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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

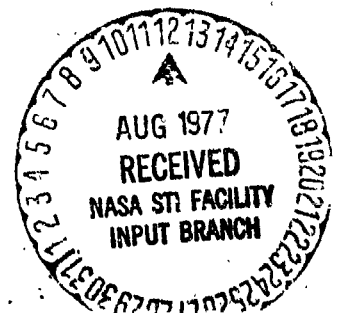
(Shuttle Test FA7)
(Ames Test 033-66)

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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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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

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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 (junction of the midbody and afterbody) and equal exit areas (Fig. 3). Each afterbody configuration has 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 $\epsilon = 8$ configuration (S/N 2 and 5) and one of $\epsilon = 4$ (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 inaccessible 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 1% 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, H₂O, and alumina (Al₂O₃) 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

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/CF₄ 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.

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 P2 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 Horex 1196A ignitors were obtainable, so that Run Nos. 422-424 were accomplished with Horex 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

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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:

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

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 P_c 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 test 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/CF₄ 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/CF₄ 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.

0 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 photographs - 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.

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/CF₄ 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 expansion ratio. Note that for all runs (except Nos. 417 and 421) with UTP-3001 propellant, the heading denotes this as "15% A1", instead of the proper "16% A1". 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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2. Andrews, C. Donald and Cooper, C. E., "A Transonic And Supersonic Investigation Of Jet Exhaust Plume Effects On The Afterbody And Base Pressures Of A Body Of Revolution," Lockheed Missiles and Space Company, LMSC-HREC TM D306909, March 1974.
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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.
5. Hair, L. M., "Stress Analysis for a Solid Propellant Plume Aerodynamics Model in the ARC 6 X 6 Foot Supersonic Wind Tunnel", REMTECH Inc., RM 016-3, July 1974.
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 Igniters for Test in the George C. Marshall 14 X 14-Inch Trisonic Wind Tunnel", Calspan Corporation, Informal Report, 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.
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TABLE 1

CAPSULE OF ARC 033-66 (FA7) TEST

Chronology: August 20-28

Tests Accomplished (Design Values)

ϵ	%A1	M_∞	P_c (psia)				
			400	800	1000	1400	1800
8	16	0.9	X	X		X	X
		1.2	X	X, X, X ^①		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 $P_{t_\infty} = 13$ psia ($P_{t_\infty} = 5$ psia for all other runs)

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
	Tension	4.4
Sting/Adapter Attachment	Shear	19.5
	Bending	16.8
Adapter	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		IF THROAT BLOCKED
NOZZLE SCREWS FAIL AT $P_c = 13, 400$ psia		

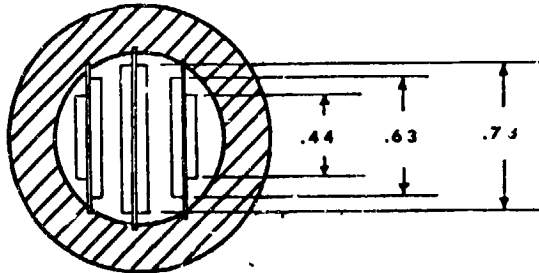
TABLE 3

PROPELLANT PROPERTIES

Designation	UTP-3001	ANB - 3335 - 1
Manufacturer	United Technology Center San Jose, Calif.	Aerojet Solid Propulsion Co. Sacramento, 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%A1)	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%A1)	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 Halex ignitors, No. 1196B
and 16 Halex 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 Halex 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. \geq 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		
	$\epsilon = 8$		$\epsilon = 4$		$\epsilon = 8$		$\epsilon = 4$
	$P_c = 400$	1600	400	800	400	1200	400
ALCL ₂			0.18	0.17			
AL ₂ O ₃ (S)	27.39	27.39	14.04	15.13	3.74	3.74	3.75
AL ₂ O ₃ (L)			12.04	14.99			
CO	37.99	37.98	38.84	36.68	15.93	15.89	17.66
CO ₂	1.30	1.31	1.16	1.09	20.66	20.73	17.95
FECL ₂	0.38	0.39	0.36	0.36			
HCL	18.57	18.59	18.66	17.67	25.52	25.52	25.49
H ₂	3.67	3.67	3.72	3.51	1.20	1.21	1.08
H ₂ O	3.23	3.23	3.44	3.24	21.90	21.88	23.01
N ₂	7.43	7.43	7.58	7.15	10.09	10.09	10.09

CHEMICAL EQUILIBRIUM TO NOZZLE THROAT,
FROZEN CHEMISTRY DOWNSTREAM

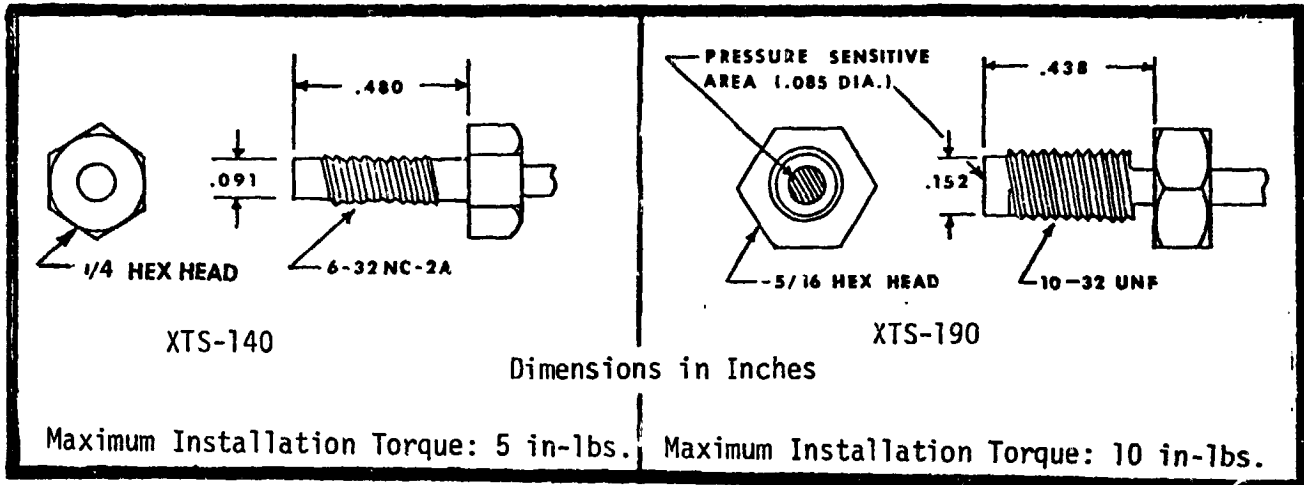
PRODUCT	16%AL UTP-3001		2%AL ANB-3335-1 ①	
	$P_c = 400$	1600	400	1200
ALCL	1.71	1.28		
ALCL ₂	1.68	2.15		
ALOCL	0.28	0.19		
AL ₂ O ₃ (L)	24.89	25.14	3.70	3.69
CO	38.10	38.21	20.10	20.08
CO ₂	1.16	1.13	14.12	14.14
CL	0.79	0.49	0.72	0.46
FE	0.11			
FECL ₂	0.13	0.22		
H	0.13			
HCL	15.55	15.76	24.72	24.98
H ₂	3.49	3.54	0.92	0.92
H ₂ O	4.43	4.44	24.92	24.40
N ₂	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



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 Oscillo-graph	Beckman Digital Data Acquisition System
Tunnel Total Pressure [ⓐ]	$P_{t\infty}$		1		X
Tunnel Static Pressure [ⓐ]	$P_{s\infty}$		2	6	X
Tunnel Total Temperature	$T_{t\infty}$				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	

[ⓐ] See text, Section 3.5.

TABLE 10

DESIGN TEST CONDITIONS

ε	Nominal		Run Numbers		
	M _∞	P _c (psia)	16% A1 (UTP-3001)	2% A1 (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	411,412,413	400	
1000					
1400	420*	423*			
1800	414				
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		

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

TABLE 11 RUN LOG (Sht. 2 of 3)

GENERAL			DESIGN CONDITIONS				CONFIGURATION			REMARKS
DATE	TIME (PDT)	RUN. NO.	M_{∞}	ϵ	%A1	P_c (psia)	NOZZLE SERIAL NO.	DIAPH. THICK (in.)	PROP WT. (grams)	
8/26/74	0302	408	0.9	4 ↓ 8	2 16	400 800 1800	3 ↓ 2	.007 ↓ .011	44.8 65.9 ?	REMTECH mfg. g.g. Diaphragm and O-rings badly deteriorated after firing; possible leak. Replaced ignitor firing leads. Extensive slag in nozzle. $P_{T_{\infty}} = 13$ psia. Extensive slag in nozzle. No data - attempt to get $P_{T_{\infty}} = 16$ psia. In cleaning P_c transducer, screen came off. Replaced. New transducer has slight drift.
	0830	411	1.2			800		.007	36.2	
	1120	412							36.65	
	1430									
	1650									
	1732									
1820		413						.010	36.2	
8/27/74	0052	414	1.2	8	16	1800	2	.011	?	REMTECH mfg. g.g. Extensive slag. Postfire: nozzle throat eroded. G.G. mfg: for MSFC phase. P6 plugged. Plume off. G.G. originally mfg. for MSFC phase. P6 okay after repair. Cleaned P_c port and transducer. P3 covered with and filled by slag. One side propellant holder burned up. Cleaned P_c port and transducer.
	0520	415	1.5		2	400	5	.010	?	
	0845	416								
	0850	417				400		.007	27.7	
	1700	418				800		.009	35.95	
	1730									
	1955	419				1400		.010	47.1	
	2155	420							47.1	
2300										

TABLE 11 RUN LOG (Sht. 3 of 3)

GENERAL			DESIGN CONDITIONS					CONFIGURATION			REMARKS
DATE	TIME (PDT)	RUN.NO.	M_b	ϵ	%A1	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. Revert back to Holec 1196B ignitor, retaining use of HLX-2-1 booster. Extensive slag. Center propellant holder burned up. Cleaned Pc 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. Pc went overscale. Nozzle erosion progressing but still acceptable. Cleaned Pc port and transducer, replaced silicone protection. REMTECH mfg. g.g. Pc behavior suspect. Postfire: Nozzle erosion significant.	
	0405	422		4		800	3	.009	65.65		
	0450										
	1040	423	1.2	8	2	1800	5	.012	49.9		
	1200										
	1400	424	1.5		16			.012	?		

TABLE 12
GAS GENERATOR ACTIVATION RESULTS

Propellant	UTP-3001 (16% A1)					ANB-3335-1 (2% A1)			
	8				4	8			4
ϵ	1800	1400	800	400	800	1800	1000	400	400
Normal P_c									
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	ZAI	M _∞	T _{T∞} (°R)	P _{T∞} (psf)	P _∞ (psf)	P _c (psia)	P _c /P _∞	Nozzle		Base		Body		Time	
											F ₃ /P _c	P ₄ /P _c	P ₆ /P _∞	P ₇ /P _∞	P ₈ /P _∞	P ₉ /P _∞		P ₁₁ /P _∞
											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	1002	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	.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	1.142	1.292	1.158	1.058	1.094	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	1.164	1.164	1.096	1.173	3
	393*				.874	628	628	381			1.141	1.098	1.123	1.105	1.123	1.105	1.171	3
	399				1.208	535	638	260			.926	1.032	.904	.913	.904	.913	1.097	6
	406*				.884	537	642	386			.958	.941	.965	.925	.965	.925	1.012	6
	407*				1.187	536	647	271			.829	.946	.823	.844	.823	.844	1.008	6
	413*				1.196	544	653	271			.878	.840	.897	.874	.897	.874	.982	6
	416				1.459	537	636	184			.743	.768	.768	.891	.768	.891	1.047	6
	418*				1.415	540	635	195			.826	.744	.832	.877	.832	.877	1.036	6
	391*				.880	537	626	378			1.158	1.179	1.157	1.089	1.157	1.089	1.166	3

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

TABLE 14
CORRELATION DATA SUMMARY

Run No.	% A1	Nozzle	Nom. M_w	P_b/P_∞	GAS-ONLY EQUILIBRIUM		GAS-ONLY IDEAL			
					δ_{jb}	$\delta_{j\infty}$	γ_{EX}	δ_{jb}	$\delta_{j\infty}$	γ_{EX}
405	16%	$\epsilon = 8$	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	2%	$\epsilon = 4$		1.277	51.6	54.3	1.2048	49.3	52.1	1.2180
401		$\epsilon = 8$		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		$\epsilon = 4$		1.120	41.9	43.3	1.2273	41.9	43.3	1.2182
412	16%	$\epsilon = 8$	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%	$\epsilon = 8$	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		$\epsilon = 4$		1.506	58.8	63.0	1.2058	56.4	60.6	1.2177

* P_g ; otherwise, P_6

TABLE 15

TABLATED SEL DATA SAMPLE - RUN NO. 398

RUN LIST	TEST#	COMP	PROPellant	SAF.	RATE	FRAYS	EDS	Pa	Pm	MACH	PICH	(PIC/P) _n	NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
398	1	66/033/1	38	500	(P2/PIC) _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	1	376	634	0.897	395	151.3	0.0249	0.0102	1.143	1.007	1.134	1.117	1.126	1.168							
2	2	376	634	0.897	478	183.0	0.0258	0.0097	1.157	1.021	1.145	1.126	1.145	1.171							
3	3	376	634	0.897	573	219.2	0.0271	0.0095	1.171	1.042	1.165	1.145	1.165	1.178							
4	4	376	634	0.897	671	256.9	0.0283	0.0091	1.180	1.061	1.180	1.159	1.180	1.185							
5	5	376	634	0.897	775	296.5	0.0298	0.0092	1.198	1.080	1.200	1.175	1.192	1.192							
6	6	376	634	0.897	878	335.9	0.0312	0.0095	1.198	1.102	1.220	1.195	1.201	1.201							
7	7	376	634	0.897	978	374.2	0.0324	0.0099	1.209	1.120	1.237	1.209	1.206	1.206							
8	8	376	634	0.897	1072	410.2	0.0336	0.0105	1.223	1.140	1.253	1.229	1.214	1.214							
9	9	376	634	0.897	1158	443.3	0.0345	0.0110	1.235	1.159	1.267	1.241	1.218	1.218							
10	10	376	634	0.897	1236	473.1	0.0354	0.0115	1.246	1.172	1.279	1.253	1.223	1.223							
11	11	376	634	0.897	1305	499.5	0.0361	0.0119	1.258	1.183	1.290	1.266	1.227	1.227							
12	12	376	634	0.897	1367	523.1	0.0369	0.0122	1.269	1.192	1.298	1.272	1.230	1.230							
13	13	376	634	0.897	1420	543.3	0.0374	0.0125	1.278	1.198	1.304	1.279	1.234	1.234							
14	14	376	634	0.897	1465	560.8	0.0379	0.0128	1.286	1.204	1.310	1.286	1.235	1.235							
15	15	376	634	0.897	1505	575.9	0.0384	0.0133	1.293	1.212	1.315	1.290	1.238	1.238							
16	16	376	634	0.897	1537	588.1	0.0388	0.0136	1.296	1.217	1.318	1.293	1.238	1.238							
17	17	376	634	0.897	1567	599.6	0.0392	0.0140	1.299	1.221	1.321	1.296	1.240	1.240							
18	18	376	634	0.897	1592	609.4	0.0395	0.0144	1.302	1.224	1.322	1.298	1.241	1.241							
19	19	376	634	0.897	1615	618.2	0.0397	0.0145	1.304	1.226	1.322	1.298	1.241	1.241							
20	20	376	634	0.897	1638	627.0	0.0400	0.0147	1.304	1.227	1.325	1.298	1.241	1.241							
21	21	376	634	0.897	1657	634.2	0.0401	0.0147	1.310	1.226	1.325	1.299	1.243	1.243							
22	22	376	634	0.897	1676	641.5	0.0402	0.0147	1.310	1.226	1.325	1.299	1.243	1.243							
23	23	376	634	0.897	1694	648.2	0.0403	0.0148	1.313	1.224	1.327	1.304	1.246	1.246							
24	24	376	634	0.897	1708	653.6	0.0405	0.0149	1.313	1.224	1.327	1.304	1.246	1.246							
25	25	376	634	0.897	1722	658.9	0.0405	0.0151	1.315	1.227	1.327	1.304	1.246	1.246							
26	26	376	634	0.897	1732	662.7	0.0406	0.0152	1.316	1.229	1.327	1.304	1.246	1.246							
27	27	376	634	0.897	1739	665.4	0.0406	0.0152	1.316	1.227	1.327	1.304	1.246	1.246							
28	28	376	634	0.897	1744	667.3	0.0409	0.0154	1.319	1.230	1.328	1.307	1.249	1.249							
29	29	376	634	0.897	1745	667.9	0.0410	0.0153	1.318	1.226	1.327	1.304	1.249	1.249							
30	30	376	634	0.897	1746	668.3	0.0412	0.0153	1.319	1.224	1.327	1.304	1.249	1.249							
31	31	376	634	0.897	1745	667.9	0.0414	0.0154	1.321	1.224	1.327	1.307	1.250	1.250							
32	32	376	634	0.897	1743	667.1	0.0416	0.0154	1.319	1.223	1.325	1.304	1.249	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	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	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	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	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	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	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	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	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	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	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	1.159							

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

PRELIMINARY DATA

YACH Q P PT PEF PCAL
0.897 211.7 376 634 1423 2119

TABLE 16

TABULATED BECKMAN DATA SAMPLE - RUN NOS. 391-398

TST	P	IN	IN-66	RUN-391	SEC-1	IL	PROSSCUT2	24	SEP	74216:35	PAGE	1
RUN:SEQ 35111												
TST	P	IN										
33	1	66										
LIST	CONF	MACH	Q	P	PT	TI	RN/L	PROPELLANT				
2	38	0.855	210.7	375.5	631.9	77.0	1.307	23	AL			
PREF PCAL 1412.8 2115.4												
RUN:SEQ 39689												
TST	P	IN										
33	1	66										
LIST	CONF	MACH	Q	P	PT	TI	RN/L	PROPELLANT				
2	38	0.855	210.7	375.5	631.9	71.0	1.326	23	AL			
PREF PCAL 1414.5 2117.6												
RUN:SEQ 39811												
TST	P	IN										
33	1	66										
LIST	CONF	MACH	Q	P	PT	TI	RN/L	PROPELLANT				
2	38	0.857	211.7	376.3	634.0	77.4	1.311	23	AL			
PREF PCAL 1422.3 2119.7												

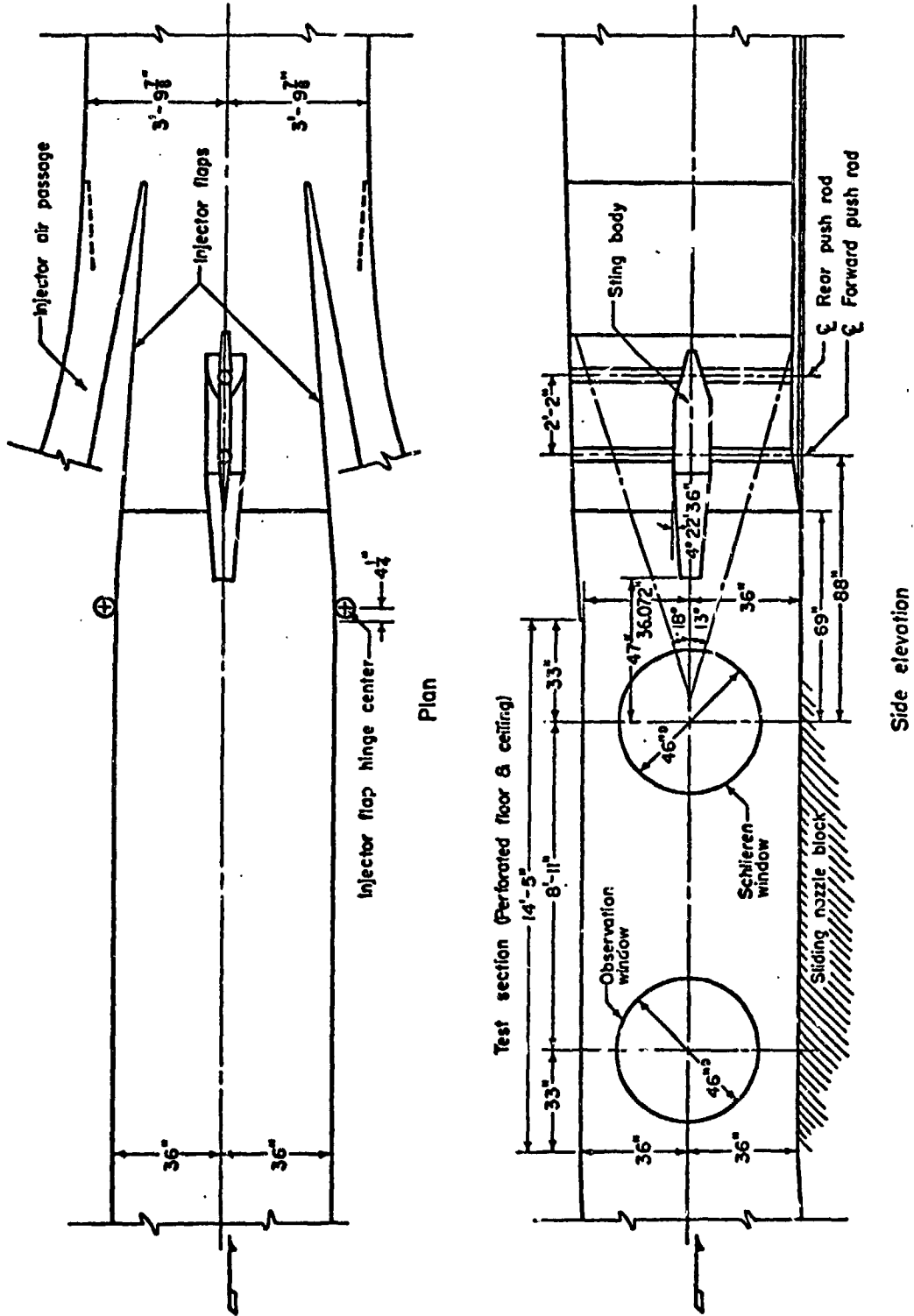


Fig. 1 Ames 6- by 6-Foot Supersonic Wind Tunnel

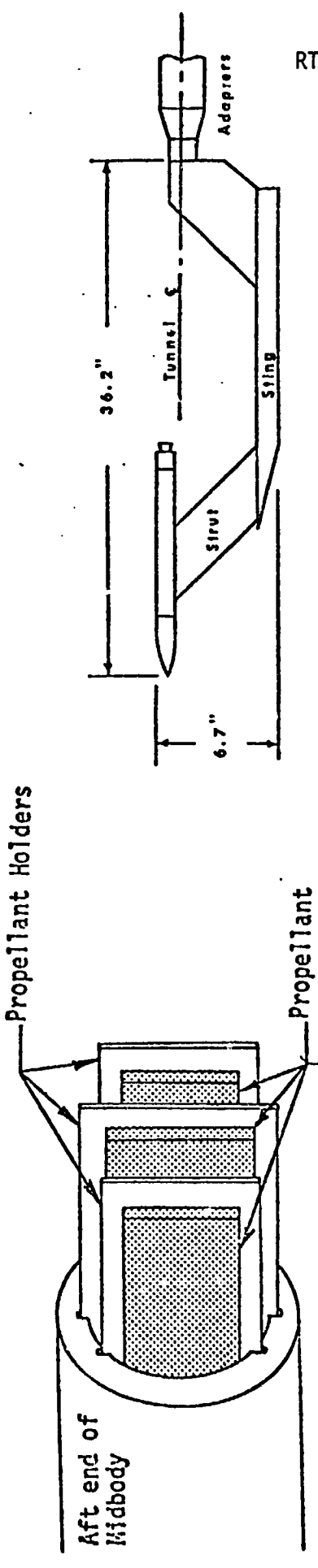
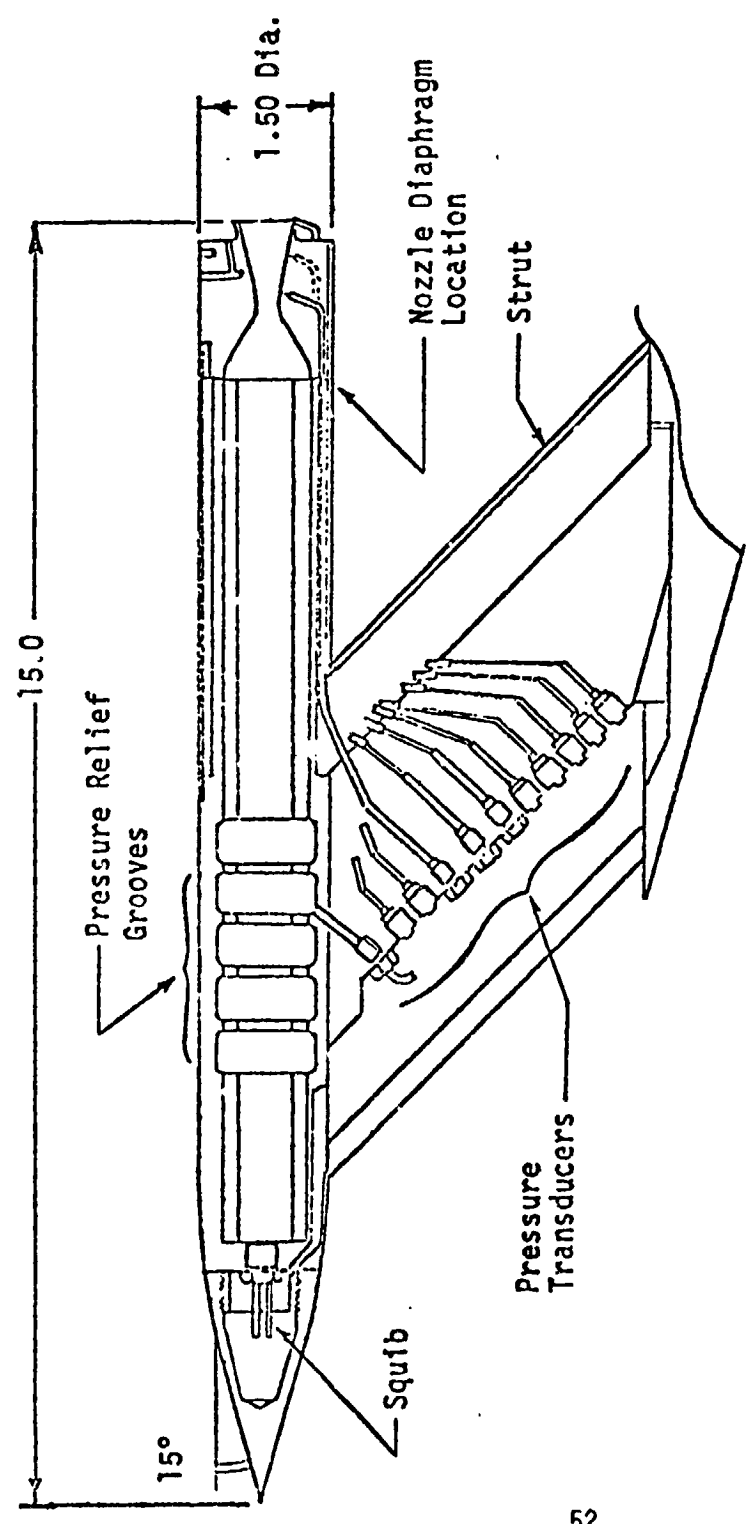
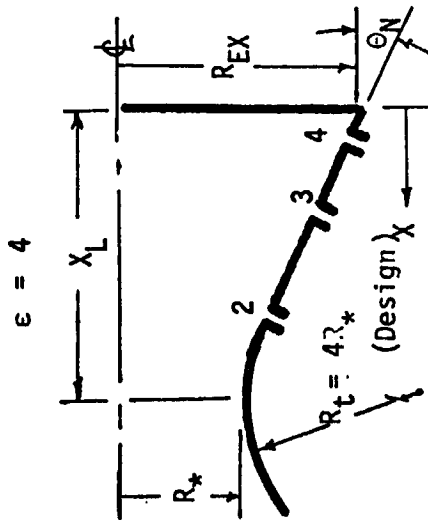
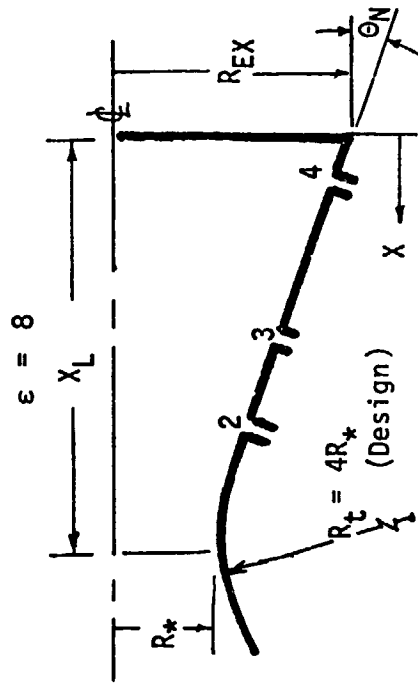
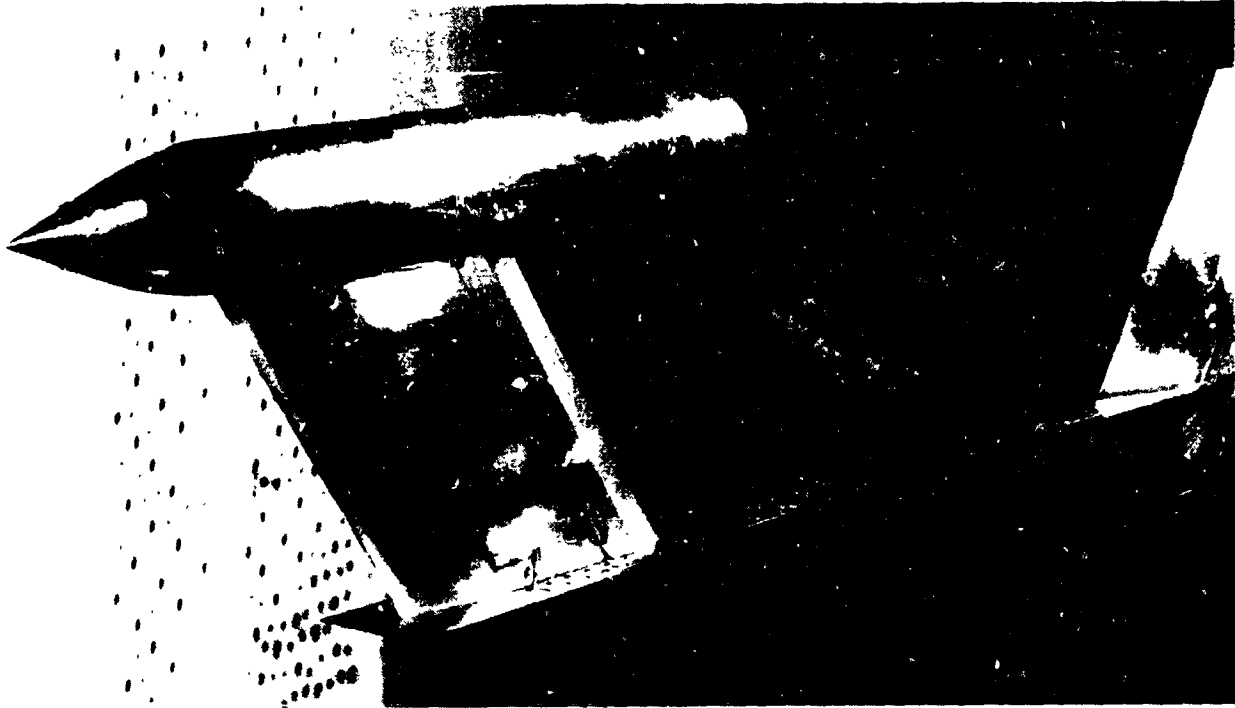


Fig. 2 Model Design



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'	.759	.373	.063	1.39	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'	.534	.297	.060	1.40	2.38	3.64
3	DESIGN	4	.175	.350	.745	.660	15°	.542	.263	.043	1.36	2.55	3.74
	MEASURED	4	.175	.350	.740	.660	15° 11'						

Fig. 3 Nozzle Geometry



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



c. Gas Generator In Action

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

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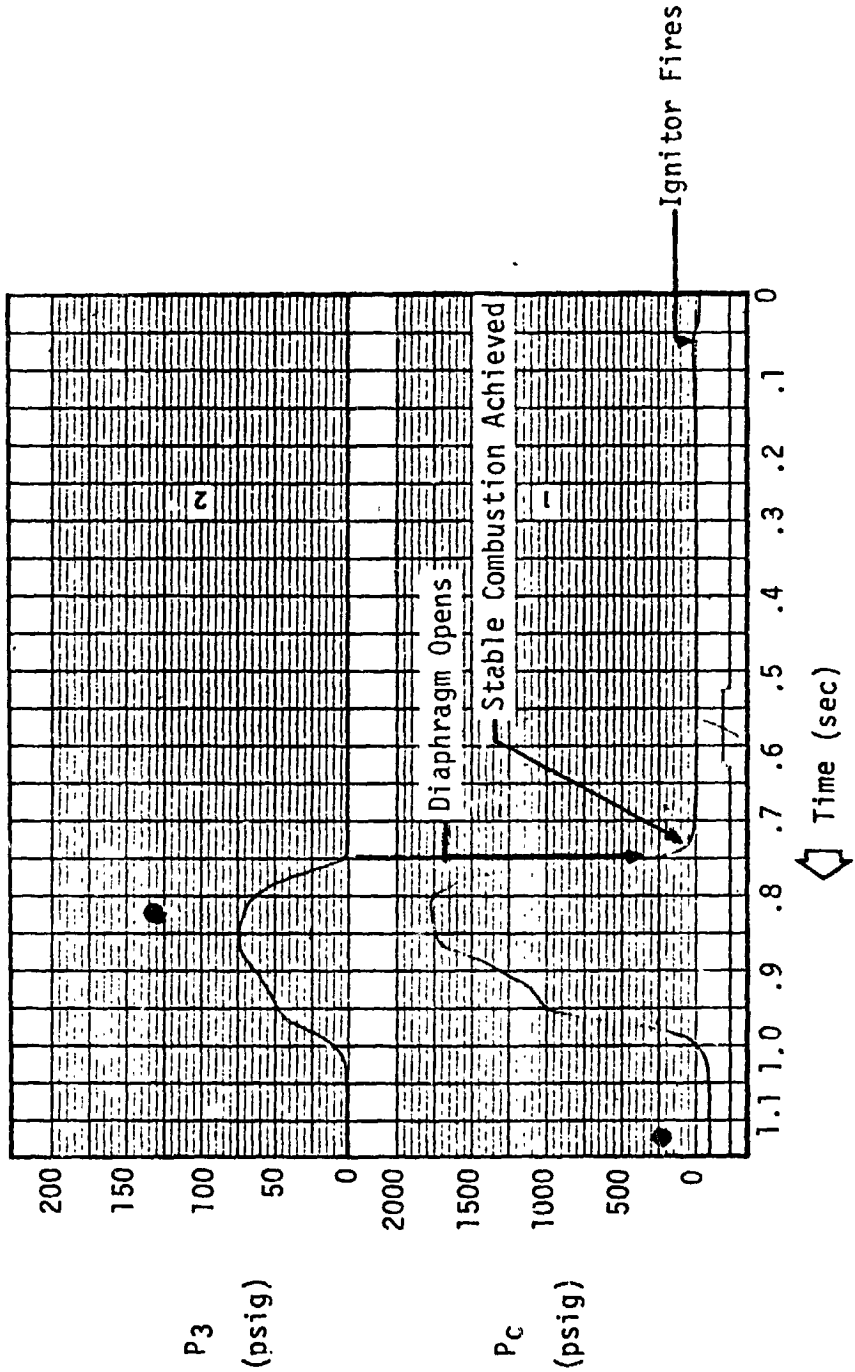


Fig. 5 Gas Generator Operational Events

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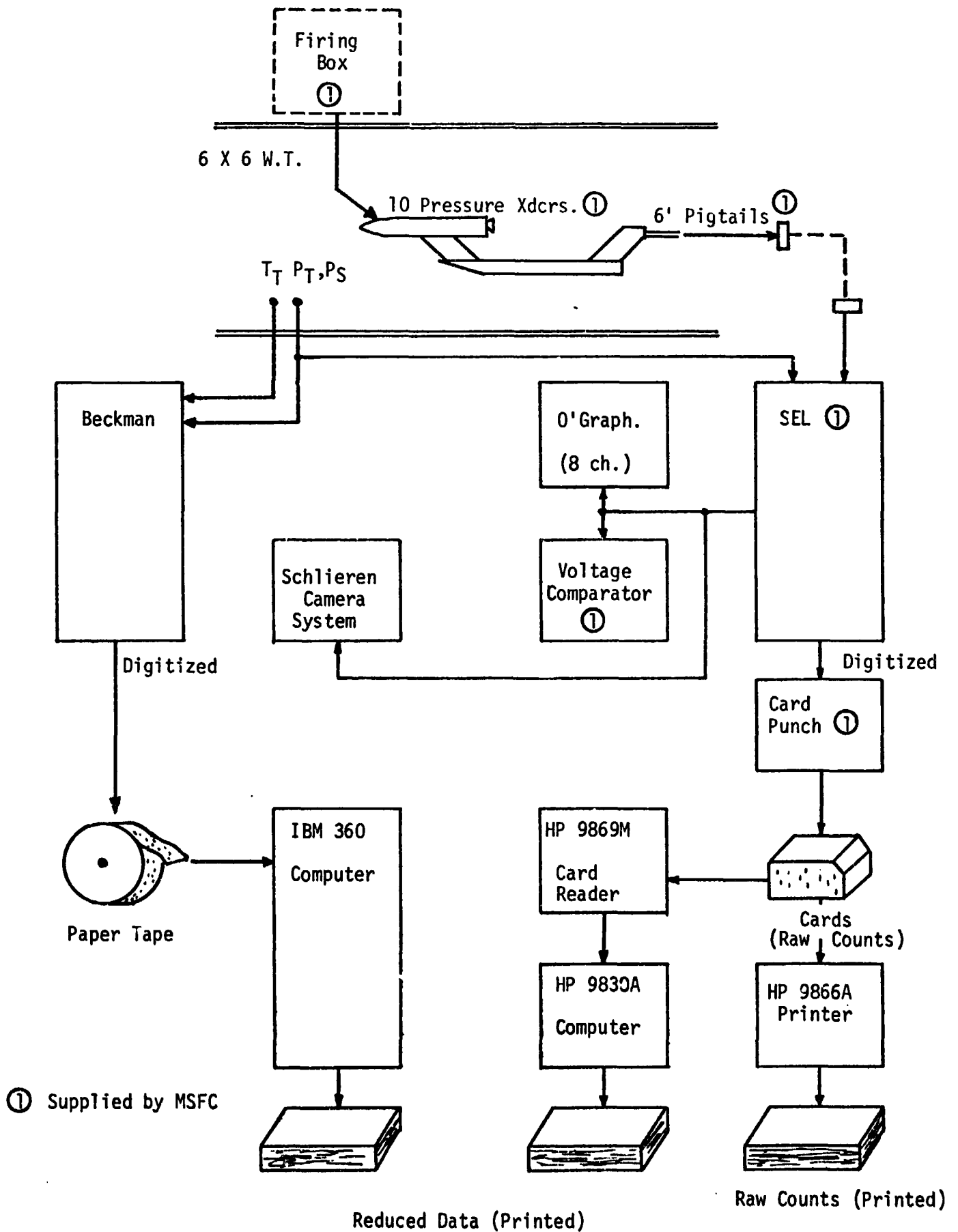
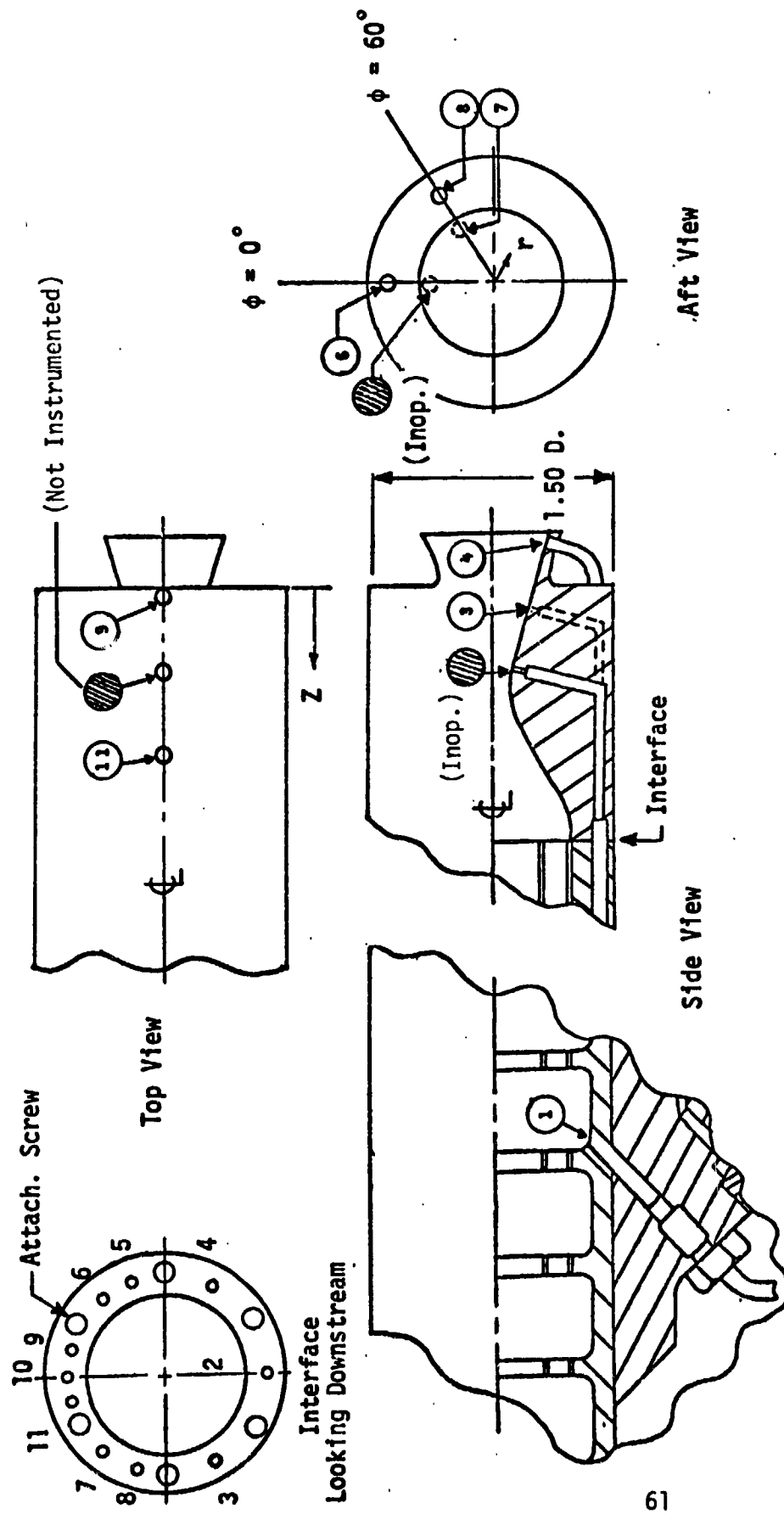


Fig. 6 Data System Schematic



Design Values
Nozzle Orifices

Tube No.	X (in)	r (in)	phi (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	↓

Side Orifices

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

Base Orifices

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

X = 0 at Nozzle Throat (See Fig. 3 for measured nozzle instrumentation locations)

Fig. 7 Model Instrumentation

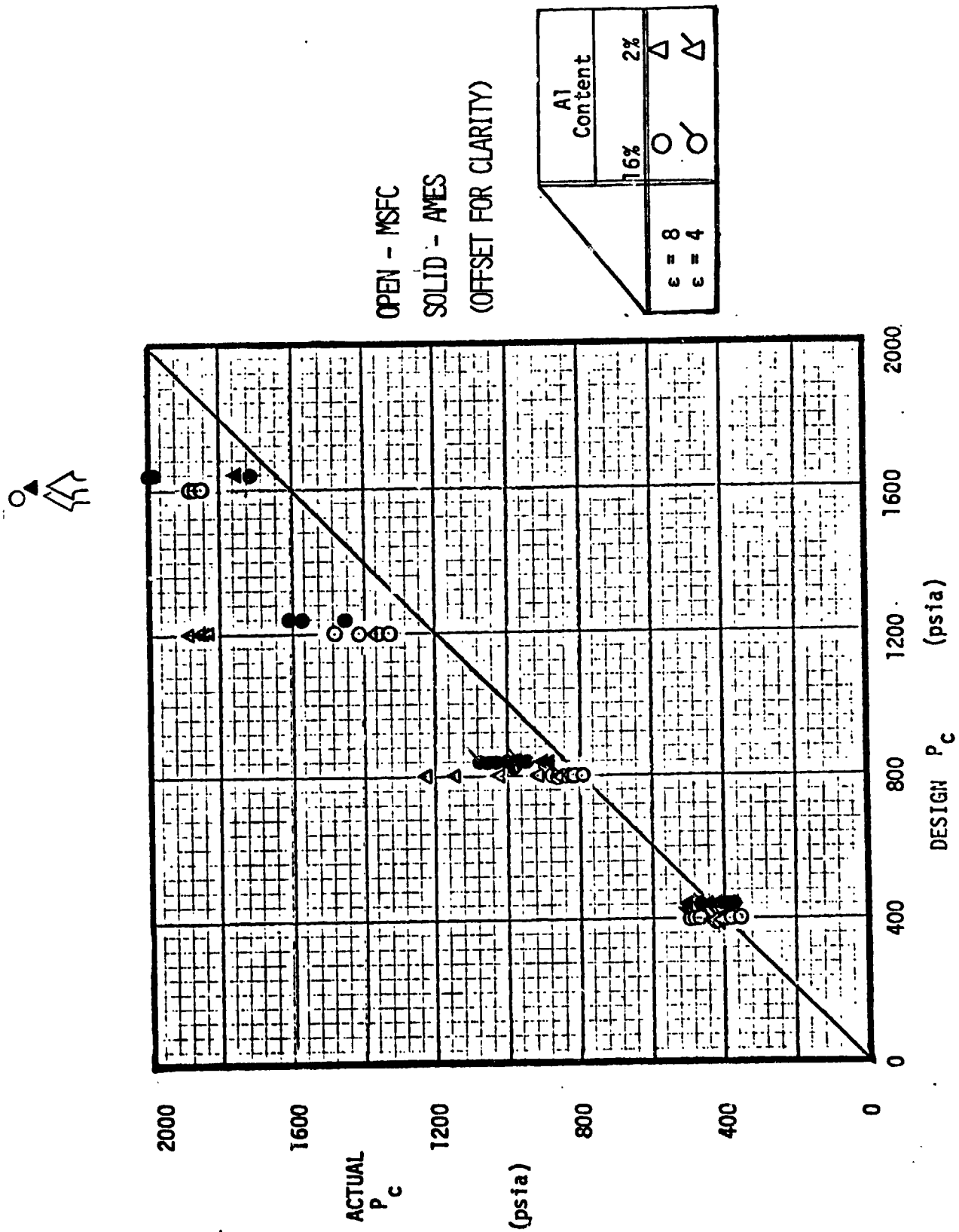


Fig. 8 Actual Chamber Pressures

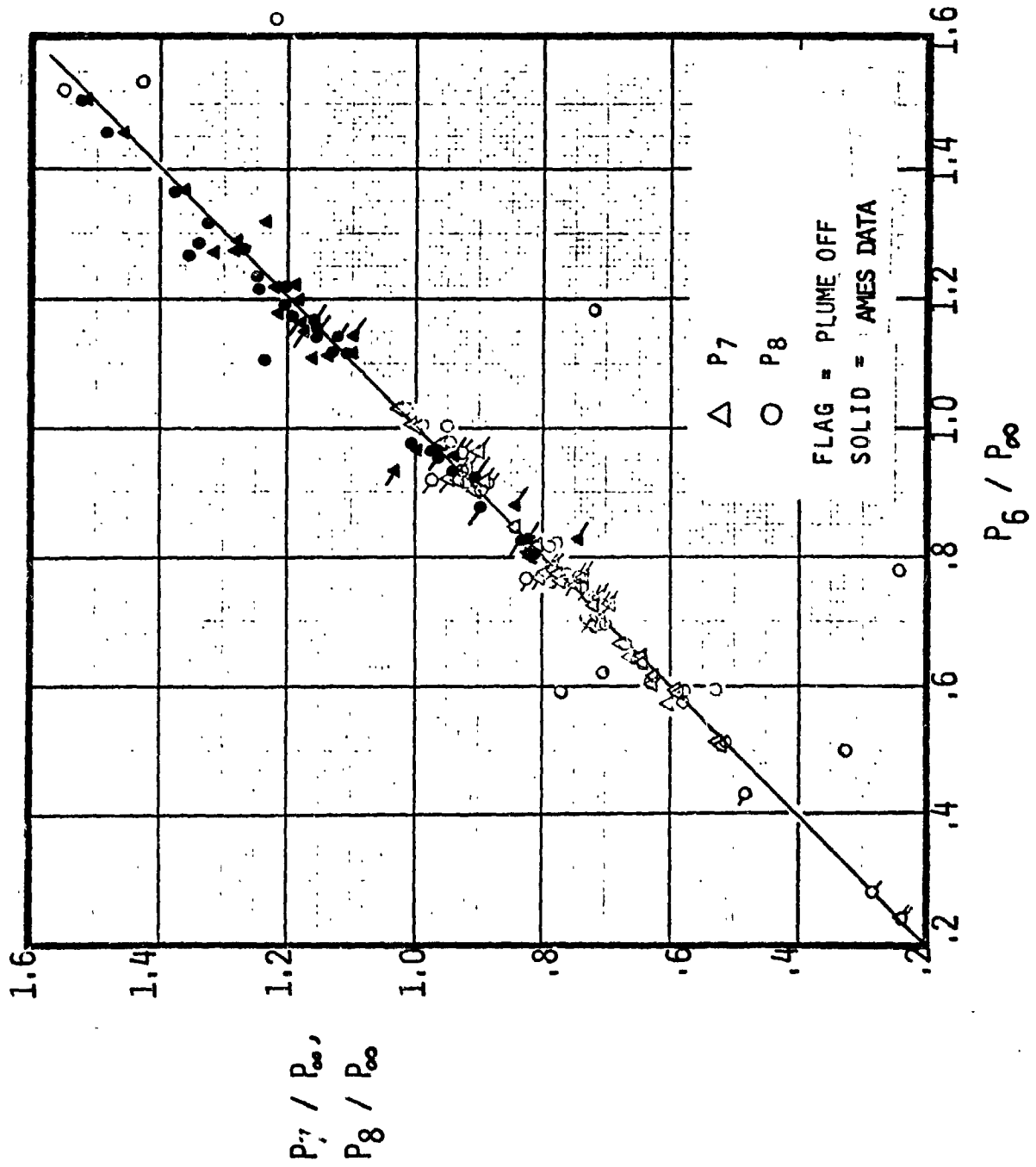


Fig. 9 Selection of Base Pressure Orifice .

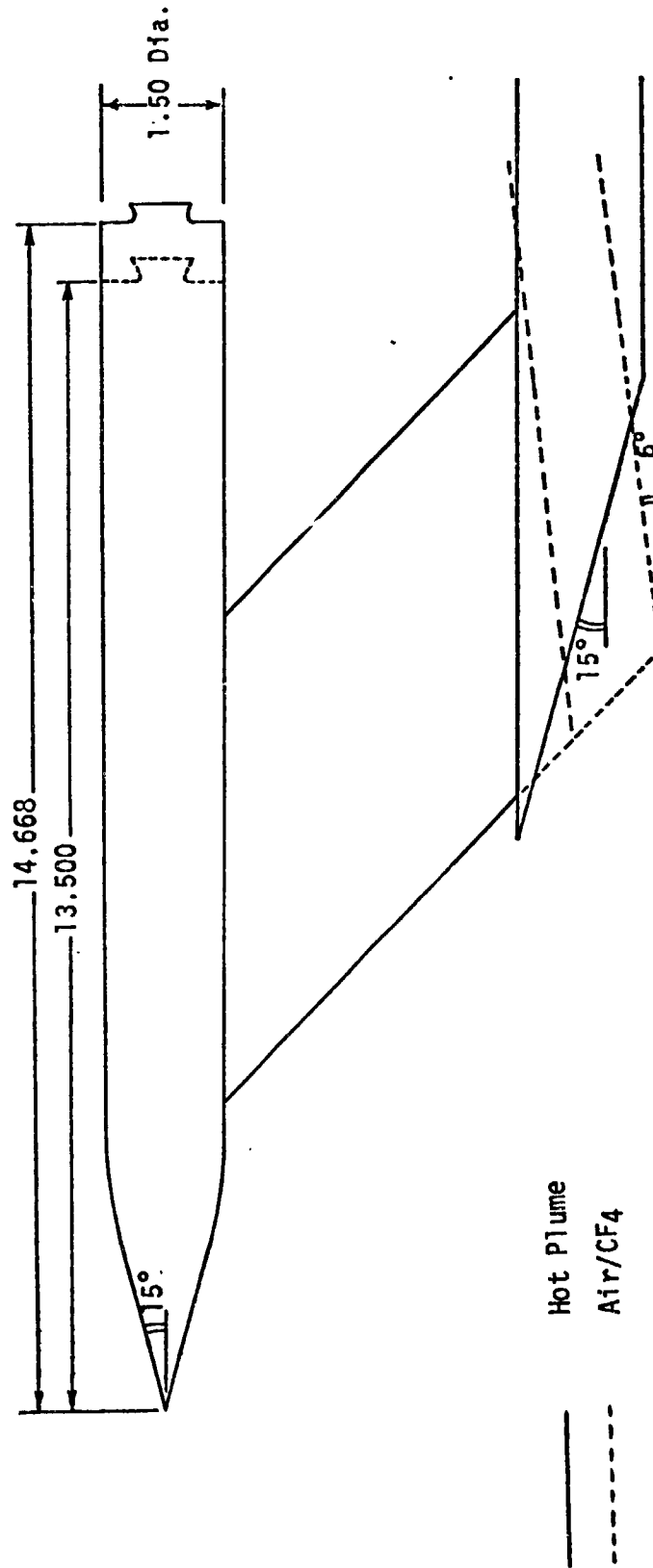
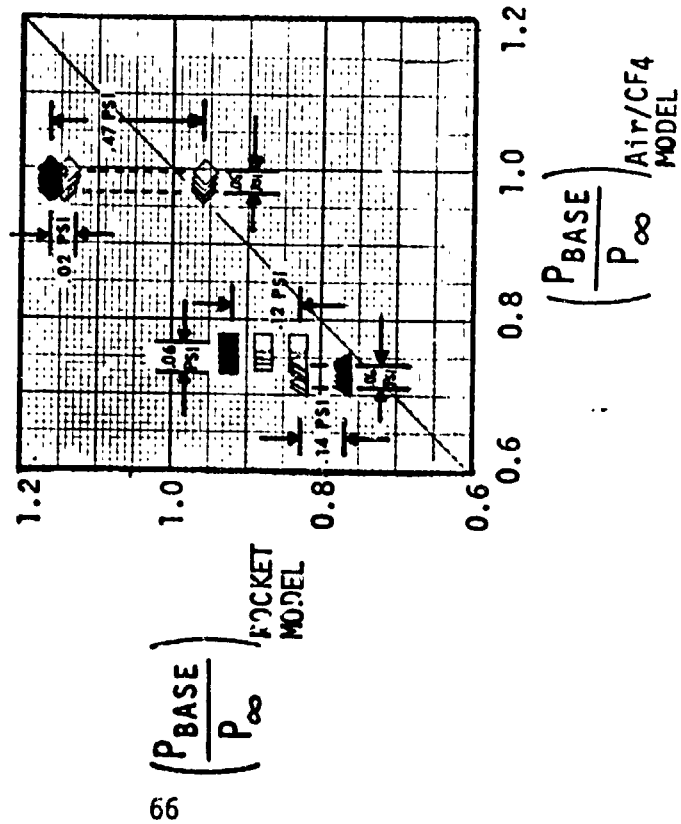


Fig. 11 Model Similarity

NO PLUME

BASE PRESSURES

Solid Symbols - Recomputed	Design M
Open Symbols - On-Line Data	M = 1.5
▲	M = 1.2 (1.3 for Air/CF4 data)
■	M = 0.3
△	
□	
◇	



BODY PRESSURES

Solid Symbols - Rocket Model
Open Symbols - Air/CF4 Model

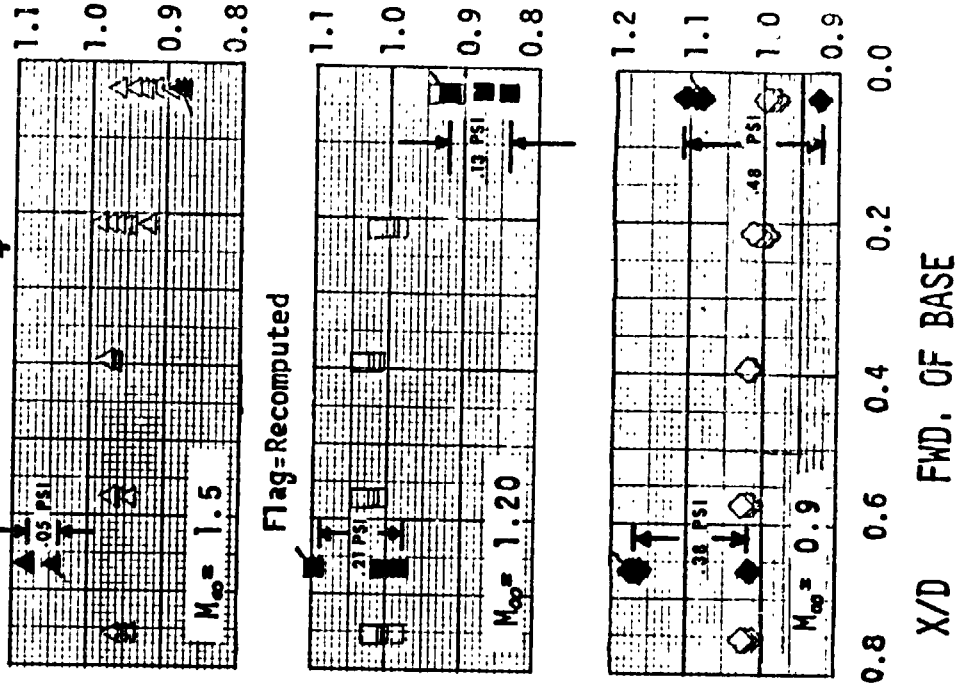


Fig. 12 Conformity to Air/CF4 Model Data

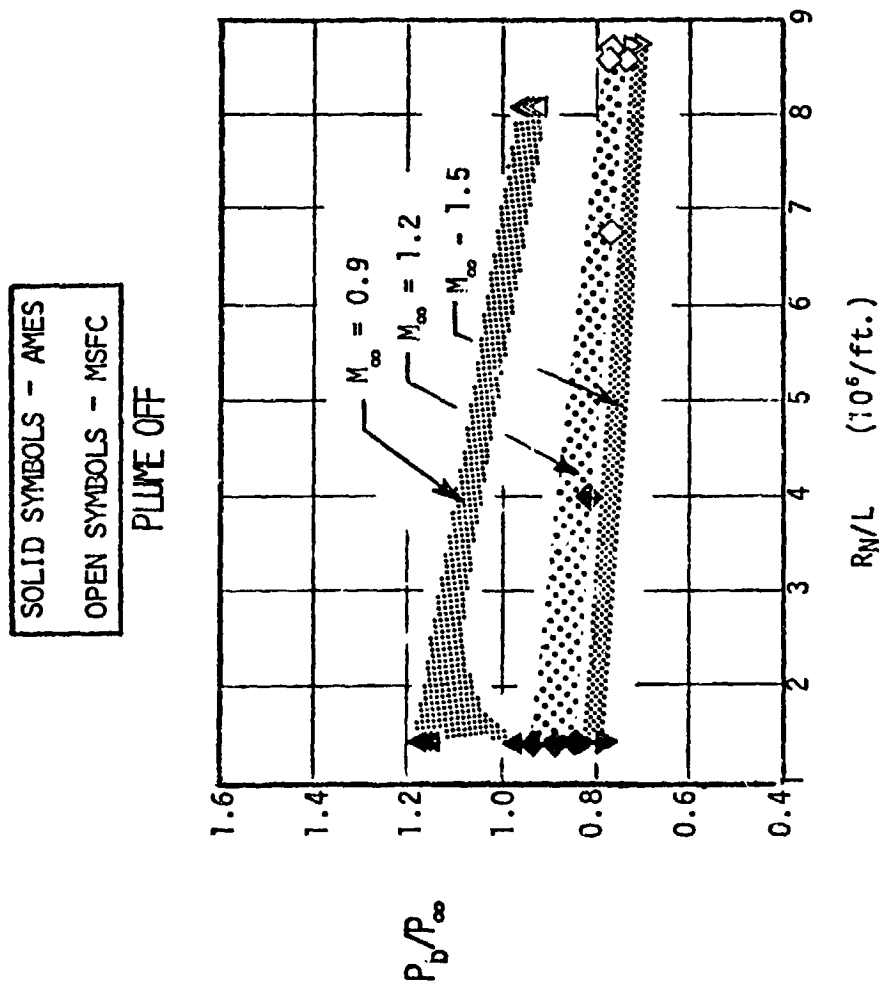


Fig. 13 Tunnel-To-Tunnel Differences

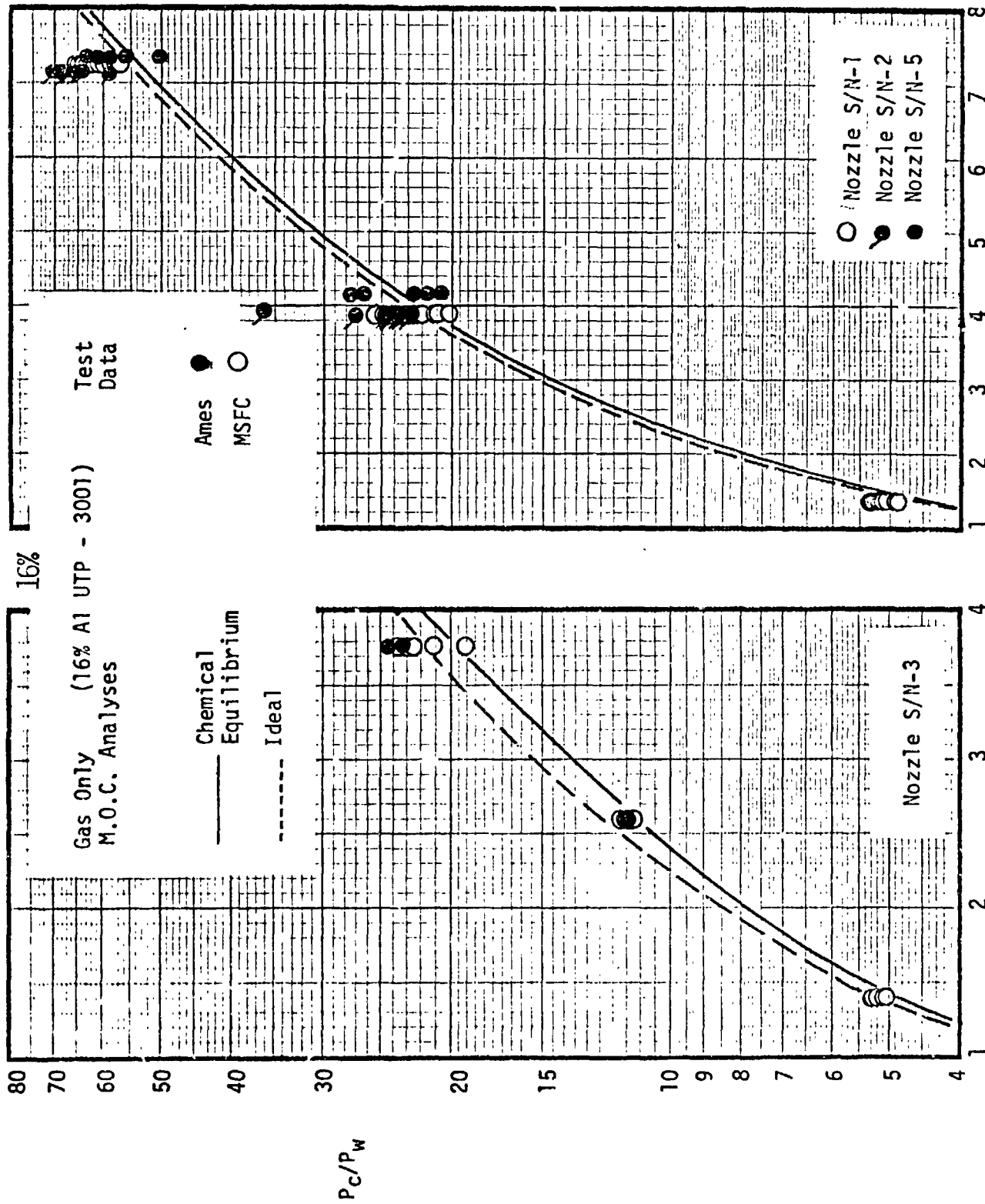


Fig. 14a Nozzle Pressure Data (16% AI UTP - 3001)

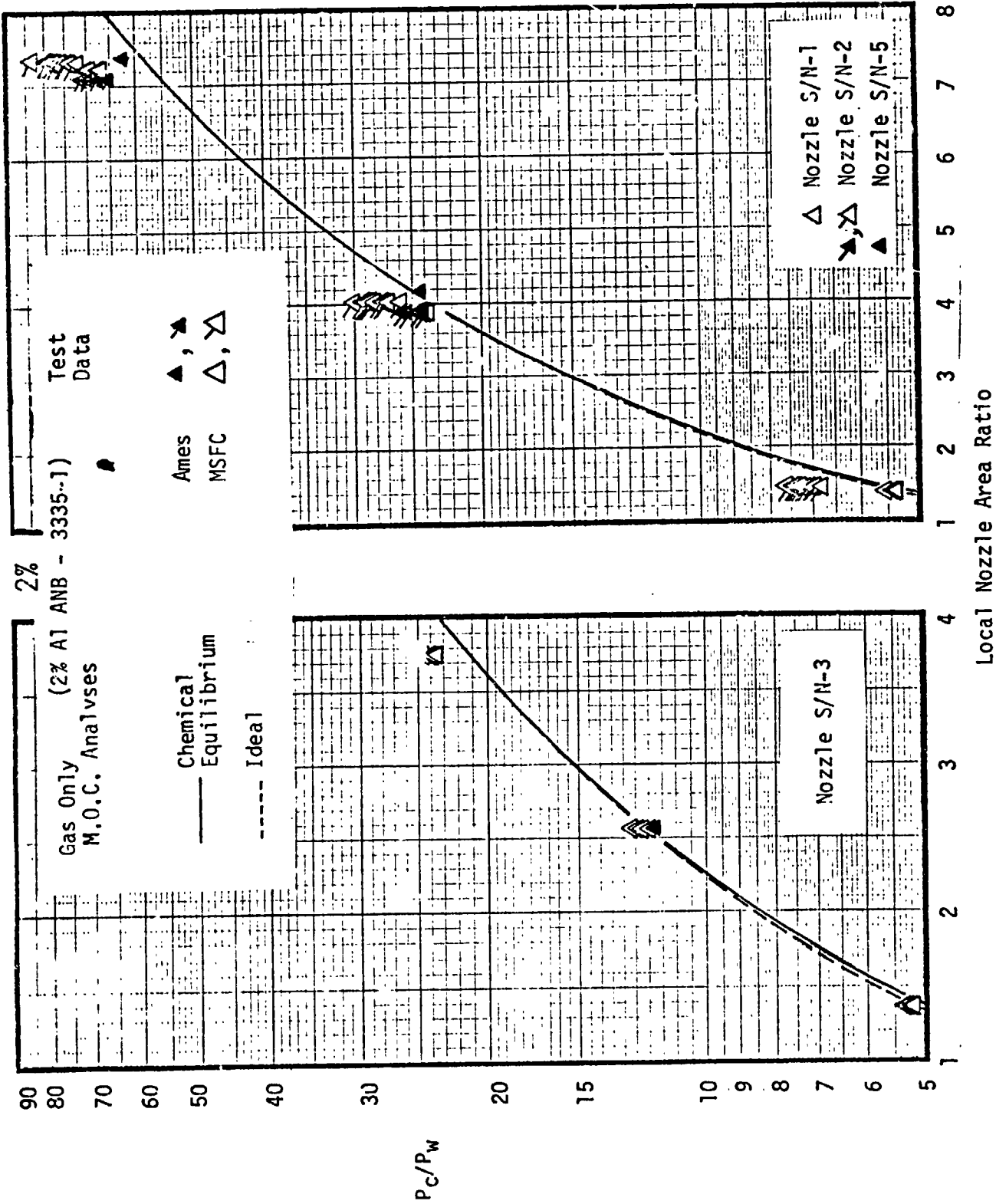


Fig. 14b Nozzle Pressure Data (2% AI ANB - 3335-1)

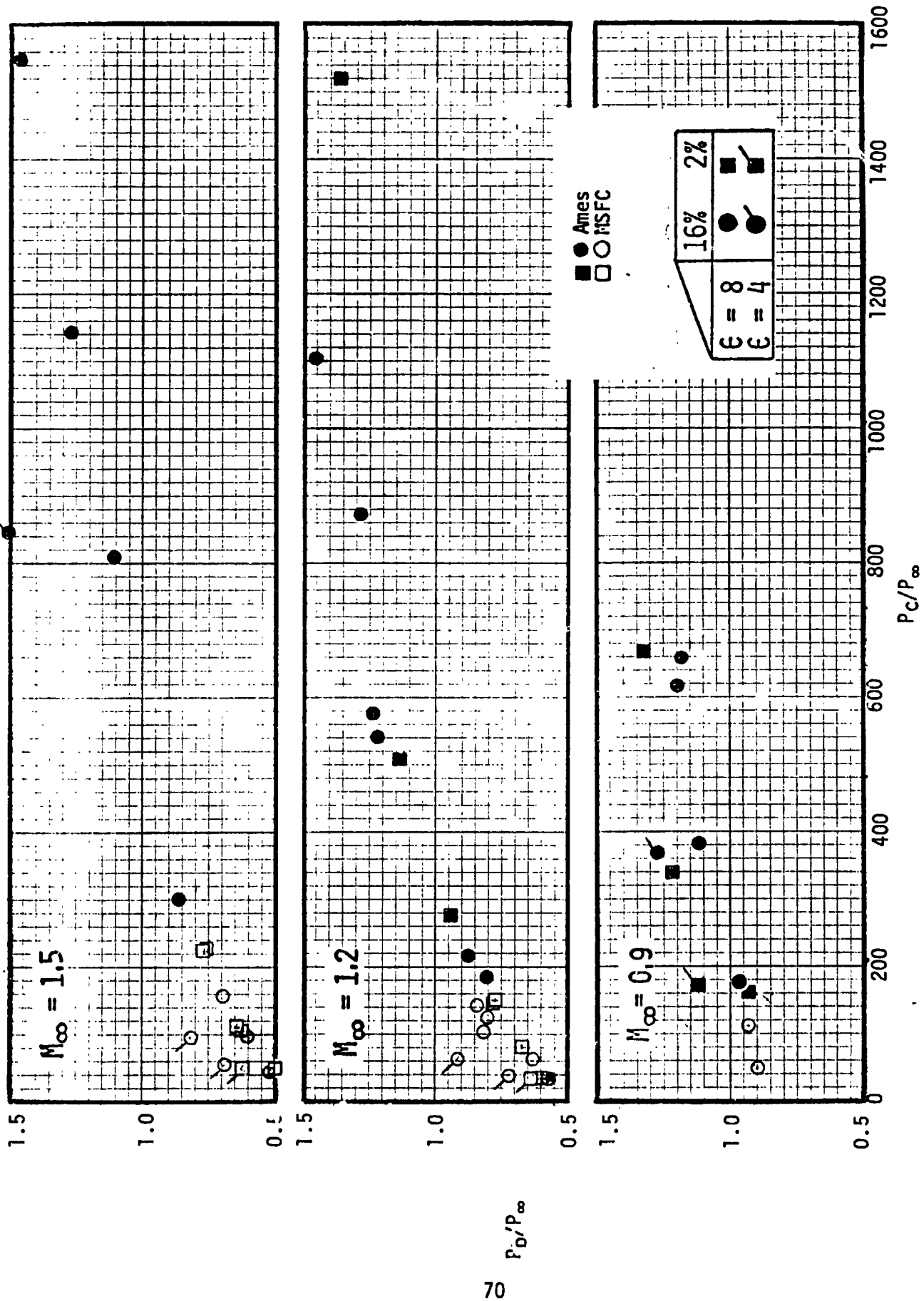


Fig. 15 Base Pressure Test Data

AMES DATA

— $\epsilon = 8$
 - - - $\epsilon = 4$

(16% AL UNLESS NOTED) (* = 2% AL)

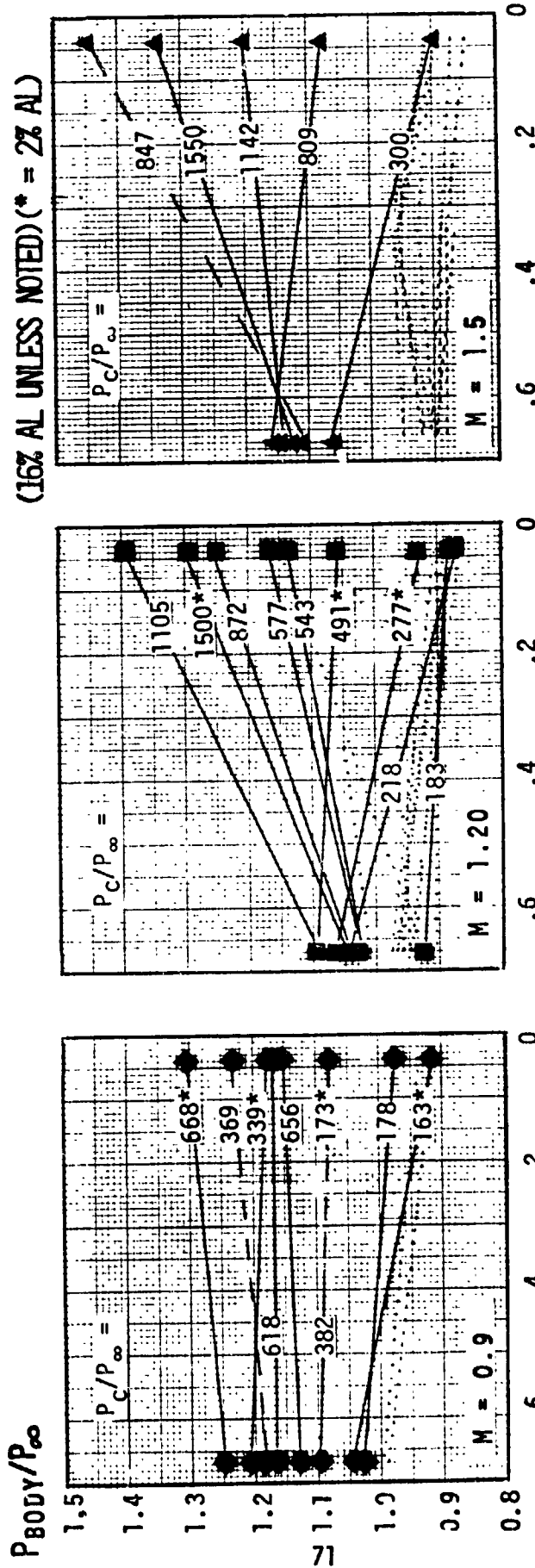
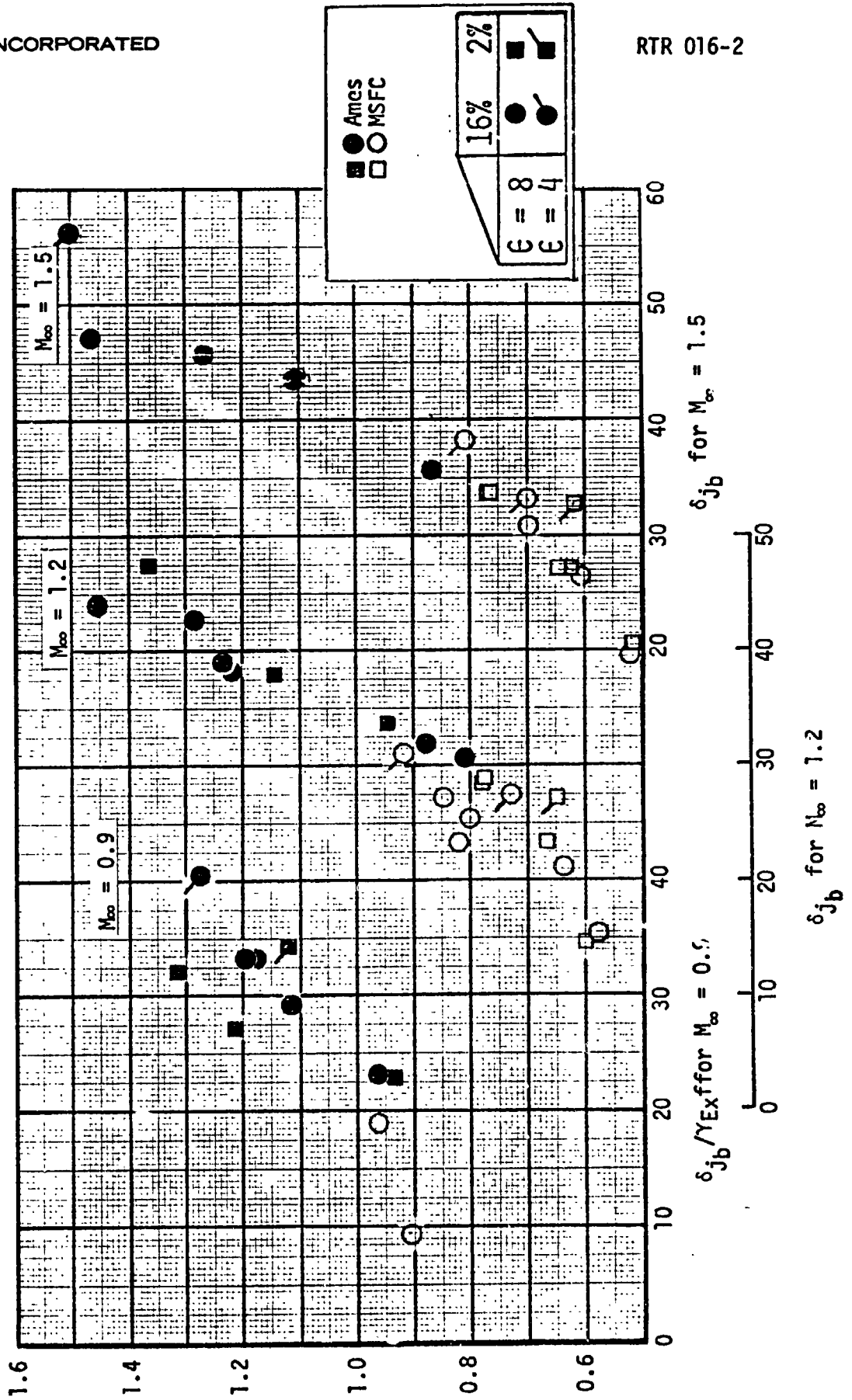


Fig. 16 Body Pressure Test Data

Fig. 17 Correlation of Base Pressure with Plume Initial Slope

GAS-ONLY, IDEAL



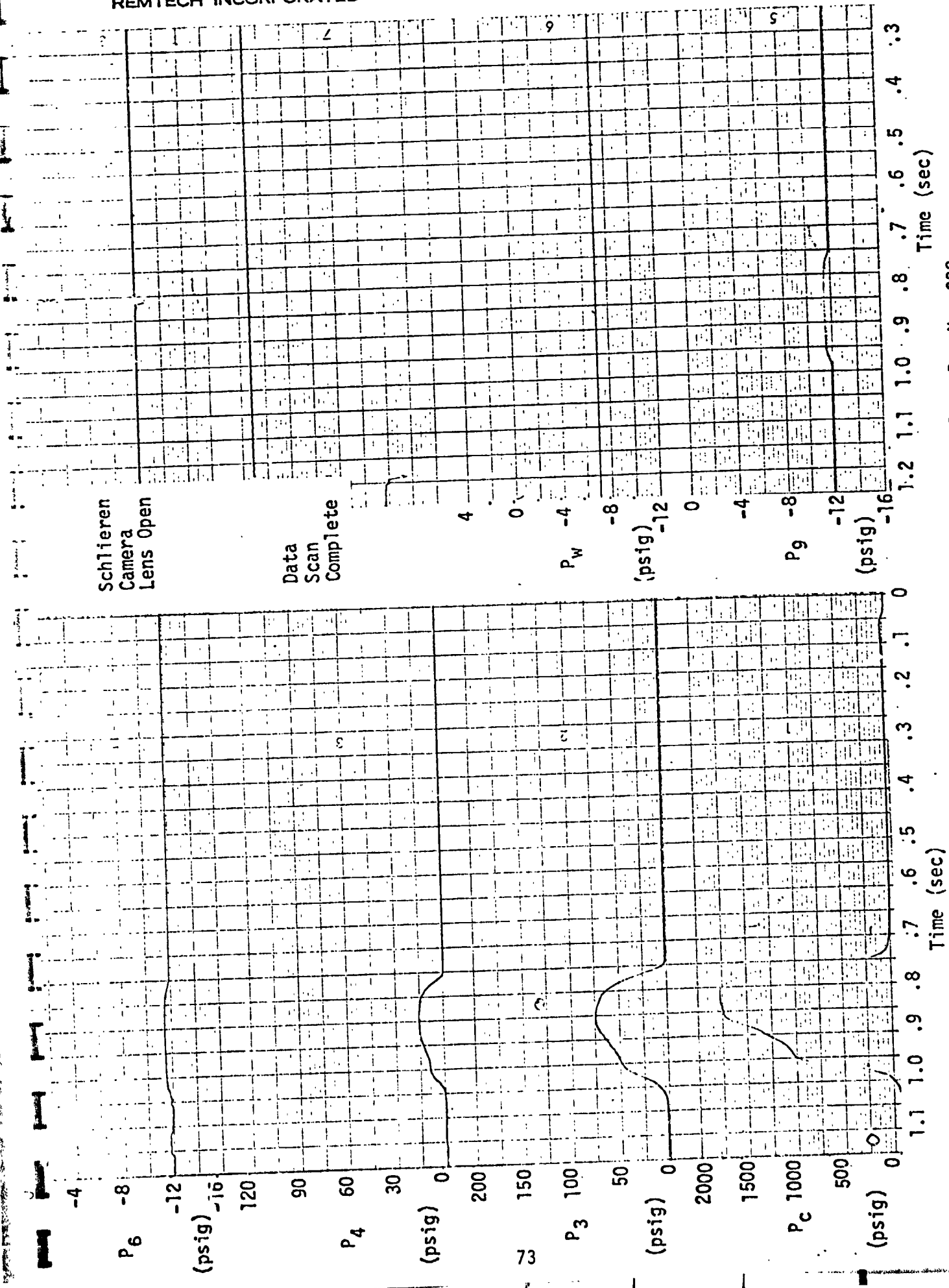


Fig. 18 Brush Oscillograph Time History Sample - Run No. 398



$M_{\infty} = 1.5$
 $\epsilon = 8$
 $P_c = 1991 \text{ psia}$
 $P_c/P_{\infty} = 1550$
UTP-3001 (16% Al)

Fig. 19 Schlieren Photograph Sample - Run No. 424

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OF POOR QUALITY

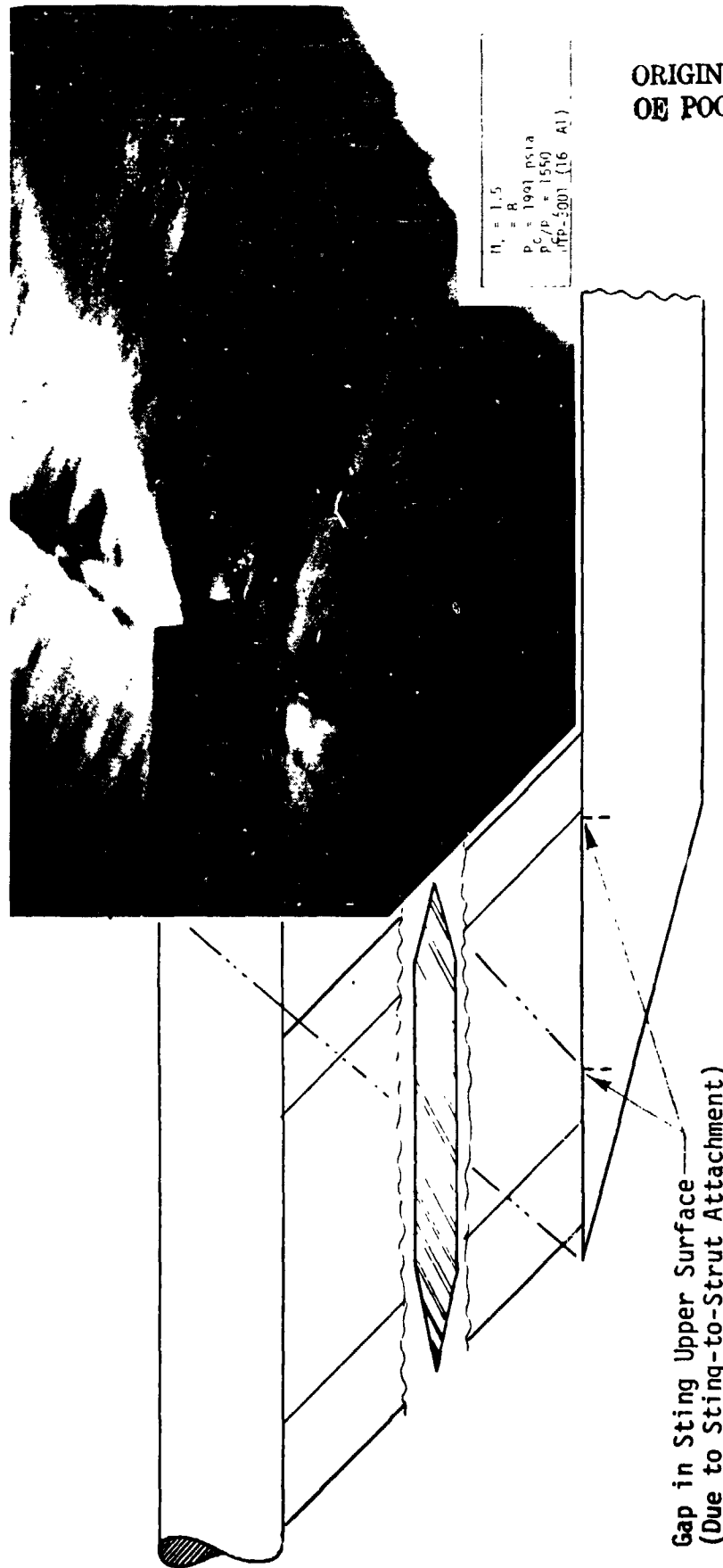


Fig. 20 Possible Sources of Shocks in Schlieren Photograph

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:

<u>Run No.</u>	<u>Hot Firing</u>	<u>Plume-Off Runs</u>
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	

00

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TST-033 PH-1 TN-66 RUN-391 SEQ-1 ID-PKLSOUT2 24 SEP 74@16:35 PAGE 1

RUN:SEQ
351:1

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 2X AL

PREF PCAL
1418.8 2115.4

RUN:SEQ
396:5

TST P TN
53 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 2X AL

PREF PCAL
1414.5 2117.6

RUN:SEQ
598:11

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 2X AL

PREF PCAL
1422.3 2119.7

9.0

REMTECH INCORPORATED

TST-033 PH-1 TN-66 RUN-399 SEC-15 ID-PRESSOUT2 24 SEP 74016:35 PAGE 2

RUN:SEQ
399:15

TST P TN
33 1 66

LIST CONF MACH 0 P PT TT RN/L PROPELLANT
2 38 1.208 265.9 260.3 637.8 75.1 1.414 28 AL

PREF PCAL
1407.5 2118.3

RUN:SEQ
400:17

TST P TN
33 1 60

LIST CONF MACH 0 P PT TT RN/L PROPELLANT
2 38 1.206 265.7 261.0 637.8 75.9 1.411 28 AL

PREF PCAL
1407.5 2118.3

RUN:SEQ
401:18

TST P TN
33 1 66

LIST CONF MACH 0 P PT TT RN/L PROPELLANT
2 38 0.896 210.6 374.8 631.2 72.1 1.322 28 AL

PREF PCAL
1406.1 2118.3

REMTECH INCORPORATED

TST-053 PH-1 IN-66 RUN-405 SEC-26 IC-PRESSCUT2 24 SEP 74216:35 PAGL 3

FUN:SEQ
405:26

TST P IN
33 1 66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.855	210.7	376.2	632.5	81.6	1.254	16% AL

PKF PCAL
1426.6 2109.8

RUN:SEQ
406:31

TST P IN
33 1 66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	0.892	210.4	377.5	653.2	77.4	1.307	16% AL

PKF PCAL
1425.1 2105.8

RUN:SEQ
407:36

TST P IN
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	10% AL

PKF PCAL
1425.0 2111.6

RUN:SEC
409:38

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	28 AL

PREF PCAL
1445.7 0.0

RUN:SEC
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	168 AL

PREF PCAL
1440.7 2118.3

RUN:SEC
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	68.5	1.340	168 AL

PREF PCAL
1445.0 2119.7

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PAGE 5

ID-PROSSCUT2 24 SLP 74016:35

RUN-411 SEC-43

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	782.5	763.4	1870.6	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

7SF-033 PH-1 TN-66 RUN-414 SEQ-47 IC-PRESSOUT2 24 SEP 74016:35

HUN:SEQ
414:47

TST P TN
33 1 66

LIST CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2 38	1.212	266.4	259.0	637.8	71.8	1.426	16% AL

PREF PCAL
1449.2 2117.7

RUN:SEC
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	1.425	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	273.7	185.6	635.7	77.8	1.506	16% AL

PREF PCAL
1452.0 2120.4

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PAGE 7

IC-PRESSDU.2 24 SEP 74 216:35

SEQ-50

RUN-417

PH-1 TN-66

RUN:SEC
417:50

TST P TN
33 1 66

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.457	273.8	184.3	635.7	78.2	1.565	168 AL

PREF PCAL
1452.0 2120.4

RUN:SEC
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	1.557	168 AL

PREF PCAL
1447.1 2.16.2

RUN:SEC
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	168 AL

PREF PCAL
1448.5 2116.2

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	168 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	168 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	192.9	635.7	70.6	1.390	168 AL

PREF PCAL
1426.6 2116.9

IC PROSSOUT2 24 SEP 74@16:35

SEQ-59

IN-00 RUN-123

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	629.9	70.6	1.435	2% AL

PREF PCAL
1420.2 2118.5

RUN:SEQ
424:60

TST P TN
33 1 06

LIST	CONF	MACH	Q	P	PT	TT	RN/L	PROPELLANT
2	38	1.456	274.4	185.0	637.2	70.2	1.375	16% AL

PREF PCAL
1419.5 2117.6

RUN LIST INTSTEP CONF PROPELLANT SAMP.RATE
 391 1 66/033/1 38 24AL 1000

FRAME TIME	Pn	Ptn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
						(P2/PTC)n	(P1/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
1	375	632	0.895	-1	-0.5	-3.2637	-2.1601	1.167	1.167	1.165	1.096	1.173		
2	375	632	0.895	-2	-0.9	-1.7765	-1.1897	1.184	1.184	1.152	1.093	1.172		
3	375	632	0.895	-3	-1.1	-1.4625	-1.0148	1.165	1.187	1.164	1.096	1.173		
4	375	632	0.895	-2	-0.9	-1.8338	-1.2971	1.167	1.188	1.165	1.098	1.173		
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

RUN LIST TWSTSP CONF PROPRIANT SAMP.RATE
 336 1 66/033/1 38 24AL 1000

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

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

RUN LIST TESTSTEP CONF PROPellant SAMP RATE
 396 1 66/033/1 38 24AL 1000

FRAME TIME	Pn	Ptn	MACHn	PFCn	NOZZLE PRESS.			(P4/PTC)n	BASE PRESS.			BODY PRESS.		
					(P2/PTC)n	(P3/PTC)n	(P5/PTC)n		(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/P)n
33	375	632	0.895	823	315.5	0.0370	0.0131	1.195	1.183	1.191	1.169	1.169	1.201	
34	375	632	0.895	828	317.4	0.0372	0.0132	1.198	1.183	1.192	1.169	1.169	1.201	
35	375	632	0.895	832	319.1	0.0374	0.0133	1.201	1.184	1.192	1.171	1.171	1.201	
36	375	632	0.895	836	320.7	0.0375	0.0134	1.206	1.186	1.194	1.172	1.172	1.203	
37	375	632	0.895	840	322.2	0.0377	0.0136	1.214	1.189	1.195	1.174	1.174	1.203	
38	375	632	0.895	843	323.2	0.0378	0.0137	1.217	1.186	1.194	1.171	1.171	1.201	
39	375	632	0.895	845	323.9	0.0378	0.0137	1.223	1.187	1.194	1.172	1.172	1.201	
40	375	632	0.895	848	325.1	0.0381	0.0138	1.223	1.191	1.195	1.174	1.174	1.203	
41	375	632	0.895	850	326.0	0.0382	0.0139	1.233	1.191	1.195	1.174	1.174	1.203	
42	375	632	0.895	852	326.8	0.0383	0.0140	1.235	1.192	1.197	1.174	1.174	1.201	
43	375	632	0.895	854	327.4	0.0385	0.0140	1.235	1.192	1.197	1.175	1.175	1.201	
44	375	632	0.895	855	328.0	0.0385	0.0140	1.232	1.192	1.197	1.174	1.174	1.201	
45	375	632	0.895	856	328.3	0.0387	0.0139	1.226	1.191	1.195	1.172	1.172	1.201	
46	375	632	0.895	858	328.9	0.0387	0.0139	1.221	1.192	1.198	1.175	1.175	1.203	
47	375	632	0.895	860	329.9	0.0389	0.0138	1.221	1.194	1.197	1.177	1.177	1.201	
48	375	632	0.895	861	330.1	0.0389	0.0138	1.209	1.191	1.194	1.175	1.175	1.201	
49	375	632	0.895	861	330.3	0.0390	0.0138	1.204	1.191	1.197	1.175	1.175	1.201	
50	375	632	0.895	863	330.8	0.0391	0.0138	1.204	1.191	1.198	1.175	1.175	1.201	
51	375	632	0.895	864	331.2	0.0392	0.0138	1.204	1.191	1.198	1.175	1.175	1.201	
52	375	632	0.895	865	331.6	0.0392	0.0138	1.206	1.191	1.198	1.175	1.175	1.203	
53	375	632	0.895	866	332.0	0.0394	0.0139	1.206	1.194	1.198	1.175	1.175	1.204	
54	375	632	0.895	867	332.6	0.0394	0.0140	1.209	1.194	1.200	1.178	1.178	1.201	
55	375	632	0.895	867	332.6	0.0394	0.0139	1.217	1.194	1.197	1.174	1.174	1.201	
56	375	632	0.895	868	332.9	0.0396	0.0141	1.223	1.192	1.198	1.175	1.175	1.201	
57	375	632	0.895	870	333.5	0.0396	0.0141	1.226	1.195	1.203	1.177	1.177	1.203	
58	375	632	0.895	871	333.9	0.0396	0.0142	1.227	1.194	1.198	1.177	1.177	1.203	
59	375	632	0.895	872	334.3	0.0397	0.0142	1.227	1.194	1.198	1.177	1.177	1.201	
60	375	632	0.895	873	334.7	0.0398	0.0142	1.224	1.194	1.198	1.177	1.177	1.201	
61	375	632	0.895	874	335.1	0.0397	0.0141	1.224	1.194	1.198	1.177	1.177	1.201	
62	375	632	0.895	874	335.1	0.0398	0.0140	1.221	1.194	1.198	1.175	1.175	1.201	
63	375	632	0.895	875	335.6	0.0400	0.0141	1.209	1.192	1.197	1.175	1.175	1.201	
64	375	632	0.895	877	336.2	0.0400	0.0140	1.201	1.194	1.200	1.178	1.178	1.201	

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

PRELIMINARY DATA

RUN LIST ENTSTEP CONF PROPELLANT SAMP.RATE
 396 1 66/033/1 38 24AL 1000

FRAME	TRJ.S	Pn	P7n	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS. (P3/PTC)n	(P4/PTC)n	(P6/P)n	BASE PRESS. (P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS. (P10/P)n	(P11/P)n
64	64	375	632	0.895	877	336.2	0.0400	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	0.0400	0.0139	1.194	1.191	1.198	1.175	1.201	
66	66	375	632	0.895	877	336.4	0.0400	0.0400	0.0138	1.191	1.191	1.198	1.175	1.201	
67	67	375	632	0.895	878	336.8	0.0400	0.0400	0.0138	1.192	1.191	1.198	1.177	1.201	
68	68	375	632	0.895	878	336.8	0.0401	0.0401	0.0138	1.192	1.191	1.198	1.175	1.201	
69	69	375	632	0.895	879	337.2	0.0402	0.0402	0.0138	1.195	1.192	1.200	1.177	1.201	
70	70	375	632	0.895	880	337.4	0.0403	0.0403	0.0139	1.201	1.194	1.201	1.178	1.203	
71	71	375	632	0.895	880	337.6	0.0403	0.0403	0.0140	1.206	1.192	1.200	1.175	1.201	
72	72	375	632	0.895	880	337.4	0.0402	0.0402	0.0139	1.209	1.192	1.198	1.175	1.201	
73	73	375	632	0.895	880	337.6	0.0405	0.0405	0.0141	1.217	1.195	1.200	1.177	1.201	
74	74	375	632	0.895	881	337.9	0.0404	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	0.0404	0.0141	1.221	1.195	1.200	1.178	1.201	
76	76	375	632	0.895	881	337.9	0.0404	0.0404	0.0142	1.223	1.195	1.201	1.178	1.201	
77	77	375	632	0.895	882	338.1	0.0405	0.0405	0.0142	1.220	1.195	1.201	1.178	1.201	
78	78	375	632	0.895	882	338.1	0.0405	0.0405	0.0141	1.217	1.195	1.200	1.177	1.201	
79	79	375	632	0.895	881	337.9	0.0405	0.0405	0.0140	1.210	1.194	1.200	1.177	1.203	
80	80	375	632	0.895	883	338.5	0.0407	0.0407	0.0141	1.207	1.197	1.203	1.180	1.204	
81	81	375	632	0.895	883	338.5	0.0407	0.0407	0.0140	1.201	1.194	1.201	1.178	1.203	
82	82	375	632	0.895	882	338.3	0.0406	0.0406	0.0139	1.197	1.192	1.200	1.177	1.203	
83	83	375	632	0.895	882	338.3	0.0407	0.0407	0.0139	1.195	1.192	1.200	1.177	1.201	
84	84	375	632	0.895	882	338.3	0.0408	0.0408	0.0139	1.195	1.192	1.201	1.177	1.201	
85	85	375	632	0.895	882	338.3	0.0408	0.0408	0.0139	1.195	1.192	1.201	1.178	1.201	
86	86	375	632	0.895	883	338.5	0.0410	0.0410	0.0139	1.200	1.192	1.201	1.178	1.203	
87	87	375	632	0.895	883	338.7	0.0410	0.0410	0.0140	1.204	1.194	1.203	1.178	1.203	
88	88	375	632	0.895	883	338.5	0.0409	0.0409	0.0140	1.207	1.191	1.200	1.175	1.201	
89	89	375	632	0.895	883	338.1	0.0408	0.0408	0.0141	1.212	1.192	1.200	1.177	1.201	
90	90	375	632	0.895	883	338.5	0.0410	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	0.0410	0.0142	1.220	1.194	1.201	1.178	1.201	
92	92	375	632	0.895	883	338.5	0.0410	0.0410	0.0143	1.220	1.194	1.201	1.177	1.201	
93	93	375	632	0.895	882	338.3	0.0411	0.0411	0.0143	1.220	1.194	1.201	1.177	1.200	
94	94	375	632	0.895	882	338.1	0.0411	0.0411	0.0143	1.217	1.194	1.200	1.177	1.200	
95	95	375	632	0.895	881	337.9	0.0410	0.0410	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 ENTSTP CONF PROPELLANT SAMP RATE
 356 1 66/033/1 38 24AL 1000

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	(P9/P)n	BODY PRESS. (P10/P)n	(P11/P)n
96	96	632	0.895	881	337.9	0.0411	0.0411	0.0142	1.206	1.194	1.201	1.178	1.178	1.201
97	97	632	0.895	882	338.1	0.0412	0.0412	0.0141	1.201	1.194	1.203	1.178	1.178	1.201
98	98	632	0.895	881	337.7	0.0412	0.0412	0.0141	1.194	1.192	1.201	1.177	1.177	1.200
99	99	632	0.895	880	337.6	0.0412	0.0412	0.0140	1.191	1.191	1.201	1.177	1.177	1.200
100	100	632	0.895	880	337.4	0.0413	0.0413	0.0140	1.191	1.192	1.201	1.177	1.177	1.201
101	101	632	0.895	880	337.4	0.0413	0.0413	0.0140	1.192	1.192	1.203	1.177	1.177	1.201
102	102	632	0.895	879	337.2	0.0414	0.0414	0.0141	1.195	1.192	1.203	1.178	1.178	1.201
103	103	632	0.895	879	337.2	0.0414	0.0414	0.0142	1.200	1.195	1.204	1.180	1.180	1.203
104	104	632	0.895	879	337.2	0.0414	0.0414	0.0142	1.204	1.195	1.204	1.178	1.178	1.203
105	105	632	0.895	878	336.8	0.0414	0.0414	0.0141	1.207	1.194	1.201	1.175	1.175	1.200
106	106	632	0.895	878	336.6	0.0414	0.0414	0.0143	1.215	1.195	1.203	1.178	1.178	1.201
107	107	632	0.895	878	336.8	0.0415	0.0415	0.0144	1.220	1.197	1.204	1.178	1.178	1.201
108	108	632	0.895	878	336.8	0.0415	0.0415	0.0144	1.221	1.197	1.204	1.178	1.178	1.201
109	109	632	0.895	878	336.6	0.0415	0.0415	0.0144	1.221	1.197	1.204	1.178	1.178	1.201
110	110	632	0.895	878	336.6	0.0415	0.0415	0.0144	1.220	1.197	1.204	1.178	1.178	1.201
111	111	632	0.895	878	336.6	0.0414	0.0414	0.0144	1.217	1.197	1.203	1.178	1.178	1.201
112	112	632	0.895	877	336.4	0.0414	0.0414	0.0143	1.209	1.195	1.203	1.177	1.177	1.201
113	113	632	0.895	878	336.8	0.0414	0.0414	0.0143	1.204	1.195	1.204	1.181	1.181	1.203
114	114	632	0.895	879	337.0	0.0415	0.0415	0.0143	1.198	1.197	1.204	1.180	1.180	1.201
115	115	632	0.895	878	336.8	0.0415	0.0415	0.0142	1.192	1.194	1.204	1.180	1.180	1.201
116	116	632	0.895	878	336.6	0.0415	0.0415	0.0141	1.191	1.194	1.203	1.178	1.178	1.201
117	117	632	0.895	878	336.8	0.0415	0.0415	0.0141	1.191	1.184	1.203	1.178	1.178	1.201
118	118	632	0.895	878	336.8	0.0415	0.0415	0.0141	1.189	1.194	1.203	1.178	1.178	1.201
119	119	632	0.895	879	337.0	0.0416	0.0416	0.0141	1.192	1.194	1.203	1.178	1.178	1.201
120	120	632	0.895	879	337.2	0.0416	0.0416	0.0142	1.195	1.194	1.203	1.178	1.178	1.201
121	121	632	0.895	879	337.2	0.0416	0.0416	0.0143	1.201	1.195	1.204	1.180	1.180	1.201
122	122	632	0.895	879	337.2	0.0416	0.0416	0.0143	1.204	1.194	1.204	1.180	1.180	1.201
123	123	632	0.895	878	336.8	0.0415	0.0415	0.0143	1.204	1.194	1.203	1.177	1.177	1.200
124	124	632	0.895	880	337.4	0.0416	0.0416	0.0145	1.209	1.194	1.201	1.178	1.178	1.201
125	125	632	0.895	880	337.4	0.0416	0.0416	0.0145	1.215	1.195	1.201	1.178	1.178	1.201
126	126	632	0.895	880	337.4	0.0416	0.0416	0.0146	1.220	1.197	1.203	1.178	1.178	1.200
127	127	632	0.895	880	337.4	0.0416	0.0416	0.0145	1.223	1.197	1.203	1.178	1.178	1.200
127	127	632	0.895	880	337.4	0.0416	0.0416	0.0145	1.220	1.195	1.201	1.177	1.177	1.200

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

PRELIMINARY DATA

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

R05 LIST IN:STP 1 66/033/1 38 2%AL 1000
 CONF PROPELLANT SAMP RATE

FRANK TIME	Pn	Ptn	MACH	FICR	(FIC/P)n	NOZZLE PRESS.		(P4/PTC)n	BASE PRESS.		(P8/P)n	BODY PRESS.	
						(P2/PTC)n	(P3/FTC)n		(P6/P)n	(P7/P)n		(P9/P)n	(P10/P)n
160	375	632	0.895	870	333.7	0.0420	0.0420	0.0145	1.223	1.195	1.201	1.177	1.200
161	375	632	0.895	869	333.3	0.0420	0.0420	0.0146	1.220	1.194	1.200	1.177	1.200
162	375	632	0.895	868	332.9	0.0421	0.0421	0.0145	1.214	1.154	1.200	1.177	1.200
163	375	632	0.895	869	333.1	0.0421	0.0421	0.0144	1.209	1.195	1.203	1.180	1.201
164	375	632	0.895	869	333.1	0.0421	0.0421	0.0144	1.201	1.195	1.201	1.178	1.201
165	375	632	0.895	868	332.8	0.0421	0.0421	0.0143	1.197	1.192	1.201	1.177	1.200
166	375	632	0.895	867	332.4	0.0420	0.0420	0.0142	1.194	1.192	1.201	1.177	1.201
167	375	632	0.895	866	332.2	0.0421	0.0421	0.0143	1.194	1.192	1.200	1.177	1.201
168	375	632	0.895	866	332.2	0.0421	0.0421	0.0143	1.195	1.192	1.201	1.177	1.201
169	375	632	0.895	866	332.0	0.0421	0.0421	0.0143	1.198	1.192	1.201	1.178	1.201
170	375	632	0.895	865	331.6	0.0421	0.0421	0.0144	1.204	1.194	1.203	1.180	1.203
171	375	632	0.895	865	331.6	0.0421	0.0421	0.0144	1.207	1.192	1.200	1.177	1.203
172	375	632	0.895	863	330.8	0.0422	0.0422	0.0145	1.218	1.194	1.200	1.177	1.201
173	375	632	0.895	863	330.8	0.0422	0.0422	0.0145	1.212	1.191	1.198	1.175	1.201
174	375	632	0.895	863	330.8	0.0422	0.0422	0.0145	1.221	1.195	1.200	1.177	1.201
175	375	632	0.895	862	330.5	0.0422	0.0422	0.0146	1.223	1.195	1.200	1.177	1.201
176	375	632	0.895	861	330.3	0.0422	0.0422	0.0146	1.223	1.194	1.200	1.177	1.201
177	375	632	0.895	860	329.9	0.0422	0.0422	0.0146	1.220	1.194	1.200	1.177	1.200
178	375	632	0.895	859	329.5	0.0422	0.0422	0.0145	1.215	1.192	1.198	1.174	1.198
179	375	632	0.895	858	328.9	0.0422	0.0422	0.0145	1.209	1.192	1.200	1.178	1.200
180	375	632	0.895	858	328.9	0.0423	0.0423	0.0145	1.204	1.194	1.201	1.178	1.201
181	375	632	0.895	857	328.7	0.0423	0.0423	0.0144	1.197	1.192	1.200	1.175	1.200
182	375	632	0.895	856	328.2	0.0423	0.0423	0.0143	1.192	1.191	1.198	1.175	1.200
183	375	632	0.895	855	327.8	0.0423	0.0423	0.0143	1.189	1.191	1.198	1.175	1.200
184	375	632	0.895	854	327.4	0.0423	0.0423	0.0143	1.189	1.191	1.198	1.175	1.200
185	375	632	0.895	853	326.8	0.0423	0.0423	0.0142	1.189	1.189	1.198	1.175	1.200
186	375	632	0.895	852	326.8	0.0424	0.0424	0.0143	1.192	1.191	1.200	1.175	1.201
187	375	632	0.895	852	326.8	0.0424	0.0424	0.0144	1.197	1.192	1.200	1.177	1.201
188	375	632	0.895	851	326.2	0.0424	0.0424	0.0143	1.200	1.189	1.197	1.172	1.198
189	375	632	0.895	849	325.5	0.0424	0.0424	0.0143	1.203	1.189	1.197	1.174	1.200
190	375	632	0.895	849	325.5	0.0425	0.0425	0.0144	1.207	1.191	1.198	1.175	1.200
191	375	632	0.895	848	325.3	0.0424	0.0424	0.0146	1.210	1.192	1.197	1.175	1.200

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

PRELIMINARY DATA

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

FRAME	TYPE	Pn	PTn	MACHn	PTCn	(PTC/P)n	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
192	192	375	632	0.895	847	324.7	0.0425	0.0146	1.210	1.191	1.197	1.174	1.174	1.198	
193	193	375	632	0.895	846	324.5	0.0424	0.0146	1.206	1.191	1.197	1.174	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	1.172	1.198	
195	195	375	632	0.895	844	323.6	0.0424	0.0145	1.200	1.187	1.194	1.171	1.171	1.197	
196	196	375	632	0.895	843	323.4	0.0426	0.0145	1.195	1.189	1.195	1.174	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	1.174	1.200	
198	198	375	632	0.895	842	322.8	0.0425	0.0145	1.183	1.186	1.195	1.172	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	1.171	1.198	
200	200	375	632	0.895	839	321.8	0.0425	0.0142	1.178	1.184	1.194	1.171	1.171	1.198	
201	201	375	632	0.895	838	321.4	0.0425	0.0143	1.178	1.184	1.194	1.171	1.171	1.198	
202	202	375	632	0.895	838	321.3	0.0425	0.0143	1.181	1.184	1.194	1.171	1.171	1.198	
203	203	375	632	0.895	837	320.9	0.0426	0.0143	1.186	1.186	1.195	1.172	1.172	1.200	
204	204	375	632	0.895	837	320.9	0.0426	0.0144	1.192	1.186	1.195	1.171	1.171	1.198	
205	205	375	632	0.895	835	320.1	0.0425	0.0143	1.194	1.184	1.192	1.168	1.168	1.197	
206	206	375	632	0.895	834	319.7	0.0425	0.0145	1.201	1.186	1.194	1.171	1.171	1.198	
207	207	375	632	0.895	833	319.5	0.0425	0.0146	1.206	1.187	1.194	1.171	1.171	1.198	
208	208	375	632	0.895	833	319.3	0.0426	0.0146	1.207	1.187	1.194	1.171	1.171	1.198	
209	209	375	632	0.895	831	318.8	0.0425	0.0146	1.209	1.186	1.192	1.171	1.171	1.198	
210	210	375	632	0.895	831	318.5	0.0425	0.0146	1.206	1.186	1.192	1.169	1.169	1.197	
211	211	375	632	0.895	830	318.2	0.0425	0.0146	1.203	1.186	1.192	1.169	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	1.168	1.197	
213	213	375	632	0.895	828	317.6	0.0425	0.0145	1.192	1.186	1.192	1.171	1.171	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 PROPELLIANT SAMP RATE
 396 1 66/033/1 38 2%AL 1000

FRAME TIME	Pn	Pth	MACH	PTCh	(PTC/P)n	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
257	375	632	0.895	803	307.8	0.0426	0.0145	0.0145	1.203	1.183	1.189	1.168	1.168	1.197
258	375	632	0.895	802	307.6	0.0425	0.0145	0.0145	1.206	1.183	1.189	1.168	1.168	1.197
259	375	632	0.895	801	307.3	0.0426	0.0146	0.0146	1.206	1.183	1.189	1.168	1.168	1.197
261	375	632	0.895	800	306.9	0.0425	0.0145	0.0145	1.203	1.183	1.189	1.166	1.166	1.197
262	375	632	0.895	799	306.5	0.0424	0.0145	0.0145	1.197	1.181	1.189	1.166	1.166	1.197
263	375	632	0.895	799	306.5	0.0426	0.0145	0.0145	1.192	1.184	1.191	1.171	1.171	1.200
264	375	632	0.895	798	306.1	0.0426	0.0144	0.0144	1.186	1.183	1.191	1.169	1.169	1.198
265	375	632	0.895	795	305.3	0.0426	0.0143	0.0143	1.181	1.181	1.189	1.168	1.168	1.198
266	375	632	0.895	795	304.8	0.0427	0.0143	0.0143	1.178	1.181	1.189	1.168	1.168	1.198
267	375	632	0.895	793	304.0	0.0427	0.0143	0.0143	1.178	1.181	1.189	1.168	1.168	1.198
268	375	632	0.895	791	303.2	0.0428	0.0144	0.0144	1.180	1.180	1.187	1.168	1.168	1.198
269	375	632	0.895	788	302.5	0.0428	0.0144	0.0144	1.181	1.180	1.187	1.168	1.168	1.200
270	375	632	0.895	786	301.5	0.0429	0.0145	0.0145	1.187	1.181	1.189	1.169	1.169	1.200
271	375	632	0.895	783	300.4	0.0430	0.0146	0.0146	1.191	1.180	1.186	1.164	1.164	1.197
272	375	632	0.895	778	298.4	0.0430	0.0145	0.0145	1.194	1.177	1.184	1.164	1.164	1.197
273	375	632	0.895	775	297.3	0.0432	0.0147	0.0147	1.200	1.178	1.184	1.164	1.164	1.198
274	375	632	0.895	771	295.8	0.0434	0.0148	0.0148	1.203	1.178	1.183	1.164	1.164	1.197
275	375	632	0.895	767	294.0	0.0435	0.0149	0.0149	1.203	1.177	1.181	1.163	1.163	1.197
276	375	632	0.895	762	292.1	0.0436	0.0150	0.0150	1.201	1.175	1.180	1.161	1.161	1.195
277	375	632	0.895	756	290.0	0.0438	0.0149	0.0149	1.200	1.174	1.178	1.160	1.160	1.194
278	375	632	0.895	750	287.7	0.0439	0.0149	0.0149	1.194	1.171	1.177	1.157	1.157	1.192
279	375	632	0.895	744	285.2	0.0441	0.0149	0.0149	1.184	1.169	1.175	1.158	1.158	1.194
280	375	632	0.895	738	283.1	0.0444	0.0150	0.0150	1.180	1.171	1.177	1.158	1.158	1.194
281	375	632	0.895	731	280.4	0.0445	0.0148	0.0148	1.172	1.168	1.174	1.155	1.155	1.192
282	375	632	0.895	723	277.3	0.0447	0.0148	0.0148	1.166	1.164	1.171	1.154	1.154	1.192
283	375	632	0.895	716	274.5	0.0449	0.0148	0.0148	1.163	1.161	1.169	1.152	1.152	1.192
284	375	632	0.895	708	271.6	0.0450	0.0148	0.0148	1.161	1.160	1.168	1.151	1.151	1.191
285	375	632	0.895	700	268.5	0.0453	0.0149	0.0149	1.161	1.158	1.166	1.149	1.149	1.191
286	375	632	0.895	692	265.5	0.0455	0.0150	0.0150	1.164	1.158	1.164	1.149	1.149	1.191
287	375	632	0.895	684	262.2	0.0459	0.0151	0.0151	1.169	1.158	1.164	1.148	1.148	1.191
288	375	632	0.895	674	258.6	0.0459	0.0151	0.0151	1.171	1.154	1.158	1.143	1.143	1.187

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

PRELIMINARY DATA

RUN LIST SWTSEY CONF PROPELLANT SAMP RATE
 396 1 66/033/1 36 25AL 1000

FRAME	TIME	Pa	Pch	KACH	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	(P9/P)n	BODY PRESS. (F10/E)n	(P11/P)n
289	289	375	632	0.895	665	254.9	0.0462	0.0152	1.175	1.178	1.152	1.158	1.143	1.143	1.187
290	290	375	632	0.895	656	251.6	0.0465	0.0152	1.178	1.178	1.152	1.157	1.141	1.141	1.187
291	291	375	632	0.895	647	248.0	0.0468	0.0155	1.180	1.180	1.149	1.155	1.140	1.140	1.187
292	292	375	632	0.895	637	244.2	0.0470	0.0156	1.180	1.180	1.148	1.152	1.137	1.137	1.186
293	293	375	632	0.895	626	240.1	0.0473	0.0157	1.178	1.178	1.145	1.151	1.135	1.135	1.186
294	294	375	632	0.895	616	236.3	0.0476	0.0157	1.174	1.174	1.141	1.148	1.132	1.132	1.184
295	295	375	632	0.895	605	232.1	0.0478	0.0157	1.166	1.166	1.138	1.145	1.128	1.128	1.183
296	296	375	632	0.895	594	227.9	0.0481	0.0157	1.160	1.160	1.137	1.145	1.129	1.129	1.184
297	297	375	632	0.895	584	223.8	0.0486	0.0158	1.154	1.154	1.134	1.141	1.126	1.126	1.183
298	298	375	632	0.895	572	219.2	0.0488	0.0157	1.146	1.146	1.129	1.137	1.121	1.121	1.181
299	299	375	632	0.895	560	214.6	0.0491	0.0157	1.140	1.140	1.125	1.134	1.118	1.118	1.180
300	300	375	632	0.895	548	210.0	0.0495	0.0158	1.138	1.138	1.121	1.131	1.115	1.115	1.180
301	301	375	632	0.895	535	205.2	0.0499	0.0159	1.137	1.137	1.118	1.128	1.114	1.114	1.180
302	302	375	632	0.895	523	200.5	0.0503	0.0161	1.135	1.135	1.115	1.125	1.111	1.111	1.180
303	303	375	632	0.895	510	195.5	0.0508	0.0163	1.138	1.138	1.114	1.123	1.109	1.109	1.178
304	304	375	632	0.895	497	190.7	0.0513	0.0165	1.140	1.140	1.109	1.118	1.105	1.105	1.177
305	305	375	632	0.895	483	185.1	0.0516	0.0165	1.138	1.138	1.103	1.111	1.100	1.100	1.175
306	306	375	632	0.895	468	179.6	0.0523	0.0169	1.140	1.140	1.102	1.109	1.098	1.098	1.175
307	307	375	632	0.895	455	174.4	0.0530	0.0172	1.141	1.141	1.097	1.105	1.092	1.092	1.174
308	308	375	632	0.895	441	169.0	0.0535	0.0174	1.140	1.140	1.092	1.102	1.092	1.092	1.174
309	309	375	632	0.895	426	163.4	0.0540	0.0175	1.135	1.135	1.088	1.095	1.089	1.089	1.172
310	310	375	632	0.895	411	157.7	0.0549	0.0176	1.129	1.129	1.083	1.092	1.085	1.085	1.171
311	311	375	632	0.895	396	151.9	0.0554	0.0178	1.121	1.121	1.077	1.086	1.080	1.080	1.169
312	312	375	632	0.895	381	146.0	0.0561	0.0177	1.109	1.109	1.071	1.080	1.077	1.077	1.169
313	313	375	632	0.895	367	140.6	0.0572	0.0180	1.100	1.100	1.068	1.079	1.075	1.075	1.169
314	314	375	632	0.895	353	135.4	0.0579	0.0180	1.089	1.089	1.062	1.072	1.071	1.071	1.168
315	315	375	632	0.895	337	129.1	0.0587	0.0176	1.079	1.079	1.054	1.068	1.066	1.066	1.166
316	316	375	632	0.895	322	123.4	0.0598	0.0180	1.071	1.071	1.049	1.063	1.063	1.063	1.166
317	317	375	632	0.895	307	117.8	0.0609	0.0182	1.066	1.066	1.045	1.059	1.060	1.060	1.166
318	318	375	632	0.895	293	112.2	0.0618	0.0185	1.063	1.063	1.040	1.056	1.057	1.057	1.164
319	319	375	632	0.895	279	106.9	0.0630	0.0187	1.062	1.062	1.036	1.051	1.054	1.054	1.164
320	320	375	632	0.895	265	101.7	0.0642	0.0192	1.063	1.063	1.033	1.049	1.052	1.052	1.166

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

PRELIMINARY DATA

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

FRAME	TIME	Pn	Ptn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS.	(P4/PTC)n	BASE PRESS.	(P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS.	(P10/P)n	(P11/P)n
321	321	375	632	0.895	252	96.5		0.0653	0.0195	1.063	1.028	1.045	1.046			1.164
322	322	375	632	0.895	257	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	215	81.6		0.0694	0.0212	1.066	1.019	1.036	1.040			1.164
325	325	375	632	0.895	200	75.3		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	1.035			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	1.029	1.029			1.163
333	333	375	632	0.895	119	45.5		0.0866	0.0244	1.023	1.003	1.026	1.031			1.163
334	334	375	632	0.895	111	42.5		0.0891	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

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

PRELIMINARY DATA

0-2

RUN LIST TESTS# CONF PROPELLANT SAMP RATE
 398 1 66/033/1 38 25AL 500

FRAME	TIME	Fn	P ₁₀	MACH _n	PTC _n	(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
1	2	376	634	0.897	595	151.3	0.0102	0.0249	0.0097	1.143	1.007	1.134	1.117	1.121	1.168
2	4	376	634	0.897	478	183.0	0.0097	0.0258	0.0097	1.157	1.021	1.145	1.121	1.121	1.171
3	6	376	634	0.897	573	219.2	0.0095	0.0271	0.0095	1.171	1.042	1.165	1.145	1.145	1.178
4	8	376	634	0.897	671	256.9	0.0091	0.0283	0.0091	1.180	1.061	1.180	1.159	1.159	1.185
5	10	376	634	0.897	775	296.5	0.0092	0.0298	0.0092	1.188	1.080	1.200	1.175	1.175	1.192
6	12	376	634	0.897	878	335.9	0.0095	0.0312	0.0095	1.198	1.102	1.220	1.195	1.201	1.201
7	14	376	634	0.897	978	374.2	0.0099	0.0324	0.0099	1.209	1.120	1.237	1.209	1.209	1.206
8	16	376	634	0.897	1072	410.2	0.0105	0.0336	0.0105	1.223	1.140	1.253	1.229	1.229	1.214
9	18	376	634	0.897	1158	443.3	0.0110	0.0345	0.0110	1.235	1.159	1.267	1.241	1.241	1.218
10	20	376	634	0.897	1236	473.1	0.0115	0.0354	0.0115	1.246	1.172	1.279	1.253	1.253	1.223
11	22	376	634	0.897	1305	499.5	0.0119	0.0361	0.0119	1.258	1.185	1.298	1.266	1.266	1.227
12	24	376	634	0.897	1367	523.1	0.0122	0.0369	0.0122	1.269	1.192	1.298	1.272	1.272	1.230
13	26	376	634	0.897	1420	543.3	0.0125	0.0374	0.0125	1.278	1.198	1.304	1.279	1.279	1.234
14	28	376	634	0.897	1465	560.8	0.0128	0.0379	0.0128	1.286	1.204	1.310	1.286	1.286	1.235
15	30	376	634	0.897	1505	575.9	0.0133	0.0384	0.0133	1.293	1.212	1.315	1.290	1.290	1.238
16	32	376	634	0.897	1537	588.1	0.0136	0.0388	0.0136	1.296	1.217	1.318	1.293	1.293	1.238
17	34	376	634	0.897	1567	599.6	0.0140	0.0392	0.0140	1.299	1.221	1.321	1.296	1.296	1.240
18	36	376	634	0.897	1592	609.4	0.0144	0.0395	0.0144	1.302	1.224	1.322	1.298	1.298	1.241
19	38	376	634	0.897	1615	618.2	0.0145	0.0397	0.0145	1.304	1.226	1.322	1.298	1.298	1.241
20	40	376	634	0.897	1638	627.0	0.0147	0.0400	0.0147	1.310	1.227	1.325	1.301	1.301	1.243
21	42	376	634	0.897	1657	634.2	0.0147	0.0401	0.0147	1.310	1.226	1.325	1.299	1.299	1.243
22	44	376	634	0.897	1676	641.5	0.0147	0.0402	0.0147	1.313	1.224	1.325	1.301	1.301	1.244
23	46	376	634	0.897	1694	648.2	0.0148	0.0403	0.0148	1.316	1.227	1.327	1.304	1.304	1.246
24	48	376	634	0.897	1708	653.6	0.0149	0.0403	0.0149	1.315	1.224	1.325	1.301	1.301	1.244
25	50	376	634	0.897	1722	658.9	0.0151	0.0405	0.0151	1.315	1.227	1.327	1.302	1.302	1.246
26	52	376	634	0.897	1732	662.7	0.0152	0.0406	0.0152	1.316	1.229	1.327	1.304	1.304	1.247
27	54	376	634	0.897	1739	665.4	0.0153	0.0406	0.0153	1.316	1.227	1.325	1.302	1.302	1.246
28	56	376	634	0.897	1744	667.3	0.0154	0.0409	0.0154	1.319	1.230	1.328	1.307	1.307	1.249
29	58	376	634	0.897	1745	667.9	0.0153	0.0410	0.0153	1.318	1.226	1.327	1.304	1.304	1.249
30	60	376	634	0.897	1746	668.3	0.0153	0.0412	0.0153	1.319	1.224	1.327	1.304	1.304	1.249
31	62	376	634	0.897	1745	667.9	0.0154	0.0414	0.0154	1.321	1.224	1.327	1.307	1.307	1.250
32	64	376	634	0.897	1743	667.1	0.0154	0.0416	0.0154	1.319	1.225	1.325	1.304	1.304	1.249

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

RUN LIST TESTS CONF PROPELLANT SAMP RATE
 396 1 66/033/1 38 24AL 500

FRAME TIME	Pn	Ptn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	BASE PRESS.	(P8/P)n	(P9/P)n	BODY PRESS.	(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	1.307	1.250	
34	68	376	634	0.897	1738	665.2	0.0420	0.0157	1.319	1.226	1.327	1.307	1.307	1.250	
35	70	376	634	0.897	1734	665.7	0.0423	0.0158	1.318	1.226	1.327	1.305	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	1.307	1.250	
37	74	376	634	0.897	1729	661.6	0.0427	0.0158	1.319	1.224	1.327	1.305	1.305	1.250	
38	76	376	634	0.897	1726	660.6	0.0429	0.0158	1.319	1.223	1.327	1.305	1.305	1.250	
39	78	376	634	0.897	1725	660.1	0.0431	0.0158	1.321	1.223	1.327	1.307	1.307	1.250	
40	80	376	634	0.897	1724	659.7	0.0434	0.0158	1.321	1.224	1.327	1.307	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	1.305	1.250	
42	84	376	634	0.897	1718	657.6	0.0438	0.0161	1.318	1.226	1.327	1.307	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	1.305	1.249	
44	88	376	634	0.897	1711	654.7	0.0441	0.0163	1.315	1.226	1.325	1.304	1.304	1.247	
45	90	376	634	0.897	1708	653.6	0.0443	0.0163	1.318	1.226	1.327	1.305	1.305	1.247	
46	92	376	634	0.897	1703	651.6	0.0444	0.0162	1.318	1.223	1.325	1.304	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	1.304	1.247	
48	96	376	634	0.897	1695	648.6	0.0448	0.0161	1.319	1.223	1.327	1.307	1.307	1.247	
49	98	376	634	0.897	1689	646.3	0.0449	0.0162	1.315	1.220	1.324	1.302	1.302	1.247	
50	100	376	634	0.897	1686	645.3	0.0448	0.0162	1.315	1.223	1.327	1.305	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	1.304	1.247	
52	104	376	634	0.897	1681	643.2	0.0450	0.0163	1.313	1.224	1.325	1.302	1.302	1.246	
53	106	376	634	0.897	1678	642.3	0.0452	0.0162	1.316	1.226	1.328	1.305	1.305	1.249	
54	108	376	634	0.897	1674	640.5	0.0452	0.0161	1.315	1.223	1.325	1.302	1.302	1.247	
55	110	376	634	0.897	1668	638.3	0.0453	0.0161	1.315	1.221	1.327	1.302	1.302	1.249	
56	112	376	634	0.897	1660	635.2	0.0454	0.0161	1.316	1.221	1.327	1.304	1.304	1.247	
57	114	376	634	0.897	1649	631.2	0.0455	0.0161	1.315	1.220	1.325	1.301	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	1.302	1.249	
59	118	376	634	0.897	1622	620.6	0.0460	0.0164	1.312	1.221	1.324	1.301	1.301	1.247	
60	120	376	634	0.897	1603	613.4	0.0462	0.0167	1.310	1.221	1.322	1.299	1.299	1.246	
61	122	376	634	0.897	1580	604.6	0.0466	0.0170	1.309	1.223	1.321	1.298	1.298	1.246	
62	124	376	634	0.897	1555	595.0	0.0470	0.0171	1.309	1.223	1.318	1.295	1.295	1.244	
63	126	376	634	0.897	1527	581.5	0.0474	0.0173	1.307	1.220	1.315	1.292	1.292	1.243	
64	128	376	634	0.897	1500	567.0	0.0477	0.0174	1.305	1.220	1.313	1.290	1.290	1.241	

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

PRELIMINARY DATA

RUN LIST ENTSTEP CONF PROPELLANT SAMP. RATE
 398 1 66/033/1 38 24AL 500

FRAME TIME	PR	PTH	MACH	PTCH	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS. (P2/PTC)n	(P4/PTC)n	(P6/P)n	BASE PRESS. (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	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	1295	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	1.195	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	1.281	1.185	1.290	1.266	1.226	
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	1.266	1.168	1.278	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	0.0170	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	0.0496	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	1.249	1.220	
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 TWISTP COMP PROPELLANT SAMP RATE
 398 1 66/033/1 38 24AL 500

FRAME TIME	PH	PTN	MACH	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
97	194	376	0.897	972	372.1	0.0489	0.0167	1.258	1.152	1.267	1.246	1.220		
98	196	376	0.897	965	369.2	0.0490	0.0168	1.259	1.154	1.269	1.247	1.220		
99	198	376	0.897	953	364.8	0.0491	0.0169	1.253	1.149	1.264	1.241	1.218		
100	200	376	0.897	940	359.8	0.0494	0.0172	1.252	1.151	1.264	1.243	1.218		
101	202	376	0.897	921	352.4	0.0498	0.0176	1.247	1.149	1.261	1.240	1.217		
102	204	376	0.897	894	342.2	0.0504	0.0179	1.240	1.143	1.255	1.232	1.215		
103	206	376	0.897	862	329.8	0.0514	0.0184	1.235	1.140	1.250	1.229	1.215		
104	208	376	0.897	820	313.9	0.0525	0.0187	1.234	1.129	1.240	1.218	1.211		
105	210	376	0.897	772	295.5	0.0540	0.0192	1.232	1.119	1.229	1.209	1.209		
106	212	376	0.897	718	274.9	0.0559	0.0199	1.226	1.106	1.218	1.200	1.206		
107	214	376	0.897	660	252.5	0.0580	0.0207	1.212	1.093	1.203	1.183	1.200		
108	216	376	0.897	599	229.1	0.0605	0.0222	1.203	1.082	1.189	1.172	1.197		
109	218	376	0.897	536	205.0	0.0634	0.0236	1.220	1.067	1.174	1.159	1.192		
110	220	376	0.897	474	181.3	0.0668	0.0252	1.226	1.050	1.157	1.145	1.188		
111	222	376	0.897	413	158.0	0.0707	0.0264	1.209	1.031	1.140	1.132	1.183		
112	224	376	0.897	356	136.3	0.0752	0.0276	1.180	1.012	1.123	1.117	1.178		
113	226	376	0.897	303	116.0	0.0802	0.0291	1.159	0.992	1.108	1.103	1.174		
114	228	376	0.897	254	97.1	0.0866	0.0310	1.142	0.975	1.094	1.093	1.172		
115	230	376	0.897	210	80.5	0.0944	0.0336	1.126	0.961	1.082	1.084	1.169		
116	232	376	0.897	169	64.6	0.1042	0.0365	1.111	0.946	1.070	1.074	1.165		
117	234	376	0.897	134	51.2	0.1175	0.0420	1.114	0.937	1.062	1.068	1.163		
118	236	376	0.897	102	39.1	0.1355	0.0500	1.119	0.929	1.056	1.064	1.162		
119	238	376	0.897	74	28.4	0.1641	0.0608	1.110	0.923	1.051	1.059	1.160		
120	240	376	0.897	52	19.8	0.2111	0.0776	1.093	0.920	1.051	1.059	1.160		
121	242	376	0.897	30	11.6	0.3174	0.1163	1.082	0.915	1.050	1.059	1.160		
122	244	376	0.897	14	5.2	0.6202	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									

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

PRELIMINARY DATA

RUN LIST THRSTP COEF PROPELLANT SAFT RATE
 399 1 66/053/1 38 2%ALL 500

FRAME TIME	Pn	Ptn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	BASE PRESS. (P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS. (P10/P)n	(P11/P)n
1	260	638	1.208	19	10.4	0.1912	0.1288	0.1288	0.924	1.035	0.904	0.911	1.094	
2	260	638	1.208	19	10.4	0.1912	0.1315	0.1315	0.926	1.037	0.906	0.915	1.097	
3	260	638	1.208	19	10.4	0.1912	0.1288	0.1288	0.926	1.032	0.904	0.913	1.097	
4	260	638	1.208	19	10.4	0.1912	0.1288	0.1288	0.926	1.030	0.904	0.913	1.097	
5	260	638	1.208	19	10.4	0.1912	0.1315	0.1315	0.928	1.030	0.904	0.913	1.097	
MACH Q	P	PT	PREP	PCAL										
1.208	265.9	260	638	1408	2118									

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

REF LIST TESTS COMP PROGRAMS SAME RACE
400 1 65/055/1 58 2:34L 500

FRAME	TIME	PH	PHN	MAJOR	PCOM	(P15/P) ⁿ	(P2/PTD) ⁿ	NOZZLE PRESS. (E3/P23) ⁿ	(P4/P23) ⁿ	(P6/P) ⁿ	BASE PRESS. (P7/P) ⁿ	(P8/P) ⁿ	(P9/P) ⁿ	BOY PRESS. (P10/P) ⁿ	(P11/P) ⁿ
1	2	261	638	1.206	215	118.7	0.0163	0.0153	0.0107	0.924	1.023	0.904	0.913	0.913	1.100
2	4	261	638	1.206	242	133.6	0.0147	0.0095	0.0095	0.919	1.027	0.904	0.911	0.911	1.098
3	6	261	638	1.206	266	146.9	0.0155	0.0091	0.0091	0.915	1.032	0.904	0.908	0.908	1.098
4	8	261	638	1.206	290	160.1	0.0171	0.0088	0.0088	0.911	1.036	0.904	0.903	0.903	1.096
5	10	261	638	1.206	314	173.4	0.0152	0.0087	0.0087	0.908	1.041	0.908	0.908	0.908	1.096
6	12	261	638	1.206	341	188.3	0.0203	0.0091	0.0091	0.919	1.054	0.922	0.911	0.911	1.096
7	14	261	638	1.206	375	207.5	0.0225	0.0091	0.0091	0.930	1.067	0.937	0.913	0.913	1.096
8	16	261	638	1.206	415	228.8	0.0235	0.0093	0.0093	0.943	1.089	0.957	0.922	0.922	1.096
9	18	261	638	1.206	459	253.1	0.0276	0.0096	0.0096	0.972	1.114	0.981	0.935	0.935	1.096
10	20	261	638	1.206	507	279.6	0.0290	0.0097	0.0097	0.988	1.136	1.003	0.941	0.941	1.096
11	22	261	638	1.206	553	305.2	0.0301	0.0101	0.0101	1.010	1.164	1.027	0.959	0.959	1.096
12	24	261	638	1.206	601	331.7	0.0309	0.0104	0.0104	1.030	1.189	1.050	0.970	0.970	1.096
13	26	261	638	1.206	646	356.5	0.0326	0.0106	0.0106	1.069	1.208	1.069	0.981	0.981	1.094
14	28	261	638	1.206	689	380.0	0.0333	0.0111	0.0111	1.083	1.242	1.092	0.999	0.999	1.096
15	30	261	638	1.206	729	402.1	0.0340	0.0116	0.0116	1.098	1.255	1.105	1.008	1.008	1.094
16	32	261	638	1.206	763	420.8	0.0345	0.0119	0.0119	1.114	1.270	1.120	1.019	1.019	1.096
17	34	261	638	1.206	793	437.4	0.0351	0.0120	0.0120	1.116	1.275	1.133	1.030	1.030	1.094
18	36	261	638	1.206	817	450.9	0.0357	0.0124	0.0124	1.125	1.286	1.149	1.043	1.043	1.094
19	38	261	638	1.206	836	461.4	0.0362	0.0127	0.0127	1.129	1.292	1.153	1.047	1.047	1.094
20	40	261	638	1.206	851	475.2	0.0367	0.0129	0.0129	1.131	1.295	1.156	1.050	1.050	1.094
21	42	261	638	1.206	861	475.2	0.0370	0.0132	0.0132	1.136	1.299	1.160	1.056	1.056	1.094
22	44	261	638	1.206	867	478.5	0.0374	0.0135	0.0135	1.136	1.295	1.158	1.054	1.054	1.094
23	46	261	638	1.206	870	480.1	0.0378	0.0137	0.0137	1.138	1.292	1.158	1.054	1.054	1.094
24	48	261	638	1.206	871	480.4	0.0380	0.0139	0.0139	1.138	1.292	1.158	1.054	1.054	1.094
25	50	261	638	1.206	869	479.6	0.0382	0.0139	0.0139	1.136	1.292	1.156	1.052	1.052	1.092
26	52	261	638	1.206	868	478.8	0.0384	0.0139	0.0139	1.133	1.292	1.153	1.054	1.054	1.094
27	54	261	638	1.206	866	477.7	0.0385	0.0140	0.0140	1.129	1.292	1.151	1.050	1.050	1.094
28	56	261	638	1.206	863	476.3	0.0387	0.0141	0.0141	1.129	1.290	1.149	1.050	1.050	1.094
29	58	261	638	1.206	861	475.2									
30	60	261	638	1.206	860	474.3									
31	62	261	638	1.206	858	473.2									
32	64	261	638	1.206	858	473.5									

12311

RUN LIST OUTSIDE CONF PROPRIETARY SALE DATE
 400 1 65/033/1 38 25AL 500

PRIME TIME	DR	PTH	MACH	PTON	(FC/P)n	(22/PTC)n	(P3/PTC)n	(F4/PTC)n	(P6/P)n	(I7/P)n	(P8/P)n	(P9/P)n	(F11/P)n
33	261	638	1.206	858	473.2	0.0387	0.0140	0.0140	1.129	1.286	1.147	1.047	1.094
34	261	638	1.206	859	473.6	0.0386	0.0140	0.0140	1.131	1.286	1.147	1.047	1.094
35	261	638	1.206	860	474.6	0.0387	0.0141	0.0141	1.133	1.288	1.149	1.050	1.096
36	251	638	1.206	861	474.9	0.0386	0.0140	0.0140	1.129	1.286	1.147	1.047	1.096
37	261	638	1.206	863	476.3	0.0387	0.0140	0.0140	1.129	1.290	1.149	1.050	1.096
38	261	638	1.206	865	477.1	0.0387	0.0140	0.0140	1.129	1.290	1.149	1.047	1.096
39	261	638	1.206	866	477.7	0.0386	0.0139	0.0139	1.127	1.288	1.147	1.045	1.096
40	261	638	1.206	868	479.0	0.0388	0.0141	0.0141	1.133	1.292	1.151	1.052	1.096
41	261	638	1.206	868	479.0	0.0386	0.0140	0.0140	1.131	1.288	1.149	1.050	1.096
42	261	638	1.206	870	479.9	0.0386	0.0140	0.0140	1.133	1.286	1.149	1.050	1.096
43	261	638	1.206	871	480.4	0.0386	0.0140	0.0140	1.136	1.288	1.153	1.052	1.096
44	261	638	1.206	871	480.4	0.0386	0.0139	0.0139	1.131	1.284	1.149	1.047	1.096
45	261	638	1.206	872	481.2	0.0386	0.0140	0.0140	1.133	1.288	1.151	1.052	1.096
46	261	638	1.206	873	481.5	0.0386	0.0140	0.0140	1.131	1.288	1.151	1.052	1.096
47	261	638	1.206	873	481.8	0.0386	0.0139	0.0139	1.129	1.288	1.151	1.050	1.096
48	261	638	1.206	874	482.4	0.0386	0.0140	0.0140	1.133	1.290	1.153	1.054	1.100
49	261	638	1.206	875	482.6	0.0386	0.0140	0.0140	1.131	1.286	1.151	1.050	1.096
50	261	638	1.206	875	482.9	0.0386	0.0140	0.0140	1.133	1.284	1.151	1.050	1.096
51	102	638	1.206	876	483.2	0.0386	0.0139	0.0139	1.136	1.286	1.153	1.052	1.096
52	104	638	1.206	877	483.7	0.0386	0.0140	0.0140	1.136	1.288	1.151	1.050	1.096
53	106	638	1.206	877	483.7	0.0386	0.0140	0.0140	1.136	1.290	1.151	1.050	1.096
54	108	638	1.206	878	484.3	0.0386	0.0140	0.0140	1.136	1.292	1.153	1.052	1.096
55	110	638	1.206	878	484.6	0.0385	0.0140	0.0140	1.133	1.295	1.153	1.054	1.096
56	112	638	1.206	879	484.8	0.0384	0.0139	0.0139	1.133	1.295	1.153	1.054	1.096
57	114	638	1.206	881	485.9	0.0385	0.0140	0.0140	1.138	1.295	1.156	1.054	1.098
58	116	638	1.206	881	486.2	0.0385	0.0139	0.0139	1.138	1.290	1.156	1.054	1.098
59	118	638	1.206	882	486.8	0.0385	0.0140	0.0140	1.140	1.290	1.156	1.054	1.098
60	120	638	1.206	884	487.9	0.0386	0.0140	0.0140	1.142	1.292	1.159	1.053	1.098
61	122	638	1.206	884	487.6	0.0384	0.0139	0.0139	1.138	1.290	1.156	1.054	1.096
62	124	638	1.206	885	488.4	0.0386	0.0140	0.0140	1.138	1.295	1.156	1.056	1.098
63	126	638	1.206	886	489.0	0.0386	0.0139	0.0139	1.138	1.297	1.156	1.056	1.096
64	128	638	1.206	886	499.0	0.0385	0.0139	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

RCM TEST SWISER CONE PROPELLANT SAFETY
400 1 66/033/1 38 25AL 500

FRAME TIME	PB	PIN	MACH	PICH	PICH (P/C/P)	NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
						(P2/PIC)n	(P3/PIC)n	(P4/PIC)n	(P6/P)n	(P7/P)n	(P8/P)n	(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	1.147	1.292	1.156	1.056	1.093	
67	134	261	638	1.206	889	490.4	0.0385	0.0140	1.144	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	1.292	1.160	1.063	1.098	
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	1.144	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	1.295	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	490.5	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	889	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	0.0367	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	1.144	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	1.053	1.092	
93	186	261	638	1.206	888	489.8	0.0388	0.0140	1.144	1.292	1.158	1.061	1.094	
94	188	261	638	1.206	887	489.2	0.0387	0.0139	1.147	1.295	1.160	1.061	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	

122312

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

PRELIMINARY DATA

RUN LIST
 400 1 65/033/1 38 254L
 MISSILE COMP PROGRAMME SUP RATE
 500

FRAME	TIME	Zn	Pzn	M-ZERO	PZCR	(PZ/P) n	MOZZIE PRESS.			(P4/PTC) n	BASE PRESS.			LODY 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
97	194	251	638	1.206	885	458.4	0.0388	0.0140	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	0.0140	1.142	1.301	1.158	1.061	1.094		
99	198	261	638	1.206	894	487.6	0.0388	0.0140	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	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	0.0140	1.142	1.295	1.156	1.055	1.094		
102	204	261	638	1.206	882	486.3	0.0389	0.0140	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	0.0140	1.140	1.297	1.153	1.053	1.092		
104	208	251	638	1.206	881	486.2	0.0389	0.0140	0.0140	1.138	1.299	1.153	1.054	1.092		
105	210	261	638	1.206	880	485.7	0.0388	0.0140	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	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	0.0141	1.138	1.297	1.151	1.054	1.092		
108	216	261	638	1.206	879	484.8	0.0388	0.0140	0.0140	1.138	1.295	1.153	1.054	1.092		
109	218	261	638	1.206	878	484.3	0.0389	0.0141	0.0141	1.142	1.297	1.156	1.056	1.092		
110	220	261	638	1.206	878	484.6	0.0388	0.0141	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	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	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	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	0.0140	1.135	1.297	1.151	1.054	1.089		
115	230	261	638	1.206	876	483.5	0.0390	0.0142	0.0142	1.140	1.301	1.156	1.054	1.094		
116	232	261	638	1.206	875	482.6	0.0388	0.0141	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	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	0.0141	1.144	1.297	1.158	1.061	1.096		
119	238	261	638	1.206	873	481.5	0.0388	0.0141	0.0141	1.144	1.297	1.158	1.061	1.096		
120	240	261	638	1.206	873	481.5	0.0389	0.0142	0.0142	1.138	1.295	1.153	1.056	1.092		
121	242	261	638	1.206	872	481.0	0.0390	0.0141	0.0141	1.140	1.299	1.158	1.061	1.092		
122	244	261	638	1.206	871	480.4	0.0389	0.0141	0.0141	1.138	1.299	1.158	1.061	1.092		
123	246	261	638	1.206	870	479.9	0.0391	0.0142	0.0142	1.138	1.299	1.158	1.053	1.089		
124	248	261	638	1.206	868	479.0	0.0390	0.0141	0.0141	1.140	1.301	1.158	1.053	1.092		
125	250	261	638	1.206	867	478.2	0.0390	0.0141	0.0141	1.138	1.295	1.153	1.053	1.089		
126	252	261	638	1.206	866	477.7	0.0390	0.0142	0.0142	1.140	1.292	1.153	1.053	1.089		
127	254	261	638	1.206	864	476.8	0.0391	0.0142	0.0142	1.140	1.292	1.153	1.054	1.089		
128	256	261	638	1.206	863	476.0	0.0391	0.0142	0.0142	1.136	1.292	1.151	1.054	1.087		

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

PRELIMINARY DATA

DATA LIST TESTSTEP CONF PROGRAM NAME SAMPLE
 400 1 66/033/1 38 244 500

FRAME	TIME	IN	PTN	MACH	PTCN	(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	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	1.121	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	0.0142	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	0.0143	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	1.092	
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	836	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	460.6	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	

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

PRELIMINARY DATA

RUN LIST AMESR COMP PROGRAMS SAMPLE RATE
 400 1 66/053/1 38 2.5AL 500

TRIMS	TIME	Pa	PIN	MA CHN	P-UN	(P70/P)n	(P2/P70)n	NOZZLE PRESS.	(P4/P70)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS.	(P10/P)n	(P11/P)n
161	322	261	638	1.206	171	425.5	0.0147	0.0407	0.0149	1.100	1.259	1.114	1.027	1.027	1.089	
162	324	261	638	1.206	751	414.2	0.0151	0.0414	0.0151	1.092	1.253	1.107	1.021	1.021	1.089	
163	326	261	638	1.206	724	399.6	0.0152	0.0420	0.0152	1.076	1.239	1.094	1.012	1.012	1.087	
164	328	261	638	1.206	693	382.5	0.0155	0.0428	0.0155	1.061	1.224	1.074	1.001	1.001	1.089	
165	330	261	638	1.206	660	364.0	0.0158	0.0433	0.0158	1.047	1.208	1.061	0.994	0.994	1.087	
166	332	261	638	1.206	621	342.8	0.0161	0.0447	0.0158	1.027	1.184	1.039	0.931	0.931	1.087	
167	334	261	638	1.206	580	320.1	0.0166	0.0459	0.0161	1.008	1.162	1.019	0.966	0.966	1.092	
168	336	261	638	1.206	538	297.0	0.0168	0.0473	0.0166	0.990	1.140	0.999	0.959	0.959	1.087	
169	338	261	638	1.206	494	272.4	0.0180	0.0485	0.0168	0.961	1.111	0.970	0.941	0.941	1.089	
170	340	261	638	1.206	451	248.7	0.0185	0.0499	0.0176	0.939	1.094	0.950	0.935	0.935	1.092	
171	342	261	638	1.206	407	224.7	0.0194	0.0513	0.0180	0.913	1.072	0.924	0.922	0.922	1.092	
172	344	261	638	1.206	365	201.5	0.0198	0.0529	0.0185	0.888	1.045	0.897	0.911	0.911	1.094	
173	346	261	638	1.206	325	179.4	0.0198	0.0547	0.0194	0.866	1.023	0.875	0.906	0.906	1.092	
174	348	261	638	1.206	288	158.7	0.0208	0.0560	0.0198	0.844	0.994	0.849	0.895	0.895	1.094	
175	350	261	638	1.206	253	139.4	0.0217	0.0579	0.0208	0.822	0.970	0.827	0.888	0.888	1.094	
176	352	261	638	1.206	221	122.1	0.0226	0.0596	0.0217	0.805	0.950	0.807	0.884	0.884	1.094	
177	354	261	638	1.206	193	106.3	0.0238	0.0611	0.0226	0.785	0.928	0.785	0.877	0.877	1.094	
178	356	261	638	1.206	167	92.0	0.0250	0.0630	0.0238	0.765	0.908	0.767	0.875	0.875	1.092	
179	358	261	638	1.206	144	79.6	0.0268	0.0646	0.0250	0.747	0.893	0.749	0.875	0.875	1.092	
180	360	261	638	1.206	124	68.3	0.0279	0.0666	0.0268	0.734	0.882	0.738	0.875	0.875	1.092	
181	362	261	638	1.206	106	58.6	0.0305	0.0682	0.0279	0.727	0.875	0.732	0.873	0.873	1.092	
182	364	261	638	1.206	92	50.9	0.0323	0.0715	0.0305	0.732	0.871	0.734	0.873	0.873	1.092	
183	366	261	638	1.206	79	43.7	0.0351	0.0729	0.0323	0.736	0.871	0.736	0.875	0.875	1.089	
184	368	261	638	1.206	69	37.9	0.0392	0.0763	0.0351	0.747	0.873	0.743	0.875	0.875	1.089	
185	370	261	638	1.206	60	33.2	0.0418	0.0808	0.0392	0.760	0.862	0.752	0.860	0.860	1.089	
186	372	261	638	1.206	52	28.5	0.0457	0.0846	0.0418	0.769	0.866	0.758	0.860	0.860	1.089	
187	374	261	638	1.206	46	25.5	0.0506	0.0895	0.0457	0.783	0.897	0.769	0.882	0.882	1.089	
188	376	261	638	1.206	41	22.5	0.0549	0.0937	0.0506	0.794	0.893	0.780	0.882	0.882	1.089	
189	378	261	638	1.206	36	19.7	0.0620	0.0997	0.0549	0.802	0.893	0.787	0.882	0.882	1.092	
190	380	261	638	1.206	33	18.3	0.0671	0.1065	0.0620	0.818	0.900	0.802	0.888	0.888	1.092	
191	382	261	638	1.206	29	16.1	0.0734	0.1115	0.0671	0.827	0.900	0.809	0.898	0.898	1.092	
192	384	261	638	1.206	27	14.7			0.0734	0.835	0.904	0.819	0.891	0.891	1.092	

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

PRELIMINARY DATA

BUY LIST OUTSEP CONF PROPRIETARY SAFE-RATE
 400 1 66/033/1 38 241L 500

FRAME	TIME	IN	PT	MACH	PTCH	(P13/E)n	NOZZLE PRESS.			BODY PRESS.				
							(22/PTC)n	(25/PTC)n	(24/PTC)n	(26/E)n	(27/P)n	(P8/P)n	(P9/P)n	(P10/P)n
193	386	261	638	1.206	25	13.9	0.1207	0.849	0.0817	0.849	0.955	0.829	0.895	1.094
194	388	261	638	1.206	22	12.5	0.1252	0.851	0.0841	0.851	0.959	0.835	0.891	1.092
195	390	261	638	1.206	22	12.0	0.1371	0.860	0.0949	0.860	0.972	0.842	0.895	1.094
196	392	261	638	1.206	20	11.2	0.1473	0.862	0.1019	0.862	0.981	0.847	0.897	1.094
197	394	261	638	1.206	19	10.3	0.1591	0.864	0.1101	0.864	0.988	0.851	0.895	1.092
198	396	261	638	1.206	18	10.0	0.1671	0.873	0.1159	0.873	0.997	0.860	0.899	1.094
199	398	261	638	1.206	17	9.5	0.1730	0.875	0.1197	0.875	0.997	0.862	0.895	1.092
200	400	261	638	1.206	16	8.9	0.1878	0.877	0.1302	0.877	0.999	0.866	0.897	1.094
201	402	261	638	1.206	16	8.7	0.1980	0.884	0.1345	0.884	1.005	0.871	0.897	1.094
202	404	261	638	1.206	16	8.7	0.1980	0.886	0.1343	0.886	1.010	0.875	0.895	1.094
203	406	261	638	1.206	15	8.1	0.2160	0.888	0.1469	0.888	1.016	0.882	0.899	1.094
204	408	261	638	1.206	15	8.1	0.2160	0.891	0.1469	0.891	1.023	0.886	0.899	1.094
205	410	261	638	1.206	14	7.8	0.2236	0.893	0.1520	0.893	1.027	0.891	0.899	1.094
206	412	261	638	1.206	13	7.3	0.2354	0.895	0.1555	0.895	1.030	0.895	0.899	1.094
207	414	261	638	1.206	14	7.6	0.2366	0.899	0.1612	0.899	1.034	0.897	0.899	1.094
208	416	261	638	1.206	13	7.3	0.2405	0.902	0.1635	0.902	1.036	0.902	0.902	1.094
209	418	261	638	1.206	13	7.0	0.2552	0.906	0.1739	0.906	1.039	0.906	0.902	1.094
210	420	261	638	1.206	13	7.3	0.2506	0.913	0.1711	0.913	1.045	0.913	0.904	1.094
211	422	261	638	1.206	12	6.5	0.2713	0.911	0.1845	0.911	1.047	0.913	0.902	1.092
212	424	261	638	1.206	12	6.7	0.2713	0.915	0.1810	0.915	1.054	0.919	0.906	1.092
213	426	261	638	1.206	12	6.7	0.2711	0.915	0.1851	0.915	1.058	0.922	0.906	1.089

MACH Q P PT PRTP 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 TESTSET CONF PROPELLANT SAMPL. RATE
 401 1 06/033/1 38 25AL 500

FRAME	TIME	Pa	Pth	WASH	PTCH	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS. (P5/PTC)n	(F4/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	0.0103	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		1.041
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	0.0143	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		1.058

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

PRELIMINARY DATA

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

FRAME	FILE	PT	PTn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	NOZLE PRESS. (F3/PTC)n	(P4/PTC)n	(P6/P)n	BASE PRESS. (PT/P)n	(P8/P)n	(P9/F)n	BODY PRESS. (P10/F)n	(F11/P)n
33	66	375	631	0.896	402	154.5	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	0.917	1.038	0.932	0.908	1.038		
37	74	375	631	0.896	404	155.3	0.0392	0.0143	0.921	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	0.908	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	0.0145	0.921	1.037	0.934	0.909	1.038		
41	82	375	631	0.896	409	157.0	0.0394	0.0143	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	0.920	1.038	0.932	0.911	1.037		
44	88	375	631	0.896	410	157.6	0.0393	0.0143	0.920	1.040	0.934	0.909	1.038		
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	0.0392	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	0.0392	0.0142	0.924	1.043	0.937	0.912	1.038		
50	100	375	631	0.896	412	158.4	0.0392	0.0144	0.924	1.043	0.937	0.912	1.038		
51	102	375	631	0.896	413	158.6	0.0394	0.0144	0.924	1.044	0.937	0.912	1.038		
52	104	375	631	0.896	413	158.7	0.0393	0.0144	0.924	1.044	0.937	0.912	1.038		
53	106	375	631	0.896	413	158.7	0.0393	0.0144	0.924	1.044	0.937	0.912	1.038		
54	108	375	631	0.896	414	158.9	0.0393	0.0144	0.924	1.044	0.937	0.912	1.038		
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	0.0145	0.924	1.044	0.940	0.917	1.043		
63	126	375	631	0.896	412	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 TWTSTP COMB PROPELLANT SAMP.RATE
 401 1 66/033/1 38 26AL 500

FRAME TIME	Pd	FTn	MACHn	PFCn	(PTC/P)n	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
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	0.0395	0.0143	0.925	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	0.0392	0.0143	0.926	1.037	0.935	0.912	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	0.0145	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	

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PRELIMINARY DATA

RUC LIST ENTSTP COMP PROPELLANT SAMP.RATE
 401 1 66/033/1 38 25AL 500

FRAME	FLITE	Pn	PTn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS. (F2/PTC)n	(F3/PTC)n	(F4/PTC)n	BASE PRESS. (F6/P)n	(F7/P)n	(F8/P)n	BODY PRESS. (F9/P)n	(F10/P)n	(F11/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	0.927	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	0.929	1.037	0.935	0.915	1.038		
104	208	375	631	0.896	418	160.7	0.0392	0.0146	0.929	1.037	0.937	0.914	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	1.043		
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	1.043		
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 ZHTSTP CONF PROPELLANT SAMP RATE
 401 1 66/033/1 38 24AL 500

FRAME	IDXB	Pa	FTh	MACHn	FTCn	(PTC/P)n	(F2/FTC)n	NOZZLE PRESS. (F3/FTC)n	(P4/FTC)n	BASE PRESS. (F6/F)n	(F7/F)n	(F8/F)n	BODY PRESS. (F9/F)n	(F10/F)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	1.041	0.935	0.914	1.038		
131	262	375	631	0.896	422	162.2	0.0388	0.0146	0.931	1.040	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	1.046	0.940	0.915	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	0.932	1.047	0.941	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	162.4	0.0390	0.0147	0.931	1.049	0.940	0.917	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	1.044	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	1.046	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	0.0146	0.931	1.046	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	1.041		
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		

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PRELIMINARY DATA

RUN LIST TESTSTEP CONF PROPELLANT SAUF. RATE
 401 1 66/053/1 38 2541 500

PRVS	RVS	Pn	Pn	MACH	PCOR	(PTC/P)n	MIDDLE 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
161	322	375	631	0.896	421	161.8	0.0392	0.0147	0.926	1.046	0.938	0.914	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	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	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	0.914	1.040	
165	330	375	631	0.896	420	161.4	0.0394	0.0148	0.929	1.043	0.938	0.915	0.915	1.040	
166	332	375	631	0.896	420	161.4	0.0394	0.0149	0.929	1.047	0.938	0.915	0.915	1.043	
167	334	375	631	0.896	419	160.9	0.0391	0.0146	0.929	1.044	0.938	0.915	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	0.917	1.043	
169	338	375	631	0.896	419	161.1	0.0392	0.0147	0.929	1.049	0.940	0.917	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	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	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	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	0.915	1.041	
174	348	375	631	0.896	416	159.9	0.0393	0.0147	0.931	1.044	0.937	0.915	0.915	1.041	
175	350	375	631	0.896	415	159.5	0.0392	0.0147	0.926	1.041	0.934	0.912	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	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	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	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	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	0.911	1.038	
181	362	375	631	0.896	410	157.6	0.0394	0.0148	0.924	1.043	0.931	0.911	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	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	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	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	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	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	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	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	0.909	1.037	
190	380	375	631	0.896	401	153.9	0.0397	0.0148	0.923	1.037	0.931	0.911	0.911	1.038	
191	382	375	631	0.896	398	153.0	0.0401	0.0151	0.926	1.037	0.932	0.912	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	0.909	1.038	

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

RUN LIST TESTSTEP COMP PROPELLANT SAFE RATE
 401 1 66/033/1 38 24AL 500

FRANS	TIME	PD	PTH	MACH	FTCN	(PTC/P) _n	(P2/PTC) _n	NOZZLE PRESS. (P3/PTC) _n	(P4/PTC) _n	BASE PRESS. (P6/P) _n	(F7/P) _n	(P8/P) _n	BODY PRESS. (F9/P) _n	(F10/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	0.907	1.040		
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	0.0437	0.0160	0.898	1.007	0.903	0.891	1.035		
201	402	375	631	0.896	323	124.2	0.0441	0.0160	0.894	1.004	0.901	0.889	1.035		
202	404	375	631	0.896	313	120.1	0.0445	0.0161	0.889	1.001	0.897	0.884	1.034		
203	406	375	631	0.896	302	116.1	0.0451	0.0164	0.881	0.992	0.892	0.881	1.032		
204	408	375	631	0.896	291	111.7	0.0454	0.0165	0.877	0.986	0.881	0.880	1.032		
205	410	375	631	0.896	280	107.5	0.0460	0.0165	0.874	0.980	0.874	0.874	1.030		
206	412	375	631	0.896	268	102.8	0.0465	0.0166	0.871	0.975	0.874	0.868	1.030		
207	414	375	631	0.896	256	98.4	0.0473	0.0170	0.869	0.972	0.869	0.863	1.029		
208	416	375	631	0.896	245	94.0	0.0477	0.0171	0.863	0.969	0.864	0.861	1.029		
209	418	375	631	0.896	232	89.0	0.0483	0.0173	0.860	0.967	0.861	0.858	1.027		
210	420	375	631	0.896	220	84.6	0.0490	0.0176	0.855	0.964	0.857	0.855	1.027		
211	422	375	631	0.896	208	79.6	0.0497	0.0177	0.852	0.961	0.854	0.852	1.026		
212	424	375	631	0.896	195	75.0	0.0508	0.0185	0.854	0.961	0.854	0.852	1.027		
213	426	375	631	0.896	185	71.0									
MACH	Q	P	PT	PREF	PCAL										
0.896	210.6	375	631	1406	2118										

102995

RUE LIST THRSTP COMP PROPellant SAMP.RATE
 405 1 66/033/1 36 15%AL 50C

FRAME	TIME	Pn	Ptn	MACH	FTCR	(P/C/P)n	(P2/PTC)n	NOZZLE PRESS.	(P4/PTC)n	BASE PRESS.	(P6/P)n	(P7/F)n	(P8/P)n	BODY PRESS.	(P9/P)n	(P10/P)n	(P11/P)n
1	2	376	633	0.895	738	167.5	0.0283	0.0127	0.549	0.980	0.957	0.957	0.933	0.933	0.933	1.014	
2	4	376	633	0.895	437	167.3	0.0303	0.0132	0.946	0.979	0.956	0.956	0.931	0.931	0.931	1.015	
3	6	376	633	0.895	432	165.2	0.0318	0.0135	0.940	0.975	0.954	0.954	0.926	0.926	0.926	1.014	
4	8	376	633	0.895	427	163.3	0.0334	0.0138	0.937	0.977	0.949	0.949	0.923	0.923	0.923	1.014	
5	10	376	633	0.895	421	161.0	0.0348	0.0142	0.934	0.975	0.948	0.948	0.922	0.922	0.922	1.012	
6	12	376	633	0.895	414	158.4	0.0359	0.0143	0.931	0.975	0.946	0.946	0.917	0.917	0.917	1.012	
7	14	376	633	0.895	410	156.8	0.0372	0.0148	0.936	0.979	0.949	0.949	0.920	0.920	0.920	1.014	
8	16	376	633	0.895	404	154.5	0.0378	0.0148	0.936	0.977	0.948	0.948	0.919	0.919	0.919	1.014	
9	18	376	633	0.895	401	153.6	0.0385	0.0151	0.939	0.979	0.951	0.951	0.920	0.920	0.920	1.014	
10	20	376	633	0.895	399	152.8	0.0391	0.0154	0.943	0.982	0.954	0.954	0.925	0.925	0.925	1.017	
11	22	376	633	0.895	398	152.2	0.0392	0.0152	0.942	0.982	0.954	0.954	0.922	0.922	0.922	1.015	
12	24	376	633	0.895	398	152.4	0.0398	0.0156	0.946	0.988	0.959	0.959	0.926	0.926	0.926	1.017	
13	26	376	633	0.895	399	152.8	0.0399	0.0157	0.948	0.991	0.962	0.962	0.930	0.930	0.930	1.017	
14	28	376	633	0.895	400	153.2	0.0400	0.0158	0.949	0.994	0.963	0.963	0.931	0.931	0.931	1.017	
15	30	376	633	0.895	403	154.1	0.0404	0.0160	0.956	0.998	0.969	0.969	0.937	0.937	0.937	1.020	
16	32	376	633	0.895	405	154.9	0.0403	0.0160	0.959	0.998	0.971	0.971	0.937	0.937	0.937	1.020	
17	34	376	633	0.895	407	155.9	0.0404	0.0161	0.962	0.998	0.974	0.974	0.942	0.942	0.942	1.021	
18	36	376	633	0.895	409	156.6	0.0407	0.0163	0.965	1.000	0.975	0.975	0.943	0.943	0.943	1.023	
19	38	376	633	0.895	411	157.2	0.0410	0.0163	0.963	0.998	0.974	0.974	0.943	0.943	0.943	1.023	
20	40	376	633	0.895	411	157.4	0.0412	0.0164	0.962	1.000	0.974	0.974	0.945	0.945	0.945	1.023	
21	42	376	633	0.895	411	157.2	0.0412	0.0164	0.962	1.000	0.972	0.972	0.945	0.945	0.945	1.023	
22	44	376	633	0.895	410	156.8	0.0415	0.0164	0.959	0.998	0.971	0.971	0.943	0.943	0.943	1.023	
23	46	376	633	0.895	408	156.1	0.0415	0.0163	0.957	0.997	0.969	0.969	0.943	0.943	0.943	1.023	
24	48	376	633	0.895	407	155.9	0.0417	0.0163	0.957	0.995	0.968	0.968	0.942	0.942	0.942	1.023	
25	50	376	633	0.895	405	155.1	0.0418	0.0162	0.956	0.992	0.965	0.965	0.939	0.939	0.939	1.021	
26	52	376	633	0.895	404	154.7	0.0417	0.0162	0.956	0.989	0.965	0.965	0.939	0.939	0.939	1.021	
27	54	376	633	0.895	404	154.5	0.0418	0.0162	0.956	0.989	0.965	0.965	0.936	0.936	0.936	1.020	
28	56	376	633	0.895	402	153.8	0.0415	0.0159	0.953	0.988	0.963	0.963	0.936	0.936	0.936	1.020	
29	58	376	633	0.895	402	154.0	0.0416	0.0159	0.953	0.991	0.963	0.963	0.936	0.936	0.936	1.020	
30	60	376	633	0.895	402	154.0	0.0414	0.0158	0.951	0.991	0.963	0.963	0.936	0.936	0.936	1.020	
31	62	376	633	0.895	402	153.8	0.0414	0.0157	0.949	0.989	0.963	0.963	0.934	0.934	0.934	1.020	
32	64	376	633	0.895	403	154.3	0.0415	0.0159	0.954	0.992	0.966	0.966	0.937	0.937	0.937	1.021	

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

PRELIMINARY DATA

RUN LIST TRUSTEP CONF PROPELLANT SAMP RATE
 405 1 66/033/1 38 15KAL 500

FRAME TIME	Pn	Ptn	MACHn	FTCh	(PTC/P)n	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
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	0.954	0.992	0.969	0.939	1.023	
36	72	376	633	0.895	403	154.5	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	0.996	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	0.0162	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	1.028	
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	0.974	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	0.942	1.028	
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	1.026	
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	

102936

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

O. J. P

RUN LIST TESTSTEP COMP PROPELLANT SAMP RATE
 405 1 66/033/1 38 15%AL 500

FRAME	TIME	Fn	Ftn	MACH	PTCn	(PTC/P)n	(P2/PTC)n	KOZZIE PRESS. (P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BOUY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
65	130	376	633	0.895	409	156.4	C.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	0.957	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	1.026		
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	418	160.1	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	0.962	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	0.945	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	0.0397	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	1.002	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	0.0145	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	0.971	1.006	0.985	0.953	1.034		
93	186	376	633	0.895	439	167.9	0.0389	0.0136	0.971	1.006	0.985	0.951	1.031		
94	188	376	633	0.895	441	168.7	0.0386	0.0134	0.971	1.006	0.983	0.953	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	1.008	0.985	0.953	1.031		

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

PRELIMINARY DATA

REF LIST THESE CONF PROPELLANT SAFE RATE
405 1 66/033/1 36 15KAL 500

FRAME	TIME	Pn	FTN	MACHN	ZTCN	(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
97	194	376	633	0.895	445	170.2	0.0378	0.0374	0.0134	0.968	1.009	0.983	0.953	0.951	1.031
98	196	376	633	0.895	446	170.6	0.0372	0.0368	0.0133	0.968	1.009	0.985	0.953	0.951	1.031
99	198	376	633	0.895	447	171.6	0.0366	0.0362	0.0133	0.969	1.009	0.985	0.951	0.951	1.031
100	200	376	633	0.895	449	171.8	0.0364	0.0359	0.0135	0.969	1.006	0.985	0.951	0.951	1.031
101	202	376	633	0.895	450	172.5	0.0358	0.0354	0.0135	0.971	1.009	0.986	0.953	0.951	1.031
102	204	376	633	0.895	453	173.3	0.0356	0.0352	0.0134	0.968	1.008	0.985	0.951	0.951	1.029
103	206	376	633	0.895	455	173.3	0.0354	0.0350	0.0134	0.968	1.011	0.985	0.951	0.951	1.031
104	208	376	633	0.895	455	174.0	0.0352	0.0348	0.0135	0.968	1.011	0.985	0.951	0.951	1.031
105	210	376	633	0.895	456	174.4	0.0350	0.0346	0.0136	0.966	1.009	0.985	0.949	0.949	1.025
106	212	376	633	0.895	456	174.4	0.0348	0.0344	0.0135	0.965	1.009	0.985	0.949	0.949	1.029
107	214	376	633	0.895	458	175.4	0.0346	0.0342	0.0139	0.968	1.006	0.982	0.948	0.948	1.029
108	216	376	633	0.895	458	175.2	0.0344	0.0340	0.0139	0.966	1.005	0.982	0.948	0.948	1.029
109	218	376	633	0.895	459	175.6	0.0342	0.0338	0.0139	0.966	1.006	0.982	0.948	0.948	1.029
110	220	376	633	0.895	460	176.0	0.0340	0.0336	0.0142	0.968	1.006	0.982	0.946	0.946	1.028
111	222	376	633	0.895	459	175.8	0.0338	0.0334	0.0140	0.963	1.002	0.979	0.946	0.946	1.028
112	224	376	633	0.895	461	176.5	0.0336	0.0332	0.0142	0.965	1.005	0.980	0.946	0.946	1.028
113	226	376	633	0.895	461	176.5	0.0334	0.0330	0.0143	0.965	1.005	0.977	0.946	0.946	1.026
114	228	376	633	0.895	462	176.7	0.0332	0.0328	0.0143	0.965	1.005	0.977	0.946	0.946	1.026
115	230	376	633	0.895	463	177.1	0.0330	0.0326	0.0145	0.965	1.003	0.977	0.946	0.946	1.026
116	232	376	633	0.895	463	177.1	0.0328	0.0324	0.0145	0.965	1.003	0.977	0.946	0.946	1.026
117	234	376	633	0.895	463	177.3	0.0326	0.0322	0.0146	0.965	1.003	0.977	0.946	0.946	1.028
118	236	376	633	0.895	464	177.5	0.0324	0.0320	0.0146	0.968	1.003	0.979	0.946	0.946	1.029
119	238	376	633	0.895	464	177.7	0.0322	0.0318	0.0147	0.966	1.002	0.977	0.946	0.946	1.028
120	240	376	633	0.895	464	177.7	0.0320	0.0316	0.0149	0.966	1.005	0.979	0.949	0.949	1.028
121	242	376	633	0.895	465	177.9	0.0318	0.0314	0.0150	0.966	1.006	0.979	0.949	0.949	1.028
122	244	376	633	0.895	465	177.9	0.0316	0.0312	0.0150	0.965	1.006	0.977	0.948	0.948	1.028
123	246	376	633	0.895	465	177.9	0.0314	0.0310	0.0150	0.965	1.006	0.977	0.948	0.948	1.028
124	248	376	633	0.895	465	178.1	0.0312	0.0308	0.0152	0.965	1.005	0.977	0.948	0.948	1.028
125	250	376	633	0.895	465	178.1	0.0310	0.0306	0.0152	0.965	1.002	0.977	0.948	0.948	1.028
126	252	376	633	0.895	465	177.9	0.0308	0.0304	0.0152	0.965	1.000	0.975	0.948	0.948	1.028
127	254	376	633	0.895	466	178.3	0.0306	0.0302	0.0153	0.966	0.998	0.977	0.948	0.948	1.028
128	256	376	633	0.895	466	177.7	0.0304	0.0300	0.0155	0.966	1.000	0.977	0.949	0.949	1.028
							0.0370		0.0154	0.963	0.998	0.975	0.948	0.948	1.028

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

PRELIMINARY DATA

RAE LIST EMSTFP CONF PROPELLANT SAME RATE
405 1 66/033/1 38 15%AL 500

FRAME TIME	Pr	Ptn	KACHn	PTCn	(PTC/F)n	NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
						(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(F7/F)n	(P8/P)n	(P9/P)n	(F10/F)n	(F11/P)n
129	258	376	633	0.895	465	177.9	0.0373	0.963	0.0155	0.963	0.977	0.948	1.028	
130	260	376	633	0.895	464	177.7	0.0375	0.962	0.0155	0.962	0.975	0.948	1.028	
131	262	376	633	0.895	463	177.5	0.0374	0.962	0.0155	0.962	0.975	0.946	1.026	
132	264	376	633	0.895	464	177.7	0.0378	0.965	0.0157	0.965	0.979	0.949	1.029	
133	266	376	633	0.895	463	177.1	0.0377	0.963	0.0156	0.963	0.975	0.948	1.029	
134	268	376	633	0.895	463	177.1	0.0379	0.965	0.0157	0.965	0.977	0.948	1.029	
135	270	376	633	0.895	463	177.1	0.0382	0.963	0.0158	0.963	0.979	0.951	1.031	
136	272	376	633	0.895	461	176.5	0.0380	0.966	0.0156	0.966	0.975	0.946	1.029	
137	274	376	633	0.895	462	176.9	0.0383	0.966	0.0158	0.966	0.977	0.951	1.029	
138	276	376	633	0.895	461	176.5	0.0386	0.966	0.0158	0.966	0.979	0.951	1.031	
139	278	376	633	0.895	461	176.3	0.0388	0.966	0.0159	0.966	0.977	0.949	1.028	
140	280	376	633	0.895	460	176.2	0.0391	0.969	0.0160	0.969	0.977	0.954	1.031	
141	282	376	633	0.895	459	175.6	0.0392	0.968	0.0158	0.968	0.977	0.951	1.031	
142	284	376	633	0.895	457	175.0	0.0395	0.969	0.0160	0.969	0.977	0.951	1.031	
143	286	376	633	0.895	455	174.2	0.0400	0.969	0.0161	0.969	0.977	0.953	1.031	
144	288	376	633	0.895	453	173.3	0.0402	0.968	0.0160	0.968	0.975	0.949	1.029	
145	290	376	633	0.895	449	171.9	0.0408	0.966	0.0162	0.966	0.974	0.951	1.029	
146	292	376	633	0.895	446	170.6	0.0411	0.963	0.0162	0.963	0.972	0.949	1.028	
147	294	376	633	0.895	441	168.7	0.0417	0.962	0.0162	0.962	0.971	0.946	1.028	
148	296	376	633	0.895	435	166.4	0.0423	0.959	0.0162	0.959	0.968	0.946	1.029	
149	298	376	633	0.895	430	164.5	0.0431	0.959	0.0164	0.959	0.968	0.946	1.029	
150	300	376	633	0.895	423	161.8	0.0437	0.956	0.0165	0.956	0.963	0.940	1.026	
151	302	376	633	0.895	416	159.1	0.0444	0.956	0.0165	0.956	0.962	0.939	1.026	
152	304	376	633	0.895	409	156.4	0.0452	0.954	0.0167	0.954	0.960	0.937	1.024	
153	306	376	633	0.895	399	152.8	0.0457	0.949	0.0166	0.949	0.956	0.934	1.024	
154	308	376	633	0.895	392	149.9	0.0464	0.946	0.0167	0.946	0.954	0.931	1.023	
155	310	376	633	0.895	382	146.3	0.0472	0.942	0.0168	0.942	0.951	0.930	1.023	
156	312	376	633	0.895	372	142.5	0.0476	0.937	0.0167	0.937	0.946	0.925	1.021	
157	314	376	633	0.895	363	139.0	0.0486	0.934	0.0169	0.934	0.945	0.925	1.021	
158	316	376	633	0.895	352	134.6	0.0493	0.933	0.0169	0.933	0.942	0.920	1.021	
159	318	376	633	0.895	341	130.5	0.0498	0.933	0.0170	0.933	0.940	0.919	1.021	
160	320	376	633	0.895	331	126.6	0.0506	0.933	0.0173	0.933	0.940	0.919	1.023	

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

PRELIMINARY DATA

REF LIST TWTSTP CONF PROPELLANT SAIP RATE
 405 1 66/033/1 38 15KAL 500

FRAME	FILE	Pn	Ptn	MACHn	PTCn	PTC/Pn	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
161	322	376	633	0.895	319	122.0	0.0510	0.0170	0.925	0.929	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	87.9	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		

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

RUN LIST ENTWSTP COME PROPELLANT SAIP.RATE
 405 1 66/033/1 38 15.44 500

PLANE	TIME	Pn	Ptn	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
							(F2/PTC)n	(F3/PTC)n	(F4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(F9/P)n	(F10/P)n	(P11/P)n
193	386	376	633	0.895	27	10.2	0.1357	0.1090	0.1090	0.922	0.951	0.939	0.904	0.905	1.011
194	388	376	633	0.895	25	9.4	0.1483	0.1179	0.1179	0.928	0.954	0.948	0.905	0.912	1.009
195	390	376	633	0.895	23	8.9	0.1550	0.1298	0.1298	0.934	0.960	0.948	0.913	0.917	1.011
196	392	376	633	0.895	22	8.3	0.1627	0.1368	0.1368	0.940	0.966	0.951	0.916	0.920	1.011
197	394	376	633	0.895	20	7.7	0.1746	0.1491	0.1491	0.945	0.971	0.956	0.920	0.925	1.012
198	396	376	633	0.895	19	7.1	0.1853	0.1611	0.1611	0.948	0.974	0.959	0.923	0.928	1.012
199	398	376	633	0.895	19	7.1	0.1888	0.1638	0.1638	0.951	0.977	0.963	0.925	0.930	1.012
200	400	376	633	0.895	17	6.6	0.2053	0.1781	0.1781	0.951	0.979	0.966	0.925	0.930	1.012
201	402	376	633	0.895	17	6.4	0.2155	0.1865	0.1865	0.951	0.980	0.968	0.925	0.935	1.012
202	404	376	633	0.895	17	6.6	0.2131	0.1840	0.1840	0.949	0.983	0.971	0.926	0.935	1.012
203	406	376	633	0.895	15	5.8	0.2368	0.2016	0.2016	0.945	0.983	0.971	0.923	0.935	1.011
204	408	376	633	0.895	16	6.0	0.2335	0.1984	0.1984	0.943	0.986	0.972	0.923	0.935	1.011
205	410	376	633	0.895	15	5.8	0.2412	0.2049	0.2049	0.940	0.988	0.971	0.922	0.935	1.009
206	412	376	633	0.895	14	5.4	0.2536	0.2124	0.2124	0.937	0.986	0.969	0.920	0.935	1.009
207	414	376	633	0.895	15	5.8	0.2500	0.2082	0.2082	0.940	0.988	0.972	0.922	0.935	1.011
208	416	376	633	0.895	14	5.2	0.2677	0.2238	0.2238	0.939	0.985	0.969	0.920	0.935	1.009
209	418	376	633	0.895	14	5.2	0.2726	0.2238	0.2238	0.940	0.985	0.968	0.920	0.935	1.009
210	420	376	633	0.895	14	5.2	0.2824	0.2311	0.2311	0.942	0.985	0.969	0.923	0.935	1.012
211	422	376	633	0.895	13	4.8	0.2889	0.2415	0.2415	0.939	0.980	0.966	0.920	0.935	1.012
212	424	376	633	0.895	13	5.0	0.2951	0.2361	0.2361	0.942	0.983	0.968	0.925	0.935	1.012
213	426	376	633	0.895	13	4.8	0.2994	0.2454	0.2454	0.942	0.985	0.968	0.925	0.935	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

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RUE LIST TWASBP CHIEF PROPULSANT SAFE RATE
406 1 66/033/1 38 154AL 500

FRAME	TIME	Pa	PTh	MACH	PTON	(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
1	2	377	633	0.892	778	296.9	0.0104	0.0235	0.0104	1.040	1.048	1.050	1.008	1.054	1.054
2	4	377	633	0.892	821	313.1	0.0111	0.0257	0.0111	1.051	1.060	1.060	1.019	1.059	1.059
3	6	377	633	0.892	852	324.9	0.0116	0.0275	0.0116	1.059	1.066	1.068	1.028	1.063	1.063
4	8	377	633	0.892	876	334.3	0.0122	0.0294	0.0122	1.066	1.073	1.076	1.036	1.066	1.066
5	10	377	633	0.892	895	341.3	0.0127	0.0313	0.0127	1.076	1.083	1.083	1.044	1.071	1.071
6	12	377	633	0.892	906	345.5	0.0131	0.0328	0.0131	1.076	1.083	1.083	1.047	1.071	1.071
7	14	377	633	0.892	915	349.1	0.0136	0.0344	0.0136	1.082	1.091	1.091	1.053	1.074	1.074
8	16	377	633	0.892	920	350.9	0.0143	0.0359	0.0143	1.083	1.094	1.092	1.056	1.076	1.076
9	18	377	633	0.892	922	351.6	0.0143	0.0372	0.0143	1.085	1.095	1.092	1.056	1.076	1.076
10	20	377	633	0.892	923	352.2	0.0147	0.0384	0.0147	1.085	1.095	1.098	1.056	1.076	1.076
11	22	377	633	0.892	922	351.6	0.0149	0.0395	0.0149	1.091	1.097	1.098	1.062	1.082	1.082
12	24	377	633	0.892	920	351.0	0.0151	0.0407	0.0151	1.095	1.097	1.100	1.063	1.083	1.083
13	26	377	633	0.892	918	350.3	0.0153	0.0418	0.0153	1.098	1.098	1.102	1.066	1.086	1.086
14	28	377	633	0.892	916	349.5	0.0154	0.0427	0.0154	1.097	1.098	1.100	1.065	1.085	1.085
15	30	377	633	0.892	914	348.6	0.0156	0.0435	0.0156	1.097	1.102	1.103	1.068	1.088	1.088
16	32	377	633	0.892	912	347.8	0.0156	0.0442	0.0156	1.097	1.103	1.103	1.068	1.088	1.088
17	34	377	633	0.892	909	346.7	0.0156	0.0447	0.0156	1.095	1.103	1.103	1.068	1.088	1.088
18	36	377	633	0.892	906	345.7	0.0157	0.0452	0.0157	1.097	1.103	1.103	1.069	1.089	1.089
19	38	377	633	0.892	905	345.1	0.0157	0.0453	0.0157	1.097	1.102	1.103	1.066	1.089	1.089
20	40	377	633	0.892	902	344.2	0.0157	0.0455	0.0157	1.097	1.100	1.103	1.066	1.089	1.089
21	42	377	633	0.892	900	343.4	0.0157	0.0452	0.0157	1.096	1.100	1.103	1.066	1.091	1.091
22	44	377	633	0.892	899	343.0	0.0157	0.0450	0.0157	1.098	1.102	1.103	1.066	1.091	1.091
23	46	377	633	0.892	896	341.9	0.0157	0.0446	0.0157	1.098	1.102	1.102	1.066	1.091	1.091
24	48	377	633	0.892	895	341.5	0.0157	0.0442	0.0157	1.097	1.103	1.103	1.066	1.091	1.091
25	50	377	633	0.892	893	340.7	0.0156	0.0439	0.0156	1.095	1.105	1.103	1.066	1.091	1.091
26	52	377	633	0.892	891	340.0	0.0155	0.0434	0.0155	1.095	1.103	1.102	1.065	1.091	1.091
27	54	377	633	0.892	891	339.8	0.0156	0.0433	0.0156	1.098	1.103	1.103	1.068	1.094	1.094
28	56	377	633	0.892	889	339.0	0.0155	0.0430	0.0155	1.098	1.103	1.103	1.068	1.094	1.094
29	58	377	633	0.892	888	338.6	0.0155	0.0427	0.0155	1.098	1.100	1.102	1.066	1.092	1.092
30	60	377	633	0.892	887	338.5	0.0155	0.0425	0.0155	1.098	1.100	1.103	1.066	1.094	1.094
31	62	377	633	0.892	885	337.7	0.0154	0.0422	0.0154	1.102	1.102	1.105	1.069	1.095	1.095
32	64	377	633	0.892	886	338.1	0.0155	0.0421	0.0155	1.097	1.098	1.102	1.066	1.094	1.094

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

PRELIMINARY DATA

RUN LIST TRIPLE CHECK PROPELLANT SAMP RATE
 406 1 66/033/1 3E 15%AL 50C

FRAME	TIME	PR	FR	SR	PTCN	(PTC/F)n	(P2/PTC)n	NOZZLE PRESS.	(P4/PTC)n	BASS PRESS.	(P6/P)n	(P7/P)n	(P8/F)n	BODY PRESS.	(P9/P)n	(P10/F)n
33	66	377	633	0.892	886	337.9	0.0419	0.0419	0.0134	1.097	1.102	1.102	1.103	1.068	1.068	1.094
34	68	377	633	0.892	886	337.9	0.0417	0.0417	0.0154	1.098	1.102	1.102	1.105	1.069	1.069	1.095
35	70	377	633	0.892	887	338.5	0.0415	0.0415	0.0153	1.097	1.095	1.103	1.103	1.066	1.066	1.094
36	72	377	633	0.892	888	338.8	0.0415	0.0415	0.0153	1.097	1.095	1.103	1.103	1.066	1.066	1.094
37	74	377	633	0.892	889	339.2	0.0415	0.0415	0.0152	1.098	1.095	1.103	1.103	1.068	1.068	1.095
38	76	377	633	0.892	889	339.6	0.0415	0.0415	0.0152	1.097	1.094	1.102	1.102	1.068	1.068	1.095
39	78	377	633	0.892	890	339.6	0.0416	0.0416	0.0152	1.097	1.097	1.103	1.103	1.066	1.066	1.094
40	80	377	633	0.892	892	340.2	0.0415	0.0415	0.0152	1.095	1.098	1.103	1.103	1.065	1.065	1.092
41	82	377	633	0.892	894	340.9	0.0415	0.0415	0.0151	1.095	1.100	1.103	1.103	1.065	1.065	1.091
42	84	377	633	0.892	895	341.5	0.0415	0.0415	0.0151	1.095	1.100	1.105	1.105	1.065	1.065	1.092
43	86	377	633	0.892	897	342.1	0.0414	0.0414	0.0150	1.097	1.098	1.103	1.103	1.065	1.065	1.091
44	88	377	633	0.892	899	343.0	0.0414	0.0414	0.0150	1.097	1.097	1.103	1.103	1.065	1.065	1.091
45	90	377	633	0.892	901	343.6	0.0413	0.0413	0.0149	1.098	1.095	1.103	1.103	1.065	1.065	1.091
46	92	377	633	0.892	903	344.6	0.0412	0.0412	0.0148	1.098	1.095	1.103	1.103	1.063	1.063	1.089
47	94	377	633	0.892	906	345.5	0.0411	0.0411	0.0147	1.098	1.097	1.103	1.103	1.063	1.063	1.088
48	96	377	633	0.892	907	345.9	0.0410	0.0410	0.0147	1.095	1.098	1.103	1.103	1.063	1.063	1.088
49	98	377	633	0.892	909	346.6	0.0410	0.0410	0.0147	1.095	1.098	1.103	1.103	1.063	1.063	1.088
50	100	377	633	0.892	911	347.6	0.0410	0.0410	0.0147	1.094	1.098	1.103	1.103	1.063	1.063	1.088
51	102	377	633	0.892	913	348.2	0.0408	0.0408	0.0145	1.092	1.098	1.102	1.102	1.062	1.062	1.086
52	104	377	633	0.892	916	349.5	0.0410	0.0410	0.0146	1.097	1.100	1.103	1.103	1.063	1.063	1.088
53	106	377	633	0.892	917	349.9	0.0409	0.0409	0.0145	1.095	1.095	1.102	1.102	1.063	1.063	1.086
54	108	377	633	0.892	920	350.9	0.0409	0.0409	0.0145	1.097	1.095	1.102	1.102	1.063	1.063	1.086
55	110	377	633	0.892	923	352.0	0.0411	0.0411	0.0146	1.098	1.097	1.103	1.103	1.065	1.065	1.088
56	112	377	633	0.892	924	352.4	0.0411	0.0411	0.0146	1.098	1.097	1.103	1.103	1.065	1.065	1.088
57	114	377	633	0.892	928	353.9	0.0413	0.0413	0.0145	1.097	1.094	1.102	1.102	1.065	1.065	1.086
58	116	377	633	0.892	930	354.9	0.0413	0.0413	0.0145	1.095	1.098	1.102	1.102	1.065	1.065	1.086
59	118	377	633	0.892	933	356.0	0.0415	0.0415	0.0144	1.095	1.097	1.102	1.102	1.063	1.063	1.086
60	120	377	633	0.892	937	357.5	0.0417	0.0417	0.0145	1.098	1.100	1.105	1.105	1.068	1.068	1.088
61	122	377	633	0.892	940	358.5	0.0417	0.0417	0.0145	1.098	1.098	1.103	1.103	1.065	1.065	1.088
62	124	377	633	0.892	943	359.8	0.0418	0.0418	0.0143	1.102	1.097	1.103	1.103	1.066	1.066	1.089
63	126	377	633	0.892	946	361.0	0.0420	0.0420	0.0143	1.103	1.098	1.106	1.106	1.069	1.069	1.091
64	128	377	633	0.892	950	362.3	0.0420	0.0420	0.0143	1.103	1.098	1.105	1.105	1.066	1.066	1.089

RUL LIST TRNSTP CONF PROPELLANT SAMP RATE
 406 1 66/033/1 38 154AL 500

FRAME	TIME	Pn	Ptn	MACHN	Ptcn	(P2/Ptc)n	NOZZLE PRESS. (P3/Ptc)n	(P4/Ptc)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS. (F10/F)n	(F11/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	368.5	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	1.105	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	0.0141	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	1.114	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	0.0145	1.115	1.108	1.112	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	1.112	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	

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

PRELIMINARY DATA

RUL LIST 406 1 66/053/1 38 15MAY 500

FRAME LINE	IN	PTH	WCHM	PTCH	(F3/P)n	(P2/PTC)n	SCALLE PRESS.	(P4/PTC)n	BASE PRESS.	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS.	(P10/P)n	(P11/P)n
97	194	377	633	0.892	991	378.1	0.0281	0.0155	1.114	1.105	1.112	1.112	1.077	1.077	1.092	
98	196	377	633	0.892	986	377.0	0.0282	0.0156	1.112	1.108	1.112	1.112	1.077	1.077	1.092	
99	196	377	633	0.892	986	376.2	0.0284	0.0157	1.111	1.109	1.112	1.112	1.076	1.076	1.091	
100	200	377	633	0.892	984	375.3	0.0284	0.0158	1.109	1.111	1.111	1.111	1.076	1.076	1.091	
101	202	377	633	0.892	980	373.9	0.0287	0.0158	1.106	1.109	1.111	1.112	1.074	1.074	1.091	
102	204	377	633	0.892	979	373.4	0.0288	0.0159	1.109	1.111	1.111	1.112	1.074	1.074	1.091	
103	206	377	633	0.892	975	372.0	0.0289	0.0159	1.108	1.108	1.111	1.111	1.073	1.073	1.091	
104	208	377	633	0.892	972	370.9	0.0292	0.0160	1.108	1.106	1.111	1.112	1.074	1.074	1.091	
105	210	377	633	0.892	969	369.7	0.0292	0.0161	1.109	1.108	1.112	1.112	1.074	1.074	1.091	
106	212	377	633	0.892	964	367.8	0.0294	0.0162	1.105	1.105	1.108	1.108	1.069	1.069	1.088	
107	214	377	633	0.892	961	366.5	0.0294	0.0162	1.105	1.106	1.109	1.109	1.071	1.071	1.088	
108	216	377	633	0.892	955	364.2	0.0297	0.0163	1.103	1.106	1.109	1.109	1.069	1.069	1.088	
109	218	377	633	0.892	948	361.7	0.0301	0.0164	1.103	1.105	1.106	1.106	1.068	1.068	1.088	
110	220	377	633	0.892	942	359.2	0.0304	0.0164	1.102	1.106	1.108	1.108	1.069	1.069	1.088	
111	222	377	633	0.892	933	355.8	0.0307	0.0164	1.100	1.100	1.100	1.103	1.066	1.066	1.086	
112	224	377	633	0.892	923	352.2	0.0311	0.0165	1.098	1.098	1.098	1.103	1.065	1.065	1.086	
113	226	377	633	0.892	912	348.0	0.0315	0.0165	1.098	1.097	1.097	1.102	1.065	1.065	1.086	
114	228	377	633	0.892	899	343.0	0.0321	0.0166	1.092	1.092	1.092	1.095	1.059	1.059	1.083	
115	230	377	633	0.892	885	337.5	0.0327	0.0166	1.091	1.092	1.092	1.095	1.059	1.059	1.083	
116	232	377	633	0.892	867	330.8	0.0335	0.0166	1.086	1.089	1.089	1.091	1.056	1.056	1.082	
117	234	377	633	0.892	847	323.0	0.0345	0.0167	1.080	1.085	1.085	1.086	1.050	1.050	1.079	
118	236	377	633	0.892	823	314.0	0.0355	0.0168	1.077	1.080	1.080	1.082	1.048	1.048	1.080	
119	238	377	633	0.892	798	304.3	0.0368	0.0168	1.071	1.071	1.071	1.076	1.040	1.040	1.077	
120	240	377	633	0.892	769	293.4	0.0384	0.0170	1.065	1.063	1.063	1.069	1.036	1.036	1.074	
121	242	377	633	0.892	738	281.6	0.0401	0.0172	1.059	1.056	1.056	1.062	1.030	1.030	1.073	
122	244	377	633	0.892	707	269.6	0.0420	0.0175	1.053	1.056	1.056	1.054	1.022	1.022	1.069	
123	246	377	633	0.892	672	256.2	0.0445	0.0174	1.042	1.040	1.040	1.054	1.016	1.016	1.068	
124	248	377	633	0.892	637	242.9	0.0457	0.0176	1.033	1.033	1.033	1.045	1.003	1.003	1.065	
125	250	377	633	0.892	601	229.2	0.0493	0.0176	1.022	1.022	1.022	1.035	0.999	0.999	1.062	
126	252	377	633	0.892	563	214.0	0.0526	0.0177	1.010	1.010	1.010	1.013	0.989	0.989	1.059	
127	254	377	633	0.892	527	201.1	0.0560	0.0180	1.001	0.999	0.999	1.002	0.981	0.981	1.056	
128	256	377	633	0.892	489	186.4	0.0560	0.0180	0.989	0.986	0.986	0.990	0.969	0.969	1.053	

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

PRELIMINARY DATA

RUN LIST
406 1 66/C33/1 38 15%AL 500

FRAME	TIME	IN	FT	MACH	PTCH	(PTC/E) _n	(P2/PTC) _n	NOZZLE PRESS.	(P3/PTC) _n	(P4/PTC) _n	(I6/E) _n	BASE PRESS.	(P7/P) _n	(P8/P) _n	BODY PRESS.	(P9/P) _n	(F10/P) _n	(F11/F) _n
129	258	377	633	0.892	451	172.1	C.0132	C.0598	C.0132	C.0132	0.978	0.972	0.976	0.956	0.956	1.050		
130	260	377	633	0.892	415	158.2	0.0643	0.0643	0.0185	0.0185	0.967	0.960	0.966	0.949	0.949	1.046		
131	262	377	633	0.892	376	143.5	0.0687	0.0687	0.0163	0.0163	0.950	0.944	0.950	0.935	0.935	1.044		
132	264	377	633	0.892	341	130.2	0.0740	0.0740	0.018E	0.018E	0.940	0.929	0.940	0.934	0.934	1.040		
133	266	377	633	0.892	306	116.6	0.0794	0.0794	0.0189	0.0189	0.929	0.921	0.925	0.915	0.915	1.037		
134	268	377	633	0.892	273	104.0	0.0853	0.0853	C.0191	C.0191	0.920	0.909	0.915	0.905	0.905	1.034		
135	270	377	633	0.892	242	92.2	0.0921	0.0921	C.0199	C.0199	0.917	0.903	0.911	0.902	0.902	1.034		
136	272	377	633	0.892	211	80.6	0.0991	0.0991	0.0201	0.0201	C.905	0.892	0.903	0.892	0.892	1.031		
137	274	377	633	0.892	184	70.3	0.1071	0.1071	0.0212	0.0212	0.905	0.886	0.899	0.888	0.888	1.030		
138	276	377	633	0.892	160	61.1	0.1152	0.1152	0.0225	0.0225	0.905	0.886	0.899	0.886	0.886	1.030		
139	278	377	633	0.892	138	52.5	0.1239	0.1239	0.0240	0.0240	0.897	0.880	0.897	0.880	0.880	1.027		
140	280	377	633	0.892	111	45.1	0.1342	0.1342	0.0271	0.0271	0.897	0.883	0.902	0.883	0.883	1.027		
141	282	377	633	0.892	101	38.8	0.1441	0.1441	0.0300	0.0300	0.899	0.891	0.905	0.885	0.885	1.025		
142	284	377	633	0.892	87	33.1	0.1552	0.1552	0.0335	0.0335	0.899	0.891	0.909	0.885	0.885	1.025		
143	286	377	633	0.892	74	28.1	0.1672	0.1672	0.0394	0.0394	0.903	0.897	0.915	0.889	0.889	1.025		
144	288	377	633	0.892	64	24.3	0.1778	0.1778	0.0448	0.0448	0.909	0.902	0.921	0.891	0.891	1.024		
145	290	377	633	0.892	55	20.8	0.1888	0.1888	0.0513	0.0513	0.917	0.906	0.928	0.896	0.896	1.025		
146	292	377	633	0.892	48	18.2	0.1997	0.1997	0.0598	0.0598	0.924	0.912	0.934	0.900	0.900	1.025		
147	294	377	633	0.892	43	16.3	0.2060	0.2060	0.0680	0.0680	0.932	0.918	0.938	0.906	0.906	1.025		
148	296	377	633	0.892	37	14.2	0.2149	0.2149	0.0767	0.0767	0.935	0.924	0.943	0.911	0.911	1.025		
149	298	377	633	0.892	34	12.8	0.2214	0.2214	0.0877	0.0877	0.941	0.929	0.946	0.915	0.915	1.025		
150	300	377	633	0.892	31	11.7	0.2257	0.2257	0.0963	0.0963	0.944	0.935	0.949	0.918	0.918	1.025		
151	302	377	633	0.892	28	10.5	0.2309	0.2309	0.1049	0.1049	0.947	0.937	0.950	0.921	0.921	1.025		
152	304	377	633	0.892	27	10.4	0.2292	0.2292	0.1124	0.1124	0.953	0.940	0.953	0.926	0.926	1.027		
153	306	377	633	0.892	25	9.4	0.2277	0.2277	0.1217	0.1217	0.955	0.938	0.955	0.928	0.928	1.025		
154	308	377	633	0.892	24	9.0	0.2277	0.2277	0.1290	0.1290	0.960	0.943	0.957	0.928	0.928	1.027		
155	310	377	633	0.892	23	8.8	0.2268	0.2268	C.1361	C.1361	0.960	0.943	0.960	0.932	0.932	1.027		
156	312	377	633	0.892	21	8.1	0.2294	0.2294	0.1419	0.1419	0.957	0.941	0.958	0.931	0.931	1.025		
157	314	377	633	0.892	22	8.3	0.2290	0.2290	0.1432	0.1432	0.960	0.946	0.961	0.932	0.932	1.025		
158	316	377	633	0.892	21	7.9	0.2252	0.2252	0.1502	0.1502	0.958	0.949	0.961	0.934	0.934	1.025		
159	318	377	633	0.892	20	7.7	0.2209	0.2209	0.1539	0.1539	0.958	0.947	0.961	0.932	0.932	1.024		
160	320	377	633	0.892	21	7.9	0.2188	0.2188	0.1550	0.1550	0.963	0.952	0.964	0.937	0.937	1.025		

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RUN LIST TWISTEP CONF PROPELLANT SAFETY RATE
 406 1 66/033/1 38 15%AL 500

FRAME TIME	Pn	Ptn	MACHn	FTCn	(FTC/F)n	NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
						(P2/FTC)n	(P3/FTC)n	(P4/FTC)n	(P6/F)n	(F7/F)n	(Z8/F)n	(F9/F)n	(F10/F)n	(F11/F)n
161	322	377	633	0.892	19	7.3	0.2255	0.1619	0.963	0.948	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	0.975	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 FT 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 TITSTR CONF PROPELLANT SAFE RATE
 407 1 66/0533/1 38 15%AL 500

FRAME	TIME	Pn	Ptn	MACH	PCN	(F2/PTC)n	(P3/PTC)n	(F4/PTC)n	(P6/E)n	(P7/P)n	(P8/P)n	(P9/P)n	(F10/P)n	(F11/P)n
1	2	261	637	1.205	494	272.6	0.0265	0.0168	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	1.045	
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	263.9	0.0347	0.0134	0.899	1.080	0.928	0.890	1.043	
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	1.040	
8	16	261	637	1.205	447	246.4	0.0392	0.0146	0.886	1.067	0.917	0.881	1.040	
9	18	261	637	1.205	437	241.2	0.0405	0.0152	0.868	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	0.875	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	1.045	0.901	0.877	1.047	
21	42	261	637	1.205	387	213.5	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	1.045	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	392	215.3	0.0420	0.0152	0.873	1.047	0.901	0.875	1.045	
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	393	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	

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

PRELIMINARY DATA

RUN LIST TESTS COME PROPELLANT SAMP. RATE
407 1 66/033/1 38 155AL 500

FRAME	TIME	Pn	Ptn	MACH	FTCN	(F/C/P)n	(F2/FTC)n	(F3/FTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	BCDY PRESS. (P9/P)n	(P10/P)n	(P11/P)n
33	66	261	637	1.205	395	216.0	C.0418	C.0418	0.0154	0.875	1.043	0.901	0.875	0.875	1.040
34	68	261	637	1.205	394	217.2	0.0419	0.0419	0.0155	0.877	1.047	0.906	C.877	C.877	1.043
35	70	261	637	1.205	394	217.2	0.0419	0.0419	0.0155	0.877	1.049	0.903	0.877	0.877	1.040
36	72	261	637	1.205	394	217.2	0.0419	0.0419	0.0155	0.875	1.051	0.903	0.875	0.875	1.040
37	74	261	637	1.205	394	217.5	C.0417	C.0417	0.0156	0.877	1.054	0.908	0.879	0.879	1.043
38	76	261	637	1.205	394	217.2	C.0418	C.0418	0.0155	0.877	1.049	0.906	0.877	0.877	1.040
39	78	261	637	1.205	394	217.5	C.0417	C.0417	0.0155	0.879	1.047	0.906	0.877	0.877	1.040
40	80	261	637	1.205	394	217.5	C.0417	C.0417	0.0155	0.879	1.047	0.906	0.879	0.879	1.040
41	82	261	637	1.205	395	217.7	0.0418	0.0418	0.0156	0.879	1.047	0.906	0.877	0.877	1.040
42	84	261	637	1.205	394	217.2	0.0417	0.0417	0.0156	0.877	1.047	0.908	0.879	0.879	1.040
43	86	261	637	1.205	395	217.7	0.0417	0.0417	0.0156	0.877	1.049	0.906	0.879	0.879	1.040
44	88	261	637	1.205	394	217.5	0.0415	0.0415	0.0156	0.875	1.049	0.906	0.879	0.879	1.040
45	90	261	637	1.205	394	217.2	0.0414	0.0414	0.0155	0.873	1.047	0.903	0.879	0.879	1.040
46	92	261	637	1.205	395	217.7	0.0417	0.0417	0.0157	0.877	1.047	0.906	0.879	0.879	1.040
47	94	261	637	1.205	394	217.5	0.0415	0.0415	0.0156	0.877	1.047	0.906	0.879	0.879	1.040
48	96	261	637	1.205	394	217.5	0.0414	0.0414	0.0156	0.877	1.045	0.906	0.877	0.877	1.043
49	98	261	637	1.205	395	218.0	0.0416	0.0416	0.0158	0.881	1.043	0.906	0.879	0.879	1.043
50	100	261	637	1.205	394	217.2	0.0413	0.0413	0.0155	0.875	1.043	0.903	0.875	0.875	1.045
51	102	261	637	1.205	395	217.7	0.0415	0.0415	0.0157	0.875	1.045	0.903	0.875	0.875	1.043
52	104	261	637	1.205	395	217.7	0.0415	0.0415	0.0157	0.875	1.045	0.906	0.877	0.877	1.043
53	106	261	637	1.205	394	217.5	0.0412	0.0412	0.0156	0.870	1.038	0.903	C.875	C.875	1.040
54	108	261	637	1.205	395	218.0	0.0416	0.0416	0.0158	0.875	1.043	0.908	0.879	0.879	1.045
55	110	261	637	1.205	394	217.2	0.0414	0.0414	0.0156	0.873	1.036	0.903	0.875	0.875	1.043
56	112	261	637	1.205	394	217.2	0.0413	0.0413	0.0157	0.875	1.036	0.903	0.875	0.875	1.043
57	114	261	637	1.205	394	217.2	0.0414	0.0414	0.0157	0.873	1.036	0.906	0.879	0.879	1.045
58	116	261	637	1.205	393	216.3	0.0411	0.0411	0.0155	0.873	1.036	0.901	0.870	0.870	1.040
59	118	261	637	1.205	394	217.2	0.0414	0.0414	0.0157	0.873	1.045	0.903	0.875	0.875	1.043
60	120	261	637	1.205	393	216.9	0.0413	0.0413	0.0157	0.870	1.047	0.903	0.875	0.875	1.043
61	122	261	637	1.205	393	216.9	0.0411	0.0411	0.0156	0.870	1.047	0.903	0.875	0.875	1.043
62	124	261	637	1.205	393	216.9	0.0413	0.0413	0.0157	0.870	1.051	0.903	0.877	0.877	1.043
63	126	261	637	1.205	394	217.2	0.0411	0.0411	0.0156	0.873	1.047	0.901	0.873	0.873	1.040
64	128	261	637	1.205	394	217.2	0.0411	0.0411	0.0156	0.875	1.047	0.903	0.873	0.873	1.040

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

PRELIMINARY DATA

RUN LIST TRUSTEP CONF ERCEBELLANT SAMP. RATE
4C7 1 66/033/1 38 15VAL 500

FRAME	TIME	PH	PTH	MACH	PTCN	(PFC/P)E	(E2/E00)E	(F3/PTC)n	(P4/PTC)n	(P6/P)n	BASE PRESS.	(P7/P)n	(F8/P)n	(E9/P)n	BCDY PRESS.	(F10/P)n	(F11/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	0.877	1.049	0.903	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	0.0408	0.0153	0.877	1.051	0.903	0.877	1.043				
78	156	261	637	1.205	395	218.0	0.0409	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	0.884	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	0.0154	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	0.0153	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	217.5	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	395	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				

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

PRELIMINARY DATA

RUN LIST THESE CORE PROFILES ARE SAMPLED
 407 1 66/033/1 33 15:41 500

FRAME	FILE	PA	PC	MACH	PTCH	(PTC/P) _n	(F2/PTC) _n	(F3/PTC) _n	(P4/PTC) _n	(F6/P) _n	(P7/E) _n	(P8/P) _n	(F9/E) _n	BODY PRESS. (F10/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	0.906	0.877	1.040		
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	1.049	0.908	0.875	1.045		
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	1.045		
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	0.0154	0.884	1.054	0.906	0.877	1.045		
114	228	261	637	1.205	395	217.7	0.0403	0.0152	0.884	1.049	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	0.0404	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	1.040		
119	238	261	637	1.205	395	218.0	0.0403	0.0152	0.881	1.051	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	1.038		
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	0.0400	0.0152	0.890	1.051	0.912	0.881	1.036		
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	0.0390	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 INTSTP COMP PROGRAMME SAVE RATE
 407 1 66/033/1 32 15%

FRAME	TIME	PL	FRM	MACH	FOR	(PCC/P)E	(P2/PCC)E	(P3/PCC)E	(P4/PCC)E	(P6/P)E	BASE PRESS.	(F7/P)E	(P8/E)E	(P9/E)E	SOY PRESS.	(P11/E)E
129	258	261	637	1.205	397	213.1	0.0402	0.0398	0.0152	0.886	1.056	0.910	0.876	1.036		
130	260	261	637	1.205	396	213.6	0.0401	0.0400	0.0150	0.884	1.049	0.908	0.875	1.034		
131	262	261	637	1.205	396	218.6	0.0401	0.0398	0.0152	0.888	1.049	0.908	0.875	1.038		
132	264	261	637	1.205	397	213.9	0.0401	0.0398	0.0152	0.881	1.049	0.908	0.877	1.036		
133	266	261	637	1.205	396	213.6	0.0400	0.0398	0.0151	0.884	1.049	0.906	0.877	1.036		
134	268	261	637	1.205	396	218.6	0.0399	0.0395	0.0151	0.881	1.049	0.903	0.875	1.036		
135	270	261	637	1.205	396	218.3	0.0401	0.0400	0.0150	0.881	1.051	0.908	0.879	1.036		
136	272	261	637	1.205	395	218.0	0.0401	0.0400	0.0152	0.881	1.047	0.906	0.875	1.036		
137	274	261	637	1.205	395	217.5	0.0401	0.0400	0.0151	0.881	1.045	0.903	0.875	1.036		
138	276	261	637	1.205	394	216.9	0.0402	0.0401	0.0151	0.884	1.045	0.906	0.877	1.040		
139	278	261	637	1.205	393	216.4	0.0403	0.0403	0.0152	0.884	1.045	0.903	0.877	1.040		
140	280	261	637	1.205	392	215.8	0.0403	0.0403	0.0152	0.881	1.045	0.905	0.879	1.040		
141	282	261	637	1.205	391	214.2	0.0405	0.0405	0.0153	0.879	1.047	0.901	0.875	1.040		
142	284	261	637	1.205	386	213.1	0.0408	0.0408	0.0152	0.870	1.040	0.897	0.875	1.038		
143	286	261	637	1.205	383	208.6	0.0415	0.0415	0.0155	0.866	1.029	0.895	0.875	1.036		
144	288	261	637	1.205	378	206.4	0.0420	0.0420	0.0155	0.864	1.023	0.884	0.870	1.036		
145	290	261	637	1.205	374	198.7	0.0427	0.0427	0.0157	0.859	1.020	0.879	0.866	1.040		
146	292	261	637	1.205	368	194.5	0.0450	0.0450	0.0156	0.848	1.009	0.860	0.866	1.040		
147	294	261	637	1.205	360	187.7	0.0459	0.0459	0.0159	0.839	1.005	0.862	0.862	1.038		
148	296	261	637	1.205	352	181.6	0.0450	0.0450	0.0160	0.826	0.998	0.851	0.857	1.038		
149	298	261	637	1.205	340	174.2	0.0464	0.0464	0.0161	0.815	0.985	0.828	0.857	1.040		
150	300	261	637	1.205	316	165.6	0.0469	0.0469	0.0166	0.809	0.976	0.813	0.855	1.033		
151	302	261	637	1.205	300	157.6	0.0481	0.0481	0.0166	0.793	0.956	0.800	0.851	1.038		
152	304	261	637	1.205	286	147.9	0.0492	0.0492	0.0169	0.782	0.939	0.789	0.851	1.043		
153	306	261	637	1.205	268	129.7	0.0500	0.0500	0.0172	0.769	0.926	0.769	0.842	1.036		
154	308	261	637	1.205	252	120.4	0.0512	0.0512	0.0177	0.749	0.903	0.756	0.844	1.036		
155	310	261	637	1.205	235	111.8	0.0524	0.0524	0.0177	0.736	0.892	0.756	0.844	1.036		
156	312	261	637	1.205	218	103.0			0.0179	0.718	0.877	0.740	0.839	1.036		
157	314	261	637	1.205	203											
158	316	261	637	1.205	187											
159	318	261	637	1.205	187											
160	320	261	637	1.205	187											

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

PRELIMINARY DATA

RUN LIST TESTS COME PROPELLANT SAME FILE
 407 1 66/033/1 30 15.44 50

FRAME	FILE	Zn	PFR	KACHN	PTCN	(PTC/Z)E	(P2/PTC)E	ICELLE PRESS.	(P4/PTC)E	(P6/P)E	BASE PRESS.	(F7/P)E	(P8/P)E	(P9/P)E	BOBY PRESS.	(P10/F)E	(P11/F)E
161	322	261	637	1.205	172	95.0	0.0533	0.0180	0.700	0.859	0.846	0.723	0.837	0.837	1.036		
162	324	251	637	1.205	158	87.0	0.0548	0.0187	0.681	0.846	0.826	0.709	0.852	0.852	1.040		
163	326	261	637	1.205	145	79.6	0.0556	0.0186	0.674	0.826	0.811	0.694	0.835	0.835	1.038		
164	328	261	637	1.205	132	72.5	0.0568	0.0192	0.661	0.811	0.800	0.678	0.835	0.835	1.040		
165	330	261	637	1.205	121	66.8	0.0576	0.0197	0.652	0.800	0.793	0.672	0.831	0.831	1.040		
166	332	261	637	1.205	111	61.3	0.0592	0.0202	0.647	0.793	0.793	0.663	0.831	0.831	1.040		
167	334	261	637	1.205	101	55.3	0.0604	0.0207	0.650	0.793	0.798	0.667	0.831	0.831	1.040		
168	336	261	637	1.205	93	51.1	0.0616	0.0215	0.656	0.798	0.804	0.674	0.831	0.831	1.040		
169	338	261	637	1.205	85	46.7	0.0627	0.0223	0.656	0.804	0.813	0.674	0.835	0.835	1.040		
170	340	261	637	1.205	77	42.3	0.0640	0.0234	0.667	0.813	0.822	0.694	0.835	0.835	1.040		
171	342	261	637	1.205	71	39.3	0.0662	0.0259	0.685	0.822	0.831	0.705	0.835	0.835	1.040		
172	344	261	637	1.205	65	35.7	0.0666	0.0277	0.700	0.831	0.842	0.716	0.837	0.837	1.040		
173	346	261	637	1.205	60	32.9	0.0678	0.0300	0.716	0.842	0.855	0.729	0.842	0.842	1.043		
174	348	261	637	1.205	56	30.7	0.0702	0.0331	0.734	0.855	0.864	0.738	0.842	0.842	1.040		
175	350	261	637	1.205	50	27.4	0.0720	0.0351	0.742	0.864	0.879	0.749	0.844	0.844	1.043		
176	352	261	637	1.205	47	25.7	0.0752	0.0384	0.756	0.879	0.892	0.760	0.846	0.846	1.043		
177	354	261	637	1.205	43	23.8	0.0782	0.0415	0.764	0.892	0.899	0.764	0.846	0.846	1.043		
178	356	261	637	1.205	40	21.9	0.0801	0.0439	0.773	0.899	0.910	0.778	0.851	0.851	1.045		
179	358	261	637	1.205	38	20.8	0.0861	0.0502	0.789	0.910	0.912	0.782	0.848	0.848	1.043		
180	360	261	637	1.205	35	19.1	0.0878	0.0532	0.795	0.912	0.919	0.789	0.851	0.851	1.043		
181	362	261	637	1.205	32	17.7	0.0946	0.0573	0.802	0.919	0.928	0.798	0.855	0.855	1.043		
182	364	261	637	1.205	31	16.9	0.0993	0.0634	0.813	0.928	0.930	0.798	0.851	0.851	1.040		
183	366	261	637	1.205	28	15.5	0.1033	0.0654	0.813	0.930	0.943	0.809	0.857	0.857	1.040		
184	368	261	637	1.205	28	14.4	0.1076	0.0702	0.822	0.943	0.952	0.815	0.857	0.857	1.038		
185	370	261	637	1.205	26	14.4	0.1138	0.0743	0.824	0.952	0.956	0.820	0.855	0.855	1.040		
186	372	261	637	1.205	25	13.6	0.1207	0.0768	0.826	0.956	0.965	0.828	0.859	0.859	1.038		
187	374	261	637	1.205	24	13.0	0.1286	0.0842	0.831	0.965	0.967	0.831	0.857	0.857	1.038		
188	376	261	637	1.205	23	12.5	0.1314	0.0877	0.831	0.967	0.970	0.833	0.857	0.857	1.038		
189	378	261	637	1.205	22	12.2	0.1344	0.0916	0.833	0.970	0.972	0.837	0.857	0.857	1.038		
190	380	261	637	1.205	21	11.7	0.1439	0.0942	0.833	0.972	0.979	0.839	0.855	0.855	1.038		
191	382	261	637	1.205	21	11.7	0.1470	0.0942	0.835	0.979	0.979	0.846	0.859	0.859	1.038		
192	384	261	637	1.205	20	11.1	0.1510	0.0964	0.835	0.979	0.979	0.846	0.859	0.859	1.038		

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PRELIMINARY DATA

RUN LIST CRASH COMP PROBLEMS SAME BASE
 407 1 66/033/1 38 15445 50

FRAME	TIME	Pa	Pn	LAGN	PCOR	(PC/E) _n	(P2/PTC) _n	NOZZLE PRESS. (P3/PTC) _n	(P4/PTC) _n	BASE PRESS. (P6/F) _n	(P7/F) _n	(P8/P) _n	BODY PRESS. (P9/F) _n	(F10/E) _n	(F11/E) _n
195	386	261	637	1.205	20	10.0	0.1582	0.837	0.1014	0.837	0.985	0.851	0.859	1.038	1.038
194	388	261	637	1.205	19	10.6	0.1624	0.839	0.1040	0.839	0.994	0.857	0.862	1.038	1.038
195	390	261	637	1.205	18	10.0	0.1677	0.844	0.1070	0.844	0.996	0.864	0.862	1.040	1.040
196	392	261	637	1.205	19	10.0	0.1703	0.853	0.1095	0.853	1.003	0.870	0.864	1.040	1.040
197	394	261	637	1.205	18	9.7	0.1762	0.857	0.1129	0.857	1.005	0.875	0.868	1.040	1.040
198	396	261	637	1.205	18	9.7	0.1800	0.864	0.1129	0.864	1.009	0.879	0.868	1.040	1.040
199	398	261	637	1.205	19	10.0	0.1787	0.870	0.1155	0.870	1.016	0.884	0.875	1.043	1.043
200	400	261	637	1.205	17	9.2	0.1668	0.865	0.1197	0.865	1.016	0.884	0.870	1.040	1.040
201	402	261	637	1.205	17	9.5	0.1852	0.873	0.1191	0.873	1.020	0.888	0.873	1.040	1.040
202	404	261	637	1.205	17	9.2	0.1908	0.873	0.1227	0.873	1.023	0.888	0.873	1.038	1.038
203	406	261	637	1.205	16	8.6	0.1987	0.873	0.1273	0.873	1.020	0.886	0.873	1.038	1.038
204	408	261	637	1.205	17	9.5	0.1930	0.877	0.1249	0.877	1.025	0.888	0.877	1.043	1.043
205	410	261	637	1.205	16	8.6	0.2030	0.877	0.1305	0.877	1.016	0.886	0.875	1.043	1.043
206	412	261	637	1.205	16	8.6	0.2030	0.879	0.1305	0.879	1.014	0.884	0.875	1.043	1.043
207	414	261	637	1.205	16	8.6	0.2072	0.879	0.1337	0.879	1.016	0.886	0.879	1.047	1.047
208	416	261	637	1.205	15	8.4	0.2053	0.875	0.1315	0.875	1.009	0.879	0.873	1.043	1.043
209	418	261	637	1.205	15	8.4	0.2141	0.877	0.1381	0.877	1.014	0.881	0.877	1.045	1.045
210	420	261	637	1.205	15	8.4	0.2141	0.873	0.1348	0.873	1.014	0.881	0.875	1.045	1.045
211	422	261	637	1.205	15	8.1	0.2214	0.868	0.1394	0.868	1.012	0.877	0.873	1.040	1.040
212	424	261	637	1.205	15	6.1	0.2214	0.868	0.1428	0.868	1.014	0.879	0.877	1.045	1.045
213	426	261	637	1.205	15	8.1	0.2214	0.866	0.1394	0.866	1.007	0.877	0.875	1.045	1.045

MACR Q P FT PREF PCAL
 1.205 265.3 261 637 1425 2108

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

SEE LIST THREE CONF PROPRIETARY SAFETY DATA
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RELAY	TIME	FR	FTN	MACEN	PTCH	(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	633	0.897	428	164.2	0.0600	0.0306	1.087	1.103	1.105	1.048	1.071	1.071
2	4	376	633	0.897	440	168.8	0.0539	0.0323	1.096	1.113	1.114	1.056	1.076	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	1.076
4	8	376	633	0.897	453	173.8	0.0701	0.0347	1.105	1.117	1.120	1.062	1.079	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	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	1.080
7	14	376	633	0.897	461	176.8	0.0774	0.0374	1.111	1.128	1.128	1.075	1.082	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	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	1.082
10	20	376	633	0.897	459	175.9	0.0824	0.0392	1.113	1.130	1.126	1.076	1.085	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	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	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	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	1.084
15	30	376	633	0.897	451	172.8	0.0859	0.0401	1.114	1.126	1.125	1.075	1.087	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	1.087
17	34	376	633	0.897	449	172.0	0.0863	0.0402	1.114	1.131	1.125	1.073	1.087	1.087
18	36	376	633	0.897	443	171.6	0.0865	0.0403	1.114	1.131	1.125	1.074	1.088	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	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	1.088
21	42	376	633	0.897	447	171.5	0.0866	0.0403	1.117	1.128	1.126	1.073	1.088	1.088
22	44	376	633	0.897	448	171.8	0.0865	0.0403	1.119	1.128	1.126	1.074	1.090	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	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	1.090
25	50	376	633	0.897	449	172.0	0.0864	0.0401	1.116	1.130	1.126	1.074	1.090	1.090
26	52	376	633	0.897	448	171.8	0.0864	0.0401	1.114	1.128	1.125	1.073	1.088	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	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	1.090
29	58	376	633	0.897	450	172.4	0.0865	0.0402	1.119	1.126	1.126	1.074	1.090	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	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	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	1.091

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

PRELIMINARY DATA

AMS FILE SYSTEM COMP PROGRAMMING SHEET
 408 1 66/053/1 54 2411 20

FRAMES	FILE	IN	PTH	MACHIN	FROM	(P0/P)h	(P1/P)h	(P2/P)h	(P3/P)h	(P4/P)h	(P5/P)h	(P6/P)h	(P7/P)h	(P8/P)h	(P9/P)h	(P10/P)h	(P11/P)h
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	1.126	1.073	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	1.076	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	172.4	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	0.0401	1.117	1.130	1.126	1.076	1.093				
44	88	376	633	0.897	449	172.0	0.0873	0.0401	1.119	1.128	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	1.077	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	0.0874	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	1.126	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				

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

RUN LIST THROSTEN CONE PROPELLANT SAIP RATE
 408 1 66/033/1 34 2:34

FRAMES	TIME	Pa	Pth	MACH	FTCh	(P/C/P) ⁿ	(P2/FTC) ⁿ	NOZZLE PRESS. (P3/FTC) ⁿ	(P4/FTC) ⁿ	BASE PRESS. (P6/P) ⁿ	(P7/P) ⁿ	(P8/P) ⁿ	BODY PRESS. (P9/P) ⁿ	(P10/F) 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	1.074	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	1.126	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	0.0881	0.0398	1.116	1.126	1.122	1.074	1.091		
80	160	376	633	0.897	444	170.1	0.0881	0.0398	1.117	1.126	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	0.0880	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	1.120	1.073	1.088		
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	1.123	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
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PRELIMINARY DATA

09

RUN LIST
408 1 66/033/1 34 2%
CONE PROPELLANT SAMP RATE
20

FRAM	TIME	IN	PTH	MACH	PTCH	(PTC/P) \bar{z}	(P2/PTC) \bar{h}	(P3/PTC) \bar{h}	(P4/PTC) \bar{h}	(P6/P) \bar{h}	(P7/P) \bar{h}	(P8/P) \bar{z}	(P9/P) \bar{z}	(F10/P) \bar{h}	(F11/P) \bar{z}
97	194	376	633	0.897	444	170.3	0.0893	0.0403	0.0403	1.117	1.123	1.122	1.074	1.073	1.090
98	196	376	633	0.897	442	169.5	0.0894	0.0403	0.0403	1.114	1.123	1.120	1.073	1.073	1.090
99	193	376	633	0.897	442	169.5	0.0896	0.0404	0.0404	1.114	1.125	1.120	1.074	1.074	1.090
100	200	376	633	0.897	442	169.3	0.0895	0.0403	0.0403	1.114	1.126	1.120	1.074	1.074	1.090
101	202	376	633	0.897	440	168.8	0.0895	0.0403	0.0403	1.113	1.125	1.119	1.073	1.073	1.085
102	204	376	633	0.897	441	169.0	0.0897	0.0405	0.0405	1.114	1.126	1.122	1.074	1.074	1.090
103	206	376	633	0.897	439	168.2	0.0897	0.0405	0.0405	1.113	1.123	1.119	1.071	1.071	1.088
104	208	376	633	0.897	438	168.0	0.0895	0.0405	0.0405	1.113	1.122	1.119	1.071	1.071	1.088
105	210	376	633	0.897	438	168.0	0.0895	0.0406	0.0406	1.114	1.123	1.120	1.073	1.073	1.090
106	212	376	633	0.897	437	167.4	0.0892	0.0406	0.0406	1.110	1.120	1.117	1.068	1.068	1.087
107	214	376	633	0.897	437	167.4	0.0892	0.0408	0.0408	1.111	1.123	1.117	1.070	1.070	1.087
108	216	376	633	0.897	436	167.0	0.0879	0.0407	0.0407	1.110	1.123	1.114	1.068	1.068	1.085
109	218	376	633	0.897	435	166.9	0.0877	0.0407	0.0407	1.107	1.123	1.114	1.067	1.067	1.084
110	220	376	633	0.897	435	166.9	0.0876	0.0405	0.0405	1.110	1.125	1.117	1.067	1.067	1.084
111	222	376	633	0.897	434	166.5	0.0874	0.0407	0.0407	1.108	1.120	1.114	1.067	1.067	1.084
112	224	376	633	0.897	433	166.1	0.0874	0.0407	0.0407	1.108	1.119	1.114	1.067	1.067	1.084
113	226	376	633	0.897	433	165.9	0.0875	0.0406	0.0406	1.108	1.119	1.114	1.067	1.067	1.084
114	228	376	633	0.897	432	165.7	0.0872	0.0405	0.0405	1.108	1.117	1.113	1.064	1.064	1.082
115	230	376	633	0.897	431	165.5	0.0873	0.0405	0.0405	1.107	1.120	1.114	1.065	1.065	1.084
116	232	376	633	0.897	431	165.1	0.0872	0.0404	0.0404	1.105	1.120	1.114	1.065	1.065	1.082
117	234	376	633	0.897	430	164.7	0.0873	0.0404	0.0404	1.105	1.120	1.113	1.064	1.064	1.082
118	236	376	633	0.897	429	164.4	0.0872	0.0403	0.0403	1.105	1.120	1.113	1.065	1.065	1.082
119	238	376	633	0.897	429	164.1	0.0872	0.0403	0.0403	1.105	1.118	1.111	1.064	1.064	1.082
120	240	376	633	0.897	428	164.0	0.0872	0.0401	0.0401	1.105	1.117	1.111	1.064	1.064	1.082
121	242	376	633	0.897	428	164.0	0.0871	0.0401	0.0401	1.107	1.117	1.111	1.064	1.064	1.082
122	244	376	633	0.897	428	164.0	0.0872	0.0402	0.0402	1.107	1.119	1.113	1.064	1.064	1.082
123	246	376	633	0.897	427	163.6	0.0871	0.0400	0.0400	1.105	1.117	1.111	1.062	1.062	1.082
124	248	376	633	0.897	427	163.4	0.0871	0.0401	0.0401	1.105	1.119	1.111	1.064	1.064	1.082
125	250	376	633	0.897	426	163.4	0.0871	0.0400	0.0400	1.103	1.120	1.111	1.062	1.062	1.082
126	252	376	633	0.897	426	163.2	0.0870	0.0400	0.0400	1.103	1.117	1.111	1.062	1.062	1.082
127	254	376	633	0.897	427	163.6	0.0871	0.0401	0.0401	1.105	1.119	1.113	1.064	1.064	1.082
128	256	376	633	0.897	425	163.0	0.0871	0.0400	0.0400	1.103	1.116	1.111	1.062	1.062	1.080

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National Aeronautics and Space Administration
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PRELIMINARY DATA

RUI LISC : 69/553/1 34 2,34
 408 : 408

PRIME FILE	EL	PCH	MACH	FICH	(PTC/P)n	NOZZLE PRESS.			(P4/P0C)n	BASE PRESS.			BODY PRESS.		
						(F2/PTC)n	(F3/PTC)n	(F5/PTC)n		(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	(P10/P)n	(P11/2)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	0.0870	0.0401	1.103	1.119	1.113	1.064	1.082		
134	268	376	633	0.897	426	163.2	0.0872	0.0401	1.107	1.120	1.114	1.062	1.080		
135	270	376	633	0.897	426	163.4	0.0870	0.0401	1.103	1.114	1.111	1.062	1.080		
136	272	376	633	0.897	425	163.0	0.0871	0.0401	1.103	1.113	1.111	1.062	1.080		
137	274	376	633	0.897	425	162.8	0.0872	0.0402	1.102	1.113	1.110	1.061	1.079		
138	276	376	633	0.897	424	162.6	0.0872	0.0401	1.102	1.114	1.110	1.061	1.080		
139	278	376	633	0.897	423	162.3	0.0873	0.0402	1.100	1.114	1.110	1.061	1.079		
140	280	376	633	0.897	423	162.1	0.0873	0.0402	1.099	1.114	1.108	1.059	1.079		
141	282	376	633	0.897	422	161.9	0.0873	0.0402	1.099	1.113	1.108	1.059	1.080		
142	284	376	633	0.897	421	161.3	0.0874	0.0402	1.099	1.111	1.108	1.059	1.080		
143	286	376	633	0.897	421	161.3	0.0876	0.0402	1.100	1.111	1.108	1.059	1.079		
144	288	376	633	0.897	420	160.9	0.0876	0.0402	1.100	1.110	1.108	1.059	1.079		
145	290	376	633	0.897	420	160.9	0.0877	0.0402	1.100	1.110	1.108	1.059	1.080		
146	292	376	633	0.897	419	160.7	0.0877	0.0402	1.102	1.110	1.110	1.059	1.080		
147	294	376	633	0.897	420	160.9	0.0878	0.0401	1.099	1.110	1.108	1.057	1.079		
148	296	376	633	0.897	418	160.1	0.0877	0.0401	1.099	1.111	1.110	1.057	1.079		
149	298	376	633	0.897	418	160.3	0.0879	0.0401	1.097	1.113	1.110	1.057	1.079		
150	300	376	633	0.897	417	159.8	0.0879	0.0400	1.096	1.111	1.108	1.056	1.079		
151	302	376	633	0.897	417	159.8	0.0882	0.0401	1.100	1.113	1.111	1.059	1.080		
152	304	376	633	0.897	418	160.1	0.0881	0.0400	1.100	1.110	1.108	1.057	1.080		
153	306	376	633	0.897	417	159.8	0.0883	0.0400	1.099	1.108	1.108	1.057	1.080		
154	308	376	633	0.897	417	159.8	0.0883	0.0401	1.102	1.110	1.110	1.059	1.082		
155	310	376	633	0.897	416	159.6	0.0886	0.0398	1.099	1.107	1.107	1.056	1.079		
156	312	376	633	0.897	417	159.8	0.0886	0.0400	1.099	1.111	1.108	1.057	1.079		
157	314	376	633	0.897	417	159.8	0.0887	0.0400	1.096	1.110	1.108	1.056	1.077		
158	316	376	633	0.897	416	159.6	0.0887	0.0400	1.095	1.110	1.107	1.056	1.077		
159	318	376	633	0.897	416	159.6	0.0888	0.0402	1.099	1.113	1.110	1.059	1.079		
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 TIME LISTED COMP PROPELLANT SAMP RATE
 408 1 65/533/1 34 25AL 20

FRAME	TIME	IN	PTH	WCHN	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/F) _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	0.0399	0.0399	1.099	1.108	1.107	1.056	1.077		
163	326	376	633	0.897	417	160.0	0.0399	0.0401	1.099	1.110	1.108	1.057	1.075		
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	1.077		
172	344	376	633	0.897	421	161.5	0.0891	0.0403	1.103	1.113	1.110	1.061	1.075		
173	346	376	633	0.897	421	161.5	0.0889	0.0403	1.100	1.113	1.107	1.059	1.077		
174	348	376	633	0.897	421	161.5	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	0.0890	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	1.095	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	1.064		
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		

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

PRELIMINARY DATA

ROI LIST TESTS CONF FACILITIES SAFT DATE
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TIME	Pa	PTD	MACRO	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
193	386	376	633	0.897	281	107.8	0.0978	0.0447	1.016	1.028	1.027	0.979	1.027	1.051
194	388	376	633	0.897	270	103.4	0.0985	0.0447	1.010	1.019	1.019	0.970	1.019	1.048
195	390	376	633	0.897	257	98.6	0.0987	0.0448	1.002	1.008	1.011	0.962	1.011	1.047
196	392	376	633	0.897	246	94.2	0.0989	0.0448	0.995	0.999	1.004	0.955	1.004	1.045
197	394	376	633	0.897	235	90.0	0.0992	0.0448	0.987	0.993	0.996	0.949	0.996	1.042
198	396	376	633	0.897	223	85.4	0.0996	0.0445	0.978	0.984	0.987	0.939	0.987	1.041
199	398	376	633	0.897	212	81.6	0.0998	0.0445	0.970	0.978	0.979	0.933	0.979	1.039
200	400	376	633	0.897	202	77.5	0.0998	0.0445	0.962	0.970	0.972	0.927	0.972	1.038
201	402	376	633	0.897	192	73.7	0.0998	0.0438	0.952	0.959	0.962	0.918	0.962	1.034
202	404	376	633	0.897	184	70.4	0.1004	0.0439	0.952	0.955	0.958	0.915	0.958	1.034
203	406	376	633	0.897	174	66.6	0.1004	0.0439	0.944	0.941	0.950	0.907	0.950	1.033
204	408	376	633	0.897	165	63.3	0.1007	0.0433	0.936	0.932	0.942	0.903	0.942	1.031
205	410	376	633	0.897	157	60.3	0.1012	0.0433	0.935	0.926	0.939	0.900	0.939	1.028
206	412	376	633	0.897	148	56.6	0.1014	0.0427	0.927	0.916	0.930	0.892	0.930	1.026
207	414	376	633	0.897	141	53.9	0.1022	0.0427	0.926	0.913	0.929	0.890	0.929	1.028
208	416	376	633	0.897	133	51.1	0.1019	0.0425	0.925	0.910	0.924	0.887	0.924	1.020
209	418	376	633	0.897	125	48.0	0.1026	0.0426	0.919	0.904	0.919	0.883	0.919	1.027
210	420	376	633	0.897	119	45.5	0.1037	0.0422	0.921	0.903	0.919	0.886	0.919	1.027
211	422	376	633	0.897	111	42.6	0.1041	0.0415	0.919	0.896	0.916	0.881	0.916	1.025
212	424	376	633	0.897	105	40.1	0.1046	0.0412	0.925	0.896	0.916	0.881	0.916	1.025
213	426	376	633	0.897	99	37.8	0.1056	0.0411	0.925	0.896	0.919	0.883	0.919	1.025

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

PRELIMINARY DATA

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POINTS	TIME	PR	FEE	MACH	PCOM	PCOM	(PTC/P) n	MOBILE PRESS.		BASE PRESS.		(PE/E) n	BODY PRESS.	
								(P3/PTC) n	(P3/PTC) n	(P6/P) n	(P7/P) n		(P3/P) n	(P10/E) n
1	1	376	632	0.894	710	271.9	0.0625	0.0335	1.188	1.198	1.151	1.142	1.122	
2	4	376	632	0.894	767	293.7	0.0667	0.0355	1.206	1.218	1.160	1.160	1.133	
3	6	376	632	0.894	817	312.7	0.0708	0.0372	1.220	1.235	1.226	1.226	1.140	
4	8	376	632	0.894	858	328.6	0.0747	0.0386	1.232	1.249	1.238	1.238	1.149	
5	10	376	632	0.894	894	342.2	0.0787	0.0396	1.244	1.260	1.249	1.249	1.156	
6	12	376	632	0.894	920	352.5	0.0824	0.0408	1.252	1.266	1.255	1.255	1.160	
7	14	376	632	0.894	940	360.0	0.0861	0.0415	1.260	1.272	1.261	1.261	1.165	
8	16	376	632	0.894	954	365.5	0.0897	0.0423	1.267	1.280	1.267	1.267	1.171	
9	18	376	632	0.894	961	368.0	0.0928	0.0429	1.267	1.283	1.269	1.269	1.172	
10	20	376	632	0.894	966	369.9	0.0959	0.0436	1.272	1.289	1.272	1.272	1.175	
11	22	376	632	0.894	967	370.3	0.0987	0.0441	1.273	1.292	1.273	1.273	1.177	
12	24	376	632	0.894	965	369.5	0.1015	0.0445	1.272	1.290	1.272	1.272	1.179	
13	26	376	632	0.894	963	368.6	0.1041	0.0448	1.277	1.293	1.275	1.275	1.182	
14	28	376	632	0.894	957	366.5	0.1068	0.0449	1.275	1.289	1.273	1.273	1.180	
15	30	376	632	0.894	953	364.9	0.1094	0.0449	1.277	1.287	1.273	1.273	1.182	
16	32	376	632	0.894	949	363.2	0.1121	0.0449	1.278	1.289	1.275	1.275	1.183	
17	34	376	632	0.894	944	361.5	0.1146	0.0447	1.278	1.286	1.270	1.270	1.182	
18	36	376	632	0.894	941	360.4	0.1168	0.0447	1.277	1.290	1.273	1.273	1.183	
19	38	376	632	0.894	939	359.4	0.1185	0.0447	1.275	1.290	1.273	1.273	1.183	
20	40	376	632	0.894	936	358.4	0.1194	0.0447	1.275	1.292	1.273	1.273	1.185	
21	42	376	632	0.894	935	357.9	0.1195	0.0449	1.278	1.295	1.277	1.277	1.188	
22	44	376	632	0.894	933	357.5	0.1188	0.0450	1.278	1.292	1.275	1.275	1.188	
23	46	376	632	0.894	932	356.7	0.1173	0.0452	1.280	1.290	1.277	1.277	1.188	
24	48	376	632	0.894	931	356.5	0.1152	0.0454	1.281	1.292	1.277	1.277	1.189	
25	50	376	632	0.894	931	356.5	0.1125	0.0455	1.281	1.292	1.277	1.277	1.189	
26	52	376	632	0.894	930	356.1	0.1097	0.0455	1.280	1.292	1.278	1.278	1.191	
27	54	376	632	0.894	930	356.1	0.1067	0.0453	1.280	1.293	1.278	1.278	1.191	
28	56	376	632	0.894	930	356.1	0.1036	0.0451	1.280	1.293	1.278	1.278	1.191	
29	58	376	632	0.894	930	356.1	0.1007	0.0448	1.278	1.292	1.277	1.277	1.191	
30	60	376	632	0.894	932	356.7	0.0981	0.0445	1.281	1.293	1.278	1.278	1.191	
31	62	376	632	0.894	932	356.7	0.0959	0.0442	1.281	1.290	1.278	1.278	1.191	
32	64	376	632	0.894	933	357.3	0.0941	0.0439	1.283	1.290	1.278	1.278	1.191	

12236

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

PRELIMINARY DATA

RPT LIST TESTS CONF PROPELLANT SAMP RATE
409 1 66/C33/1 34 15:41 500

PRIME ID#	IN	FIR	MACH	FPC/F	NOZZLE PRESS.		BASE PRESS.		BODY PRESS.	
					(22/FPC)h	(F3/FPC)h	(26/F)h	(F7/F)h	(28/P)h	(F9/P)h (F10/P)h (P11/P)h
33	66	376	632	0.894	936	0.0926	1.284	1.292	1.234	1.192
34	68	376	632	0.894	936	0.0912	1.280	1.289	1.232	1.191
35	70	376	632	0.894	940	0.0900	1.280	1.292	1.232	1.191
36	72	376	632	0.894	943	0.0890	1.280	1.290	1.232	1.189
37	74	376	632	0.894	946	0.0882	1.276	1.290	1.231	1.188
38	76	376	632	0.894	950	0.0878	1.261	1.292	1.234	1.189
39	78	376	632	0.894	952	0.0874	1.260	1.287	1.232	1.188
40	80	376	632	0.894	954	0.0874	1.261	1.286	1.232	1.188
41	82	376	632	0.894	956	0.0876	1.281	1.286	1.232	1.188
42	84	376	632	0.894	958	0.0878	1.278	1.284	1.234	1.189
43	86	376	632	0.894	960	0.0880	1.278	1.284	1.229	1.185
44	88	376	632	0.894	961	0.0879	1.277	1.286	1.229	1.185
45	90	376	632	0.894	962	0.0876	1.275	1.286	1.231	1.185
46	92	376	632	0.894	963	0.0878	1.275	1.286	1.228	1.185
47	94	376	632	0.894	964	0.0876	1.275	1.283	1.231	1.185
48	96	376	632	0.894	964	0.0876	1.275	1.283	1.228	1.182
49	98	376	632	0.894	964	0.0875	1.277	1.281	1.229	1.183
50	100	376	632	0.894	964	0.0874	1.277	1.281	1.228	1.182
51	102	376	632	0.894	963	0.0873	1.275	1.283	1.228	1.182
52	104	376	632	0.894	963	0.0872	1.275	1.283	1.228	1.182
53	106	376	632	0.894	962	0.0873	1.273	1.284	1.228	1.180
54	108	376	632	0.894	960	0.0872	1.273	1.284	1.228	1.182
55	110	376	632	0.894	961	0.0871	1.273	1.285	1.228	1.182
56	112	376	632	0.894	961	0.0871	1.277	1.281	1.228	1.182
57	114	376	632	0.894	960	0.0869	1.277	1.280	1.228	1.182
58	116	376	632	0.894	960	0.0869	1.278	1.280	1.228	1.183
59	118	376	632	0.894	961	0.0871	1.281	1.283	1.231	1.185
60	120	376	632	0.894	960	0.0873	1.278	1.281	1.231	1.183
61	122	376	632	0.894	958	0.0876	1.278	1.284	1.231	1.185
62	124	376	632	0.894	955	0.0880	1.278	1.286	1.231	1.185
63	126	376	632	0.894	952	0.0984	1.275	1.286	1.229	1.185
64	128	376	632	0.894	947	0.0992	1.280	1.287	1.232	1.185
						0.0900	1.277	1.284	1.229	1.183

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

PRELIMINARY DATA

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REF LIST ENTSEP CONF PROPELLANT SMIF.DATE
 409 1 66/033/1 34 15:AL 500

FRAM	TIME	PH	PTN	MACH	PCON	(PIC/P)n	(P2/PTC)n	NOZLE PRESS.	(P4/PTC)n	(P6/P)n	BASE PRESS.	(P8/P)n	(P9/P)n	BOXY PRESS.	(P11/P)n
65	130	376	632	0.894	942	360.7	0.0909	0.0412	1.278	1.283	1.283	1.272	1.229	1.183	
66	132	376	632	0.894	936	359.2	0.0918	0.0414	1.280	1.286	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	1.284	1.270	1.228	1.183	
68	136	376	632	0.894	930	356.1	0.0926	0.0415	1.278	1.289	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	1.289	1.272	1.226	1.185	
70	140	376	632	0.894	924	353.7	0.0925	0.0417	1.275	1.290	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	1.292	1.273	1.231	1.186	
72	144	376	632	0.894	919	351.9	0.0926	0.0420	1.277	1.289	1.289	1.272	1.228	1.185	
73	146	376	632	0.894	917	351.2	0.0924	0.0422	1.277	1.287	1.287	1.272	1.228	1.185	
74	148	376	632	0.894	915	350.4	0.0924	0.0424	1.278	1.286	1.286	1.272	1.228	1.186	
75	150	376	632	0.894	915	350.2	0.0922	0.0425	1.277	1.284	1.284	1.272	1.228	1.185	
76	152	376	632	0.894	912	349.1	0.0923	0.0428	1.275	1.284	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	1.284	1.272	1.226	1.183	
78	156	376	632	0.894	908	347.7	0.0925	0.0432	1.272	1.283	1.283	1.269	1.224	1.183	
79	158	376	632	0.894	906	346.8	0.0925	0.0433	1.270	1.281	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	1.280	1.269	1.224	1.182	
81	162	376	632	0.894	902	345.4	0.0920	0.0433	1.272	1.277	1.277	1.267	1.221	1.180	
82	164	376	632	0.894	900	344.7	0.0915	0.0432	1.273	1.275	1.275	1.267	1.221	1.180	
83	166	376	632	0.894	899	344.3	0.0911	0.0429	1.273	1.277	1.277	1.269	1.224	1.182	
84	163	376	632	0.894	896	343.1	0.0905	0.0426	1.270	1.275	1.275	1.267	1.221	1.180	
85	170	376	632	0.894	896	342.9	0.0900	0.0423	1.270	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	1.277	1.267	1.221	1.179	
87	174	376	632	0.894	892	341.6	0.0894	0.0417	1.267	1.275	1.275	1.266	1.220	1.177	
88	176	376	632	0.894	892	341.4	0.0895	0.0417	1.270	1.278	1.278	1.269	1.223	1.179	
89	178	376	632	0.894	890	340.6	0.0896	0.0415	1.269	1.273	1.273	1.266	1.221	1.177	
90	180	376	632	0.894	888	340.1	0.0898	0.0414	1.270	1.273	1.273	1.266	1.220	1.177	
91	182	376	632	0.894	887	339.7	0.0900	0.0413	1.270	1.273	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	1.270	1.264	1.216	1.175	
93	186	376	632	0.894	884	338.3	0.0901	0.0409	1.267	1.273	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	1.273	1.264	1.220	1.175	
95	190	376	632	0.894	880	336.8	0.0904	0.0406	1.264	1.273	1.273	1.264	1.216	1.174	
96	192	376	632	0.894	879	336.4	0.0906	0.0406	1.267	1.273	1.273	1.264	1.221	1.175	

12237

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

PRELIMINARY DATA

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 RUC LIST WARSSE COND PROGRAMME SHIPBOARD 500

FRANK	TIME	Fn	Ptn	MACHn	FTCh	(P30/P)n	(E2/P30)n	(E3/P30)n	(P4/P30)n	(P6/P30)n	BASE PRESS. (E7/E)n	(E8/E)n	(P9/P)n	BOY PRESS. (E10/E)n	(E11/E)n
97	194	376	632	0.894	677	325.1	0.0907	0.0406	0.0406	1.267	1.270	1.265	1.218	1.174	
98	196	376	632	0.894	675	325.1	0.0907	0.0406	0.0406	1.267	1.269	1.265	1.218	1.174	
99	193	376	632	0.894	674	324.7	0.0908	0.0407	0.0407	1.269	1.270	1.265	1.220	1.175	
100	200	376	632	0.894	673	324.3	0.0907	0.0409	0.0409	1.269	1.270	1.264	1.218	1.175	
101	202	376	632	0.894	671	323.4	0.0906	0.0411	0.0411	1.269	1.272	1.264	1.220	1.175	
102	204	376	632	0.894	669	322.8	0.0906	0.0413	0.0413	1.267	1.272	1.264	1.220	1.174	
103	206	376	632	0.894	667	321.8	0.0903	0.0415	0.0415	1.266	1.273	1.264	1.218	1.174	
104	208	376	632	0.894	663	320.5	0.0908	0.0418	0.0418	1.264	1.272	1.265	1.217	1.174	
105	210	376	632	0.894	660	329.2	0.0909	0.0422	0.0422	1.266	1.272	1.265	1.217	1.174	
106	212	376	632	0.894	654	326.9	0.0910	0.0425	0.0425	1.264	1.267	1.261	1.215	1.172	
107	214	376	632	0.894	646	324.0	0.0912	0.0430	0.0430	1.264	1.266	1.261	1.214	1.172	
108	216	376	632	0.894	637	320.3	0.0915	0.0435	0.0435	1.264	1.264	1.261	1.214	1.171	
109	218	376	632	0.894	622	314.8	0.0916	0.0439	0.0439	1.257	1.260	1.255	1.208	1.169	
110	220	376	632	0.894	606	308.7	0.0918	0.0444	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	0.0448	1.247	1.252	1.247	1.200	1.166	
112	224	376	632	0.894	760	290.9	0.0924	0.0450	0.0450	1.240	1.243	1.238	1.191	1.159	
113	226	376	632	0.894	732	280.3	0.0928	0.0451	0.0451	1.224	1.243	1.238	1.175	1.157	
114	228	376	632	0.894	700	267.9	0.0931	0.0451	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	0.0449	1.217	1.214	1.214	1.166	1.145	
116	232	376	632	0.894	632	242.0	0.0936	0.0446	0.0446	1.209	1.205	1.205	1.159	1.142	
117	234	376	632	0.894	597	228.6	0.0938	0.0443	0.0443	1.195	1.189	1.189	1.145	1.133	
118	236	376	632	0.894	564	215.6	0.0943	0.0440	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	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	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	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	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	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	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	0.0396	1.097	1.082	1.084	1.042	1.082	
126	252	376	632	0.894	344	131.6	0.0967	0.0390	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	0.0385	1.071	1.059	1.061	1.016	1.076	
128	256	376	632	0.894	302	115.7	0.0974	0.0379	0.0379	1.058	1.047	1.047	1.005	1.073	

National Aeronautics and Space Administration
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PRELIMINARY DATA

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RUN LIST TWISSE COMP PROPELLANT SAFETY DATA
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PRIME TIME	EN	PER	LAGEN	PTOR	(P0/E)E	(P2/PTC)E	(E3/PTC)E	(P4/PTC)E	BASE PRESS (F6/E)E	(F7/F)E	(F8/E)E	BOY PRESS (F9/F)E	(F10/E)E	(F11/F)E
129	258	376	632	0.894	282	108.0	0.0975	0.0374	1.044	1.032	1.035	0.995	0.995	1.068
130	260	376	632	0.894	264	101.2	0.0978	0.0369	1.033	1.018	1.024	0.963	0.963	1.065
131	262	376	632	0.894	245	93.9	0.0963	0.0365	1.021	1.002	1.012	0.970	0.970	1.062
132	264	376	632	0.894	228	87.4	0.0963	0.0362	1.001	0.990	1.001	0.960	0.960	1.059
133	266	376	632	0.894	212	81.2	0.0985	0.0359	0.986	0.979	0.992	0.950	0.950	1.058
134	268	376	632	0.894	195	74.5	0.0988	0.0350	0.978	0.966	0.978	0.930	0.930	1.055
135	270	376	632	0.894	180	69.0	0.0990	0.0345	0.969	0.946	0.961	0.920	0.920	1.050
136	272	376	632	0.894	166	63.4	0.0992	0.0345	0.958	0.934	0.952	0.910	0.910	1.047
137	274	376	632	0.894	152	59.1	0.0997	0.0340	0.955	0.927	0.949	0.900	0.900	1.044
138	276	376	632	0.894	140	53.7	0.0997	0.0337	0.944	0.918	0.941	0.890	0.890	1.044
139	278	376	632	0.894	127	48.7	0.0994	0.0331	0.944	0.912	0.938	0.895	0.895	1.039
140	280	376	632	0.894	117	44.7	0.0996	0.0326	0.944	0.912	0.938	0.895	0.895	1.039
141	282	376	632	0.894	107	40.9	0.1004	0.0324	0.945	0.911	0.938	0.894	0.894	1.036
142	284	376	632	0.894	97	37.0	0.0997	0.0316	0.938	0.906	0.935	0.888	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	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	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	0.889	1.035
146	292	376	632	0.894	68	25.0	0.1020	0.0341	0.940	0.911	0.937	0.894	0.894	1.035
147	294	376	632	0.894	62	23.6	0.1026	0.0339	0.944	0.909	0.937	0.892	0.892	1.035
148	296	376	632	0.894	57	21.9	0.1045	0.0360	0.949	0.911	0.940	0.895	0.895	1.035
149	296	376	632	0.894	53	20.2	0.1063	0.0381	0.956	0.912	0.945	0.901	0.901	1.035
150	300	376	632	0.894	50	19.0	0.1095	0.0394	0.963	0.915	0.945	0.904	0.904	1.035
151	302	376	632	0.894	46	17.5	0.1135	0.0429	0.969	0.920	0.952	0.911	0.911	1.035
152	304	376	632	0.894	44	16.7	0.1159	0.0448	0.975	0.924	0.955	0.915	0.915	1.035
153	306	376	632	0.894	41	15.8	0.1175	0.0476	0.979	0.929	0.958	0.926	0.926	1.035
154	308	376	632	0.894	39	14.8	0.1200	0.0506	0.986	0.930	0.961	0.926	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	0.930	1.036
156	312	376	632	0.894	36	13.5	0.1282	0.0569	0.996	0.935	0.967	0.934	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	0.936	1.036
158	316	376	632	0.894	35	13.5	0.1357	0.0628	1.004	0.945	0.973	0.945	0.945	1.036
159	318	376	632	0.894	33	12.7	0.1378	0.0635	1.001	0.943	0.972	0.941	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	0.945	1.035

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National Aeronautics and Space Administration
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PRELIMINARY DATA

RUN LIST TESTS COMF PERFORMANCE SNIP RACS
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FRAME TIME	DR	PTL	MACH	PTCH	(PTC/P)n	NOZZLE PRESS.			BASE PRESS.			BODY PRESS.		
						(P2/PIC)n	(E3/PTC)n	(F4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/E)n	(F10/E)n	(F11/E)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	0.941	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	0.0752	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	0.966	1.042	
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	1.042	
175	350	376	632	0.894	31	11.8	0.1686	0.0785	1.015	0.990	1.010	0.955	1.044	
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	0.992	1.009	0.955	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	1.039	
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	1.041	
188	376	376	632	0.894	31	11.8	0.1707	0.0801	1.010	0.992	1.010	0.950	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	1.042	
191	382	376	632	0.894	30	11.6	0.1714	0.0798	1.015	0.990	1.015	0.955	1.042	
192	384	376	632	0.894	30	11.4	0.1695	0.0778	1.012	0.989	1.010	0.952	1.039	

National Aeronautics and Space Administration
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PRELIMINARY DATA

REF LIST TABLE ONE PROPELLANT AND GRADE
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TABLE TITLE	EN	PR	MACH	P	PT	PREP	PCAL	NOZZLE PRESS.			BASE PRESS.		
								(P2/P0)n	(P3/P0)n	(P4/P0)n	(P6/P)n	(P7/P)n	(P8/P)n
193	386	376	632	0.894	30	11.4	0.1742	0.0911	1.013	0.992	1.012	0.956	1.041
194	388	376	632	0.894	30	11.6	0.1714	0.0798	1.013	0.993	1.012	0.956	1.039
195	390	376	632	0.894	30	11.4	0.1742	0.0794	1.015	0.993	1.015	0.955	1.039
196	392	376	632	0.894	30	11.4	0.1742	0.0823	1.015	0.995	1.015	0.956	1.042
197	394	376	632	0.894	30	11.4	0.1720	0.0794	1.016	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	0.0311	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	1.015	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	0.0311	1.016	0.998	1.015	0.955	1.041
212	424	376	632	0.894	30	11.4	0.1720	0.0778	1.013	0.996	1.015	0.956	1.041
213	426	376	632	0.894	31	11.3	0.1707	0.0801	1.013	0.999	1.016	0.956	1.042

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

ALL DATA CORRECTED COEFFICIENTS SAME DATA
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TRAILING ZONE	IN	PTH	MACH	PCN	(PC/F) ⁿ	(E1/PC) ⁿ	(E3/PC) ⁿ	(P4/PC) ⁿ	BASE PRESS. (P6/P) ⁿ	(F7/F) ⁿ	(P8/F) ⁿ	BODY PRESS. (P9/P) ⁿ	(P10/F) ⁿ	(P11/F) ⁿ
1	2	376	634	0.897	927	354.7	0.0196	0.0087	1.056	1.086	1.08	1.027	1.044	1.065
2	4	376	634	0.897	1028	393.3	0.0213	0.0093	1.073	1.107	1.096	1.044	1.059	1.073
3	6	376	634	0.897	1123	429.5	0.0231	0.0095	1.088	1.124	1.106	1.078	1.090	1.088
4	8	376	634	0.897	1214	464.5	0.0250	0.0106	1.105	1.144	1.127	1.090	1.101	1.095
5	10	376	634	0.897	1295	495.7	0.0267	0.0111	1.118	1.154	1.136	1.107	1.116	1.107
6	12	376	634	0.897	1370	524.2	0.0286	0.0116	1.131	1.167	1.148	1.122	1.131	1.116
7	14	376	634	0.897	1436	549.7	0.0304	0.0121	1.142	1.177	1.159	1.147	1.147	1.127
8	16	376	634	0.897	1494	571.7	0.0323	0.0125	1.150	1.186	1.163	1.150	1.150	1.128
9	18	376	634	0.897	1543	590.6	0.0342	0.0129	1.157	1.195	1.173	1.153	1.153	1.131
10	20	376	634	0.897	1585	606.5	0.0362	0.0133	1.162	1.203	1.179	1.153	1.153	1.119
11	22	376	634	0.897	1618	619.3	0.0383	0.0136	1.165	1.209	1.182	1.153	1.153	1.122
12	24	376	634	0.897	1646	629.8	0.0405	0.0138	1.170	1.212	1.186	1.153	1.153	1.127
13	26	376	634	0.897	1668	638.3	0.0422	0.0141	1.173	1.214	1.188	1.153	1.153	1.130
14	28	376	634	0.897	1684	644.4	0.0433	0.0143	1.176	1.214	1.191	1.153	1.153	1.131
15	30	376	634	0.897	1696	649.2	0.0439	0.0144	1.177	1.216	1.193	1.153	1.153	1.131
16	32	376	634	0.897	1706	652.8	0.0443	0.0146	1.179	1.217	1.193	1.153	1.153	1.131
17	34	376	634	0.897	1710	654.5	0.0445	0.0147	1.179	1.219	1.193	1.153	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	1.153	1.130
19	38	376	634	0.897	1715	656.2	0.0440	0.0148	1.179	1.219	1.194	1.153	1.153	1.128
20	40	376	634	0.897	1713	655.7	0.0436	0.0149	1.177	1.217	1.194	1.153	1.153	1.122
21	42	376	634	0.897	1713	655.5	0.0435	0.0150	1.180	1.217	1.196	1.156	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	1.156	1.098
23	46	376	634	0.897	1706	652.8	0.0425	0.0150	1.182	1.211	1.196	1.156	1.156	1.075
24	48	376	634	0.897	1702	651.5	0.0422	0.0151	1.183	1.209	1.196	1.157	1.157	1.052
25	50	376	634	0.897	1697	649.4	0.0418	0.0150	1.177	1.203	1.189	1.154	1.154	1.023
26	52	376	634	0.897	1693	647.8	0.0415	0.0151	1.177	1.203	1.189	1.154	1.154	0.997
27	54	376	634	0.897	1688	646.1	0.0417	0.0151	1.174	1.200	1.185	1.153	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	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	1.150	0.926
30	60	376	634	0.897	1673	640.4	0.0411	0.0151	1.165	1.194	1.171	1.145	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	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	1.142	0.866

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

PRELIMINARY DATA

RUN LINE 1 MISSILE COMB PROGRAMMANT SELF-RATE
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FRAME LINE	EN	27H	LACEN	PCOM	(PTC/E)n	(P2/PTC)n	KOLETE PRESS.	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/E)n	BODY PRESS.	(E10/E)n	(E11/P)n
33	66	376	634	0.897	1659	635.0	C.0410	0.0151	1.157	1.176	1.162	1.157	1.157	0.848	
34	68	376	634	0.897	1655	633.5	C.0411	C.0152	1.157	1.177	1.163	1.157	1.157	0.856	
35	70	376	634	0.897	1650	631.4	C.0412	C.0152	1.156	1.176	1.162	1.156	1.156	0.825	
36	72	376	634	0.897	1645	629.5	C.0412	C.0152	1.154	1.176	1.160	1.154	1.154	0.817	
37	74	376	634	0.897	1640	627.5	C.0413	C.0152	1.153	1.173	1.160	1.153	1.153	0.808	
38	76	376	634	0.897	1635	625.6	C.0413	C.0152	1.151	1.170	1.157	1.151	1.151	0.802	
39	78	376	634	0.897	1629	623.5	C.0412	C.0152	1.150	1.165	1.155	1.150	1.150	0.798	
40	80	376	634	0.897	1625	621.8	C.0412	C.0152	1.147	1.160	1.150	1.147	1.147	0.796	
41	82	376	634	0.897	1621	620.3	C.0412	C.0152	1.144	1.157	1.147	1.144	1.144	0.796	
42	84	376	634	0.897	1616	618.4	C.0412	C.0153	1.139	1.153	1.142	1.139	1.139	0.793	
43	86	376	634	0.897	1613	617.4	C.0412	C.0153	1.134	1.150	1.137	1.134	1.134	0.799	
44	88	376	634	0.897	1610	616.2	C.0411	C.0153	1.130	1.145	1.133	1.130	1.130	0.799	
45	90	376	634	0.897	1606	614.7	C.0410	C.0152	1.124	1.139	1.127	1.124	1.124	0.799	
46	92	376	634	0.897	1604	614.0	C.0410	C.0153	1.125	1.139	1.125	1.125	1.125	0.799	
47	94	376	634	0.897	1600	612.4	C.0409	C.0152	1.122	1.133	1.121	1.122	1.122	0.795	
48	96	376	634	0.897	1596	610.9	C.0409	C.0152	1.124	1.130	1.119	1.124	1.124	0.791	
49	98	376	634	0.897	1593	609.6	C.0408	C.0153	1.124	1.130	1.119	1.124	1.124	0.788	
50	100	376	634	0.897	1587	607.3	C.0407	C.0152	1.121	1.125	1.116	1.121	1.121	0.784	
51	102	376	634	0.897	1584	606.1	C.0407	C.0152	1.124	1.130	1.119	1.124	1.124	0.781	
52	104	376	634	0.897	1579	604.2	C.0406	C.0152	1.124	1.130	1.119	1.124	1.124	0.778	
53	106	376	634	0.897	1574	602.5	C.0405	C.0152	1.124	1.130	1.119	1.124	1.124	0.776	
54	108	376	634	0.897	1570	600.9	C.0406	C.0152	1.127	1.132	1.122	1.127	1.127	0.778	
55	110	376	634	0.897	1566	599.2	C.0404	C.0151	1.127	1.131	1.121	1.127	1.127	0.776	
56	112	376	634	0.897	1562	597.9	C.0404	C.0151	1.128	1.131	1.122	1.128	1.128	0.779	
57	114	376	634	0.897	1560	596.9	C.0403	C.0150	1.130	1.137	1.124	1.130	1.130	0.784	
58	116	376	634	0.897	1557	595.8	C.0402	C.0149	1.128	1.151	1.123	1.128	1.128	0.785	
59	118	376	634	0.897	1554	594.6	C.0402	C.0149	1.125	1.211	1.121	1.125	1.125	0.795	
60	120	376	634	0.897	1550	593.5	C.0401	C.0148	1.119	1.315	1.116	1.119	1.119	0.802	
61	122	376	634	0.897	1547	591.9	C.0399	C.0148	1.111	1.447	1.110	1.111	1.111	0.810	
62	124	376	634	0.897	1542	590.2	C.0398	C.0148	1.107	1.591	1.105	1.107	1.107	0.824	
63	126	376	634	0.897	1538	588.7	C.0396	C.0147	1.099	1.728	1.096	1.099	1.099	0.833	
64	128	376	634	0.897	1534	587.0	C.0395	C.0147	1.095	1.845	1.092	1.095	1.095	0.842	

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FRAME TIME	IN	ZER	INCH	FOOT	(P12/P)h	(P2/P)h	MOZELL PRESS. (P3/P)h	(P4/P)h	(P6/P)h	BLAD PRESS. (P7/P)h	(P8/P)h	(P9/P)h	FLY PRESS. (P10/P)h	(P11/P)h
62	130	376	634	0.897	1530	535.4	0.0395	0.0146	1.090	1.930	1.087	1.076	0.035	
66	152	376	634	0.897	1526	534.1	0.0391	0.0146	1.037	1.922	1.084	1.075	0.062	
67	134	376	634	0.897	1522	532.4	0.0385	0.0145	1.082	2.057	1.031	1.073	0.066	
68	136	376	634	0.897	1519	531.2	0.0386	0.0145	1.081	2.057	1.079	1.072	0.073	
69	138	376	634	0.897	1516	530.1	0.0382	0.0150	1.079	2.057	1.079	1.072	0.076	
70	140	376	634	0.897	1512	528.7	0.0385	0.0150	1.075	2.027	1.079	1.075	0.077	
71	142	376	634	0.897	1511	528.4	0.0382	0.0151	1.084	1.972	1.082	1.076	0.080	
72	144	376	634	0.897	1508	527.2	0.0382	0.0151	1.084	1.994	1.061	1.073	0.082	
73	146	376	634	0.897	1506	526.4	0.0382	0.0151	1.085	1.803	1.082	1.076	0.083	
74	148	376	634	0.897	1505	525.9	0.0385	0.0152	1.090	1.703	1.084	1.081	0.085	
75	150	376	634	0.897	1501	524.3	0.0382	0.0151	1.087	1.607	1.082	1.082	0.088	
76	152	376	634	0.897	1499	523.6	0.0385	0.0152	1.090	1.517	1.085	1.082	0.090	
77	154	376	634	0.897	1495	522.0	0.0387	0.0152	1.092	1.455	1.085	1.084	0.076	
78	156	376	634	0.897	1490	520.1	0.0388	0.0152	1.092	1.356	1.067	1.084	0.075	
79	158	376	634	0.897	1484	517.8	0.0391	0.0152	1.093	1.294	1.092	1.090	0.073	
80	160	376	634	0.897	1475	514.4	0.0392	0.0152	1.093	1.234	1.092	1.090	0.072	
81	162	376	634	0.897	1465	510.8	0.0397	0.0149	1.096	1.156	1.098	1.087	0.066	
82	164	376	634	0.897	1454	506.4	0.0400	0.0146	1.099	1.153	1.090	1.090	0.066	
83	166	376	634	0.897	1440	501.0	0.0404	0.0147	1.093	1.124	1.088	1.089	0.062	
84	168	376	634	0.897	1424	545.1	0.0409	0.0146	1.096	1.107	1.090	1.086	0.060	
85	170	376	634	0.897	1406	522.2	0.0415	0.0145	1.096	1.093	1.090	1.087	0.059	
86	172	376	634	0.897	1386	520.3	0.0421	0.0144	1.095	1.085	1.090	1.085	0.059	
87	174	376	634	0.897	1363	521.5	0.0428	0.0144	1.096	1.081	1.093	1.087	0.063	
88	176	376	634	0.897	1337	511.0	0.0437	0.0143	1.096	1.078	1.092	1.082	0.069	
89	178	376	634	0.897	1309	501.1	0.0445	0.0143	1.093	1.078	1.095	1.082	0.071	
90	180	376	634	0.897	1278	489.2	0.0455	0.0143	1.099	1.081	1.096	1.082	0.082	
91	182	376	634	0.897	1245	476.6	0.0465	0.0142	1.099	1.085	1.098	1.082	0.083	
92	184	376	634	0.897	1207	461.0	0.0475	0.0142	1.096	1.088	1.096	1.078	0.086	
93	186	376	634	0.897	1167	446.5	0.0486	0.0142	1.095	1.092	1.090	1.076	0.090	
94	188	376	634	0.897	1122	429.5	0.0497	0.0142	1.092	1.093	1.095	1.072	0.091	
95	190	376	634	0.897	1074	410.9	0.0507	0.0143	1.085	1.092	1.090	1.067	0.092	
96	192	376	634	0.897	1024	391.8	0.0517	0.0144	1.082	1.090	1.087	1.062	0.094	

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PRELIMINARY DATA

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 41C CHESTNUT CO. PROPRIETARY SALES BUREAU INC

FRAME	FILE	IN	FR	INCH	FRCH	(F20/F2)R	(E2/F20)R	WHEELS PRESS.	(P4/F20)R	(F6/F2)R	(F7/F2)R	(F8/P)R	(F9/F)R	BODY PRESS.	(F10/F)R	(F11/F)R
57	194	376	634	0.897	969	370.8	0.0144	1.075	1.067	1.062	1.079	1.055	1.047	1.051	0.951	
96	196	376	634	0.897	914	349.7	0.0145	1.067	1.067	1.062	1.072	1.047	1.047	1.051	0.961	
95	198	376	634	0.897	857	327.5	0.0146	1.067	1.067	1.062	1.072	1.047	1.047	1.051	0.975	
100	200	376	634	0.897	797	305.1	0.0147	1.067	1.067	1.062	1.072	1.047	1.047	1.051	0.984	
101	202	376	634	0.897	739	282.5	0.0148	1.067	1.067	1.062	1.072	1.047	1.047	1.051	0.997	
102	204	376	634	0.897	681	260.5	0.0149	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.005	
103	206	376	634	0.897	623	238.5	0.0150	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.013	
104	208	376	634	0.897	569	217.3	0.0152	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.024	
105	210	376	634	0.897	516	197.6	0.0151	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.029	
106	212	376	634	0.897	467	178.6	0.0151	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.032	
107	214	376	634	0.897	422	161.6	0.0152	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.036	
108	216	376	634	0.897	381	145.7	0.0150	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.036	
109	218	376	634	0.897	344	131.5	0.0149	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.038	
110	220	376	634	0.897	310	118.5	0.0150	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.038	
111	222	376	634	0.897	280	107.1	0.0149	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.036	
112	224	376	634	0.897	254	97.1	0.0148	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.036	
113	226	376	634	0.897	231	88.3	0.0148	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.035	
114	228	376	634	0.897	210	80.3	0.0146	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.032	
115	230	376	634	0.897	191	73.2	0.0150	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.029	
116	232	376	634	0.897	175	67.1	0.0155	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.029	
117	234	376	634	0.897	159	60.5	0.0156	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.025	
118	236	376	634	0.897	146	56.0	0.0160	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.025	
119	238	376	634	0.897	133	51.0	0.0174	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.026	
120	240	376	634	0.897	121	46.4	0.0183	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.024	
121	242	376	634	0.897	112	42.9	0.0202	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.024	
122	244	376	634	0.897	102	38.9	0.0218	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.024	
123	246	376	634	0.897	93	35.5	0.0239	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.024	
124	248	376	634	0.897	85	32.4	0.0274	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.026	
125	250	376	634	0.897	76	29.2	0.0265	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.023	
126	252	376	634	0.897	70	26.9	0.0323	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.023	
127	254	376	634	0.897	64	24.4	0.0356	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.023	
128	256	376	634	0.897	58	22.1	0.0385	1.067	1.067	1.062	1.072	1.047	1.047	1.051	1.021	

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 Ames Research Center: MOFFETT FIELD, CALIF.
PRELIMINARY DATA

RUN DATE 06/05/71 15:42
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TRAIL	TIME	IN	FM	IN-OUT	TRAIL	(F2/PTC)n	(F3/PTC)n	(F4/PTC)n	(F6/P)n	RACE PRESS.	(F8/P)n	(F9/P)n	BODY PRESS.	(F10/P)n	(F11/P)n
129	258	376	634	0.897	54	20.6	0.0866	0.0441	0.906	0.912	0.920	0.903	0.903	1.023	
130	260	376	634	0.897	43	13.2	0.0924	0.0481	0.905	0.911	0.920	0.900	0.900	1.021	
131	262	376	634	0.897	45	17.1	0.1011	0.0519	0.908	0.912	0.923	0.902	0.902	1.021	
132	264	376	634	0.897	41	15.8	0.1097	0.0575	0.911	0.915	0.926	0.900	0.900	1.021	
133	266	376	634	0.897	38	14.6	0.1165	0.0607	0.915	0.917	0.928	0.900	0.900	1.021	
134	268	376	634	0.897	36	13.7	0.1264	0.0678	0.915	0.925	0.934	0.905	0.905	1.021	
135	270	376	634	0.897	33	12.7	0.1381	0.0728	0.915	0.929	0.937	0.905	0.905	1.021	
136	272	376	634	0.897	31	11.9	0.1469	0.0775	0.922	0.934	0.946	0.908	0.908	1.021	
137	274	376	634	0.897	30	11.4	0.1566	0.0831	0.925	0.940	0.946	0.908	0.908	1.021	
138	276	376	634	0.897	29	11.0	0.1620	0.0860	0.928	0.940	0.948	0.908	0.908	1.021	
139	278	376	634	0.897	27	10.4	0.1710	0.0907	0.931	0.945	0.952	0.909	0.909	1.021	
140	280	376	634	0.897	26	10.0	0.1775	0.0942	0.935	0.948	0.955	0.912	0.912	1.023	
141	282	376	634	0.897	26	10.0	0.1825	0.0961	0.937	0.951	0.957	0.917	0.917	1.023	
142	284	376	634	0.897	24	9.3	0.1921	0.1040	0.940	0.955	0.960	0.920	0.920	1.023	
143	286	376	634	0.897	24	9.3	0.1976	0.1040	0.943	0.958	0.961	0.923	0.923	1.023	
144	288	376	634	0.897	24	9.1	0.1990	0.1062	0.943	0.958	0.961	0.923	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	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	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	0.926	1.023	
148	296	376	634	0.897	22	8.3	0.2204	0.1183	0.952	0.963	0.966	0.929	0.929	1.023	
149	298	376	634	0.897	22	8.5	0.2184	0.1179	0.957	0.960	0.969	0.932	0.932	1.024	
150	300	376	634	0.897	21	7.9	0.2278	0.1216	0.955	0.968	0.972	0.931	0.931	1.021	
151	302	376	634	0.897	21	8.1	0.2256	0.1211	0.953	0.972	0.972	0.934	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	0.934	1.021	
153	306	376	634	0.897	21	7.9	0.2310	0.1240	0.953	0.975	0.977	0.934	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	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	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	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	0.941	1.021	
158	316	376	634	0.897	20	7.5	0.2427	0.1303	0.963	0.974	0.975	0.938	0.938	1.021	
159	318	376	634	0.897	20	7.7	0.2400	0.1296	0.971	0.977	0.978	0.943	0.943	1.023	
160	320	376	634	0.897	20	7.7	0.2400	0.1296	0.971	0.977	0.978	0.943	0.943	1.023	

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PRELIMINARY DATA

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RUN MISS 411 1 66/0571 30 15941

3000 FACEDIMANT SAMF.RAPF 500

SPACE	TIME	PH	EM	... 2M	EDGE	(PFC/P)H	(P2/PFC)H	MOBILE PRESS.	(P4/PFC)H	(P6/P)H	BASE PRESS.	(P8/P)H	(P9/P)H	BCDY PRESS.	(F11/E)H
1	1	260	639	1.209	803	335.7	0.0353	0.0135	1.040	0.644	1.053	1.034	1.053	1.053	
2	2	260	639	1.209	641	354.5	0.0359	0.0136	1.060	0.666	1.042	1.102	1.042	1.022	
3	3	260	639	1.209	674	373.0	0.0364	0.0139	1.060	0.690	1.049	1.118	1.049	1.022	
4	4	260	639	1.209	705	390.1	0.0368	0.0141	1.098	0.717	1.052	1.133	1.052	1.029	
5	5	260	639	1.209	733	405.6	0.0373	0.0145	1.111	0.744	1.062	1.142	1.062	1.027	
6	6	260	639	1.209	757	418.6	0.0375	0.0147	1.118	0.766	1.069	1.151	1.069	1.027	
7	7	260	639	1.209	779	430.8	0.0376	0.0149	1.126	0.788	1.071	1.160	1.071	1.027	
8	8	260	639	1.209	795	441.3	0.0379	0.0146	1.131	0.808	1.071	1.164	1.071	1.027	
9	9	260	639	1.209	813	449.6	0.0380	0.0147	1.133	0.821	1.071	1.166	1.071	1.027	
10	10	260	639	1.209	827	457.4	0.0385	0.0149	1.140	0.834	1.071	1.168	1.071	1.027	
11	11	260	639	1.209	837	462.9	0.0385	0.0148	1.140	0.841	1.071	1.168	1.071	1.027	
12	12	260	639	1.209	845	467.3	0.0383	0.0148	1.142	0.848	1.071	1.173	1.071	1.027	
13	13	260	639	1.209	851	470.9	0.0385	0.0149	1.146	0.861	1.071	1.177	1.071	1.029	
14	14	260	639	1.209	855	472.9	0.0384	0.0149	1.142	0.863	1.071	1.175	1.071	1.029	
15	15	260	639	1.209	859	475.1	0.0386	0.0150	1.146	0.872	1.071	1.177	1.071	1.029	
16	16	260	639	1.209	862	476.7	0.0387	0.0151	1.144	0.876	1.071	1.177	1.071	1.029	
17	17	260	639	1.209	863	477.6	0.0387	0.0150	1.142	0.876	1.071	1.175	1.071	1.027	
18	18	260	639	1.209	866	479.2	0.0389	0.0152	1.149	0.883	1.071	1.175	1.071	1.031	
19	19	260	639	1.209	867	479.5	0.0390	0.0151	1.146	0.879	1.071	1.177	1.071	1.029	
20	20	260	639	1.209	869	480.6	0.0391	0.0150	1.146	0.876	1.071	1.175	1.071	1.031	
21	21	260	639	1.209	871	481.7	0.0391	0.0150	1.149	0.879	1.071	1.177	1.071	1.033	
22	22	260	639	1.209	872	482.5	0.0394	0.0151	1.142	0.879	1.071	1.171	1.071	1.029	
23	23	260	639	1.209	874	483.6	0.0397	0.0149	1.144	0.879	1.071	1.175	1.071	1.031	
24	24	260	639	1.209	876	484.7	0.0399	0.0147	1.142	0.876	1.071	1.171	1.071	1.031	
25	25	260	639	1.209	878	485.6	0.0401	0.0147	1.137	0.876	1.071	1.166	1.071	1.029	
26	26	260	639	1.209	880	486.7	0.0404	0.0146	1.140	0.876	1.071	1.166	1.071	1.029	
27	27	260	639	1.209	882	488.1	0.0406	0.0144	1.137	0.870	1.071	1.164	1.071	1.029	
28	28	260	639	1.209	884	489.2	0.0408	0.0145	1.137	0.867	1.071	1.162	1.071	1.029	
29	29	260	639	1.209	886	490.3	0.0409	0.0142	1.140	0.865	1.071	1.164	1.071	1.031	
30	30	260	639	1.209	889	491.9	0.0405	0.0141	1.140	0.865	1.071	1.164	1.071	1.031	
31	31	260	639	1.209	891	492.8	0.0406	0.0140	1.137	0.867	1.071	1.164	1.071	1.031	
32	32	260	639	1.209	894	494.4	0.0407	0.0139	1.137	0.870	1.071	1.166	1.071	1.031	

National Aeronautics and Space Administration
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PRELIMINARY DATA

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REF LIST LISTING CONF PROGRAMS AND SUBPROGRAMS
 411 1 66/033/1 33 1534C

SR	TIME	EN	PR	WCHP	FLD	(P1/P2)H	(P3/P4)H	(P4/P5)H	BLSE PRESS.	(P6/P7)H	(P7/P8)H	(P8/P9)H	(P9/P10)H	(P10/P11)H	(P11/P12)H
33	66	260	639	1.209	997	1.157	0.0405	0.0138	1.137	0.870	1.168	1.069	1.031	1.031	
34	68	260	639	1.209	893	1.137	0.0402	0.0137	0.870	0.870	1.165	1.069	1.031	1.031	
35	70	260	639	1.209	904	1.144	0.0400	0.0136	1.144	0.870	1.173	1.071	1.033	1.033	
36	72	260	639	1.209	911	1.149	0.0399	0.0135	1.144	0.870	1.173	1.071	1.033	1.033	
37	74	260	639	1.209	916	1.153	0.0399	0.0135	1.149	0.876	1.173	1.071	1.033	1.033	
38	76	260	639	1.209	912	1.153	0.0399	0.0135	1.149	0.876	1.173	1.071	1.033	1.033	
39	78	260	639	1.209	912	1.153	0.0401	0.0134	1.149	0.876	1.173	1.071	1.033	1.033	
40	80	260	639	1.209	925	1.153	0.0401	0.0134	1.153	0.881	1.180	1.080	1.033	1.033	
41	82	260	639	1.209	929	1.153	0.0402	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
42	84	260	639	1.209	933	1.153	0.0402	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
43	86	260	639	1.209	935	1.153	0.0402	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
44	88	260	639	1.209	941	1.153	0.0402	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
45	90	260	639	1.209	945	1.153	0.0405	0.0133	1.153	0.883	1.180	1.080	1.033	1.033	
46	92	260	639	1.209	949	1.153	0.0405	0.0133	1.153	0.883	1.180	1.080	1.033	1.033	
47	94	260	639	1.209	953	1.153	0.0411	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
48	96	260	639	1.209	957	1.153	0.0411	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
49	98	260	639	1.209	960	1.153	0.0412	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
50	100	260	639	1.209	964	1.153	0.0412	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
51	102	260	639	1.209	967	1.153	0.0412	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
52	104	260	639	1.209	970	1.153	0.0412	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
53	106	260	639	1.209	974	1.153	0.0412	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
54	108	260	639	1.209	977	1.153	0.0412	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
55	110	260	639	1.209	981	1.153	0.0415	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
56	112	260	639	1.209	984	1.153	0.0415	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
57	114	260	639	1.209	987	1.153	0.0416	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
58	116	260	639	1.209	990	1.153	0.0419	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
59	118	260	639	1.209	995	1.153	0.0422	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
60	120	260	639	1.209	999	1.153	0.0424	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
61	122	260	639	1.209	1002	1.153	0.0425	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
62	124	260	639	1.209	1005	1.153	0.0432	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
63	126	260	639	1.209	1005	1.153	0.0432	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	
64	128	260	639	1.209	1006	1.153	0.0432	0.0132	1.153	0.883	1.180	1.080	1.033	1.033	

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PRELIMINARY DATA

RUN LIST MINSZ1 COMP PROGRAMME SAMP RATE
 411 1-65/055/1 38 15742 500

FRAME NO.	TIME	PH	FM	MACH	TCR	(F10/P)h	(R2/FTC)h	(F5/FTC)h	(R4/FTC)h	(F6/P)h	BASE PRESS.	(F8/P)h	(F9/E)h	BOSS PRESS.	(F10/E)h	(F11/E)h
97	194	260	639	1.209	1019	503.6	0.0421	0.0177	0.0177	1.226	0.954	1.239	1.162	1.162	1.025	1.025
98	196	260	639	1.209	1015	561.4	0.0425	0.0178	0.0178	1.226	0.958	1.241	1.164	1.164	1.027	1.027
99	198	260	639	1.209	1009	558.1	0.0425	0.0179	0.0179	1.224	0.956	1.235	1.164	1.164	1.027	1.027
100	200	260	639	1.209	1002	534.5	0.0423	0.0179	0.0179	1.222	0.954	1.237	1.162	1.162	1.025	1.025
101	202	260	639	1.209	995	590.3	0.0435	0.0181	0.0181	1.217	0.947	1.230	1.162	1.162	1.027	1.027
102	204	260	639	1.209	986	545.6	0.0435	0.0181	0.0181	1.215	0.947	1.230	1.155	1.155	1.027	1.027
103	206	260	639	1.209	976	539.8	0.0445	0.0181	0.0181	1.213	0.941	1.226	1.151	1.151	1.027	1.027
104	208	260	639	1.209	964	533.2	0.0445	0.0182	0.0182	1.213	0.938	1.224	1.149	1.149	1.027	1.027
105	210	260	639	1.209	950	525.7	0.0451	0.0183	0.0183	1.206	0.932	1.217	1.142	1.142	1.027	1.027
106	212	260	639	1.209	934	516.6	0.0458	0.0183	0.0183	1.199	0.927	1.213	1.137	1.137	1.027	1.027
107	214	260	639	1.209	915	506.3	0.0457	0.0184	0.0184	1.191	0.923	1.206	1.131	1.131	1.027	1.027
108	216	260	639	1.209	894	494.4	0.0477	0.0185	0.0185	1.182	0.916	1.197	1.122	1.122	1.027	1.027
109	218	260	639	1.209	869	480.6	0.0488	0.0185	0.0185	1.171	0.901	1.184	1.115	1.115	1.025	1.025
110	220	260	639	1.209	842	465.7	0.0505	0.0187	0.0187	1.160	0.890	1.173	1.102	1.102	1.025	1.025
111	222	260	639	1.209	810	448.0	0.0520	0.0188	0.0188	1.144	0.870	1.157	1.089	1.089	1.025	1.025
112	224	260	639	1.209	775	428.6	0.0540	0.0189	0.0189	1.129	0.850	1.140	1.075	1.075	1.025	1.025
113	226	260	639	1.209	737	407.6	0.0565	0.0191	0.0191	1.111	0.830	1.122	1.060	1.060	1.025	1.025
114	228	260	639	1.209	695	384.3	0.0592	0.0192	0.0192	1.087	0.803	1.096	1.038	1.038	1.025	1.025
115	230	260	639	1.209	653	361.1	0.0625	0.0192	0.0192	1.062	0.783	1.076	1.022	1.022	1.025	1.025
116	232	260	639	1.209	609	337.0	0.0662	0.0192	0.0192	1.038	0.759	1.051	1.002	1.002	1.022	1.022
117	234	260	639	1.209	565	312.7	0.0705	0.0191	0.0191	1.011	0.730	1.022	0.960	0.960	1.022	1.022
118	236	260	639	1.209	524	290.0	0.0749	0.0193	0.0193	0.991	0.708	1.002	0.940	0.940	1.027	1.027
119	238	260	639	1.209	492	266.3	0.0800	0.0190	0.0190	0.965	0.677	0.976	0.924	0.924	1.027	1.027
120	240	260	639	1.209	443	244.9	0.0855	0.0189	0.0189	0.941	0.651	0.950	0.904	0.904	1.027	1.027
121	242	260	639	1.209	406	224.5	0.0917	0.0189	0.0189	0.916	0.628	0.929	0.881	0.881	1.025	1.025
122	244	260	639	1.209	370	204.3	0.0981	0.0184	0.0184	0.890	0.602	0.905	0.856	0.856	1.027	1.027
123	246	260	639	1.209	336	187.1	0.1056	0.0184	0.0184	0.870	0.584	0.885	0.836	0.836	1.027	1.027
124	248	260	639	1.209	306	170.2	0.1135	0.0191	0.0191	0.845	0.564	0.865	0.807	0.807	1.027	1.027
125	250	260	639	1.209	279	154.2	0.1224	0.0177	0.0177	0.823	0.540	0.841	0.779	0.779	1.025	1.025
126	252	260	639	1.209	252	139.5	0.1324	0.0177	0.0177	0.803	0.516	0.823	0.756	0.756	1.025	1.025
127	254	260	639	1.209	227	125.7	0.1431	0.0173	0.0173	0.781	0.489	0.797	0.731	0.731	1.025	1.025
128	256	260	639	1.209	205	113.5	0.1553	0.0170	0.0170	0.759	0.463	0.775	0.705	0.705	1.025	1.025

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PRELIMINARY DATA

RUN LIST SWITCH COMP PROPellant SAFERATE
 411 1 68/055/1 50 15441

STAGE	TIME	EN	PR	WGT	PROP	(FIC/F)H	(P2/PIC)H	(I3/IC)H	(E4/IC)H	(P6/P)H	(P7/P)H	(P8/P)H	(P9/P)H	(P10/P)H	(P11/P)H
129	250	260	639	1.209	103	101.4	0.1691	0.0168	0.739	0.436	0.752	0.861	0.856	1.022	
130	260	639	1.209	162	90.9	80.6	0.1542	0.0166	0.719	0.416	0.753	0.856	0.856	1.022	
131	264	639	1.209	146	80.6	72.0	0.2021	0.0163	0.702	0.396	0.717	0.856	0.856	1.022	
132	266	639	1.209	130	72.0	64.0	0.2206	0.0162	0.688	0.385	0.710	0.856	0.856	1.022	
133	266	639	1.209	116	64.0	56.6	0.2418	0.0162	0.682	0.378	0.706	0.856	0.856	1.022	
134	266	639	1.209	102	56.6	50.7	0.2660	0.0158	0.679	0.374	0.710	0.856	0.856	1.022	
135	270	639	1.209	92	50.7	44.7	0.2860	0.0171	0.686	0.361	0.721	0.856	0.856	1.022	
136	274	639	1.209	81	44.7	40.0	0.3211	0.0170	0.697	0.385	0.733	0.856	0.856	1.022	
137	274	639	1.209	72	40.0	36.1	0.3506	0.0176	0.710	0.396	0.746	0.861	0.861	1.025	
138	276	639	1.209	65	36.1	31.7	0.3800	0.0202	0.726	0.414	0.766	0.865	0.865	1.027	
139	278	639	1.209	57	31.7	29.2	0.4152	0.0204	0.739	0.425	0.777	0.865	0.865	1.025	
140	280	639	1.209	53	29.2	26.4	0.4461	0.0231	0.755	0.443	0.792	0.867	0.867	1.025	
141	282	639	1.209	49	26.4	23.5	0.4805	0.0256	0.770	0.458	0.803	0.870	0.870	1.025	
142	284	639	1.209	45	23.5	22.5	0.5164	0.0259	0.785	0.469	0.812	0.876	0.876	1.025	
143	286	639	1.209	41	22.5	20.3	0.5399	0.0324	0.803	0.487	0.825	0.876	0.876	1.025	
144	288	639	1.209	37	20.3	19.2	0.5606	0.0332	0.814	0.494	0.843	0.876	0.876	1.025	
145	290	639	1.209	35	19.2	18.1	0.6006	0.0366	0.825	0.502	0.854	0.881	0.881	1.025	
146	292	639	1.209	33	18.1	17.0	0.6251	0.0405	0.843	0.516	0.850	0.881	0.881	1.025	
147	294	639	1.209	31	17.0	16.4	0.6463	0.0415	0.848	0.520	0.854	0.881	0.881	1.025	
148	296	639	1.209	30	16.4	15.6	0.6563	0.0461	0.859	0.531	0.861	0.881	0.881	1.025	
149	298	639	1.209	28	15.6	14.8	0.6775	0.0485	0.865	0.540	0.865	0.881	0.881	1.025	
150	300	639	1.209	27	14.8	14.5	0.6901	0.0515	0.870	0.547	0.870	0.881	0.881	1.025	
151	302	639	1.209	26	14.5	14.0	0.6962	0.0542	0.879	0.553	0.879	0.881	0.881	1.025	
152	304	639	1.209	25	14.0	13.7	0.7079	0.0545	0.881	0.553	0.881	0.881	0.881	1.025	
153	306	639	1.209	25	13.7	13.4	0.7060	0.0574	0.887	0.558	0.887	0.881	0.881	1.025	
154	308	639	1.209	24	13.4	12.8	0.7069	0.0586	0.892	0.560	0.892	0.881	0.881	1.025	
155	310	639	1.209	24	13.4	12.8	0.6931	0.0607	0.894	0.564	0.894	0.881	0.881	1.025	
156	312	639	1.209	23	12.8	12.6	0.7057	0.0633	0.894	0.571	0.894	0.881	0.881	1.025	
157	314	639	1.209	23	12.6	12.3	0.6942	0.0653	0.896	0.575	0.896	0.881	0.881	1.025	
158	316	639	1.209	22	12.3	11.7	0.7105	0.0662	0.896	0.580	0.896	0.881	0.881	1.025	
159	318	639	1.209	21	11.7	12.3	0.7251	0.0669	0.894	0.582	0.901	0.881	0.881	1.022	
160	320	639	1.209	22	12.3	12.3	0.6935	0.0684	0.901	0.584	0.905	0.881	0.881	1.025	

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 Ames Research Center: MOFFETT FIELD, CALIF.
PRELIMINARY DATA

DATE TIME ALTITUDE GOLF PERCENTAGE SALT GRADE
 411 1 66/055/1 36 15/41 500

GRADE	TIME	ALT	FM	INCH	PROR	(PQ/F) ⁿ	(P2/PCQ) ⁿ	WIND PRESS.	(P4/PTC) ⁿ	(P6/P) ⁿ	BASE PRESS.	(P7/P) ⁿ	(P3/F) ⁿ	(E9/E) ⁿ	BOY PRESS.	(E10/E) ⁿ	(E11/P) ⁿ
151	322	260	639	1.209	21	11.7	0.6568	0.6874	0.0693	0.901	0.584	0.907	0.897	0.897	1.022	1.022	1.022
152	324	260	639	1.209	21	11.7	0.6780	0.7059	0.0693	0.903	0.586	0.910	0.910	0.897	1.022	1.022	1.022
153	326	260	639	1.209	20	10.9	0.7059	0.6654	0.0745	0.905	0.591	0.914	0.914	0.897	1.022	1.022	1.022
154	328	260	639	1.209	20	11.5	0.6654	0.6686	0.0734	0.901	0.593	0.914	0.914	0.897	1.022	1.022	1.022
155	330	260	639	1.209	20	11.2	0.6686	0.6861	0.0752	0.898	0.595	0.914	0.914	0.897	1.022	1.022	1.022
156	332	260	639	1.209	19	10.6	0.6861	0.6439	0.0739	0.894	0.593	0.912	0.912	0.897	1.022	1.022	1.022
157	334	260	639	1.209	19	11.2	0.6439	0.6652	0.0765	0.898	0.591	0.912	0.912	0.897	1.022	1.022	1.022
158	336	260	639	1.209	20	10.6	0.6652	0.6549	0.0765	0.896	0.591	0.912	0.912	0.897	1.022	1.022	1.022
159	338	260	639	1.209	19	10.6	0.6549	0.6445	0.0765	0.896	0.589	0.914	0.914	0.897	1.022	1.022	1.022
170	340	260	639	1.209	19	10.6	0.6445	0.6615	0.0779	0.898	0.589	0.907	0.907	0.897	1.022	1.022	1.022
171	342	260	639	1.209	18	10.1	0.6615	0.6405	0.0779	0.892	0.584	0.910	0.910	0.897	1.022	1.022	1.022
172	344	260	639	1.209	18	10.4	0.6405	0.6250	0.0785	0.894	0.589	0.910	0.910	0.897	1.022	1.022	1.022
173	346	260	639	1.209	19	10.4	0.6250	0.6154	0.0785	0.894	0.589	0.905	0.905	0.897	1.022	1.022	1.022
174	348	260	639	1.209	19	10.4	0.6154	0.6103	0.0795	0.892	0.586	0.905	0.905	0.897	1.022	1.022	1.022
175	350	260	639	1.209	18	10.1	0.6103	0.6030	0.0807	0.894	0.586	0.905	0.905	0.897	1.022	1.022	1.022
176	352	260	639	1.209	18	10.1	0.6030	0.5957	0.0807	0.894	0.586	0.905	0.905	0.897	1.022	1.022	1.022
177	354	260	639	1.209	18	10.1	0.5957	0.5691	0.0834	0.896	0.575	0.903	0.903	0.897	1.022	1.022	1.022
178	356	260	639	1.209	18	10.1	0.5691	0.5937	0.0834	0.896	0.575	0.903	0.903	0.897	1.022	1.022	1.022
179	358	260	639	1.209	18	10.4	0.5937	0.5701	0.0834	0.896	0.575	0.903	0.903	0.897	1.022	1.022	1.022
180	360	260	639	1.209	13	9.8	0.5701	0.5749	0.0834	0.896	0.575	0.903	0.903	0.897	1.022	1.022	1.022
181	362	260	639	1.209	13	9.8	0.5749	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
182	364	260	639	1.209	13	9.5	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
183	366	260	639	1.209	17	9.5	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
184	368	260	639	1.209	17	9.5	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
185	370	260	639	1.209	17	9.5	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
186	372	260	639	1.209	17	9.5	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
187	374	260	639	1.209	18	9.8	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
188	376	260	639	1.209	18	10.1	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
189	378	260	639	1.209	17	9.2	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
190	380	260	639	1.209	17	9.2	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
191	382	260	639	1.209	13	9.8	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022
192	384	260	639	1.209	18	9.8	0.5799	0.5799	0.0834	0.894	0.575	0.901	0.901	0.897	1.022	1.022	1.022

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

RUN LIST CURSSE COEF PROGRAMME SAVI.P.02
411 1 66/032/1 38 15345 500

TIME	TUB	C	P	PC	PRE	FOAL	NOZLE PRESS.			BASE PRESS.			BODY PRESS.		
							(P2/P20)n	(P3/P20)n	(P4/P20)n	(P5/P2)n	(P7/P2)n	(P8/P2)n	(P9/P2)n	(P10/P2)n	(P11/P2)n
197	386	260	639	1.209	13	10.1	0.4932	0.5103	0.0862	0.5592	0.575	0.896	0.896	0.896	
194	388	260	639	1.209	17	9.8	0.4883	0.4846	0.0854	0.569	0.567	0.896	0.896	1.027	
195	390	260	639	1.209	18	9.8	0.4883	0.4846	0.0854	0.569	0.567	0.896	0.896	1.027	
196	392	260	639	1.209	18	9.8	0.4870	0.4870	0.0825	0.569	0.562	0.896	0.896	1.029	
197	394	260	639	1.209	17	9.5	0.4870	0.4870	0.0825	0.569	0.562	0.896	0.896	1.027	
198	396	260	639	1.209	17	9.5	0.4870	0.4870	0.0825	0.569	0.562	0.896	0.896	1.029	
199	398	260	639	1.209	17	9.5	0.4793	0.4715	0.0854	0.569	0.562	0.896	0.896	1.031	
200	400	260	639	1.209	17	9.5	0.4715	0.4715	0.0854	0.569	0.562	0.896	0.896	1.029	
201	402	260	639	1.209	17	9.5	0.4715	0.4715	0.0854	0.569	0.562	0.896	0.896	1.029	
202	404	260	639	1.209	17	9.5	0.4633	0.4633	0.0854	0.569	0.562	0.896	0.896	1.033	
203	406	260	639	1.209	17	9.5	0.4633	0.4633	0.0854	0.569	0.562	0.896	0.896	1.031	
204	408	260	639	1.209	17	9.5	0.4599	0.4599	0.0825	0.569	0.555	0.896	0.896	1.033	
205	410	260	639	1.209	17	9.5	0.4561	0.4561	0.0854	0.569	0.555	0.896	0.896	1.031	
206	412	260	639	1.209	17	9.5	0.4561	0.4561	0.0854	0.569	0.555	0.896	0.896	1.033	
207	414	260	639	1.209	17	9.5	0.4561	0.4561	0.0854	0.569	0.555	0.896	0.896	1.033	
208	416	260	639	1.209	17	9.5	0.4561	0.4561	0.0854	0.569	0.555	0.896	0.896	1.033	
209	418	260	639	1.209	17	9.2	0.4418	0.4418	0.0849	0.569	0.558	0.896	0.896	1.036	
210	420	260	639	1.209	16	9.8	0.4418	0.4418	0.0849	0.569	0.558	0.896	0.896	1.036	
211	422	260	639	1.209	17	9.2	0.4378	0.4378	0.0852	0.569	0.560	0.896	0.896	1.036	
212	424	260	639	1.209	17	9.5	0.4378	0.4378	0.0852	0.569	0.560	0.896	0.896	1.036	
213	426	260	639	1.209	18	9.8	0.4378	0.4378	0.0852	0.569	0.560	0.896	0.896	1.036	
214	428	260	639	1.209	18	9.8	0.4378	0.4378	0.0852	0.569	0.560	0.896	0.896	1.036	
215	430	260	639	1.209	18	9.8	0.4378	0.4378	0.0852	0.569	0.560	0.896	0.896	1.036	

1.209 266.2 260 639 1453 2120

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

PRELIMINARY DATA

12256

RUN LIST 412 1 66/033/1 3C 15/42

OCCT PROPELLANT SAGE RATE
500

TRAC	TIME	PR	PTH	INCH	FT/SEC	(P2/P20)H	(P3/P30)H	(P4/P40)H	(P5/P50)H	(P6/P60)H	(P7/P70)H	(P8/P80)H	(P9/P90)H	BODY PR	(E11/E11)H
1	1	763	1877	1.210	375	0.0408	0.0154	0.716	0.729	0.357	0.357	0.925	0.357	0.925	
2	2	763	1877	1.210	410	0.0412	0.0154	0.725	0.729	0.357	0.357	0.925	0.357	0.925	
3	3	763	1877	1.210	445	0.0416	0.0154	0.730	0.729	0.357	0.357	0.925	0.357	0.925	
4	4	763	1877	1.210	480	0.0420	0.0156	0.735	0.732	0.357	0.357	0.925	0.357	0.925	
5	5	763	1877	1.210	515	0.0424	0.0156	0.740	0.732	0.357	0.357	0.925	0.357	0.925	
6	6	763	1877	1.210	550	0.0428	0.0156	0.745	0.732	0.357	0.357	0.925	0.357	0.925	
7	7	763	1877	1.210	585	0.0432	0.0156	0.750	0.732	0.357	0.357	0.925	0.357	0.925	
8	8	763	1877	1.210	620	0.0436	0.0156	0.755	0.732	0.357	0.357	0.925	0.357	0.925	
9	9	763	1877	1.210	655	0.0440	0.0156	0.760	0.732	0.357	0.357	0.925	0.357	0.925	
10	10	763	1877	1.210	690	0.0444	0.0156	0.765	0.732	0.357	0.357	0.925	0.357	0.925	
11	11	763	1877	1.210	725	0.0448	0.0156	0.770	0.732	0.357	0.357	0.925	0.357	0.925	
12	12	763	1877	1.210	760	0.0452	0.0156	0.775	0.732	0.357	0.357	0.925	0.357	0.925	
13	13	763	1877	1.210	795	0.0456	0.0156	0.780	0.732	0.357	0.357	0.925	0.357	0.925	
14	14	763	1877	1.210	830	0.0460	0.0156	0.785	0.732	0.357	0.357	0.925	0.357	0.925	
15	15	763	1877	1.210	865	0.0464	0.0156	0.790	0.732	0.357	0.357	0.925	0.357	0.925	
16	16	763	1877	1.210	900	0.0468	0.0156	0.795	0.732	0.357	0.357	0.925	0.357	0.925	
17	17	763	1877	1.210	935	0.0472	0.0156	0.800	0.732	0.357	0.357	0.925	0.357	0.925	
18	18	763	1877	1.210	970	0.0476	0.0156	0.805	0.732	0.357	0.357	0.925	0.357	0.925	
19	19	763	1877	1.210	1005	0.0480	0.0156	0.810	0.732	0.357	0.357	0.925	0.357	0.925	
20	20	763	1877	1.210	1040	0.0484	0.0156	0.815	0.732	0.357	0.357	0.925	0.357	0.925	
21	21	763	1877	1.210	1075	0.0488	0.0156	0.820	0.732	0.357	0.357	0.925	0.357	0.925	
22	22	763	1877	1.210	1110	0.0492	0.0156	0.825	0.732	0.357	0.357	0.925	0.357	0.925	
23	23	763	1877	1.210	1145	0.0496	0.0156	0.830	0.732	0.357	0.357	0.925	0.357	0.925	
24	24	763	1877	1.210	1180	0.0500	0.0156	0.835	0.732	0.357	0.357	0.925	0.357	0.925	
25	25	763	1877	1.210	1215	0.0504	0.0156	0.840	0.732	0.357	0.357	0.925	0.357	0.925	
26	26	763	1877	1.210	1250	0.0508	0.0156	0.845	0.732	0.357	0.357	0.925	0.357	0.925	
27	27	763	1877	1.210	1285	0.0512	0.0156	0.850	0.732	0.357	0.357	0.925	0.357	0.925	
28	28	763	1877	1.210	1320	0.0516	0.0156	0.855	0.732	0.357	0.357	0.925	0.357	0.925	
29	29	763	1877	1.210	1355	0.0520	0.0156	0.860	0.732	0.357	0.357	0.925	0.357	0.925	
30	30	763	1877	1.210	1390	0.0524	0.0156	0.865	0.732	0.357	0.357	0.925	0.357	0.925	
31	31	763	1877	1.210	1425	0.0528	0.0156	0.870	0.732	0.357	0.357	0.925	0.357	0.925	
32	32	763	1877	1.210	1460	0.0532	0.0156	0.875	0.732	0.357	0.357	0.925	0.357	0.925	

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

NO. 101 WASTE COLLECTOR PROGRAMS SCHEDULE
 412 1 65/55/1 50 15000

TIME	DIR	PH	FTN	LA-GR	FCR	(E2/P20)n	(E3/P20)n	(E4/P20)n	(E6/P2)n	(E7/E)n	(E8/E)n	(E9/E)n	(E10/E)n	(E11/P)n
66	66	763	1877	1.210	932	0.0449	0.0147	0.771	0.771	0.784	0.867	0.867	0.919	
67	67	763	1877	1.210	932	0.0451	0.0148	0.771	0.771	0.784	0.867	0.867	0.921	
68	68	763	1877	1.210	932	0.0457	0.0147	0.771	0.771	0.784	0.867	0.867	0.921	
69	69	763	1877	1.210	932	0.0459	0.0147	0.771	0.771	0.784	0.867	0.867	0.921	
70	70	763	1877	1.210	932	0.0459	0.0147	0.771	0.771	0.784	0.867	0.867	0.921	
71	71	763	1877	1.210	932	0.0456	0.0146	0.771	0.771	0.784	0.867	0.867	0.921	
72	72	763	1877	1.210	932	0.0453	0.0146	0.771	0.771	0.784	0.867	0.867	0.921	
73	73	763	1877	1.210	932	0.0447	0.0146	0.771	0.771	0.784	0.867	0.867	0.921	
74	74	763	1877	1.210	932	0.0440	0.0146	0.771	0.771	0.784	0.867	0.867	0.921	
75	75	763	1877	1.210	932	0.0433	0.0146	0.771	0.771	0.784	0.867	0.867	0.921	
76	76	763	1877	1.210	932	0.0426	0.0145	0.771	0.771	0.784	0.867	0.867	0.921	
77	77	763	1877	1.210	932	0.0419	0.0145	0.771	0.771	0.784	0.867	0.867	0.921	
78	78	763	1877	1.210	932	0.0412	0.0145	0.771	0.771	0.784	0.867	0.867	0.921	
79	79	763	1877	1.210	932	0.0407	0.0145	0.771	0.771	0.784	0.867	0.867	0.921	
80	80	763	1877	1.210	932	0.0402	0.0145	0.771	0.771	0.784	0.867	0.867	0.921	
81	81	763	1877	1.210	932	0.0399	0.0145	0.771	0.771	0.784	0.867	0.867	0.921	
82	82	763	1877	1.210	932	0.0397	0.0145	0.771	0.771	0.784	0.867	0.867	0.921	
83	83	763	1877	1.210	932	0.0395	0.0144	0.771	0.771	0.784	0.867	0.867	0.921	
84	84	763	1877	1.210	932	0.0397	0.0144	0.771	0.771	0.784	0.867	0.867	0.921	
85	85	763	1877	1.210	932	0.0397	0.0143	0.771	0.771	0.784	0.867	0.867	0.921	
86	86	763	1877	1.210	932	0.0400	0.0143	0.771	0.771	0.784	0.867	0.867	0.921	
87	87	763	1877	1.210	932	0.0404	0.0142	0.771	0.771	0.784	0.867	0.867	0.921	
88	88	763	1877	1.210	932	0.0407	0.0142	0.771	0.771	0.784	0.867	0.867	0.921	
89	89	763	1877	1.210	932	0.0411	0.0140	0.771	0.771	0.784	0.867	0.867	0.921	
90	90	763	1877	1.210	932	0.0415	0.0137	0.771	0.771	0.784	0.867	0.867	0.921	
91	91	763	1877	1.210	932	0.0417	0.0135	0.771	0.771	0.784	0.867	0.867	0.921	
92	92	763	1877	1.210	932	0.0415	0.0135	0.771	0.771	0.784	0.867	0.867	0.921	
93	93	763	1877	1.210	932	0.0421	0.0135	0.771	0.771	0.784	0.867	0.867	0.921	
94	94	763	1877	1.210	932	0.0422	0.0133	0.771	0.771	0.784	0.867	0.867	0.921	
95	95	763	1877	1.210	932	0.0423	0.0132	0.771	0.771	0.784	0.867	0.867	0.921	
96	96	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
97	97	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
98	98	763	1877	1.210	932	0.0425	0.0130	0.771	0.771	0.784	0.867	0.867	0.921	
99	99	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
100	100	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
101	101	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
102	102	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
103	103	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
104	104	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
105	105	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
106	106	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
107	107	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
108	108	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
109	109	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
110	110	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
111	111	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
112	112	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
113	113	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
114	114	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
115	115	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
116	116	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
117	117	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
118	118	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
119	119	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
120	120	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
121	121	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
122	122	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
123	123	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
124	124	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
125	125	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
126	126	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
127	127	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	
128	128	763	1877	1.210	932	0.0424	0.0131	0.771	0.771	0.784	0.867	0.867	0.921	

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

PRELIMINARY DATA

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FRAME	TIME	POS	FOV	ISCH	PROP	NOZZLE PRESS.	(22/PTC)n	(15/PTC)n	(24/PTC)n	(26/P)n	SLD PRESS.	(27/P)n	(28/P)n	(29/P)n	BODY PRESS.	(31/P)n
65	130	765	1377	1.210	939	0.0424	0.0131	0.792	0.804	0.792	0.804	0.806	0.806	0.872	0.872	0.921
66	132	763	1377	1.210	942	0.0425	0.0131	0.792	0.805	0.792	0.805	0.805	0.805	0.873	0.873	0.921
67	134	763	1377	1.210	945	0.0422	0.0131	0.793	0.804	0.793	0.804	0.805	0.805	0.873	0.873	0.920
68	136	763	1377	1.210	950	0.0421	0.0133	0.795	0.805	0.795	0.805	0.805	0.805	0.873	0.873	0.921
69	138	763	1377	1.210	953	0.0421	0.0133	0.796	0.804	0.796	0.804	0.805	0.805	0.873	0.873	0.921
70	140	763	1377	1.210	955	0.0421	0.0136	0.796	0.805	0.796	0.805	0.805	0.805	0.873	0.873	0.920
71	142	763	1377	1.210	955	0.0421	0.0136	0.796	0.805	0.796	0.805	0.805	0.805	0.873	0.873	0.919
72	144	763	1377	1.210	955	0.0422	0.0137	0.798	0.807	0.798	0.807	0.806	0.806	0.875	0.875	0.919
73	146	763	1377	1.210	955	0.0420	0.0138	0.799	0.808	0.799	0.808	0.808	0.808	0.875	0.875	0.919
74	148	763	1377	1.210	959	0.0420	0.0139	0.799	0.808	0.799	0.808	0.808	0.808	0.876	0.876	0.919
75	150	763	1377	1.210	960	0.0421	0.0141	0.802	0.808	0.802	0.808	0.808	0.808	0.876	0.876	0.919
76	152	763	1377	1.210	962	0.0421	0.0142	0.802	0.808	0.802	0.808	0.808	0.808	0.877	0.877	0.919
77	154	763	1377	1.210	963	0.0422	0.0144	0.804	0.809	0.804	0.809	0.809	0.809	0.877	0.877	0.919
78	156	763	1377	1.210	964	0.0422	0.0144	0.804	0.809	0.804	0.809	0.809	0.809	0.877	0.877	0.919
79	158	763	1377	1.210	966	0.0422	0.0146	0.805	0.809	0.805	0.809	0.811	0.811	0.876	0.876	0.920
80	160	763	1377	1.210	965	0.0422	0.0146	0.805	0.808	0.805	0.808	0.811	0.811	0.876	0.876	0.920
81	162	763	1377	1.210	966	0.0422	0.0146	0.805	0.808	0.805	0.808	0.811	0.811	0.877	0.877	0.920
82	164	763	1377	1.210	967	0.0425	0.0149	0.807	0.811	0.807	0.811	0.812	0.812	0.876	0.876	0.922
83	166	763	1377	1.210	967	0.0422	0.0155	0.807	0.811	0.807	0.811	0.813	0.813	0.876	0.876	0.922
84	168	763	1377	1.210	968	0.0420	0.0154	0.807	0.811	0.807	0.811	0.813	0.813	0.876	0.876	0.921
85	170	763	1377	1.210	966	0.0419	0.0153	0.805	0.813	0.805	0.813	0.815	0.815	0.876	0.876	0.922
86	172	763	1377	1.210	966	0.0417	0.0154	0.803	0.811	0.803	0.811	0.814	0.814	0.876	0.876	0.922
87	174	763	1377	1.210	966	0.0400	0.0155	0.803	0.811	0.803	0.811	0.815	0.815	0.876	0.876	0.922
88	176	763	1377	1.210	966	0.0390	0.0157	0.809	0.811	0.809	0.811	0.816	0.816	0.876	0.876	0.922
89	178	763	1377	1.210	964	0.0390	0.0157	0.807	0.810	0.807	0.810	0.814	0.814	0.875	0.875	0.921
90	180	763	1377	1.210	963	0.0390	0.0159	0.807	0.811	0.807	0.811	0.814	0.814	0.876	0.876	0.921
91	182	763	1377	1.210	963	0.0359	0.0160	0.805	0.811	0.805	0.811	0.815	0.815	0.876	0.876	0.920
92	184	763	1377	1.210	961	0.0357	0.0161	0.805	0.811	0.805	0.811	0.814	0.814	0.875	0.875	0.919
93	186	763	1377	1.210	960	0.0346	0.0162	0.805	0.812	0.805	0.812	0.814	0.814	0.876	0.876	0.919
94	188	763	1377	1.210	958	0.0344	0.0163	0.805	0.811	0.805	0.811	0.814	0.814	0.875	0.875	0.919
95	190	763	1377	1.210	956	0.0324	0.0165	0.805	0.811	0.805	0.811	0.815	0.815	0.875	0.875	0.919
96	192	763	1377	1.210	955	0.0315	0.0164	0.805	0.811	0.805	0.811	0.815	0.815	0.876	0.876	0.919
96	192	763	1377	1.210	954	0.0306	0.0165	0.805	0.812	0.805	0.812	0.816	0.816	0.876	0.876	0.918

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

PRELIMINARY DATA

LIST 1 66/053/1 38 15441

LINE	ITEM	HT	FR	WAGE	TECH	(F30/2)n	(F2/F20)n	OFFICE PRESS:	(F4/F40)n	BASE PRESS:	(F6/P)n	(F7/E)n	(26/P)n	BODY PRESS:	(29/E)n	(P11/P)n
194	763	1877	1.210	952	175.2	0.0296	0.0166	0.805	0.814	0.806	0.816	0.817	0.878	0.918		
195	765	1877	1.210	950	179.2	0.0295	0.0166	0.806	0.816	0.807	0.816	0.818	0.878	0.913		
196	763	1877	1.210	949	173.3	0.0288	0.0166	0.807	0.818	0.807	0.819	0.821	0.879	0.918		
200	763	1877	1.210	946	175.4	0.0284	0.0166	0.808	0.819	0.808	0.819	0.821	0.880	0.918		
202	765	1877	1.210	946	177.6	0.0281	0.0166	0.809	0.818	0.808	0.819	0.821	0.880	0.918		
204	763	1877	1.210	943	177.5	0.0281	0.0165	0.810	0.819	0.810	0.819	0.821	0.881	0.918		
206	765	1877	1.210	941	177.5	0.0282	0.0165	0.810	0.819	0.810	0.819	0.821	0.882	0.918		
208	765	1877	1.210	939	177.5	0.0282	0.0164	0.809	0.818	0.809	0.818	0.819	0.880	0.918		
210	765	1877	1.210	935	176.5	0.0281	0.0164	0.807	0.818	0.807	0.818	0.819	0.880	0.918		
212	765	1877	1.210	932	175.5	0.0285	0.0163	0.805	0.818	0.805	0.818	0.818	0.879	0.918		
214	763	1877	1.210	928	174.0	0.0287	0.0163	0.805	0.818	0.804	0.816	0.815	0.879	0.918		
216	763	1877	1.210	925	173.3	0.0290	0.0162	0.804	0.816	0.804	0.816	0.816	0.876	0.918		
218	765	1877	1.210	919	172.0	0.0292	0.0162	0.802	0.812	0.802	0.812	0.812	0.876	0.918		
220	763	1877	1.210	912	170.6	0.0294	0.0163	0.800	0.810	0.800	0.810	0.812	0.876	0.918		
222	765	1877	1.210	905	170.6	0.0299	0.0163	0.799	0.808	0.799	0.808	0.811	0.876	0.918		
224	765	1877	1.210	896	169.0	0.0301	0.0164	0.794	0.803	0.794	0.803	0.806	0.875	0.918		
226	765	1877	1.210	886	167.2	0.0311	0.0164	0.791	0.802	0.791	0.802	0.804	0.874	0.918		
228	765	1877	1.210	875	165.1	0.0307	0.0164	0.786	0.797	0.786	0.797	0.799	0.874	0.918		
230	765	1877	1.210	862	162.6	0.0317	0.0164	0.786	0.792	0.786	0.792	0.799	0.874	0.918		
232	765	1877	1.210	846	159.6	0.0325	0.0166	0.781	0.792	0.781	0.792	0.799	0.874	0.918		
234	765	1877	1.210	820	156.2	0.0322	0.0166	0.775	0.787	0.775	0.787	0.792	0.873	0.918		
236	765	1877	1.210	803	153.7	0.0342	0.0165	0.768	0.773	0.768	0.773	0.773	0.871	0.918		
238	765	1877	1.210	784	147.3	0.0354	0.0165	0.761	0.760	0.761	0.760	0.771	0.870	0.918		
240	765	1877	1.210	757	142.0	0.0354	0.0166	0.751	0.755	0.751	0.755	0.754	0.870	0.918		
242	765	1877	1.210	720	137.4	0.0365	0.0166	0.741	0.747	0.741	0.747	0.753	0.868	0.918		
244	765	1877	1.210	690	131.3	0.0363	0.0165	0.728	0.730	0.728	0.730	0.742	0.867	0.918		
246	765	1877	1.210	663	125.1	0.0402	0.0165	0.716	0.724	0.716	0.724	0.729	0.867	0.918		
248	765	1877	1.210	629	118.6	0.0422	0.0165	0.702	0.710	0.702	0.710	0.716	0.865	0.918		
250	765	1877	1.210	595	111.0	0.0443	0.0166	0.685	0.695	0.685	0.695	0.701	0.864	0.917		
252	765	1877	1.210	550	105.2	0.0469	0.0165	0.674	0.679	0.674	0.679	0.685	0.862	0.917		
254	765	1877	1.210	521	90.3	0.0496	0.0164	0.659	0.661	0.659	0.661	0.671	0.860	0.917		
256	765	1877	1.210	495	81.5	0.0524	0.0163	0.643	0.644	0.643	0.644	0.655	0.855	0.916		

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

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3	E	B	D	W	H	M	R	A	S	P	Q	BODY PRESS.		BODY PRESS.		P																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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199	235	1877	1.210	490	73.1	0.0556	0.612	0.628	0.613	0.638	0.622	0.640	0.657	0.677	0.690	0.705	0.720	0.732	0.744	0.756	0.764	0.772	0.779	0.785	0.790	0.794	0.798	0.802	0.806	0.810	0.813	0.815	0.817	0.819	0.821	0.823	0.825	0.827	0.829	0.831	0.833	0.835	0.837	0.839	0.841	0.843	0.845	0.847	0.849	0.851	0.853	0.855	0.857	0.859	0.861	0.863	0.865	0.867	0.869	0.871	0.873	0.875	0.877	0.879	0.881	0.883	0.885	0.887	0.889	0.891	0.893	0.895	0.897	0.899	0.901	0.903	0.905	0.907	0.909	0.911	0.913	0.915	0.917	0.919	0.921	0.923	0.925	0.927	0.929	0.931	0.933	0.935	0.937	0.939	0.941	0.943	0.945	0.947	0.949	0.951	0.953	0.955	0.957	0.959	0.961	0.963	0.965	0.967	0.969	0.971	0.973	0.975	0.977	0.979	0.981	0.983	0.985	0.987	0.989	0.991	0.993	0.995	0.997	0.999	1.001	1.003	1.005	1.007	1.009	1.011	1.013	1.015	1.017	1.019	1.021	1.023	1.025	1.027	1.029	1.031	1.033	1.035	1.037	1.039	1.041	1.043	1.045	1.047	1.049	1.051	1.053	1.055	1.057	1.059	1.061	1.063	1.065	1.067	1.069	1.071	1.073	1.075	1.077	1.079	1.081	1.083	1.085	1.087	1.089	1.091	1.093	1.095	1.097	1.099	1.101	1.103	1.105	1.107	1.109	1.111	1.113	1.115	1.117	1.119	1.121	1.123	1.125	1.127	1.129	1.131	1.133	1.135	1.137	1.139	1.141	1.143	1.145	1.147	1.149	1.151	1.153	1.155	1.157	1.159	1.161	1.163	1.165	1.167	1.169	1.171	1.173	1.175	1.177	1.179	1.181	1.183	1.185	1.187	1.189	1.191	1.193	1.195	1.197	1.199	1.201	1.203	1.205	1.207	1.209	1.211	1.213	1.215	1.217	1.219	1.221	1.223	1.225	1.227	1.229	1.231	1.233	1.235	1.237	1.239	1.241	1.243	1.245	1.247	1.249	1.251	1.253	1.255	1.257	1.259	1.261	1.263	1.265	1.267	1.269	1.271	1.273	1.275	1.277	1.279	1.281	1.283	1.285	1.287	1.289	1.291	1.293	1.295	1.297	1.299	1.301	1.303	1.305	1.307	1.309	1.311	1.313	1.315	1.317	1.319	1.321	1.323	1.325	1.327	1.329	1.331	1.333	1.335	1.337	1.339	1.341	1.343	1.345	1.347	1.349	1.351	1.353	1.355	1.357	1.359	1.361	1.363	1.365	1.367	1.369	1.371	1.373	1.375	1.377	1.379	1.381	1.383	1.385	1.387	1.389	1.391	1.393	1.395	1.397	1.399	1.401	1.403	1.405	1.407	1.409	1.411	1.413	1.415	1.417	1.419	1.421	1.423	1.425	1.427	1.429	1.431	1.433	1.435	1.437	1.439	1.441	1.443	1.445	1.447	1.449	1.451	1.453	1.455	1.457	1.459	1.461	1.463	1.465	1.467	1.469	1.471	1.473	1.475	1.477	1.479	1.481	1.483	1.485	1.487	1.489	1.491	1.493	1.495	1.497	1.499	1.501	1.503	1.505	1.507	1.509	1.511	1.513	1.515	1.517	1.519	1.521	1.523	1.525	1.527	1.529	1.531	1.533	1.535	1.537	1.539	1.541	1.543	1.545	1.547	1.549	1.551	1.553	1.555	1.557	1.559	1.561	1.563	1.565	1.567	1.569	1.571	1.573	1.575	1.577	1.579	1.581	1.583	1.585	1.587	1.589	1.591	1.593	1.595	1.597	1.599	1.601	1.603	1.605	1.607	1.609	1.611	1.613	1.615	1.617	1.619	1.621	1.623	1.625	1.627	1.629	1.631	1.633	1.635	1.637	1.639	1.641	1.643	1.645	1.647	1.649	1.651	1.653	1.655	1.657	1.659	1.661	1.663	1.665	1.667	1.669	1.671	1.673	1.675	1.677	1.679	1.681	1.683	1.685	1.687	1.689	1.691	1.693	1.695	1.697	1.699	1.701	1.703	1.705	1.707	1.709	1.711	1.713	1.715	1.717	1.719	1.721	1.723	1.725	1.727	1.729	1.731	1.733	1.735	1.737	1.739	1.741	1.743	1.745	1.747	1.749	1.751	1.753	1.755	1.757	1.759	1.761	1.763	1.765	1.767	1.769	1.771	1.773	1.775	1.777	1.779	1.781	1.783	1.785	1.787	1.789	1.791	1.793	1.795	1.797	1.799	1.801	1.803	1.805	1.807	1.809	1.811	1.813	1.815	1.817	1.819	1.821	1.823	1.825	1.827	1.829	1.831	1.833	1.835	1.837	1.839	1.841	1.843	1.845	1.847	1.849	1.851	1.853	1.855	1.857	1.859	1.861	1.863	1.865	1.867	1.869	1.871	1.873	1.875	1.877	1.879	1.881	1.883	1.885	1.887	1.889	1.891	1.893	1.895	1.897	1.899	1.901	1.903	1.905	1.907	1.909	1.911	1.913	1.915	1.917	1.919	1.921	1.923	1.925	1.927	1.929	1.931	1.933	1.935	1.937	1.939	1.941	1.943	1.945	1.947	1.949	1.951	1.953	1.955	1.957	1.959	1.961	1.963	1.965	1.967	1.969	1.971	1.973	1.975	1.977	1.979	1.981	1.983	1.985	1.987	1.989	1.991	1.993	1.995	1.997	1.999	2.001	2.003	2.005	2.007	2.009	2.011	2.013	2.015	2.017	2.019	2.021	2.023	2.025	2.027	2.029	2.031	2.033	2.035	2.037	2.039	2.041	2.043	2.045	2.047	2.049	2.051	2.053	2.055	2.057	2.059	2.061	2.063	2.065	2.067	2.069	2.071	2.073	2.075	2.077	2.079	2.081	2.083	2.085	2.087	2.089	2.091	2.093	2.095	2.097	2.099	2.101	2.103	2.105	2.107	2.109	2.111	2.113	2.115	2.117	2.119	2.121	2.123	2.125	2.127	2.129	2.131	2.133	2.135	2.137	2.139	2.141	2.143	2.145	2.147	2.149	2.151	2.153	2.155	2.157	2.159	2.161	2.163	2.165	2.167	2.169	2.171	2.173	2.175	2.177	2.179	2.181	2.183	2.185	2.187	2.189	2.191	2.193	2.195	2.197	2.199	2.201	2.203	2.205	2.207	2.209	2.211	2.213	2.215	2.217	2.219	2.221	2.223	2.225	2.227	2.229	2.231	2.233	2.235	2.237	2.239	2.241	2.243	2.245	2.247	2.249	2.251	2.253	2.255	2.257	2.259	2.261	2.263	2.265	2.267	2.269	2.271	2.273	2.275	2.277	2.279	2.281	2.283	2.285	2.287	2.289	2.291	2.293	2.295	2.297	2.299	2.301	2.303	2.305	2.307	2.309	2.311	2.313	2.315	2.317	2.319	2.321	2.323	2.325	2.327	2.329	2.331	2.333	2.335	2.337	2.339	2.341	2.343	2.345	2.347	2.349	2.351	2.353	2.355	2.357	2.359	2.361	2.363	2.365	2.367	2.369	2.371	2.373	2.375	2.377	2.379	2.381	2.383	2.385	2.387	2.389	2.391	2.393	2.395	2.397	2.399	2.401	2.403	2.405	2.407	2.409	2.411	2.413	2.415	2.417	2.419	2.421	2.423	2.425	2.427	2.429	2.431	2.433	2.435	2.437	2.439	2.441	2.443	2.445	2.447	2.449	2.451	2.453	2.455	2.457	2.459	2.461	2.463	2.465	2.467	2.469	2.471	2.473	2.475	2.477	2.479	2.481	2.483	2.485	2.487	2.489	2.491	2.493	2.495	2.497	2.499	2.501	2.503	2.505	2.507	2.509	2.511	2.513	2.515	2.517	2.519	2.521	2.523	2.525	2.527	2.529	2.531	2.533	2.535	2.537	2.539	2.541	2.543	2.545	2.547	2.549	2.551	2.553	2.555	2.557	2.559	2.561	2.563	2.565	2.567	2.569	2.571	2.573	2.575	2.577	2.579	2.581	2.583	2.585	2.587	2.589	2.591	2.593	2.595	2.597	2.599	2.601	2.603	2.605	2.607	2.609	2.611	2.613	2.615	2.617	2.619	2.621	2.623	2.625	2.627	2.629	2.631	2.633	2.635	2.637	2.639	2.641	2.643	2.645	2.647	2.649	2.651	2.653	2.655	2.657	2.659	2.661	2.663	2.665	2.667	2.669	2.671	2.673	2.675	2.677	2.679	2.681	2.683	2.685	2.687	2.689	2.691	2.693	2.695	2.697	2.699	2.701	2.703	2.705	2.707	2.709	2.711	2.713	2.715	2.717	2.719	2.721	2.723	2.725	2.727	2.729	2.731	2.733	2.735	2.737	2.739	2.741	2.743	2.745	2.747	2.749	2.751	2.753	2.755	2.757	2.759	2.761	2.763	2.765	2.767	2.769	2.771	2.773	2.775	2.777	2.779	2.781	2.783	2.785	2.787	2.789	2.791	2.793	2.795	2.797	2.799	2.801	2.803	2.805	2.807	2.809	2.811	2.813	2.815	2.817	2.819	2.821	2.823	2.825	2.827	2.829	2.831	2.833	2.835	2.837	2.839	2.841	2.843	2.845	2.847	2.849	2.851	2.853	2.855	2.857	2.859	2.861	2.863	2.865	2.867	2.869	2.871	2.873	2.875	2.877	2.879	2.881	2.883	2.885	2.887	2.889	2.891	2.893	2.895	2.897	2.899	2.901	2.903	2.905	2.907	2.909	2.911	2.913	2.915	2.917	2.919	2.921	2.923	2.925	2.927	2.929	2.931	2.933	2.935	2.937	2.939	2.941	2.943	2.945	2.947	2.949	2.951	2.953	2.955	2.957	2.959	2.961	2.963	2.965	2.967	2.969	2.971	2.973	2.975	2.977	2.979	2.981	2.983	2.985	2.987	2.989	2.991	2.993	2.995	2.997	2.999	3.001	3.003	3.005	3.007	3.009	3.011	3.013	3.015	3.017	3.019	3.021	3.023	3.025	3.027	3.029	3.031	3.033	3.035	3.037	3.039	3.041	3.043	3.045	3.047	3.049	3.051	3.053	3.055	3.057	3.059	3.061	3.063	3.065	3.067	3.069	3.071	3.073	3.075	3.077	3.079	3.081	3.083	3.085	3.087	3.089	3.091	3.093	3.095	3.097	3.099	3.101	3.103	3.105	3.107	3.109	3.111	3.113	3.115	3.117	3.119	3.121	3.123	3.125	3.127	3.129	3.131	3.133	3.135	3.137	3.139	3.141	3.143	3.145	3.147	3.149	3.151	3.153	3.155	3.157	3.159	3.161	3.163	3.165</

ALC LIST 1 66/3371 33 15611
SOME PROGRAMS SAME AS 50C

FRAME	TIME	FILE	FILE	FILE	(P2/P20) n	(E3/P20) n	(E4/P20) n	(E6/P) n	(E7/P) n	(E8/P) n	(E9/P) n	(E10/P) n	(E11/P) n
161	322	763	1877	1.210	7.6	0.1199	0.824	0.815	0.827	0.827	0.827	0.827	0.827
162	324	763	1877	1.210	7.4	0.1150	0.825	0.815	0.827	0.827	0.827	0.827	0.827
163	326	763	1877	1.210	33	0.1156	0.824	0.813	0.825	0.825	0.825	0.825	0.825
164	328	763	1877	1.210	33	0.1179	0.825	0.812	0.826	0.826	0.826	0.826	0.826
165	330	763	1877	1.210	37	0.1192	0.821	0.811	0.824	0.824	0.824	0.824	0.824
166	332	763	1877	1.210	36	0.1796	0.821	0.810	0.824	0.824	0.824	0.824	0.824
167	334	763	1877	1.210	35	0.1850	0.820	0.806	0.824	0.824	0.824	0.824	0.824
168	336	763	1877	1.210	34	0.1825	0.819	0.805	0.824	0.824	0.824	0.824	0.824
169	338	763	1877	1.210	34	0.1832	0.818	0.804	0.824	0.824	0.824	0.824	0.824
170	340	763	1877	1.210	34	0.1832	0.818	0.802	0.824	0.824	0.824	0.824	0.824
171	342	763	1877	1.210	34	0.1848	0.817	0.801	0.824	0.824	0.824	0.824	0.824
172	344	763	1877	1.210	33	0.1856	0.816	0.800	0.824	0.824	0.824	0.824	0.824
173	346	763	1877	1.210	32	0.1872	0.815	0.799	0.824	0.824	0.824	0.824	0.824
174	348	763	1877	1.210	31	0.1864	0.815	0.798	0.824	0.824	0.824	0.824	0.824
175	350	763	1877	1.210	32	0.1905	0.814	0.798	0.824	0.824	0.824	0.824	0.824
176	352	763	1877	1.210	32	0.1905	0.814	0.796	0.824	0.824	0.824	0.824	0.824
177	354	763	1877	1.210	31	0.1672	0.814	0.796	0.824	0.824	0.824	0.824	0.824
178	356	763	1877	1.210	31	0.1900	0.814	0.796	0.824	0.824	0.824	0.824	0.824
179	358	763	1877	1.210	30	0.1912	0.814	0.796	0.824	0.824	0.824	0.824	0.824
180	360	763	1877	1.210	30	0.1932	0.814	0.796	0.824	0.824	0.824	0.824	0.824
181	362	763	1877	1.210	30	0.1932	0.814	0.796	0.824	0.824	0.824	0.824	0.824
182	364	763	1877	1.210	29	0.1932	0.814	0.796	0.824	0.824	0.824	0.824	0.824
183	366	763	1877	1.210	29	0.1932	0.814	0.796	0.824	0.824	0.824	0.824	0.824
184	368	763	1877	1.210	29	0.1932	0.814	0.796	0.824	0.824	0.824	0.824	0.824
185	370	763	1877	1.210	29	0.1932	0.814	0.796	0.824	0.824	0.824	0.824	0.824
186	372	763	1877	1.210	29	0.1932	0.814	0.796	0.824	0.824	0.824	0.824	0.824
187	374	763	1877	1.210	29	0.1932	0.814	0.796	0.824	0.824	0.824	0.824	0.824
188	376	763	1877	1.210	29	0.1942	0.814	0.796	0.824	0.824	0.824	0.824	0.824
189	378	763	1877	1.210	29	0.1942	0.814	0.796	0.824	0.824	0.824	0.824	0.824
190	380	763	1877	1.210	29	0.1953	0.814	0.796	0.824	0.824	0.824	0.824	0.824
191	382	763	1877	1.210	28	0.1977	0.814	0.791	0.824	0.824	0.824	0.824	0.824
192	384	763	1877	1.210	28	0.1977	0.814	0.791	0.824	0.824	0.824	0.824	0.824

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

PRELIMINARY DATA

RUN LIST TWA525 SCHE PROGRAMME DATE: 1966
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TRAIL	TIME	PR	FEH	MACH	PRC	SCHE	(F2/PTC)n	(F5/PTC)n	(F4/PTC)n	(F6/PTC)n	(F7/PTC)n	(F8/PTC)n	(F9/PTC)n	(F10/PTC)n	(F11/PTC)n
193	386	763	1877	1.210	25	15841	C.1953	C.1546	C.813	C.759	C.807	C.875	C.917		
194	368	763	1877	1.210	25	15841	C.1953	C.1528	C.813	C.783	C.807	C.875	C.919		
195	390	763	1877	1.210	25	15841	C.1953	C.1546	C.813	C.789	C.808	C.875	C.919		
196	392	763	1877	1.210	23	15841	C.1989	C.1574	C.813	C.790	C.809	C.875	C.919		
197	394	763	1877	1.210	25	15841	C.1953	C.1546	C.813	C.791	C.809	C.875	C.920		
199	398	763	1877	1.210	26	15841	C.1964	C.1574	C.813	C.792	C.809	C.875	C.921		
200	400	763	1877	1.210	27	15841	C.1976	C.1584	C.812	C.790	C.808	C.872	C.921		
201	402	763	1877	1.210	28	15841	C.1953	C.1546	C.814	C.790	C.807	C.872	C.922		
202	404	763	1877	1.210	27	15841	C.2001	C.1584	C.814	C.787	C.805	C.870	C.922		
203	406	763	1877	1.210	28	15841	C.1964	C.1555	C.814	C.787	C.805	C.870	C.924		
204	406	763	1877	1.210	28	15841	C.1953	C.1563	C.815	C.787	C.805	C.869	C.922		
205	410	763	1877	1.210	27	15841	C.2013	C.1595	C.813	C.785	C.802	C.869	C.922		
206	412	763	1877	1.210	23	15841	C.1964	C.1555	C.814	C.787	C.805	C.870	C.922		
207	414	763	1877	1.210	27	15841	C.2001	C.1534	C.814	C.787	C.802	C.870	C.921		
208	416	763	1877	1.210	27	15841	C.2015	C.1595	C.814	C.785	C.804	C.870	C.922		
209	416	763	1877	1.210	20	15841	C.1953	C.1563	C.817	C.797	C.802	C.870	C.922		
210	420	763	1877	1.210	27	15841	C.1976	C.1566	C.817	C.795	C.805	C.872	C.922		
211	422	763	1877	1.210	27	15841	C.1976	C.1584	C.813	C.786	C.805	C.872	C.921		
212	424	763	1877	1.210	27	15841	C.1976	C.1602	C.813	C.797	C.809	C.875	C.921		
213	426	763	1877	1.210	27	15841	C.1980	C.1555	C.816	C.797	C.807	C.872	C.921		

TRAIL TIME PR FEH MACH PRC SCHE
 1.210 782.9 763 1877 1.210 27 15841

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

PRELIMINARY DATA

100-1007-1 68/000/1 30 15.22

	IN	TIME	WIND	TEMP	PR	WIND	TEMP	PR	WIND	TEMP	PR	WIND	TEMP	PR	WIND	TEMP	PR	WIND	TEMP	PR
1	261	630	1.206	592	326.5	0.0136	1.097	1.094	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
2	261	630	1.206	625	345.0	0.0141	1.112	1.112	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
3	261	630	1.206	655	361.2	0.0146	1.123	1.123	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
4	261	630	1.206	679	374.7	0.0149	1.132	1.132	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
5	261	630	1.206	702	387.2	0.0153	1.139	1.139	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
6	261	630	1.206	720	397.4	0.0155	1.145	1.145	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
7	261	630	1.206	736	405.5	0.0150	1.156	1.156	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
8	261	630	1.206	751	414.2	0.0161	1.161	1.161	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
9	261	630	1.206	762	420.5	0.0162	1.165	1.165	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
10	261	630	1.206	775	426.5	0.0164	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
11	261	630	1.206	782	431.6	0.0162	1.172	1.172	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
12	261	630	1.206	792	435.2	0.0162	1.176	1.176	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
13	261	630	1.206	797	439.6	0.0163	1.167	1.167	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
14	261	630	1.206	803	443.2	0.0418	1.165	1.165	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
15	261	630	1.206	809	446.2	0.0417	1.172	1.172	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
16	261	630	1.206	819	449.5	0.0418	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
17	261	630	1.206	819	451.7	0.0416	1.174	1.174	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
18	261	630	1.203	823	454.2	0.0415	1.172	1.172	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
19	261	630	1.206	828	456.7	0.0415	1.174	1.174	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
20	261	630	1.206	831	458.5	0.0410	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
21	261	630	1.206	831	461.9	0.0410	1.172	1.172	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
22	261	630	1.206	834	460.3	0.0410	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
23	261	630	1.206	837	461.9	0.0400	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
24	261	630	1.206	839	463.0	0.0400	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
25	261	630	1.206	842	464.4	0.0400	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
26	261	630	1.206	844	465.5	0.0405	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
27	261	630	1.206	845	466.1	0.0402	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
28	261	630	1.206	846	466.9	0.0401	1.172	1.172	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
29	261	630	1.206	848	467.7	0.0401	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
30	261	630	1.206	848	468.0	0.0400	1.169	1.169	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
31	261	630	1.206	849	468.5	0.0399	1.167	1.167	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
32	261	630	1.206	850	469.1	0.0399	1.167	1.167	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026
33	261	630	1.206	850	469.1	0.0399	1.165	1.165	1.152	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026	1.026

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ORIGINAL PAGE IS
OF POOR QUALITY

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

PRELIMINARY DATA

16/123 1 66/255/1 32 15.12

LINE NO	ITEM	QTY	UNIT	PRICE	AMOUNT	WGT (LBS)	WGT (KG)	WGT (G)	WGT (OZ)	WGT (T)	WGT (M)	WGT (N)	WGT (P)	WGT (Q)	WGT (R)	WGT (S)	WGT (T)	WGT (U)	WGT (V)	WGT (W)	WGT (X)	WGT (Y)	WGT (Z)	WGT (AA)	WGT (AB)	WGT (AC)	WGT (AD)	WGT (AE)	WGT (AF)	WGT (AG)	WGT (AH)	WGT (AI)	WGT (AJ)	WGT (AK)	WGT (AL)	WGT (AM)	WGT (AN)	WGT (AO)	WGT (AP)	WGT (AQ)	WGT (AR)	WGT (AS)	WGT (AT)	WGT (AU)	WGT (AV)	WGT (AW)	WGT (AX)	WGT (AY)	WGT (AZ)	WGT (BA)	WGT (BB)	WGT (BC)	WGT (BD)	WGT (BE)	WGT (BF)	WGT (BG)	WGT (BH)	WGT (BI)	WGT (BJ)	WGT (BK)	WGT (BL)	WGT (BM)	WGT (BN)	WGT (BO)	WGT (BP)	WGT (BQ)	WGT (BR)	WGT (BS)	WGT (BT)	WGT (BU)	WGT (BV)	WGT (BW)	WGT (BX)	WGT (BY)	WGT (BZ)	WGT (CA)	WGT (CB)	WGT (CC)	WGT (CD)	WGT (CE)	WGT (CF)	WGT (CG)	WGT (CH)	WGT (CI)	WGT (CJ)	WGT (CK)	WGT (CL)	WGT (CM)	WGT (CN)	WGT (CO)	WGT (CP)	WGT (CQ)	WGT (CR)	WGT (CS)	WGT (CT)	WGT (CU)	WGT (CV)	WGT (CW)	WGT (CX)	WGT (CY)	WGT (CZ)	WGT (DA)	WGT (DB)	WGT (DC)	WGT (DD)	WGT (DE)	WGT (DF)	WGT (DG)	WGT (DH)	WGT (DI)	WGT (DJ)	WGT (DK)	WGT (DL)	WGT (DM)	WGT (DN)	WGT (DO)	WGT (DP)	WGT (DQ)	WGT (DR)	WGT (DS)	WGT (DT)	WGT (DU)	WGT (DV)	WGT (DW)	WGT (DX)	WGT (DY)	WGT (DZ)	WGT (EA)	WGT (EB)	WGT (EC)	WGT (ED)	WGT (EE)	WGT (EF)	WGT (EG)	WGT (EH)	WGT (EI)	WGT (EJ)	WGT (EK)	WGT (EL)	WGT (EM)	WGT (EN)	WGT (EO)	WGT (EP)	WGT (EQ)	WGT (ER)	WGT (ES)	WGT (ET)	WGT (EU)	WGT (EV)	WGT (EW)	WGT (EX)	WGT (EY)	WGT (EZ)	WGT (FA)	WGT (FB)	WGT (FC)	WGT (FD)	WGT (FE)	WGT (FF)	WGT (FG)	WGT (FH)	WGT (FI)	WGT (FJ)	WGT (FK)	WGT (FL)	WGT (FM)	WGT (FN)	WGT (FO)	WGT (FP)	WGT (FQ)	WGT (FR)	WGT (FS)	WGT (FT)	WGT (FU)	WGT (FV)	WGT (FW)	WGT (FX)	WGT (FY)	WGT (FZ)	WGT (GA)	WGT (GB)	WGT (GC)	WGT (GD)	WGT (GE)	WGT (GF)	WGT (GG)	WGT (GH)	WGT (GI)	WGT (GJ)	WGT (GK)	WGT (GL)	WGT (GM)	WGT (GN)	WGT (GO)	WGT (GP)	WGT (GQ)	WGT (GR)	WGT (GS)	WGT (GT)	WGT (GU)	WGT (GV)	WGT (GW)	WGT (GX)	WGT (GY)	WGT (GZ)	WGT (HA)	WGT (HB)	WGT (HC)	WGT (HD)	WGT (HE)	WGT (HF)	WGT (HG)	WGT (HH)	WGT (HI)	WGT (HJ)	WGT (HK)	WGT (HL)	WGT (HM)	WGT (HN)	WGT (HO)	WGT (HP)	WGT (HQ)	WGT (HR)	WGT (HS)	WGT (HT)	WGT (HU)	WGT (HV)	WGT (HW)	WGT (HX)	WGT (HY)	WGT (HZ)	WGT (IA)	WGT (IB)	WGT (IC)	WGT (ID)	WGT (IE)	WGT (IF)	WGT (IG)	WGT (IH)	WGT (II)	WGT (IJ)	WGT (IK)	WGT (IL)	WGT (IM)	WGT (IN)	WGT (IO)	WGT (IP)	WGT (IQ)	WGT (IR)	WGT (IS)	WGT (IT)	WGT (IU)	WGT (IV)	WGT (IW)	WGT (IX)	WGT (IY)	WGT (IZ)	WGT (JA)	WGT (JB)	WGT (JC)	WGT (JD)	WGT (JE)	WGT (JF)	WGT (JG)	WGT (JH)	WGT (JI)	WGT (JJ)	WGT (JK)	WGT (JL)	WGT (JM)	WGT (JN)	WGT (JO)	WGT (JP)	WGT (JQ)	WGT (JR)	WGT (JS)	WGT (JT)	WGT (JU)	WGT (JV)	WGT (JW)	WGT (JX)	WGT (JY)	WGT (JZ)	WGT (KA)	WGT (KB)	WGT (KC)	WGT (KD)	WGT (KE)	WGT (KF)	WGT (KG)	WGT (KH)	WGT (KI)	WGT (KJ)	WGT (KK)	WGT (KL)	WGT (KM)	WGT (KN)	WGT (KO)	WGT (KP)	WGT (KQ)	WGT (KR)	WGT (KS)	WGT (KT)	WGT (KU)	WGT (KV)	WGT (KW)	WGT (KX)	WGT (KY)	WGT (KZ)	WGT (LA)	WGT (LB)	WGT (LC)	WGT (LD)	WGT (LE)	WGT (LF)	WGT (LG)	WGT (LH)	WGT (LI)	WGT (LJ)	WGT (LK)	WGT (LL)	WGT (LM)	WGT (LN)	WGT (LO)	WGT (LP)	WGT (LQ)	WGT (LR)	WGT (LS)	WGT (LT)	WGT (LU)	WGT (LV)	WGT (LW)	WGT (LX)	WGT (LY)	WGT (LZ)	WGT (MA)	WGT (MB)	WGT (MC)	WGT (MD)	WGT (ME)	WGT (MF)	WGT (MG)	WGT (MH)	WGT (MI)	WGT (MJ)	WGT (MK)	WGT (ML)	WGT (MN)	WGT (MO)	WGT (MP)	WGT (MQ)	WGT (MR)	WGT (MS)	WGT (MT)	WGT (MU)	WGT (MV)	WGT (MW)	WGT (MX)	WGT (MY)	WGT (MZ)	WGT (NA)	WGT (NB)	WGT (NC)	WGT (ND)	WGT (NE)	WGT (NF)	WGT (NG)	WGT (NH)	WGT (NI)	WGT (NJ)	WGT (NK)	WGT (NL)	WGT (NM)	WGT (NN)	WGT (NO)	WGT (NP)	WGT (NQ)	WGT (NR)	WGT (NS)	WGT (NT)	WGT (NU)	WGT (NV)	WGT (NW)	WGT (NX)	WGT (NY)	WGT (NZ)	WGT (OA)	WGT (OB)	WGT (OC)	WGT (OD)	WGT (OE)	WGT (OF)	WGT (OG)	WGT (OH)	WGT (OI)	WGT (OJ)	WGT (OK)	WGT (OL)	WGT (OM)	WGT (ON)	WGT (OO)	WGT (OP)	WGT (OQ)	WGT (OR)	WGT (OS)	WGT (OT)	WGT (OU)	WGT (OV)	WGT (OW)	WGT (OX)	WGT (OY)	WGT (OZ)	WGT (PA)	WGT (PB)	WGT (PC)	WGT (PD)	WGT (PE)	WGT (PF)	WGT (PG)	WGT (PH)	WGT (PI)	WGT (PJ)	WGT (PK)	WGT (PL)	WGT (PM)	WGT (PN)	WGT (PO)	WGT (PP)	WGT (PQ)	WGT (PR)	WGT (PS)	WGT (PT)	WGT (PU)	WGT (PV)	WGT (PW)	WGT (PX)	WGT (PY)	WGT (PZ)	WGT (QA)	WGT (QB)	WGT (QC)	WGT (QD)	WGT (QE)	WGT (QF)	WGT (QG)	WGT (QH)	WGT (QI)	WGT (QJ)	WGT (QK)	WGT (QL)	WGT (QM)	WGT (QN)	WGT (QO)	WGT (QP)	WGT (QQ)	WGT (QR)	WGT (QS)	WGT (QT)	WGT (QU)	WGT (QV)	WGT (QW)	WGT (QX)	WGT (QY)	WGT (QZ)	WGT (RA)	WGT (RB)	WGT (RC)	WGT (RD)	WGT (RE)	WGT (RF)	WGT (RG)	WGT (RH)	WGT (RI)	WGT (RJ)	WGT (RK)	WGT (RL)	WGT (RM)	WGT (RN)	WGT (RO)	WGT (RP)	WGT (RQ)	WGT (RR)	WGT (RS)	WGT (RT)	WGT (RU)	WGT (RV)	WGT (RW)	WGT (RX)	WGT (RY)	WGT (RZ)	WGT (SA)	WGT (SB)	WGT (SC)	WGT (SD)	WGT (SE)	WGT (SF)	WGT (SG)	WGT (SH)	WGT (SI)	WGT (SJ)	WGT (SK)	WGT (SL)	WGT (SM)	WGT (SN)	WGT (SO)	WGT (SP)	WGT (SQ)	WGT (SR)	WGT (SS)	WGT (ST)	WGT (SU)	WGT (SV)	WGT (SW)	WGT (SX)	WGT (SY)	WGT (SZ)	WGT (TA)	WGT (TB)	WGT (TC)	WGT (TD)	WGT (TE)	WGT (TF)	WGT (TG)	WGT (TH)	WGT (TI)	WGT (TJ)	WGT (TK)	WGT (TL)	WGT (TM)	WGT (TN)	WGT (TO)	WGT (TP)	WGT (TQ)	WGT (TR)	WGT (TS)	WGT (TT)	WGT (TU)	WGT (TV)	WGT (TW)	WGT (TX)	WGT (TY)	WGT (TZ)	WGT (UA)	WGT (UB)	WGT (UC)	WGT (UD)	WGT (UE)	WGT (UF)	WGT (UG)	WGT (UH)	WGT (UI)	WGT (UJ)	WGT (UK)	WGT (UL)	WGT (UM)	WGT (UN)	WGT (UO)	WGT (UP)	WGT (UQ)	WGT (UR)	WGT (US)	WGT (UT)	WGT (UU)	WGT (UV)	WGT (UW)	WGT (UX)	WGT (UY)	WGT (UZ)	WGT (VA)	WGT (VB)	WGT (VC)	WGT (VD)	WGT (VE)	WGT (VF)	WGT (VG)	WGT (VH)	WGT (VI)	WGT (VJ)	WGT (VK)	WGT (VL)	WGT (VM)	WGT (VN)	WGT (VO)	WGT (VP)	WGT (VQ)	WGT (VR)	WGT (VS)	WGT (VT)	WGT (VU)	WGT (VV)	WGT (VW)	WGT (VX)	WGT (VY)	WGT (VZ)	WGT (WA)	WGT (WB)	WGT (WC)	WGT (WD)	WGT (WE)	WGT (WF)	WGT (WG)	WGT (WH)	WGT (WI)	WGT (WJ)	WGT (WK)	WGT (WL)	WGT (WM)	WGT (WN)	WGT (WO)	WGT (WP)	WGT (WQ)	WGT (WR)	WGT (WS)	WGT (WT)	WGT (WU)	WGT (WV)	WGT (WW)	WGT (WX)	WGT (WY)	WGT (WZ)	WGT (XA)	WGT (XB)	WGT (XC)	WGT (XD)	WGT (XE)	WGT (XF)	WGT (XG)	WGT (XH)	WGT (XI)	WGT (XJ)	WGT (XK)	WGT (XL)	WGT (XM)	WGT (XN)	WGT (XO)	WGT (XP)	WGT (XQ)	WGT (XR)	WGT (XS)	WGT (XT)	WGT (XU)	WGT (XV)	WGT (XW)	WGT (XZ)	WGT (YA)	WGT (YB)	WGT (YC)	WGT (YD)	WGT (YE)	WGT (YF)	WGT (YG)	WGT (YH)	WGT (YI)	WGT (YJ)	WGT (YK)	WGT (YL)	WGT (YM)	WGT (YN)	WGT (YO)	WGT (YP)	WGT (YQ)	WGT (YR)	WGT (YS)	WGT (YT)	WGT (YU)	WGT (YV)	WGT (YW)	WGT (YZ)	WGT (ZA)	WGT (ZB)	WGT (ZC)	WGT (ZD)	WGT (ZE)	WGT (ZF)	WGT (ZG)	WGT (ZH)	WGT (ZI)	WGT (ZJ)	WGT (ZK)	WGT (ZL)	WGT (ZM)	WGT (ZN)	WGT (ZO)	WGT (ZP)	WGT (ZQ)	WGT (ZR)	WGT (ZS)	WGT (ZT)	WGT (ZU)	WGT (ZV)	WGT (ZW)	WGT (ZZ)
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National Aeronautics and Space Administration
Ames Research Center: MOFFETT FIELD, CALIF.
PRELIMINARY DATA

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TRAIL	W	H	P	FT	PREP	FOALJ	MIDDLE PRESS.			TWO PRESS.			DOOR PRESS.		
							(E1/200)H	(E3/200)H	(E4/200)H	(F6/E)H	(F7/E)H	(F8/E)H	(E9/E)H	(E10/E)H	(E11/E)H
192	261	261	261	261	261	261	0.1247	0.0496	0.927	0.887	0.936	0.911	1.022	1.026	
197	261	261	261	261	261	261	0.1244	0.0510	0.924	0.885	0.936	0.911	1.022	1.026	
198	261	261	261	261	261	261	0.1227	0.0496	0.924	0.885	0.936	0.911	1.022	1.026	
199	261	261	261	261	261	261	0.1209	0.0496	0.927	0.885	0.936	0.911	1.022	1.026	
200	261	261	261	261	261	261	0.1199	0.0503	0.927	0.887	0.936	0.911	1.022	1.026	
201	261	261	261	261	261	261	0.1189	0.0503	0.924	0.887	0.936	0.911	1.022	1.026	
202	261	261	261	261	261	261	0.1185	0.0503	0.927	0.885	0.936	0.911	1.022	1.026	
203	261	261	261	261	261	261	0.1168	0.0510	0.924	0.880	0.936	0.911	1.022	1.026	
204	261	261	261	261	261	261	0.1171	0.0517	0.924	0.880	0.936	0.911	1.022	1.026	
205	261	261	261	261	261	261	0.1164	0.0510	0.920	0.876	0.936	0.911	1.022	1.026	
206	261	261	261	261	261	261	0.1166	0.0524	0.920	0.876	0.936	0.911	1.022	1.026	
207	261	261	261	261	261	261	0.1189	0.0503	0.924	0.885	0.936	0.911	1.022	1.026	
208	261	261	261	261	261	261	0.1195	0.0503	0.927	0.885	0.936	0.911	1.022	1.026	
209	261	261	261	261	261	261	0.1168	0.0510	0.924	0.880	0.936	0.911	1.022	1.026	
210	261	261	261	261	261	261	0.1168	0.0510	0.924	0.876	0.936	0.911	1.022	1.026	
211	261	261	261	261	261	261	0.1171	0.0517	0.924	0.880	0.936	0.911	1.022	1.026	
212	261	261	261	261	261	261	0.1164	0.0510	0.920	0.876	0.936	0.911	1.022	1.026	
213	261	261	261	261	261	261	0.1166	0.0524	0.920	0.876	0.936	0.911	1.022	1.026	

1.206 265.7 261 636 1451 2116

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PRELIMINARY DATA

THIS LIST SHOWS SOME PROBLEMS WITH BASES
 114 1 86/15/1 30 15:41 500

TRAIL NO.	WIND	WIND DIR	WIND SPCD	WIND DIR	WIND SPCD	(F20/F2)H	(F2/200)H	(F2/200)H	(F2/200)H	(F24/F20)H	(F26/F2)H	(F27/F2)H	(F28/F2)H	(F29/F2)H	(F30/F2)H	(F11/F2)H
1	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
2	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
3	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
4	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
5	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
6	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
7	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
8	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
9	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
10	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
11	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
12	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
13	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
14	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
15	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
16	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
17	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
18	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
19	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
20	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
21	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
22	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
23	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
24	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
25	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
26	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
27	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
28	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
29	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
30	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
31	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	
32	259	638	1.212	1803	1005.5	0.0373	0.0121	1.383	1.421	0.0115	1.270	1.225	1.265	1.169	1.085	

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 PRELIMINARY DATA

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300	1187	2158	0017	2100000000	0000	0000	300	1187	2158	0017	2100000000	0000	0000
33	66	259	638	1.212	1937	1060.2	0.0407	0.0151	1.450	1.479	1.351	1.037	
34	63	259	638	1.212	1955	1091.6	0.0408	0.0151	1.450	1.479	1.361	1.087	
35	70	259	638	1.212	1970	1095.5	0.0410	0.0152	1.454	1.483	1.365	1.089	
36	72	259	638	1.212	1975	1093.0	0.0411	0.0152	1.454	1.483	1.385	1.092	
37	74	259	638	1.212	1900	1100.8	0.0412	0.0152	1.454	1.483	1.385	1.092	
38	76	259	638	1.212	1934	1105.0	0.0414	0.0152	1.454	1.483	1.387	1.096	
39	73	259	638	1.212	1936	1104.3	0.0416	0.0156	1.452	1.483	1.387	1.096	
40	82	259	638	1.212	1900	1105.3	0.0420	0.0156	1.456	1.488	1.392	1.092	
41	84	259	638	1.212	1988	1105.2	0.0421	0.0160	1.454	1.488	1.392	1.094	
42	82	259	638	1.212	1988	1105.2	0.0425	0.0162	1.454	1.488	1.394	1.094	
43	86	259	638	1.212	1920	1101.1	0.0425	0.0162	1.459	1.490	1.392	1.096	
44	88	259	638	1.212	1963	1097.6	0.0426	0.0165	1.459	1.490	1.392	1.096	
45	90	259	638	1.212	1975	1097.2	0.0426	0.0165	1.459	1.490	1.392	1.096	
46	92	259	638	1.212	1951	1085.0	0.0428	0.0166	1.461	1.485	1.392	1.096	
47	94	259	638	1.212	1951	1077.7	0.0431	0.0167	1.461	1.485	1.392	1.096	
48	96	259	638	1.212	1932	1068.8	0.0433	0.0168	1.459	1.481	1.392	1.096	
49	90	259	638	1.212	1905	1059.4	0.0437	0.0168	1.459	1.481	1.392	1.096	
50	100	259	638	1.212	1897	1049.4	0.0439	0.0168	1.459	1.479	1.392	1.094	
51	104	259	638	1.212	1868	1038.5	0.0440	0.0167	1.454	1.479	1.390	1.092	
52	106	259	638	1.212	1850	1028.5	0.0442	0.0166	1.452	1.474	1.390	1.092	
53	108	259	638	1.212	1829	1017.1	0.0442	0.0164	1.452	1.474	1.387	1.094	
54	108	259	638	1.212	1809	1006.0	0.0441	0.0164	1.447	1.472	1.385	1.093	
55	110	259	638	1.212	1750	995.4	0.0439	0.0165	1.445	1.472	1.385	1.093	
56	112	259	638	1.212	1769	983.5	0.0434	0.0162	1.447	1.470	1.381	1.087	
57	114	259	638	1.212	1750	973.2	0.0430	0.0162	1.447	1.472	1.381	1.087	
58	116	259	638	1.212	1731	962.6	0.0426	0.0163	1.445	1.470	1.376	1.087	
59	118	259	638	1.212	1712	952.1	0.0422	0.0163	1.445	1.467	1.376	1.085	
60	120	259	638	1.212	1696	942.5	0.0419	0.0165	1.441	1.472	1.381	1.085	
61	122	259	638	1.212	1678	932.0	0.0415	0.0162	1.445	1.472	1.376	1.087	
62	124	259	638	1.212	1661	925.7	0.0415	0.0162	1.445	1.470	1.376	1.087	
63	126	259	638	1.212	1646	915.1	0.0412	0.0162	1.441	1.472	1.375	1.092	
64	128	259	638	1.212	1631	906.8	0.0411	0.0165	1.441	1.472	1.375	1.092	
									1.441	1.456	1.372	1.067	

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PROGRAMS BY DATE
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TRAIN	QTR	IN	PM	WGEN	EPGM	(22/22) n	(23/23) n	(24/24) n	(26/26) n	(27/27) n	(28/28) n	(29/29) n	(30/30) n
1	2	260	639	1.209	606	0.0235	0.0099	0.970	0.975	0.948	0.948	1.061	1.061
2	4	260	639	1.209	547.0	0.0255	0.0109	0.979	0.982	0.953	0.953	1.063	1.063
3	6	260	639	1.209	639	0.0274	0.0116	0.979	0.982	0.948	0.948	1.059	1.059
4	8	260	639	1.209	643	0.0295	0.0125	0.986	0.986	0.953	0.953	1.061	1.061
5	10	260	639	1.209	641	0.0314	0.0133	0.988	0.984	0.951	0.951	1.061	1.061
6	12	260	639	1.209	634	0.0332	0.0138	0.986	0.979	0.948	0.948	1.061	1.061
7	14	260	639	1.209	644.6	0.0348	0.0145	0.984	0.977	0.951	0.951	1.051	1.051
8	16	260	639	1.209	611	0.0365	0.0149	0.975	0.975	0.944	0.944	1.059	1.059
9	18	260	639	1.209	597	0.0377	0.0154	0.968	0.966	0.942	0.942	1.059	1.059
10	20	260	639	1.209	583	0.0389	0.0157	0.962	0.962	0.940	0.940	1.057	1.057
11	22	260	639	1.209	570	0.0400	0.0160	0.959	0.957	0.937	0.937	1.057	1.057
12	24	260	639	1.209	556	0.0406	0.0162	0.955	0.953	0.935	0.935	1.057	1.057
13	26	260	639	1.209	544	0.0414	0.0164	0.953	0.951	0.935	0.935	1.057	1.057
14	28	260	639	1.209	533	0.0418	0.0164	0.951	0.946	0.931	0.931	1.055	1.055
15	30	260	639	1.209	524	0.0421	0.0163	0.946	0.942	0.928	0.928	1.057	1.057
16	32	260	639	1.209	517	0.0425	0.0165	0.944	0.942	0.928	0.928	1.057	1.057
17	34	260	639	1.209	509	0.0425	0.0165	0.942	0.942	0.928	0.928	1.057	1.057
18	36	260	639	1.209	504	0.0425	0.0164	0.937	0.937	0.928	0.928	1.057	1.057
19	38	260	639	1.209	501	0.0427	0.0164	0.940	0.940	0.928	0.928	1.059	1.059
20	40	260	639	1.209	496	0.0424	0.0161	0.935	0.935	0.926	0.926	1.057	1.057
21	42	260	639	1.209	495	0.0424	0.0162	0.940	0.937	0.928	0.928	1.057	1.057
22	44	260	639	1.209	495	0.0425	0.0161	0.942	0.937	0.928	0.928	1.057	1.057
23	46	260	639	1.209	492	0.0421	0.0161	0.942	0.935	0.924	0.924	1.055	1.055
24	48	260	639	1.209	492	0.0422	0.0161	0.944	0.942	0.926	0.926	1.057	1.057
25	50	260	639	1.209	491	0.0419	0.0159	0.940	0.940	0.926	0.926	1.057	1.057
26	52	260	639	1.209	491	0.0418	0.0159	0.937	0.940	0.926	0.926	1.057	1.057
27	54	260	639	1.209	491	0.0418	0.0159	0.937	0.937	0.926	0.926	1.057	1.057
28	56	260	639	1.209	491	0.0417	0.0157	0.935	0.935	0.924	0.924	1.061	1.061
29	58	260	639	1.209	491	0.0418	0.0159	0.940	0.942	0.928	0.928	1.061	1.061
30	60	260	639	1.209	491	0.0418	0.0158	0.942	0.942	0.928	0.928	1.059	1.059
31	62	260	639	1.209	491	0.0416	0.0158	0.942	0.942	0.928	0.928	1.059	1.059
32	64	260	639	1.209	491	0.0418	0.0159	0.942	0.942	0.928	0.928	1.063	1.063

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

PRELIMINARY DATA

RUC LIST MISSIE COMP PROGRAMME SAMPLING
 415 1 56/053/1 38 2-1-1 500

FRAME	TIME	IN	FTN	FLIGHT	PCN	(P20/P) n	(P22/200) n	NOZZLE PRESS.	(P24/200) n	BASE PRESS.	(P26/P) n	(P27/P) n	(P28/P) n	BODY PRESS.	(P29/P) n	(P30/P) n	(P31/P) n
33	66	260	639	1.209	491	271.8	0.0416	0.0416	0.0158	0.940	0.942	0.942	0.942	0.928	0.928	1.061	
34	70	260	639	1.209	491	271.8	0.0417	0.0417	0.0158	0.937	0.942	0.942	0.942	0.928	0.928	1.061	
35	72	260	639	1.209	492	272.0	0.0418	0.0418	0.0159	0.940	0.942	0.942	0.942	0.931	0.931	1.063	
36	74	260	639	1.209	493	272.6	0.0417	0.0417	0.0159	0.942	0.942	0.942	0.942	0.931	0.931	1.063	
37	74	260	639	1.209	492	272.3	0.0417	0.0417	0.0159	0.944	0.942	0.942	0.942	0.933	0.933	1.066	
38	75	260	639	1.209	493	272.9	0.0417	0.0417	0.0158	0.948	0.942	0.942	0.942	0.933	0.933	1.066	
39	78	260	639	1.209	493	272.9	0.0413	0.0413	0.0158	0.948	0.948	0.942	0.942	0.933	0.933	1.066	
40	80	260	639	1.209	493	272.6	0.0418	0.0418	0.0158	0.948	0.948	0.940	0.940	0.931	0.931	1.066	
41	82	260	639	1.209	494	273.1	0.0418	0.0418	0.0159	0.948	0.948	0.942	0.942	0.933	0.933	1.066	
42	84	260	639	1.209	493	272.9	0.0417	0.0417	0.0158	0.944	0.942	0.942	0.942	0.933	0.933	1.066	
43	85	260	639	1.209	493	272.9	0.0417	0.0417	0.0158	0.942	0.942	0.942	0.940	0.933	0.933	1.066	
44	88	260	639	1.209	494	273.1	0.0418	0.0418	0.0160	0.946	0.942	0.942	0.942	0.935	0.935	1.066	
45	90	260	639	1.209	493	272.6	0.0416	0.0416	0.0158	0.942	0.942	0.942	0.940	0.928	0.928	1.066	
46	92	260	639	1.209	494	273.4	0.0416	0.0416	0.0159	0.946	0.946	0.942	0.942	0.933	0.933	1.066	
47	94	260	639	1.209	494	273.4	0.0416	0.0416	0.0159	0.948	0.948	0.942	0.942	0.933	0.933	1.066	
48	96	260	639	1.209	495	273.7	0.0416	0.0416	0.0158	0.946	0.946	0.940	0.940	0.928	0.928	1.063	
49	98	260	639	1.209	496	274.2	0.0418	0.0418	0.0160	0.948	0.948	0.944	0.944	0.935	0.935	1.068	
50	100	260	639	1.209	496	274.5	0.0415	0.0415	0.0158	0.942	0.942	0.940	0.940	0.931	0.931	1.068	
51	102	260	639	1.209	496	274.5	0.0415	0.0415	0.0158	0.940	0.940	0.940	0.940	0.931	0.931	1.068	
52	104	260	639	1.209	497	274.8	0.0416	0.0416	0.0159	0.940	0.940	0.942	0.942	0.928	0.928	1.070	
53	106	260	639	1.209	497	275.1	0.0414	0.0414	0.0157	0.935	0.935	0.937	0.937	0.928	0.928	1.060	
54	108	260	639	1.209	498	275.6	0.0414	0.0414	0.0159	0.942	0.942	0.942	0.942	0.933	0.933	1.070	
55	110	260	639	1.209	498	275.6	0.0414	0.0414	0.0158	0.940	0.940	0.940	0.940	0.928	0.928	1.068	
56	112	260	639	1.209	499	275.9	0.0414	0.0414	0.0158	0.940	0.940	0.940	0.940	0.928	0.928	1.068	
57	114	260	639	1.209	499	276.2	0.0415	0.0415	0.0158	0.940	0.940	0.942	0.942	0.928	0.928	1.068	
58	116	260	639	1.209	500	276.5	0.0414	0.0414	0.0158	0.933	0.933	0.940	0.940	0.928	0.928	1.068	
59	118	260	639	1.209	500	276.7	0.0414	0.0414	0.0158	0.933	0.933	0.942	0.942	0.931	0.931	1.068	
60	120	260	639	1.209	501	277.0	0.0414	0.0414	0.0158	0.931	0.931	0.942	0.942	0.931	0.931	1.068	
61	122	260	639	1.209	501	277.3	0.0415	0.0415	0.0158	0.933	0.933	0.944	0.944	0.931	0.931	1.066	
62	124	260	639	1.209	501	277.0	0.0415	0.0415	0.0159	0.933	0.933	0.944	0.944	0.931	0.931	1.066	
63	126	260	639	1.209	501	277.3	0.0415	0.0415	0.0158	0.937	0.937	0.945	0.945	0.931	0.931	1.066	
64	128	260	639	1.209	502	277.6	0.0414	0.0414	0.0159	0.940	0.940	0.945	0.945	0.931	0.931	1.066	

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PRELIMINARY DATA

TEST LIST TRISTE COIT PROGRAMS AIR 2-2-62
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TEST	FT	FTn	Wt	WtW	(P2/P20)n	WORLD PRESS:	(P3/P30)n	BASE PRESS:	(P4/P40)n	(P5/P50)n	BASE PRESS:	(P6/P60)n	(P7/P70)n	(P8/P80)n	BODY PRESS:	(P9/P90)n	(P10/P100)n	(P11/P110)n
65	150	639	1.209	501	277.3	0.0413	0.0158	0.937	0.0159	0.0159	0.945	0.948	0.928	0.928	1.066			
66	132	639	1.209	503	278.1	0.0415	0.0159	0.937	0.0159	0.0159	0.946	0.948	0.931	0.931	1.066			
67	134	639	1.209	502	277.8	0.0414	0.0158	0.935	0.0158	0.0158	0.945	0.946	0.928	0.928	1.066			
68	136	639	1.209	503	278.1	0.0413	0.0158	0.933	0.0158	0.0158	0.945	0.946	0.931	0.931	1.066			
69	138	639	1.209	503	278.4	0.0414	0.0159	0.935	0.0159	0.0159	0.945	0.946	0.928	0.928	1.066			
70	140	639	1.209	502	277.6	0.0413	0.0158	0.940	0.0158	0.0158	0.944	0.944	0.931	0.931	1.066			
71	142	639	1.209	502	277.8	0.0415	0.0159	0.942	0.0159	0.0159	0.944	0.944	0.928	0.928	1.066			
72	144	639	1.209	502	277.6	0.0414	0.0158	0.942	0.0158	0.0158	0.944	0.944	0.933	0.933	1.066			
73	146	639	1.209	501	277.0	0.0414	0.0158	0.944	0.0158	0.0158	0.944	0.944	0.928	0.928	1.066			
74	148	639	1.209	501	277.3	0.0416	0.0160	0.944	0.0160	0.0160	0.944	0.944	0.933	0.933	1.068			
75	150	639	1.209	500	276.5	0.0414	0.0158	0.940	0.0158	0.0158	0.946	0.946	0.933	0.933	1.068			
76	152	639	1.209	499	276.2	0.0415	0.0158	0.940	0.0158	0.0158	0.946	0.946	0.933	0.933	1.068			
77	154	639	1.209	499	275.6	0.0415	0.0159	0.940	0.0159	0.0159	0.946	0.946	0.933	0.933	1.070			
78	156	639	1.209	498	275.6	0.0414	0.0158	0.937	0.0158	0.0158	0.944	0.944	0.928	0.928	1.068			
79	158	639	1.209	498	275.6	0.0416	0.0159	0.942	0.0159	0.0159	0.944	0.944	0.933	0.933	1.068			
80	160	639	1.209	498	275.3	0.0415	0.0159	0.944	0.0159	0.0159	0.944	0.944	0.933	0.933	1.066			
81	162	639	1.209	497	275.1	0.0414	0.0158	0.944	0.0158	0.0158	0.944	0.944	0.933	0.933	1.066			
82	164	639	1.209	497	274.8	0.0414	0.0158	0.942	0.0158	0.0158	0.942	0.942	0.931	0.931	1.063			
83	166	639	1.209	497	274.8	0.0414	0.0158	0.942	0.0158	0.0158	0.942	0.942	0.933	0.933	1.063			
84	168	639	1.209	496	274.5	0.0413	0.0158	0.942	0.0158	0.0158	0.942	0.942	0.933	0.933	1.061			
85	170	639	1.209	496	274.2	0.0414	0.0159	0.942	0.0159	0.0159	0.942	0.942	0.933	0.933	1.061			
86	172	639	1.209	496	274.5	0.0415	0.0159	0.944	0.0159	0.0159	0.944	0.944	0.933	0.933	1.061			
87	174	639	1.209	495	274.0	0.0414	0.0158	0.944	0.0158	0.0158	0.944	0.944	0.933	0.933	1.061			
88	176	639	1.209	495	274.0	0.0414	0.0158	0.946	0.0158	0.0158	0.946	0.946	0.933	0.933	1.061			
89	178	639	1.209	495	273.7	0.0415	0.0159	0.948	0.0159	0.0159	0.948	0.948	0.933	0.933	1.059			
90	180	639	1.209	494	273.1	0.0415	0.0158	0.946	0.0158	0.0158	0.946	0.946	0.933	0.933	1.059			
91	182	639	1.209	494	273.4	0.0415	0.0159	0.944	0.0159	0.0159	0.944	0.944	0.933	0.933	1.059			
92	184	639	1.209	493	272.6	0.0414	0.0158	0.940	0.0158	0.0158	0.940	0.940	0.931	0.931	1.059			
93	186	639	1.209	492	272.5	0.0415	0.0159	0.940	0.0159	0.0159	0.940	0.940	0.933	0.933	1.061			
94	188	639	1.209	492	272.6	0.0415	0.0159	0.942	0.0159	0.0159	0.942	0.942	0.933	0.933	1.061			
95	190	639	1.209	491	271.5	0.0413	0.0157	0.937	0.0157	0.0157	0.937	0.937	0.928	0.928	1.059			
96	192	639	1.209	491	271.8	0.0415	0.0158	0.942	0.0158	0.0158	0.942	0.942	0.933	0.933	1.061			

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

PRELIMINARY DATA

THE LIST THESE COMP PROGRAMS SAVER LINE
415 1 56/033/1 38 2HAL 500

TRAIL	TIME	En	PTH	MACH	PRGN	(20/P)n	(22/P)n	(23/P)n	(24/P)n	(26/P)n	(27/P)n	(28/P)n	(29/P)n	BODY PRESS	(P11/P)n
97	134	260	639	1.209	491	271.5	0.0414	0.0158	0.942	0.942	0.942	0.940	0.931	1.061	
98	136	260	639	1.209	490	271.2	0.0413	0.0155	0.942	0.942	0.942	0.935	0.928	1.059	
99	138	260	639	1.209	491	271.5	0.0415	0.0159	0.944	0.944	0.944	0.940	0.933	1.063	
100	200	260	639	1.209	490	270.9	0.0413	0.0157	0.940	0.940	0.940	0.937	0.931	1.061	
101	202	260	639	1.209	490	270.9	0.0415	0.0157	0.942	0.942	0.942	0.940	0.931	1.061	
102	204	260	639	1.209	490	271.2	0.0414	0.0157	0.940	0.940	0.940	0.940	0.931	1.061	
103	205	260	639	1.209	490	271.2	0.0415	0.0156	0.937	0.937	0.937	0.935	0.928	1.057	
104	206	260	639	1.209	490	271.2	0.0414	0.0157	0.942	0.942	0.942	0.940	0.933	1.059	
105	210	260	639	1.209	490	271.2	0.0414	0.0157	0.944	0.944	0.944	0.940	0.933	1.059	
106	212	260	639	1.209	490	270.9	0.0415	0.0157	0.942	0.942	0.942	0.940	0.933	1.057	
107	214	260	639	1.209	490	270.9	0.0413	0.0157	0.944	0.944	0.944	0.940	0.933	1.059	
108	216	260	639	1.209	490	270.9	0.0415	0.0157	0.940	0.940	0.940	0.937	0.931	1.057	
109	218	260	639	1.209	489	270.8	0.0414	0.0157	0.937	0.937	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	0.937	0.937	0.931	1.059	
111	222	260	639	1.209	489	270.6	0.0415	0.0158	0.940	0.940	0.940	0.935	0.931	1.059	
112	224	260	639	1.209	488	270.1	0.0415	0.0157	0.942	0.942	0.942	0.937	0.931	1.061	
113	226	260	639	1.209	488	270.1	0.0415	0.0158	0.944	0.944	0.944	0.935	0.931	1.061	
114	228	260	639	1.209	488	269.8	0.0415	0.0157	0.942	0.942	0.942	0.937	0.931	1.061	
115	230	260	639	1.209	487	269.3	0.0413	0.0156	0.942	0.942	0.942	0.937	0.928	1.051	
116	232	260	639	1.209	483	269.6	0.0415	0.0158	0.940	0.940	0.940	0.935	0.928	1.061	
117	234	260	639	1.209	486	269.0	0.0415	0.0158	0.937	0.937	0.937	0.935	0.928	1.061	
118	236	260	639	1.209	486	268.7	0.0415	0.0157	0.940	0.940	0.940	0.935	0.928	1.061	
119	238	260	639	1.209	485	268.4	0.0417	0.0159	0.940	0.940	0.940	0.933	0.928	1.061	
120	240	260	639	1.209	482	266.8	0.0416	0.0157	0.935	0.935	0.935	0.933	0.926	1.059	
121	242	260	639	1.209	482	266.5	0.0417	0.0158	0.940	0.940	0.940	0.935	0.928	1.061	
122	244	260	639	1.209	479	265.1	0.0419	0.0159	0.942	0.942	0.942	0.935	0.928	1.061	
123	246	260	639	1.209	476	263.5	0.0418	0.0158	0.937	0.937	0.937	0.928	0.924	1.059	
124	248	260	639	1.209	475	262.6	0.0422	0.0160	0.940	0.940	0.940	0.933	0.931	1.063	
125	250	260	639	1.209	471	260.4	0.0422	0.0158	0.933	0.933	0.933	0.928	0.926	1.061	
126	252	260	639	1.209	468	258.7	0.0425	0.0160	0.931	0.931	0.931	0.928	0.926	1.061	
127	254	260	639	1.209	465	257.1	0.0424	0.0161	0.931	0.931	0.931	0.928	0.928	1.063	
128	256	260	639	1.209	461	254.9	0.0425	0.0159	0.926	0.926	0.926	0.924	0.924	1.059	

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

PRELIMINARY DATA

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OF POOR QUALITY

RUN LIST
 415 1 65/035/1 38 2.5AL 500

SCALE	TITLE	IN	FTN	MACH	PTCN	(PTC/2)n	(22/PTC)n	NOZLE PRESS.	(P3/PTC)n	(P4/PTC)n	BASE PRESS.	(P7/2)n	(P8/P)n	BODY PRESS.	(P9/P)n	(E10/E)n	(E11/P)n
129	258	260	639	1.209	457	252.9		0.0428	0.0161	0.0161	0.931	0.926	0.928	0.928	1.061	1.061	
130	260	260	639	1.209	454	251.0		0.0429	0.0161	0.0161	0.931	0.924	0.928	0.928	1.061	1.061	
131	262	260	639	1.209	450	249.1		0.0429	0.0150	0.0150	0.931	0.922	0.928	0.928	1.061	1.061	
132	264	260	639	1.209	447	247.4		0.0430	0.0150	0.0150	0.924	0.917	0.924	0.924	1.061	1.061	
133	266	260	639	1.209	444	245.7		0.0430	0.0150	0.0150	0.920	0.915	0.924	0.924	1.061	1.061	
134	268	260	639	1.209	441	244.1		0.0431	0.0160	0.0160	0.917	0.915	0.924	0.924	1.061	1.061	
135	270	260	639	1.209	439	242.7		0.0431	0.0160	0.0160	0.915	0.913	0.922	0.922	1.061	1.061	
136	272	260	639	1.209	437	241.9		0.0431	0.0160	0.0160	0.915	0.913	0.922	0.922	1.061	1.061	
137	274	260	639	1.209	434	240.2		0.0431	0.0161	0.0161	0.915	0.911	0.922	0.922	1.061	1.061	
138	276	260	639	1.209	433	239.7		0.0430	0.0160	0.0160	0.917	0.911	0.922	0.922	1.061	1.061	
139	278	260	639	1.209	432	238.8		0.0430	0.0160	0.0160	0.917	0.911	0.922	0.922	1.061	1.061	
140	280	260	639	1.209	430	237.7		0.0429	0.0158	0.0158	0.913	0.909	0.920	0.920	1.061	1.061	
141	282	260	639	1.209	430	237.7		0.0431	0.0160	0.0160	0.913	0.909	0.922	0.922	1.061	1.061	
142	284	260	639	1.209	428	236.6		0.0430	0.0160	0.0160	0.911	0.909	0.920	0.920	1.061	1.061	
143	286	260	639	1.209	426	235.8		0.0430	0.0160	0.0160	0.909	0.909	0.920	0.920	1.061	1.061	
144	288	260	639	1.209	426	235.5		0.0430	0.0161	0.0161	0.911	0.911	0.922	0.922	1.061	1.061	
145	290	260	639	1.209	425	235.9		0.0428	0.0159	0.0159	0.909	0.909	0.920	0.920	1.061	1.061	
146	292	260	639	1.209	422	233.6		0.0431	0.0160	0.0160	0.913	0.909	0.922	0.922	1.061	1.061	
147	294	260	639	1.209	420	232.5		0.0431	0.0160	0.0160	0.913	0.909	0.922	0.922	1.061	1.061	
148	296	260	639	1.209	418	231.4		0.0430	0.0159	0.0159	0.913	0.906	0.920	0.920	1.061	1.061	
149	298	260	639	1.209	417	230.8		0.0432	0.0161	0.0161	0.913	0.906	0.924	0.924	1.061	1.061	
150	300	260	639	1.209	415	229.4		0.0432	0.0161	0.0161	0.905	0.906	0.920	0.920	1.063	1.063	
151	304	260	639	1.209	413	228.6		0.0432	0.0160	0.0160	0.904	0.904	0.920	0.920	1.063	1.063	
152	306	260	639	1.209	412	227.8		0.0432	0.0162	0.0162	0.902	0.904	0.922	0.922	1.066	1.066	
153	308	260	639	1.209	410	226.7		0.0432	0.0160	0.0160	0.900	0.900	0.917	0.917	1.061	1.061	
154	310	260	639	1.209	409	226.1		0.0432	0.0162	0.0162	0.900	0.902	0.920	0.920	1.063	1.063	
155	312	260	639	1.209	407	225.3		0.0433	0.0161	0.0161	0.904	0.904	0.920	0.920	1.061	1.061	
156	314	260	639	1.209	406	224.7		0.0433	0.0160	0.0160	0.904	0.904	0.920	0.920	1.061	1.061	
157	316	260	639	1.209	405	224.2		0.0434	0.0162	0.0162	0.900	0.902	0.922	0.922	1.066	1.066	
158	318	260	639	1.209	405	223.9		0.0433	0.0160	0.0160	0.900	0.900	0.920	0.920	1.063	1.063	
159	320	260	639	1.209	404	223.6		0.0433	0.0160	0.0160	0.900	0.900	0.920	0.920	1.063	1.063	
160	320	260	639	1.209	404	223.6		0.0432	0.0160	0.0160	0.900	0.902	0.920	0.920	1.063	1.063	

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

PRELIMINARY DATA

DATE: 12/15/55
 TIME: 10:35 AM
 NAME: WALTER S. WILSON
 TITLE: PROJECT MANAGER

GRAVE	TIME	DA	PM	HOURS	FEET	(P1/P2)n	(P2/P3)n	(P3/P4)n	(P4/P5)n	(P5/P6)n	(P6/P7)n	(P7/P8)n	(P8/P9)n	(P9/P10)n	(P10/P11)n
161	322	260	639	1.209	405	225.9	0.0435	0.0161	0.0161	0.900	0.904	0.920	0.920	1.063	
162	324	260	639	1.209	404	223.3	0.0430	0.0160	0.0160	0.902	0.904	0.922	0.922	1.063	
163	326	260	639	1.209	405	225.9	0.0431	0.0160	0.0160	0.906	0.902	0.922	0.922	1.061	
164	328	260	639	1.209	405	225.9	0.0428	0.0159	0.0159	0.904	0.902	0.920	0.920	1.061	
165	330	260	639	1.209	404	223.6	0.0430	0.0159	0.0159	0.900	0.902	0.920	0.920	1.061	
166	332	260	639	1.209	404	224.2	0.0430	0.0159	0.0159	0.900	0.900	0.920	0.920	1.061	
167	334	260	639	1.209	404	224.2	0.0431	0.0159	0.0159	0.897	0.900	0.920	0.920	1.061	
168	336	260	639	1.209	403	222.8	0.0431	0.0159	0.0159	0.897	0.900	0.920	0.920	1.061	
169	338	260	639	1.209	402	222.5	0.0432	0.0160	0.0160	0.897	0.897	0.917	0.917	1.061	
170	340	260	639	1.209	399	220.6	0.0432	0.0161	0.0161	0.900	0.897	0.920	0.920	1.059	
171	342	260	639	1.209	397	219.7	0.0436	0.0161	0.0161	0.900	0.897	0.920	0.920	1.057	
172	344	260	639	1.209	394	219.1	0.0437	0.0161	0.0161	0.897	0.891	0.915	0.915	1.057	
173	346	260	639	1.209	391	216.2	0.0438	0.0162	0.0162	0.897	0.895	0.922	0.922	1.061	
174	348	260	639	1.209	388	214.5	0.0441	0.0165	0.0165	0.889	0.889	0.917	0.917	1.059	
175	350	260	639	1.209	382	211.4	0.0442	0.0165	0.0165	0.889	0.886	0.917	0.917	1.059	
176	352	260	639	1.209	377	208.7	0.0445	0.0165	0.0165	0.886	0.886	0.917	0.917	1.059	
177	354	260	639	1.209	371	205.4	0.0450	0.0166	0.0166	0.884	0.884	0.920	0.920	1.059	
178	356	260	639	1.209	365	201.8	0.0451	0.0165	0.0165	0.878	0.875	0.913	0.913	1.057	
179	358	260	639	1.209	357	197.6	0.0457	0.0168	0.0168	0.880	0.873	0.917	0.917	1.057	
180	360	260	639	1.209	349	192.9	0.0462	0.0169	0.0169	0.875	0.869	0.915	0.915	1.057	
181	362	260	639	1.209	339	187.4	0.0468	0.0170	0.0170	0.869	0.860	0.915	0.915	1.059	
182	364	260	639	1.209	328	181.6	0.0475	0.0174	0.0174	0.862	0.855	0.915	0.915	1.059	
183	366	260	639	1.209	316	174.9	0.0480	0.0174	0.0174	0.849	0.844	0.911	0.911	1.057	
184	368	260	639	1.209	303	167.7	0.0487	0.0177	0.0177	0.838	0.836	0.909	0.909	1.059	
185	370	260	639	1.209	289	160.0	0.0497	0.0178	0.0178	0.827	0.827	0.909	0.909	1.059	
186	372	260	639	1.209	275	152.0	0.0506	0.0182	0.0182	0.816	0.816	0.906	0.906	1.059	
187	374	260	639	1.209	258	142.8	0.0518	0.0184	0.0184	0.805	0.805	0.906	0.906	1.059	
188	376	260	639	1.209	242	133.7	0.0531	0.0187	0.0187	0.793	0.793	0.906	0.906	1.059	
189	378	260	639	1.209	225	124.6	0.0544	0.0189	0.0189	0.782	0.780	0.904	0.904	1.057	
190	380	260	639	1.209	207	114.6	0.0559	0.0191	0.0191	0.765	0.765	0.902	0.902	1.057	
191	382	260	639	1.209	192	106.1	0.0576	0.0199	0.0199	0.749	0.749	0.902	0.902	1.057	
192	384	260	639	1.209	174	96.4	0.0592	0.0201	0.0201	0.729	0.729	0.900	0.900	1.057	

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

PRELIMINARY DATA

12317

REF LIST AIRSEP GOLF PROPELLANT SAIR. RATE
415 .1 66/333/1 38 2:AL 500

TABLE	LINE	Zn	FTn	MACHn	FTCh	(FTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P6/P)n	(P7/P)n	(P8/E)n	(P9/P)n	(P10/P)n	(P11/P)n
193	386	260	639	1.209	159	87.8	0.0205	0.0612	0.0212	0.712	0.723	0.900	0.900	1.057	
194	388	260	639	1.209	144	79.8	0.0211	0.0651	0.0211	0.687	0.701	0.897	0.902	1.057	
195	390	260	639	1.209	129	71.2	0.0219	0.0678	0.0219	0.685	0.693	0.900	0.897	1.057	
197	394	260	639	1.209	104	57.7	0.0226	0.0703	0.0226	0.665	0.685	0.895	0.897	1.055	
199	396	260	639	1.209	93	51.6	0.0245	0.0727	0.0245	0.662	0.685	0.895	0.895	1.052	
200	400	260	639	1.209	84	46.6	0.0241	0.0786	0.0241	0.692	0.712	0.902	0.902	1.057	
201	402	260	639	1.209	75	41.5	0.0253	0.0824	0.0253	0.694	0.716	0.897	0.897	1.055	
202	404	260	639	1.209	66	37.5	0.0255	0.0857	0.0255	0.702	0.729	0.900	0.900	1.057	
203	406	260	639	1.209	61	33.9	0.0267	0.0885	0.0267	0.716	0.743	0.904	0.904	1.059	
204	408	260	639	1.209	55	30.3	0.0301	0.0938	0.0301	0.723	0.747	0.900	0.900	1.057	
205	410	260	639	1.209	50	27.8	0.0319	0.0972	0.0319	0.758	0.760	0.904	0.904	1.059	
206	412	260	639	1.209	46	25.3	0.0334	0.1005	0.0334	0.751	0.759	0.906	0.906	1.061	
207	414	260	639	1.209	42	23.4	0.0364	0.1062	0.0364	0.774	0.778	0.906	0.906	1.059	
208	416	260	639	1.209	39	21.4	0.0389	0.1080	0.0389	0.778	0.796	0.909	0.909	1.063	
209	418	260	639	1.209	36	20.0	0.0410	0.1157	0.0410	0.787	0.805	0.911	0.911	1.061	
210	420	260	639	1.209	33	18.4	0.0452	0.1210	0.0452	0.793	0.813	0.911	0.911	1.061	
211	422	260	639	1.209	31	17.3	0.0491	0.1271	0.0491	0.802	0.820	0.911	0.911	1.061	
212	424	260	639	1.209	30	16.4	0.0518	0.1339	0.0518	0.811	0.827	0.913	0.913	1.061	
213	426	260	639	1.209	27	15.1	0.0568	0.1417	0.0568	0.826	0.833	0.915	0.915	1.059	

PAGE 3
1.209 266.2 260 639 1444 2118

12318

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

PRELIMINARY DATA

RUN LIST THESE SOME PROGRAMS SURF.RATE
 416 1 66/033/1 38 16%AL 500

PRIME FILE	PN	PTN	WCHR	PTCN	(PTC/P)n	NOZZLE PRESS.			BASE PRESS.			BOY PRESS.		
						(22/PTC)n	(23/PTC)n	(24/PTC)n	(26/2)n	(P7/P)n	(P8/2)n	(P9/P)n	(P10/2)n	(P11/2)n
1	2	184	636	1.459	24	19.0	0.1314	0.0584	0.752	0.774	0.884	0.884	1.050	
2	4	184	636	1.459	23	18.2	0.1313	0.0567	0.743	0.771	0.881	0.881	1.047	
3	6	184	636	1.459	23	18.2	0.1313	0.0567	0.743	0.768	0.881	0.881	1.047	
4	8	184	636	1.459	24	18.6	0.1314	0.0597	0.746	0.774	0.887	0.887	1.050	
5	10	184	636	1.459	23	17.8	0.1313	0.0557	0.743	0.765	0.878	0.878	1.044	

WCHR 0 P 20 P107 POAL
 1.459 275.7 184 636 1452 2119

12319

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

PRELIMINARY DATA

RUN LIST MISSILE COMP PROGRAMME SAMP RATE
 417 1 66/035/1 38 16431 500

FRAME	TIME	PITCH	ROLL	YACHTN	PITCH	(P10/P)n	NOZZLE PRESS.			(P4/P10)n	BASE PRESS.			(P8/P)n	BODY PRESS.		
							(22/P10)n	(23/P10)n	(24/P10)n		(P6/P)n	(P7/P)n	(P9/P)n		(P10/P)n	(P11/P)n	
1	184	636	1.457	433	338.1	0.0288	0.0127	0.790	0.806	0.877	0.877	1.049					
2	184	636	1.457	435	340.0	0.0304	0.0134	0.790	0.809	0.877	0.877	1.049					
3	184	636	1.457	436	340.4	0.0322	0.0140	0.793	0.815	0.877	0.877	1.049					
4	184	636	1.457	435	339.6	0.0340	0.0146	0.802	0.821	0.884	0.884	1.052					
5	184	636	1.457	430	336.1	0.0354	0.0149	0.802	0.821	0.877	0.877	1.046					
6	134	636	1.457	427	335.8	0.0371	0.0155	0.818	0.824	0.884	0.884	1.049					
7	134	636	1.457	422	329.5	0.0385	0.0159	0.818	0.827	0.884	0.884	1.046					
8	184	636	1.457	416	325.2	0.0395	0.0161	0.821	0.827	0.877	0.877	1.046					
9	184	636	1.457	412	321.6	0.0411	0.0167	0.827	0.834	0.887	0.887	1.049					
10	184	636	1.457	405	316.6	0.0417	0.0167	0.821	0.831	0.884	0.884	1.049					
11	184	636	1.457	400	312.7	0.0426	0.0169	0.821	0.834	0.884	0.884	1.049					
12	184	636	1.457	396	309.1	0.0434	0.0172	0.821	0.837	0.887	0.887	1.052					
13	184	636	1.457	391	305.2	0.0436	0.0171	0.815	0.831	0.887	0.887	1.049					
14	184	636	1.457	387	302.5	0.0444	0.0173	0.821	0.834	0.887	0.887	1.049					
15	184	636	1.457	384	299.6	0.0445	0.0174	0.824	0.834	0.887	0.887	1.049					
16	184	636	1.457	381	297.4	0.0448	0.0172	0.824	0.837	0.890	0.890	1.049					
17	184	636	1.457	379	295.9	0.0450	0.0175	0.824	0.837	0.890	0.890	1.052					
18	184	636	1.457	377	294.3	0.0451	0.0173	0.818	0.834	0.887	0.887	1.049					
19	184	636	1.457	376	293.5	0.0450	0.0172	0.812	0.834	0.890	0.890	1.052					
20	184	636	1.457	375	292.7	0.0451	0.0173	0.812	0.834	0.890	0.890	1.052					
21	184	636	1.457	375	292.7	0.0451	0.0172	0.812	0.834	0.890	0.890	1.052					
22	184	636	1.457	374	292.0	0.0451	0.0172	0.815	0.837	0.890	0.890	1.052					
23	184	636	1.457	375	292.7	0.0450	0.0171	0.821	0.837	0.890	0.890	1.052					
24	184	636	1.457	375	292.7	0.0446	0.0171	0.821	0.837	0.890	0.890	1.052					
25	184	636	1.457	374	292.4	0.0447	0.0169	0.821	0.837	0.890	0.890	1.056					
26	184	636	1.457	376	293.5	0.0448	0.0171	0.821	0.840	0.890	0.890	1.056					
27	184	636	1.457	376	293.5	0.0445	0.0171	0.821	0.837	0.890	0.890	1.056					
28	184	636	1.457	376	293.9	0.0444	0.0171	0.821	0.837	0.890	0.890	1.056					
29	184	636	1.457	377	294.7	0.0447	0.0171	0.824	0.843	0.890	0.890	1.059					
30	184	636	1.457	377	293.9	0.0443	0.0169	0.821	0.843	0.890	0.890	1.056					
31	184	636	1.457	378	295.1	0.0444	0.0170	0.827	0.843	0.890	0.890	1.056					
32	184	636	1.457	378	295.5	0.0444	0.0171	0.834	0.843	0.890	0.890	1.056					

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

FOR USE IN WISEP COMP PROGRAMS AIR FORCE
417 1 63/055/1 58 16/AL 500

PLA	TIME	IN	RPM	WAGEN	200n	(P20/P20)n	NOISE PRESS. (22/220)n	(23/230)n	(24/240)n	(26/260)n	(27/270)n	(28/280)n	(29/290)n	BODY PRESS. (30/300)n	(31/310)n	(311/311)n
32	65	164	636	1.457	378	295.5	0.0442	0.0170	0.851	0.840	0.837	1.052				
33	68	184	636	1.457	379	296.3	0.0444	0.0172	0.854	0.846	0.836	1.059				
34	70	184	636	1.457	379	295.9	0.0441	0.0169	0.827	0.843	0.890	1.056				
35	72	184	636	1.457	379	296.2	0.0445	0.0170	0.824	0.843	0.893	1.056				
36	74	184	636	1.457	380	296.6	0.0442	0.0172	0.824	0.845	0.896	1.059				
37	75	184	636	1.457	379	296.3	0.0441	0.0169	0.821	0.840	0.887	1.056				
38	78	184	636	1.457	380	295.6	0.0444	0.0172	0.827	0.843	0.896	1.059				
39	80	184	636	1.457	380	295.6	0.0442	0.0172	0.831	0.846	0.893	1.056				
40	82	184	636	1.457	380	295.6	0.0442	0.0170	0.831	0.843	0.890	1.056				
41	84	184	636	1.457	380	295.6	0.0442	0.0172	0.834	0.849	0.896	1.059				
42	86	184	636	1.457	380	296.6	0.0440	0.0170	0.824	0.846	0.893	1.056				
43	88	184	636	1.457	380	296.6	0.0440	0.0170	0.824	0.846	0.893	1.056				
44	90	184	636	1.457	380	297.0	0.0440	0.0170	0.821	0.846	0.893	1.059				
45	92	184	636	1.457	381	297.4	0.0441	0.0171	0.821	0.846	0.890	1.056				
46	94	184	636	1.457	380	296.6	0.0440	0.0170	0.824	0.846	0.893	1.059				
47	96	184	636	1.457	380	297.0	0.0440	0.0171	0.827	0.846	0.893	1.059				
48	98	184	636	1.457	380	297.0	0.0440	0.0170	0.827	0.846	0.890	1.059				
49	100	184	636	1.457	380	296.6	0.0458	0.0169	0.821	0.843	0.890	1.059				
50	102	184	636	1.457	381	297.8	0.0440	0.0171	0.821	0.846	0.893	1.059				
51	104	184	636	1.457	381	297.4	0.0459	0.0170	0.818	0.846	0.890	1.059				
52	106	184	636	1.457	381	297.4	0.0439	0.0170	0.815	0.845	0.890	1.062				
53	108	184	636	1.457	382	296.6	0.0459	0.0172	0.815	0.852	0.896	1.065				
54	110	184	636	1.457	381	297.4	0.0437	0.0170	0.815	0.846	0.893	1.065				
55	112	184	636	1.457	382	298.2	0.0438	0.0171	0.821	0.849	0.893	1.062				
56	114	184	636	1.457	382	298.2	0.0458	0.0171	0.821	0.846	0.893	1.062				
57	116	184	636	1.457	382	298.2	0.0456	0.0169	0.821	0.846	0.887	1.059				
58	118	184	636	1.457	385	299.4	0.0440	0.0173	0.827	0.852	0.896	1.065				
59	120	184	636	1.457	382	299.6	0.0437	0.0170	0.821	0.849	0.890	1.062				
60	122	184	636	1.457	383	299.0	0.0457	0.0170	0.818	0.849	0.893	1.062				
61	124	184	636	1.457	385	299.4	0.0458	0.0171	0.821	0.852	0.896	1.065				
62	126	184	636	1.457	385	299.4	0.0456	0.0169	0.818	0.846	0.893	1.065				
63	128	184	636	1.457	385	299.4	0.0458	0.0171	0.827	0.852	0.896	1.062				
64	128	184	636	1.457	385	299.4	0.0458	0.0171	0.827	0.852	0.896	1.062				

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

PRELIMINARY DATA

2-3

ACT LIST 417 1 65/055/1 38 16 500

TIME	Pn	Ptn	MACH	FTON	TOTAL 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
65	184	636	1.457	384	299.3	0.0437	0.0170	0.831	0.852	0.893	1.059		
66	184	636	1.457	383	299.4	0.0437	0.0171	0.834	0.852	0.890	1.059		
67	184	636	1.457	384	299.6	0.0437	0.0170	0.827	0.849	0.896	1.062		
68	184	636	1.457	384	299.8	0.0437	0.0170	0.824	0.849	0.890	1.059		
69	184	636	1.457	384	299.8	0.0437	0.0170	0.824	0.852	0.893	1.059		
70	140	636	1.457	384	300.2	0.0439	0.0171	0.827	0.852	0.893	1.059		
71	142	636	1.457	384	299.4	0.0438	0.0170	0.831	0.852	0.896	1.059		
72	144	636	1.457	384	299.8	0.0439	0.0171	0.834	0.852	0.896	1.059		
73	146	636	1.457	384	299.8	0.0439	0.0171	0.834	0.852	0.896	1.059		
74	148	636	1.457	383	299.8	0.0439	0.0171	0.834	0.849	0.896	1.059		
75	150	636	1.457	382	298.6	0.0437	0.0170	0.834	0.849	0.896	1.059		
76	152	636	1.457	382	298.6	0.0437	0.0170	0.834	0.852	0.896	1.059		
77	154	636	1.457	382	299.4	0.0440	0.0171	0.834	0.852	0.896	1.059		
78	156	636	1.457	382	298.6	0.0439	0.0170	0.827	0.852	0.896	1.059		
79	158	636	1.457	382	298.2	0.0440	0.0171	0.827	0.852	0.896	1.059		
80	160	636	1.457	381	298.6	0.0441	0.0173	0.831	0.856	0.899	1.065		
81	162	636	1.457	381	297.8	0.0439	0.0170	0.824	0.852	0.893	1.059		
82	164	636	1.457	381	297.8	0.0440	0.0172	0.831	0.852	0.896	1.062		
83	166	636	1.457	381	297.5	0.0440	0.0171	0.834	0.856	0.896	1.062		
84	168	636	1.457	381	297.4	0.0439	0.0170	0.834	0.852	0.890	1.059		
85	170	636	1.457	381	297.8	0.0442	0.0174	0.840	0.859	0.899	1.062		
86	172	636	1.457	381	297.4	0.0441	0.0171	0.834	0.856	0.893	1.059		
87	174	636	1.457	381	297.4	0.0445	0.0171	0.834	0.859	0.896	1.062		
88	176	636	1.457	381	297.4	0.0445	0.0171	0.834	0.859	0.896	1.065		
89	178	636	1.457	381	297.0	0.0440	0.0169	0.827	0.856	0.890	1.056		
90	180	636	1.457	381	297.4	0.0443	0.0171	0.834	0.859	0.896	1.059		
91	182	636	1.457	381	297.4	0.0445	0.0171	0.834	0.859	0.893	1.059		
92	184	636	1.457	381	297.4	0.0441	0.0170	0.834	0.856	0.890	1.056		
93	186	636	1.457	381	297.4	0.0445	0.0171	0.834	0.862	0.896	1.059		
94	188	636	1.457	381	297.4	0.0441	0.0170	0.827	0.859	0.890	1.056		
95	190	636	1.457	381	297.4	0.0441	0.0170	0.824	0.859	0.893	1.059		
96	192	636	1.457	381	297.4	0.0441	0.0170	0.824	0.862	0.896	1.059		
97	194	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

TEST LIST MISSP SOFT PROGRAMME SUP. 500
 1 66/033/1 38 16/45

PRIME	TEST	WGT	HTN	HTM	FOON	(PWC/P)h	(P2/P2)n	NOISE PRESS.	(P4/P2)n	(P6/P)n	BASE PRESS.	(P7/P)n	(P8/P)n	SOBY PLASS.	(P9/P)n	(P10/P)n	(P11/P)n
97	194	184	636	1.457	381	297.4	0.0441	0.0170	0.0170	0.824	0.827	0.852	0.896	0.896	0.896	1.059	
98	196	184	636	1.457	381	297.4	0.0441	0.0170	0.0170	0.827	0.827	0.852	0.896	0.896	0.896	1.059	
99	198	184	636	1.457	381	297.4	0.0441	0.0170	0.0170	0.827	0.827	0.852	0.896	0.896	0.896	1.059	
100	200	184	636	1.457	380	297.0	0.0438	0.0169	0.0169	0.827	0.827	0.852	0.893	0.893	0.893	1.059	
101	202	184	636	1.457	381	297.8	0.0440	0.0170	0.0170	0.831	0.831	0.855	0.893	0.893	0.893	1.059	
102	204	184	636	1.457	381	297.4	0.0439	0.0169	0.0169	0.827	0.827	0.852	0.893	0.893	0.893	1.059	
103	206	184	636	1.457	381	297.4	0.0437	0.0169	0.0169	0.827	0.827	0.852	0.893	0.893	0.893	1.059	
104	208	184	636	1.457	382	298.2	0.0440	0.0171	0.0171	0.824	0.824	0.855	0.896	0.896	0.896	1.062	
105	210	184	636	1.457	381	297.4	0.0436	0.0167	0.0167	0.834	0.834	0.855	0.896	0.896	0.896	1.062	
106	212	184	636	1.457	382	298.2	0.0438	0.0168	0.0168	0.843	0.843	0.862	0.896	0.896	0.896	1.059	
107	214	184	636	1.457	381	297.8	0.0438	0.0168	0.0168	0.843	0.843	0.862	0.896	0.896	0.896	1.059	
108	216	184	636	1.457	381	297.8	0.0435	0.0168	0.0168	0.840	0.840	0.859	0.893	0.893	0.893	1.056	
109	218	184	636	1.457	381	298.6	0.0439	0.0168	0.0168	0.843	0.843	0.858	0.893	0.893	0.893	1.052	
110	220	184	636	1.457	381	297.8	0.0437	0.0168	0.0168	0.834	0.834	0.862	0.896	0.896	0.896	1.059	
111	222	184	636	1.457	382	298.2	0.0438	0.0167	0.0167	0.827	0.827	0.862	0.896	0.896	0.896	1.062	
112	224	184	636	1.457	382	298.2	0.0436	0.0167	0.0167	0.834	0.834	0.862	0.896	0.896	0.896	1.062	
113	226	184	636	1.457	382	298.2	0.0439	0.0169	0.0169	0.840	0.840	0.865	0.896	0.896	0.896	1.062	
114	228	184	636	1.457	382	298.6	0.0439	0.0169	0.0169	0.846	0.846	0.865	0.896	0.896	0.896	1.062	
115	230	184	636	1.457	382	298.6	0.0439	0.0169	0.0169	0.846	0.846	0.865	0.896	0.896	0.896	1.062	
116	232	184	636	1.457	382	298.6	0.0437	0.0168	0.0168	0.846	0.846	0.865	0.896	0.896	0.896	1.062	
117	234	184	636	1.457	382	298.6	0.0441	0.0169	0.0169	0.852	0.852	0.868	0.896	0.896	0.896	1.062	
118	236	184	636	1.457	385	299.0	0.0440	0.0169	0.0169	0.846	0.846	0.865	0.896	0.896	0.896	1.062	
119	238	184	636	1.457	385	299.0	0.0440	0.0169	0.0169	0.843	0.843	0.865	0.896	0.896	0.896	1.062	
120	240	184	636	1.457	383	299.4	0.0441	0.0170	0.0170	0.840	0.840	0.865	0.896	0.896	0.896	1.062	
121	242	184	636	1.457	384	300.2	0.0442	0.0170	0.0170	0.845	0.845	0.865	0.896	0.896	0.896	1.062	
122	244	184	636	1.457	384	299.3	0.0443	0.0170	0.0170	0.856	0.856	0.868	0.896	0.896	0.896	1.065	
123	246	184	636	1.457	385	300.6	0.0443	0.0171	0.0171	0.865	0.865	0.868	0.896	0.896	0.896	1.065	
124	248	184	636	1.457	385	300.6	0.0443	0.0171	0.0171	0.871	0.871	0.868	0.896	0.896	0.896	1.065	
125	250	184	636	1.457	384	300.2	0.0442	0.0170	0.0170	0.871	0.871	0.868	0.896	0.896	0.896	1.065	
126	252	184	636	1.457	385	300.9	0.0444	0.0172	0.0172	0.865	0.865	0.868	0.896	0.896	0.896	1.065	
127	254	184	636	1.457	384	300.2	0.0444	0.0171	0.0171	0.865	0.865	0.868	0.896	0.896	0.896	1.062	
128	256	184	636	1.457	384	300.2	0.0445	0.0171	0.0171	0.865	0.865	0.868	0.896	0.896	0.896	1.065	

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PRELIMINARY DATA

RUN LIST TESTS COME FROM RUNS 500-599
417 1 56/055/1 58 15.2

TRAIL	IN	HT	WT	HT	WT	(22/25)n	NOZZLE PRESS.	(24/25)n	(26/27)n	(28/29)n	(29/30)n	(31/32)n
129	253	184	636	1.457	335	300.6	0.0447	0.0172	0.865	0.871	0.899	1.065
130	260	184	636	1.457	335	299.0	0.0449	0.0172	0.865	0.868	0.895	1.062
131	262	184	636	1.457	335	299.0	0.0449	0.0172	0.865	0.868	0.895	1.062
132	264	184	636	1.457	332	298.2	0.0449	0.0172	0.865	0.865	0.896	1.062
133	266	184	636	1.457	330	295.6	0.0455	0.0175	0.862	0.865	0.890	1.053
134	268	184	636	1.457	329	296.3	0.0453	0.0175	0.862	0.868	0.895	1.062
135	270	184	636	1.457	326	292.4	0.0456	0.0171	0.843	0.865	0.893	1.059
136	272	184	636	1.457	324	292.4	0.0456	0.0171	0.843	0.862	0.893	1.059
137	274	184	636	1.457	321	290.0	0.0459	0.0172	0.843	0.865	0.893	1.062
138	276	184	636	1.457	317	286.9	0.0461	0.0172	0.834	0.865	0.896	1.062
139	278	184	636	1.457	316	286.9	0.0461	0.0172	0.834	0.859	0.890	1.059
140	280	184	636	1.457	314	284.1	0.0467	0.0175	0.843	0.859	0.896	1.059
141	282	184	636	1.457	312	280.2	0.0470	0.0175	0.843	0.856	0.893	1.059
142	284	184	636	1.457	312	275.6	0.0474	0.0175	0.840	0.852	0.890	1.056
143	286	184	636	1.457	312	270.5	0.0479	0.0177	0.837	0.852	0.896	1.059
144	288	184	636	1.457	311	265.0	0.0483	0.0177	0.815	0.843	0.890	1.059
145	290	184	636	1.457	311	258.4	0.0487	0.0179	0.802	0.837	0.893	1.056
146	292	184	636	1.457	313	251.7	0.0494	0.0180	0.793	0.834	0.895	1.059
147	294	184	636	1.457	302	244.3	0.0500	0.0181	0.784	0.824	0.890	1.056
148	296	184	636	1.457	291	235.7	0.0505	0.0183	0.777	0.815	0.890	1.059
149	298	184	636	1.457	279	227.5	0.0512	0.0184	0.771	0.809	0.890	1.056
150	300	184	636	1.457	266	213.1	0.0517	0.0185	0.765	0.796	0.887	1.056
151	302	184	636	1.457	254	208.0	0.0523	0.0187	0.752	0.787	0.887	1.056
152	304	184	636	1.457	254	196.6	0.0534	0.0191	0.746	0.777	0.887	1.059
153	306	184	636	1.457	245	187.3	0.0542	0.0193	0.731	0.765	0.884	1.059
154	308	184	636	1.457	211	175.9	0.0553	0.0196	0.718	0.752	0.884	1.059
155	310	184	636	1.457	195	165.0	0.0567	0.0202	0.709	0.743	0.887	1.062
156	312	184	636	1.457	181	152.3	0.0573	0.0201	0.695	0.724	0.881	1.056
157	314	184	636	1.457	167	141.6	0.0591	0.0208	0.687	0.715	0.884	1.056
158	316	184	636	1.457	152	130.2	0.0603	0.0211	0.674	0.699	0.884	1.056
159	318	184	636	1.457	140	118.9	0.0616	0.0211	0.659	0.681	0.877	1.052
160	320	184	636	1.457	126	102.2	0.0638	0.0223	0.649	0.674	0.884	1.056
						98.2	0.0651	0.0220	0.627	0.656	0.877	1.052

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PRELIMINARY DATA

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MISSILE JONES PROGRAMS SAMPLING
 66/035/1 38 16,341 500

ID	PR	ZIN	MACH	FT/IN	(P2/P20)n	WOLINE PRESS.			(P4/P20)n	MASE PRESS.			BODY PRESS.		
						(P3/P20)n	(P5/P20)n	(P7/P2)n		(P6/P2)n	(P7/P2)n	(P8/P2)n	(P9/P2)n	(P10/P2)n	(P11/P2)n
161	184	636	1.457	114	88.8	0.0675	0.0226	0.612	0.599	0.640	0.877	1.052			
162	184	636	1.457	103	80.2	0.0695	0.0235	0.599	0.627	0.627	0.881	1.056			
163	184	636	1.457	92	71.7	0.0747	0.0244	0.571	0.571	0.609	0.877	1.052			
164	184	636	1.457	83	64.6	0.0775	0.0253	0.556	0.581	0.595	0.877	1.052			
165	184	636	1.457	74	57.6	0.0809	0.0269	0.534	0.568	0.581	0.874	1.049			
166	184	636	1.457	66	51.3	0.0856	0.0271	0.527	0.552	0.581	0.877	1.052			
167	184	636	1.457	58	45.5	0.0890	0.0285	0.534	0.565	0.581	0.871	1.049			
168	184	636	1.457	46	36.1	0.0934	0.0295	0.546	0.565	0.574	0.874	1.052			
169	184	636	1.457	41	32.2	0.0998	0.0313	0.559	0.574	0.574	0.871	1.049			
170	184	636	1.457	37	29.1	0.1052	0.0346	0.577	0.587	0.602	0.877	1.049			
171	184	636	1.457	32	25.2	0.1133	0.0382	0.596	0.618	0.618	0.877	1.049			
172	184	636	1.457	29	22.8	0.1209	0.0414	0.615	0.631	0.631	0.877	1.046			
173	184	636	1.457	26	20.1	0.1289	0.0447	0.624	0.643	0.643	0.877	1.046			
174	184	636	1.457	23	17.7	0.1371	0.0526	0.637	0.662	0.662	0.877	1.046			
175	184	636	1.457	21	16.6	0.1468	0.0595	0.645	0.671	0.671	0.877	1.046			
176	184	636	1.457	18	14.2	0.1637	0.0637	0.656	0.684	0.684	0.877	1.046			
177	184	636	1.457	17	13.1	0.1744	0.0688	0.671	0.699	0.699	0.877	1.046			
178	184	636	1.457	16	12.7	0.1839	0.0756	0.677	0.706	0.706	0.877	1.046			
179	184	636	1.457	15	12.5	0.2055	0.0844	0.695	0.719	0.719	0.881	1.046			
180	184	636	1.457	13	10.5	0.2155	0.0913	0.706	0.727	0.727	0.881	1.046			
181	184	636	1.457	12	9.5	0.2277	0.0913	0.706	0.731	0.731	0.877	1.046			
182	184	636	1.457	11	8.4	0.2534	0.1041	0.712	0.745	0.745	0.884	1.046			
183	184	636	1.457	11	8.8	0.2599	0.1085	0.721	0.746	0.746	0.881	1.046			
184	184	636	1.457	10	7.6	0.2865	0.1148	0.721	0.756	0.756	0.881	1.046			
185	184	636	1.457	9	7.2	0.3019	0.1264	0.727	0.765	0.765	0.881	1.046			
186	184	636	1.457	9	6.4	0.3091	0.1319	0.737	0.765	0.765	0.884	1.046			
187	184	636	1.457	8	6.4	0.3386	0.1357	0.737	0.774	0.774	0.884	1.046			
188	184	636	1.457	8	6.4	0.3467	0.1479	0.749	0.781	0.781	0.884	1.046			
189	184	636	1.457	8	6.0	0.3692	0.1575	0.746	0.781	0.781	0.881	1.046			
190	184	636	1.457	8	5.6	0.4040	0.1755	0.746	0.790	0.790	0.887	1.046			

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PRELIMINARY DATA

417 1 66/055/1 32 16335
 500

PLATE NO	Q	P	PT	PREF	PCAL	INCH	PCIN	(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	336	184	636	1.457	7	5.6	0.3948	0.1684	0.1684	0.1684	0.790	0.740	0.790	0.881	0.881	1.040
194	398	184	636	1.457	7	5.6	0.3948	0.1684	0.1684	0.1684	0.790	0.740	0.790	0.881	0.881	1.040
195	390	184	636	1.457	7	5.2	0.4341	0.1810	0.1810	0.1810	0.795	0.737	0.795	0.881	0.881	1.040
196	392	184	636	1.457	7	5.5	0.4040	0.1753	0.1753	0.1753	0.799	0.743	0.799	0.881	0.881	1.040
197	394	184	636	1.457	7	5.2	0.4341	0.1810	0.1810	0.1810	0.802	0.752	0.802	0.881	0.881	1.040
198	396	184	636	1.457	7	5.2	0.4341	0.1810	0.1810	0.1810	0.806	0.752	0.806	0.881	0.881	1.040
199	398	184	636	1.457	7	5.2	0.4341	0.1810	0.1810	0.1810	0.806	0.752	0.806	0.881	0.881	1.040
200	400	184	636	1.457	6	4.5	0.4984	0.2126	0.2126	0.2126	0.812	0.765	0.812	0.881	0.881	1.043
201	402	184	636	1.457	7	5.2	0.4440	0.1958	0.1958	0.1958	0.812	0.771	0.812	0.881	0.881	1.043
202	404	184	636	1.457	6	4.5	0.5101	0.2214	0.2214	0.2214	0.812	0.771	0.812	0.881	0.881	1.043
203	406	184	636	1.457	6	4.5	0.5101	0.2214	0.2214	0.2214	0.812	0.771	0.812	0.881	0.881	1.043
204	408	184	636	1.457	6	4.9	0.4798	0.2196	0.2196	0.2196	0.818	0.777	0.818	0.881	0.881	1.046
205	410	184	636	1.457	5	3.7	0.6041	0.2577	0.2577	0.2577	0.815	0.774	0.815	0.881	0.881	1.043
206	412	184	636	1.457	6	4.5	0.5217	0.2501	0.2501	0.2501	0.818	0.784	0.818	0.881	0.881	1.046
207	414	184	636	1.457	6	4.5	0.5217	0.2501	0.2501	0.2501	0.818	0.784	0.818	0.881	0.881	1.046
208	416	184	636	1.457	5	4.1	0.5462	0.2330	0.2330	0.2330	0.815	0.784	0.815	0.881	0.881	1.040
209	418	184	636	1.457	5	4.9	0.4905	0.2196	0.2196	0.2196	0.815	0.790	0.815	0.881	0.881	1.046
210	420	184	636	1.457	5	4.1	0.5462	0.2330	0.2330	0.2330	0.815	0.781	0.815	0.881	0.881	1.046
211	422	184	636	1.457	5	4.1	0.5462	0.2330	0.2330	0.2330	0.815	0.781	0.815	0.881	0.881	1.045
212	424	184	636	1.457	6	4.5	0.5217	0.2501	0.2501	0.2501	0.815	0.777	0.815	0.881	0.881	1.049
213	426	184	636	1.457	5	4.1	0.5462	0.2330	0.2330	0.2330	0.806	0.771	0.806	0.881	0.881	1.045

HACH 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 TWISTP CONF PROPELLANT SAMP RATE
 418 1 66/033/1 38 15%AL 500

FRASE TIME	PH	PHN	MACH	PTCH	(PFC/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	183	636	1.463	721	567.4	0.0254	0.0105	0.869	1.036	1.039	0.932	1.165		
2	183	636	1.463	765	600.4	0.0274	0.0115	0.869	1.055	1.062	0.939	1.162		
3	183	636	1.463	800	629.5	0.0296	0.0125	0.882	1.077	1.090	0.954	1.165		
4	183	636	1.463	828	651.6	0.0315	0.0132	0.885	1.090	1.109	0.961	1.165		
5	183	636	1.463	852	670.9	0.0332	0.0138	0.891	1.090	1.128	0.973	1.162		
6	183	636	1.463	872	686.2	0.0350	0.0146	0.898	1.099	1.147	0.989	1.165		
7	183	636	1.463	887	698.0	0.0365	0.0156	0.895	1.102	1.153	0.989	1.162		
8	183	636	1.463	899	707.9	0.0381	0.0156	0.904	1.118	1.169	1.002	1.162		
9	183	636	1.463	908	715.0	0.0396	0.0160	0.904	1.121	1.178	1.008	1.162		
10	183	636	1.463	915	720.5	0.0407	0.0163	0.907	1.124	1.181	1.011	1.156		
11	183	636	1.463	920	724.0	0.0416	0.0167	0.914	1.124	1.191	1.024	1.162		
12	183	636	1.463	923	726.4	0.0423	0.0169	0.917	1.115	1.187	1.024	1.159		
13	183	636	1.463	924	727.6	0.0429	0.0170	0.920	1.112	1.191	1.024	1.159		
14	183	636	1.463	924	727.6	0.0433	0.0172	0.926	1.109	1.191	1.027	1.159		
15	183	636	1.463	924	727.6	0.0436	0.0173	0.929	1.106	1.191	1.027	1.156		
16	183	636	1.463	922	725.6	0.0437	0.0173	0.932	1.109	1.191	1.030	1.159		
17	183	636	1.463	922	725.6	0.0439	0.0174	0.932	1.109	1.191	1.030	1.156		
18	183	636	1.463	918	724.4	0.0439	0.0174	0.936	1.109	1.191	1.030	1.156		
19	183	636	1.463	915	720.1	0.0439	0.0173	0.939	1.106	1.187	1.030	1.153		
20	183	636	1.463	914	719.3	0.0440	0.0174	0.945	1.106	1.187	1.030	1.153		
21	183	636	1.463	910	716.5	0.0440	0.0174	0.948	1.099	1.184	1.030	1.150		
22	183	636	1.463	908	715.0	0.0440	0.0173	0.951	1.096	1.184	1.030	1.153		
23	183	636	1.463	907	713.8	0.0441	0.0174	0.958	1.099	1.184	1.030	1.156		
24	183	636	1.463	903	711.0	0.0440	0.0173	0.958	1.099	1.178	1.027	1.156		
25	183	636	1.463	902	710.2	0.0442	0.0173	0.954	1.099	1.178	1.027	1.156		
26	183	636	1.463	900	708.7	0.0442	0.0173	0.958	1.099	1.178	1.024	1.156		
27	183	636	1.463	898	707.1	0.0443	0.0173	0.958	1.099	1.178	1.024	1.156		
28	183	636	1.463	898	706.7	0.0445	0.0173	0.958	1.099	1.175	1.021	1.159		
29	183	636	1.463	895	704.7	0.0446	0.0171	0.967	1.099	1.175	1.024	1.156		
30	183	636	1.463	895	704.3	0.0447	0.0172	0.973	1.093	1.175	1.021	1.159		
31	183	636	1.463	894	703.9	0.0450	0.0172	0.980	1.096	1.181	1.027	1.162		
32	183	636	1.463	893	702.8	0.0451	0.0171	0.973	1.093	1.175	1.021	1.159		

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

PRELIMINARY DATA

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

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)
33	66	183	636	1.463	893	702.8	0.0454	0.0171	0.980	1.099	1.178	1.027	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	1.024	1.162	
35	70	183	636	1.463	893	702.8	0.0458	0.0171	0.983	1.102	1.178	1.024	1.024	1.162	
36	72	183	636	1.463	893	703.2	0.0461	0.0172	0.989	1.106	1.184	1.024	1.024	1.159	
37	74	183	636	1.463	894	703.5	0.0463	0.0171	0.989	1.099	1.181	1.024	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	1.027	1.159	
39	78	183	636	1.463	896	705.5	0.0468	0.0171	0.999	1.099	1.187	1.030	1.030	1.159	
40	80	183	636	1.463	899	707.9	0.0470	0.0171	0.999	1.102	1.187	1.030	1.030	1.156	
41	82	183	636	1.463	901	709.1	0.0472	0.0171	0.999	1.106	1.191	1.033	1.033	1.156	
42	84	183	636	1.463	904	711.4	0.0474	0.0171	1.002	1.112	1.191	1.036	1.036	1.156	
43	86	183	636	1.463	906	713.0	0.0477	0.0171	1.002	1.115	1.194	1.036	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	1.036	1.156	
45	90	183	636	1.463	910	716.1	0.0481	0.0170	1.011	1.118	1.194	1.036	1.036	1.156	
46	92	183	636	1.463	911	716.9	0.0483	0.0170	1.011	1.112	1.194	1.036	1.036	1.156	
47	94	183	636	1.463	912	718.1	0.0485	0.0169	1.017	1.112	1.194	1.036	1.036	1.156	
48	96	183	636	1.463	915	720.1	0.0487	0.0170	1.024	1.115	1.197	1.039	1.039	1.156	
49	98	183	636	1.463	915	720.5	0.0488	0.0169	1.024	1.112	1.194	1.036	1.036	1.156	
50	100	183	636	1.463	918	722.8	0.0490	0.0170	1.017	1.118	1.197	1.036	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	1.036	1.156	
52	104	183	636	1.463	923	726.8	0.0491	0.0170	1.024	1.118	1.194	1.033	1.033	1.159	
53	106	183	636	1.463	927	729.9	0.0493	0.0171	1.030	1.121	1.197	1.043	1.043	1.156	
54	108	183	636	1.463	930	731.9	0.0492	0.0170	1.030	1.115	1.194	1.036	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	1.036	1.159	
56	112	183	636	1.463	937	737.8	0.0493	0.0170	1.039	1.118	1.197	1.039	1.039	1.162	
57	114	183	636	1.463	941	740.5	0.0491	0.0170	1.036	1.118	1.200	1.039	1.039	1.156	
58	116	183	636	1.463	945	744.1	0.0490	0.0170	1.039	1.121	1.200	1.039	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	1.039	1.159	
60	120	183	636	1.463	953	750.4	0.0486	0.0169	1.039	1.124	1.200	1.039	1.039	1.156	
61	122	183	636	1.463	957	753.5	0.0484	0.0170	1.046	1.124	1.206	1.043	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	1.039	1.156	
63	126	183	636	1.463	966	760.2	0.0480	0.0169	1.049	1.118	1.203	1.039	1.039	1.159	
64	128	183	636	1.463	970	763.8	0.0478	0.0169	1.055	1.121	1.206	1.043	1.043	1.159	

RUN LIST ENTSTEP COMP PROPELLANT SAMP.RATE
 418 1 66/033/1 38 154AL 500

FRAME TIME	Pn	Pm	MACH	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	(P9/P)n	BODY PRESS. (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	1.159	
67	134	183	636	1.463	983	773.6	0.0470	0.0167	1.055	1.131	1.210	1.046	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	140	183	636	1.463	990	779.1	0.0464	0.0166	1.055	1.131	1.210	1.046	1.159	
70	142	183	636	1.463	994	782.7	0.0462	0.0166	1.062	1.131	1.213	1.049	1.159	
71	144	183	636	1.463	997	785.0	0.0460	0.0165	1.062	1.128	1.213	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	1.216	1.055	1.162	
74	148	183	636	1.463	1006	792.1	0.0454	0.0162	1.068	1.131	1.216	1.055	1.162	
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	1.147	1.222	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	1.084	1.147	1.228	1.068	1.159	
82	164	183	636	1.463	1022	804.7	0.0443	0.0160	1.084	1.147	1.225	1.062	1.153	
83	166	183	636	1.463	1024	805.9	0.0438	0.0161	1.084	1.147	1.225	1.062	1.156	
84	168	183	636	1.463	1025	806.7	0.0431	0.0161	1.090	1.150	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	1028	809.8	0.0351	0.0162	1.106	1.162	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	

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

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

FRAME	TIME	Pa	Ptn	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	(P3/PTC)n	(P4/PTC)n	(P5/P)n	BASE PRESS. (P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS. (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	1.074	1.153	
98	196	183	636	1.463	1029	809.8	0.0333	0.0164	1.124	1.165	1.241	1.080	1.080	1.156	
99	198	183	636	1.463	1026	807.9	0.0332	0.0165	1.118	1.162	1.235	1.074	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	1.077	1.150	
101	202	183	636	1.463	1024	806.3	0.0332	0.0164	1.121	1.172	1.232	1.077	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	1.074	1.147	
103	206	183	636	1.463	1020	803.1	0.0335	0.0165	1.128	1.169	1.238	1.080	1.080	1.150	
104	208	183	636	1.463	1015	799.2	0.0336	0.0164	1.128	1.159	1.232	1.074	1.074	1.150	
105	210	183	636	1.463	1010	795.3	0.0338	0.0164	1.131	1.156	1.232	1.074	1.074	1.150	
106	212	183	636	1.463	1004	790.1	0.0341	0.0155	1.137	1.156	1.232	1.077	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	1.068	1.147	
108	216	183	636	1.463	982	772.8	0.0350	0.0167	1.134	1.153	1.225	1.071	1.071	1.150	
109	218	183	636	1.463	965	759.8	0.0356	0.0167	1.134	1.150	1.219	1.068	1.068	1.150	
110	220	183	636	1.463	944	743.3	0.0365	0.0168	1.134	1.143	1.210	1.062	1.062	1.147	
111	222	183	636	1.463	919	723.6	0.0375	0.0170	1.137	1.137	1.203	1.062	1.062	1.153	
112	224	183	636	1.463	890	700.4	0.0387	0.0171	1.137	1.118	1.187	1.052	1.052	1.150	
113	226	183	636	1.463	857	674.4	0.0402	0.0173	1.140	1.106	1.175	1.043	1.043	1.150	
114	228	183	636	1.463	821	646.5	0.0419	0.0175	1.140	1.090	1.162	1.036	1.036	1.153	
115	230	183	636	1.463	785	617.7	0.0439	0.0177	1.140	1.074	1.147	1.024	1.024	1.150	
116	232	183	636	1.463	746	587.4	0.0461	0.0178	1.137	1.062	1.131	1.017	1.017	1.153	
117	234	183	636	1.463	709	558.3	0.0485	0.0179	1.137	1.045	1.115	1.008	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	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	0.989	1.153	
120	240	183	636	1.463	605	476.0	0.0564	0.0179	1.131	0.986	1.068	0.969	0.969	1.153	
121	242	183	636	1.463	573	451.2	0.0591	0.0178	1.131	0.964	1.055	0.955	0.955	1.153	
122	244	183	636	1.463	544	428.0	0.0620	0.0177	1.131	0.945	1.039	0.939	0.939	1.153	
123	246	183	636	1.463	517	406.8	0.0651	0.0178	1.131	0.936	1.030	0.930	0.930	1.156	
124	248	183	636	1.463	488	384.3	0.0679	0.0176	1.121	0.917	1.011	0.911	0.911	1.153	
125	250	183	636	1.463	462	363.9	0.0712	0.0176	1.118	0.910	0.999	0.958	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	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	0.945	1.150	
128	256	183	636	1.463	381	300.1	0.0836	0.0180	1.115	0.873	0.958	0.931	0.931	1.153	

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

PRELIMINARY DATA

RUN ID: 1 66/033/1 38 154AL
 418 TESTSTP CONF PROPELLANT SAMP RATE
 500

FRAME TIME	Pn	Pm	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	183	636	1.463	352	277.3	0.0872	0.0179	1.112	0.851	0.939	0.942	0.942	1.150
130	260	183	636	1.463	324	255.2	0.0926	0.0182	1.109	0.852	0.923	0.942	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	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	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	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	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	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	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	0.929	1.153
138	276	183	636	1.463	134	105.3	0.1723	0.0213	1.080	0.690	0.787	0.923	0.923	1.153
139	278	183	636	1.463	117	91.9	0.1894	0.0223	1.077	0.671	0.762	0.929	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	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	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	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	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	0.926	1.150
145	290	183	636	1.463	50	35.1	0.2599	0.0292	1.046	0.580	0.671	0.929	0.929	1.152
146	292	183	636	1.463	42	33.2	0.2569	0.0308	1.043	0.567	0.662	0.926	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	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	0.929	1.156
149	298	183	636	1.463	25	19.8	0.2659	0.0397	1.027	0.577	0.674	0.926	0.926	1.156
150	300	183	636	1.463	23	17.9	0.2541	0.0465	1.024	0.595	0.687	0.929	0.929	1.156
151	302	183	636	1.463	19	14.7	0.2620	0.0535	1.024	0.608	0.699	0.926	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	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	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	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	0.923	1.153
156	312	183	636	1.463	8	6.1	0.3593	0.1234	1.005	0.671	0.775	0.923	0.923	1.156
157	314	183	636	1.463	6	4.5	0.4386	0.1492	0.995	0.680	0.784	0.929	0.929	1.153
158	316	183	636	1.463	5	4.1	0.4936	0.1828	0.992	0.699	0.797	0.929	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	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	0.926	1.150
161	322	183	636	1.463	2	1.7	1.1666	0.4546	0.986	0.734	0.825	0.926	0.926	1.153
162	324	183	636	1.463	1	0.9	2.1940	0.7917	0.983	0.734	0.828	0.926	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	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	0.929	1.153

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

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

PRELIMINARY DATA

12279

RUN LIST TESTSTEP COMP P. PRELIMANT SAMP. RATE
 419 1 66/033/1 38 15%ALL 500

FRAME	TIDS	Pa	Ptn	MACH	PTCN	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS. (P3/PTC)L	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS. (P10/P)n	(P11/P)n
1	2	375	632	0.897	871	334.5	0.0117	0.0251	1.017	1.070	1.092	1.040	1.093		
2	4	375	632	0.897	956	361.3	0.0124	0.0268	1.020	1.087	1.104	1.077	1.097		
3	6	375	632	0.897	1035	397.5	0.0130	0.0283	1.024	1.104	1.118	1.070	1.103		
4	8	375	632	0.897	1106	424.7	0.0136	0.0297	1.030	1.113	1.127	1.078	1.107		
5	10	375	632	0.897	1169	448.9	0.0141	0.0311	1.035	1.126	1.138	1.090	1.112		
6	12	375	632	0.897	1224	470.2	0.0146	0.0323	1.041	1.135	1.149	1.100	1.117		
7	14	375	632	0.897	1272	488.7	0.0151	0.0334	1.047	1.144	1.156	1.107	1.121		
8	16	375	632	0.897	1312	503.9	0.0155	0.0344	1.052	1.153	1.163	1.117	1.124		
9	18	375	632	0.897	1345	516.7	0.0159	0.0354	1.057	1.161	1.169	1.123	1.127		
10	20	375	632	0.897	1372	527.1	0.0163	0.0363	1.061	1.169	1.175	1.129	1.130		
11	22	375	632	0.897	1393	535.2	0.0166	0.0370	1.066	1.172	1.178	1.132	1.133		
12	24	375	632	0.897	1412	542.3	0.0170	0.0377	1.075	1.175	1.184	1.138	1.138		
13	26	375	632	0.897	1425	547.3	0.0172	0.0383	1.080	1.176	1.186	1.141	1.140		
14	28	375	632	0.897	1436	551.5	0.0175	0.0389	1.086	1.178	1.189	1.144	1.143		
15	30	375	632	0.897	1445	554.9	0.0178	0.0394	1.093	1.181	1.192	1.147	1.146		
16	32	375	632	0.897	1450	556.9	0.0179	0.0397	1.095	1.178	1.190	1.147	1.146		
17	34	375	632	0.897	1455	559.0	0.0181	0.0402	1.101	1.183	1.192	1.149	1.147		
18	36	375	632	0.897	1458	560.1	0.0182	0.0406	1.104	1.183	1.192	1.150	1.147		
19	38	375	632	0.897	1460	560.9	0.0182	0.0409	1.107	1.181	1.190	1.147	1.147		
20	40	375	632	0.897	1462	561.7	0.0182	0.0412	1.117	1.184	1.193	1.153	1.150		
21	42	375	632	0.897	1462	561.7	0.0182	0.0413	1.118	1.179	1.193	1.150	1.149		
22	44	375	632	0.897	1463	561.9	0.0182	0.0414	1.124	1.179	1.195	1.152	1.150		
23	46	375	632	0.897	1463	562.1	0.0181	0.0416	1.129	1.181	1.196	1.153	1.153		
24	48	375	632	0.897	1463	562.1	0.0181	0.0416	1.130	1.178	1.195	1.150	1.152		
25	50	375	632	0.897	1463	562.2	0.0181	0.0417	1.135	1.184	1.198	1.153	1.153		
26	52	375	632	0.897	1464	562.2	0.0181	0.0417	1.138	1.184	1.198	1.153	1.153		
27	54	375	632	0.897	1464	562.2	0.0181	0.0416	1.140	1.185	1.196	1.152	1.153		
28	56	375	632	0.897	1464	562.2	0.0182	0.0416	1.144	1.186	1.198	1.152	1.155		
29	58	375	632	0.897	1464	562.8	0.0182	0.0416	1.147	1.183	1.198	1.152	1.155		
30	60	375	632	0.897	1465	563.0	0.0182	0.0416	1.150	1.181	1.196	1.152	1.155		
31	62	375	632	0.897	1468	563.8	0.0182	0.0415	1.153	1.181	1.196	1.153	1.155		
32	64	375	632	0.897	1470	564.7	0.0181	0.0415	1.156	1.181	1.198	1.152	1.155		

L2280

RUN LIST TESTSTEP CONF PROPRIANT SAMP_RATE
 419 1 66/033/1 38 15%ALL 500

FRAME TIME	Pn	Ptn	MACHn	PTCN	(PTC/P)n	(P2/TC)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
33	66	375	632	0.897	1472	565.3	0.0414	0.0180	1.156	1.181	1.196	1.153	1.153	1.155
34	68	375	632	0.897	1475	566.7	0.0415	0.0179	1.160	1.183	1.198	1.153	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	1.156
36	72	375	632	0.897	1481	569.0	0.0412	0.0176	1.161	1.184	1.199	1.156	1.156	1.156
37	74	375	632	0.897	1486	570.7	0.0411	0.0174	1.169	1.183	1.199	1.156	1.156	1.158
38	76	375	632	0.897	1489	571.8	0.0410	0.0174	1.172	1.184	1.201	1.160	1.160	1.158
39	78	375	632	0.897	1492	573.2	0.0410	0.0173	1.176	1.187	1.204	1.160	1.160	1.160
40	80	375	632	0.897	1496	574.7	0.0410	0.0173	1.176	1.187	1.204	1.160	1.160	1.158
41	82	375	632	0.897	1499	575.7	0.0408	0.0171	1.173	1.186	1.201	1.156	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	1.160
43	86	375	632	0.897	1507	579.0	0.0408	0.0170	1.178	1.192	1.203	1.160	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	1.156
45	90	375	632	0.897	1516	582.2	0.0408	0.0169	1.183	1.195	1.204	1.161	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	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	1.160
48	96	375	632	0.897	1527	586.4	0.0410	0.0168	1.187	1.192	1.204	1.161	1.161	1.160
49	98	375	632	0.897	1530	587.6	0.0411	0.0167	1.184	1.189	1.204	1.156	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	1.160
51	102	375	632	0.897	1536	590.1	0.0415	0.0168	1.187	1.195	1.204	1.160	1.160	1.158
52	104	375	632	0.897	1539	591.1	0.0416	0.0168	1.187	1.195	1.204	1.160	1.160	1.158
53	106	375	632	0.897	1541	592.0	0.0418	0.0169	1.189	1.195	1.204	1.160	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	1.156
55	110	375	632	0.897	1546	593.7	0.0419	0.0170	1.189	1.192	1.203	1.156	1.156	1.156
56	112	375	632	0.897	1549	594.9	0.0420	0.0170	1.190	1.190	1.201	1.156	1.156	1.156
57	114	375	632	0.897	1552	596.2	0.0420	0.0170	1.192	1.190	1.203	1.156	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	1.156	1.155
59	118	375	632	0.897	1558	598.5	0.0420	0.0172	1.193	1.193	1.203	1.156	1.156	1.155
60	120	375	632	0.897	1562	599.9	0.0419	0.0172	1.192	1.195	1.201	1.156	1.156	1.155
61	122	375	632	0.897	1565	601.0	0.0416	0.0172	1.192	1.193	1.201	1.156	1.156	1.153
62	124	375	632	0.897	1570	603.2	0.0416	0.0172	1.192	1.193	1.201	1.156	1.156	1.155
63	126	375	632	0.897	1574	604.5	0.0407	0.0172	1.193	1.192	1.201	1.156	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	1.158	1.155

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

PRELIMINARY DATA

RUN LIST TRTSTP COMP PROPELLANT SAMP RATE
 419 1 66/033/1 38 15%AL 500

FRAME TIME	Pn	Pm	MACHn	PICH	(P1/P)n	NOZZLE PRESS.		(P4/PTC)n	BASE PRESS.		BODY PRESS.	
						(P2/PTC)n	(P3/PTC)n		(P6/P)n	(P7/P)n	(P8/P)n	(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
66	132	375	632	0.897	1586	609.3	0.0388	0.0172	1.195	1.192	1.204	1.158
67	134	375	632	0.897	1591	611.2	0.0385	0.0173	1.196	1.195	1.206	1.152
68	136	375	632	0.897	1595	612.6	0.0378	0.0172	1.195	1.196	1.206	1.156
69	138	375	632	0.897	1598	613.7	0.0374	0.0171	1.195	1.193	1.204	1.156
70	140	375	632	0.897	1602	615.3	0.0373	0.0171	1.198	1.196	1.207	1.166
71	142	375	632	0.897	1603	615.8	0.0371	0.0170	1.198	1.192	1.206	1.164
72	144	375	632	0.897	1605	616.6	0.0371	0.0169	1.196	1.192	1.206	1.166
73	146	375	632	0.897	1607	617.2	0.0371	0.0168	1.201	1.192	1.207	1.166
74	148	375	632	0.897	1608	617.6	0.0372	0.0167	1.198	1.189	1.204	1.166
75	150	375	632	0.897	1609	617.9	0.0373	0.0167	1.201	1.192	1.207	1.161
76	152	375	632	0.897	1609	618.1	0.0375	0.0166	1.199	1.193	1.207	1.161
77	154	375	632	0.897	1610	618.3	0.0376	0.0166	1.199	1.193	1.206	1.169
78	156	375	632	0.897	1609	617.8	0.0378	0.0166	1.201	1.193	1.207	1.172
79	158	375	632	0.897	1608	617.8	0.0379	0.0166	1.203	1.189	1.206	1.169
80	160	375	632	0.897	1606	617.0	0.0381	0.0166	1.203	1.186	1.204	1.169
81	162	375	632	0.897	1604	616.0	0.0382	0.0167	1.204	1.184	1.204	1.170
82	164	375	632	0.897	1600	614.7	0.0383	0.0168	1.206	1.184	1.204	1.164
83	166	375	632	0.897	1594	612.4	0.0385	0.0169	1.204	1.184	1.203	1.165
84	168	375	632	0.897	1588	610.1	0.0387	0.0170	1.204	1.184	1.201	1.165
85	170	375	632	0.897	1580	607.0	0.0388	0.0171	1.204	1.184	1.201	1.169
86	172	375	632	0.897	1571	603.3	0.0390	0.0172	1.204	1.183	1.199	1.167
87	174	375	632	0.897	1562	600.1	0.0394	0.0174	1.207	1.185	1.199	1.169
88	176	375	632	0.897	1550	595.3	0.0400	0.0176	1.207	1.179	1.198	1.166
89	178	375	632	0.897	1537	590.3	0.0407	0.0177	1.207	1.179	1.198	1.164
90	180	375	632	0.897	1523	584.9	0.0416	0.0177	1.210	1.181	1.199	1.166
91	182	375	632	0.897	1505	578.2	0.0424	0.0177	1.206	1.179	1.195	1.150
92	184	375	632	0.897	1488	571.7	0.0433	0.0177	1.206	1.181	1.195	1.156
93	186	375	632	0.897	1468	564.0	0.0442	0.0177	1.204	1.183	1.193	1.156
94	188	375	632	0.897	1447	555.7	0.0451	0.0175	1.201	1.179	1.189	1.150
95	190	375	632	0.897	1425	547.3	0.0461	0.0175	1.204	1.179	1.190	1.150
96	192	375	632	0.897	1399	537.3	0.0469	0.0174	1.201	1.172	1.186	1.144

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

PRELIMINARY DATA

12281

RUN LIST ENTSTEP COMP PROPELLANT SAMP.RATE
 419 1 66/033/1 38 15KAL 500

FRAME	TIME	Pa	Ptn	MACH	PTCN	(PTC/P)n	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
97	194	375	632	0.897	1372	526.9	0.0173	0.0478	1.201	1.169	1.183	1.141	1.140	1.146	
98	196	375	632	0.897	1342	515.4	0.0172	0.0487	1.198	1.167	1.181	1.132	1.147	1.143	
99	198	375	632	0.897	1308	502.3	0.0174	0.0493	1.196	1.161	1.175	1.130	1.161	1.143	
100	200	375	632	0.897	1270	487.7	0.0174	0.0499	1.193	1.156	1.173	1.126	1.167	1.140	
101	202	375	632	0.897	1226	471.0	0.0175	0.0501	1.190	1.150	1.160	1.120	1.156	1.136	
102	204	375	632	0.897	1176	451.6	0.0175	0.0504	1.190	1.145	1.152	1.115	1.140	1.132	
103	206	375	632	0.897	1118	429.5	0.0182	0.0505	1.187	1.127	1.140	1.104	1.127	1.127	
104	208	375	632	0.897	1054	404.9	0.0185	0.0505	1.186	1.113	1.126	1.093	1.104	1.123	
105	210	375	632	0.897	984	377.9	0.0189	0.0510	1.185	1.098	1.113	1.083	1.083	1.118	
106	212	375	632	0.897	909	349.1	0.0194	0.0514	1.179	1.083	1.097	1.069	1.069	1.113	
107	214	375	632	0.897	831	319.3	0.0198	0.0514	1.173	1.066	1.081	1.057	1.057	1.109	
108	216	375	632	0.897	751	288.6	0.0193	0.0520	1.169	1.050	1.064	1.041	1.041	1.103	
109	218	375	632	0.897	674	258.8	0.0207	0.0528	1.164	1.034	1.046	1.026	1.026	1.098	
110	220	375	632	0.897	598	229.6	0.0211	0.0536	1.156	1.015	1.030	1.012	1.012	1.095	
111	222	375	632	0.897	525	201.7	0.0221	0.0545	1.155	0.997	1.015	1.000	1.000	1.092	
112	224	375	632	0.897	460	176.6	0.0226	0.0567	1.149	0.978	1.000	0.984	0.984	1.087	
113	226	375	632	0.897	398	152.8	0.0226	0.0580	1.143	0.963	0.987	0.974	0.974	1.086	
114	228	375	632	0.897	343	131.6	0.0234	0.0599	1.138	0.951	0.978	0.964	0.964	1.081	
115	230	375	632	0.897	294	113.0	0.0236	0.0612	1.129	0.937	0.967	0.952	0.952	1.080	
116	232	375	632	0.897	250	95.9	0.0244	0.0634	1.124	0.924	0.951	0.941	0.941	1.077	
117	234	375	632	0.897	213	81.7	0.0253	0.0662	1.117	0.911	0.944	0.924	0.924	1.073	
118	236	375	632	0.897	180	69.0	0.0258	0.0687	1.109	0.917	0.949	0.917	0.917	1.073	
119	238	375	632	0.897	151	57.9	0.0281	0.0687	1.107	0.915	0.949	0.938	0.938	1.073	
120	240	375	632	0.897	128	49.0	0.0291	0.0733	1.100	0.908	0.944	0.937	0.937	1.070	
121	242	375	632	0.897	106	40.8	0.0291	0.0774	1.095	0.906	0.944	0.937	0.937	1.069	
122	244	375	632	0.897	89	34.1	0.0315	0.0837	1.092	0.906	0.944	0.937	0.937	1.069	
123	246	375	632	0.897	74	28.5	0.0356	0.0911	1.084	0.906	0.944	0.937	0.937	1.066	
124	248	375	632	0.897	61	23.5	0.0391	0.0995	1.081	0.906	0.944	0.937	0.937	1.066	
125	250	375	632	0.897	51	19.7	0.0467	0.1125	1.077	0.917	0.951	0.951	0.951	1.064	
126	252	375	632	0.897	42	16.2	0.0543	0.1286	1.072	0.920	0.955	0.955	0.955	1.064	
127	254	375	632	0.897	35	13.3	0.0646	0.1487	1.070	0.920	0.960	0.960	0.960	1.066	
128	256	375	632	0.897	29	11.0	0.0798	0.1728	1.070	0.923	0.960	0.960	0.960	1.066	

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

PRELIMINARY DATA

NUM LIST TWTSTP CONF PROPELLANT SAMP RATE
 419 1 66/033/1 38 15%AL 500

FRAMES	TIME	Pn	Ptn	MAGLn	PTGn	(PTG/P)n	(P2/PTC)n	NOZZLE PRESS. (P3/PTC)n	(P4/PTC)n	BASE PRESS. (P6/P)n	(P7/P)n	(P8/P)n	RODY PRESS. (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	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	0.964	0.966	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	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	0.972	0.971	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	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	0.978	0.977	0.977	1.066
135	270	375	632	0.897	8	3.1	0.5554	0.3224	1.054	0.944	0.980	0.980	0.978	0.978	1.064
136	272	375	632	0.897	6	2.4	0.7254	0.4265	1.050	0.946	0.980	0.980	0.978	0.978	1.064
137	274	375	632	0.897	6	2.4	0.7469	0.4427	1.050	0.947	0.983	0.983	0.978	0.978	1.064
138	276	375	632	0.897	5	1.8	0.9716	0.5843	1.049	0.944	0.981	0.981	0.975	0.975	1.064
139	278	375	632	0.897	4	1.6	1.0875	0.6659	1.047	0.944	0.981	0.981	0.974	0.974	1.064
140	280	375	632	0.897	4	1.6	1.1193	0.6898	1.047	0.947	0.984	0.984	0.974	0.974	1.064
141	282	375	632	0.897	2	0.6	2.6937	1.6507	1.041	0.944	0.981	0.981	0.969	0.969	1.064
142	284	375	632	0.897	2	0.6	2.1412	1.3195	1.040	0.949	0.983	0.983	0.969	0.969	1.064
143	286	375	632	0.897	2	0.6	2.7745	1.7098	1.037	0.952	0.984	0.984	0.967	0.967	1.064
144	288	375	632	0.897	1	0.3	6.6956	4.1133	1.034	0.952	0.983	0.983	0.966	0.966	1.064
145	290	375	632	0.897	1	0.5	4.0517	2.5119	1.035	0.955	0.989	0.989	0.969	0.969	1.064
146	292	375	632	0.897	-0	-0.1	-15.1596	-9.3422	1.032	0.954	0.989	0.989	0.966	0.966	1.063
147	294	375	632	0.897	-1	-0.3	-5.8774	-3.5712	1.030	0.955	0.992	0.992	0.969	0.969	1.063
148	296	375	632	0.897	-1	-0.3	-5.8774	-3.6330	1.032	0.960	0.997	0.997	0.972	0.972	1.064
149	298	375	632	0.897	-2	-0.7	-2.5925	-1.5699	1.027	0.960	0.997	0.997	0.972	0.972	1.063
150	300	375	632	0.897	-1	-0.5	-3.6331	-2.2457	1.027	0.969	1.001	1.001	0.977	0.977	1.064

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

12283

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

PRELIMINARY DATA

RUN LIST TESTSTEP CONF PROPRIANT SAMP RATE
 420 1 66/033/1 38 15%AL 500

FRAME TIME	PH	PTN	MACH	PITCH	(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	260	637	1.207	911	504.1	0.0250	0.0106	0.918	0.999	1.081	0.997	1.048		
2	260	637	1.207	990	547.5	0.0269	0.0115	0.924	1.033	1.117	1.022	1.048		
3	260	637	1.207	1060	586.5	0.0284	0.0122	0.926	1.068	1.150	1.046	1.048		
4	260	637	1.207	1126	622.8	0.0300	0.0130	0.933	1.101	1.179	1.070	1.048		
5	260	637	1.207	1184	654.9	0.0314	0.0136	0.938	1.132	1.205	1.092	1.048		
6	260	637	1.207	1235	683.1	0.0326	0.0140	0.944	1.159	1.227	1.112	1.048		
7	260	637	1.207	1282	709.1	0.0339	0.0146	0.955	1.185	1.250	1.134	1.050		
8	260	637	1.207	1320	730.1	0.0349	0.0150	0.962	1.201	1.265	1.150	1.050		
9	260	637	1.207	1353	748.6	0.0360	0.0153	0.973	1.216	1.278	1.163	1.053		
10	260	637	1.207	1382	764.4	0.0369	0.0157	0.984	1.232	1.294	1.179	1.048		
11	260	637	1.207	1404	776.6	0.0376	0.0158	0.988	1.238	1.298	1.183	1.048		
12	260	637	1.207	1424	787.6	0.0383	0.0161	0.999	1.252	1.307	1.194	1.048		
13	260	637	1.207	1439	795.9	0.0389	0.0163	1.008	1.261	1.311	1.199	1.046		
14	260	637	1.207	1451	802.6	0.0393	0.0165	1.015	1.263	1.314	1.203	1.044		
15	260	637	1.207	1461	808.4	0.0398	0.0167	1.030	1.267	1.320	1.212	1.046		
16	260	637	1.207	1467	811.7	0.0400	0.0169	1.037	1.261	1.318	1.212	1.044		
17	260	637	1.207	1473	814.7	0.0403	0.0172	1.046	1.261	1.318	1.214	1.046		
18	260	637	1.207	1477	817.0	0.0406	0.0172	1.057	1.258	1.320	1.216	1.046		
19	260	637	1.207	1479	818.3	0.0408	0.0173	1.061	1.254	1.316	1.212	1.042		
20	260	637	1.207	1482	819.7	0.0411	0.0176	1.070	1.256	1.320	1.216	1.044		
21	260	637	1.207	1484	820.8	0.0414	0.0177	1.079	1.256	1.318	1.216	1.044		
22	260	637	1.207	1485	821.7	0.0416	0.0179	1.086	1.256	1.318	1.216	1.044		
23	260	637	1.207	1487	822.5	0.0419	0.0181	1.095	1.256	1.318	1.219	1.046		
24	260	637	1.207	1489	823.6	0.0421	0.0182	1.095	1.256	1.318	1.219	1.046		
25	260	637	1.207	1490	824.4	0.0424	0.0182	1.103	1.250	1.318	1.219	1.046		
26	260	637	1.207	1492	825.5	0.0426	0.0182	1.110	1.250	1.318	1.219	1.046		
27	260	637	1.207	1495	826.9	0.0426	0.0182	1.121	1.247	1.318	1.219	1.046		
28	260	637	1.207	1495	827.2	0.0429	0.0181	1.128	1.250	1.320	1.221	1.046		
29	260	637	1.207	1497	828.3	0.0431	0.0178	1.132	1.250	1.320	1.221	1.046		
30	260	637	1.207	1498	828.8	0.0434	0.0178	1.139	1.254	1.323	1.223	1.046		
31	260	637	1.207	1498	829.4	0.0438	0.0176	1.146	1.256	1.323	1.223	1.046		
32	260	637	1.207	1499	829.4	0.0440	0.0173	1.150	1.256	1.323	1.223	1.046		
32	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 TESTSTEP CONF PROPELLANT SAMP. RATE
 420 1 66/033/1 38 15%AL 500

FRAME	TIME	Pa	P1n	NACHN	PTCN	(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
33	66	260	637	1.207	1502	830.8	0.0447	0.0169	1.165	1.254	1.323	1.223	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	1.225	1.050
22	70	260	637	1.207	1504	831.3	0.0455	0.0167	1.183	1.252	1.325	1.230	1.230	1.053
36	72	260	637	1.207	1505	831.6	0.0458	0.0165	1.190	1.252	1.325	1.235	1.235	1.048
37	74	260	637	1.207	1505	832.7	0.0460	0.0164	1.190	1.258	1.325	1.227	1.227	1.050
38	76	260	637	1.207	1506	833.3	0.0463	0.0164	1.194	1.258	1.325	1.230	1.230	1.048
39	78	260	637	1.207	1507	833.8	0.0466	0.0163	1.196	1.261	1.325	1.227	1.227	1.046
40	80	260	637	1.207	1510	835.2	0.0468	0.0163	1.205	1.261	1.329	1.234	1.234	1.046
41	82	260	637	1.207	1511	836.0	0.0471	0.0163	1.207	1.261	1.327	1.230	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	1.232	1.046
43	86	260	637	1.207	1517	839.4	0.0476	0.0163	1.221	1.263	1.329	1.232	1.232	1.046
44	88	260	637	1.207	1520	841.0	0.0476	0.0163	1.223	1.263	1.329	1.232	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	1.236	1.046
46	92	260	637	1.207	1528	845.4	0.0483	0.0164	1.232	1.272	1.331	1.236	1.236	1.046
47	94	260	637	1.207	1533	847.9	0.0486	0.0164	1.234	1.274	1.334	1.236	1.236	1.044
48	96	260	637	1.207	1537	850.1	0.0491	0.0164	1.234	1.274	1.334	1.236	1.236	1.048
49	98	260	637	1.207	1541	852.6	0.0495	0.0164	1.243	1.274	1.336	1.241	1.241	1.046
50	100	260	637	1.207	1545	854.9	0.0500	0.0164	1.247	1.272	1.334	1.238	1.238	1.046
51	102	260	637	1.207	1549	857.1	0.0506	0.0164	1.252	1.272	1.334	1.238	1.238	1.046
52	104	260	637	1.207	1554	859.8	0.0511	0.0164	1.256	1.272	1.336	1.241	1.241	1.046
53	106	260	637	1.207	1558	861.8	0.0517	0.0163	1.256	1.272	1.336	1.241	1.241	1.046
54	108	260	637	1.207	1562	864.0	0.0523	0.0163	1.259	1.276	1.336	1.243	1.243	1.046
55	110	260	637	1.207	1565	865.9	0.0526	0.0163	1.261	1.281	1.336	1.243	1.243	1.044
56	112	260	637	1.207	1567	867.0	0.0526	0.0163	1.263	1.285	1.336	1.243	1.243	1.044
57	114	260	637	1.207	1571	869.2	0.0524	0.0162	1.265	1.283	1.334	1.243	1.243	1.042
58	116	260	637	1.207	1573	870.1	0.0518	0.0162	1.272	1.285	1.338	1.245	1.245	1.044
59	118	260	637	1.207	1574	870.9	0.0509	0.0161	1.272	1.285	1.336	1.245	1.245	1.044
60	120	260	637	1.207	1576	872.0	0.0499	0.0161	1.276	1.281	1.336	1.245	1.245	1.044
61	122	260	637	1.207	1576	871.7	0.0487	0.0162	1.283	1.281	1.340	1.250	1.250	1.044
62	124	260	637	1.207	1577	872.3	0.0474	0.0161	1.285	1.278	1.338	1.245	1.245	1.042
63	126	260	637	1.207	1576	871.7	0.0462	0.0161	1.285	1.283	1.340	1.250	1.250	1.042
64	128	260	637	1.207	1574	870.6	0.0451	0.0161	1.285	1.287	1.342	1.250	1.250	1.042
							0.0440	0.0161	1.285	1.285	1.340	1.247	1.247	1.039

122284

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

PRELIMINARY DATA

RUN LIST
420 1 66/053/1 38 15%AL

UNSEEP CONF PROPELLANT SAMP RATE
500

FRAME TIME	Pa	Pm	Pm	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS. (P3/PTC)n	(P4/PTC)n	(P6/P)n	BASE PRESS. (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	1.305	1.272	1.345	1.252	1.042		
74	148	260	637	1.207	1559	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	0.0162	1.309	1.265	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	0.0357	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	0.0166	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	0.0370	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	1.289	1.347	1.254	1.042		
90	180	260	637	1.207	1516	838.8	0.0376	0.0172	1.325	1.289	1.347	1.254	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	1.342	1.254	1.042		
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 TWISRP CONF PROPRIETARY SAMP RATE
 420 1 66/333/1 38 15%AL 500

FRAME	TIME	Pa	Pin	MACHn	PTCn	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS.	(P4/PTC)n	(P6/P)n	BASE PRESS.	(P8/P)n	(P9/P)n	BODY PRESS.	(P10/P)n	(P11/P)n
97	194	260	637	1.207	1429	790.4	0.0394	0.0399	0.0182	1.323	1.276	1.538	1.241	1.241	1.042	1.042
98	196	260	637	1.207	1405	777.1	0.0399	0.0399	0.0184	1.325	1.272	1.334	1.241	1.241	1.044	1.044
99	198	260	637	1.207	1375	760.8	0.0405	0.0405	0.0187	1.325	1.261	1.327	1.232	1.232	1.042	1.042
100	200	260	637	1.207	1340	741.2	0.0415	0.0415	0.0190	1.325	1.250	1.309	1.223	1.223	1.044	1.044
101	202	260	637	1.207	1299	718.5	0.0423	0.0423	0.0193	1.323	1.238	1.309	1.214	1.214	1.042	1.042
102	204	260	637	1.207	1251	692.2	0.0435	0.0435	0.0197	1.318	1.225	1.296	1.199	1.199	1.044	1.044
103	206	260	637	1.207	1195	661.2	0.0449	0.0449	0.0201	1.314	1.212	1.278	1.185	1.185	1.044	1.044
104	208	260	637	1.207	1134	627.5	0.0467	0.0467	0.0205	1.309	1.199	1.258	1.165	1.165	1.044	1.044
105	210	260	637	1.207	1067	590.4	0.0487	0.0487	0.0209	1.303	1.181	1.234	1.146	1.146	1.044	1.044
106	212	260	637	1.207	995	550.6	0.0512	0.0512	0.0213	1.300	1.157	1.207	1.121	1.121	1.044	1.044
107	214	260	637	1.207	922	509.9	0.0543	0.0543	0.0218	1.285	1.130	1.181	1.099	1.099	1.044	1.044
108	216	260	637	1.207	846	467.9	0.0577	0.0577	0.0222	1.285	1.097	1.150	1.072	1.072	1.044	1.044
109	218	260	637	1.207	771	426.4	0.0616	0.0616	0.0226	1.281	1.064	1.119	1.048	1.048	1.044	1.044
110	220	260	637	1.207	698	386.3	0.0663	0.0663	0.0230	1.265	1.033	1.088	1.028	1.028	1.046	1.046
111	222	260	637	1.207	627	346.7	0.0712	0.0712	0.0231	1.258	0.997	1.055	1.002	1.002	1.042	1.042
112	224	260	637	1.207	562	310.7	0.0772	0.0772	0.0236	1.245	0.971	1.026	0.984	0.984	1.044	1.044
113	226	260	637	1.207	500	276.7	0.0836	0.0836	0.0238	1.232	0.942	0.966	0.954	0.954	1.042	1.042
114	228	260	637	1.207	443	245.2	0.0909	0.0909	0.0239	1.227	0.911	0.944	0.946	0.946	1.039	1.039
115	230	260	637	1.207	392	217.2	0.0992	0.0992	0.0243	1.227	0.887	0.944	0.938	0.938	1.042	1.042
116	232	260	637	1.207	346	191.2	0.1084	0.1084	0.0241	1.203	0.853	0.913	0.922	0.922	1.039	1.039
117	234	260	637	1.207	304	168.0	0.1184	0.1184	0.0243	1.194	0.822	0.889	0.911	0.911	1.042	1.042
118	236	260	637	1.207	266	147.3	0.1298	0.1298	0.0246	1.179	0.796	0.867	0.904	0.904	1.044	1.044
119	238	260	637	1.207	233	128.7	0.1422	0.1422	0.0242	1.168	0.767	0.838	0.887	0.887	1.039	1.039
120	240	260	637	1.207	203	112.4	0.1566	0.1566	0.0248	1.154	0.747	0.818	0.833	0.833	1.042	1.042
121	242	260	637	1.207	177	97.8	0.1729	0.1729	0.0248	1.141	0.723	0.794	0.807	0.807	1.042	1.042
122	244	260	637	1.207	153	84.5	0.1918	0.1918	0.0248	1.130	0.699	0.772	0.804	0.804	1.042	1.042
123	246	260	637	1.207	132	72.9	0.2138	0.2138	0.0254	1.119	0.679	0.755	0.804	0.804	1.044	1.044
124	248	260	637	1.207	114	62.9	0.2371	0.2371	0.0254	1.108	0.656	0.732	0.800	0.800	1.042	1.042
125	250	260	637	1.207	98	54.0	0.2650	0.2650	0.0260	1.099	0.641	0.732	0.800	0.800	1.044	1.044
126	252	260	637	1.207	84	46.3	0.2974	0.2974	0.0268	1.088	0.634	0.732	0.800	0.800	1.044	1.044
127	254	260	637	1.207	72	39.9	0.3328	0.3328	0.0276	1.077	0.634	0.734	0.800	0.800	1.044	1.044
128	256	260	637	1.207	61	33.6	0.3794	0.3794	0.0287	1.077	0.639	0.741	0.800	0.800	1.044	1.044

12286

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

RUI LISH TRIPSTP CONF PROPELLANT SAMP. RATE
 420 1 66/033/1 38 15%AL 500

TRANS TIME	Pa	Pth	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	(P9/P)n	BODY PRESS. (P10/P)n	(P11/P)n
129	258	260	637	1.207	52	28.9	0.4245	0.0302	1.066	0.650	0.752	0.884	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	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	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	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	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	0.893	1.042
136	272	260	637	1.207	21	11.7	0.8443	0.0609	1.022	0.721	0.820	0.895	0.895	1.042
137	274	260	637	1.207	17	9.2	1.0280	0.0683	1.011	0.727	0.827	0.895	0.895	1.042
138	276	260	637	1.207	15	8.4	1.0987	0.0817	1.008	0.745	0.838	0.900	0.900	1.042
139	278	260	637	1.207	14	7.6	1.1802	0.0943	1.002	0.754	0.845	0.902	0.902	1.042
140	280	260	637	1.207	12	6.5	1.3308	0.1061	0.995	0.763	0.851	0.900	0.900	1.039
141	282	260	637	1.207	11	6.2	1.3604	0.1243	0.995	0.774	0.860	0.907	0.907	1.044
142	284	260	637	1.207	9	5.1	1.5984	0.1404	0.991	0.774	0.862	0.904	0.904	1.042
143	286	260	637	1.207	8	4.5	1.7366	0.1698	0.988	0.776	0.867	0.907	0.907	1.044
144	288	260	637	1.207	8	4.3	1.7975	0.1873	0.986	0.783	0.873	0.911	0.911	1.046
145	290	260	637	1.207	7	3.7	1.9964	0.2078	0.980	0.783	0.873	0.907	0.907	1.042
146	292	260	637	1.207	7	3.7	1.9566	0.2228	0.980	0.794	0.880	0.911	0.911	1.044
147	294	260	637	1.207	6	3.4	2.1715	0.2619	0.973	0.807	0.889	0.911	0.911	1.044
148	296	260	637	1.207	6	3.1	2.3165	0.2968	0.973	0.814	0.895	0.915	0.915	1.046
149	298	260	637	1.207	5	2.9	2.4213	0.2872	0.971	0.814	0.898	0.915	0.915	1.046
150	300	260	637	1.207	5	2.6	2.2523	0.2872	0.971	0.814	0.898	0.915	0.915	1.046
151	302	260	637	1.207	5	2.6	2.4213	0.3173	0.968	0.818	0.900	0.915	0.915	1.046
152	304	260	637	1.207	5	2.6	2.3218	0.3284	0.968	0.822	0.907	0.913	0.913	1.046
153	306	260	637	1.207	5	2.6	2.3644	0.3391	0.968	0.827	0.909	0.913	0.913	1.044
154	308	260	637	1.207	4	2.0	2.8606	0.4174	0.964	0.831	0.913	0.913	0.913	1.044
155	310	260	637	1.207	4	2.3	2.4716	0.3796	0.962	0.838	0.915	0.913	0.913	1.044
156	312	260	637	1.207	4	1.8	2.4079	0.3676	0.960	0.840	0.918	0.913	0.913	1.042
157	314	260	637	1.207	4	2.3	3.0581	0.4829	0.955	0.842	0.918	0.913	0.913	1.042
158	316	260	637	1.207	4	2.0	2.3125	0.3796	0.957	0.842	0.922	0.913	0.913	1.042
159	318	260	637	1.207	4	2.0	2.5535	0.4174	0.955	0.840	0.924	0.911	0.911	1.042
160	320	260	637	1.207	4	2.3	2.4993	0.4310	0.955	0.840	0.924	0.911	0.911	1.042
161	322	260	637	1.207	4	2.3	2.1852	0.3915	0.957	0.842	0.926	0.915	0.915	1.042
162	324	260	637	1.207	3	1.5	3.2548	0.5540	0.951	0.838	0.924	0.911	0.911	1.039
163	326	260	637	1.207	4	2.0	2.3729	0.4310	0.951	0.842	0.924	0.911	0.911	1.039
164	328	260	637	1.207	3	1.8	2.3187	0.4310	0.949	0.845	0.924	0.911	0.911	1.039
							2.5985	0.4829	0.944	0.842	0.920	0.909	0.909	1.037

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

PRELIMINARY DATA

MT LIST TESTS COME PROPELLANT SAFETY 500
 421 1 66/033/1 38 16.45

FRAME	SIZE	IN	FTN	WATER	PROP	(P30/P3)h	(P2/P20)h	NOZLE PRESS.	(P4/P40)h	(P6/P7)h	WIND PRESS.	(P7/P7)h	(P8/P8)h	WIND PRESS.	(P9/P9)h	(P10/P10)h	(P11/P11)h
1	2	183	636	1.462	836	658.5	0.0237	0.0094	0.864	0.945	0.984	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	1.040	0.987	1.150			
3	6	183	636	1.462	971	764.2	0.0277	0.0115	0.876	1.015	1.103	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	1.125	1.002	1.154			
5	10	183	636	1.462	1074	845.2	0.0310	0.0129	0.895	1.075	1.154	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	1.169	1.028	1.154			
7	14	183	636	1.462	1149	904.7	0.0335	0.0140	0.911	1.113	1.188	1.188	1.057	1.154			
8	16	183	636	1.462	1181	929.5	0.0345	0.0145	0.924	1.135	1.207	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	1.213	1.050	1.150			
10	20	183	636	1.462	1231	968.9	0.0362	0.0152	0.939	1.172	1.239	1.239	1.065	1.150			
11	22	183	636	1.462	1251	985.0	0.0368	0.0155	0.949	1.183	1.259	1.259	1.072	1.150			
12	24	183	636	1.462	1269	998.8	0.0374	0.0157	0.958	1.201	1.245	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	1.254	1.087	1.150			
14	28	183	636	1.462	1299	1022.4	0.0383	0.0160	0.980	1.217	1.257	1.257	1.087	1.147			
15	30	183	636	1.462	1311	1031.8	0.0386	0.0161	0.990	1.220	1.264	1.264	1.094	1.147			
16	32	183	636	1.462	1322	1040.5	0.0389	0.0162	1.006	1.220	1.264	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	1.267	1.100	1.147			
18	36	183	636	1.462	1340	1055.1	0.0393	0.0164	1.021	1.223	1.267	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	1.267	1.103	1.147			
20	40	183	636	1.462	1355	1065.2	0.0396	0.0165	1.043	1.229	1.264	1.264	1.103	1.147			
21	42	183	636	1.462	1357	1068.4	0.0397	0.0166	1.043	1.229	1.264	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	1.267	1.103	1.147			
23	46	183	636	1.462	1363	1073.2	0.0396	0.0158	1.065	1.217	1.264	1.264	1.100	1.144			
24	48	183	636	1.462	1365	1074.2	0.0396	0.0172	1.075	1.210	1.254	1.254	1.100	1.144			
25	50	183	636	1.462	1367	1075.9	0.0395	0.0172	1.084	1.210	1.254	1.254	1.106	1.144			
26	52	183	636	1.462	1369	1077.9	0.0393	0.0173	1.084	1.207	1.264	1.264	1.106	1.144			
27	54	183	636	1.462	1371	1079.5	0.0393	0.0176	1.094	1.215	1.270	1.270	1.106	1.144			
28	56	183	636	1.462	1373	1080.5	0.0392	0.0179	1.100	1.220	1.270	1.270	1.106	1.144			
29	58	183	636	1.462	1375	1083.8	0.0392	0.0179	1.103	1.220	1.270	1.270	1.103	1.144			
30	60	183	636	1.462	1377	1085.8	0.0392	0.0181	1.119	1.229	1.280	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	1.276	1.113	1.147			
32	64	183	636	1.462	1383	1088.5	0.0392	0.0182	1.128	1.223	1.280	1.280	1.116	1.147			

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

PRELIMINARY DATA

421 1 06/053/1 38 165AL 500
 WASTE COMP PROGRAM AND DATA

32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1					
53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21				
183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183	183				
536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536	536			
1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462	1.462			
1387	1391	1396	1400	1404	1409	1413	1417	1421	1426	1430	1434	1438	1442	1446	1449	1450	1451	1452	1452	1451	1449	1447	1445	1443	1441	1439	1437	1435	1433	1431	1429	1427	1425			
1092.1	1094.8	1095.7	1095.3	1095.4	1095.0	1095.1	1095.5	1095.8	1095.5	1095.1	1095.1	1095.8	1095.5	1095.5	1095.3	1095.3	1095.9	1095.5	1095.0	1095.0	1094.5	1094.5	1094.5	1094.5	1094.5	1094.5	1094.5	1094.5	1094.5	1094.5	1094.5	1094.5	1094.5			
0.0392	0.0392	0.0395	0.0395	0.0397	0.0399	0.0399	0.0400	0.0402	0.0403	0.0404	0.0405	0.0406	0.0409	0.0411	0.0414	0.0418	0.0421	0.0426	0.0430	0.0437	0.0439	0.0441	0.0445	0.0445	0.0445	0.0445	0.0445	0.0445	0.0447	0.0447	0.0447	0.0447	0.0447			
(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n	(25/250)n			
0.0183	0.0183	0.0184	0.0184	0.0183	0.0181	0.0179	0.0176	0.0175	0.0174	0.0173	0.0172	0.0172	0.0172	0.0172	0.0172	0.0173	0.0174	0.0175	0.0176	0.0177	0.0178	0.0178	0.0179	0.0180	0.0181	0.0181	0.0181	0.0181	0.0181	0.0181	0.0181	0.0181	0.0181			
(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n	(24/250)n			
1.141	1.158	1.147	1.154	1.157	1.166	1.169	1.176	1.185	1.191	1.198	1.201	1.210	1.217	1.223	1.229	1.235	1.235	1.235	1.248	1.248	1.254	1.261	1.261	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.267	1.267			
(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n	(26/2)n		
1.229	1.229	1.239	1.245	1.248	1.254	1.248	1.248	1.251	1.257	1.273	1.276	1.276	1.273	1.273	1.280	1.280	1.292	1.298	1.303	1.303	1.302	1.303	1.303	1.311	1.311	1.311	1.311	1.311	1.311	1.311	1.311	1.311	1.311			
(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n	(27/2)n		
1.286	1.283	1.289	1.292	1.292	1.298	1.295	1.298	1.305	1.308	1.317	1.317	1.324	1.327	1.332	1.336	1.342	1.342	1.352	1.352	1.352	1.352	1.355	1.355	1.358	1.358	1.358	1.358	1.358	1.358	1.358	1.358	1.358	1.358			
(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	(28/2)n	
1.122	1.119	1.123	1.128	1.123	1.133	1.135	1.135	1.141	1.144	1.154	1.157	1.166	1.166	1.169	1.172	1.176	1.179	1.188	1.188	1.188	1.191	1.198	1.198	1.193	1.193	1.193	1.193	1.193	1.193	1.193	1.193	1.193	1.193			
(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	(29/2)n	
1.150	1.147	1.150	1.150	1.147	1.150	1.150	1.150	1.154	1.150	1.150	1.150	1.150	1.150	1.150	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	1.154	
(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n	(30/2)n

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

PRELIMINARY DATA

ORIGINAL PAGE IS OF POOR QUALITY

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421 1 66/033/1 58 15.115 500

LINE	ITEM	QTY	UNIT	PRICE	AMOUNT	DATE	DESCRIPTION	(P2/E10)n	(P5/E20)n	(P4/P10)n	(P6/P2)n	(P7/P2)n	(P8/P2)n	(P9/P2)n	(P10/E)n	(P11/E)n
65	150	183	636	1.462	1445			0.0451	1135.7	0.0180	1.280	1.308	1.355	1.193	1.147	
66	132	183	636	1.462	1439			0.0454	1132.6	0.0180	1.286	1.305	1.352	1.201	1.147	
67	129	183	636	1.462	1435			0.0457	1129.4	0.0180	1.286	1.305	1.349	1.193	1.147	
68	136	183	636	1.462	1429			0.0460	1125.1	0.0181	1.289	1.300	1.349	1.193	1.147	
69	136	183	636	1.462	1424			0.0462	1121.2	0.0181	1.289	1.300	1.349	1.193	1.147	
70	142	183	636	1.462	1411			0.0463	1115.1	0.0181	1.289	1.300	1.343	1.191	1.144	
71	142	183	636	1.462	1411			0.0463	1115.1	0.0181	1.289	1.300	1.342	1.191	1.144	
72	143	183	636	1.462	1405			0.0465	1106.2	0.0184	1.295	1.305	1.342	1.185	1.144	
73	146	183	636	1.462	1398			0.0461	1100.5	0.0185	1.298	1.298	1.336	1.185	1.144	
74	148	183	636	1.462	1391			0.0459	1094.6	0.0186	1.298	1.298	1.336	1.182	1.144	
75	150	183	636	1.462	1383			0.0453	1088.9	0.0187	1.295	1.295	1.333	1.185	1.147	
76	152	183	636	1.462	1374			0.0451	1081.4	0.0188	1.298	1.302	1.333	1.179	1.144	
77	154	183	636	1.462	1366			0.0449	1075.5	0.0189	1.298	1.302	1.333	1.179	1.144	
78	156	183	636	1.462	1358			0.0447	1069.2	0.0191	1.292	1.302	1.330	1.172	1.141	
79	158	183	636	1.462	1349			0.0445	1062.1	0.0194	1.298	1.302	1.336	1.182	1.144	
80	160	183	636	1.462	1343			0.0445	1057.0	0.0194	1.295	1.302	1.336	1.179	1.144	
81	162	183	636	1.462	1336			0.0445	1051.5	0.0195	1.298	1.302	1.336	1.182	1.144	
82	154	183	636	1.462	1332			0.0444	1048.4	0.0195	1.298	1.302	1.336	1.182	1.147	
83	153	183	636	1.462	1329			0.0443	1046.0	0.0196	1.298	1.298	1.336	1.191	1.147	
84	152	183	636	1.462	1325			0.0442	1042.9	0.0196	1.298	1.298	1.336	1.185	1.147	
85	170	183	636	1.462	1321			0.0442	1039.7	0.0197	1.302	1.308	1.339	1.191	1.150	
87	174	183	636	1.462	1314			0.0443	1034.6	0.0197	1.302	1.305	1.336	1.180	1.150	
88	175	183	636	1.462	1306			0.0445	1027.9	0.0198	1.298	1.302	1.330	1.182	1.147	
89	178	183	636	1.462	1296			0.0449	1020.0	0.0200	1.302	1.285	1.317	1.185	1.154	
90	180	183	636	1.462	1284			0.0452	1010.6	0.0200	1.302	1.285	1.311	1.172	1.150	
91	182	183	636	1.462	1270			0.0452	999.9	0.0202	1.302	1.276	1.311	1.166	1.147	
92	184	183	636	1.462	1256			0.0455	988.5	0.0203	1.298	1.267	1.305	1.160	1.150	
93	186	183	636	1.462	1241			0.0455	976.7	0.0204	1.298	1.254	1.295	1.147	1.147	
94	188	183	636	1.462	1224			0.0452	963.7	0.0205	1.292	1.251	1.292	1.144	1.147	
95	190	183	636	1.462	1208			0.0465	951.1	0.0206	1.289	1.248	1.285	1.135	1.147	
96	192	183	636	1.462	1192			0.0468	938.2	0.0207	1.283	1.245	1.280	1.126	1.147	
					1174			0.0471	924.0	0.0208	1.280	1.239	1.275	1.122	1.147	

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

PRELIMINARY DATA

REF ID: A6503371 38 16 JUL 65
 TEST CODE PROGRAMME SALES DATA
 500

SLICE TIME	FT	FT	INCH	FROM	(P1/P2)E	(P3/P4)E	(P5/P6)E	(P7/P8)E	(P9/P10)E	(P11/P12)E
97	194	135	535	1.452	1159	912.6	0.0474	0.0210	1.285	1.123
98	196	183	636	1.452	1145	301.2	0.0474	0.0211	1.276	1.119
99	198	185	636	1.462	1132	891.5	0.0475	0.0211	1.280	1.147
100	200	185	636	1.462	1119	881.1	0.0477	0.0211	1.280	1.125
101	202	185	636	1.462	1102	867.7	0.0477	0.0209	1.270	1.119
102	204	185	636	1.452	1083	852.7	0.0481	0.0207	1.270	1.113
103	206	185	636	1.462	1053	832.7	0.0485	0.0204	1.264	1.113
104	208	185	636	1.462	1025	807.1	0.0495	0.0201	1.257	1.105
105	210	185	636	1.462	988	777.6	0.0507	0.0200	1.261	1.100
106	212	185	636	1.462	942	741.7	0.0522	0.0196	1.254	1.084
107	214	185	636	1.462	892	702.0	0.0542	0.0195	1.251	1.072
108	216	185	636	1.462	837	659.1	0.0567	0.0194	1.248	1.059
109	218	185	636	1.462	779	615.0	0.0595	0.0191	1.235	1.037
110	220	185	636	1.462	720	566.6	0.0629	0.0192	1.229	1.028
111	222	185	636	1.462	659	518.9	0.0669	0.0191	1.220	1.009
112	224	185	636	1.462	600	472.5	0.0714	0.0191	1.210	1.062
113	226	185	636	1.462	545	427.2	0.0766	0.0192	1.201	1.057
114	228	185	636	1.462	488	383.9	0.0825	0.0191	1.191	1.002
115	230	185	636	1.452	436	345.4	0.0890	0.0190	1.179	0.974
116	232	185	636	1.452	389	305.5	0.0964	0.0192	1.169	0.945
117	234	185	636	1.452	341	270.5	0.1049	0.0192	1.160	0.921
118	236	185	636	1.462	302	237.5	0.1146	0.0192	1.147	0.895
119	238	185	636	1.462	265	203.4	0.1253	0.0195	1.135	0.870
120	240	185	636	1.462	231	171.6	0.1374	0.0195	1.122	0.845
121	242	185	636	1.462	199	136.8	0.1518	0.0196	1.106	0.825
122	244	185	636	1.462	173	106.0	0.1681	0.0200	1.100	0.804
123	246	185	636	1.462	145	79.0	0.1867	0.0207	1.094	0.779
124	248	185	636	1.462	126	59.0	0.2093	0.0207	1.075	0.757
125	250	185	636	1.462	108	44.0	0.2357	0.0219	1.069	0.738
126	252	185	636	1.462	90	32.0	0.2657	0.0212	1.043	0.710
127	254	185	636	1.462	76	23.0	0.2997	0.0224	1.037	0.688
128	256	185	636	1.462	64	17.0	0.3407	0.0228	1.021	0.669
129	258	185	636	1.462	55	11.9	0.3879	0.0227	1.006	0.647
130	260	185	636	1.462	45	8.5	0.4403	0.0256	1.002	0.625
131	262	185	636	1.462	37	6.5	0.5132	0.0260	0.987	0.604
132	264	185	636	1.462	31	4.2	0.5875	0.0272	0.977	0.580
133	266	185	636	1.462	25	2.7	0.6732	0.0313	0.968	0.557
134	268	185	636	1.462	21	1.6	0.7752	0.0309	0.952	0.535
135	270	185	636	1.462	13	1.0	0.8757	0.0387	0.946	0.511
136	272	185	636	1.462	15	12.0	1.0022	0.0451	0.935	0.483
137	274	185	636	1.462	15	10.0	1.1522	0.0476	0.924	0.455

SLICE TIME P FT FT PREP PCAL
 1.462 275.7 185 636 1428 2118

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

PRELIMINARY DATA

PTN LIST WHISPER CON7 PROPELLANT SAMP.RATE
 422 1 66/053/1 34 15%AL 500

FRAME TIME	PTN	FACHn	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
1	183	636	1.462	605	476.0	0.0435	0.0239	1.131	1.099	1.172	1.080	1.124	
2	183	636	1.462	656	516.6	0.0496	0.0272	1.184	1.159	1.228	1.124	1.118	
3	183	636	1.462	707	556.7	0.0556	0.0303	1.244	1.225	1.288	1.181	1.121	
4	183	636	1.462	754	593.7	0.0610	0.0331	1.291	1.285	1.339	1.228	1.121	
5	183	636	1.462	798	628.0	0.0661	0.0355	1.332	1.335	1.390	1.269	1.118	
6	183	636	1.462	836	658.3	0.0710	0.0379	1.373	1.383	1.420	1.313	1.121	
7	183	636	1.462	870	684.7	0.0759	0.0398	1.402	1.411	1.446	1.339	1.118	
8	183	636	1.462	898	706.7	0.0808	0.0413	1.427	1.436	1.468	1.364	1.118	
9	183	636	1.462	921	725.2	0.0850	0.0424	1.449	1.455	1.483	1.383	1.118	
10	183	636	1.462	940	740.2	0.0881	0.0431	1.461	1.471	1.496	1.398	1.118	
11	183	636	1.462	954	751.2	0.0916	0.0435	1.468	1.487	1.506	1.411	1.118	
12	183	636	1.462	966	760.2	0.0924	0.0439	1.474	1.496	1.512	1.417	1.118	
13	183	636	1.462	975	767.3	0.0926	0.0441	1.477	1.506	1.515	1.420	1.115	
14	183	636	1.462	982	772.8	0.0924	0.0442	1.480	1.509	1.515	1.424	1.115	
15	183	636	1.462	991	780.3	0.0924	0.0442	1.487	1.512	1.518	1.427	1.115	
16	183	636	1.462	999	786.2	0.0921	0.0440	1.490	1.506	1.518	1.427	1.115	
17	183	636	1.462	1007	792.9	0.0915	0.0438	1.493	1.502	1.518	1.427	1.115	
18	183	636	1.462	1016	800.0	0.0908	0.0435	1.499	1.506	1.521	1.430	1.115	
19	183	636	1.462	1024	805.9	0.0898	0.0431	1.493	1.502	1.518	1.427	1.112	
20	183	636	1.462	1032	812.6	0.0892	0.0428	1.496	1.509	1.521	1.430	1.115	
21	183	636	1.462	1040	818.5	0.0885	0.0426	1.493	1.512	1.521	1.430	1.112	
22	183	636	1.462	1046	823.2	0.0876	0.0423	1.490	1.509	1.518	1.427	1.112	
23	183	636	1.462	1053	829.1	0.0871	0.0422	1.496	1.515	1.524	1.435	1.115	
24	183	636	1.462	1058	833.1	0.0867	0.0420	1.493	1.506	1.524	1.430	1.112	
25	183	636	1.462	1063	837.0	0.0864	0.0420	1.496	1.506	1.524	1.430	1.112	
26	183	636	1.462	1067	840.1	0.0863	0.0422	1.496	1.506	1.528	1.436	1.115	
27	183	636	1.462	1070	842.5	0.0862	0.0423	1.496	1.502	1.521	1.430	1.112	
28	183	636	1.462	1074	845.3	0.0862	0.0425	1.502	1.509	1.521	1.436	1.115	
29	183	636	1.462	1075	846.4	0.0865	0.0426	1.502	1.512	1.528	1.436	1.112	
30	183	636	1.462	1076	847.2	0.0865	0.0427	1.502	1.515	1.524	1.436	1.112	
31	183	636	1.462	1076	847.2	0.0867	0.0429	1.506	1.521	1.528	1.443	1.115	
32	183	636	1.462	1075	846.4	0.0868	0.0429	1.509	1.515	1.524	1.439	1.112	

12290

NON LIST TESTS COMP PROPellant SAMP RATE
422 1 66/033/1 34 15%AI 500

FRAMES	TIME	Pa	P ₁ n	MACH	P ₁ TCn	(P ₁ /P ₁)n	(P ₂ /P ₁)n	(P ₃ /P ₁)n	(P ₄ /P ₁)n	(P ₆ /P ₁)n	(P ₇ /P ₁)n	(P ₈ /P ₁)n	(P ₉ /P ₁)n	(P ₁₀ /P ₁)n	(P ₁₁ /P ₁)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	1.524	1.443	1.112		
35	70	183	636	1.462	1071	843.3	0.0872	0.0427	1.515	1.518	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	1.512	1.531	1.524	1.446	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	1.534	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	0.0429	1.509	1.521	1.526	1.446	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	1.506	1.531	1.534	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	0.0890	0.0422	1.506	1.534	1.534	1.436	1.109		
58	116	183	636	1.462	1014	798.0	0.0891	0.0421	1.506	1.524	1.531	1.436	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	0.0896	0.0418	1.506	1.524	1.534	1.436	1.109		
62	124	183	636	1.462	1017	800.8	0.0898	0.0418	1.506	1.528	1.537	1.436	1.109		
63	126	183	636	1.462	1018	801.6	0.0899	0.0418	1.506	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 1 THRSTP 34 CONF PROPELLANT SAHP RATE 500
 422 1 66/053/1 34 15%AL

FRAME	TIME	Pn	Ptn	MACHn	PTCn	(PTC/P)n	(P3/PTC)n	NOZZLE PRESS. (P4/PTC)n	(P6/P)n	BASE PRESS. (P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS. (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	1.521	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	1.515	1.424	1.109
75	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	0.0953	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	1.445	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

RUI LIST TESTS CO-IN PROPELLANT SHIP. DATA
 422 1 66/033/1 34 15%AL 500

FRAME TIME	Pn	PCn	MACHn	PTCn	(PTC/P)n	(P3/PTC)n	NOZZLE PRESS.	(P4/PTC)n	(P6/P)n	"BASE PRESS.	(P7/P)n	(P8/P)n	(P9/P)n	ROCK PRESS.	(P11/P)n
97	183	636	1.462	696	547.7	0.0958	0.0427	1.395	1.411	1.411	1.436	1.320	1.109		
98	183	636	1.462	691	545.7	0.0953	0.0427	1.405	1.417	1.417	1.445	1.326	1.112		
99	183	636	1.462	683	557.8	0.0948	0.0425	1.396	1.408	1.408	1.433	1.320	1.112		
100	183	636	1.462	676	532.3	0.0944	0.0426	1.393	1.402	1.402	1.433	1.317	1.115		
101	183	636	1.462	669	526.8	0.0939	0.0427	1.398	1.398	1.398	1.450	1.317	1.113		
102	183	636	1.462	661	520.5	0.0933	0.0427	1.389	1.389	1.389	1.420	1.301	1.112		
103	183	636	1.462	653	514.2	0.0929	0.0429	1.386	1.392	1.392	1.420	1.304	1.115		
104	183	636	1.462	645	507.9	0.0921	0.0431	1.380	1.389	1.389	1.417	1.296	1.115		
105	183	636	1.462	637	501.6	0.0913	0.0433	1.373	1.389	1.389	1.411	1.291	1.115		
106	183	636	1.462	630	495.7	0.0904	0.0436	1.373	1.386	1.386	1.411	1.291	1.115		
107	183	636	1.462	622	489.8	0.0893	0.0438	1.367	1.376	1.376	1.405	1.282	1.115		
108	183	636	1.462	615	484.3	0.0880	0.0440	1.364	1.370	1.370	1.393	1.279	1.115		
109	183	636	1.462	609	479.2	0.0867	0.0442	1.364	1.364	1.364	1.395	1.276	1.115		
110	183	636	1.462	603	474.9	0.0852	0.0443	1.361	1.361	1.361	1.392	1.269	1.115		
111	183	636	1.462	597	469.7	0.0834	0.0446	1.354	1.361	1.361	1.392	1.272	1.115		
112	183	636	1.462	591	465.0	0.0818	0.0449	1.354	1.364	1.364	1.389	1.269	1.112		
113	183	636	1.462	584	459.5	0.0800	0.0451	1.348	1.364	1.364	1.386	1.266	1.112		
114	183	636	1.462	576	453.2	0.0781	0.0453	1.345	1.361	1.361	1.383	1.260	1.112		
115	183	636	1.462	567	446.5	0.0766	0.0458	1.342	1.354	1.354	1.380	1.257	1.112		
116	183	636	1.462	555	437.1	0.0750	0.0461	1.335	1.342	1.342	1.367	1.247	1.109		
117	183	636	1.462	542	426.8	0.0735	0.0465	1.326	1.329	1.329	1.358	1.258	1.109		
118	183	636	1.462	527	415.0	0.0724	0.0469	1.313	1.313	1.313	1.345	1.228	1.112		
119	183	636	1.462	508	399.7	0.0714	0.0472	1.288	1.291	1.291	1.323	1.206	1.106		
120	183	636	1.462	488	383.9	0.0709	0.0478	1.272	1.279	1.279	1.307	1.187	1.109		
121	183	636	1.462	464	365.4	0.0706	0.0483	1.247	1.257	1.257	1.285	1.165	1.106		
122	183	636	1.462	438	344.6	0.0704	0.0487	1.219	1.228	1.228	1.257	1.140	1.102		
123	183	636	1.462	410	322.9	0.0711	0.0494	1.200	1.203	1.203	1.235	1.121	1.109		
124	183	636	1.462	380	298.9	0.0714	0.0496	1.169	1.165	1.165	1.200	1.090	1.106		
125	183	636	1.462	350	275.3	0.0723	0.0500	1.140	1.131	1.131	1.169	1.052	1.106		
126	183	636	1.462	319	251.3	0.0738	0.0508	1.112	1.102	1.102	1.140	1.039	1.109		
127	183	636	1.462	289	227.3	0.0756	0.0509	1.074	1.062	1.062	1.099	1.003	1.105		
128	183	636	1.462	260	204.8	0.0788	0.0517	1.046	1.036	1.036	1.074	0.985	1.106		

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

PRELIMINARY DATA

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

PLATE	TIME	Pr	Prn	MACH	PTCH	(PTC/P)n	(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	1.462	232	182.8	0.0831	0.0878	0.0523	1.011	1.002	1.039	0.961	1.106	1.106
130	260	183	636	1.462	206	162.3	0.0939	0.1008	0.0535	0.973	0.967	1.005	0.936	1.112	1.112
131	262	183	636	1.462	182	143.4	0.1085	0.1179	0.0542	0.942	0.939	0.939	0.898	1.109	1.109
132	264	183	636	1.462	160	125.7	0.1270	0.1379	0.0550	0.879	0.898	0.904	0.879	1.109	1.109
133	266	183	636	1.462	139	109.6	0.1498	0.1629	0.0559	0.854	0.828	0.876	0.866	1.112	1.112
134	268	183	636	1.462	121	95.0	0.1781	0.1936	0.0568	0.822	0.800	0.847	0.854	1.109	1.109
135	270	183	636	1.462	105	82.4	0.2124	0.2360	0.0580	0.794	0.775	0.819	0.847	1.112	1.112
136	272	183	636	1.462	90	70.6	0.2589	0.2988	0.0596	0.766	0.750	0.794	0.838	1.109	1.109
137	274	183	636	1.462	77	60.8	0.3369	0.4644	0.0609	0.740	0.728	0.769	0.832	1.109	1.109
138	276	183	636	1.462	66	51.7	0.4513	0.7214	0.0625	0.715	0.703	0.743	0.825	1.109	1.109
139	278	183	636	1.462	55	43.5	0.5910		0.0650	0.699	0.680	0.725	0.825	1.112	1.112
140	280	183	636	1.462	48	37.6			0.0680	0.677	0.652	0.703	0.822	1.109	1.109
141	282	183	636	1.462	40	31.5			0.0723	0.658	0.630	0.680	0.822	1.112	1.112
142	284	183	636	1.462	33	26.1			0.0780	0.643	0.614	0.665	0.825	1.109	1.109
143	286	183	636	1.462	28	22.2			0.0834	0.618	0.589	0.645	0.819	1.112	1.112
144	288	183	636	1.462	22	17.5			0.0909	0.605	0.583	0.630	0.822	1.109	1.109
145	290	183	636	1.462	19	14.7			0.1020	0.589	0.573	0.618	0.825	1.112	1.112
146	292	183	636	1.462	15	12.0			0.1154	0.577	0.564	0.608	0.822	1.109	1.109
147	294	183	636	1.462	12	9.2			0.1324	0.583	0.567	0.614	0.828	1.115	1.115
148	296	183	636	1.462	10	8.0			0.1717	0.583	0.564	0.614	0.825	1.112	1.112
149	298	183	636	1.462	7	5.3			0.2116	0.595	0.567	0.624	0.828	1.112	1.112
150	300	183	636	1.462	5	4.1									

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 INTSTP CONF PROPellant SAMP. RATE
 423 1 66/033/1 38 2.44 500

PRNG TIME	Pn	P2n	MACHn	PTCn	(PTC/P)n	NOZZLE PRESS.		BASE PRESS.		BODY PRESS.	
						(P2/PTC)n	(P5/PTC)n	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n
1	260	640	1.210	1153	637.9	0.0340	0.0136	0.952	1.189	1.118	1.052
2	260	640	1.210	1266	700.4	0.0349	0.0141	0.970	1.222	1.209	1.054
3	260	640	1.210	1368	756.6	0.0357	0.0143	0.981	1.242	1.242	1.054
4	260	640	1.210	1461	808.3	0.0364	0.0146	0.996	1.264	1.266	1.054
5	260	640	1.210	1546	855.3	0.0371	0.0148	1.012	1.286	1.308	1.056
6	260	640	1.210	1622	897.4	0.0376	0.0150	1.023	1.297	1.319	1.052
7	260	640	1.210	1692	936.1	0.0382	0.0152	1.038	1.317	1.335	1.052
8	260	640	1.210	1755	970.9	0.0388	0.0153	1.052	1.331	1.351	1.052
9	260	640	1.210	1812	1002.5	0.0392	0.0154	1.065	1.342	1.355	1.052
10	260	640	1.210	1862	1029.8	0.0397	0.0155	1.081	1.342	1.366	1.054
11	22	260	640	1.210	1904	1053.1	0.0402	1.094	1.350	1.370	1.052
12	24	260	640	1.210	1937	1071.6	0.0408	1.107	1.355	1.370	1.052
13	26	260	640	1.210	1965	1087.1	0.0413	1.123	1.357	1.377	1.054
14	28	260	640	1.210	1990	1100.6	0.0419	1.136	1.359	1.377	1.054
15	30	260	640	1.210	2009	1111.2	0.0424	1.147	1.362	1.379	1.054
16	32	260	640	1.210	2014	1114.2	0.0431	1.160	1.365	1.381	1.054
17	34	260	640	1.210	2014	1114.2	0.0438	1.169	1.366	1.381	1.054
18	36	260	640	1.210	2014	1114.2	0.0445	1.178	1.364	1.381	1.054
19	38	260	640	1.210	2014	1114.2	0.0451	1.193	1.364	1.381	1.054
20	40	260	640	1.210	2014	1114.2	0.0456	1.202	1.364	1.379	1.054
21	42	260	640	1.210	2014	1114.2	0.0462	1.213	1.353	1.379	1.054
22	44	260	640	1.210	2014	1114.2	0.0467	1.227	1.355	1.381	1.056
23	46	260	640	1.210	2014	1114.2	0.0474	1.240	1.355	1.377	1.052
24	48	260	640	1.210	2014	1114.2	0.0477	1.251	1.350	1.377	1.052
25	50	260	640	1.210	2014	1114.2	0.0479	1.249	1.355	1.379	1.052
26	52	260	640	1.210	2014	1114.2	0.0484	1.249	1.357	1.379	1.052
27	54	260	640	1.210	2014	1114.2	0.0485	1.266	1.357	1.377	1.054
28	56	260	640	1.210	2014	1114.2	0.0484	1.271	1.357	1.377	1.054
29	58	260	640	1.210	2014	1114.2	0.0486	1.280	1.355	1.377	1.054
30	60	260	640	1.210	2014	1114.2	0.0488	1.289	1.355	1.379	1.058
31	62	260	640	1.210	2014	1114.2	0.0488	1.291	1.350	1.375	1.054
32	64	260	640	1.210	2014	1114.2	0.0490	1.300	1.355	1.377	1.056

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

PRELIMINARY DATA

RUN LIST TWSTP CONF PROPELLANT SALES RATE
 423 1 66/033/1 38 2:41 500

FRAME	TIME	Pa	Ptn	FACEIN	PTCN	(P/C/P)n	NOZZLE PRESS.	(P4/PTC)n	BASS PRESS.	(P6/P)n	(P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS.	(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	0.0497	0.0174	1.313	1.362	1.379	1.297	1.058			
36	72	260	640	1.210	2014	1114.2	0.0499	0.0175	1.317	1.359	1.377	1.295	1.056			
37	74	260	640	1.210	2014	1114.2	0.0502	0.0176	1.322	1.359	1.379	1.297	1.056			
38	76	260	640	1.210	2014	1114.2	0.0505	0.0176	1.328	1.359	1.381	1.300	1.058			
39	78	260	640	1.210	2014	1114.2	0.0507	0.0177	1.333	1.362	1.381	1.300	1.058			
40	80	260	640	1.210	2014	1114.2	0.0510	0.0177	1.337	1.364	1.381	1.302	1.058			
41	82	260	640	1.210	2014	1114.2	0.0513	0.0178	1.339	1.368	1.384	1.304	1.061			
42	84	260	640	1.210	2014	1114.2	0.0515	0.0178	1.342	1.373	1.384	1.304	1.061			
43	86	260	640	1.210	2014	1114.2	0.0519	0.0178	1.348	1.373	1.384	1.304	1.061			
44	88	260	640	1.210	2014	1114.2	0.0521	0.0178	1.350	1.368	1.385	1.304	1.061			
45	90	260	640	1.210	2014	1114.2	0.0524	0.0178	1.353	1.366	1.384	1.304	1.058			
46	92	260	640	1.210	2014	1114.2	0.0527	0.0179	1.357	1.368	1.386	1.306	1.061			
47	94	260	640	1.210	2014	1114.2	0.0529	0.0178	1.357	1.368	1.386	1.302	1.058			
48	96	260	640	1.210	2014	1114.2	0.0532	0.0178	1.357	1.368	1.385	1.302	1.058			
49	98	260	640	1.210	2014	1114.2	0.0534	0.0178	1.357	1.370	1.384	1.302	1.056			
50	100	260	640	1.210	2014	1114.2	0.0537	0.0177	1.357	1.368	1.381	1.297	1.054			
51	102	260	640	1.210	2014	1114.2	0.0540	0.0177	1.357	1.368	1.381	1.297	1.054			
52	104	260	640	1.210	2014	1114.2	0.0543	0.0177	1.364	1.373	1.386	1.302	1.056			
53	106	260	640	1.210	2014	1114.2	0.0545	0.0176	1.362	1.366	1.379	1.297	1.054			
54	108	260	640	1.210	2014	1114.2	0.0545	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	0.0547	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	0.0546	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	1.355	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	0.0543	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			

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PRELIMINARY DATA

RUE LIST THUSSEP COMP PROPELLANT SAMPLING
 423 1 66/033/1 38 2341 500

FRAME	TIME	Pn	Ptn	MACHn	FTCN	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS. (E3/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	0.0162	0.0540	0.0162	1.353	1.328	1.346	1.262	1.231	1.052
66	132	260	640	1.210	1969	1089.3	0.0162	0.0546	0.0162	1.350	1.328	1.344	1.255	1.231	1.050
67	134	260	640	1.210	1937	1071.6	0.0163	0.0553	0.0163	1.348	1.326	1.337	1.251	1.231	1.050
68	136	260	640	1.210	1906	1054.2	0.0163	0.0559	0.0163	1.342	1.322	1.333	1.246	1.231	1.050
69	138	260	640	1.210	1877	1038.1	0.0163	0.0566	0.0163	1.344	1.317	1.331	1.242	1.231	1.052
70	140	260	640	1.210	1846	1021.0	0.0163	0.0573	0.0163	1.339	1.308	1.326	1.238	1.231	1.050
71	142	260	640	1.210	1816	1004.4	0.0164	0.0581	0.0164	1.337	1.304	1.322	1.233	1.231	1.052
72	144	260	640	1.210	1787	988.6	0.0164	0.0589	0.0164	1.337	1.302	1.322	1.229	1.231	1.054
73	146	260	640	1.210	1758	972.3	0.0164	0.0597	0.0164	1.331	1.295	1.315	1.224	1.231	1.052
74	148	260	640	1.210	1733	958.5	0.0165	0.0607	0.0165	1.328	1.295	1.311	1.222	1.231	1.054
75	150	260	640	1.210	1708	944.9	0.0165	0.0615	0.0165	1.324	1.293	1.311	1.220	1.231	1.052
76	152	260	640	1.210	1684	931.6	0.0165	0.0622	0.0165	1.317	1.289	1.304	1.215	1.231	1.052
77	154	260	640	1.210	1663	919.8	0.0166	0.0623	0.0166	1.319	1.291	1.306	1.215	1.231	1.054
78	156	260	640	1.210	1640	907.0	0.0166	0.0617	0.0166	1.315	1.280	1.300	1.209	1.231	1.052
79	158	260	640	1.210	1618	895.1	0.0166	0.0608	0.0166	1.313	1.275	1.295	1.207	1.231	1.052
80	160	260	640	1.210	1597	883.5	0.0167	0.0595	0.0167	1.313	1.273	1.293	1.204	1.231	1.056
81	162	260	640	1.210	1574	870.5	0.0167	0.0579	0.0167	1.306	1.264	1.284	1.204	1.231	1.052
82	164	260	640	1.210	1548	856.4	0.0167	0.0564	0.0167	1.304	1.264	1.280	1.193	1.231	1.052
83	166	260	640	1.210	1519	840.1	0.0168	0.0549	0.0168	1.300	1.258	1.271	1.185	1.231	1.052
84	168	260	640	1.210	1485	821.6	0.0168	0.0534	0.0168	1.293	1.251	1.262	1.176	1.231	1.052
85	170	260	640	1.210	1444	798.9	0.0170	0.0521	0.0170	1.291	1.242	1.253	1.167	1.231	1.052
86	172	260	640	1.210	1396	772.1	0.0171	0.0511	0.0171	1.286	1.227	1.235	1.151	1.231	1.052
87	174	260	640	1.210	1339	740.8	0.0173	0.0504	0.0173	1.282	1.207	1.220	1.138	1.231	1.050
88	176	260	640	1.210	1277	705.5	0.0175	0.0499	0.0175	1.275	1.189	1.200	1.123	1.231	1.052
89	178	260	640	1.210	1207	667.8	0.0178	0.0497	0.0178	1.269	1.167	1.178	1.100	1.231	1.050
90	180	260	640	1.210	1130	624.9	0.0181	0.0497	0.0181	1.260	1.145	1.151	1.081	1.231	1.050
91	182	260	640	1.210	1049	580.1	0.0184	0.0500	0.0184	1.249	1.123	1.125	1.061	1.231	1.050
92	184	260	640	1.210	965	533.6	0.0187	0.0504	0.0187	1.240	1.096	1.096	1.038	1.231	1.050
93	186	260	640	1.210	879	486.1	0.0191	0.0510	0.0191	1.227	1.067	1.065	1.019	1.231	1.050
94	188	260	640	1.210	795	439.9	0.0196	0.0520	0.0196	1.220	1.038	1.036	0.999	1.231	1.050
95	190	260	640	1.210	712	394.0	0.0199	0.0530	0.0199	1.209	1.003	1.005	0.979	1.231	1.050
96	192	260	640	1.210	634	350.5	0.0204	0.0543	0.0204	1.196	0.970	0.977	0.963	1.231	1.050

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PRELIMINARY DATA

RUN LIST CWSTP CONF PROPELLANT SAMP. RATE
 423 1 66/033/1 38 2.4AL 500

FRAG	TIME	Pn	PTn	KACHd	PTCh	(PTC/P)n	(P2/PTC)n	NOZLE 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
97	194	260	640	1.210	560	309.9	0.0560	0.0211	0.0211	1.187	0.943	0.952	0.952	0.952	1.052
98	196	260	640	1.210	490	271.2	0.0575	0.0214	0.0214	1.169	0.908	0.923	0.937	0.928	1.050
99	198	260	640	1.210	429	237.1	0.0595	0.0222	0.0222	1.158	0.886	0.899	0.919	0.875	1.050
100	200	260	640	1.210	373	206.2	0.0615	0.0228	0.0228	1.145	0.859	0.850	0.910	0.850	1.047
101	202	260	640	1.210	322	178.0	0.0637	0.0233	0.0233	1.129	0.833	0.833	0.910	0.811	1.052
102	204	260	640	1.210	278	153.6	0.0666	0.0245	0.0245	1.120	0.811	0.811	0.901	0.791	1.050
103	206	260	640	1.210	237	130.9	0.0697	0.0252	0.0252	1.105	0.782	0.811	0.899	0.791	1.050
104	208	260	640	1.210	201	111.3	0.0734	0.0264	0.0264	1.092	0.757	0.791	0.899	0.777	1.052
105	210	260	640	1.210	170	94.2	0.0786	0.0279	0.0279	1.081	0.738	0.777	0.899	0.755	1.050
106	212	260	640	1.210	142	78.7	0.0837	0.0289	0.0289	1.063	0.715	0.755	0.892	0.742	1.050
107	214	260	640	1.210	119	65.7	0.0913	0.0316	0.0316	1.052	0.700	0.742	0.895	0.726	1.050
108	216	260	640	1.210	99	54.6	0.0990	0.0340	0.0340	1.038	0.684	0.726	0.895	0.713	1.050
109	218	260	640	1.210	81	44.9	0.1088	0.0364	0.0364	1.025	0.668	0.713	0.895	0.704	1.047
110	220	260	640	1.210	66	36.3	0.1234	0.0412	0.0412	1.012	0.658	0.704	0.897	0.698	1.050
111	222	260	640	1.210	52	28.9	0.1425	0.0461	0.0461	1.001	0.647	0.698	0.895	0.698	1.047
112	224	260	640	1.210	40	22.0	0.1722	0.0555	0.0555	0.990	0.640	0.698	0.895	0.698	1.047
113	226	260	640	1.210	29	16.2	0.2182	0.0687	0.0687	0.979	0.642	0.700	0.897	0.700	1.047
114	228	260	640	1.210	20	11.2	0.2956	0.0943	0.0943	0.970	0.647	0.707	0.897	0.707	1.047
115	230	260	640	1.210	11	6.2	0.4913	0.1567	0.1567	0.959	0.658	0.715	0.899	0.715	1.047
116	232	260	640	1.210	5	2.9	1.0064	0.3180	0.3180	0.948	0.671	0.726	0.899	0.726	1.047
117	234	260	640	1.210	-1	-0.4	-6.2566	-1.9572	-1.9572	0.939	0.684	0.738	0.901	0.738	1.045
118	236	260	640	1.210	-6	-3.5	-0.7369	-0.2312	-0.2312	0.930	0.698	0.746	0.901	0.746	1.045

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PRELIMINARY DATA

NUM LISE INSESE CONE PROPELLANT SAMP. RATE
 424 1 65/055/1 38 15%AL 500

FRAGE TIME	Pn	Ptn	ALCHN	PTCn	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS.	(P3/PTC)n	(P4/PTC)n	(P6/P)n	BASE PRESS.	(P7/P)n	(P8/E)n	(P9/P)n	BODY PRESS.	(P10/E)n	(P11/P)n
1	185	637	1.456	806	627.1	0.0370	0.0147	0.848	1.128	1.091	1.128	1.091	0.966	1.119	1.122	1.119	
2	185	637	1.456	901	701.4	0.0385	0.0154	0.860	1.168	1.134	1.168	1.134	0.997	1.122	1.122	1.122	
3	185	637	1.456	996	774.9	0.0397	0.0160	0.866	1.200	1.175	1.200	1.175	1.025	1.122	1.122	1.122	
4	185	637	1.456	1038	846.5	0.0408	0.0164	0.876	1.228	1.212	1.228	1.212	1.055	1.122	1.122	1.122	
5	185	637	1.456	1175	914.6	0.0418	0.0168	0.891	1.249	1.246	1.249	1.246	1.084	1.122	1.122	1.122	
6	185	637	1.456	1259	979.6	0.0427	0.0171	0.904	1.265	1.271	1.265	1.271	1.106	1.122	1.122	1.122	
7	185	637	1.456	1335	1039.1	0.0436	0.0173	0.919	1.277	1.296	1.277	1.296	1.131	1.122	1.122	1.122	
8	185	637	1.456	1405	1093.2	0.0445	0.0176	0.932	1.290	1.321	1.290	1.321	1.156	1.122	1.122	1.122	
9	185	637	1.456	1468	1142.7	0.0454	0.0178	0.947	1.305	1.340	1.305	1.340	1.178	1.122	1.122	1.122	
10	185	637	1.456	1523	1185.5	0.0463	0.0180	0.957	1.315	1.352	1.315	1.352	1.195	1.122	1.122	1.122	
11	185	637	1.456	1573	1224.4	0.0469	0.0182	0.969	1.327	1.365	1.327	1.365	1.209	1.122	1.122	1.122	
12	185	637	1.456	1616	1257.5	0.0475	0.0184	0.979	1.337	1.374	1.337	1.374	1.218	1.119	1.119	1.119	
13	185	637	1.456	1651	1285.1	0.0479	0.0185	0.988	1.340	1.377	1.340	1.377	1.228	1.119	1.119	1.119	
14	185	637	1.456	1683	1310.0	0.0483	0.0187	1.007	1.349	1.386	1.349	1.386	1.237	1.122	1.122	1.122	
15	185	637	1.456	1706	1327.5	0.0486	0.0188	1.016	1.343	1.386	1.343	1.386	1.243	1.119	1.119	1.119	
16	185	637	1.456	1725	1342.3	0.0488	0.0190	1.031	1.346	1.389	1.346	1.389	1.246	1.119	1.119	1.119	
17	185	637	1.456	1740	1354.3	0.0491	0.0191	1.047	1.349	1.396	1.349	1.396	1.249	1.119	1.119	1.119	
18	185	637	1.456	1750	1361.1	0.0492	0.0192	1.050	1.346	1.389	1.346	1.389	1.249	1.119	1.119	1.119	
19	185	637	1.456	1761	1370.3	0.0494	0.0193	1.063	1.355	1.393	1.355	1.393	1.256	1.119	1.119	1.119	
20	185	637	1.456	1768	1375.7	0.0493	0.0194	1.072	1.358	1.396	1.358	1.396	1.256	1.119	1.119	1.119	
21	185	637	1.456	1774	1380.8	0.0491	0.0194	1.078	1.355	1.393	1.355	1.393	1.252	1.116	1.116	1.116	
22	185	637	1.456	1781	1385.9	0.0489	0.0195	1.097	1.361	1.399	1.361	1.399	1.262	1.116	1.116	1.116	
23	185	637	1.456	1784	1388.6	0.0487	0.0195	1.100	1.355	1.396	1.355	1.396	1.256	1.116	1.116	1.116	
24	185	637	1.456	1789	1392.5	0.0485	0.0196	1.112	1.355	1.399	1.355	1.399	1.259	1.116	1.116	1.116	
25	185	637	1.456	1795	1396.8	0.0483	0.0196	1.125	1.358	1.402	1.358	1.402	1.262	1.116	1.116	1.116	
26	185	637	1.456	1802	1402.2	0.0481	0.0197	1.131	1.358	1.399	1.358	1.399	1.259	1.109	1.109	1.109	
27	185	637	1.456	1811	1409.2	0.0479	0.0198	1.140	1.368	1.405	1.368	1.405	1.265	1.112	1.112	1.112	
28	185	637	1.456	1822	1418.2	0.0477	0.0198	1.150	1.374	1.408	1.374	1.408	1.268	1.112	1.112	1.112	
29	185	637	1.456	1835	1427.9	0.0476	0.0199	1.156	1.377	1.408	1.377	1.408	1.271	1.112	1.112	1.112	
30	185	637	1.456	1848	1438.0	0.0475	0.0199	1.165	1.380	1.411	1.380	1.411	1.274	1.116	1.116	1.116	
31	185	637	1.456	1863	1449.7	0.0473	0.0200	1.175	1.380	1.411	1.380	1.411	1.274	1.116	1.116	1.116	
32	185	637	1.456	1877	1461.0	0.0473	0.0200	1.184	1.380	1.414	1.380	1.414	1.281	1.116	1.116	1.116	

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PRELIMINARY DATA

424 RUN LIST TWISTP COMP PROPELLANT SAMP RATE
1 66/033/1 38 15%AL 500

FRAME	TIME	Pn	Pth	HACHM	PTCN	(PTC/P)n	(P2/PTC)n	NOZZLE PRESS.	(P4/PTC)n	(P5/P)n	BASE PRESS.	(P7/P)n	(P8/P)n	(P9/P)n	BODY PRESS.	(P10/P)n	(P11/P)n
33	66	185	637	1.456	1893	1473.0	0.0472	0.0472	0.0200	1.196	1.380	1.421	1.284	1.284	1.119	1.119	
34	68	185	637	1.456	1909	1485.5	0.0472	0.0472	0.0200	1.206	1.386	1.427	1.287	1.287	1.119	1.119	
35	70	185	637	1.456	1923	1496.4	0.0471	0.0471	0.0199	1.209	1.389	1.427	1.293	1.293	1.119	1.119	
36	72	185	637	1.456	1938	1508.1	0.0471	0.0471	0.0198	1.215	1.399	1.433	1.296	1.296	1.119	1.119	
37	74	185	637	1.456	1950	1517.8	0.0471	0.0471	0.0198	1.221	1.405	1.433	1.299	1.299	1.119	1.119	
38	76	185	637	1.456	1960	1525.6	0.0471	0.0471	0.0197	1.228	1.405	1.433	1.302	1.302	1.119	1.119	
39	78	185	637	1.456	1970	1533.3	0.0477	0.0477	0.0198	1.240	1.414	1.442	1.309	1.309	1.122	1.122	
40	80	185	637	1.456	1977	1538.6	0.0477	0.0477	0.0198	1.246	1.417	1.449	1.318	1.318	1.122	1.122	
41	82	185	637	1.456	1985	1545.0	0.0481	0.0481	0.0199	1.256	1.421	1.453	1.327	1.327	1.125	1.125	
42	84	185	637	1.456	1991	1549.7	0.0486	0.0486	0.0200	1.268	1.430	1.464	1.337	1.337	1.125	1.125	
43	86	185	637	1.456	1990	1548.9	0.0491	0.0491	0.0201	1.265	1.430	1.464	1.337	1.337	1.119	1.119	
44	88	185	637	1.456	1986	1545.4	0.0497	0.0497	0.0201	1.277	1.442	1.470	1.346	1.346	1.119	1.119	
45	90	185	637	1.456	1972	1534.9	0.0505	0.0505	0.0203	1.281	1.445	1.470	1.349	1.349	1.119	1.119	
46	92	185	637	1.456	1952	1519.0	0.0513	0.0513	0.0205	1.287	1.442	1.467	1.349	1.349	1.116	1.116	
47	94	185	637	1.456	1925	1498.3	0.0532	0.0532	0.0207	1.299	1.445	1.474	1.358	1.358	1.122	1.122	
48	96	185	637	1.456	1891	1471.9	0.0532	0.0532	0.0209	1.302	1.436	1.464	1.349	1.349	1.116	1.116	
49	98	185	637	1.456	1833	1442.3	0.0543	0.0543	0.0211	1.312	1.450	1.464	1.349	1.349	1.119	1.119	
50	100	185	637	1.456	1811	1409.6	0.0555	0.0555	0.0213	1.318	1.421	1.455	1.346	1.346	1.119	1.119	
51	102	185	637	1.456	1765	1373.8	0.0566	0.0566	0.0215	1.321	1.414	1.445	1.333	1.333	1.116	1.116	
52	104	185	637	1.456	1718	1336.8	0.0577	0.0577	0.0218	1.327	1.417	1.442	1.324	1.324	1.119	1.119	
53	106	185	637	1.456	1670	1299.5	0.0589	0.0589	0.0220	1.327	1.417	1.442	1.324	1.324	1.119	1.119	
54	108	185	637	1.456	1622	1262.1	0.0601	0.0601	0.0223	1.330	1.417	1.442	1.324	1.324	1.116	1.116	
55	110	185	637	1.456	1575	1225.5	0.0614	0.0614	0.0225	1.337	1.417	1.436	1.315	1.315	1.116	1.116	
56	112	185	637	1.456	1529	1190.1	0.0626	0.0626	0.0228	1.340	1.414	1.433	1.305	1.305	1.116	1.116	
57	114	185	637	1.456	1484	1155.1	0.0639	0.0639	0.0230	1.343	1.411	1.430	1.302	1.302	1.116	1.116	
58	116	185	637	1.456	1442	1122.0	0.0654	0.0654	0.0233	1.349	1.411	1.430	1.299	1.299	1.119	1.119	
59	118	185	637	1.456	1403	1092.1	0.0670	0.0670	0.0236	1.352	1.411	1.430	1.296	1.296	1.119	1.119	
60	120	185	637	1.456	1365	1062.5	0.0685	0.0685	0.0238	1.352	1.411	1.427	1.293	1.293	1.119	1.119	
61	122	185	637	1.456	1333	1037.2	0.0700	0.0700	0.0240	1.352	1.411	1.424	1.293	1.293	1.119	1.119	
62	124	185	637	1.456	1302	1013.5	0.0713	0.0713	0.0242	1.355	1.408	1.417	1.287	1.287	1.119	1.119	
63	126	185	637	1.456	1274	991.3	0.0726	0.0726	0.0243	1.352	1.402	1.411	1.277	1.277	1.119	1.119	
64	128	185	637	1.456	1250	972.6	0.0738	0.0738	0.0245	1.358	1.402	1.414	1.277	1.277	1.122	1.122	

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PRELIMINARY DATA

RUN LIST TEST#2 CONF PROPELLANT SAHP. RATE
 424 1 66/033/1 38 15%AL 500

FRAME TIME	PH	PH	MACH	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	185	637	1.456	1224	952.8	0.0749	0.0246	1.358	1.396	1.411	1.271	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	1.268	1.122
67	134	185	637	1.456	1178	917.0	0.0771	0.0251	1.368	1.386	1.408	1.268	1.268	1.125
68	136	185	637	1.456	1153	897.5	0.0781	0.0252	1.358	1.374	1.396	1.256	1.256	1.125
69	138	185	637	1.456	1131	880.0	0.0790	0.0255	1.361	1.374	1.393	1.252	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	1.243	1.122
71	142	185	637	1.456	1084	843.4	0.0807	0.0258	1.355	1.358	1.371	1.228	1.228	1.119
72	144	185	637	1.456	1061	825.5	0.0816	0.0261	1.361	1.355	1.371	1.228	1.228	1.125
73	146	185	637	1.456	1036	806.1	0.0825	0.0263	1.358	1.343	1.361	1.215	1.215	1.125
74	148	185	637	1.456	1010	786.2	0.0836	0.0265	1.358	1.333	1.358	1.206	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	1.203	1.125
76	152	185	637	1.456	957	745.0	0.0862	0.0270	1.352	1.321	1.349	1.190	1.190	1.122
77	154	185	637	1.456	930	723.9	0.0878	0.0274	1.352	1.321	1.349	1.190	1.190	1.122
78	156	185	637	1.456	904	703.3	0.0895	0.0276	1.349	1.321	1.346	1.187	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	1.181	1.119
80	160	185	637	1.456	849	660.9	0.0929	0.0281	1.343	1.312	1.337	1.178	1.178	1.119
81	162	185	637	1.456	823	640.3	0.0949	0.0284	1.340	1.299	1.327	1.168	1.168	1.119
82	164	185	637	1.456	795	618.5	0.0971	0.0287	1.340	1.287	1.318	1.159	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	1.153	1.116
84	168	185	637	1.456	738	574.1	0.1024	0.0295	1.337	1.277	1.305	1.144	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	1.134	1.116
86	172	185	637	1.456	670	521.2	0.1095	0.0307	1.324	1.249	1.281	1.125	1.125	1.116
87	174	185	637	1.456	629	489.7	0.1137	0.0316	1.318	1.234	1.262	1.112	1.112	1.116
88	176	185	637	1.456	583	453.5	0.1181	0.0326	1.312	1.212	1.237	1.094	1.094	1.112
89	178	185	637	1.456	532	414.2	0.1228	0.0343	1.302	1.190	1.218	1.081	1.081	1.116
90	180	185	637	1.456	475	369.4	0.1283	0.0362	1.299	1.156	1.187	1.063	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	1.044	1.112
92	184	185	637	1.456	351	273.3	0.1449	0.0426	1.296	1.091	1.122	1.028	1.028	1.116
93	186	185	637	1.456	286	222.4	0.1588	0.0473	1.277	1.047	1.078	1.003	1.003	1.112
94	188	185	637	1.456	224	174.1	0.1799	0.0550	1.271	1.013	1.044	0.991	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	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	0.954	1.112
97	194	185	637	1.456	53	41.0	0.4928	0.1604	1.245	0.898	0.929	0.947	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	0.932	1.112

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

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PRELIMINARY DATA

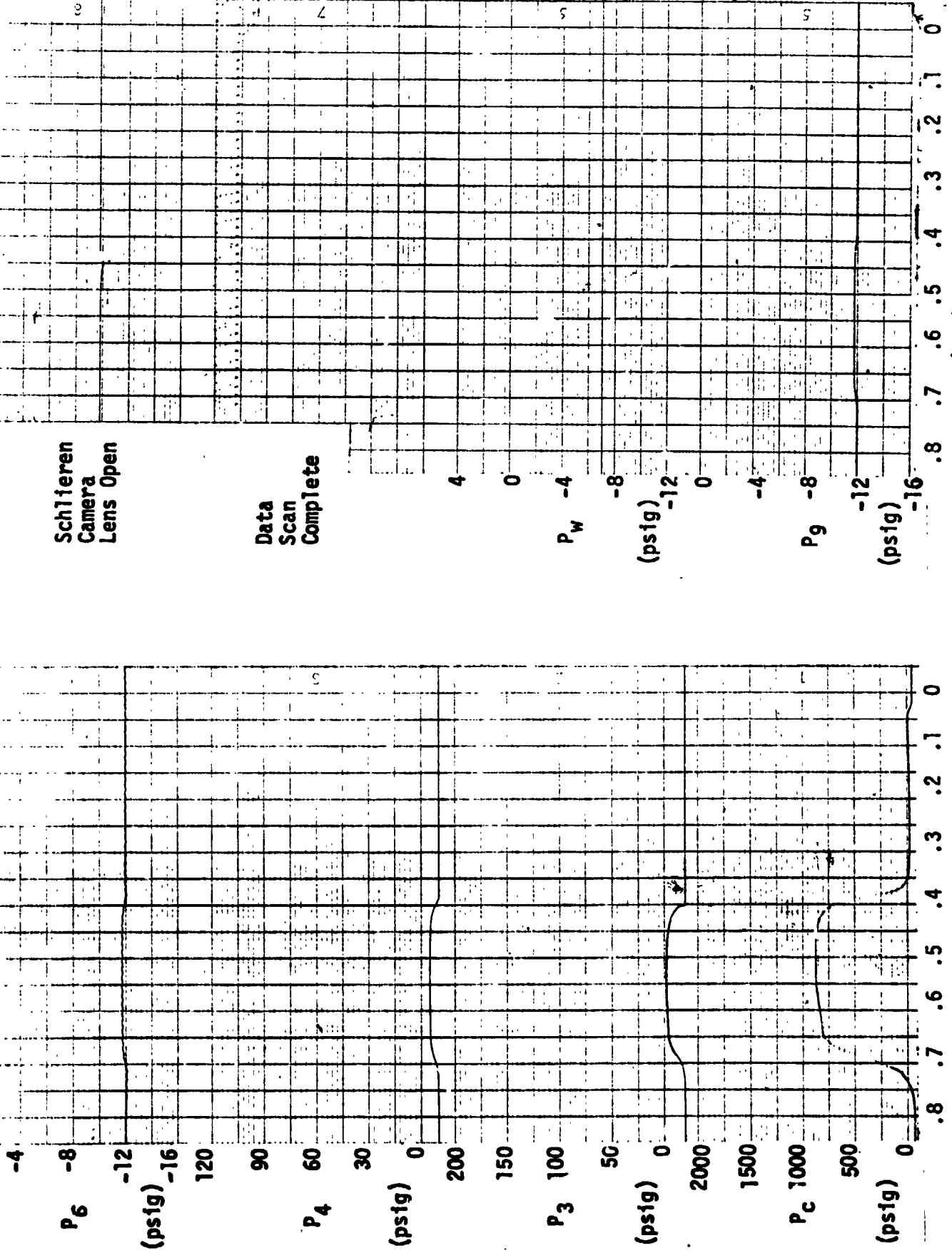
APPENDIX B

OSCILLOGRAPH TIME HISTORIES OF PRESSURES

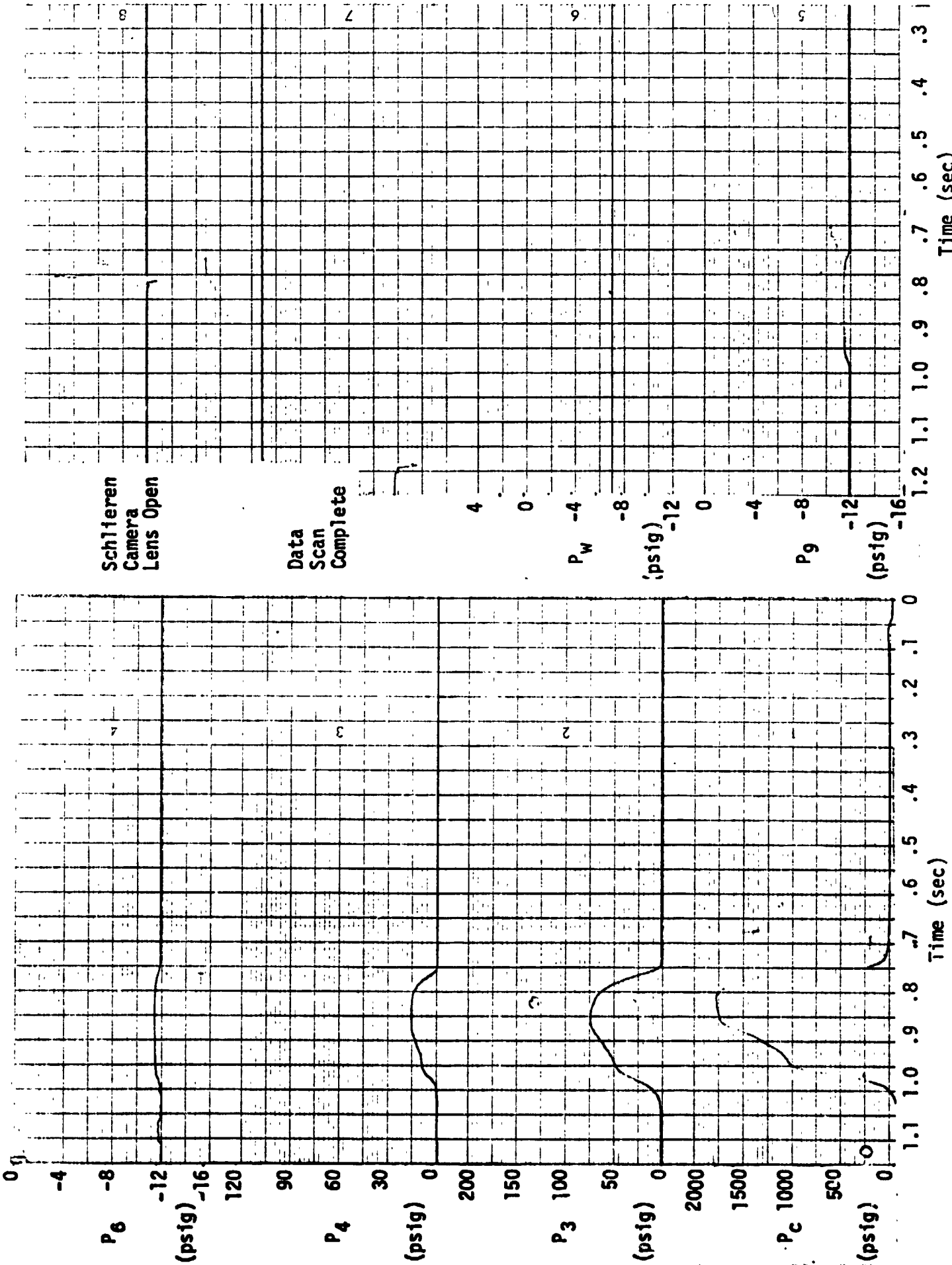
The oscillograph time histories of each hot firing during ARC 033-66 comprises a convenient means to rapidly evaluate several important pressures, provide the only time history of events before initiation of the digital data acquisition systems, and also provide the only record of Schlieren camera initiation. 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:

<u>Run No.</u>	<u>Successful</u>	<u>Misfire</u>
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	

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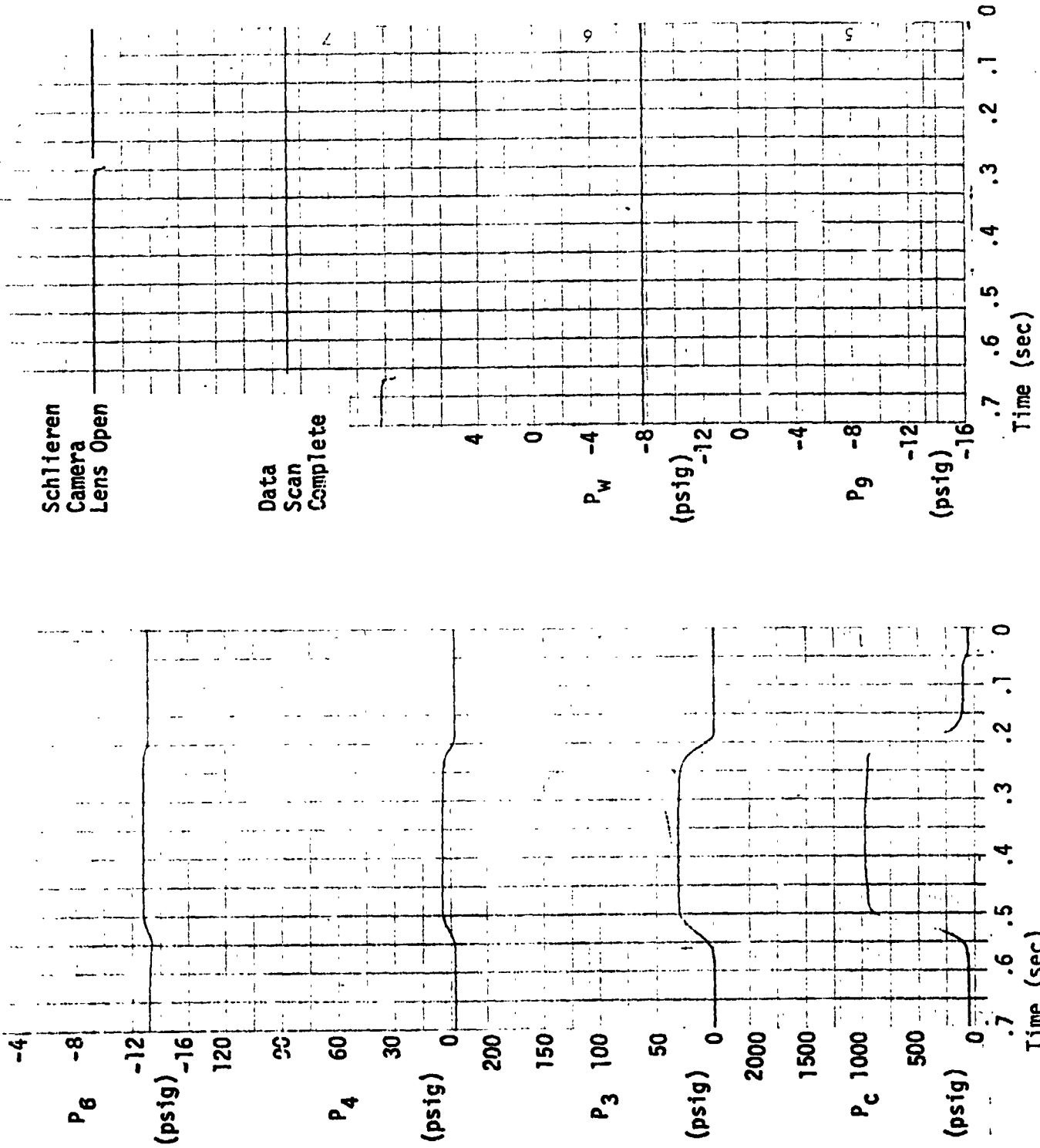


REMTECH INCORPORATED



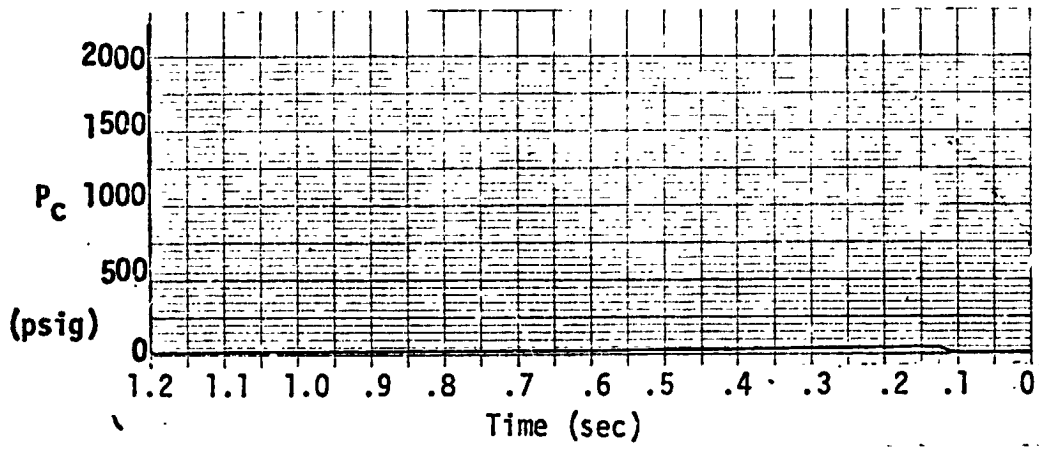
Re: "3" AT 3-3: 100 = 1.9

REMTECH INCORPORATED

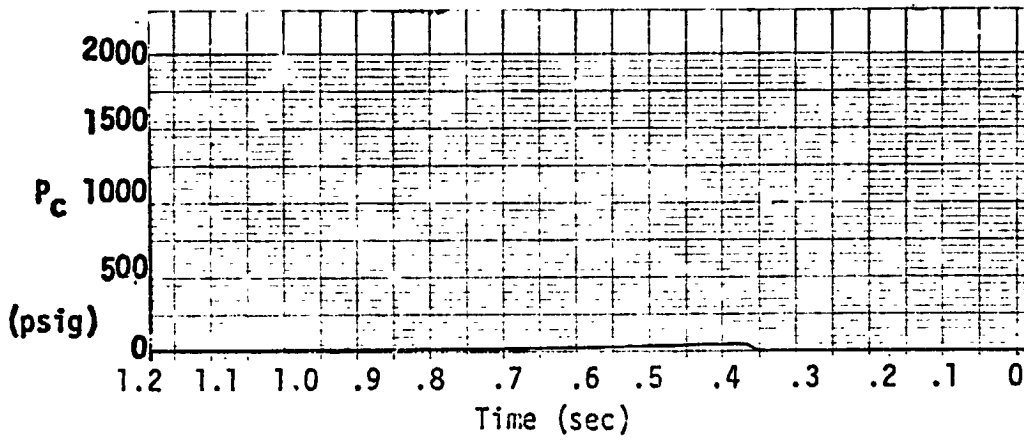


Run No. 400 2% A1 ANB-3335 $\epsilon = 8$ $M_\infty = 1.2$

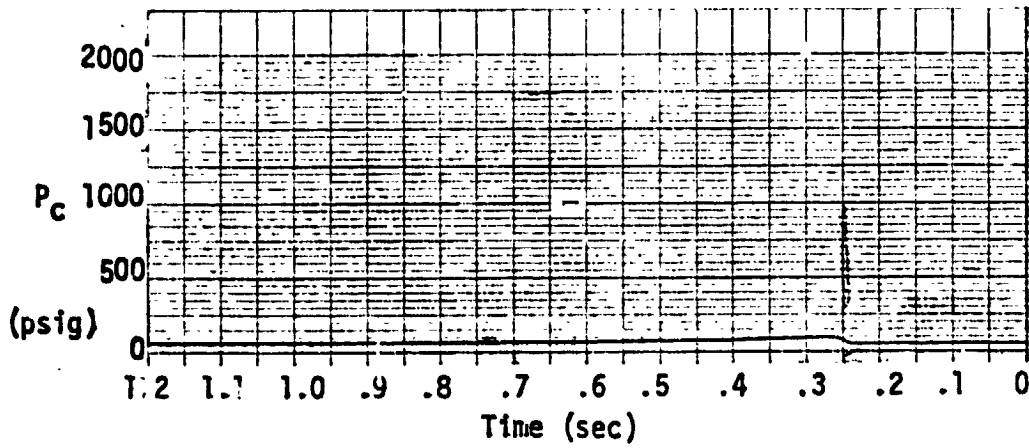
REMTECH INCORPORATED



Run No. 402

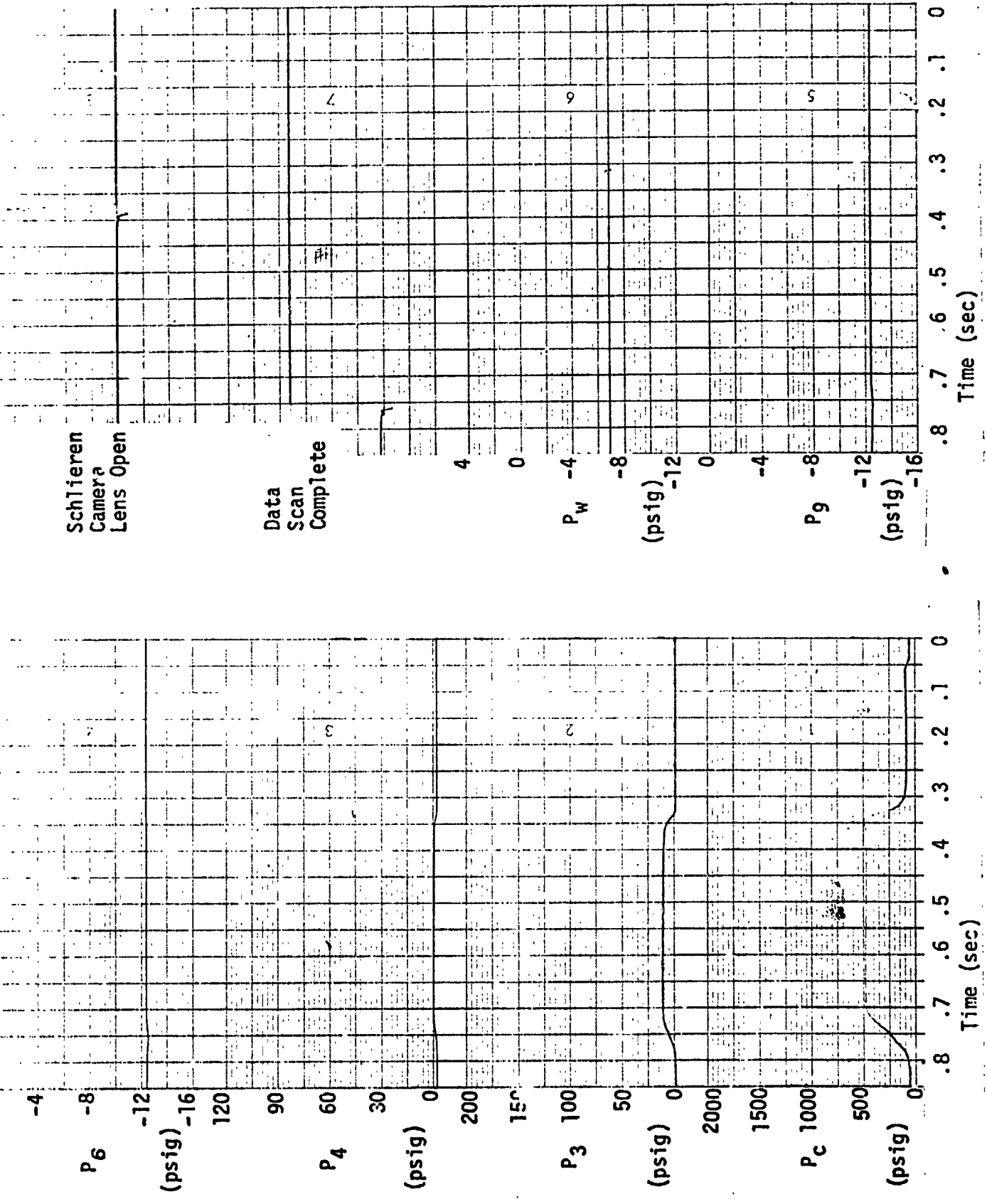


Run No. 403



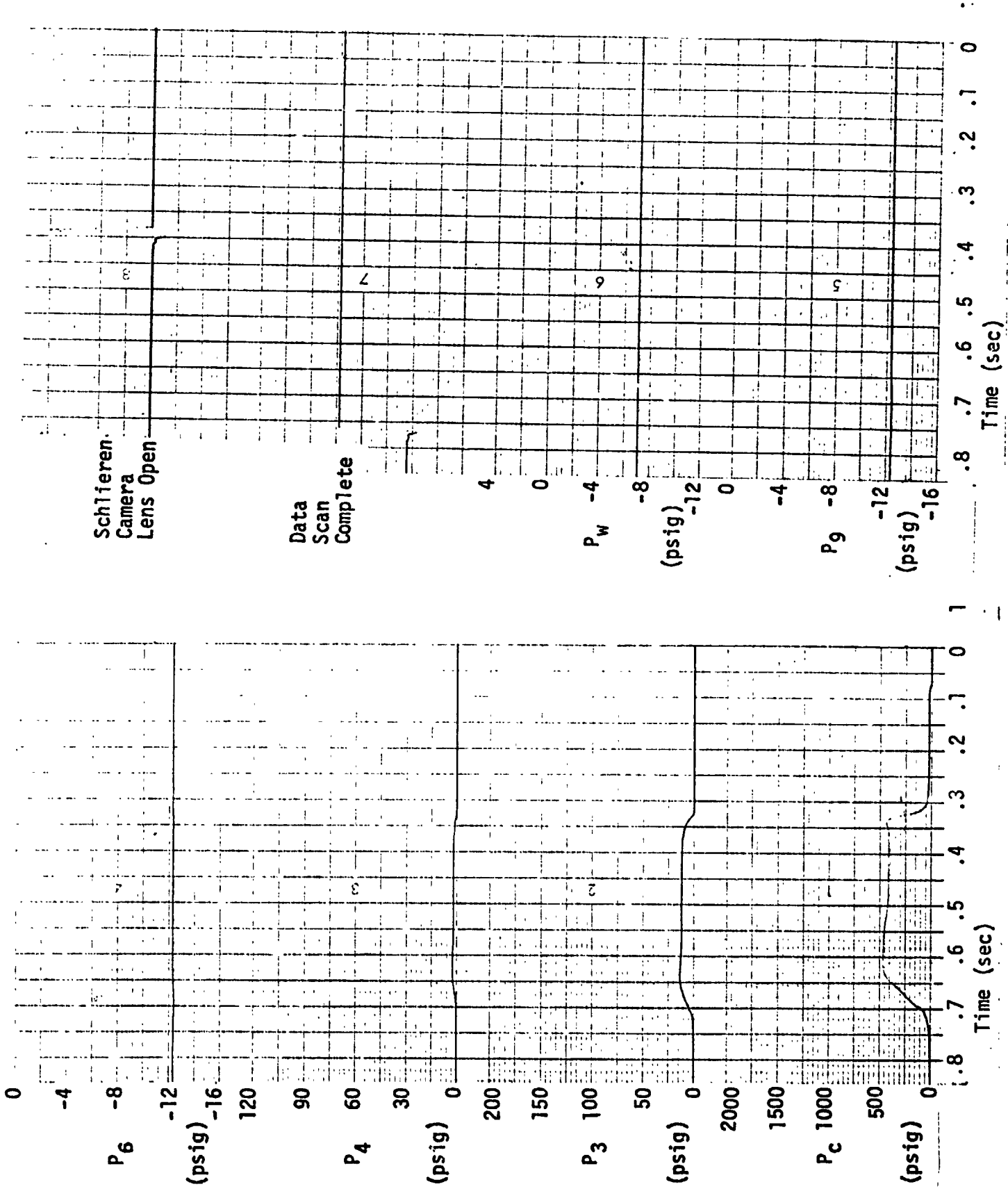
Run No. 404

REMTECH INCORPORATED

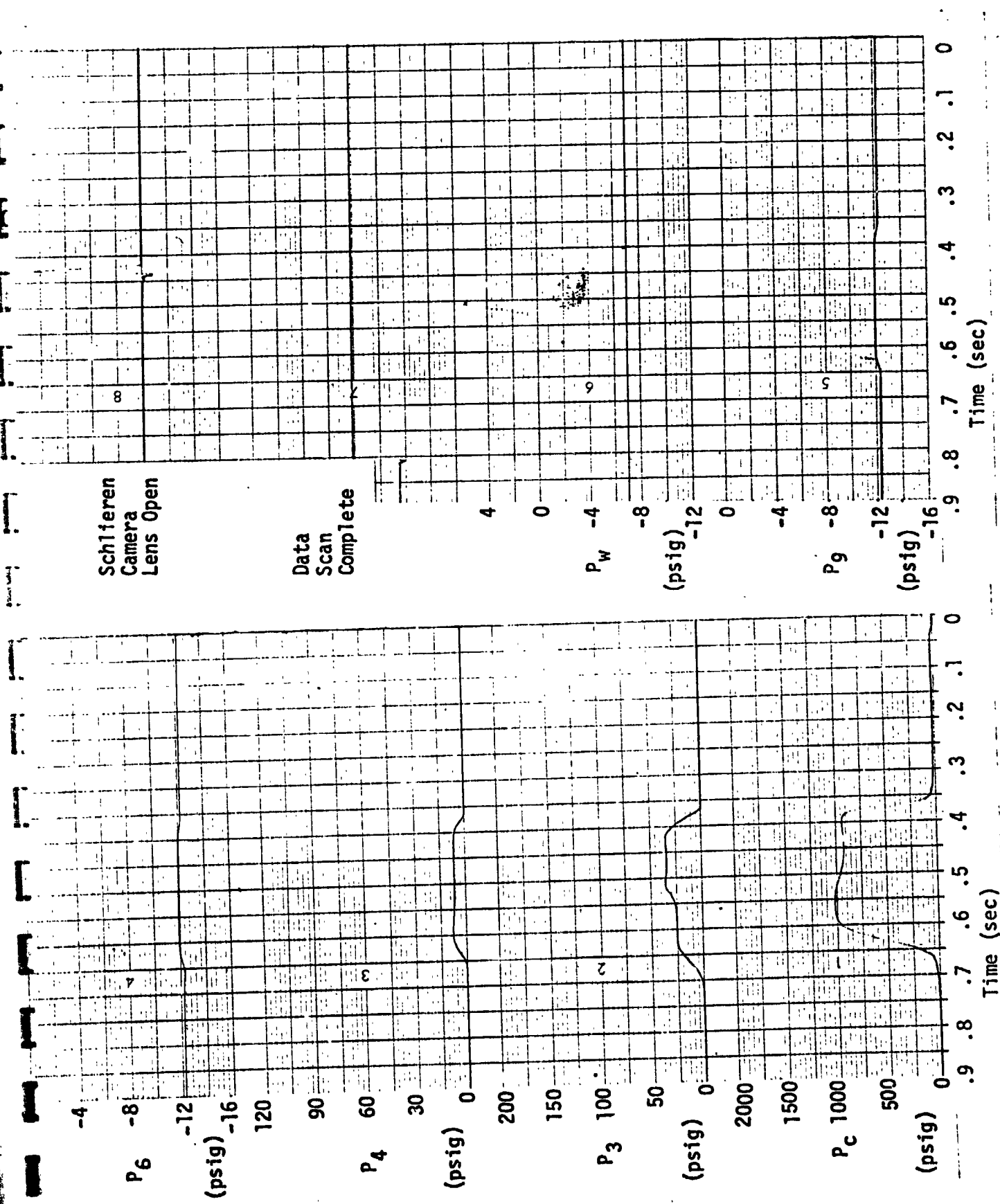


Run No. 401 2% AI ANB-3335 ε = 8 M_∞ = 0.9

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Schliefen
Camera
Lens Open

Data
Scan
Complete

P_w

(psig)

P_g

(psig)

Time (sec)

-4

P₆

(psig)

-8

-12

120

90

P₄

(psig)

60

30

P₃

(psig)

200

150

50

P_c

(psig)

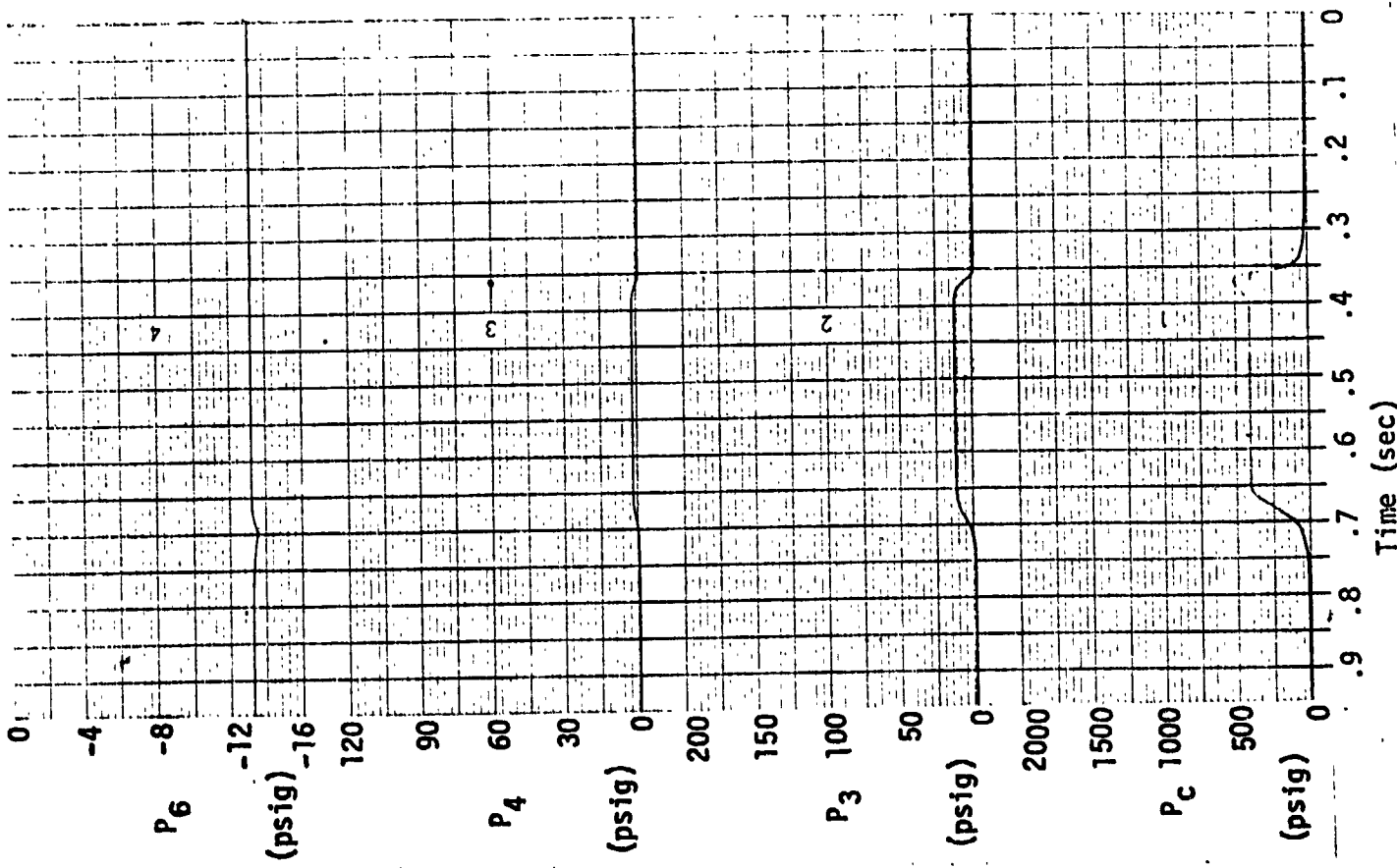
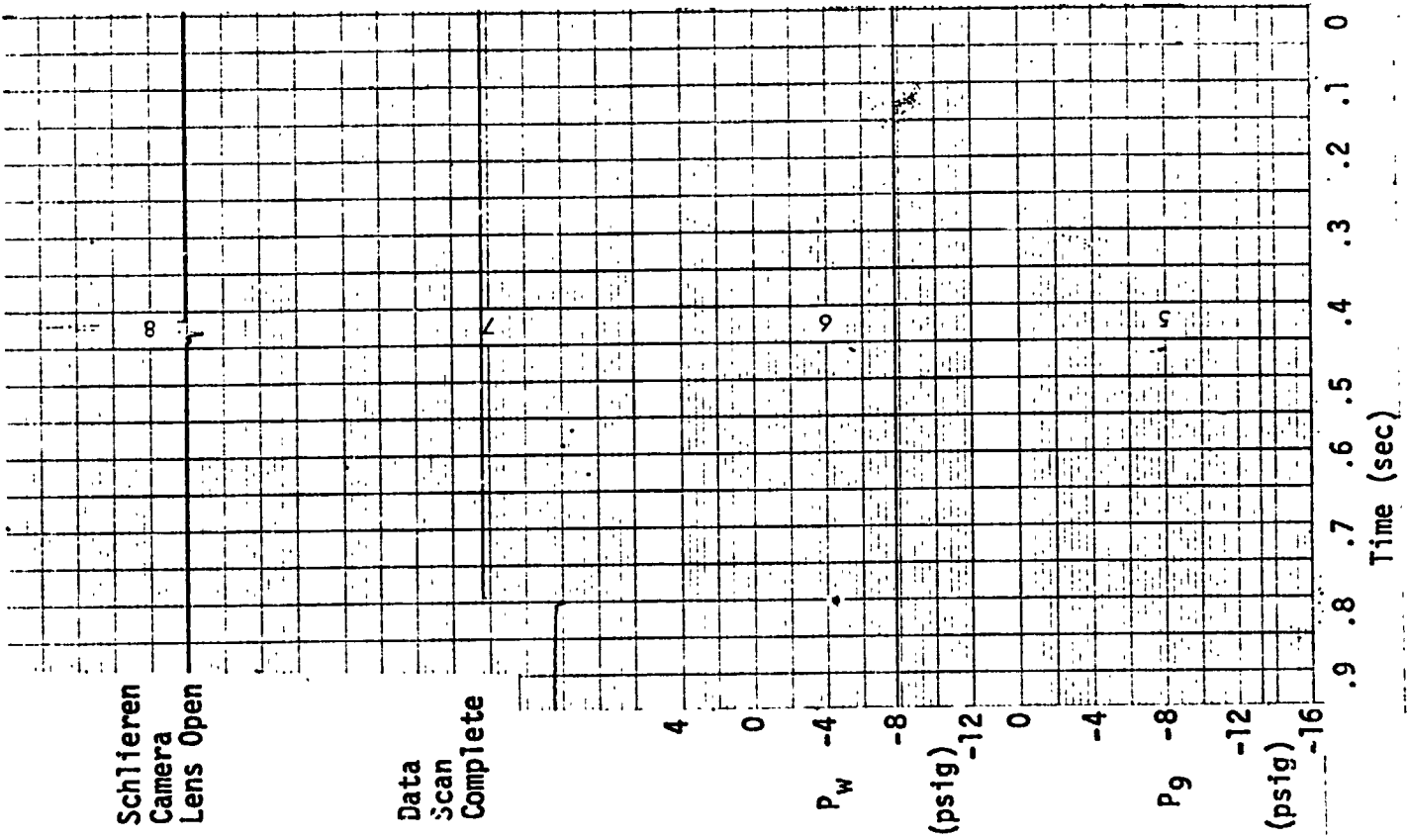
1000

500

Time (sec)

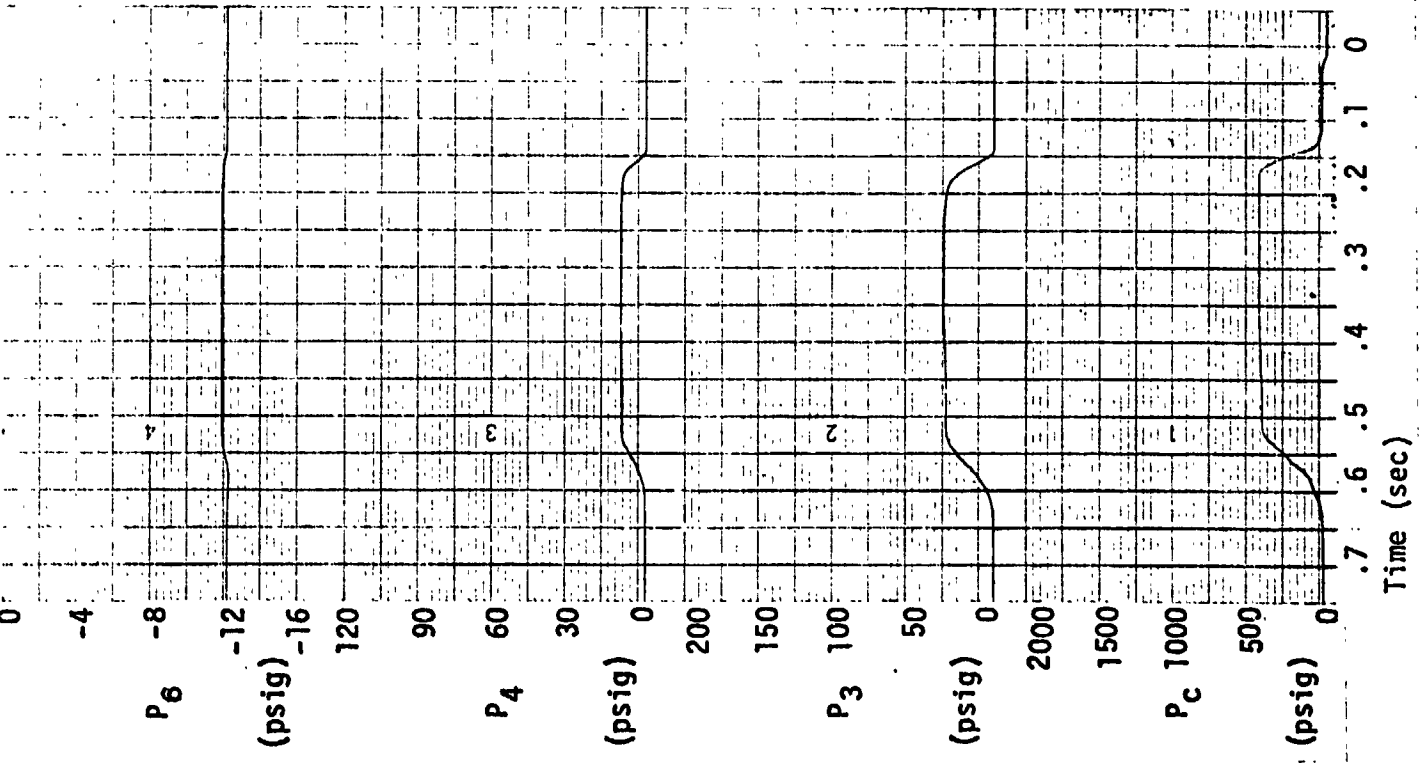
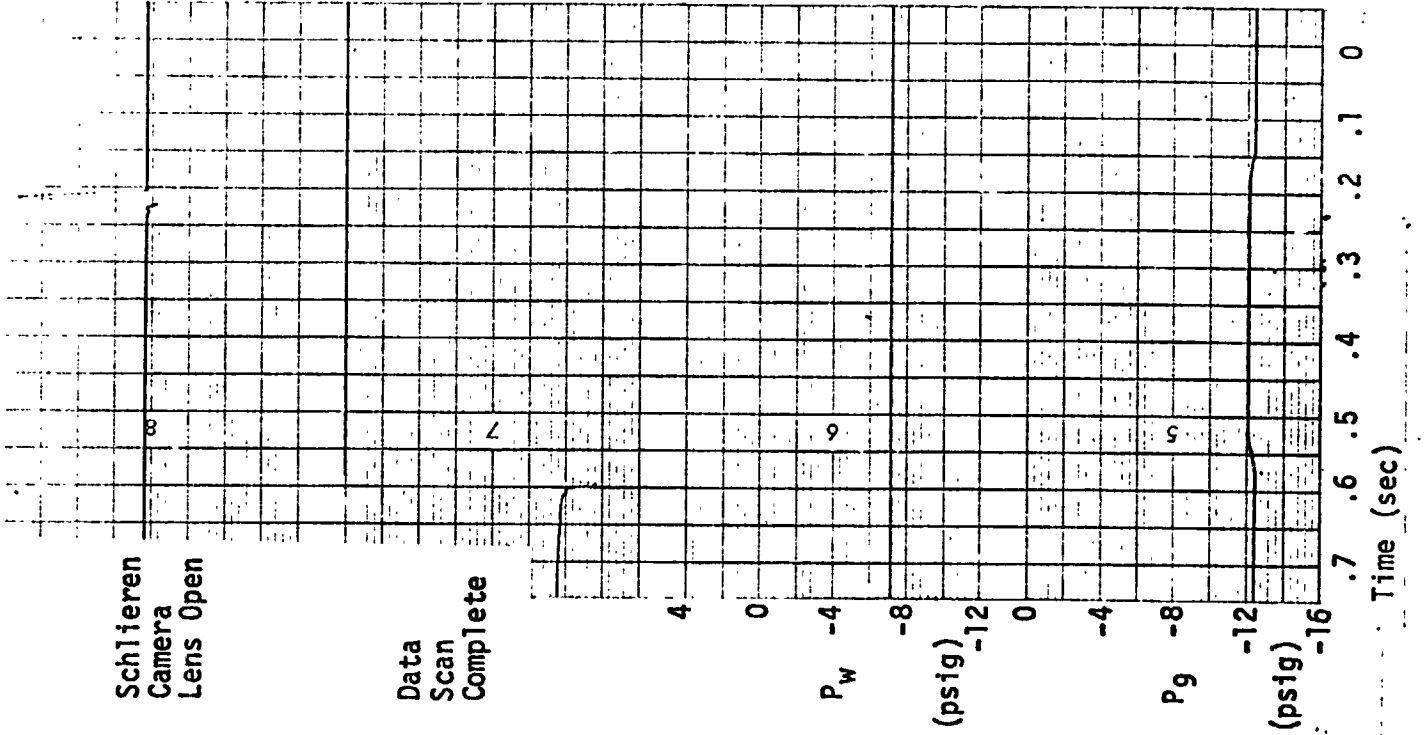
Run No. 406 16% AT UTP-3001 $\epsilon = 8$ $M_{\infty} = 0.9$

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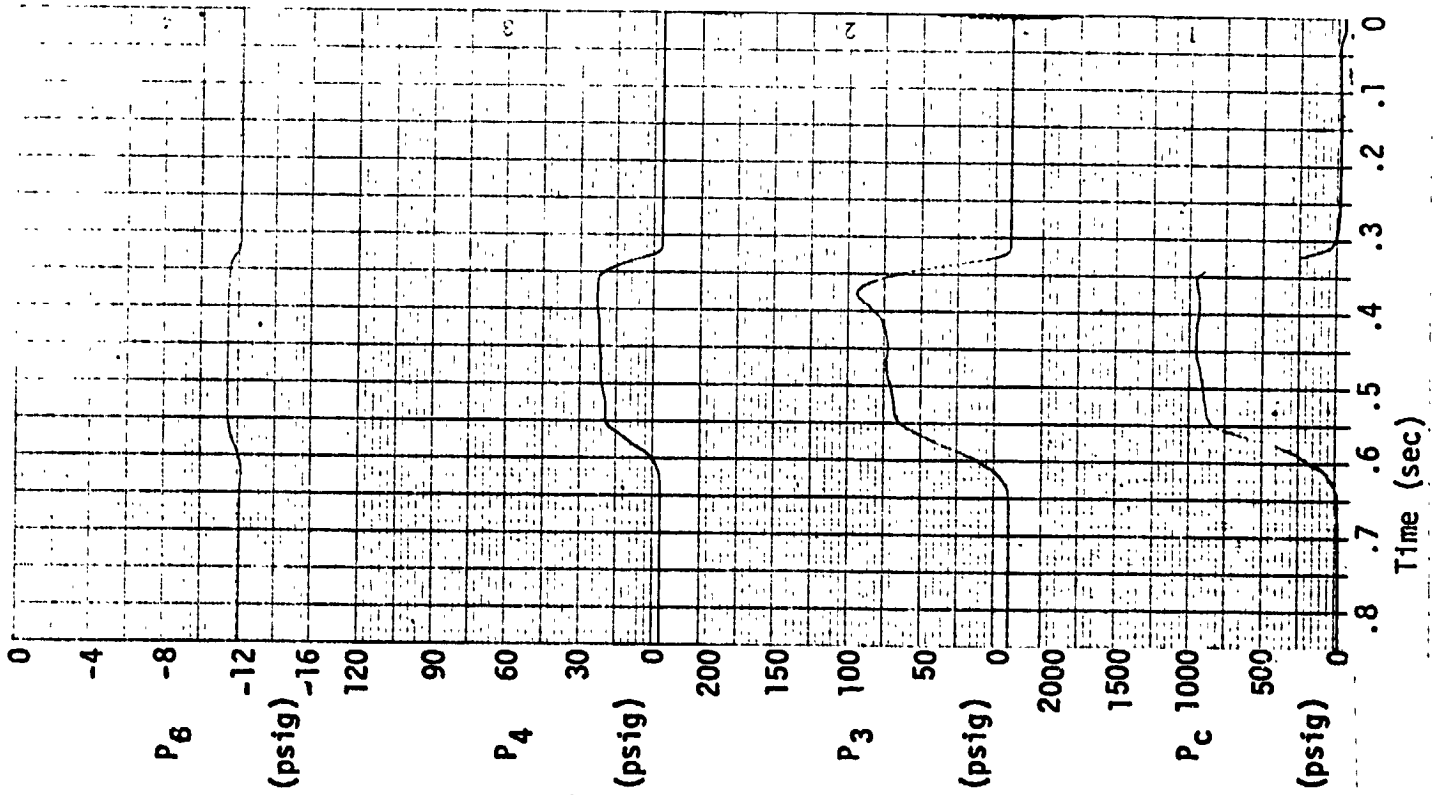
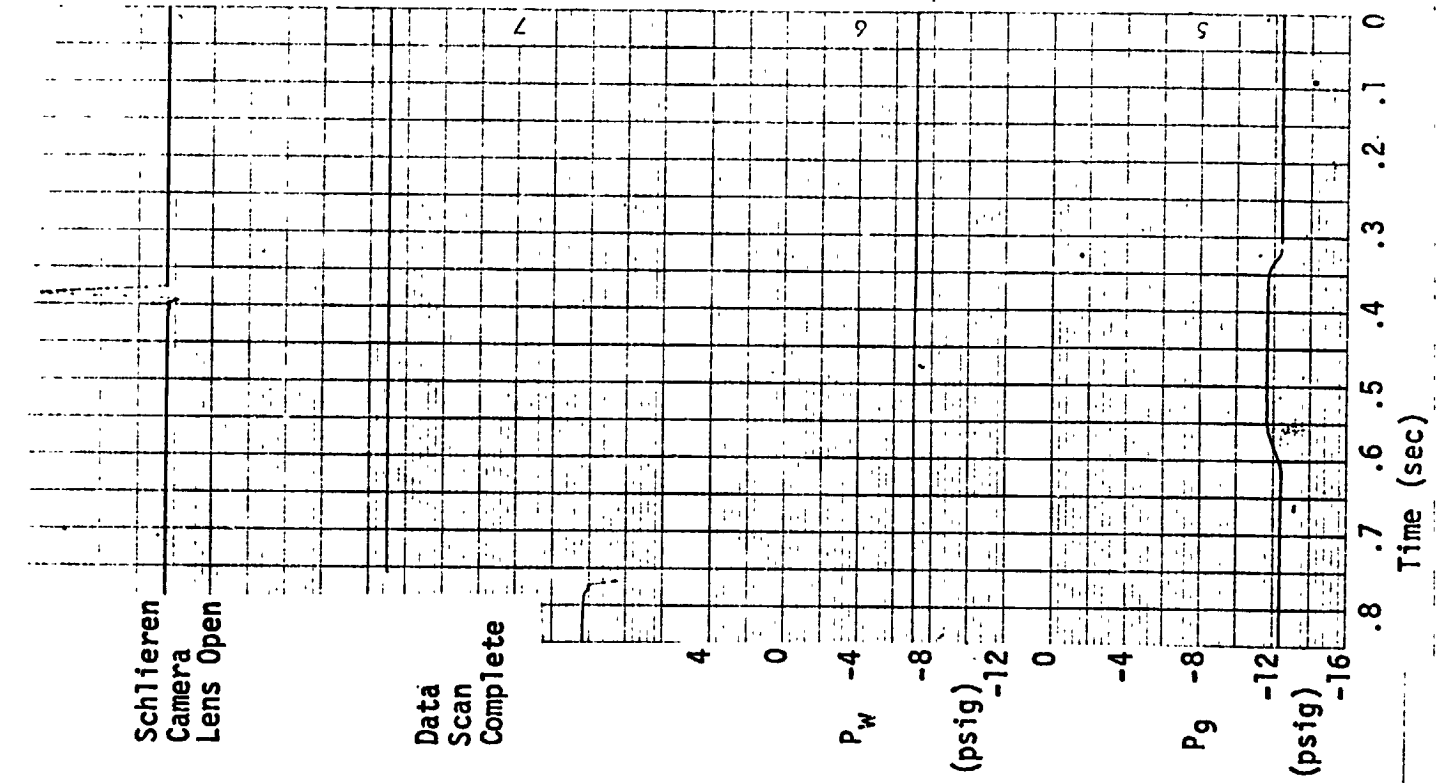
Run No. 407 16% AI UTP-3001 $\epsilon = 8$ $M_\infty = 1.2$

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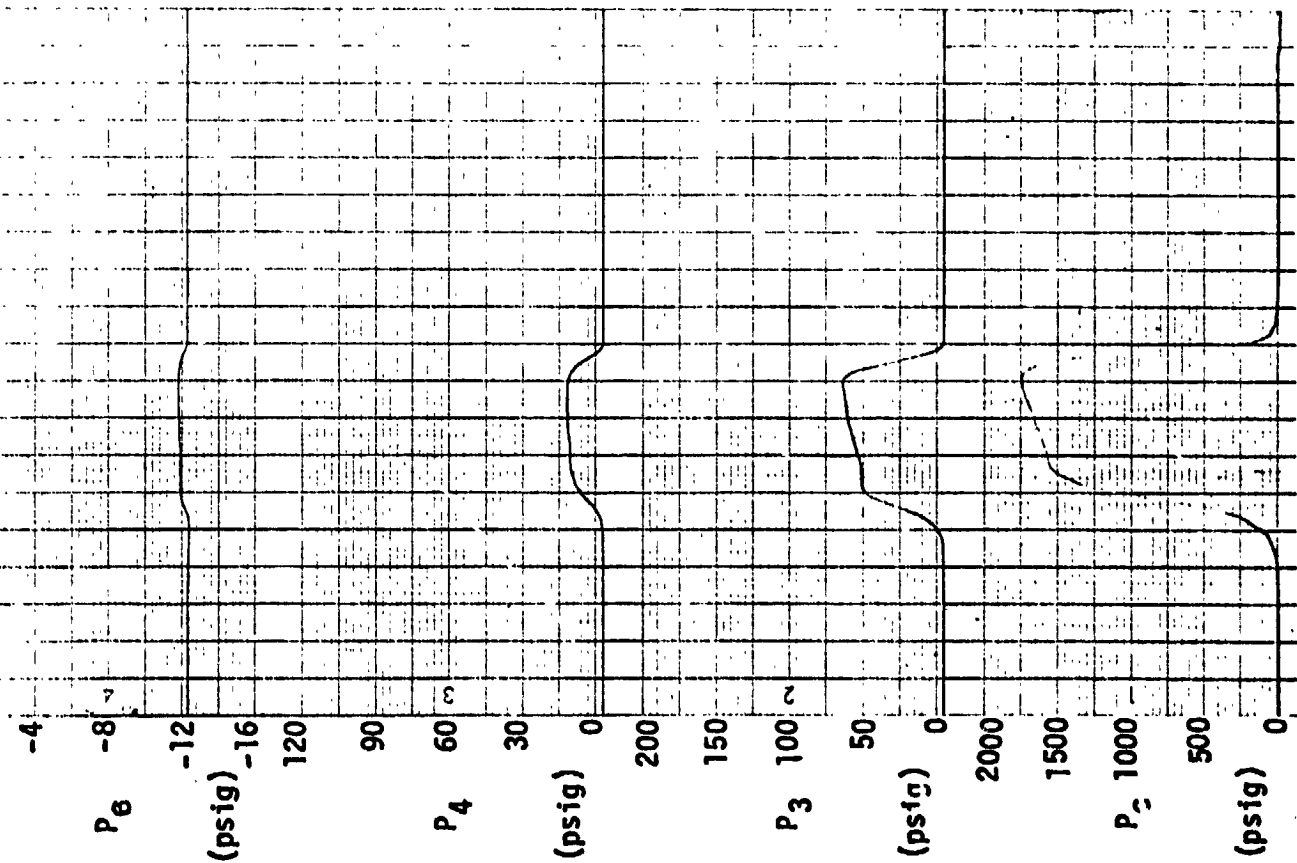
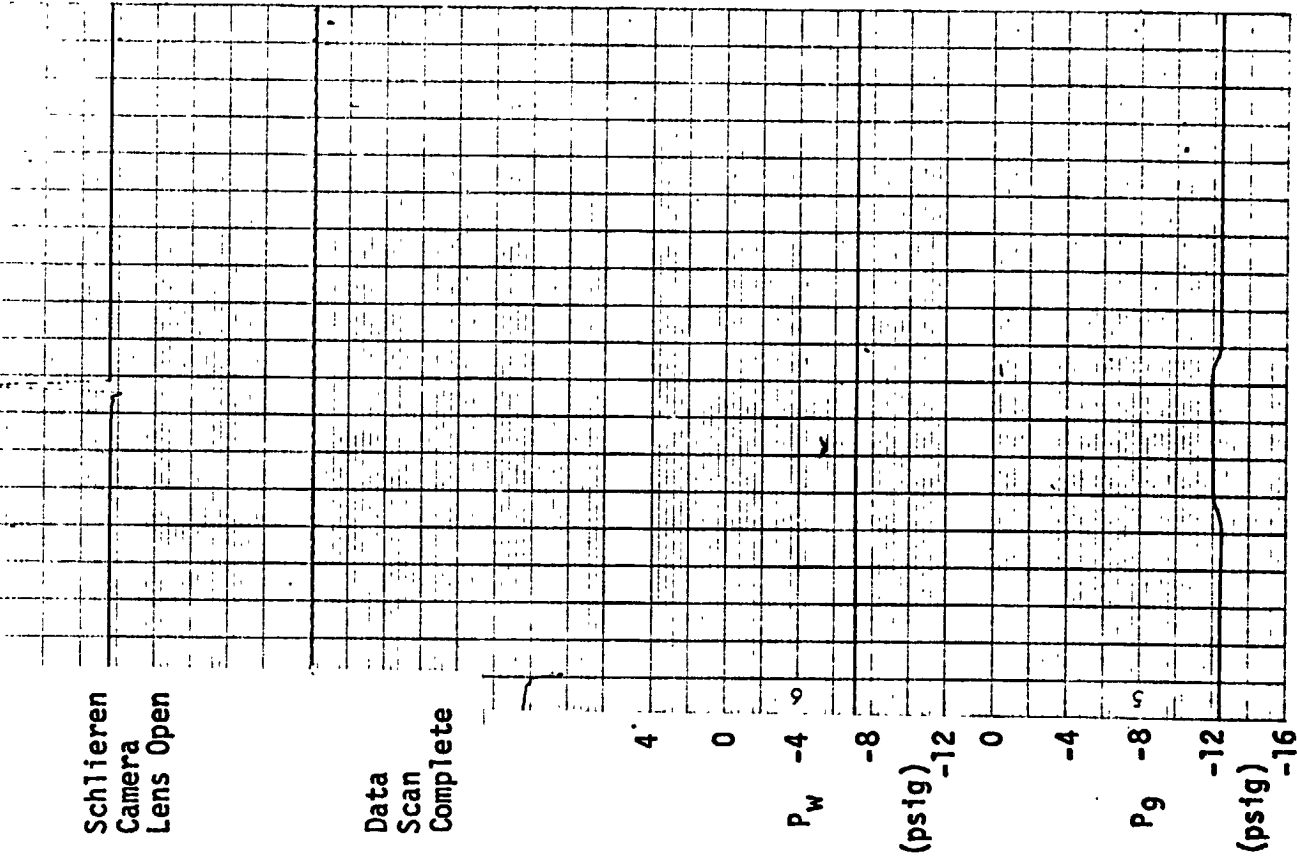


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REMTECH INCORPORATED

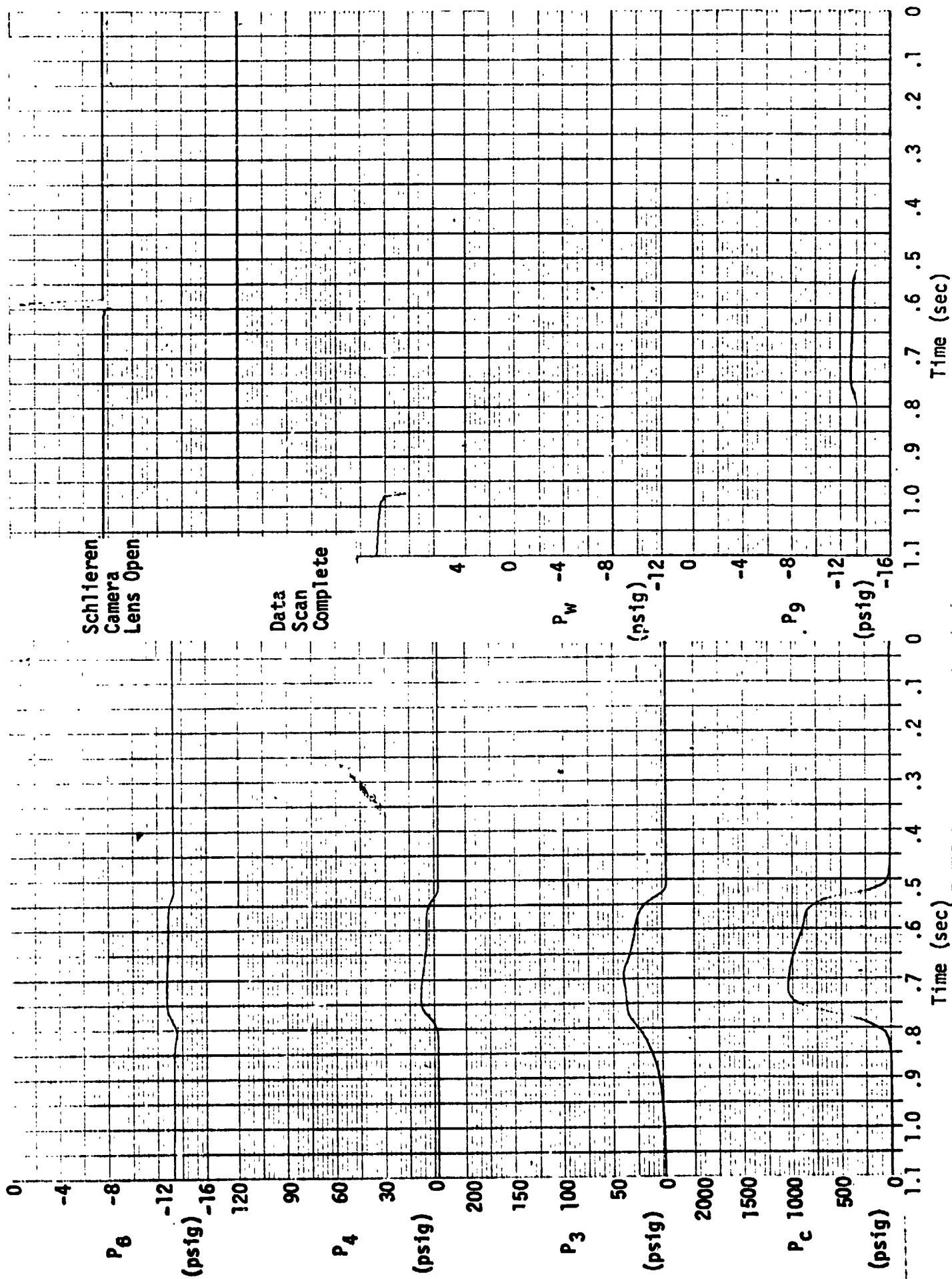


$M_\infty = 0.9$

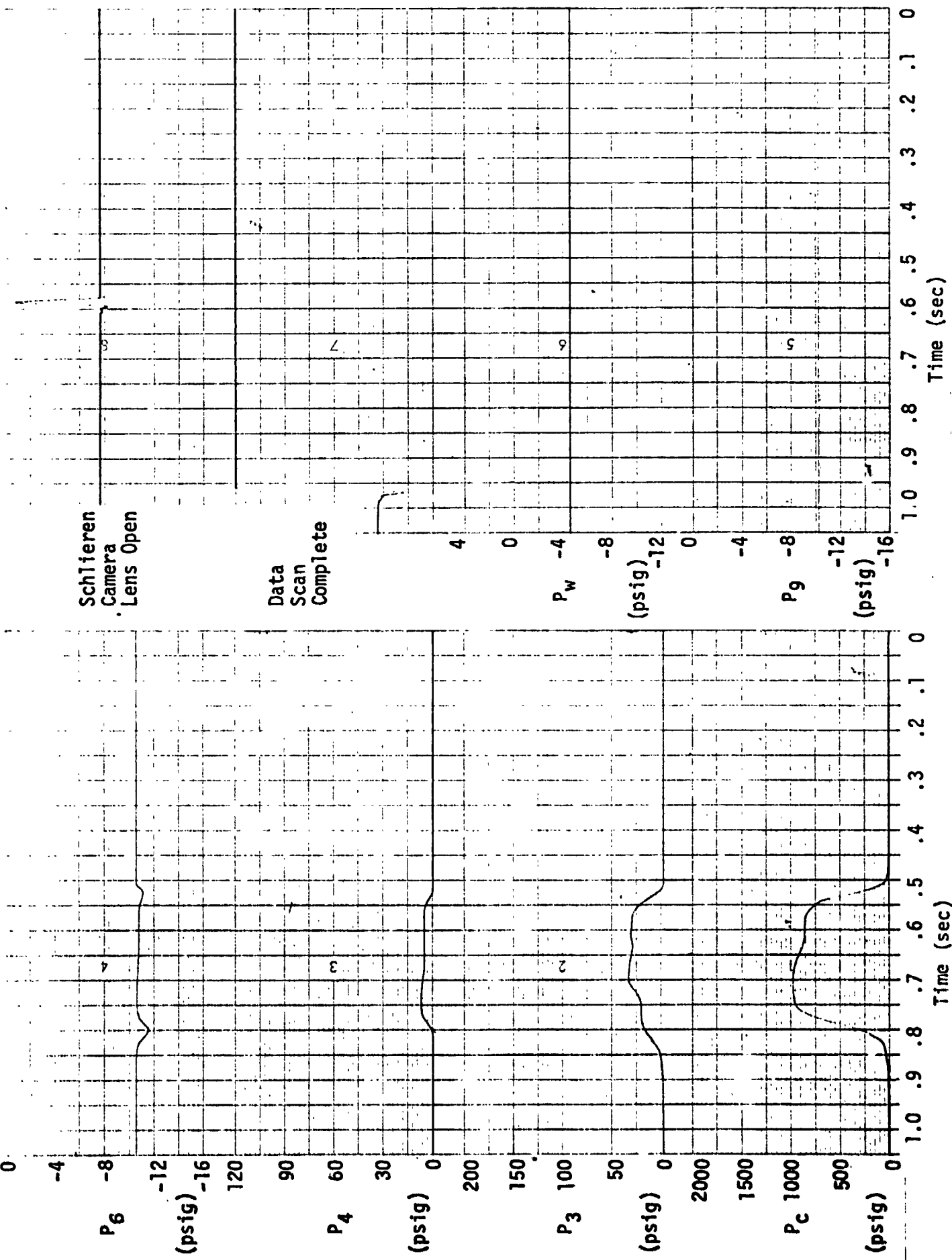
$\epsilon = 8$

Run No. 410 16% AT UTP-3001

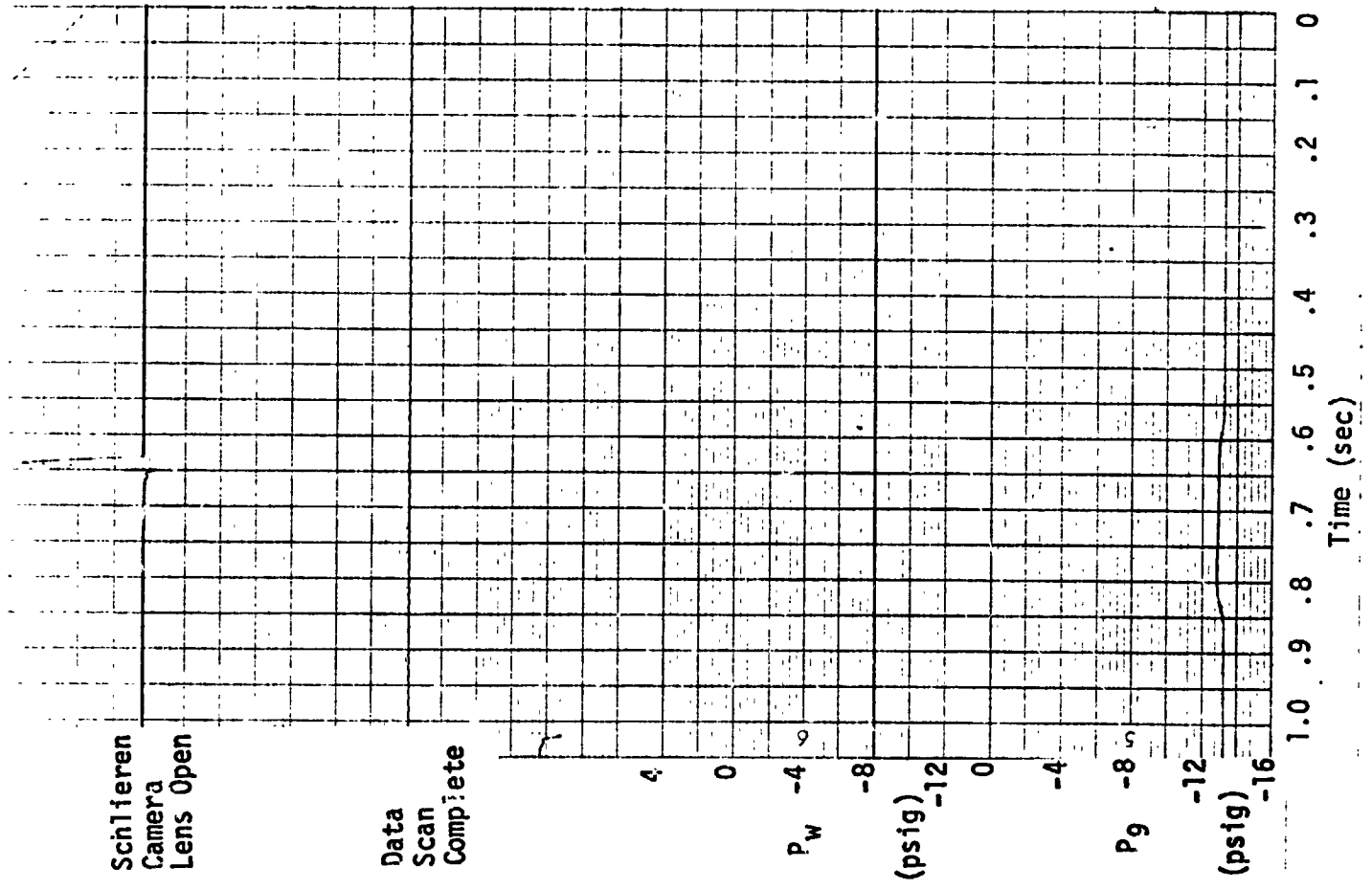
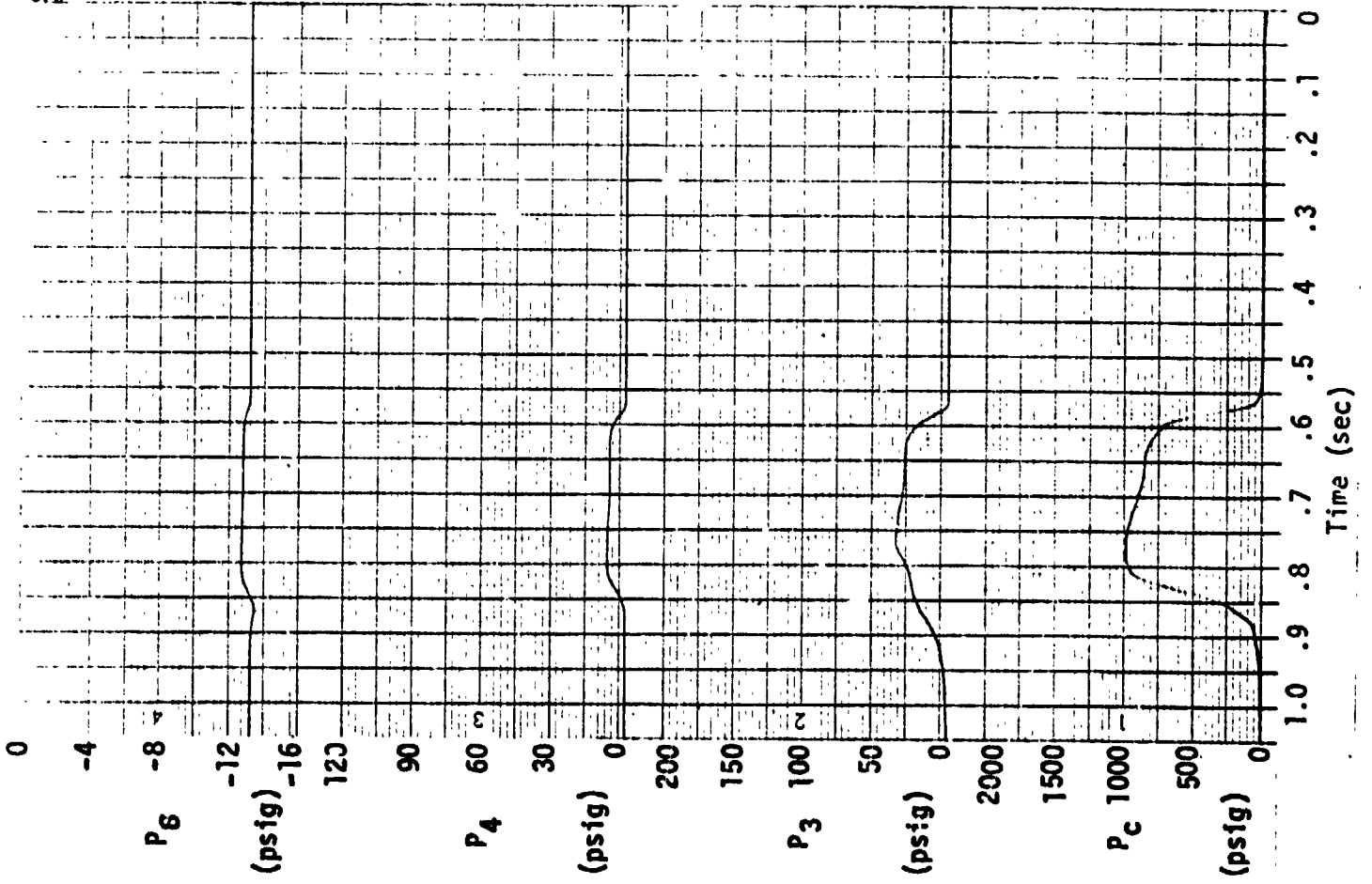
Time (sec)



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REMTECH INCORPORATED

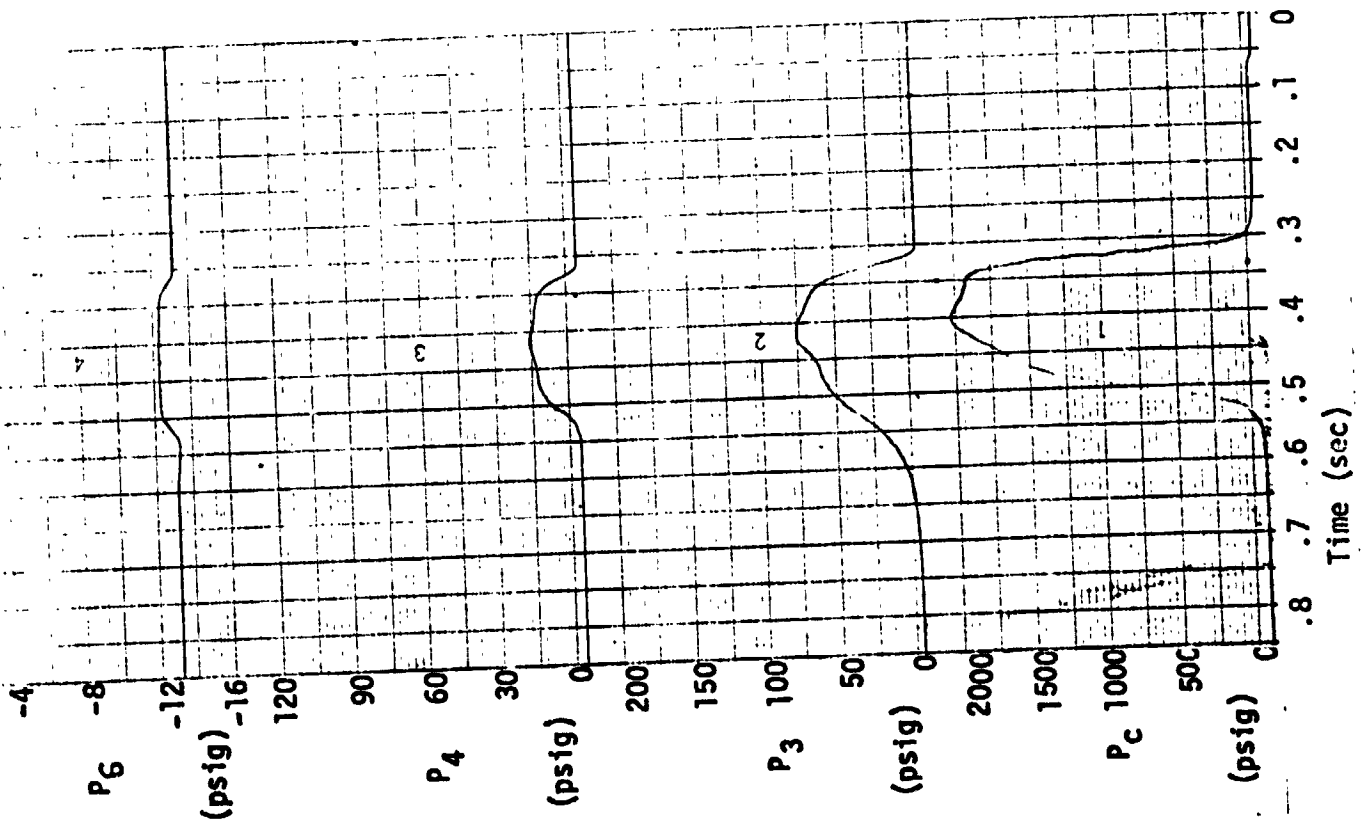
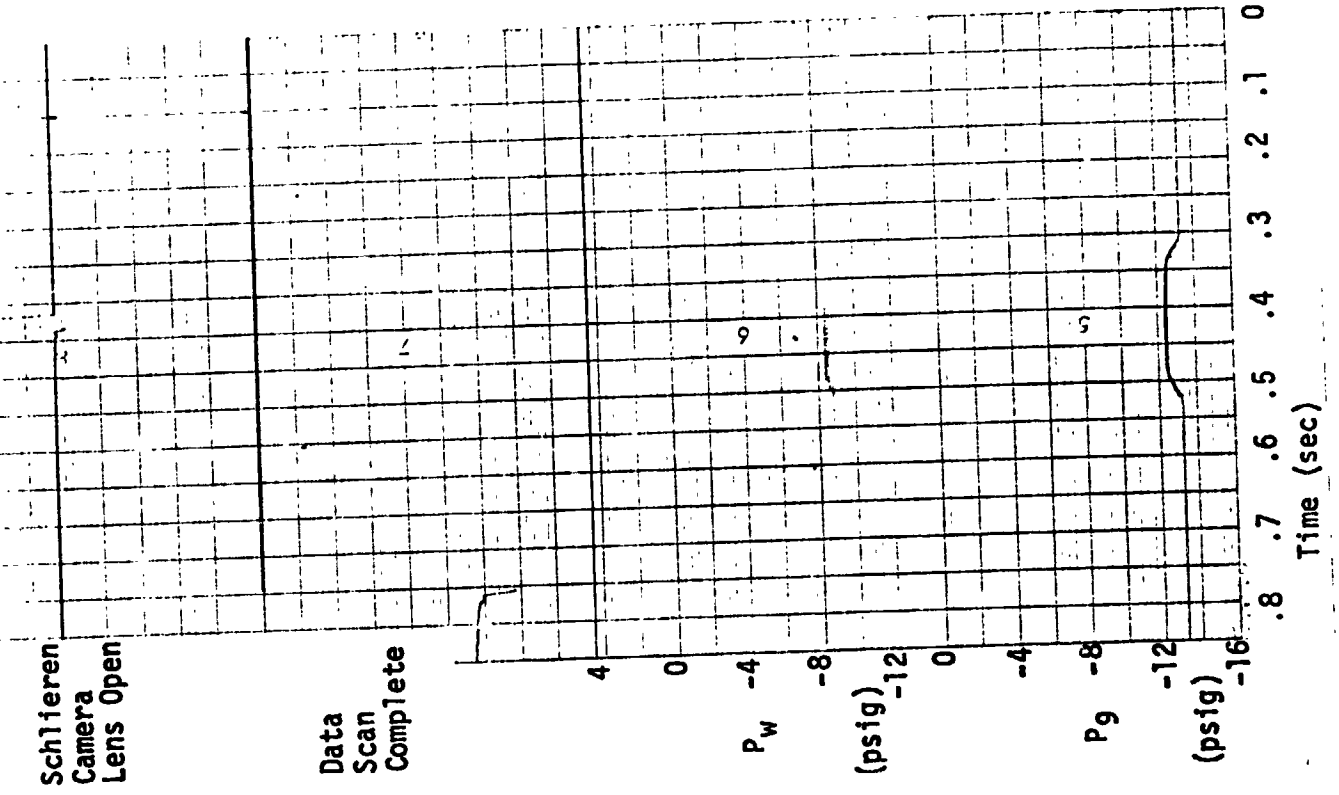


5% / STP-

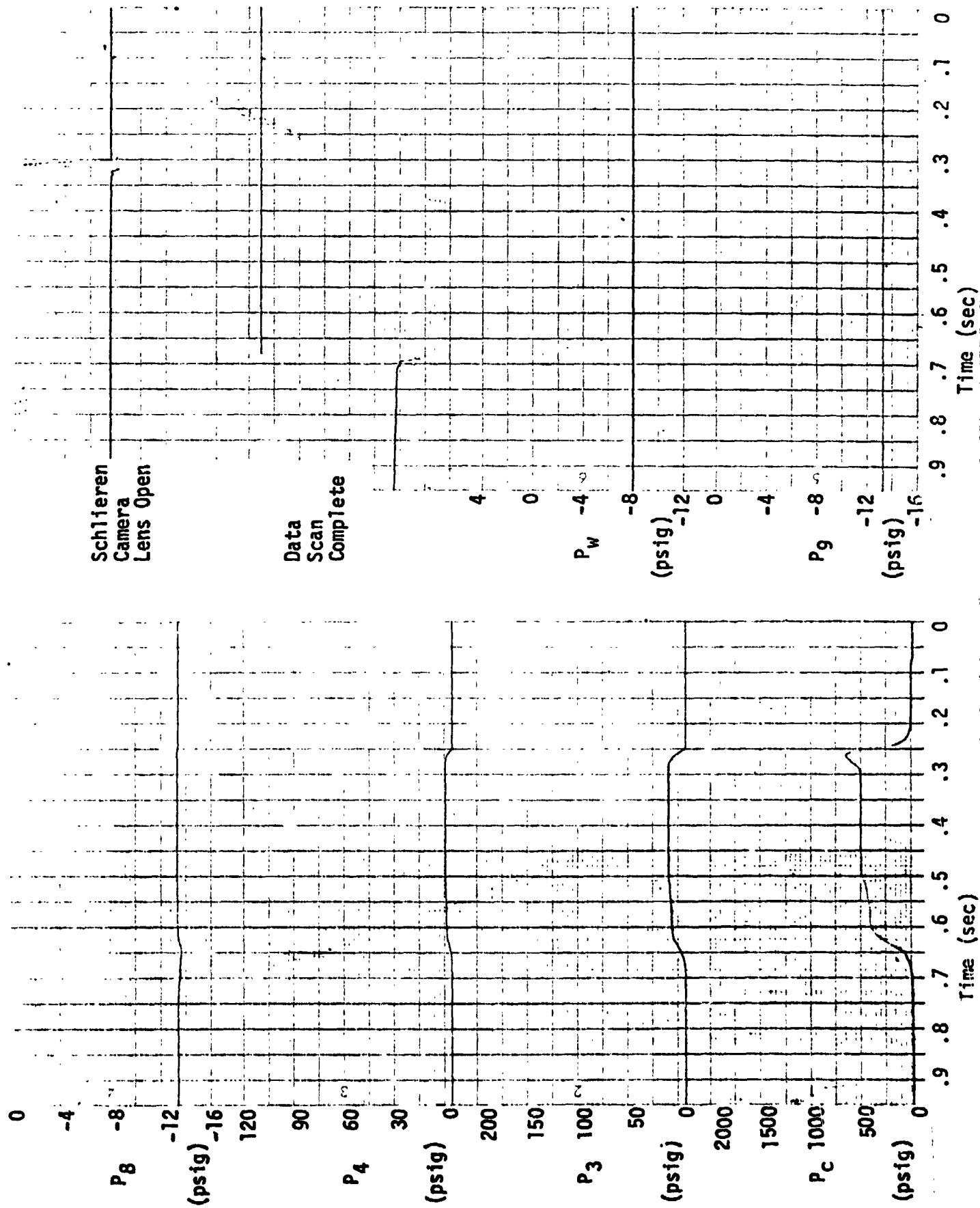
Re: 10.

Mo 12

REMTECH INCORPORATED

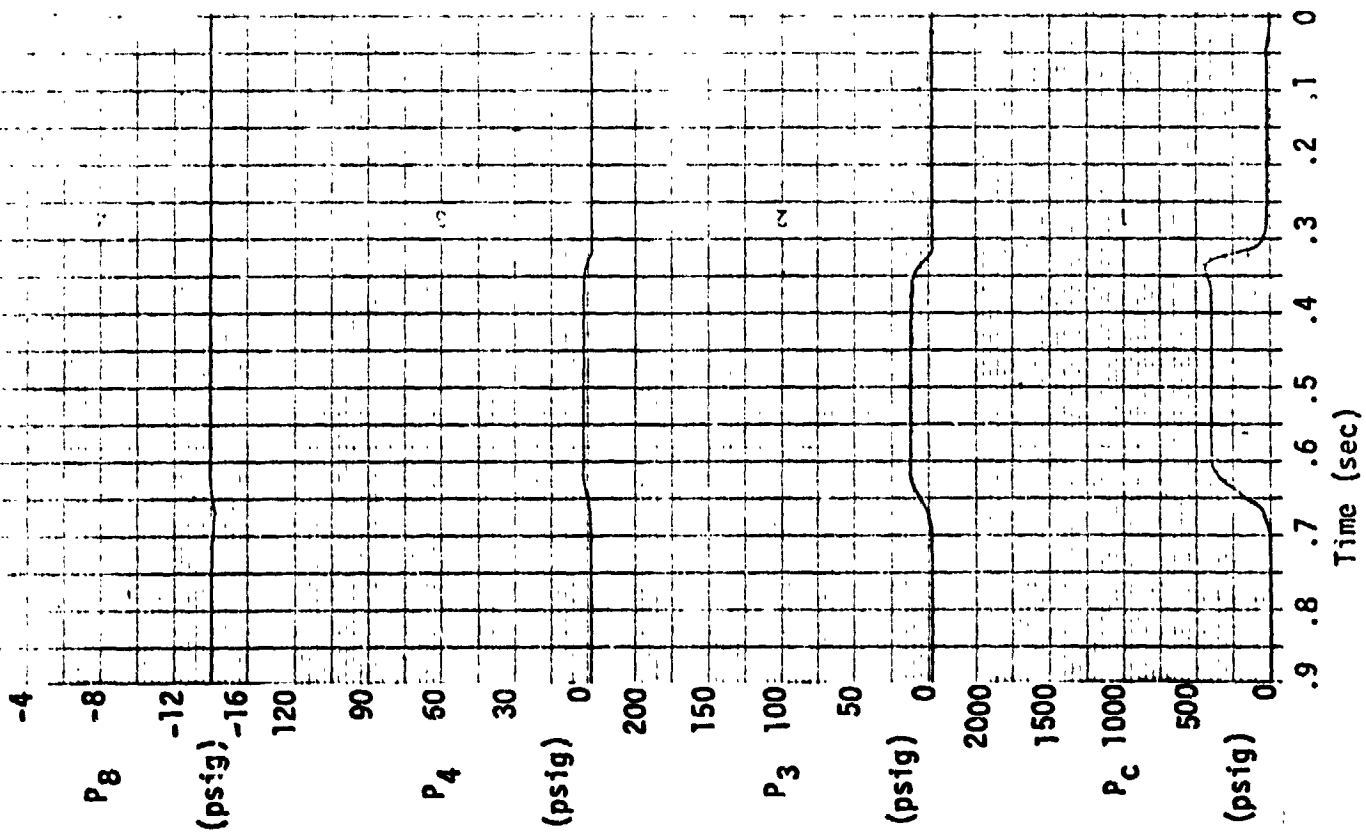
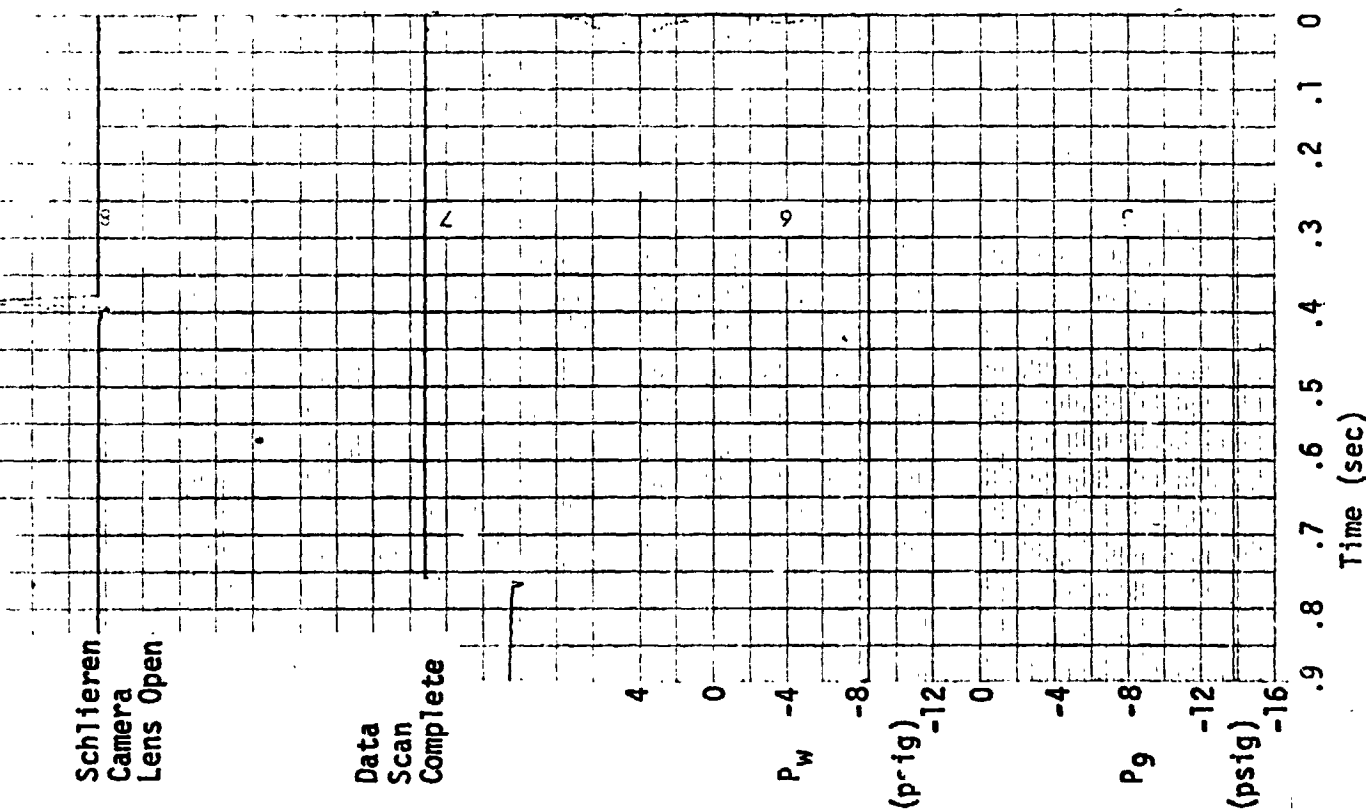


REMTECH INCORPORATED



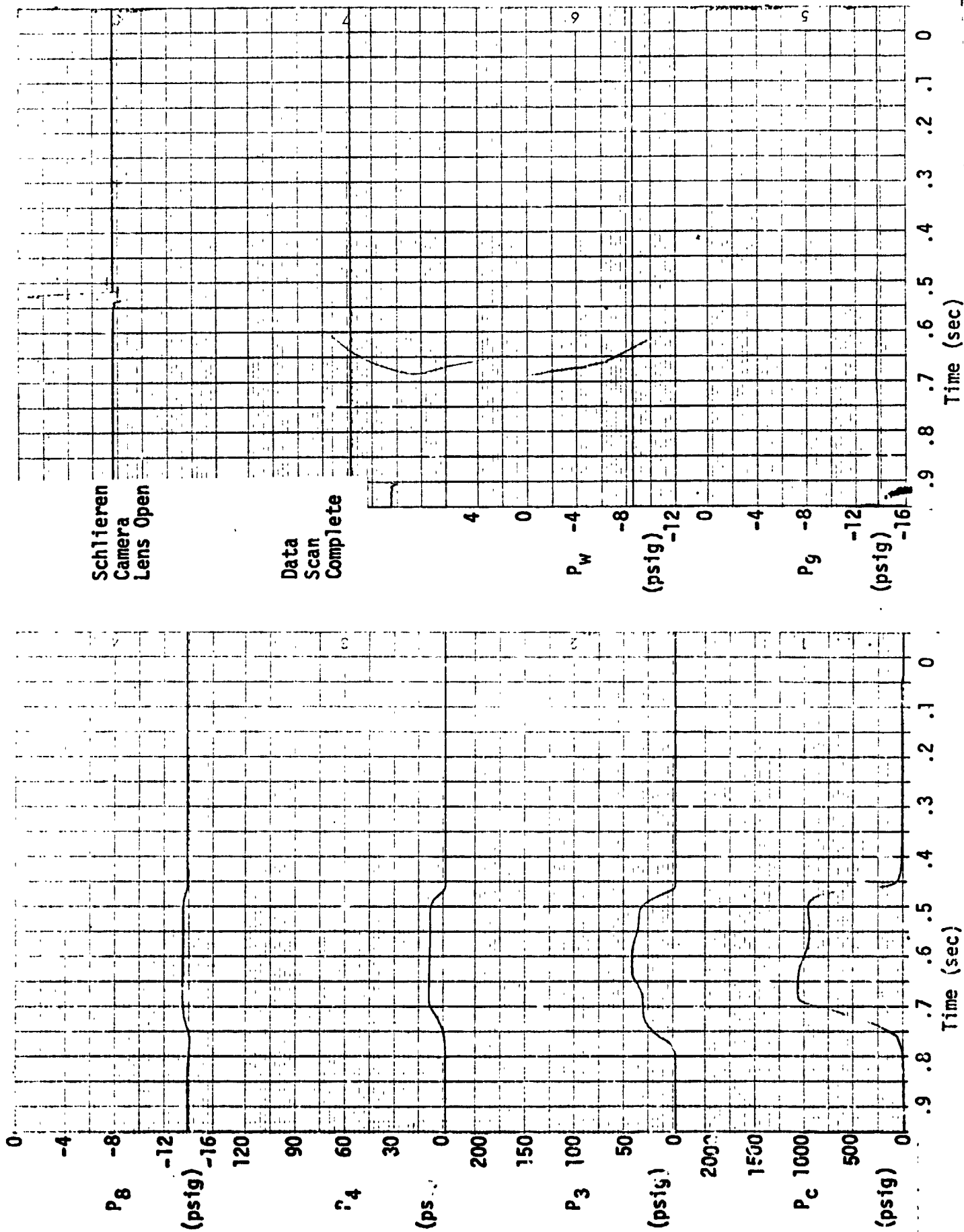
1.4 : : : : : No 115 2% ANB 1115

REMTECH INCORPORATED



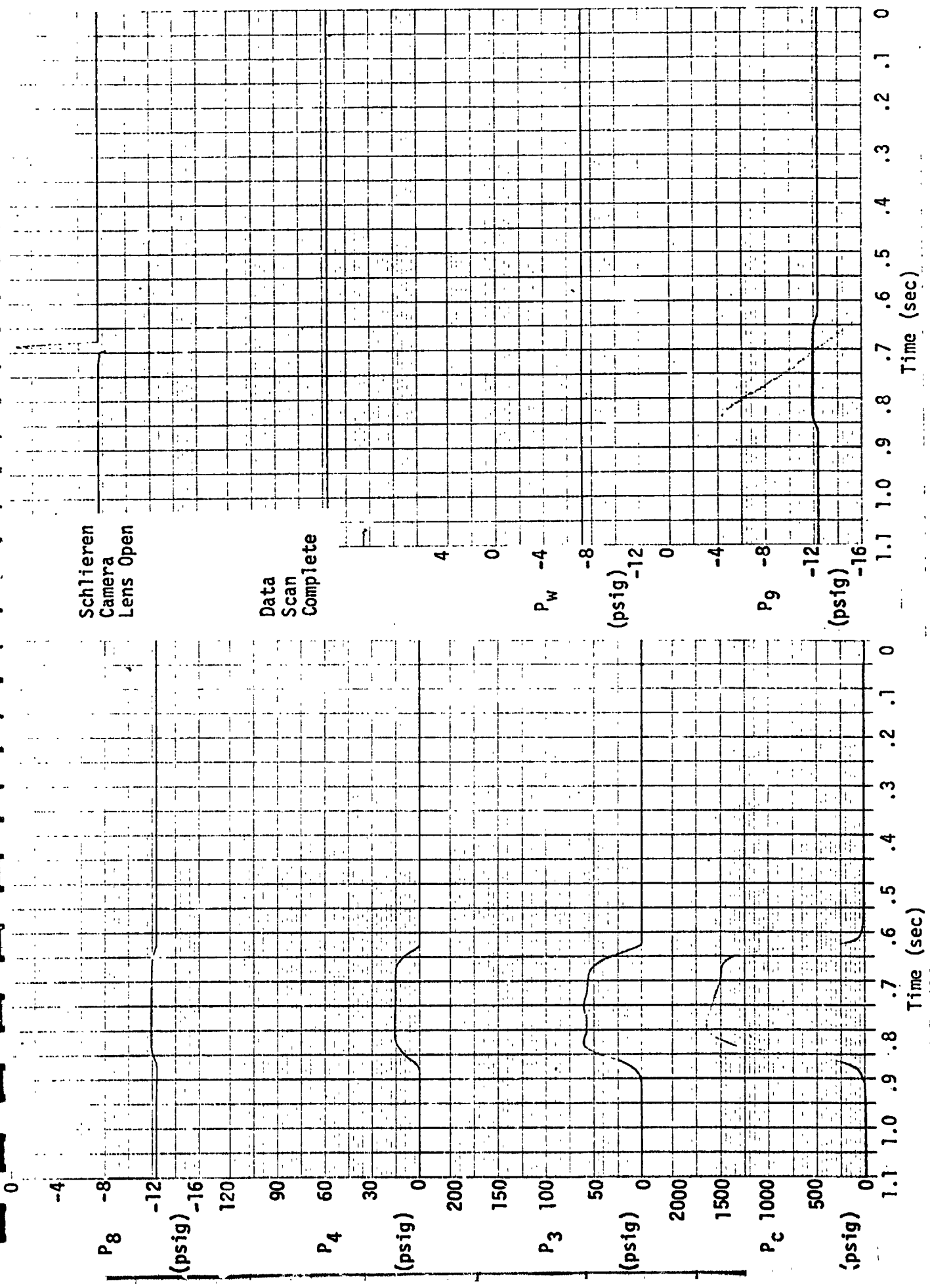
Run No. 417 16% AT UTP-3001 $\epsilon = 8$ $M_\infty = 1.5$

REMTECH INCORPORATED

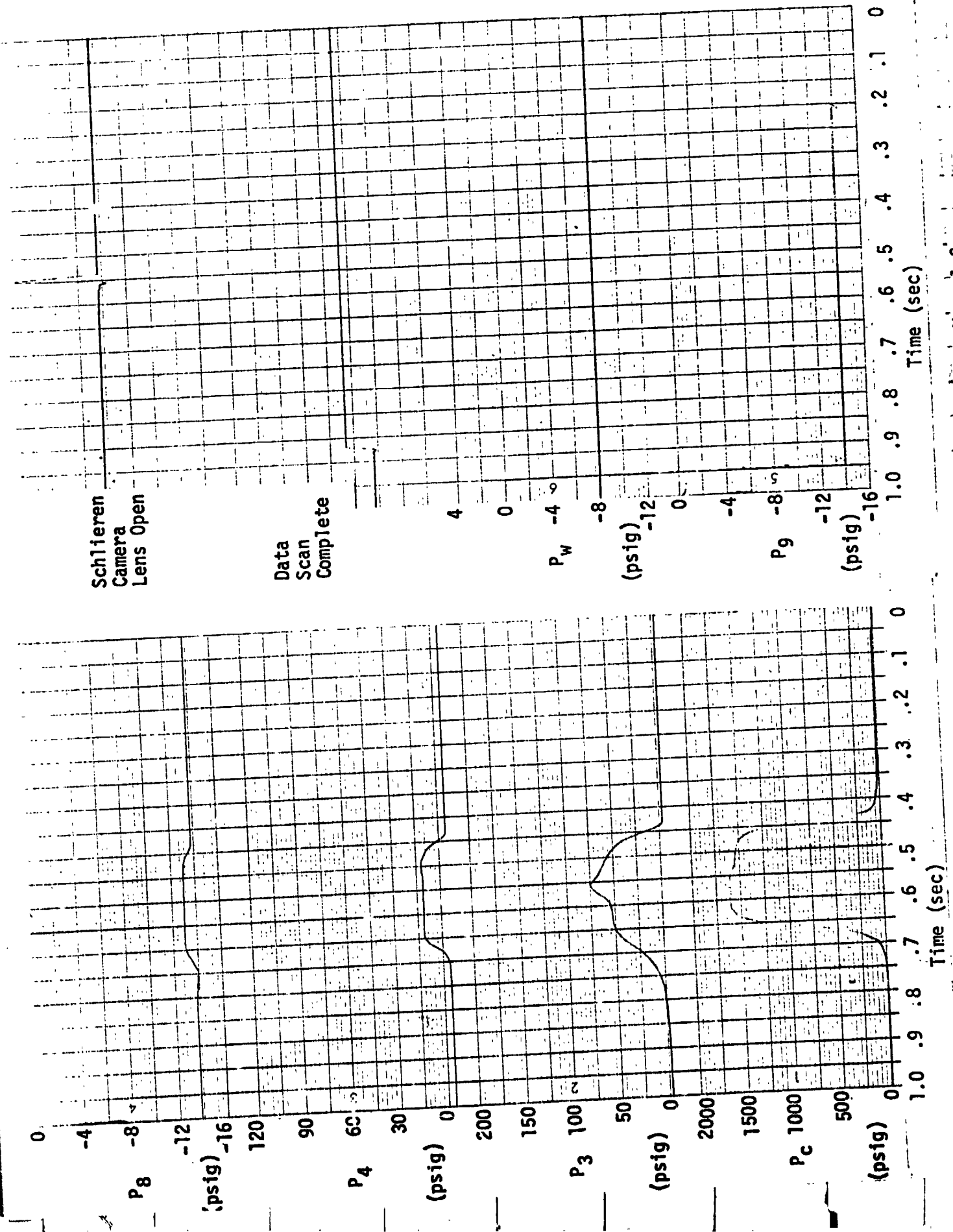


Run No. 710 10% A₁ of P-5000 M_∞ = 1.5

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

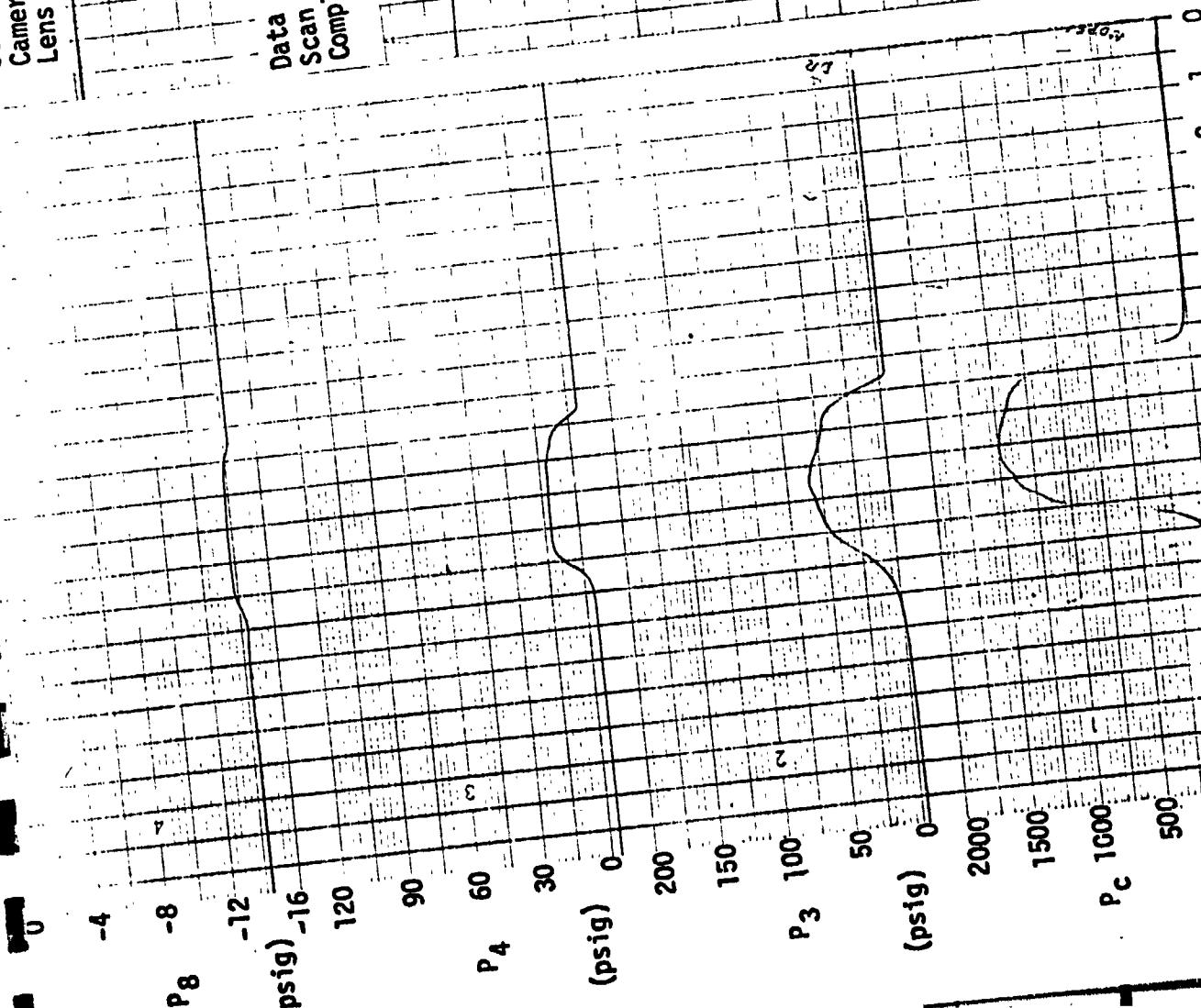
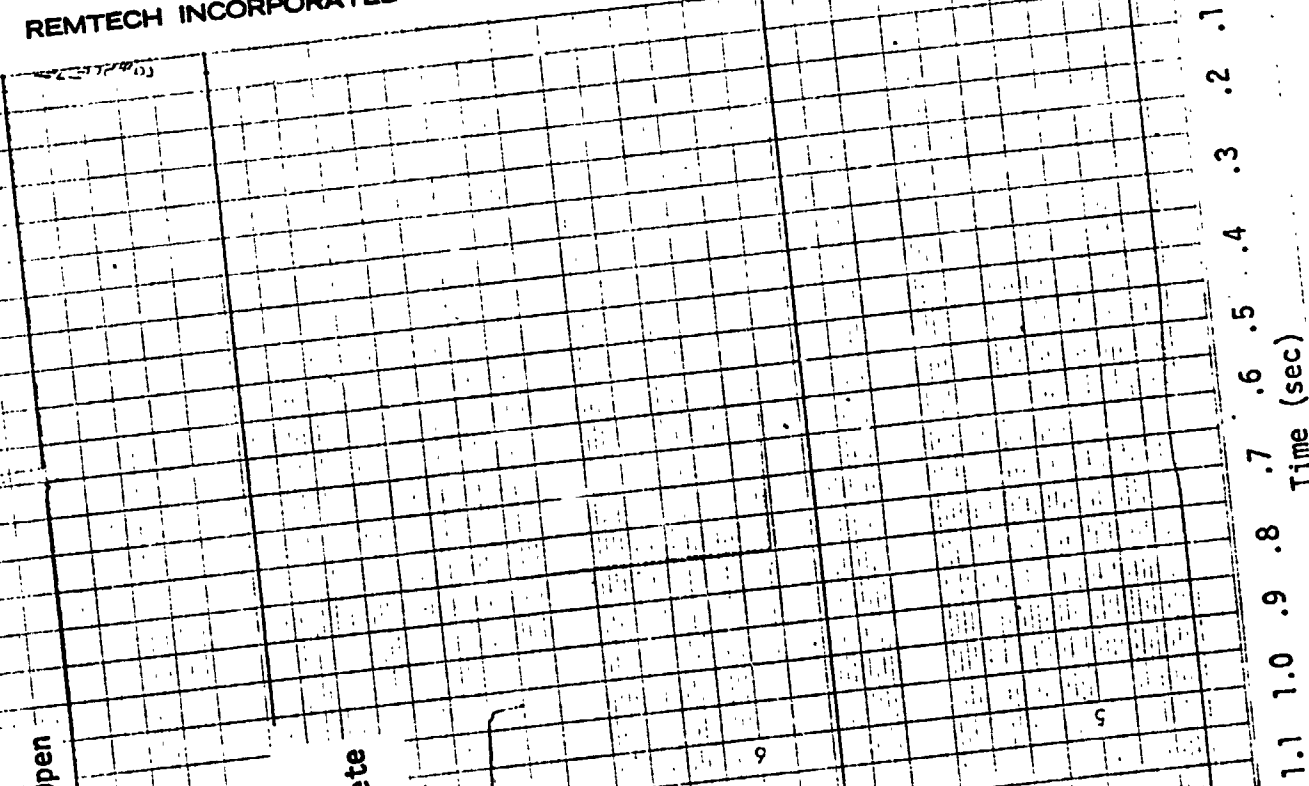


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Schlieren
Camera
Lens Open

Data
Scan
Complete

4
0 P₉
-4 (psig)
-8
-12
0
-4 P_W
-8 (psig)
-12
-16



Time (sec)

M_∞ = 1.5

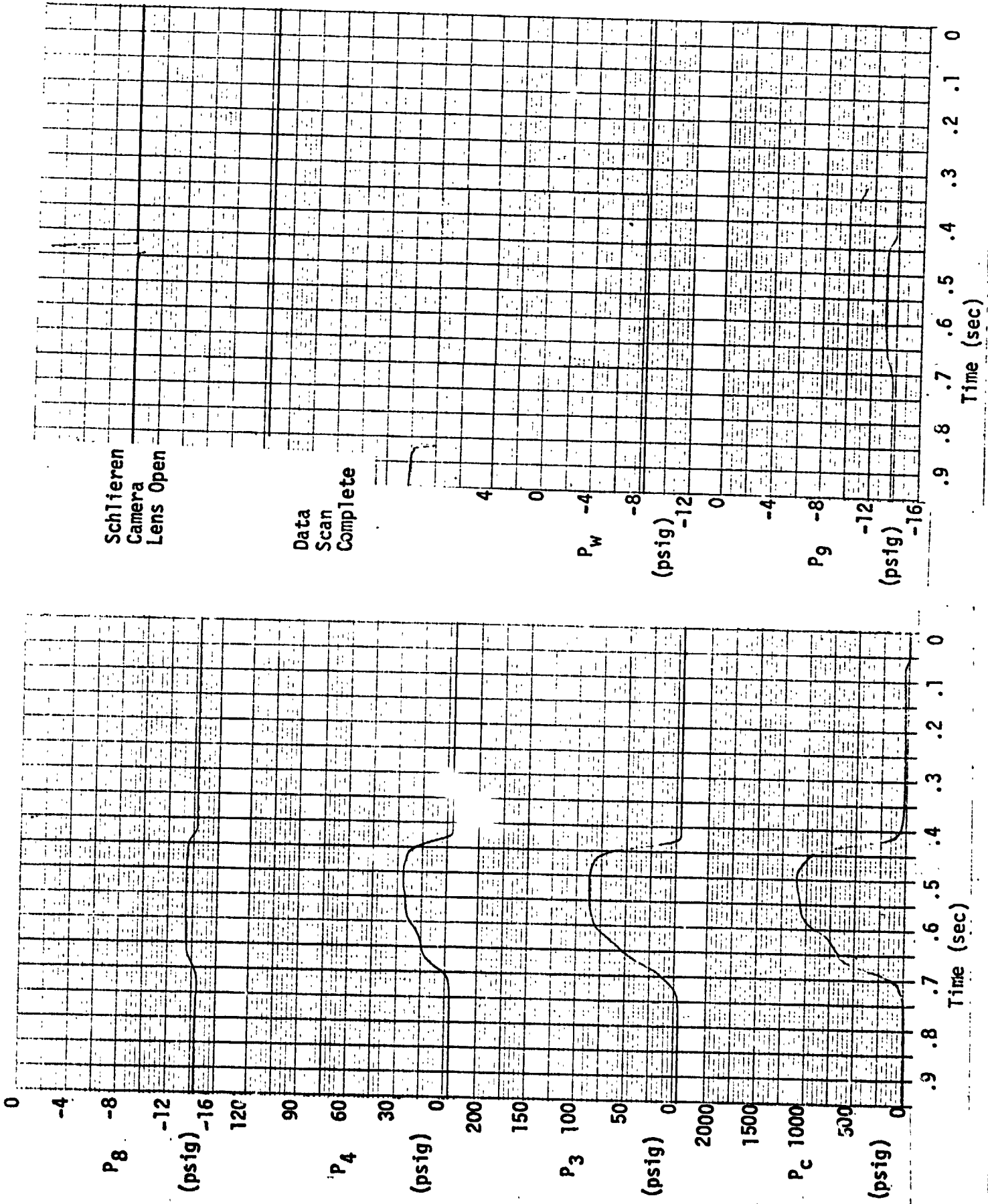
ε = 8

16% A1 UTP-3001

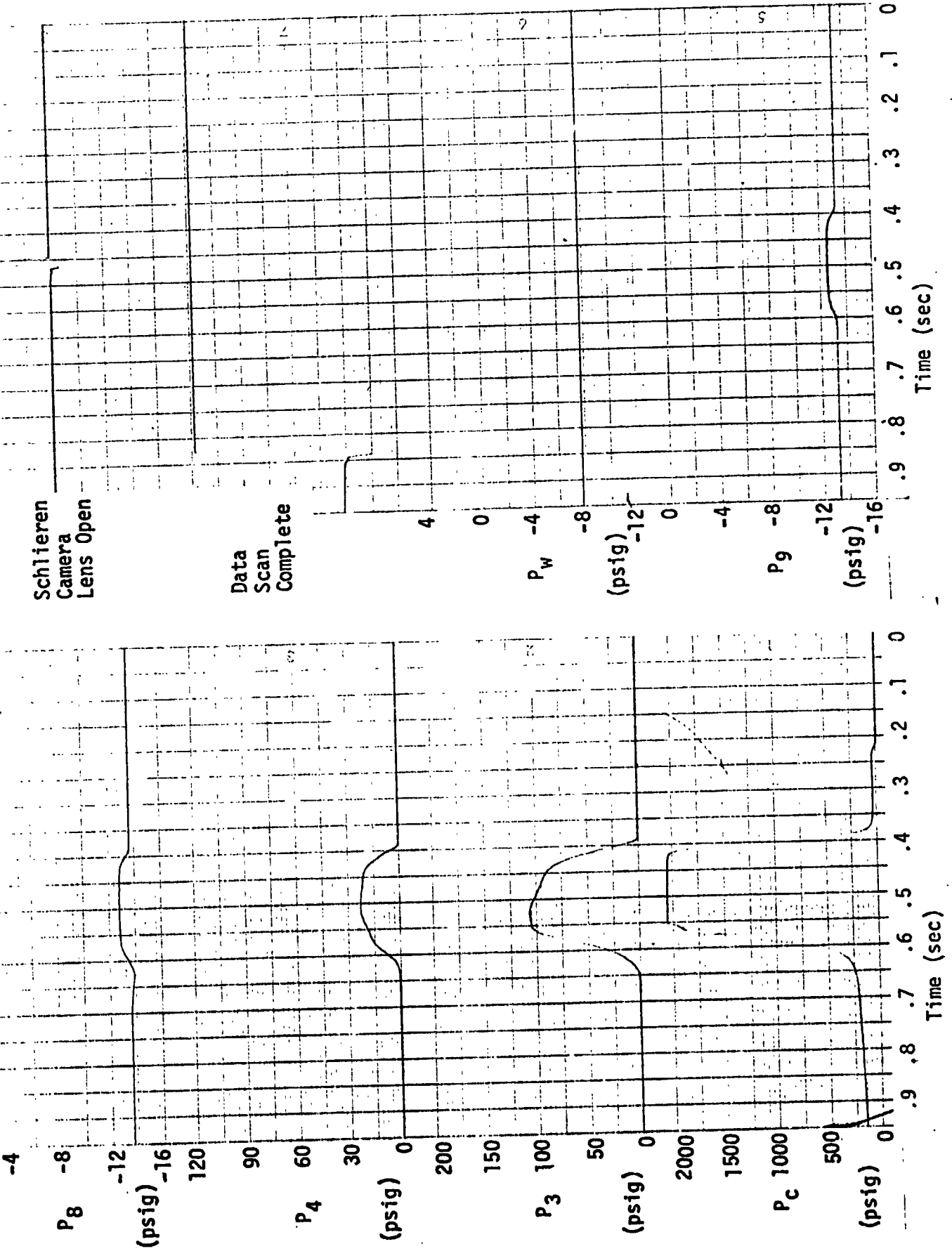
Run No. 421

Time (sec)

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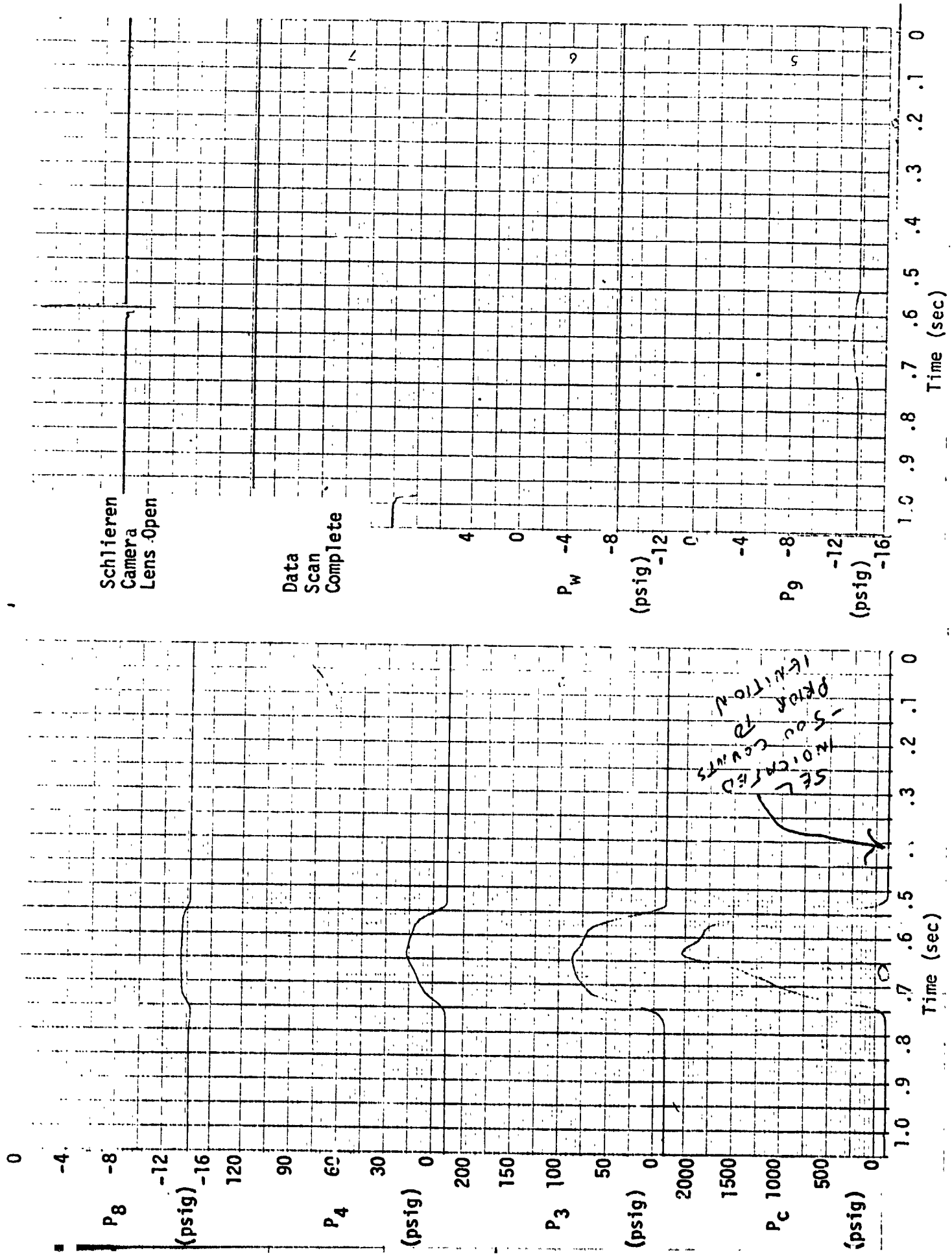


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Run No. 423 2% AT ANB-3335 $\epsilon = 8$ $M_{\infty} = 1.2$

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F 10. 6% TP- 8 1.