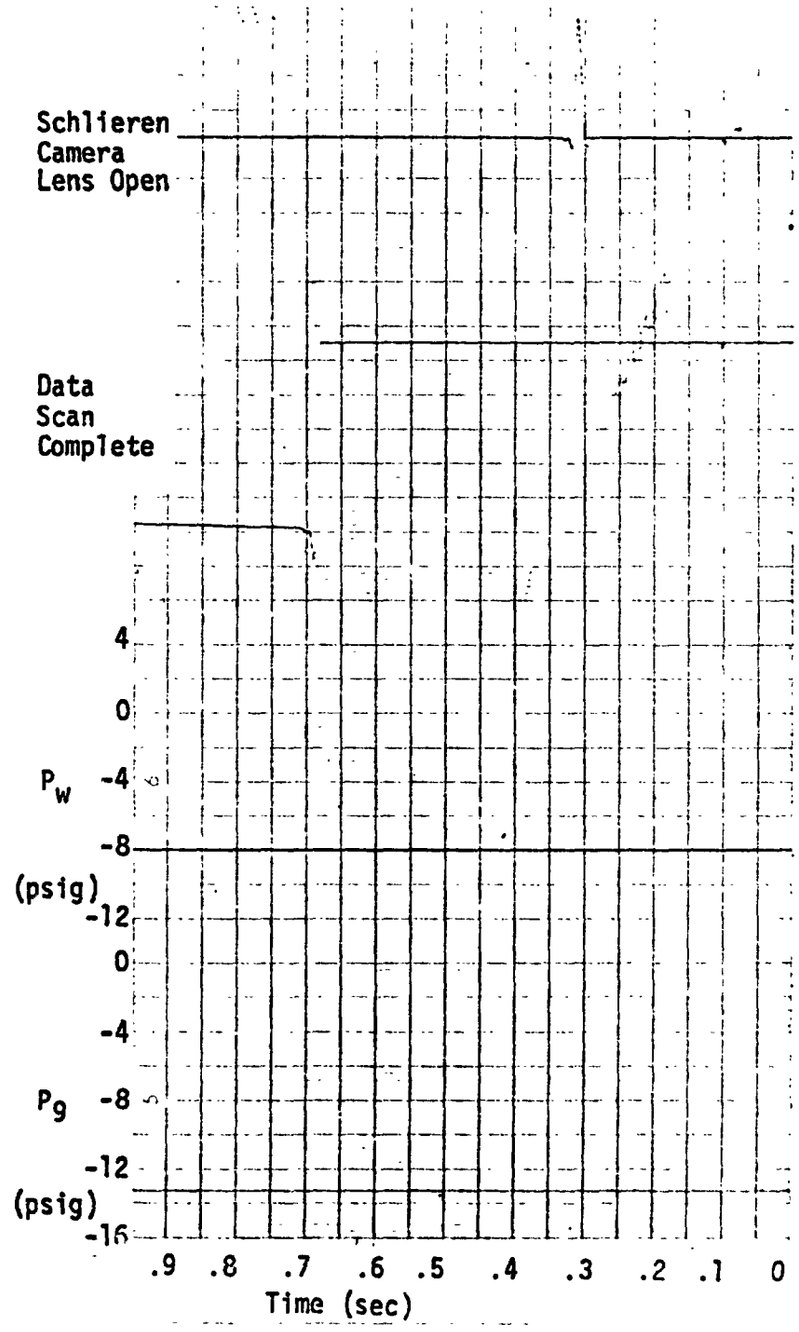
R[illegible]o. [illegible]5% [illegible]TP-[illegible] = [illegible] M_∞ 12



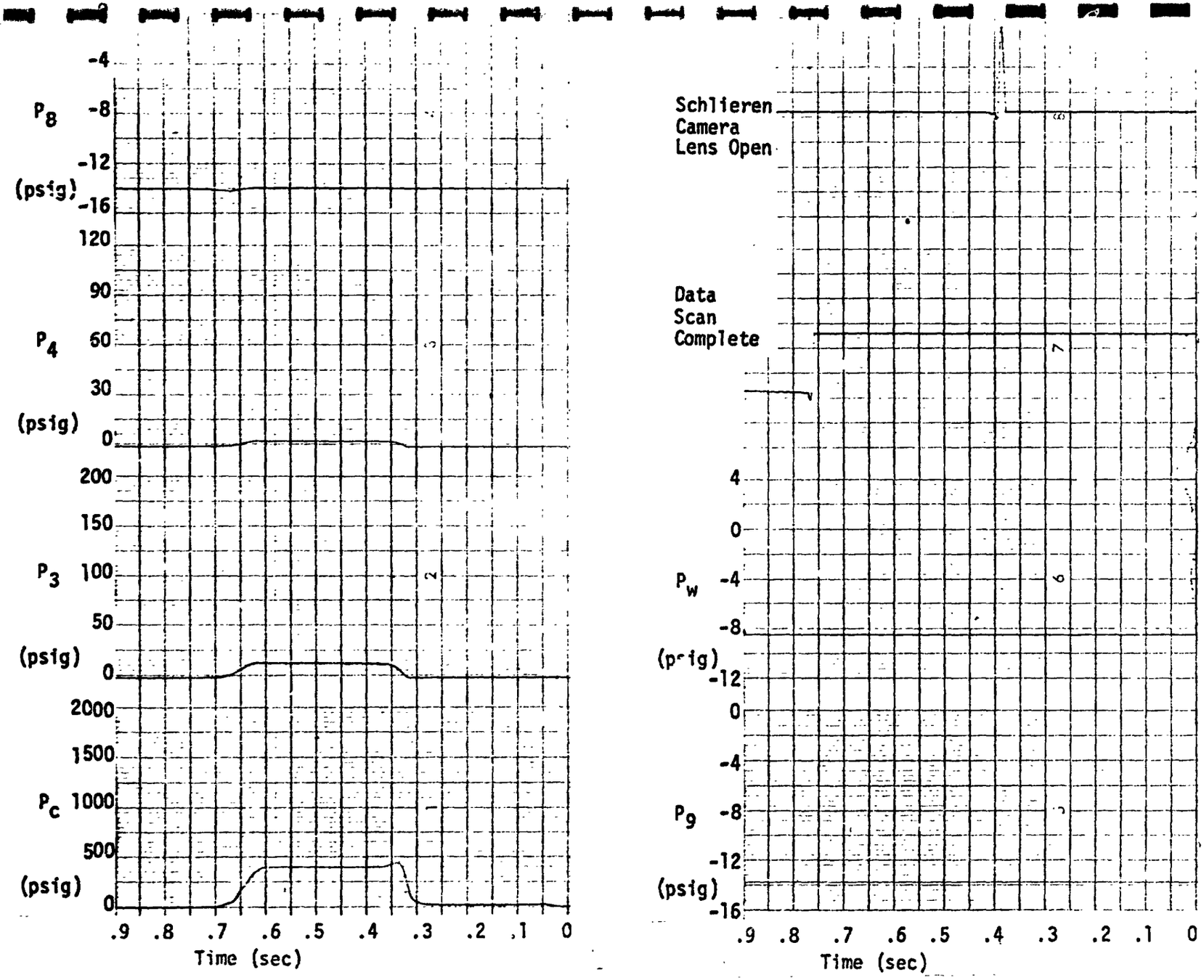
Run No. 414 16% Al UTP-3001 $\varepsilon = 8$ $M_\infty = 1.2$

REMTECH INCORPORATED



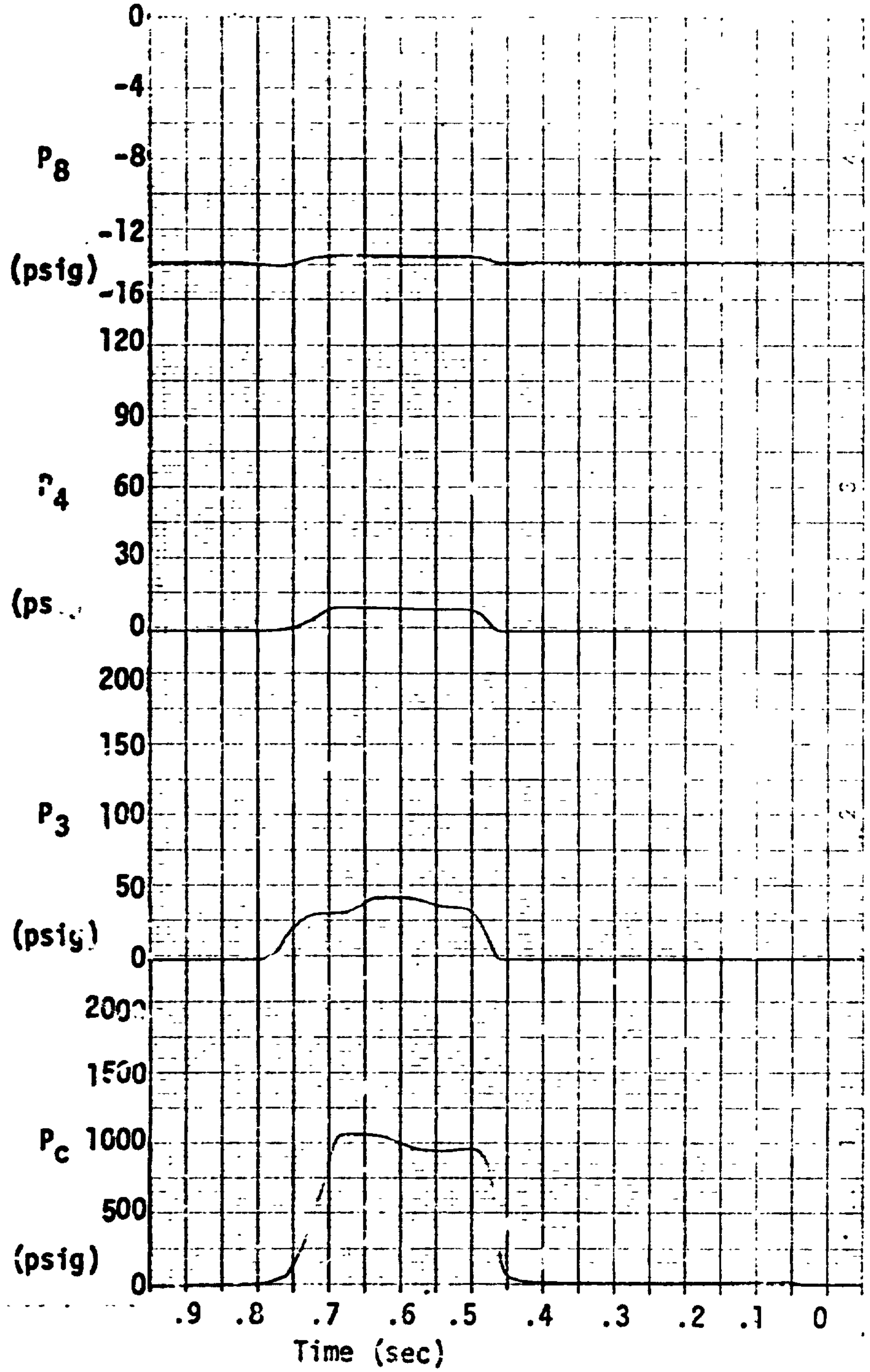


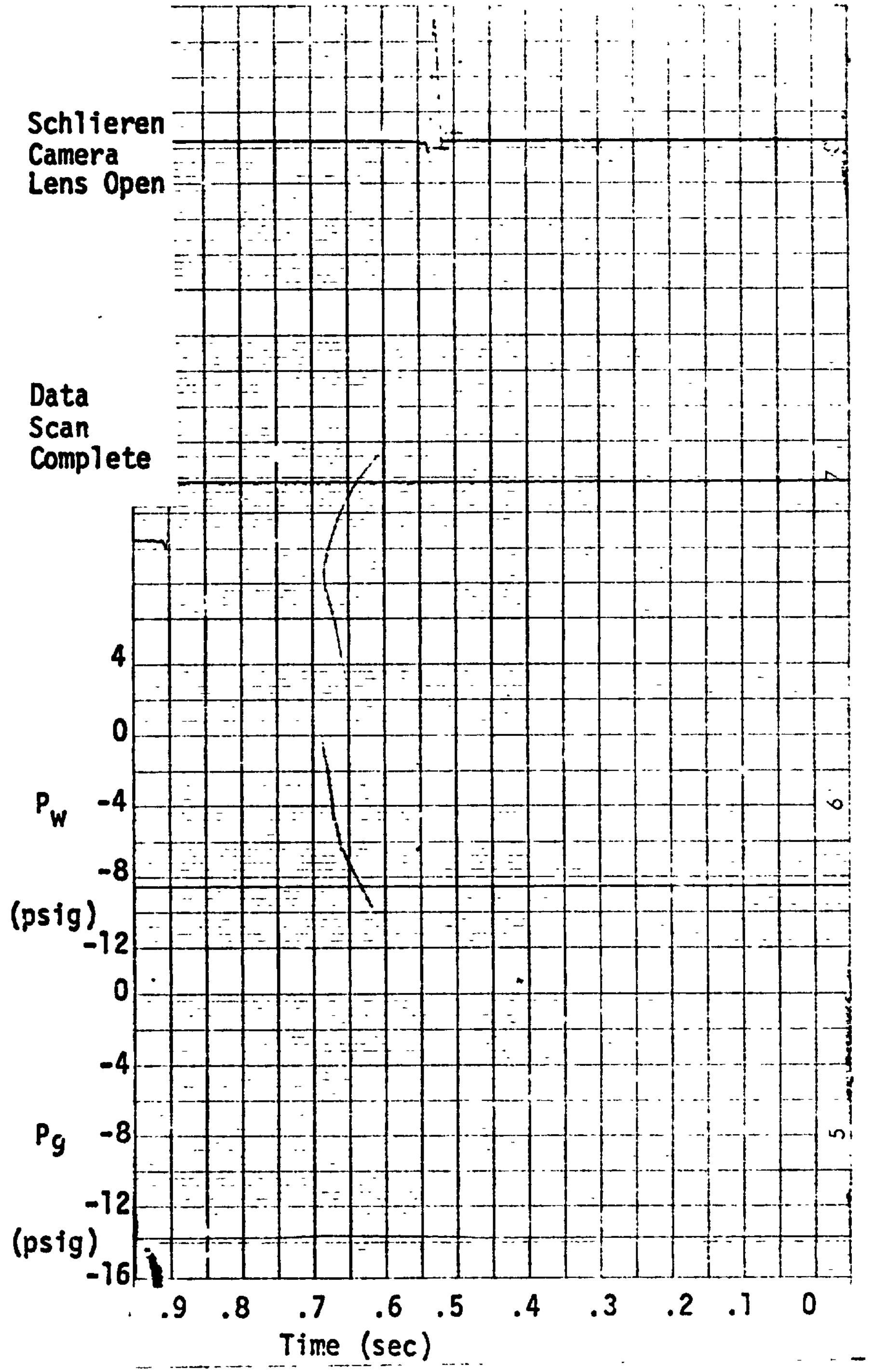
REMTECH INCORPORATED



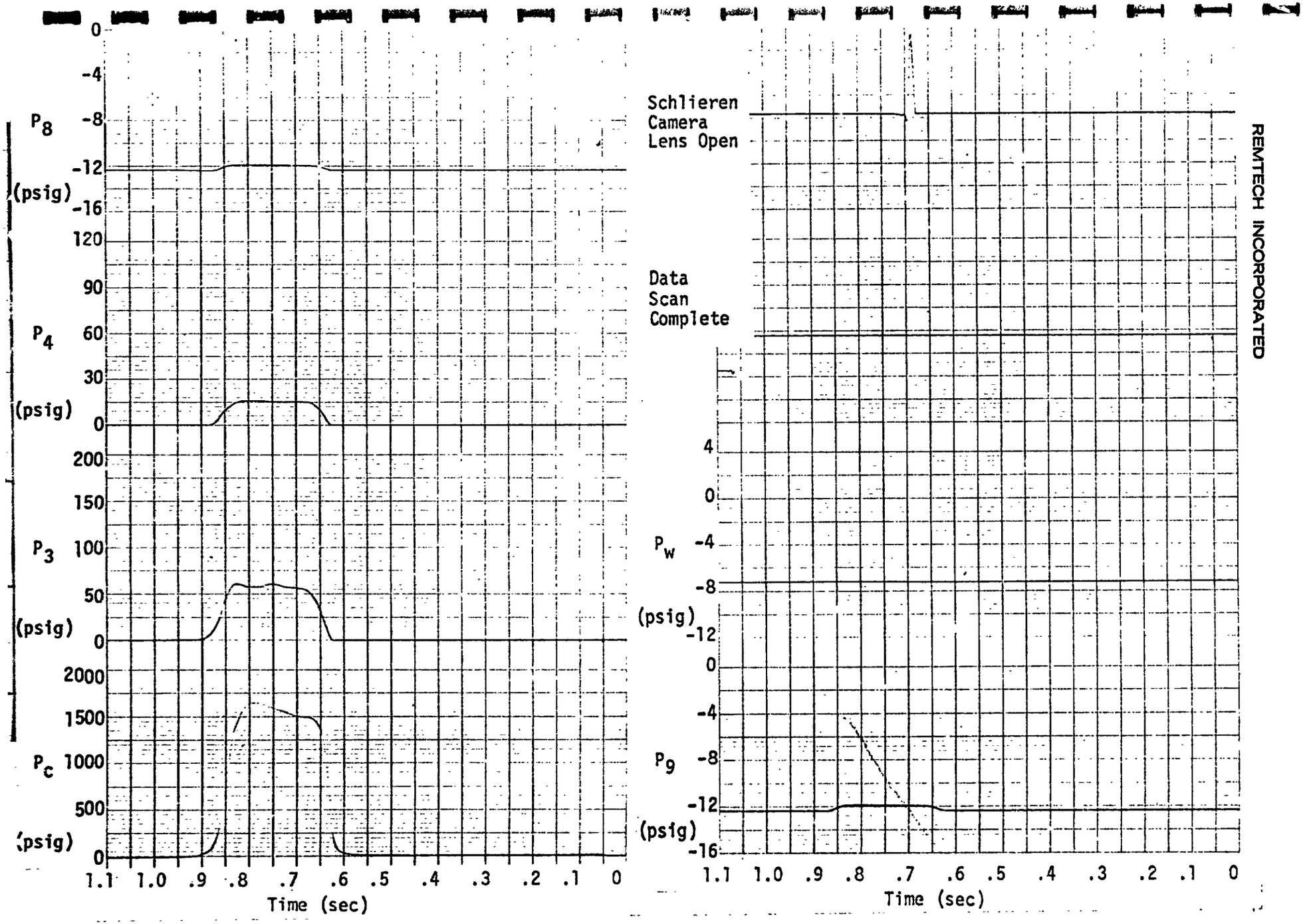
Run No. 417 16% Al UTP-3001 ε = 8 M_∞ = 1.5

REMTECH INCORPORATED



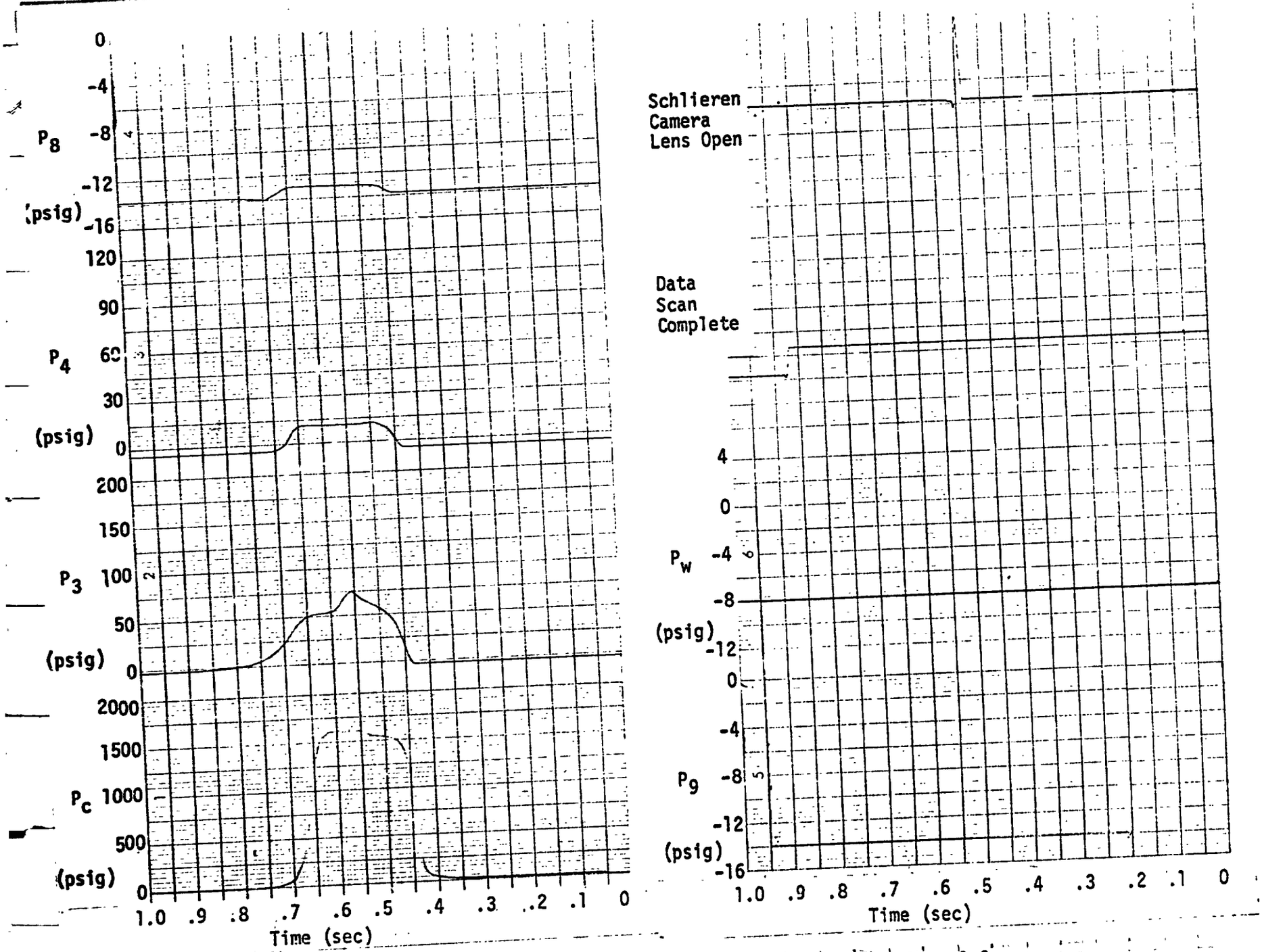


Run No. [illegible] [illegible]% A, [illegible]TP-[illegible] [illegible] = 0 M_∞ = [illegible].5

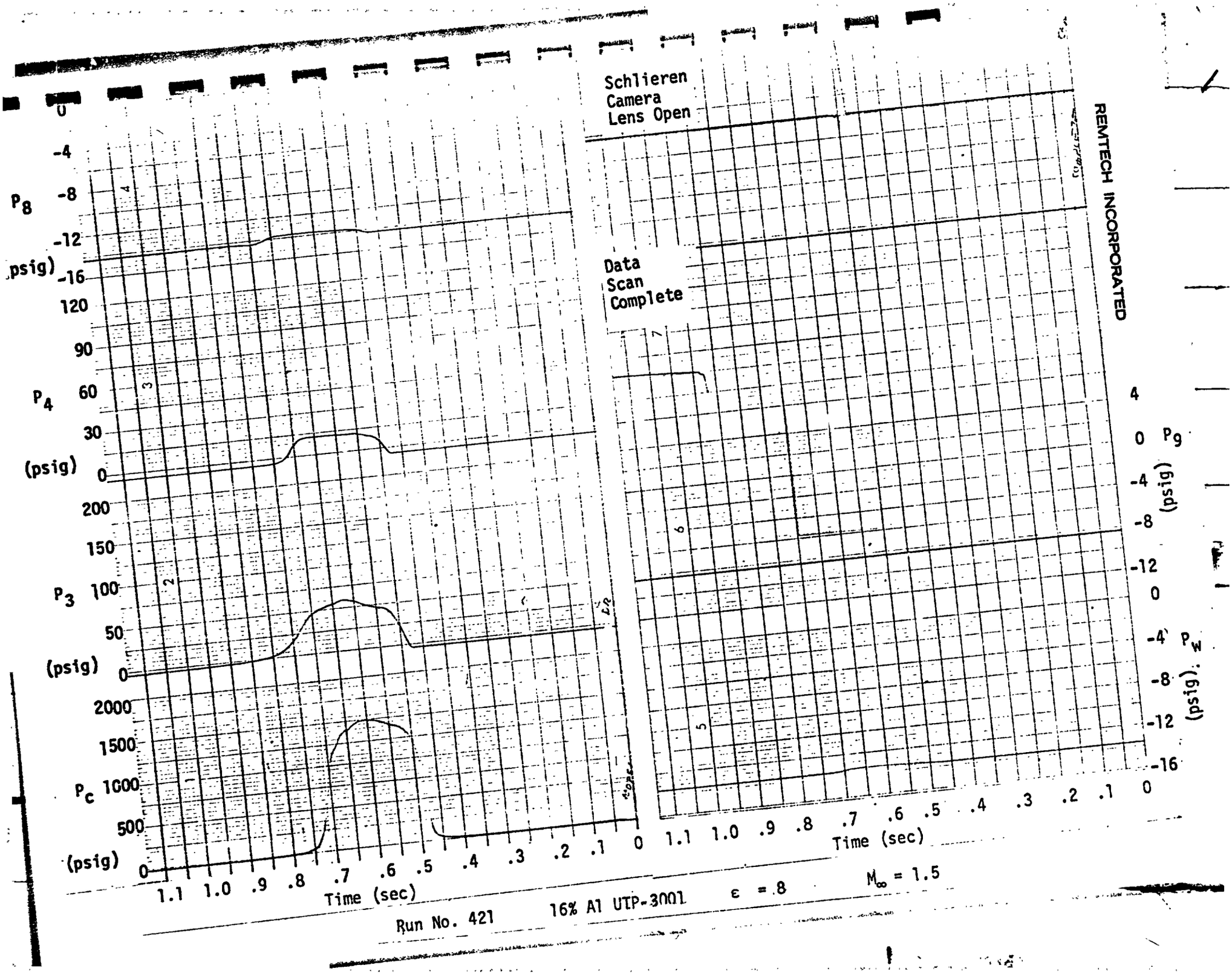


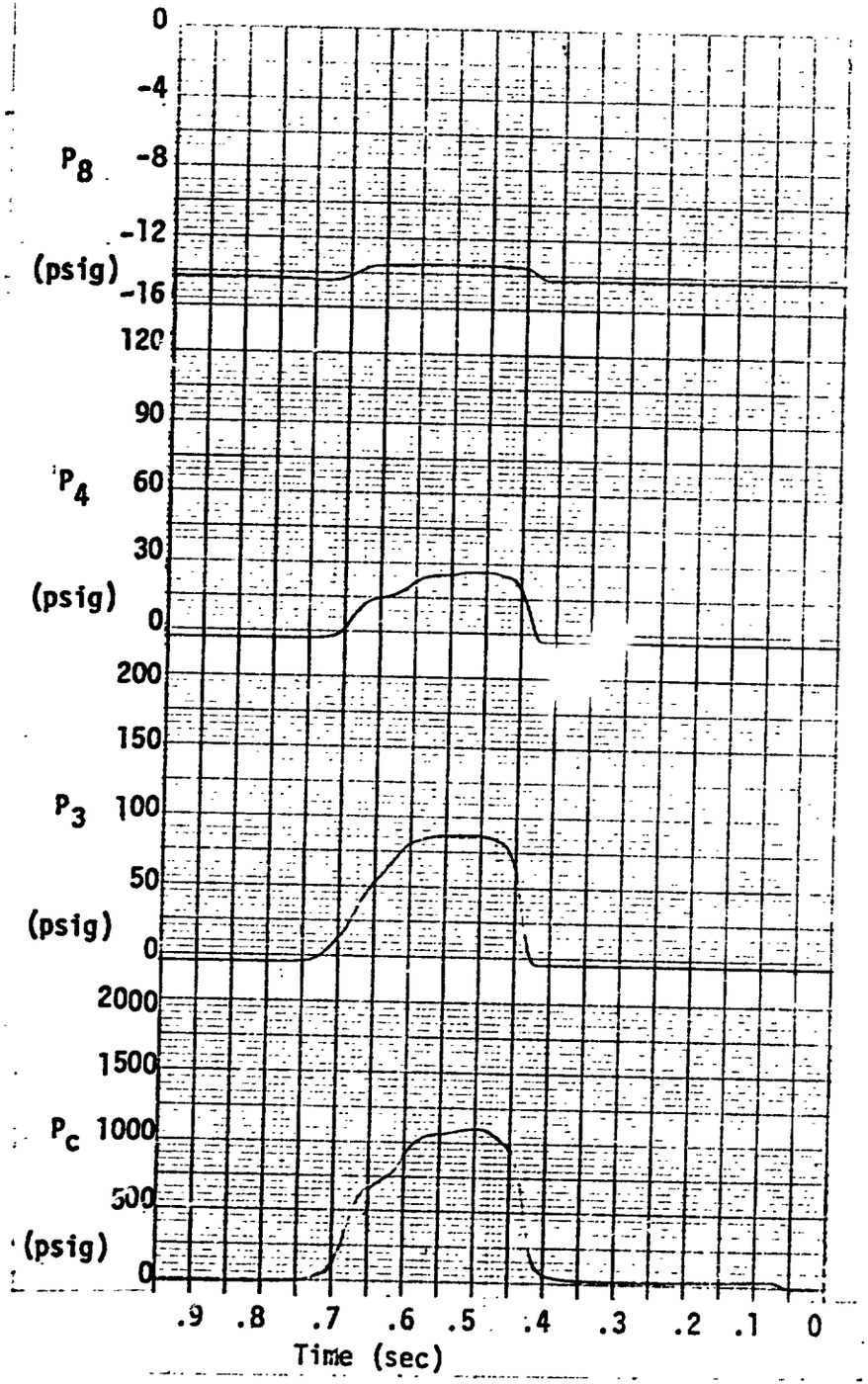
REMTECH INCORPORATED

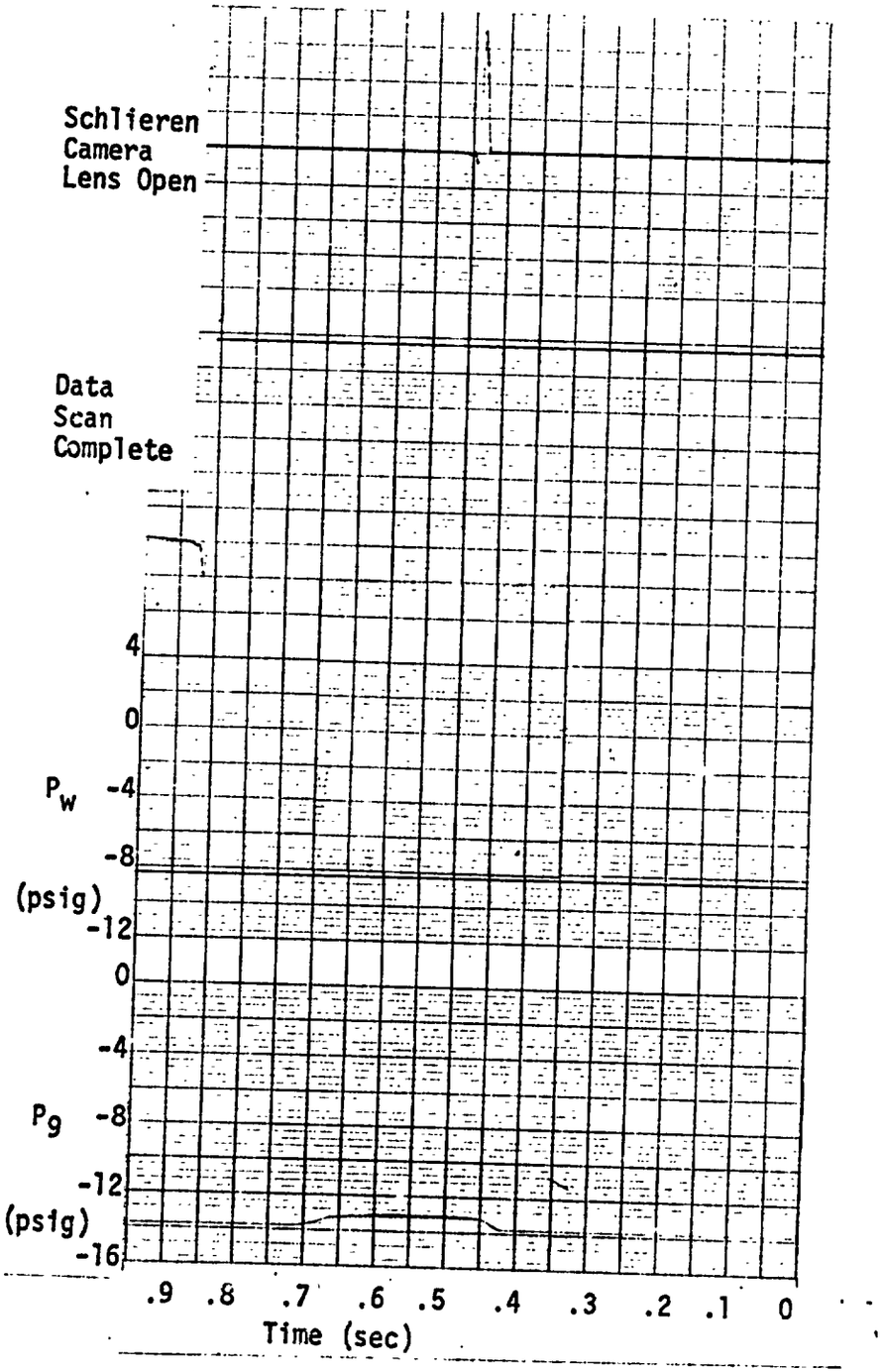
Run No. 419 16% Al UTP-3001 ε = 8 M_∞ = 0.9



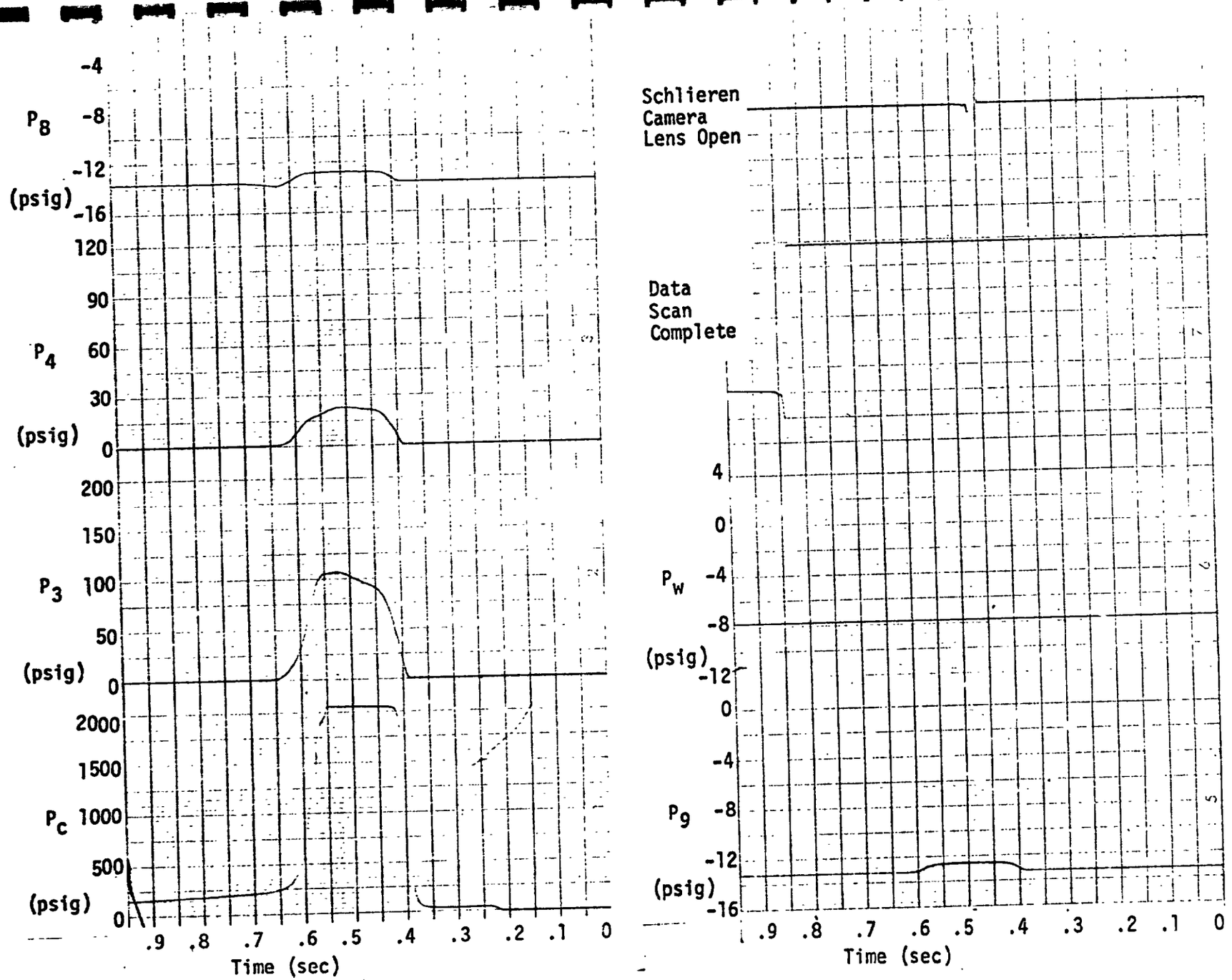
REMTECH INCORPORATED


Schlieren
Camera
Lens Open
Data
Scan
Complete
REMTECH INCORPORATED
P_8 (psig)
P_4 (psig)
P_3 (psig)
P_c (psig)
P_9 (psig)
P_w (psig)
Time (sec)
Time (sec)
Run No. 421
16% Al UTP-3001
ε = 8
M_∞ = 1.5



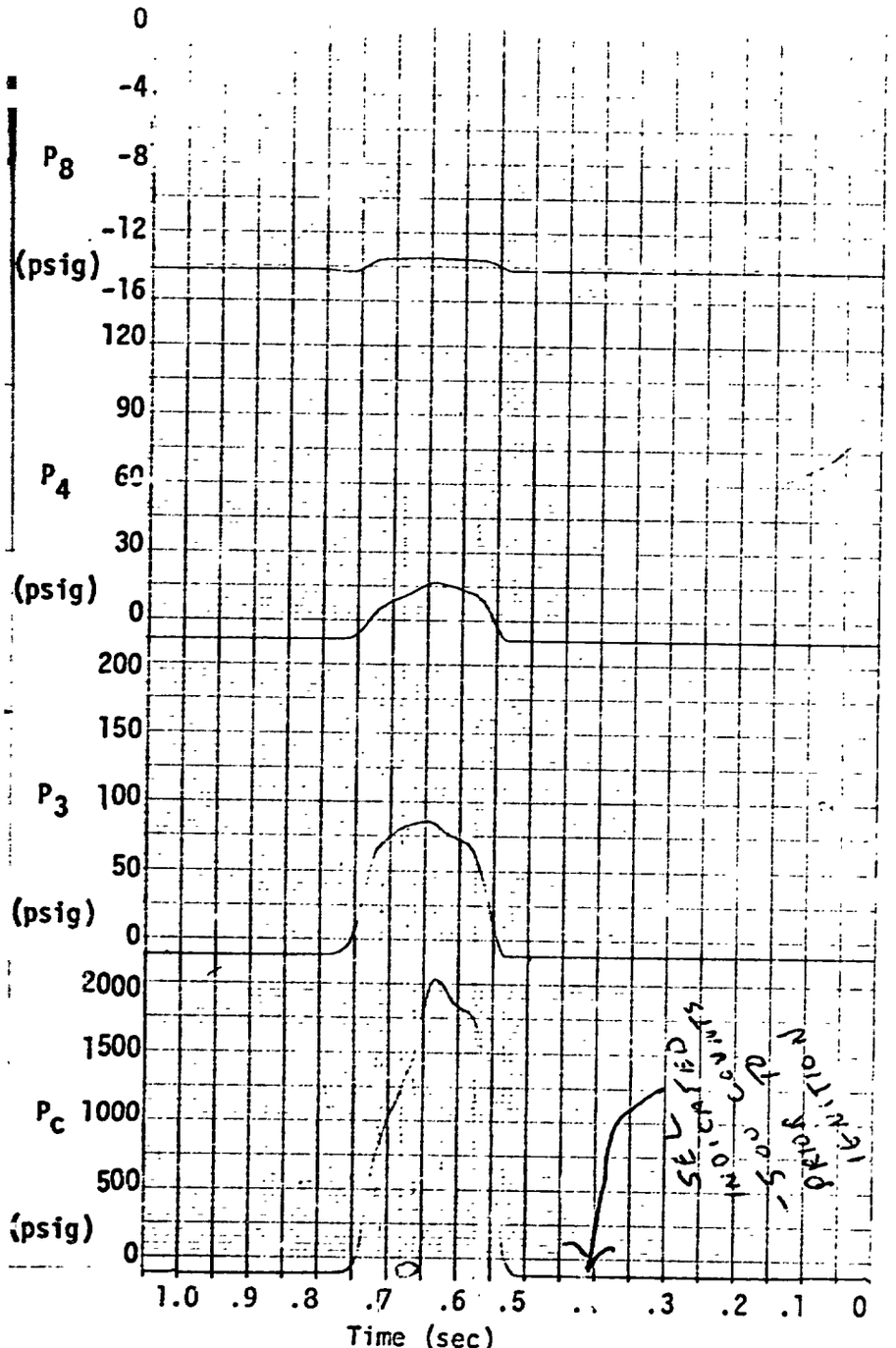


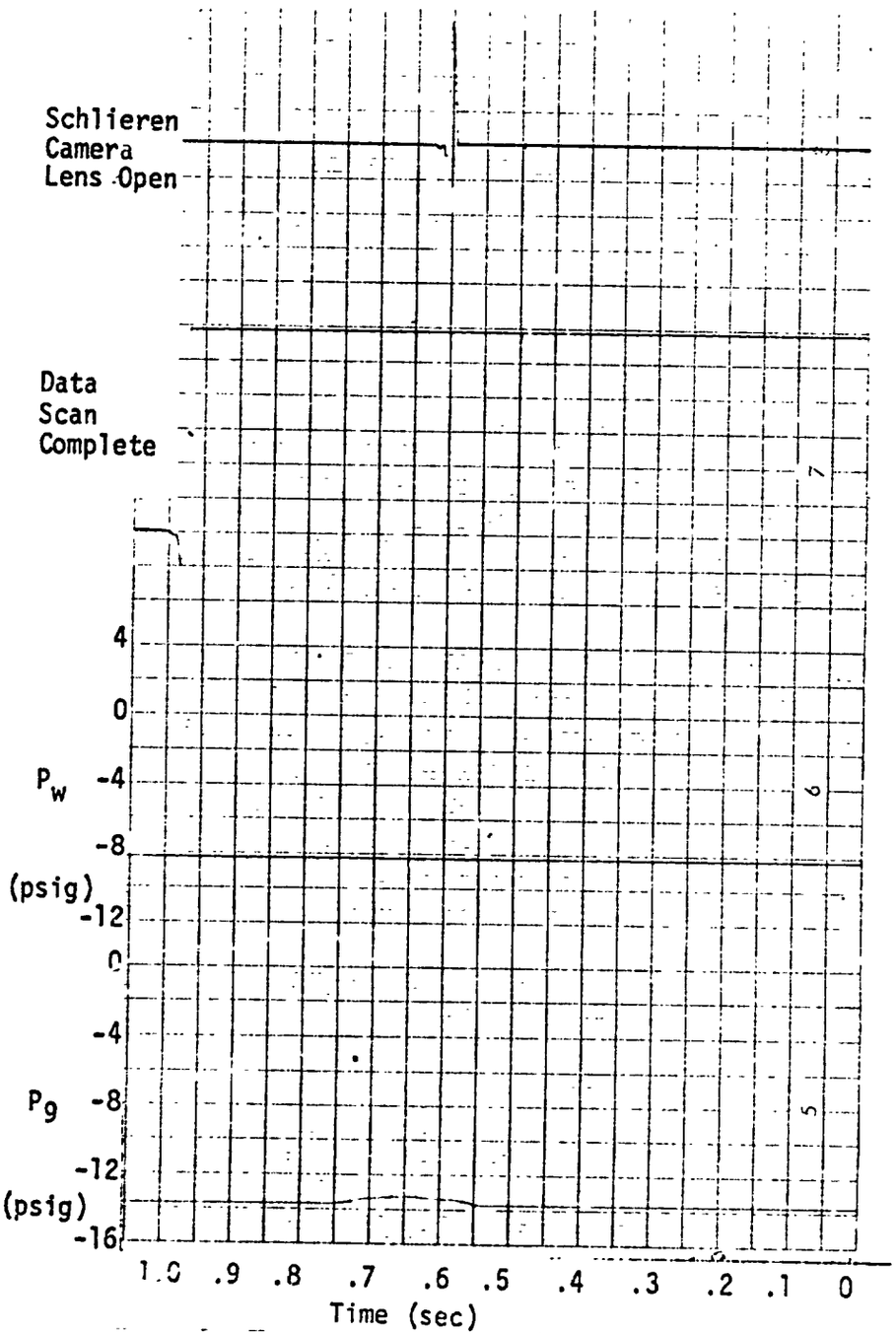
REMTECH INCORPORATED



Run No. 423 2% Al ANB-3335 $\varepsilon = 8$ $M_\infty = 1.2$

REMTECH INCORPORATED





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F lo. 6% TP- = 8 1.