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INVESTIGATION OF A 1500 FT/SEC, TRANSONIC, HIGH THROUGH-FLOW, SINGLE-STAGE AXIAL-FLOW COMPRESSOR WITH LOW HUB/TIP RATIO

COMPONENTS BRANCH
TURBINE ENGINE DIVISION

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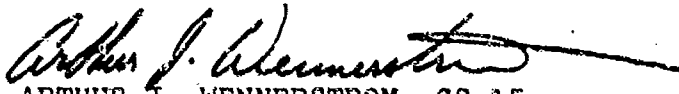
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This technical report has been reviewed and is approved for publication.



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were observed to be associated with the first stage, this stage was chosen as the subject of a research program. Results of the tests indicated that, at design speed, design flow was achieved with a rotor isentropic efficiency of 90.4 percent, a stage isentropic efficiency of 88.2 percent and a stage total pressure ratio of 2.065.



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FOREWORD

This report describes the experimental investigation of a transonic axial-flow compressor inlet stage. The work was performed in the Turbine Engine Division of the Air Force Aero-Propulsion Laboratory, Air Force Systems Command, Wright-Patterson AFB, Ohio. It was accomplished under Project 7065, Task 13, Work Unit 27. The effort was conducted by Dr. Arthur J. Wennerstrom, Dr. C. Herbert Law, and 1 Lt. William A. Buzzell of AFAPL/TBC, and Mr. Robert D. DeRose of Systems Research Laboratories, Inc., Dayton, Ohio, during the period October 1975 to March 1976.

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SECTION I

INTRODUCTION

This report presents the results of an experimental evaluation of the single-stage axial compressor described in detail in Reference 1. Performance objectives for the experimental stage were:

Flow per Frontal Area: 39.7 lb/sec/ft²
Rotor Tip Speed: 1500 ft/sec (standard conditions)
Rotor Total Pressure Ratio: 1.966
Stage Total Pressure Ratio: 1.912
Rotor Isentropic Efficiency: 86.9%
Stage Isentropic Efficiency: 83.0%

The performance goals of this stage were based on a preliminary design study of a multi-stage compressor for an advanced turbojet engine. Since the most serious aerodynamic design problems of the overall compressor were observed to be associated with the first stage, it was chosen as the subject of an experimental research program.

The results of the tests, reported herein, indicate that all of the rotor and stage design goals were achieved or exceeded. Part-speed rotor and stage isentropic efficiency, especially between 75 to 95% design speed, was exceptional for the test stage.

The second section of this report describes the test facility flow path, the compressor test vehicle, and the complete instrumentation system, including both compressor and facility instrumentation. The procedures used in taking test data and a description of the complete data analysis program are detailed in Section III. The results of the test, including design point comparisons, are given in Section IV. Section V, the last section, summarizes the conclusions drawn from the data. Appendix A includes the complete computer listing of the aerodynamic thru-blade analysis for the test point which most closely matched design point conditions. Appendix B contains the input data used in the across-blade aerodynamic analysis for each data point recorded during the test.

Appendix B provides sufficient data such that any reader wishing to process any data point not fully presented in the report, or wishing to process any data point differently, can, with the aid of Reference 6, completely reprocess the data or adapt the data to his own data reduction scheme.

SECTION II

TEST APPARATUS

1. FACILITY FLOW PATH

The test facility used is of the open-loop variety. It is shown schematically in Figure 1. Air enters the facility through a filter designed to remove five micron particles with a 99.5 percent efficiency. The air then passed through a 30-inch duct to a Universal Venturi Tube located about six pipe diameters downstream. Two pipe diameters further downstream, the air is turned 90 degrees with the aid of turning vanes. Screens are installed perpendicular to the pipe axis just before the elbow, and in the trailing edge plane of the turning vanes to prevent feedback related to flow separation on the turning vanes from reaching the venturi. Following the elbow, the flow passes through a tube bundle and subsequently enters a 48-inch diameter settling chamber. The settling chamber contains a perforated conical flow spreader and two screens patterned after the model investigated in Reference 2. From the settling chamber, air enters the compressor through a direct-coupled bellmouth. Air leaving the compressor is deflected radially outward to a peripheral throttle. The throttle consists of one stationary and one rotating cylindrical ring, each with 16 circumferentially distributed matching holes. Throttling takes place at a diameter of approximately 47 inches. The throttle is designed to vary from fully open to fully closed in 200 equal area increments. Downstream of the throttle, the flow enters a collector, from which it is passed through a 24-inch diameter duct to a silencer, and back to the atmosphere. A fast-acting poppet type valve, bypassing the throttle valve, provides a 20% increase in total throttle area to relieve compressor surge conditions on manual command. A cutaway drawing is shown in Figure 2. The perforated plate indicated just upstream of the tube bundle in Figure 1 was removed for this test to decrease the pressure drop through the facility.

2. COMPRESSOR TEST VEHICLE

A cross-section of the research compressor is shown in Figure 3. The design employs a cantilevered rotor supported by four 0.5 inch thick bearing support struts with leading edges located about two stator chord lengths downstream of the stator trailing edge plane. The rotor tip diameter is nominally 17 inches. Oil seals are controlled gap carbon seals with an air barrier. No oil leakage into the flow path has ever been experienced. Cold rotor radial tip clearance with the rotor at rest is 0.024 to 0.026 inches. Hot

clearance at design speed is predicted to be approximately 0.012 inches or about 0.3 percent of the rotor tip chord. The rotor shaft is mounted on ball bearings. Radial runout does not exceed 0.0005 inches. This configuration uses no inlet guide vanes. Surface finish on all surfaces adjacent to the flow upstream of the bearing support struts is 32 microinches or better. An abradable coating has been employed in the casing adjacent to the rotor tips. Barely visible rubs were experienced; these occurred at design speed in stall. The rotor is of integral construction, the blades and disc being machined from a single forging of 6Al-4V titanium. The stator blades are individually inserted but are machined integrally from 303 stainless steel with platforms at hub and tip. The gap between adjacent platforms lies in the range of 0 to 0.002 inches. A photograph of the rotor is shown in Figure 5 and of the stator assembly in Figure 6. The assembled stage is shown in Figure 7.

3. COMPRESSOR INSTRUMENTATION

Aerodynamic instrumentation in the compressor consists of measuring probes in the stator leading edges for total pressure and temperature, rakes downstream of the stators for total pressure, temperature and flow angle (circumferential), static pressure taps on the inner and outer flow paths and on the surfaces of one pair of stator blades, dynamic pressure measurements along the casing wall over the rotor tip, and dynamic strain gage measurements at several points on the rotor blades. Measurements of inlet total pressure and temperature, mass flow, relative humidity, and rotor speed are accomplished outside the compressor and are discussed in paragraph 4 of this section. The compressor research vehicle has a total of 171 sensors measuring aerodynamic parameters at various points throughout the stage. Refer to Figures 3 and 4 and Table 1 for specific locations. Some of the static pressures are sensed at more than one point and are manifolded to become, in each case, a single measurement. Figure 8 shows the vehicle instrumentation bulkhead.

a. Temperature Measurements

1. Location

A total of fifty-one thermocouples are used to sense aerodynamic temperature within the compressor. Nine are mounted in the vane leading edges and forty-two are located in six discharge-plane rakes. The vane leading edge and rake mounted thermocouples are of the slot vented type shown in Figure 9. A detailed analysis of the features of the slot vented design, along with recovery factor characteristics, may be found in Reference 3.

- The discharge-plane rakes each have seven sensors, equally spaced radially, while rake circumferential spacing is 2.167 times the angular spacing between vane trailing edges. The nine stator leading edge thermocouple probes are distributed on two vanes; one having four sensors and the other having five. The sensors are uniformly spaced radially and aligned with the anticipated pitch angle of the flow. The locations of the vane leading edge probes and the discharge rakes are shown in Figures 3 and 4, listed in Table 1, and shown assembled in Figures 6 and 7.

2. Calibration

All thermocouples were fabricated from insulated, single rolls of Chromel-Constantan or Chromel-Alumel wire. The thermocouple type listed in Table I distinguishes which type was used for each measurement; "1" for Chromel-Constantan and "2" for Chromel-Alumel. Thermocouples made from samples of each roll of thermocouple wire were calibrated against a Model 162 platinum resistance bulb primary standard manufactured by Rosemount Engineering Company. A constant temperature oil bath, made by Lauda Division of Brinkman Instruments, Inc. was used as the heat medium. The bath was set at four different temperatures within the range of interest. The results, indicated in Table 2, show a worst case error of plus or minus 0.5°F at the highest temperature.

With the thermocouples calibrated as indicated, the entire electronic system employed to record temperature data was examined. The results are shown in Table 3. Taking the worst case error, at the highest temperature, for both the thermocouples and readout system yields a maximum error of plus or minus 0.9°F . The more realistic RSS error goes from 0.23°F at 150 degrees to 0.65°F at 350 degrees. Finally, when recovery factor variation is added, the RSS error at 350°F becomes plus or minus 1.0°F . Figure 10 depicts the equipment used in the calibrations.

In addition to initially calibrating the thermocouples and temperature recording electronics, calibration temperatures are monitored during each test to account for electronic drifting or component failure. Four calibration temperatures are sensed twice with each thermocouple type on every data scan. The calibration temperatures are nominally 32°F , 150°F , 300°F , and 450°F , which are supplied by a Model CSD-963 Temperature Calibration System manufactured by Hy-Cal Engineering. The calibration temperatures were also calibrated against the Rosemount Engineering Company Model 162 platinum resistance bulb primary standard and were found to be within plus or minus 2°F of the nominal temperature, but did not vary with time by more than plus or minus 0.1°F per 100° . Values for the calibration

temperatures used were the calibration values rather than the nominal values. The Temperature Calibration System is located adjacent to the test facility and thermocouple wires and connectors of the same type and length are used to measure both the calibration temperatures and the facility parameters. During data reduction, the calibration data are used to construct a potential difference (NBS potential minus observed potential at the calibration temperatures) verses observed potential curve. The raw data is then converted into engineering units by utilizing the calibration curve to establish a corrected value of the potential with which to enter the NBS reference tables. All thermocouples were referenced to 32°F using two Model K170 Ice Point References manufactured by Kaye Instruments, Inc. The accuracy of the reference temperature is not significantly important as long as the reference temperature is stable during a data scan.

b. Pressure Measurements

1. Location

Forty-four static and fifty-one total pressures are measured in the vehicle flowpath. Sixteen of the static taps are distributed at various points on the compressor flowpath liners. In particular, ten of these are located over the rotor tip, starting at 0.25 inch axially forward of the leading edge and following at 0.25 axial increments downstream. A further ten static pressures are measured approximately mid-span radially on two adjacent vanes with seven suction side pressure taps on one vane and three pressure side taps on the other vane.

Nine total pressure probes are mounted on the leading edge of two stators, four probes on one vane and five on the other vane, equally spaced radially. These probes are of the Kiel stagnation tube design shown in Figure 11. Six pressure rakes are circumferentially spaced at 2.167 times the angular spacing between stator vane trailing edges, dividing the discharge annulus into six equal circumferential increments. Each rake contains seven radially distributed stagnation tubes with the second, fourth, and sixth element consisting of cobra-type directional probes. A typical rake configuration is shown in Figure 12. Reference 4 describes the cobra-type probe design and the calibrations of the specific probes in use. The cobra probes on each rake are individually calibrated versus yaw angle from plus ten degrees to minus ten degrees and checked over a Mach number range from 0.41 to 0.81. No dependence on Mach number was observed and a first degree polynomial least squares curve fit calibration was established for each cobra probe.

Located in conjunction with the static pressure taps placed over the rotor blade tips are ten Kulite Model Number XTS-1-190-200 dynamic pressure transducers. These transducers are recessed slightly in the abradable coating on the casing adjacent to the rotor tip to prevent damage by a minor rotor rub. The reference side of each transducer is connected to the corresponding static pressure tap at the same axial location.

2. Calibration

Six Kulite strain gage type transducers are used to convert the various pressures into electrical signals for processing through readout and recording. One transducer is located in each of six, forty-eight port Scanivalve¹ sequential pressure switching devices. The pressures to be sampled are connected to odd numbered ports while moderate vacuum is applied to all even numbered (roughing) ports to minimize hysteresis effects.

Four calibration pressures are sensed by all six Scanivalves on every scan. These are 5 PSIA, 15 PSIA, 15 PSIG, and 30 PSIG. The calibration pressures are supplied by Ametek Model PK-30 self-regulating, primary deadweight type, pressure standards. The 5 PSIA and 15 PSIA pressure standards are enclosed in sealed containers which are kept at 300 to 400 microns Hg absolute pressure and are corrected for this non-zero level. Barometric pressure is measured via two ports located on the instrument bulkhead. These ports are scanned twice for each data point. The value of barometric pressure is then obtained using the scanned values and a calibration curve established by the 5 PSIA and 15 PSIA calibration pressures. This barometric pressure value is used to correct the 15 PSIG and 30 PSIG calibration pressures to absolute values. These values are then used to complete the pressure calibration curve from 15 PSIA to 30 PSIG. The recorded outputs for the four calibration pressures are used to create a new calibration curve for each transducer for every data scan.

c. Readout Electronics

Data are collected and recorded through use of a Hewlett Packard 2012B Data Acquisition System (DAS). This system is comprised of a 2911 guarded crossbar scanner, 2547A coupler, 2402 integrating digital voltmeter, 5050B digital recorder, and a Kennedy 1506 incremental tape recorder.

¹Scanivalve is a trademark of Scanivalve, Inc.

As previously stated, pressure measurements are routed through six Scanivalve units using Kulite transducers for conversion into electronic signals. A "Scanivalve" offers the advantage of using the same transducer to measure many pressures and lends itself to on-line calibration as described above. An interface unit was built to program the scanivalves, along with other parameters, into the HP DAS in a manner which minimizes scanning time without compromising transducer settling time. Instead of sampling the same port on all valves sequentially before stepping to the next port, the digital interface causes each valve to move incrementally through its next roughing port to its next data point immediately after being interrogated. Each transducer then has an opportunity to settle out at its next test pressure while four others are sequentially interrogated. This sequence is repeated until all ports are sampled. Approximately ten seconds lapse for the entire procedure.

4. TEST FACILITY INSTRUMENTATION

a. Rotor Speed

A Bentley Model 306 transducer senses six grooves machined into the gearbox/rotor driveshaft coupling. The output is fed into a Model 3115 proximator for signal conditioning. The proximator signal is a train of pulses having a repetition rate corresponding to rotor RPM/10. This repetition rate is directly recorded by the HP DAS. A Bentley Model 3050 tachometer provides a visual indication of rotor speed accurate to ten RPM. The tachometer also includes an adjustable speed limiting switch as a safety feature.

b. Mass Flow

The inlet flow is metered through a 30-inch Universal Venturi Tube manufactured by B.I.F. Industries with a 17.400-inch throat. Meter accuracy has been calibrated to plus or minus one-half percent by the manufacturer. Static pressure taps are located both in the throat and in the inlet cavity.

c. Inlet (Plenum) Total Pressure and Temperature

Compressor inlet total pressure is assumed equal to plenum static pressure just downstream of the last screen. Four static taps are manifolded into one pressure source and recorded on two separate Scanivalves. At maximum flow rate, the error is no worse than 0.003 PSI, verified by calibration. Inlet total temperature is sensed by four bare junction thermocouples located in the same axial plane as the pressure taps at two different radii in the plenum.

The thermocouples are supported on two cables stretched across the inlet plenum.

d. Analog Compressor Mapping

An on-line plot of stage pressure ratio versus pseudo mass flow is effected through use of a Mosely Model 2FRA X-Y plotter. Teledyne pressure transducers are used to sense stage inlet P01, stage exit P03 from a mid-radius stagnation tube and casing P1 (measured 1.0 inch upstream of the rotor). Operational amplifiers are used to ratio exit P03 to inlet P01 and also to ratio casing P1 to inlet P01. Stage pressure ratio ($P03/P01$) is used to excite the Y-axis while the pseudo mass flow ($1-(P1/P01)$) is sent to the X-axis. The approximate compressor map so obtained is used to select a reasonable distribution of throttle settings at which to record detailed data.

e. Relative Humidity

A Foxboro Dewcel Model 2711TG-K222 was mounted in the inlet stack to monitor humidity. This device continuously measures the moisture content of the air by sensing the temperature at which the partial pressure of its water vapor is equal to the water vapor pressure of a saturated salt solution. The humidity information is acquired by the DAS as a thermocouple reading on every test run and subsequently treated in the Phase I data reduction program.

f. Strain Gage Telemetry System

To insure a clean, unobstructed inlet, a Telemetry System was used to convey strain gage data from the rotor in lieu of a slip ring. Installation of the rotating components was made in the gearbox-to-compressor driveshaft. The size of this shaft limited the system to five available channels. Figure 13 shows the Telemetry carrier tubes along side the two shafts in which they were designed to fit. Figure 14 shows the rotor downstream face with the female strain gage connector located at the center. The corresponding male half is shown in Figure 15. A connector at this interface was installed to permit removal of the rotor without disturbing gage leads. The Telemetry modules and P.M. receiver were manufactured by Acurex.

Three strain gages were applied to each of four different blades at locations previously determined during shake table tests. The redundant gages were applied to insure survival of a sufficient number to complete testing. If required, gage leads could have been changed at patches provided for that purpose, located at the rotor hub O.D. However, the five gages originally connected remained operative during the entire testing sequence thereby negating the need to make any changes.

Great care was taken during gage application to insure minimum effect on the airstream. The maximum height of the gages & lead out cross section was held to 10 mils, with the edge feathered over a large area. EpoxyLite 5403 Adhesive and fine silk cloth were used to provide the required fillet. Figure 16 shows a typical gage application.

SECTION III

TEST PROCEDURE AND DATA REDUCTION

1. TEST PROCEDURE

Test data were taken generally in order of increasing speed, with several different compressor throttle settings being probed at each speed. The on-line analog plot of stage pressure ratio versus pseudo mass flow was used to select the test points.

For each speedline, test data were first acquired at an open throttle, open surge valve condition. The second data point was obtained with an open throttle, closed surge valve condition. Although the open surge valve produced a slight asymmetry in throttling, the increased mass flow this permitted expanded the operating range which could be mapped to a useful degree. After the second data point was acquired, the compressor was gradually throttled to induce stall. After recovery, several throttle settings in the operating range were selected to complete the mapping of the speedline. One or more of three sources were used to indicate stall: The outputs of the dynamic pressure transducers located over the rotor tip, a microphone located in the plenum, and the outputs of the strain gages located on the rotor blades. The stall condition was relieved immediately by opening the pneumatically actuated surge valve.

Test data were acquired at the rate of about one speedline per hour. Some test points were repeated on different days to assure data integrity by comparison to previously acquired data. Exceptions to the test procedure described above were required for the 90%, 95%, and 100% speedlines. The elevated power requirements for the drive motor at these speeds caused the motor windings to overheat, limiting the operating time to eight to ten minutes on any given attempt. The speed then had to be reduced for several minutes to allow the windings to cool.

Prior to each test, barometric pressure and vacuum reference pressure were recorded to check the calibration pressures. The rig was initially brought up to speed and then monitored for about ten minutes, to permit equilibrium to be reached. A five minute dwell at each throttle setting was observed prior to data acquisition. Two complete data scans were acquired at each test point.

A 12-character test identification number was manually assigned to each test point (consisting of two data scans) and acquired by the DAS as the first item of data:

CHARACTERDATA

1	Last digit of year (0-9)
2-3	Numerical month (1-12)
4-5	Numerical day of month (1-31)
6-7	Test number on that day (1-99)
8-10	Throttle setting (0-200)
11-12	Percent speed (0-00 = 100%)

During each data scan, a total of 470 data items were recorded; the channel number as the first item followed by its recorded voltage as the second item.

2. DATA REDUCTION - PHASE I

Phase I reduction of the test data was accomplished using the computer program described in Reference 5. This computer program converts the raw data into engineering units, groups and displays the acquired data in a readable format, provides an initial analysis of compressor stage performance, and prepares a data deck for the Phase II aerodynamic analysis. The data is checked against specified tolerance for accuracy and obvious error, and transducer calibrations are compared with manufacturer's specifications. Further data reduction is terminated if erroneous or inconsistent data is recorded. The user has the ability to edit recorded data if required.

In cases where multiple data scans are recorded at the same test point, the user has the option for the Phase II aerodynamic analysis of having one data deck prepared for each data scan, or having an "average" data deck prepared, averaging the results of all scans at that test point. The averaging option was employed with two scans per test point. The following options of the Phase I data reduction program were also used:

- a. Temperature effects were considered in calculating gas properties.
- b. Thermocouple calibration data was available and this data was utilized in the conversion of the thermocouple outputs.
- c. The program automatically corrects all results to standard sea-level conditions.

Printed outputs were generated for each data scan and the two scans at each test point were manually compared to check for any errors or instability.

3. DATA REDUCTION - PHASE II

a. Basic Program Description

Phase II reduction of the test data was performed using the computer program described in Reference 6. This computer program provides a detailed aerodynamic analysis of the test compressor stage, utilizing the geometry of the stage and the Phase I output data deck as inputs. Analysis of each test point is performed individually, although any number of test points may be analyzed in one computer run.

The system of equations incorporated into the Phase II computer program includes a full treatment of the axisymmetric equations of motion of an inviscid fluid, including blade-force terms, and the assumption of a thermally-perfect gas as the working fluid. The equations are solved in finite difference form by the streamline curvature method. Wake and boundary layer blockages and flow deviation within blade rows are either calculated or input as a user option in the computer program.

Output from the program includes printed details of the flow field at each computing station, performance details for the blade-sections, calculated blockages, and, optionally, CALCOMP plots of blade performance parameters and the stage static pressure distribution.

b. Across-Blade Analysis

Phase II Across-Blade analysis was performed for each test point on all speedlines. The computing station axial distribution for the Across-Blade analysis is shown in Figure 17 (it should be noted in the figure that the computing stations need not be radial and can be input as curvilinear; i.e., to follow blade edges). Wake and boundary layer blockages were iteratively determined by the program at stations 7, 8, 11, 12, 13 where experimental casing static pressures could be matched by the calculated values. At stations 9 and 10 where no experimental casing static pressures were measured, blockage values were linearly interpolated between the values calculated at stations 8 and 11.

c. Thru-Blade Analysis

To obtain a more detailed picture of the flow within the compressor rotor, the test point closest to design point was chosen for Thru-Blade analysis. The more detailed analysis involved the introduction of four additional computing stations within the rotor. The location of the additional computing stations is shown in Figure 17.

Initial data input for deviation and blockage was based on design values and distributions. Due to the difficulty of obtaining a converged thru-blade solution at design flow, input deviation values were frozen at all internal stations. In addition, blockage values at stations 7 and 8 were also held to initial input values. This required some manual iteration of values between computer runs.

Convergence of the final solution was based on the following criteria:

1. The desired flow was passed through the stage.
2. Experimental casing static pressure values were matched within set tolerance limits.
3. Reasonable axial distributions of blockage and deviation were achieved.

SECTION IV

RESULTS

1. OVER-ALL PERFORMANCE

The mass-averaged performance of the rotor and of the complete compressor stage is tabulated in Table 4 and plotted in Figures 18 and 19. The performance indicates that all of the rotor and stage design goals were achieved. At 100 percent design corrected speed, corrected flow was approximately .5 lb./sec. higher than design, rotor efficiency was 3.5 points higher at a value of 90.4 percent, stage efficiency was 5.2 points higher at a value of 88.2 percent, rotor total pressure ratio was 6.8 percent higher at a value of 2.100, and stage total pressure ratio was 8.0 percent higher at a value of 2.065. The compressor was throttled to stall at each corrected speed shown on the map, with the exception of 75, 80, 85 and 100% speeds. A region of aerodynamic instability was encountered near stall at the 75, 80 and 85% speeds. At 100% speed, a slight casing rub near stall prevented data from being taken. For the other speeds the data point nearest stall was taken at a throttle opening approximately 0.5 percent further open than the setting which precipitated stall. This change in throttle area is equivalent to about 0.49 percent of the annulus area at the rotor inlet.

2. BLADE-ELEMENT PERFORMANCE (ACROSS BLADE)

The radial distributions of relative inlet Mach number, incidence angle, loss coefficient, diffusion factor, and deviation angle for both rotor and stator are presented in Figures 20 through 119, using Tables 5 through 14, for each data point shown on the compressor map. One set of these five radial distributions is presented for each blade row at each corrected speed. In each of these sets, the distributions for all throttle settings are superimposed on each respective plot. This data, also used for the compressor map, was reduced with computing stations only at blade-row edges and in free spaces as described in Section III-3b. There were no computing stations internal to blade rows.

It should be noted in the plots of radial distribution of rotor incidence that there is a notable fluctuation in incidence at all speeds between approximately 5.5 and 6.5 inches radial distance. This perturbation in incidence was caused by an input error in the final rotor blade design computer run. Specifically, at computing station 1 of the Streamsurface Geometry Specification input, the radii at streamlines 11 and 12 were reversed. Since computing station 1 is located upstream of the rotor leading

edge (computing station 2), streamlines 11 and 12 crossed at the rotor leading edge. This ultimately affected the final blade shape in that region of the rotor.

3. DESIGN SPEED DETAILED RESULTS

The data point at 100% corrected speed closest to design flow and maximum efficiency was selected for Phase II Thru-Blade analysis. The identification number for this data point is 602200201900. Details of the thru-blade analysis technique are given in Section III-3c.

During the analysis procedure it was determined that several of the Phase II program calculation options could be varied and a converged solution could be obtained according to the criteria in Section III-3c for these different sets of input options. Specifically, two input options were varied. First, the rotor outlet total pressure can be obtained either from instrumentation readings located at the stator leading edge (option $P_o = 0$) or from instrumentation rakes located in the stage discharge plane (option $P_o = 1$). The stator leading edge option uses mean total pressure readings while the stage rake plane option utilizes peak total pressure readings. The second program option concerns the blockage distribution factor input for the rotor trailing edge. This distribution factor (BDIST) varies the value of blockage at a computing station linearly from hub to tip by the following ratio:

$$\text{BDIST} = \frac{\text{HUB BLOCKAGE}}{\text{MIDRADIUS BLOCKAGE}}$$

Two values were used in the analysis: BDIST = 1.0 and 1.37. To summarize, the following list describes the input values varied for the four different thru-blade analysis cases for test point 602200201900:

- Case 1: $P_o = 0$, BDIST = 1.37
- Case 2: $P_o = 1$, BDIST = 1.0
- Case 3: $P_o = 1$, BDIST = 1.37
- Case 4: $P_o = 0$, BDIST = 1.0

The results of the four cases indicated two major trends. First, varying the P_o option and holding the BDIST option fixed influenced the radial distribution of rotor and stator losses, rotor deviation and stator incidence. Second, holding the P_o option fixed and varying the BDIST option affected the level of rotor hub trailing edge deviation and the axial variation of stage mid-span blockage.

Of the four cases analyzed, Cases 1 and 2 provided the closest experimental casing static pressure match and are

presented in detail. The detailed aerodynamic results for Case 1 and 2 are described separately in computer printouts listed in Appendix A. Comparison plots of the radial distribution of the same five parameters for rotor and stator described in the across-blade results are shown in Figures 120 through 129, using the symbols listed in Table 15. The axial static pressure distribution for each case is shown in Figures 130 and 131. A comparison of the effects of the analysis program options on the axial distribution of rotor deviation and stage blockage is shown in Figures 132 through 134, respectively.

In addition to the case 1 and 2 comparison results, other plots for test pt 602200201900 are shown in Figures 135 through 140. These include a plot of stator mid-span static pressure, compressor hub and tip geometry and velocity diagram plots, and stage exit contour plots for total pressure, flow rate parameter and total temperature.

4. DESIGN POINT COMPARISON RESULTS

To obtain a comparison between design and experimental data, results from the Case 2 100% speed data point (I.D. 602200201900) were compared with the design prediction values and are shown in Figures 141 through 150, using the symbols listed in Table 16. These plots show the same radial distributions for rotor and stator as described in the previous section. Also included in these plots are the across blade results for test point 602200201900.

5. ROTOR TIP DYNAMIC PRESSURE MEASUREMENTS

Only a fraction of this data has been processed to-date and, consequently, only a few general observations concerning the dynamic pressure measurements will be made in this report. Principal attention was focused on design speed behavior at three throttle settings. These settings were 00 (choked conditions), 19 (stage peak efficiency) and 31 (near stall). At throttle setting 00, the passage shock appears to depart from the leading-edge pressure surface obliquely, merging to a normal shock about half way across the passage. At throttle setting 19, the passage shocks appear to have nearly merged into a single normal shock. At throttle setting 31, the passage shock has been disgorged and is standing ahead of the leading edge, as would be expected. It is interesting to note that throttle setting 00 is closest to the design back pressure level and expected shock pattern, but the nearly normal shock corresponding to throttle setting 19 produced minimum losses.

SECTION V

CONCLUSIONS

The extremely high efficiency achieved by this compressor stage has resulted in much effort being expended in attempts to identify precisely which features of the design are most significant. Definitive conclusions of this sort have not been possible. However, certain features of the design do appear to have contributed.

The first principal conclusion drawn is that the method of airfoil optimization chosen, which was applied uniformly to both blade rows, appears broadly successful. To refresh the readers memory, as described in Reference 1, the work distribution in the rotor, and angular momentum distribution in the stator, were adjusted to achieve a minimum (circumferential average) static pressure gradient, modified only by a concession made to the Kutta condition near the trailing edge. The same criteria was applied regardless of whether the Mach number was moderate subsonic, as at the stator tip, or high supersonic, as at the rotor tip. It would seem excessively fortuitous if this had not contributed significantly.

The second principal conclusion drawn is that the optimization technique mentioned above plus the choice of an axial velocity ratio across the rotor of substantially less than 1.0 did an excellent job of controlling shock losses. The low axial velocity ratio kept the airfoil camber to a minimum and the optimization technique controlled the airfoil surface curvature. Figure 151 shows some design speed, peak efficiency data points on a loss parameter versus diffusion factor plot. Because the dynamic pressure transducers over the rotor tip showed the passage shock to be approximately normal at peak efficiency operation, the measured loss coefficients were corrected by subtracting normal shock loss at the relative inlet Mach number to obtain the data points shown on the Figure. These points appear so unreasonably low that two possibilities are immediately evident. The first is that the shock losses may have actually been less than normal shock losses because of small secondary shocks present. The second, and perhaps more likely, possibility is that most of the rotor diffusion loss, which is contained in the rotor wake, has been attributed to the stator because that is where the fluid mixing of the rotor wakes occurred. That is somewhat substantiated by Figure 152 where the data points for the stator appear higher than expected. Unlike Figure 151, the data in Figure 152 has not been corrected for any shock loss since the Mach number reached a maximum of about 1.0 at the hub and it was presumed that the sweep was fully effective.

The third principal conclusion drawn is that the swept leading-edge at the stator hub also probably had a major impact on the design. In spite of the stator hub Mach number of approximately 1.0, the stator hub losses were astoundingly low. As shown in Figure 152, the total pressure loss parameter was lowest in that region. However, what Figure 152 most likely shows best is the secondary flow effect produced by the stator leading edge shape. The strong sweep at the hub and the mild sweep at the tip have forced the fluid with the least momentum toward mid-passage where it is most harmless.

It has not been possible to draw firm conclusions regarding the airfoil/platform fillet treatment. However, the fillet treatment obviously did not penalize the design and may well have contributed usefully.

Overall stage performance may be viewed in at least two ways compared to design conditions. If one considers performance at design flow, both pressure ratio and efficiency goals were substantially exceeded with 2.065 versus 1.912 recorded for stage total pressure ratio and 0.882 versus 0.830 recorded for stage isentropic efficiency. On the other hand, if one evaluates stage performance at design total pressure ratio, the choked flow of 63.12 lb/sec slightly exceeded the design flow of 62.60 lb/sec and the stage isentropic efficiency at 0.856 is 2.6 points above the design value of 0.830. This efficiency was obtained through a slight extrapolation of a plot of total pressure ratio versus isentropic efficiency. This latter method of viewing the performance may be preferable from an engine operating line viewpoint because of the increased stall margin.

TABLE 1
INSTRUMENTATION LIST

ITEM NO.	TYPE SENSOR	LOCATION		ARRAY NAME	SUB.		TYPE THERMO.	REMARKS
		AXIAL	RADIAL		I	J		
14	T/C			PPT	1	1		Proximity Probe
15	T/C			PPT	2	1		"
16	T/C			PPT	3	1		"
17	T/C	-4.800	7.75	ROI	2	1		Rotor Outlet Total Temperature
18	T/C	-4.685	7.00	ROI	4	1		"
19	T/C	-4.667	6.25	ROI	6	1		"
20	T/C	-4.735	5.50	ROI	8	1		"
21	T/C			TC	1	3		32° Calibration Temperature
22	T/C			TC	1	4		32° "
23	T/C			TC	2	3		150° "
24	T/C			TC	2	4		150° "
25	T/C			TC	3	3		300° "
26	T/C			TC	3	4		300° "
27	T/C			TC	4	3		450° "
28	T/C			TC	4	4		450° "
29	T/C	-0.474	8.162	SOT	1	1		Stator Out. Total Temp. -RAKE #8
30	T/C	-0.474	7.823	SOT	2	1		"
31	T/C	-0.474	7.484	SOT	3	1		"
32	T/C	-0.474	7.145	SOT	4	1		"
33	T/C	-0.474	6.806	SOT	5	1		"
34	T/C	-0.474	6.467	SOT	6	1		"
35	T/C	-0.474	6.128	SOT	7	1		"
36	T/C	-0.474	8.162	SOT	1	3		" RAKE #10
37	T/C	-0.474	7.823	SOT	2	3		"
38	T/C	-0.474	7.484	SOT	3	3		"
39	T/C	-0.474	7.145	SOT	4	3		"
40	T/C	-0.474	6.806	SOT	5	3		"
41	T/C	-0.474	6.467	SOT	6	3		"
42	T/C	-0.474	6.128	SOT	7	3		"
43	T/C	-0.474	8.162	SOT	1	5		" RAKE # 5
44	T/C	-0.474	7.823	SOT	2	5		"
45	T/C	-0.474	7.484	SOT	3	5		"
46	T/C	-0.474	7.145	SOT	4	5		"

TABLE 1 (Cont'd)
INSTRUMENTATION LIST

ITEM NO.	TYPE SENSOR	LOCATION		ARRAY NAME	SUB.		TYPE THERMO.	REMARKS
		AXIAL	RADIAL		I	J		
47	T/C	-0.474	6.806	SOT	5	5	1	Stator Out. Tot. Temp. - RAKE #5
48	T/C	-0.474	6.467	SOT	6	5	1	"
49	T/C	-0.474	6.128	SOT	7	5	1	"
59	T/C	-0.474	7.145	SOT	4	4	2	" RAKE # 12
60	T/C			DPT	1		2	Dewcel Temperature
61	T/C			PT	1		2	Plenum Temperature
62	T/C			PT	2		2	"
63	T/C			PT	3		2	"
64	T/C			PT	4		2	"
65	T/C	-4.870	8.125	R0T	1		2	Rotor Outlet Total Temperature
66	T/C	-4.727	7.375	R0T	3		2	"
67	T/C	-4.660	6.625	R0T	5		2	"
68	T/C	-4.680	5.875	R0T	7		2	"
69	T/C	-4.933	5.125	R0T	9		2	"
70	T/C			TC	1	1	2	32° Calibration Temperature
71	T/C			TC	1	2	2	32° " "
72	T/C			TC	2	1	2	150° " "
73	T/C			TC	2	2	2	150° " "
74	T/C			TC	3	1	2	300° " "
75	T/C			TC	3	2	2	300° " "
76	T/C			TC	4	1	2	450° " "
77	T/C			TC	4	2	2	450° " "
78	T/C	-0.474	8.162	SOT	1	6	2	Stator Out. Tot. Temp. - RAKE # 7
79	T/C	-0.474	7.823	SOT	2	6	2	"
80	T/C	-0.474	7.484	SOT	3	6	2	"
81	T/C	-0.474	7.145	SOT	4	6	2	"
82	T/C	-0.474	6.806	SOT	5	6	2	"
83	T/C	-0.474	6.467	SOT	6	6	2	"
84	T/C	-0.474	6.128	SOT	7	6	2	"
85	T/C	-0.474	8.162	SOT	1	2	2	" RAKE # 3
86	T/C	-0.474	7.823	SOT	2	2	2	"
87	T/C	-0.474	7.484	SOT	3	2	2	"
88	T/C	-0.474	7.145	SOT	4	2	2	"

TABLE 1 (Cont'd)
INSTRUMENTATION LIST

ITEM NO.	TYPE SENSOR	LOCATION		ARRAY NAME	SUB		SCAN.	REMARKS
		AXIAL	RADIAL		I	J		
101	PT	-0.474	8.161	SOP	1	6	1	Stator Out. Tot. Pressure - RAKE # 11
103	PT	-0.474	7.822	SOPAN	2	6	1	" " " "
105	PT	-0.474	7.822	SOP	2	6	1	" " " "
107	PT	-0.474	7.822	SOPAP	2	6	1	" " " "
109	PT	-0.474	7.483	SOP	3	6	1	" " " "
111	PT	-0.474	7.144	SOPAN	4	6	1	" " " "
113	PT	-0.474	7.144	SOP	4	6	1	" " " "
115	PT	-0.474	7.144	SOPAP	4	6	1	" " " "
117	PT	-0.474	6.806	SOP	5	6	1	" " " "
119	PT	-0.474	6.467	SOPAN	6	6	1	" " " "
121	PT	-0.474	6.467	SOP	6	6	1	" " " "
123	PT	-0.474	6.467	SOPAP	6	6	1	" " " "
125	PT	-0.474	6.128	SOP	7	6	1	" " " "
127	PS	-4.030	6.746	SPSSP	1	1	1	Stator Pres. Side Stat. Pres. - 25%
129	PS	-3.670	6.803	SPSSP	2	1	1	" " " "
131	PS	-3.320	6.863	SPSSP	3	1	1	" " " "
133	PS			BP	1	1	1	Barometric Pressure
135	PT			PP	1	1	1	Plenum Total Pressure
137	PS			VP2	1	1	1	Venturi Inlet Pressure
139	PS			VPI	1	1	1	Venturi Throat Pressure
141	REF.			PC	1	1	1	5 psia Reference Pressure
143	REF.			PC	1	2	1	15 psia " "
145	REF.			PC	1	3	1	15 psig " "
147	REF.			PC	1	4	1	30 psig " "
201	PT	-0.474	8.161	SOP	1	1	2	Stator Out. Tot. Pressure - RAKE # 1
203	PT	-0.474	7.822	SOPAN	2	1	2	" " " "
205	PT	-0.474	7.822	SOP	2	1	2	" " " "
207	PT	-0.474	7.822	SOPAP	2	1	2	" " " "
209	PT	-0.474	7.483	SOP	3	1	2	" " " "
211	PT	-0.474	7.144	SOPAN	4	1	2	" " " "
213	PT	-0.474	7.144	SOP	4	1	2	" " " "
215	PT	-0.474	7.144	SOPAP	4	1	2	" " " "
217	PT	-0.474	6.806	SOP	5	1	2	" " " "

TABLE 1 (Cont'd)
INSTRUMENTATION LIST

ITEM NO.	TYPE SENSOR	LOCATION		ARRAY NAME	SUB		SCAN.	REMARKS
		AXIAL	RADIAL		I	J		
219	PT	-0.474	6.466	SOPAN	6	1	2	Stator Out. - Pres. - RAKE # 1
221	PT	-0.474	6.466	SOP	6	1	2	" Tot. "
223	PT	-0.474	6.466	SOPAP	6	1	2	" + "
225	PT	-0.474	6.127	SOP	7	1	2	" Tot. "
227	PT	-4.933	8.125	ROP	1		2	Rotor Outlet Total Pressure
229	PT	-4.689	7.375	ROP	3		2	" "
231	PT	-4.660	6.625	ROP	5		2	" "
233	PT	-4.727	5.875	ROP	7		2	" "
235	PT	-4.870	5.125	ROP	9		2	" "
237	PS			VP2	2		2	Venturi Inlet Pressure
239	PS			VPI	2		2	Venturi Throat Pressure
241	REF.			PC	2	1	2	5 psia Reference Pressure
243	REF.			PC	2	2	2	15 psia
245	REF.			PC	2	3	2	15 psig
247	REF.			PC	2	4	2	30 psig
301	PT	-0.474	8.161	SOP	1	3	3	Stator Out. Tot. Pres. - RAKE # 2
303	PT	-0.474	7.822	SOPAN	2	3	3	" "
305	PT	-0.474	7.822	SOP	2	3	3	" Tot. "
307	PT	-0.474	7.822	SOPAP	2	3	3	" + "
309	PT	-0.474	7.493	SOP	3	3	3	" Tot. "
311	PT	-0.474	7.144	SOPAN	4	3	3	" - "
313	PT	-0.674	7.144	SOP	4	3	3	" Tot. "
315	PT	-0.474	7.144	SOPAP	4	3	3	" + "
317	PT	-0.474	6.805	SOP	5	3	3	" Tot. "
319	PT	-0.474	6.466	SOPAN	6	3	3	" - "
321	PT	-0.474	6.466	SOP	6	3	3	" Tot. "
323	PT	-0.474	6.466	SOPAP	6	3	3	" + "
325	PT	-0.474	6.127	SOP	7	3	3	" Tot. "
327	PS	-4.240	6.716	SPSSS	1		3	Stator Suc. Side Stat. Pressure - 17%
329	PS	-4.076	6.746	SPSSS	2		3	" 25%
331	PS	-3.800	6.774	SPSSS	3		3	" 32%
333	PS	-3.713	6.803	SPSSS	4		3	" 40%
335	PS	-3.526	6.830	SPSSS	5		3	" 49%

TABLE 1 (Cont'd)
INSTRUMENTATION LIST

ITEM NO.	TYPE SENSOR	LOCATION			ARRAY NAME	SUB		SCAN.	REMARKS
		AXIAL	RADIAL	CIRCUM.		I	J		
337	PS	-3.340	6.863	Vane 11	SPSSS	6		3	Stator Suc. Side Stat. Pressure - 57%
339	PS	-3.140	5.894	Vane 11	SPSSS	7		3	" " " " " " 66%
341	REF.				PC	3	1	3	5 psia Reference Pressure
343	REF.				PC	3	2	3	15 psia " "
345	REF.				PC	3	3	3	15 psig " "
347	REF.				PC	3	4	3	30 psig " "
401	PT	-0.474	8.161	183°52'	SOP	1	5	4	Stator Out. Tot. Pres. - RAKE # 4
403	PT	-0.474	7.822	183°52'	SOPAN	2	5	4	" " " " " "
405	PT	-0.474	7.822	183°52'	SOP	2	5	4	" " " " " Tot.
407	PT	-0.474	7.822	183°52'	SOPAP	2	5	4	" " " " " "
409	PT	-0.474	7.483	183°52'	SOP	3	5	4	" " " " " Tot.
411	PT	-0.474	7.144	183°52'	SOPAN	4	5	4	" " " " " "
413	PT	-0.474	7.144	183°52'	SOP	4	5	4	" " " " " Tot.
415	PT	-0.474	7.144	183°52'	SOPAP	4	5	4	" " " " " "
417	PT	-0.474	6.805	183°52'	SOP	5	5	4	" " " " " Tot.
419	PT	-0.474	6.466	183°52'	SOPAN	6	5	4	" " " " " "
421	PT	-0.474	6.466	183°52'	SOP	6	5	4	" " " " " Tot.
423	PT	-0.474	6.466	183°52'	SOPAP	6	5	4	" " " " " "
425	PT	-0.474	6.127	183°52'	SOP	7	5	4	" " " " " Tot.
427	PS	-0.563	8.500	4@60°	SP0D2	1		4	Downstream Casing Static Pressure
429	PS	-8.001	8.500	343°44'	SPOR	1		4	Static Pressure Over Rotor
431	PS	-7.751	8.500	5°26'	SPOR	2		4	" " " " " "
433	PS	-7.501	3.500	350°31'	SPOR	3		4	" " " " " "
435	PS	-7.251	8.500	11°47'	SPOR	4		4	" " " " " "
437	PS	-7.001	8.500	356°47'	SPOR	5		4	" " " " " "
439	PS	-6.751	8.500	17°40'	SPOR	6		4	" " " " " "
441	REF.				PC	4	1	4	5 psia Reference Pressure
443	REF.				PC	4	2	4	15 psia " "
445	REF.				PC	4	3	4	15 psig " "
447	REF.				PC	4	4	4	30 psig " "
501	PT	-0.474	8.161	259°21'	SOP	1	2	5	Stator Out. Tot. Pres. - RAKE # 6
503	PT	-0.474	7.822	259°21'	SOPAN	2	2	5	" " " " " "
505	PT	-0.474	7.822	259°21'	SOP	2	2	5	" " " " " Tot.

TABLE 1 (Cont'd)
INSTRUMENTATION LIST

ITEM NO.	TYPE SENSOR	LOCATION			ARRAY NAME	SUBJ		SCAN.	REMARKS
		AXIAL	RADIAL	CIRCUM.		I	J		
509	PT	-0.474	7.822	259°21'	SOPAP	2	2	5	Stator Out. + Pres. - RAKE # 6
509	PT	-0.474	7.483	259°21'	SOP	3	2	5	" Tot. "
511	PT	-0.474	7.144	259°21'	SOPAN	4	2	5	" - "
513	PT	-0.474	7.144	259°21'	SOP	4	2	5	" Tot. "
515	PT	-0.474	7.144	259°21'	SOPAP	4	2	5	" + "
517	PT	-0.474	6.805	259°21'	SOP	5	2	5	" Tot. "
519	PT	-0.474	6.466	259°21'	SOPAN	6	2	5	" - "
521	PT	-0.474	6.466	259°21'	SOP	6	2	5	" Tot. "
523	PT	-0.474	6.466	259°21'	SOPAP	6	2	5	" + "
525	PT	-0.474	6.127	259°21'	SOP	7	2	5	" Tot. "
527	PS	-0.519	5.790	4060°	SPID2	1		5	Downstream Hub Static Pressure
529	PT	-4.800	7.750	Vane 3	ROP	2		5	Rotor Outlet Total Pressure
531	PT	-4.685	7.000	Vane 3	ROP	4		5	" "
533	PT	-4.667	6.250	Vane 3	ROP	6		5	" "
535	PT	-4.735	5.500	Vane 3	ROP	8		5	" "
537	PS	-8.751	8.500	30°00'	SPODI	1		5	Upstream Casing Static Pressure
539	PS	-8.751	8.500	120°00'	SPODI	2		5	" "
541	REF.				PC	5	1	5	5 psia Reference Pressure
543	REF.				PC	5	2	5	15 psia "
545	REF.				PC	5	3	5	15 psig "
547	REF.				PC	5	4	5	30 psig "
601	PT	-0.474	8.161	309°41'	SOP	1	4	6	Stator Out. Tot. Pres. - RAKE # 9
603	PT	-0.474	7.822	309°41'	SOPAN	2	4	6	" - "
605	PT	-0.474	7.822	309°41'	SOP	2	4	6	" Tot. "
607	PT	-0.474	7.822	309°41'	SOPAP	2	4	6	" + "
609	PT	-0.474	7.483	309°41'	SOP	3	4	6	" Tot. "
611	PT	-0.474	7.144	309°41'	SOPAN	4	4	6	" - "
613	PT	-0.474	7.144	309°41'	SOP	4	4	6	" Tot. "
615	PT	-0.474	7.144	309°41'	SOPAP	4	4	6	" + "
617	PT	-0.474	6.805	309°41'	SOP	5	4	6	" Tot. "
619	PT	-0.474	6.466	309°41'	SOPAN	6	4	6	" - "
621	PT	-0.474	6.466	309°41'	SOP	6	4	6	" Tot. "
623	PT	-0.474	6.466	309°41'	SOPAP	6	4	6	" + "

TABLE II
CALIBRATION OF SAMPLE THERMOCOUPLES

BATH SET PT °C ^A	°F ^B	AVG. OF 9 SAMPLES °F	MAX. SPREAD ± °F
65	148.1	148.4	0.1
100	211.4	210.9	0.1
150	300.8	301.4	0.4
175	346.5	346.4	0.5

A Oil Bath Set Pt.
B Mueller bridge readout converted to temperature.

TABLE III
CALIBRATION OF TEMPERATURE READOUT ELECTRONICS

SET PT. Avg ⁺ °F.	PRINTER OUTPUT Avg* °F	MAX. SPREAD ± °F
148.2	148.3	0.2
210.7	210.7	0.2
301.7	301.7	0.3
345.4	345.5	0.4

+ Average of two calibrated T/C's.
* Average of eight channels.

TABLE IV
MASS-AVERAGED COMPRESSOR PERFORMANCE

TEST I.D.	RPM	FLOW (LB/SEC)	ROTOR		STAGE	
			PRESSURE RATIO	EFFICIENCY	PRESSURE RATIO	EFFICIENCY
51029010040	9076.0	22.232	1.1227	.8534	1.1203	.8374
510290200140	9380.9	21.765	1.1246	.8495	1.1218	.8316
510290300140	9076.8	21.305	1.1254	.8425	1.1225	.8239
510290400040	8385.6	23.730	1.1275	.8351	1.1240	.8128
510290500040	8074.9	23.105	1.1276	.8237	1.1235	.7981
510290600040	8076.3	18.630	1.1203	.7866	1.1141	.7478
510290700540	8092.1	17.350	1.1153	.7444	1.1067	.6908
510290800050	10091.3	28.245	1.1973	.8611	1.1941	.8455
510290900150	10089.3	27.515	1.2002	.8525	1.1962	.8365
510291000150	10095.1	27.365	1.2013	.8511	1.1973	.8350
511250100250	10112.3	26.646	1.2042	.8446	1.1991	.8249
510291300250	10103.5	26.342	1.2046	.8392	1.1995	.8195
511250300350	10110.4	25.962	1.2057	.8323	1.1997	.8097
511250500450	10111.0	25.207	1.2053	.8169	1.1975	.7875
511250600060	12139.9	34.563	1.2979	.8685	1.2923	.8535
511250700260	12133.7	33.645	1.3018	.8589	1.2956	.8428
511250900160	12143.8	33.124	1.3044	.8538	1.2979	.8372
511250900260	12143.5	32.555	1.3049	.8456	1.2981	.8284
511251000360	12145.3	31.959	1.3063	.8352	1.2985	.8157
511251100360	12141.1	31.333	1.3066	.8313	1.2969	.8070
511251200060	12147.0	30.636	1.3054	.8200	1.2939	.7918
511250100070	14175.1	41.325	1.4258	.8770	1.4181	.8605
511260200270	14165.7	49.250	1.4332	.8640	1.4229	.8449
511260300170	14162.2	39.653	1.4373	.8647	1.4256	.8450
511260400270	14178.3	39.183	1.4401	.8557	1.4269	.8340
511260500270	14165.5	38.605	1.4412	.8547	1.4268	.8310
511260600170	14165.7	37.990	1.4412	.8477	1.4248	.8197
511260700370	14157.0	37.371	1.4386	.8399	1.4203	.8088
601290100075	15247.6	45.401	1.5159	.8916	1.5010	.8700
601290200275	15255.1	44.134	1.5202	.8796	1.5037	.8560
601290300175	15260.2	43.470	1.5210	.8719	1.5040	.8480
601290400175	15264.7	42.811	1.5202	.8630	1.5026	.8368
512850200060	16189.4	49.091	1.6033	.9080	1.5876	.8867
512850100280	16180.8	47.705	1.6125	.9020	1.5922	.8760
512850300120	16195.4	47.099	1.6139	.8930	1.5927	.8657
512850500160	16194.6	46.605	1.6152	.8880	1.5920	.8587
512860200085	17231.2	53.405	1.7125	.9175	1.6948	.8990
512850300105	17227.3	51.965	1.7250	.9080	1.7016	.8840
512850400105	17217.1	51.544	1.7269	.9070	1.7022	.8810
512850500145	17213.9	51.114	1.7248	.9040	1.7029	.8770
512860600185	17215.0	50.532	1.7321	.9020	1.7046	.8740
512860700285	17218.2	50.155	1.7351	.8980	1.7057	.8680
512860800285	17225.2	49.635	1.7378	.8940	1.7052	.8610
512860900090	19182.7	57.607	1.8291	.9320	1.8035	.9090
601150300230	14146.9	52.911	1.8365	.9120	1.8112	.8950
601220300150	14151.4	52.806	1.8440	.9070	1.8133	.8800
601220400090	14139.5	54.389	1.8466	.9040	1.8152	.8760
601220500230	14138.1	53.655	1.8491	.8990	1.8149	.8701
601220600300	14143.7	52.899	1.8532	.8940	1.8122	.8590
601220700350	14144.2	52.150	1.8562	.8910	1.8073	.8490

TABLE IV (CONT'D)

TEST I.D.	RPM	FLOW (L3/SEC)	----- PRESSURE RATIO -----	----- EFFICIENCY -----	----- PRESSURE RATIO -----	----- STAGE RATIO -----	----- EFFICIENCY -----
601300100035	14322.6	61.517	1.9408	.9190	1.9118		.8960
601300200235	19329.2	60.990	1.9944	.9260	1.9601		.9001
601300301035	13317.9	69.559	2.9001	.9217	1.9648		.8956
601300401735	13321.6	59.772	2.9056	.9189	1.9673		.8900
601300502035	13318.0	53.315	2.9066	.9110	1.9680		.8830
601290502435	19312.9	59.817	2.9083	.9070	1.9668		.8770
601290702835	19291.2	53.057	2.9081	.9047	1.9635		.8726
601290803235	19311.1	57.243	2.9100	.8960	1.9567		.8580
601290903735	13317.4	55.237	2.9142	.8940	1.9447		.8450
601160200000	20178.1	63.119	1.9798	.8830	1.9573		.8667
601160400630	20178.7	62.968	2.9367	.8940	2.0161		.8788
601220101000	20174.4	62.988	2.9536	.8958	2.0267		.8777
601220901630	20143.1	62.762	2.9820	.9020	2.0494		.8810
602200201900	20152.4	62.642	2.9997	.9040	2.0652		.8820
601220302300	20193.8	62.398	2.1195	.9110	2.0744		.8820
601221102610	20165.2	61.921	2.1378	.9100	2.0844		.8766
602200302700	20112.7	62.168	2.1293	.9140	2.0786		.8817
602200403100	20134.2	60.949	2.1322	.9070	2.0703		.8680

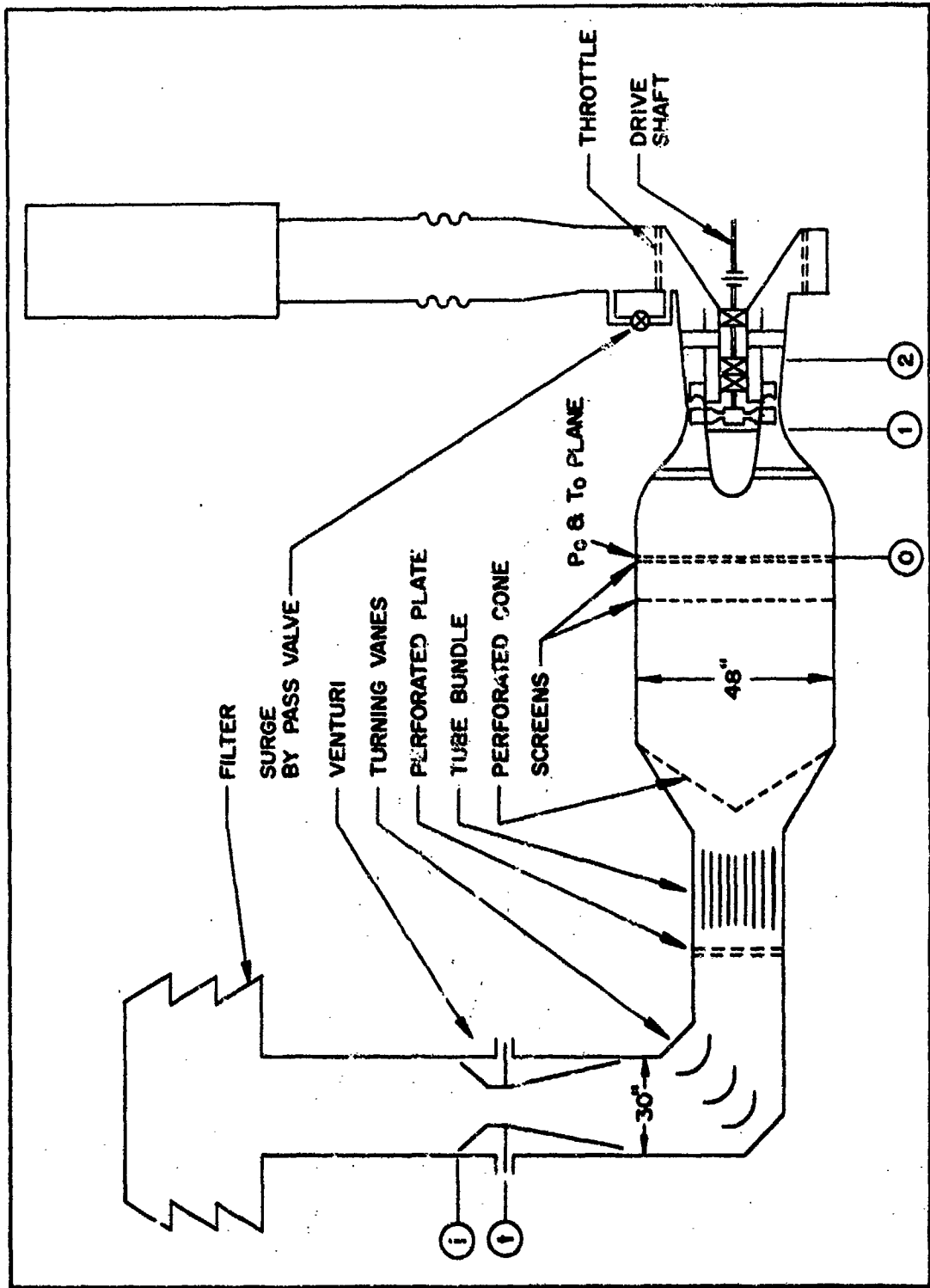
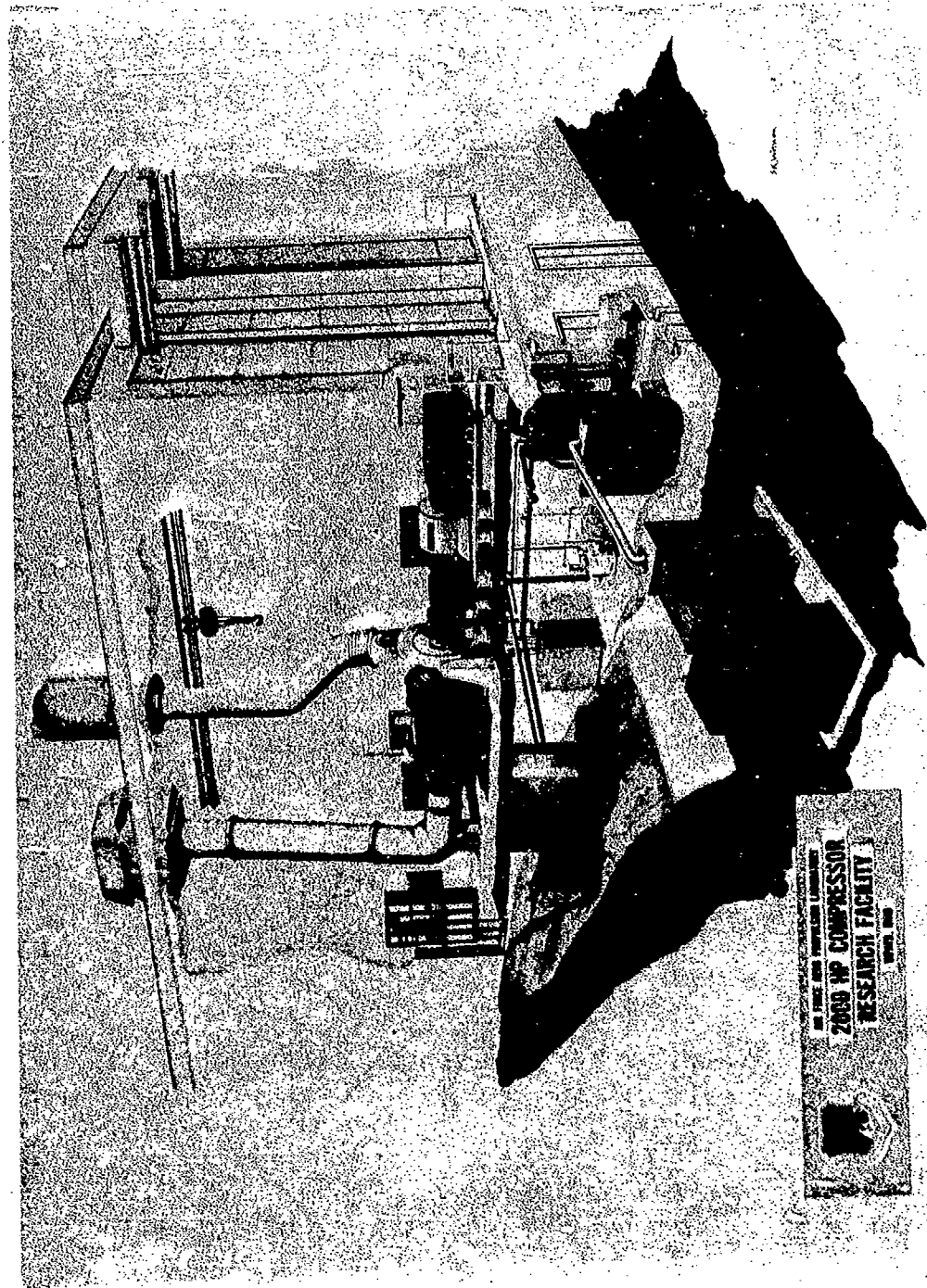


FIGURE 1. COMPRESSOR FACILITY FLOW PATH



THE UNIVERSITY OF TEXAS AT AUSTIN
2000 HP COMPRESSOR
RESEARCH FACILITY
1978-1979

FIGURE 2. TEST FACILITY

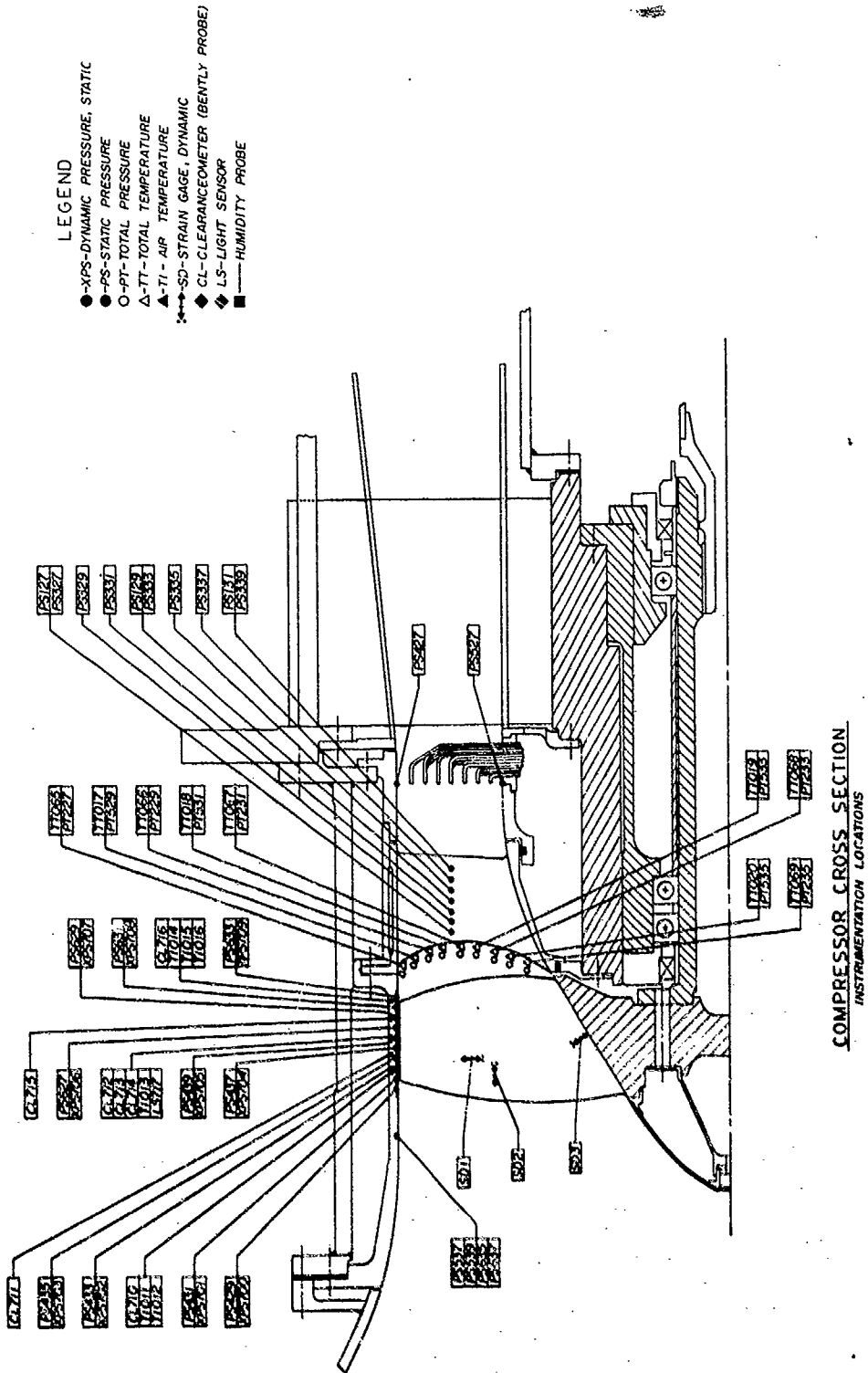


FIGURE 3. COMPRESSOR CROSS SECTION WITH INSTRUMENTATION LOCATIONS

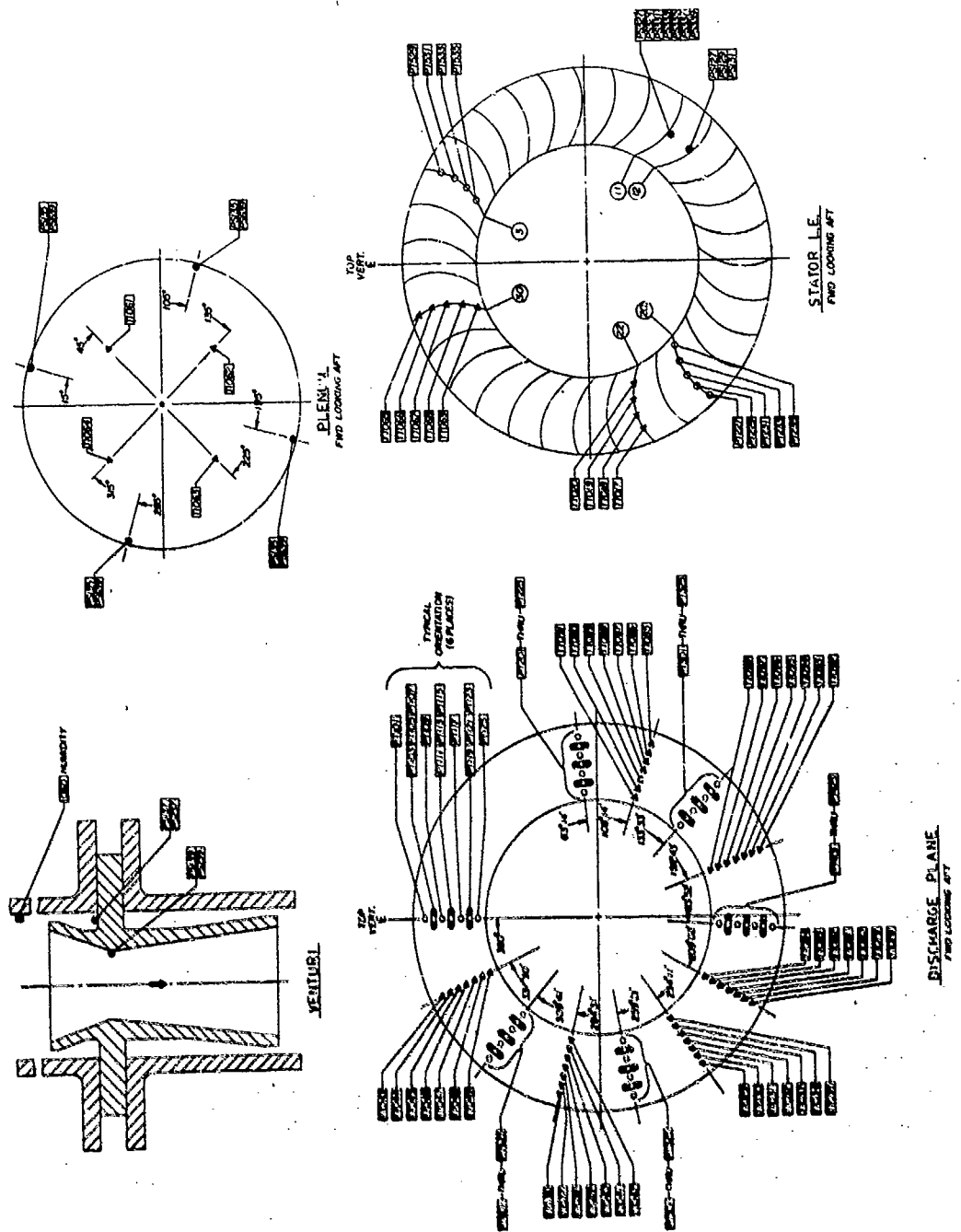


FIGURE 4. COMPRESSOR AND FACILITY INSTRUMENTATION LOCATIONS

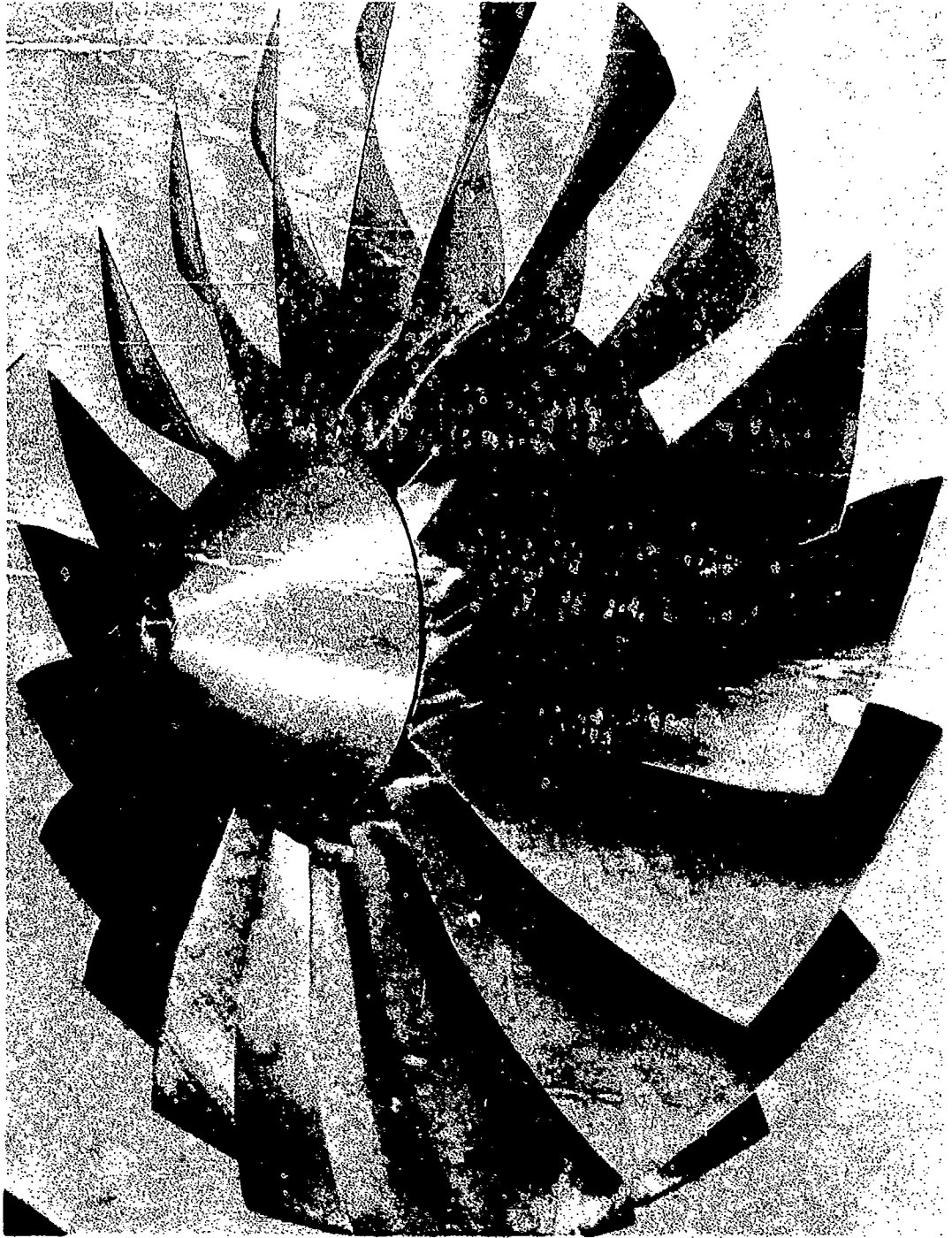


FIGURE 5. ROTOR ASSEMBLY



FIGURE 6. STATOR ASSEMBLY

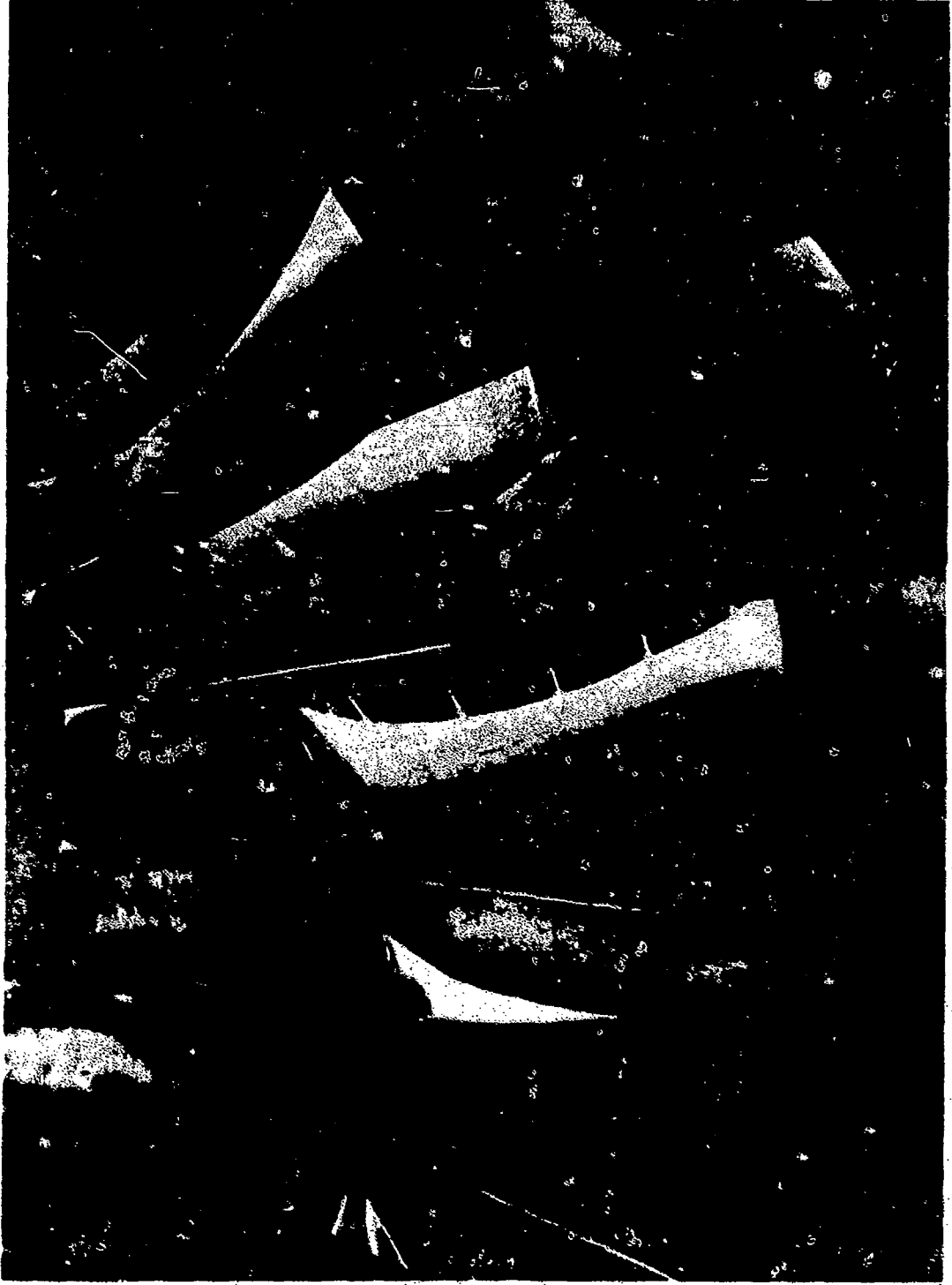


FIGURE 7. ROTOR AND STATOR ASSEMBLED

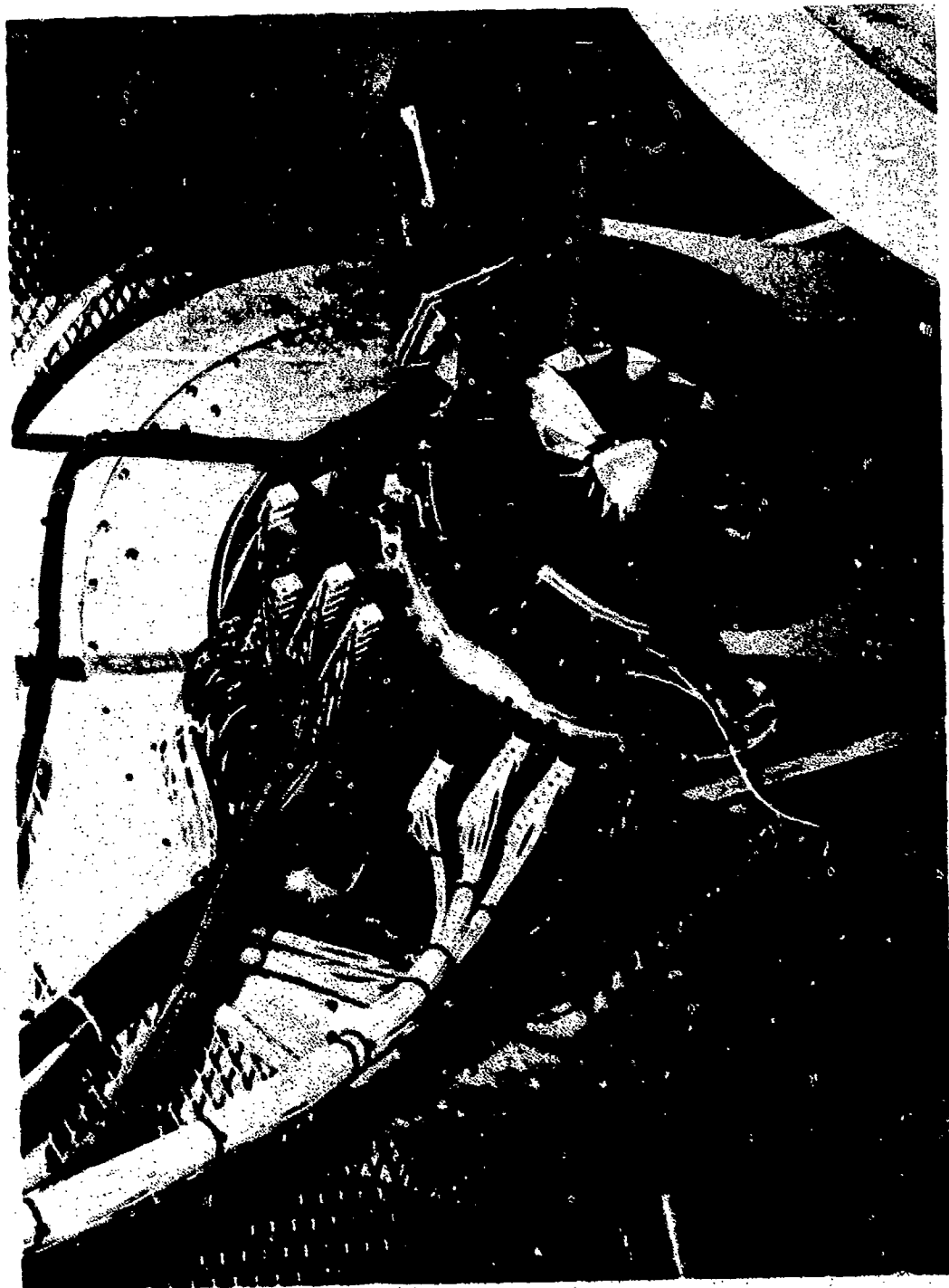


FIGURE 8. VEHICLE INSTRUMENTATION BULKHEAD

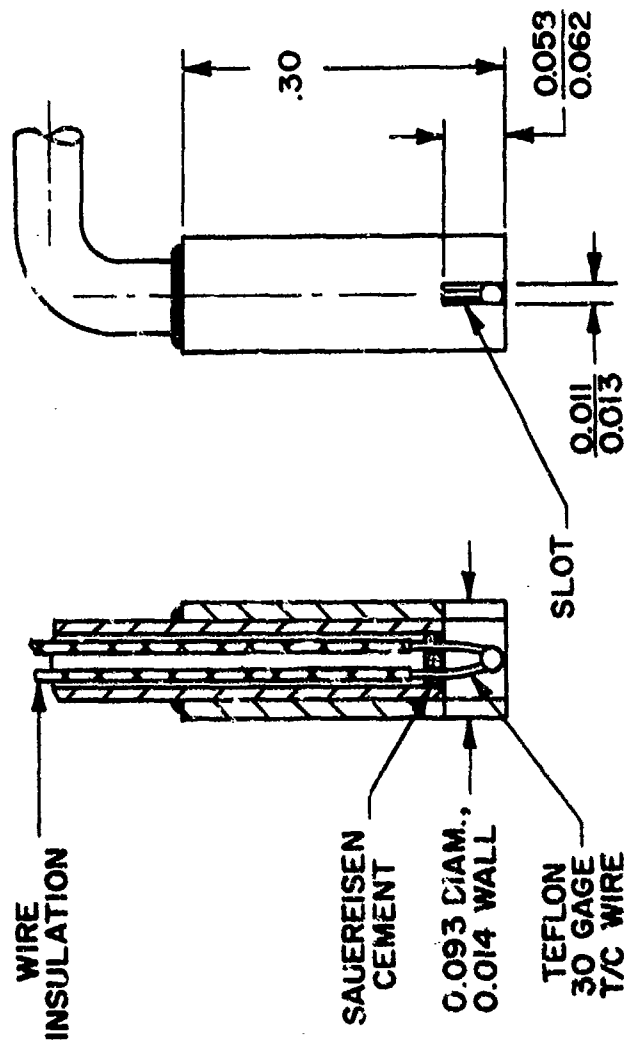


FIGURE 9. SLOT VENTED TEMPERATURE PROBE DESIGN

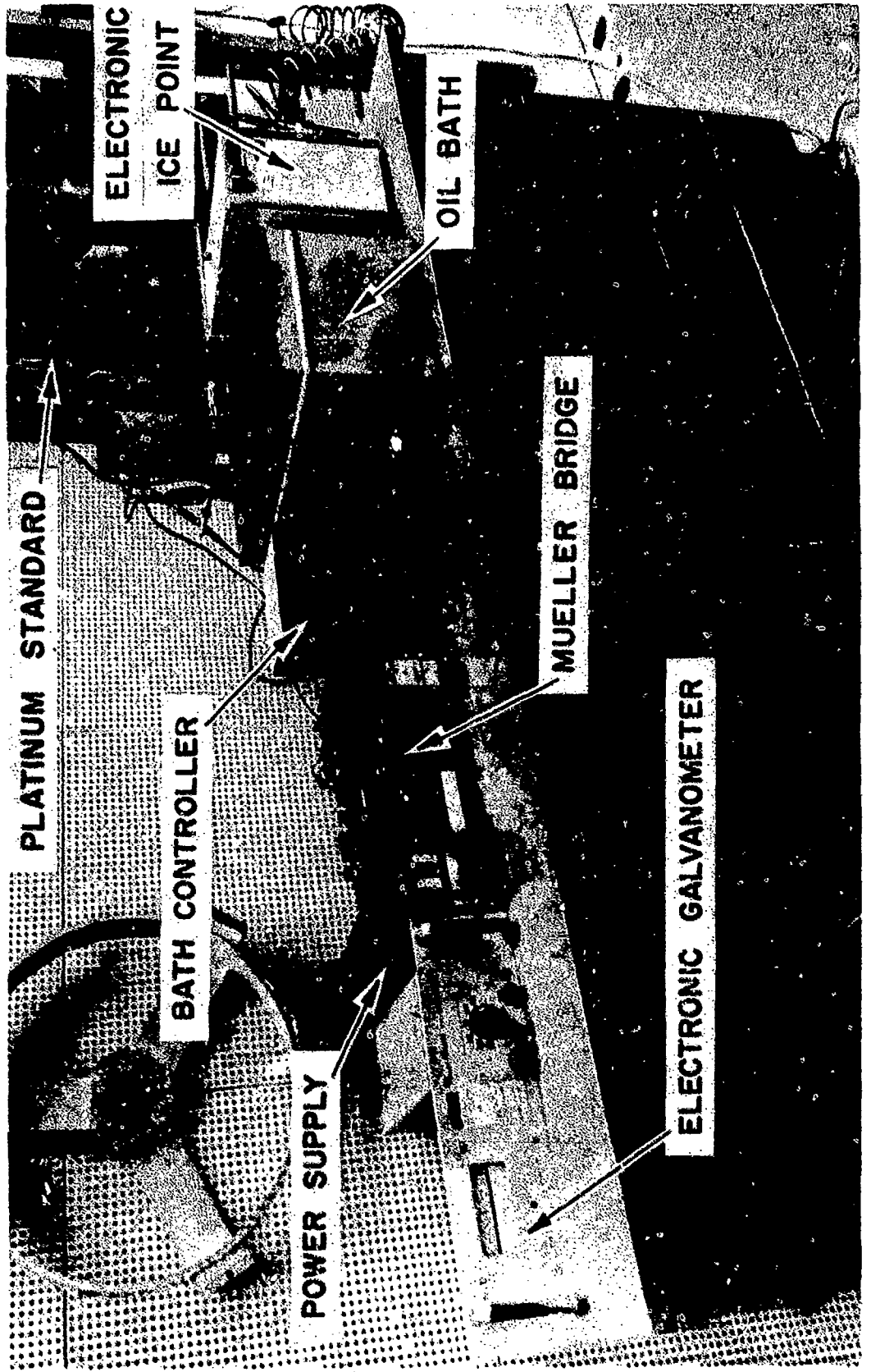


FIGURE 10. TEMPERATURE CALIBRATION SETUP

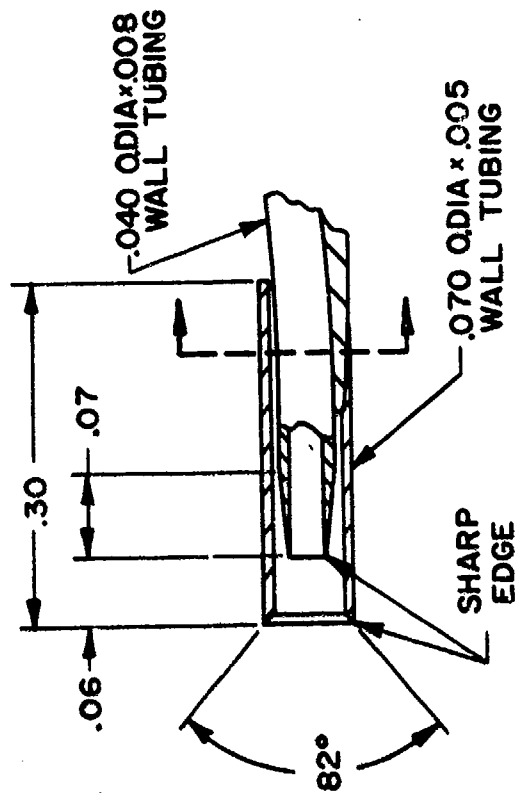


FIGURE 11. KIEL STAGNATION TUBE DESIGN

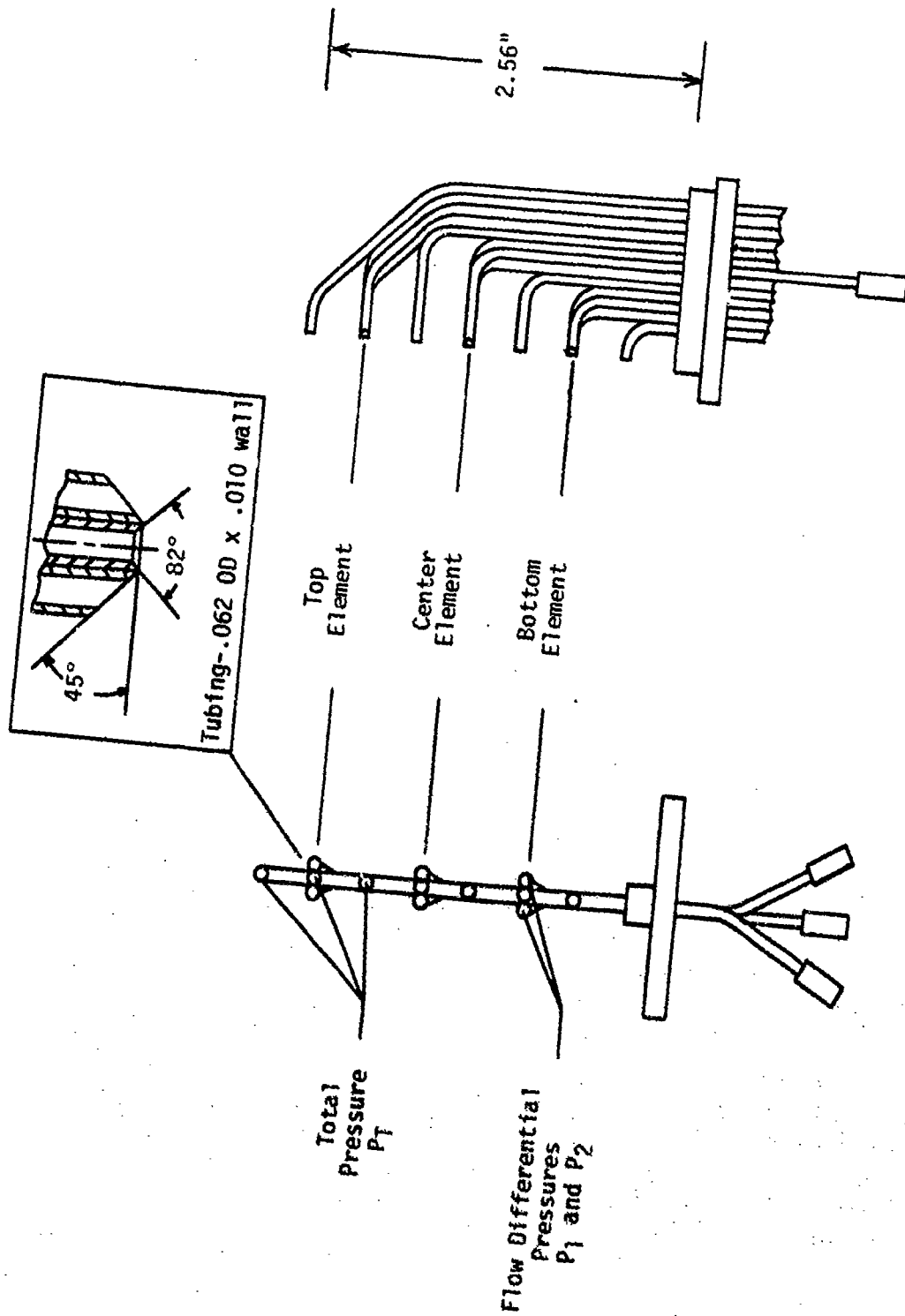


FIGURE 12. TOTAL PRESSURE AND YAW ANGLE MEASUREMENT RAKE DESIGN

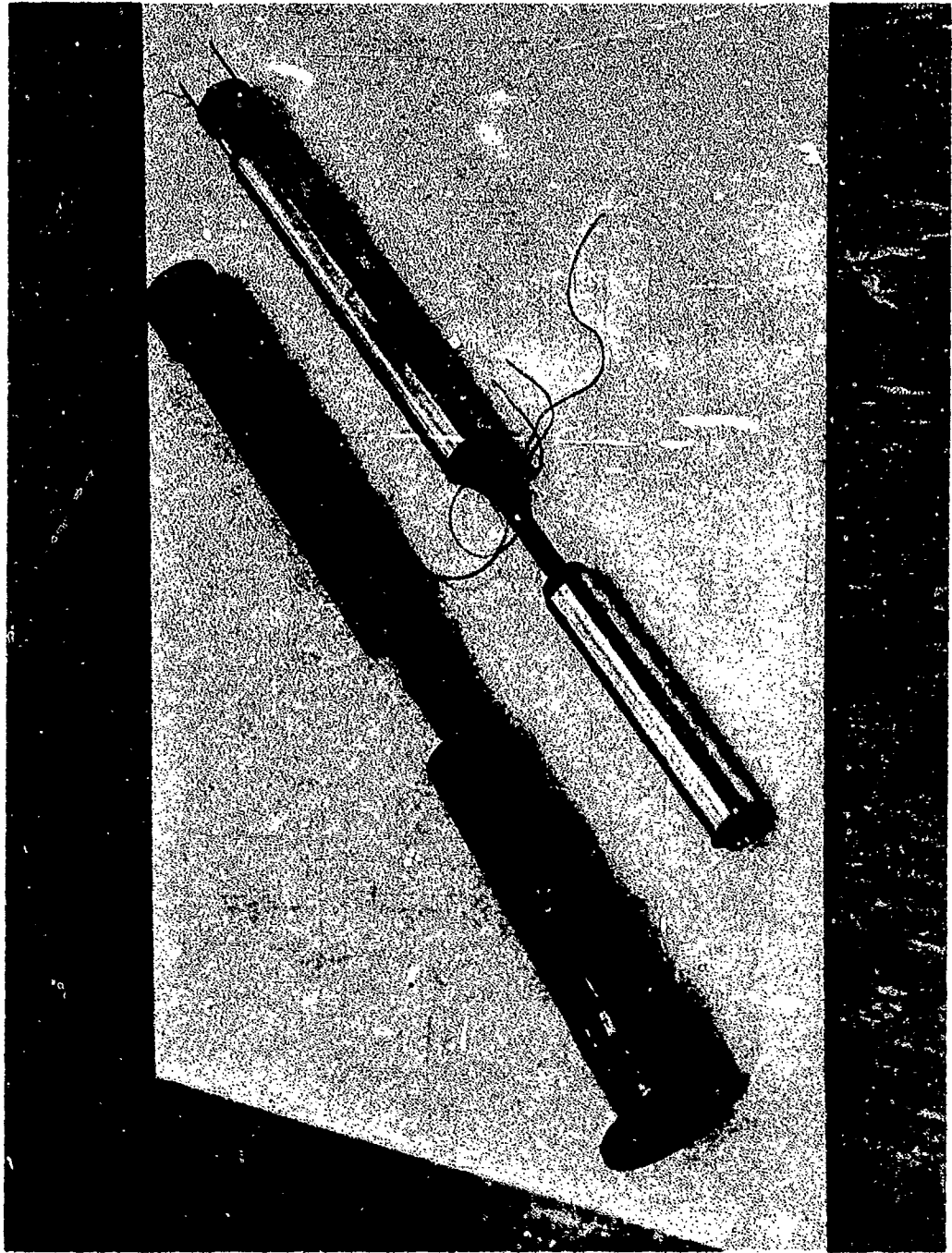


FIGURE 13. TELEMETRY CARRIER TUBES AND DRIVE SHAFTS

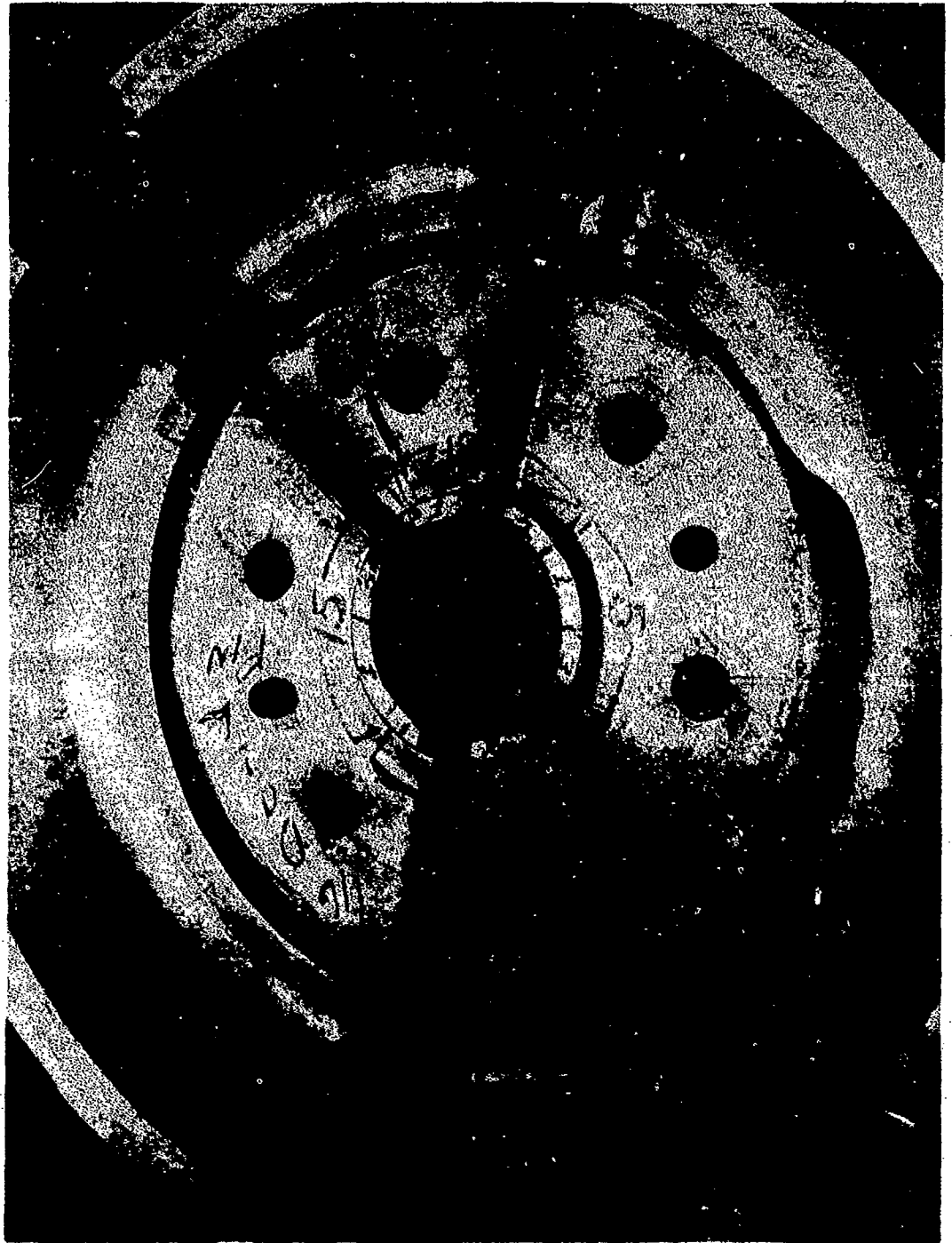


FIGURE 14. STRAIN GAGE FEMALE CONNECTOR AT
AFT END OF ROTOR

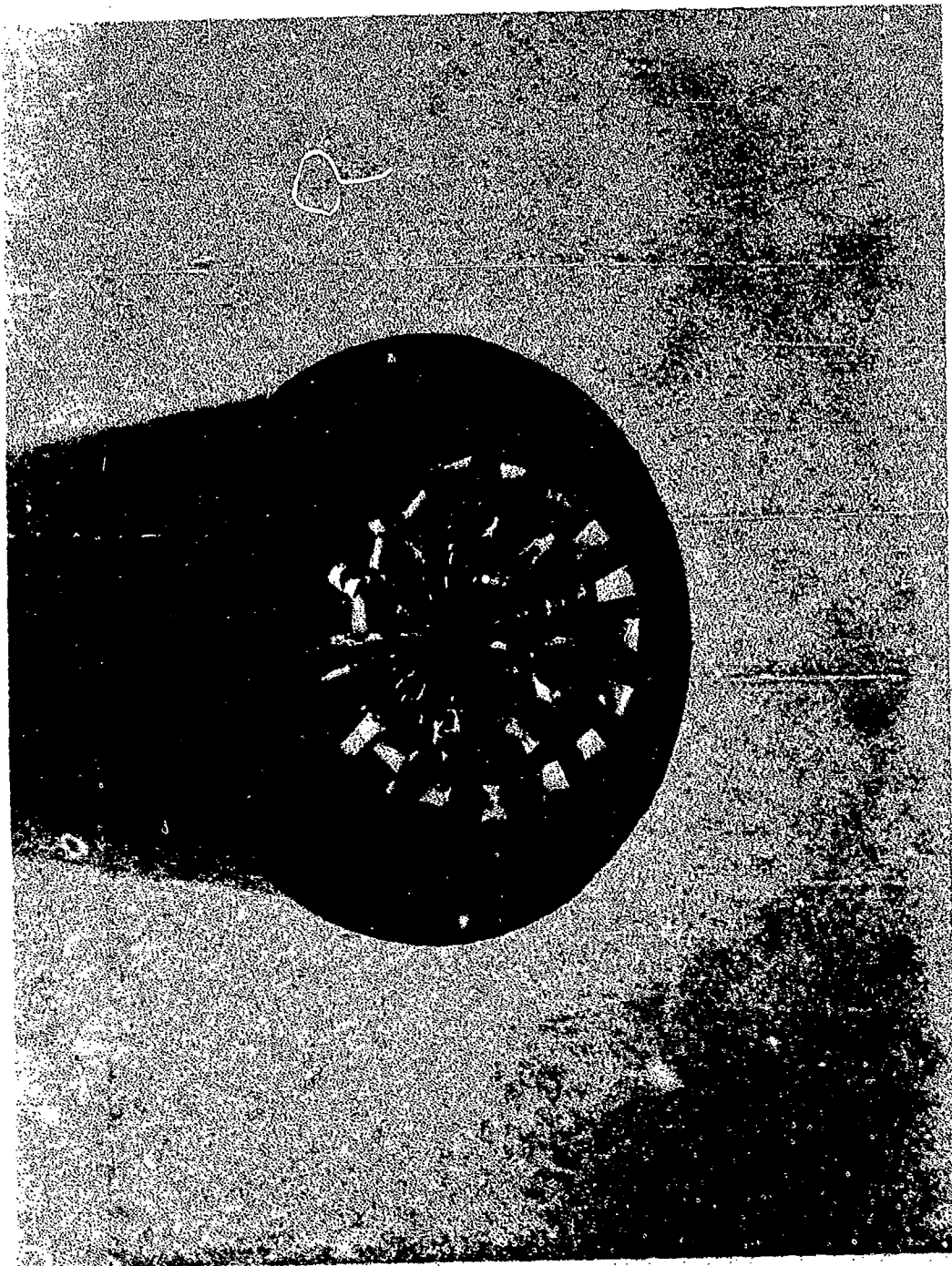
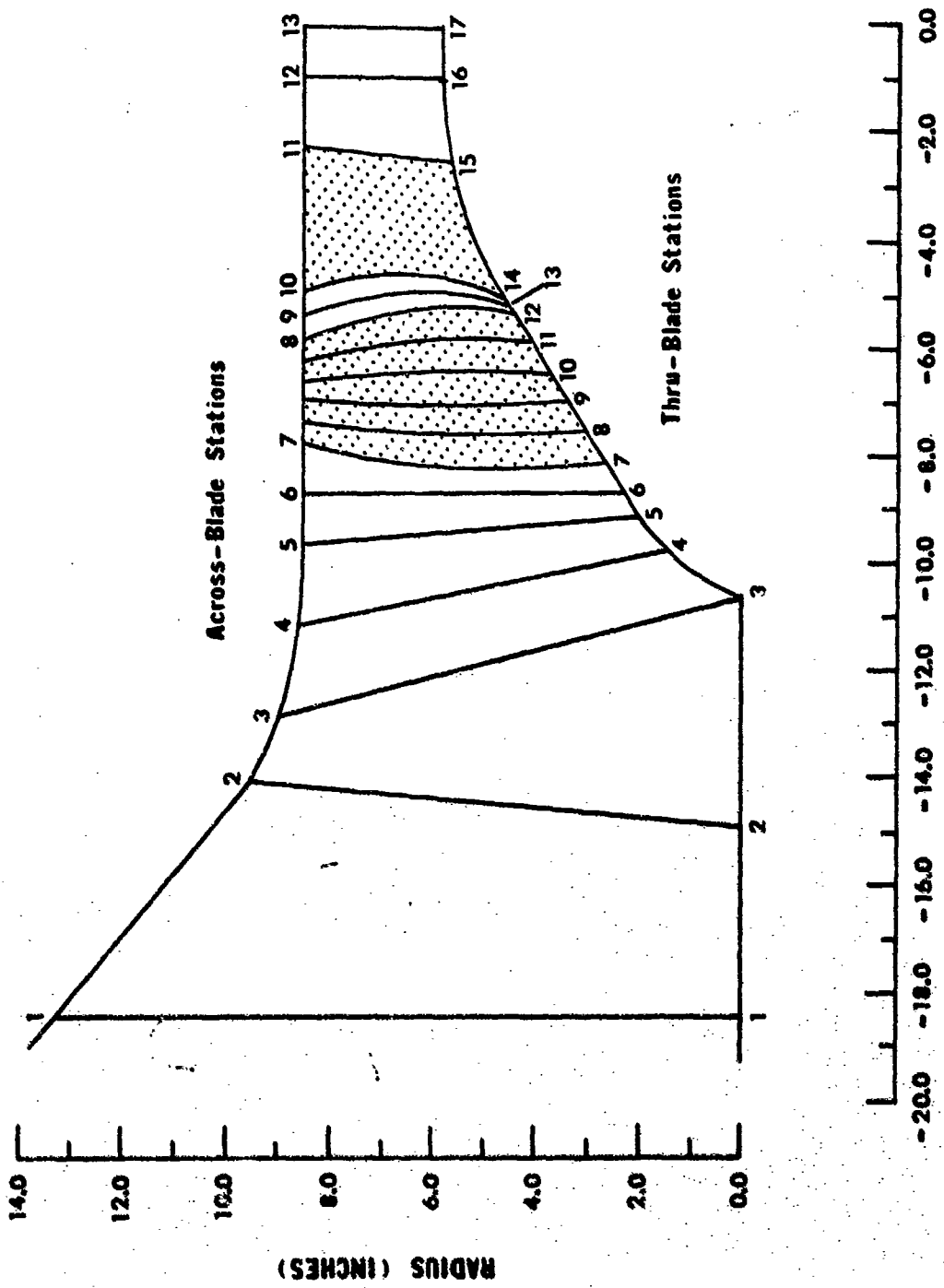


FIGURE 15. STRAIN GAGE MALE CONNECTOR AT FORWARD END OF TELEMETRY CARRIER



FIGURE 16. TYPICAL STRAIN GAGE APPLICATION



AXIAL COORDINATE (INCHES)

FIGURE 17. COMPRESSOR FLOW PATH WITH PHASE II ANALYSIS COMPUTING STATIONS

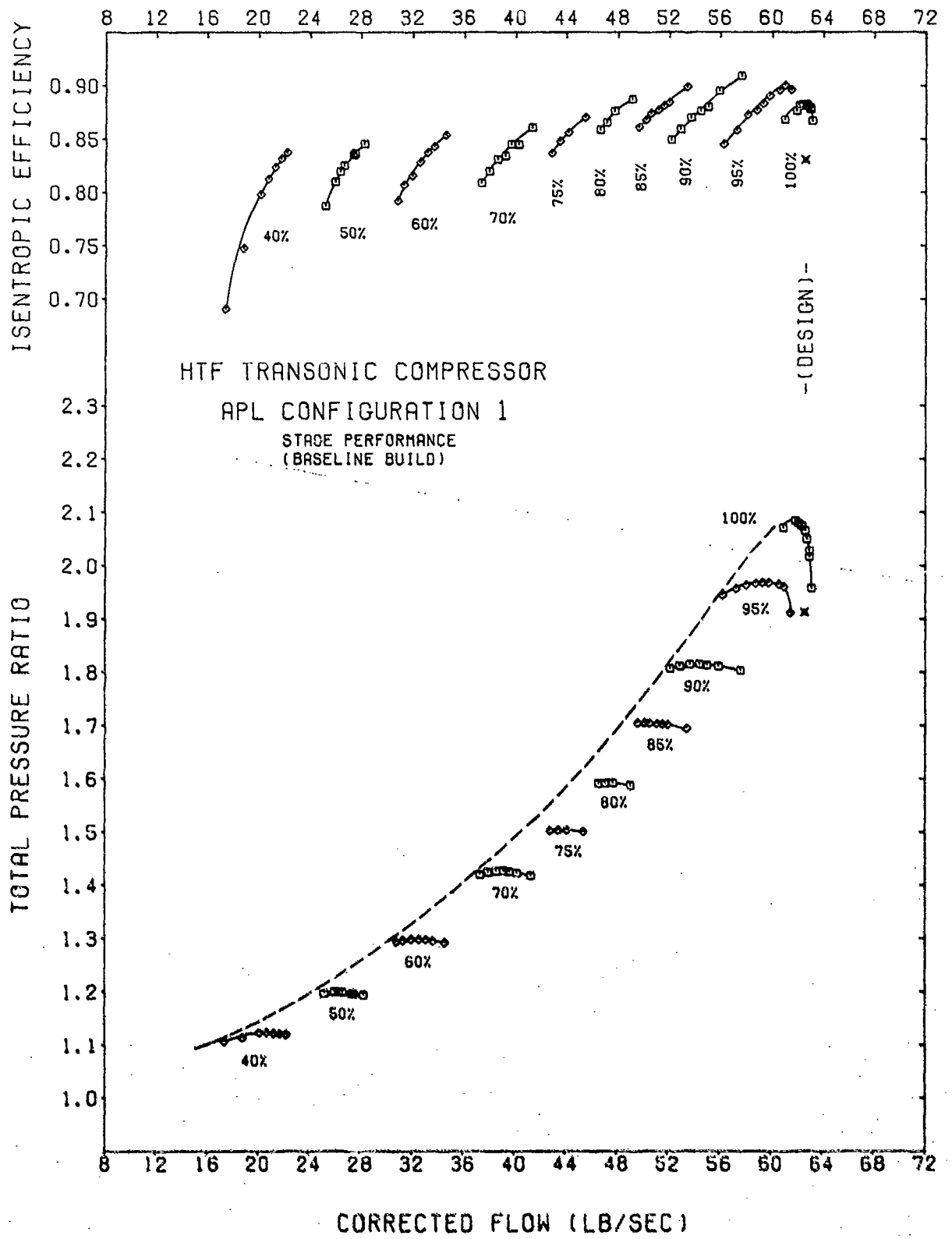


FIGURE 18. COMPRESSOR STAGE PERFORMANCE MAP

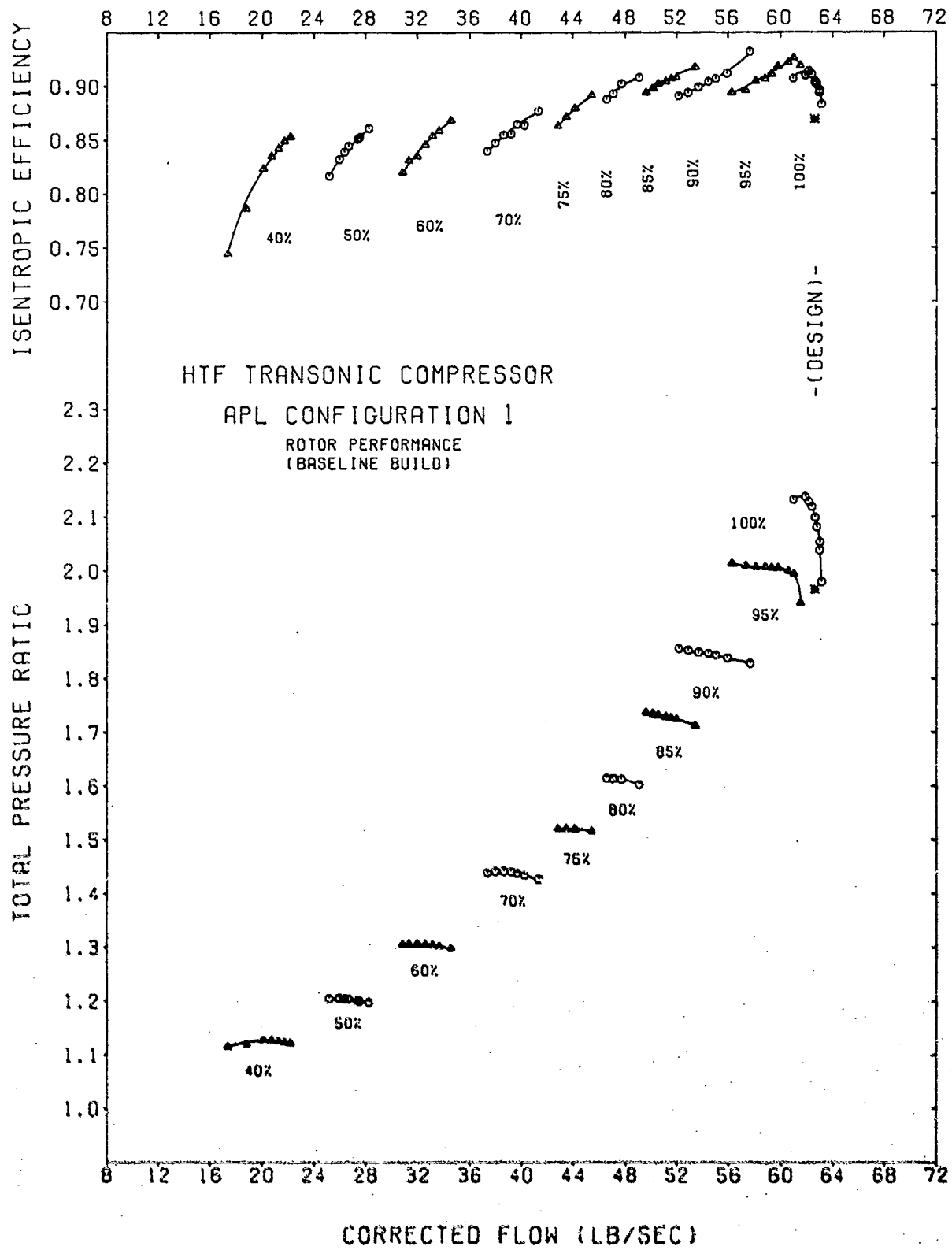


FIGURE 19. COMPRESSOR ROTOR PERFORMANCE MAP

TABLE V
IDENTIFICATION OF SYMBOLS
FOR 40%-SPEED ACROSS-BLADE FIGURES

TEST IDENTIFICATION	SYMBOL
510290706540	⌘
510290605040	⤴
510290504040	◊
510290403040	✕
510290301540	+
510290200140	▲
510290100040	⓪

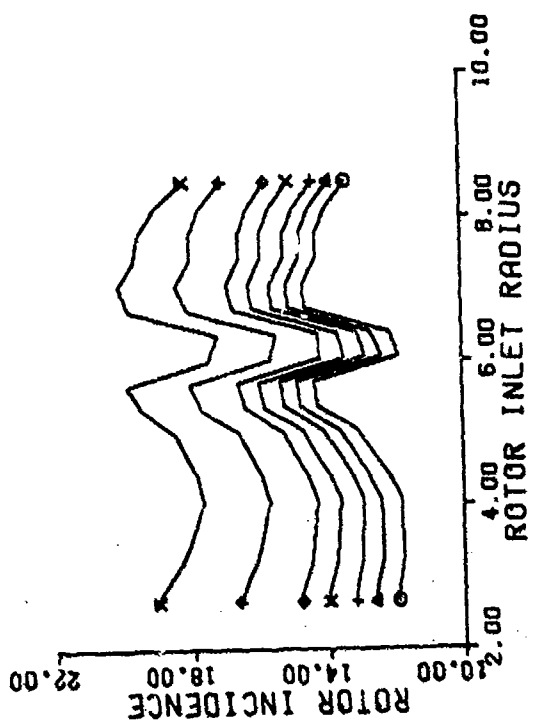


FIGURE 21 ROTOR INCIDENCE VS INLET RADIUS
(40% SPEED)

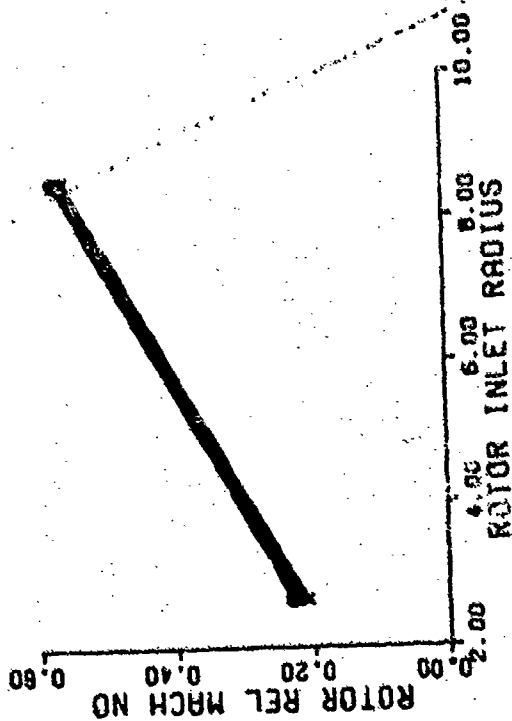


FIGURE 20 ROTOR RELATIVE MACH NUMBER
VS INLET RADIUS (40% SPEED)

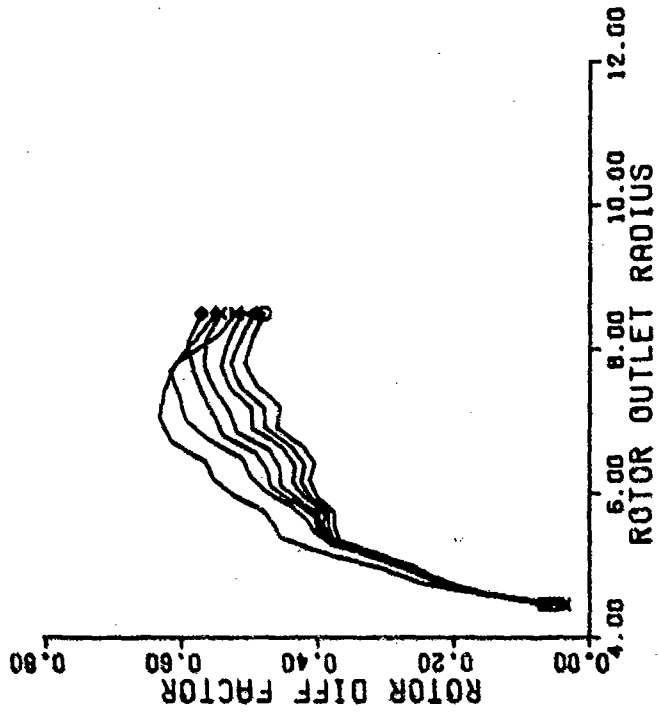


FIGURE 23 ROTOR DIFFUSION FACTOR VS
OUTLET RADIUS (40% SPEED)

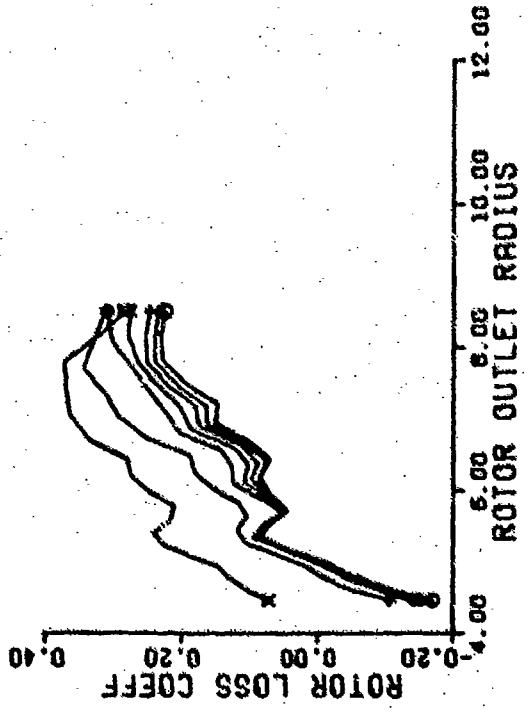


FIGURE 22 ROTOR LOSS COEFFICIENT VS
OUTLET RADIUS (40% SPEED)

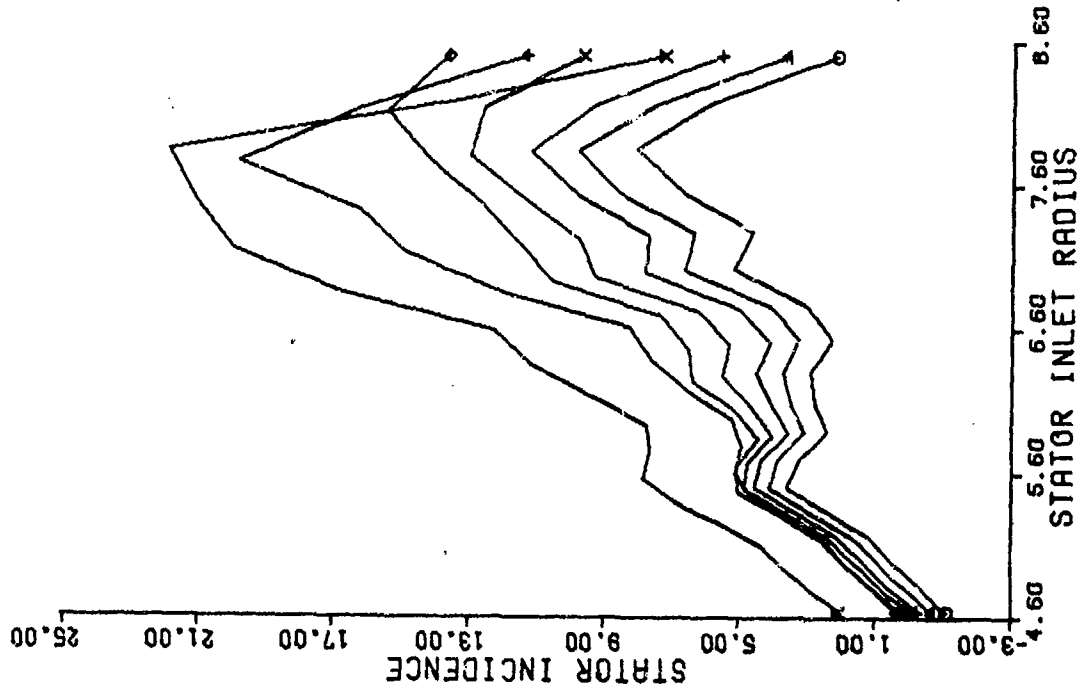


FIGURE 25 STATOR INCIDENCE VS INLET RADIUS (40% SPEED)

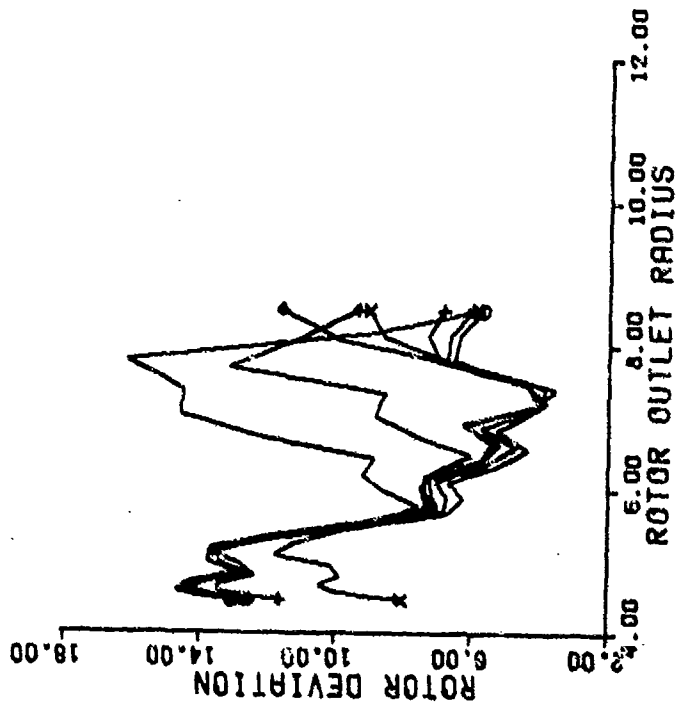


FIGURE 24 ROTOR DEVIATION VS OUTLET RADIUS (40% SPEED)

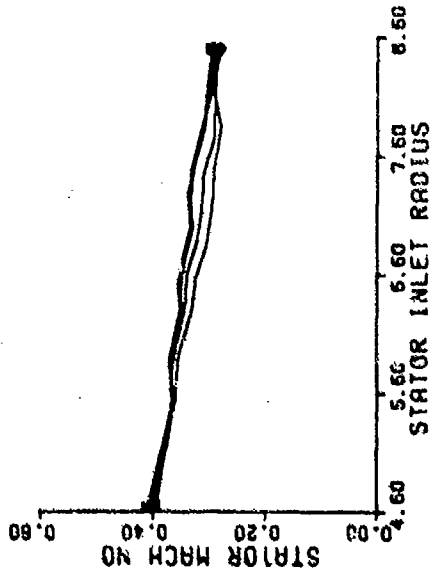


FIGURE 26 STATOR MACH NUMBER VS INLET RADIUS (40% SPEED)

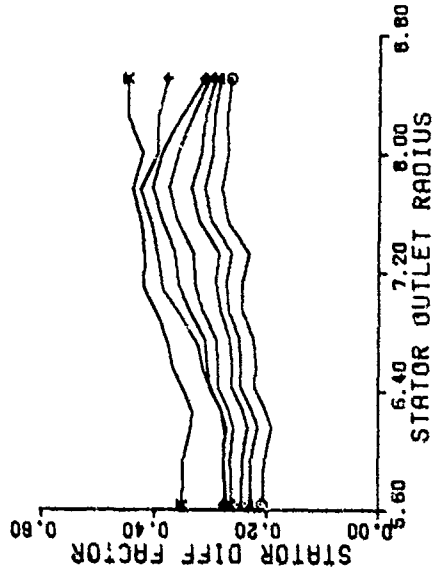


FIGURE 27 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (40% SPEED)

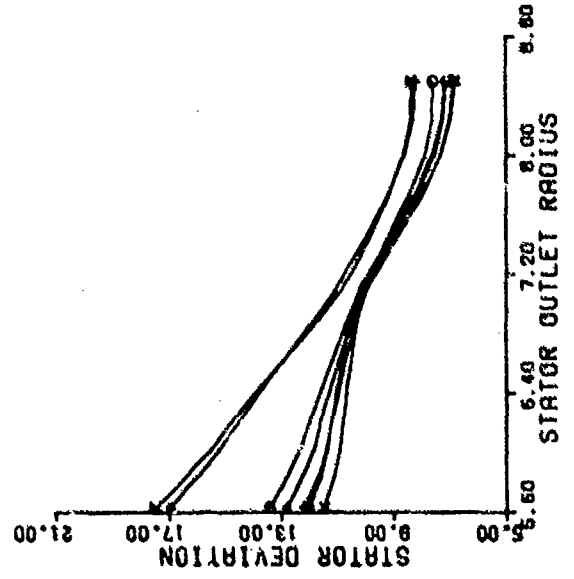


FIGURE 28 STATOR DEVIATION VS OUTLET RADIUS (40% SPEED)

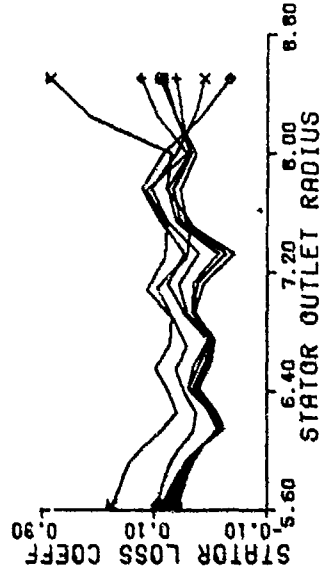


FIGURE 29 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (40% SPEED)

TABLE VI

IDENTIFICATION OF SYMBOLS
FOR 50%-SPEED ACROSS-BLADE FIGURES

TEST IDENTIFICATION	SYMBOL
511250504450	⌘
511250303550	⤴
511250102350	◊
510291302850	✕
510291001050	+
510290900150	△
510290800050	⊙

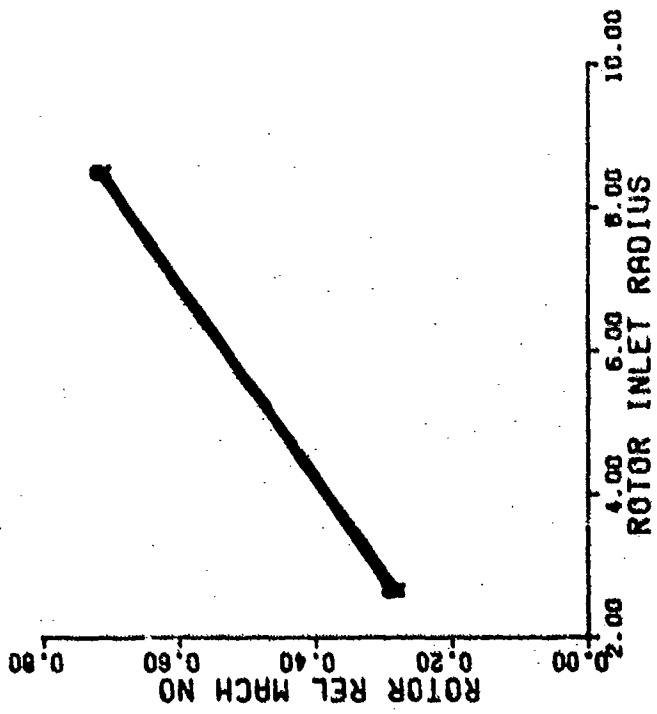


FIGURE 30 ROTOR RELATIVE MACH NUMBER
VS INLET RADIUS (50% SPEED)

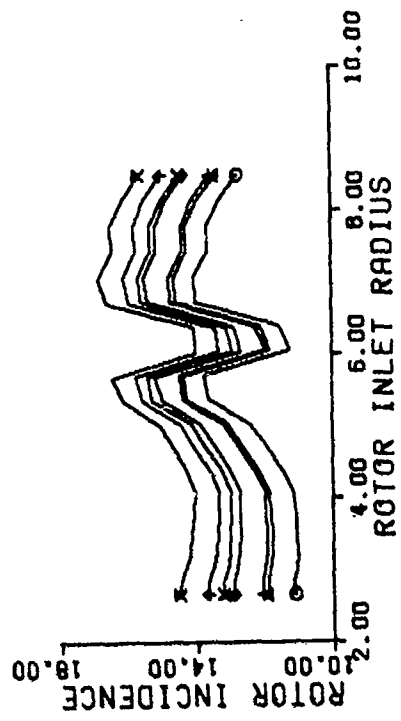


FIGURE 31 ROTOR INCIDENCE VS INLET
RADIUS (50% SPEED)

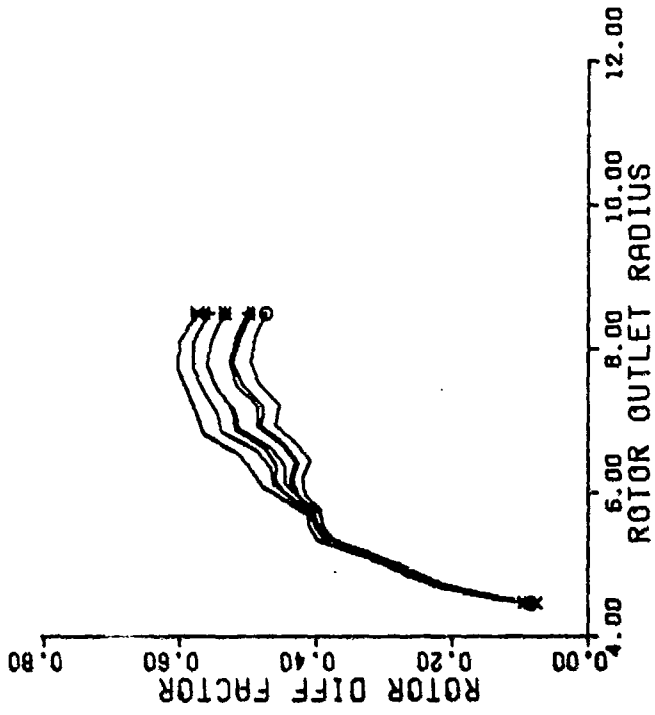


FIGURE 33 ROTOR DIFFUSION FACTOR VS
OUTLET RADIUS (50% SPEED)

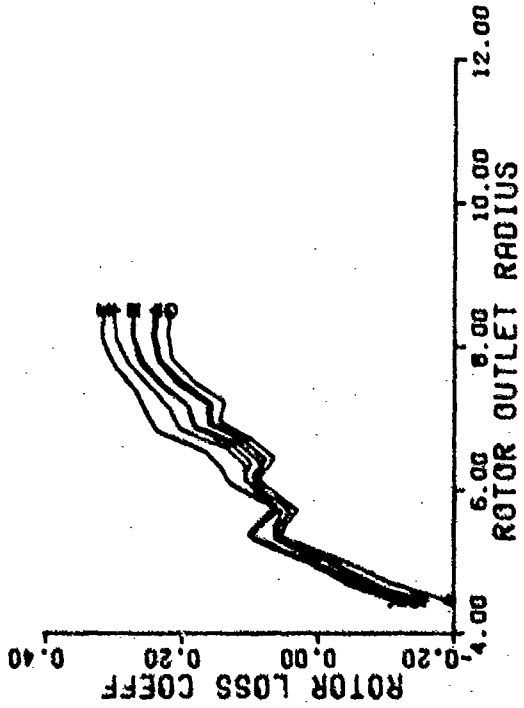


FIGURE 32 ROTOR LOSS COEFFICIENT VS
OUTLET RADIUS (50% SPEED)

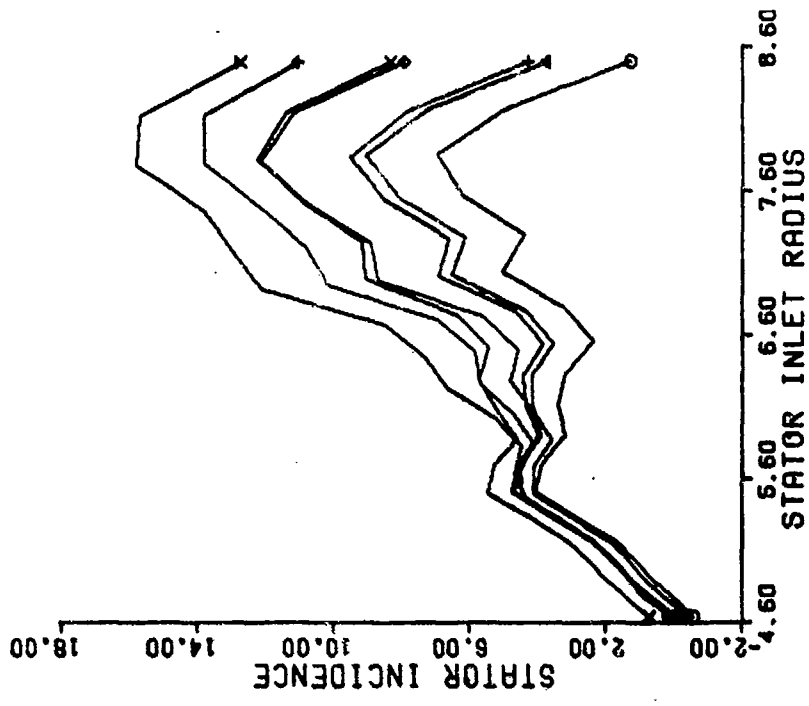


FIGURE 35 STATOR INCIDENCE VS INLET RADIUS (50% SPEED)

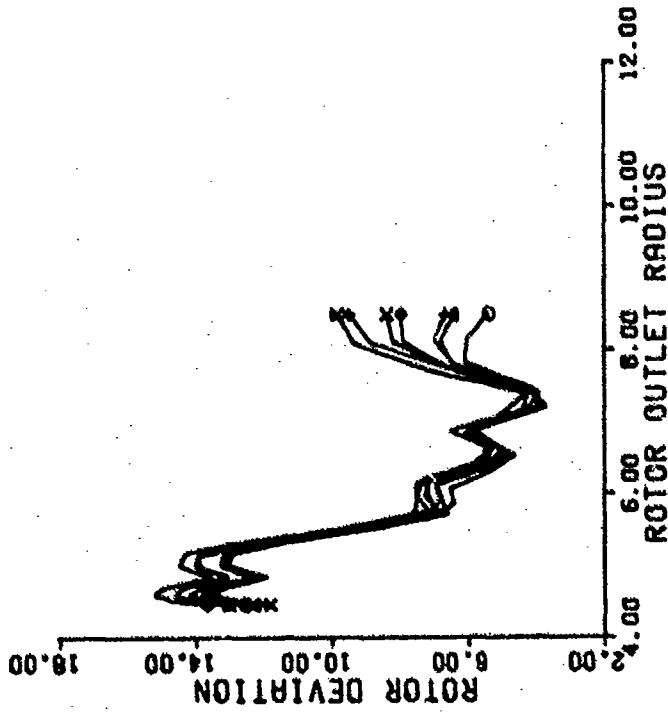


FIGURE 34 ROTOR DEVIATIONS VS OUTLET RADIUS (50% SPEED)

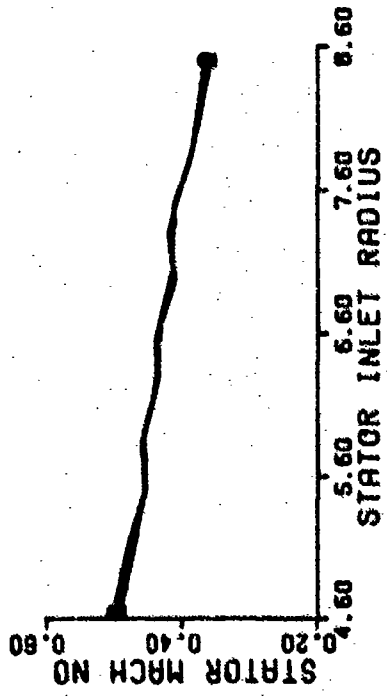


FIGURE 36 STATOR MACH NUMBER VS INLET RADIUS (50% SPEED)

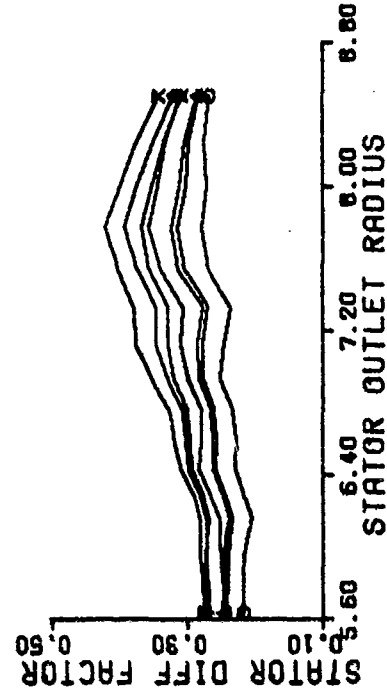


FIGURE 37 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (50% SPEED)

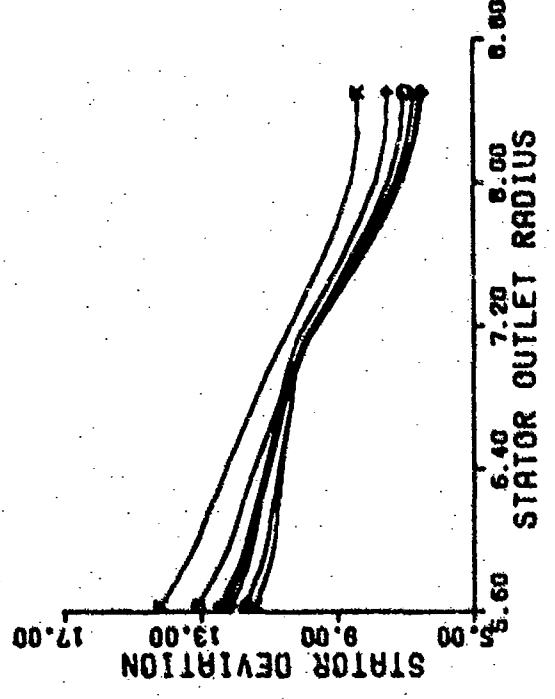


FIGURE 38 STATOR DEVIATION VS OUTLET RADIUS (50% SPEED)

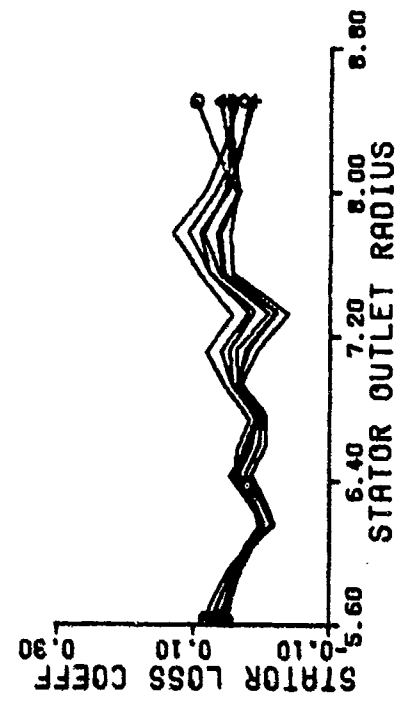


FIGURE 39 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (50% SPEED)

TABLE VII

IDENTIFICATION OF SYMBOLS
FOR 60%-SPEED ACROSS-BLADE FIGURES

TEST IDENTIFICATION	SYMBOL
511251204060	⌘
511251103660	↑
511251003060	◇
511250902360	×
511250801560	+
511250700260	△
511250600060	⊙

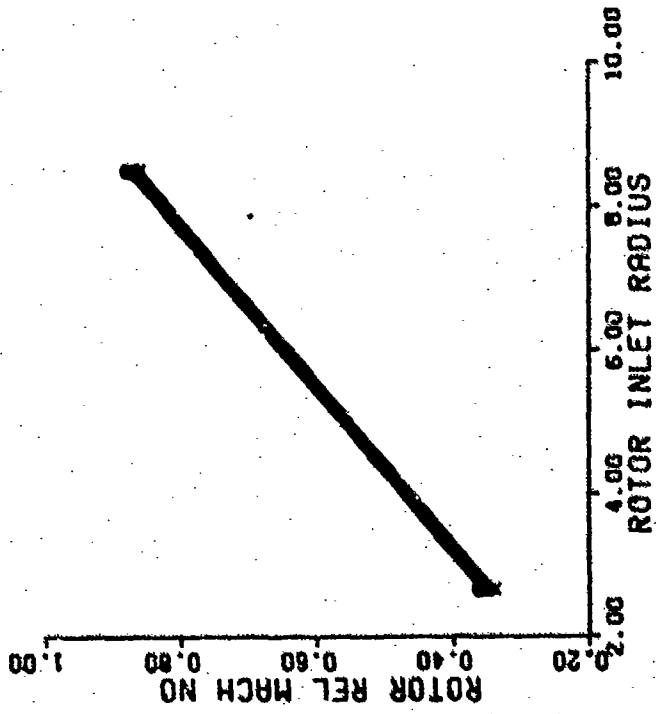


FIGURE 40 ROTOR RELATIVE MACH NUMBER VS INLET RADIUS (60% SPEED)

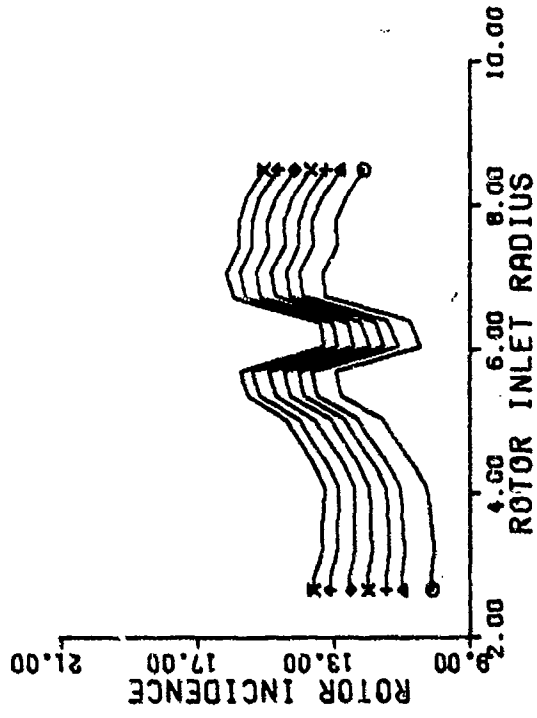


FIGURE 41 ROTOR INCIDENCE VS INLET RADIUS (60% SPEED)

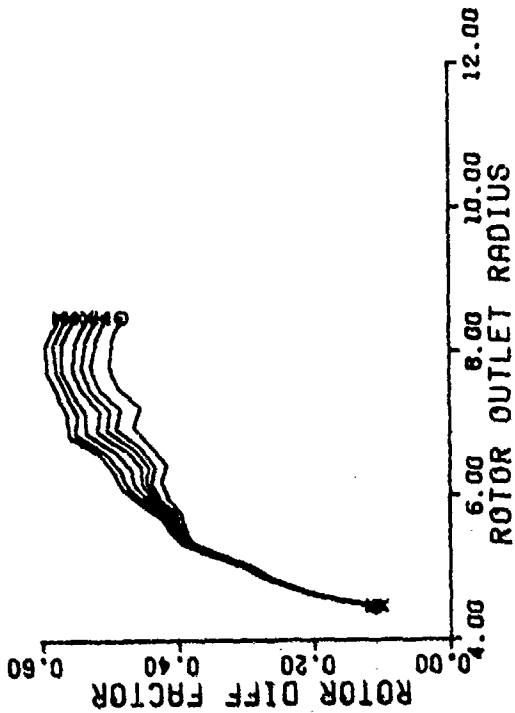


FIGURE 43 ROTOR DIFFUSION FACTOR VS
OUTLET RADIUS (60% SPEED)

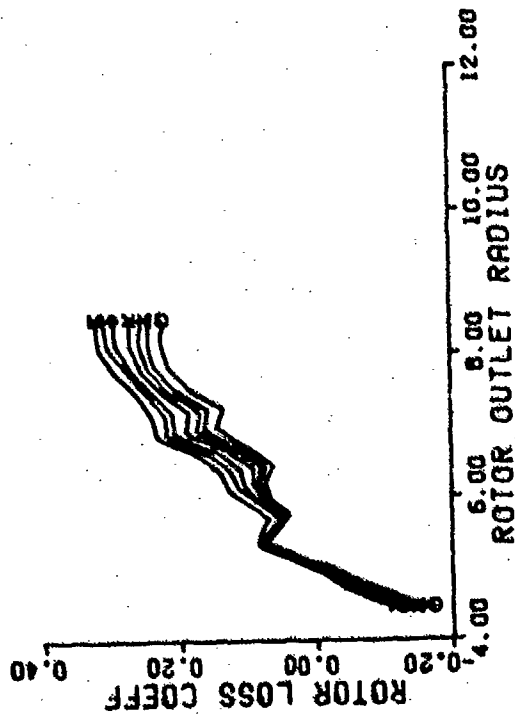


FIGURE 42 ROTOR LOSS COEFFICIENT VS
OUTLET RADIUS (60% SPEED)

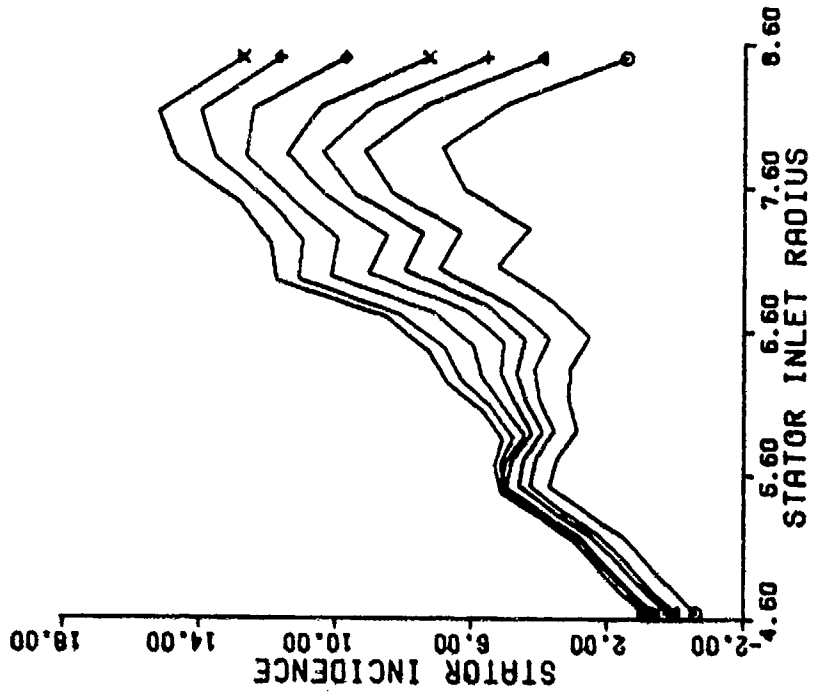


FIGURE 45 STATOR INCIDENCE VS INLET RADIUS (60% SPEED)

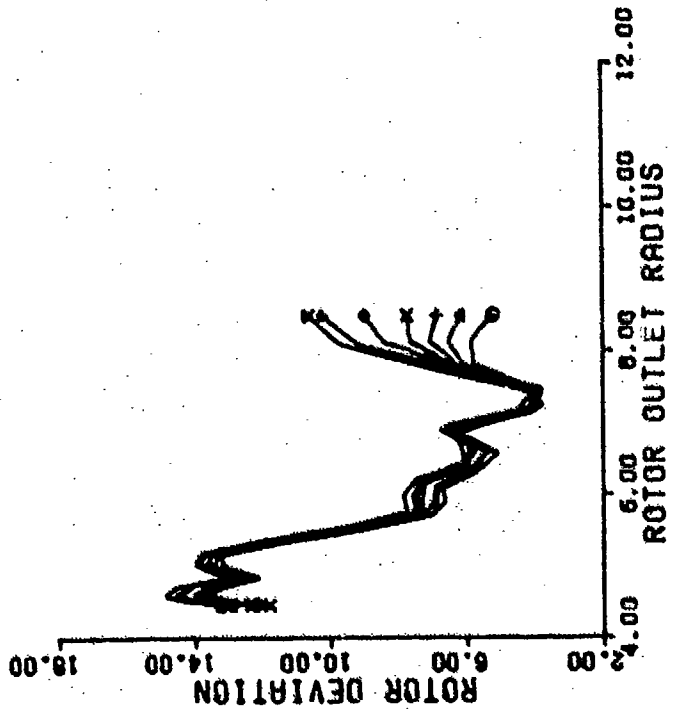


FIGURE 44 ROTOR DEVIATION VS OUTLET RADIUS (60% SPEED)

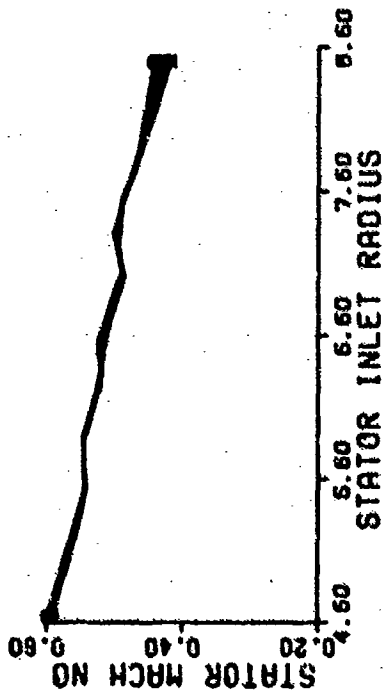


FIGURE 45 STATOR MACH NUMBER VS INLET RADIUS (60% SPEED)

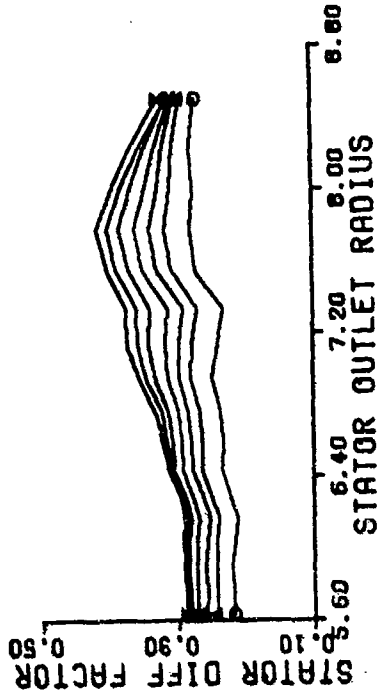


FIGURE 47 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (60% SPEED)

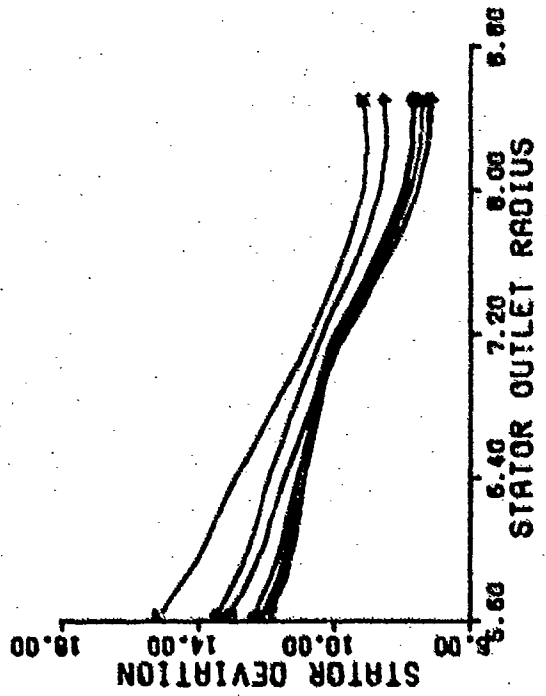


FIGURE 48 STATOR DEVIATION VS OUTLET RADIUS (60% SPEED)

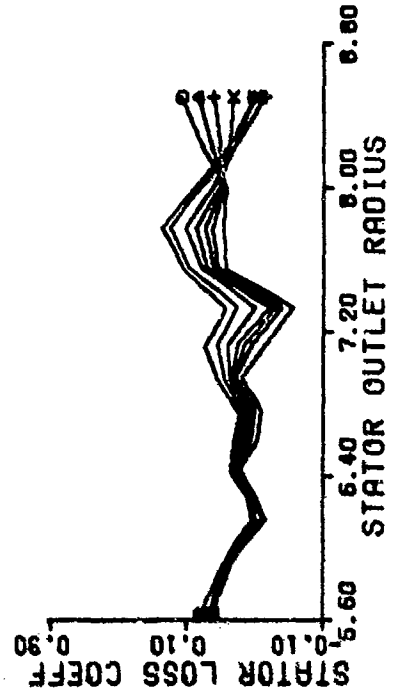


FIGURE 49 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (60% SPEED)

TABLE VIII

IDENTIFICATION OF SYMBOLS
FOR 70%-SPEED ACROSS-BLADE FIGURES

TEST IDENTIFICATION	SYMBOL
511260703570	⌘
511260603317	↑
511260502670	◊
511260402070	×
511260301470	+
511260200270	▲
511260100070	⊙

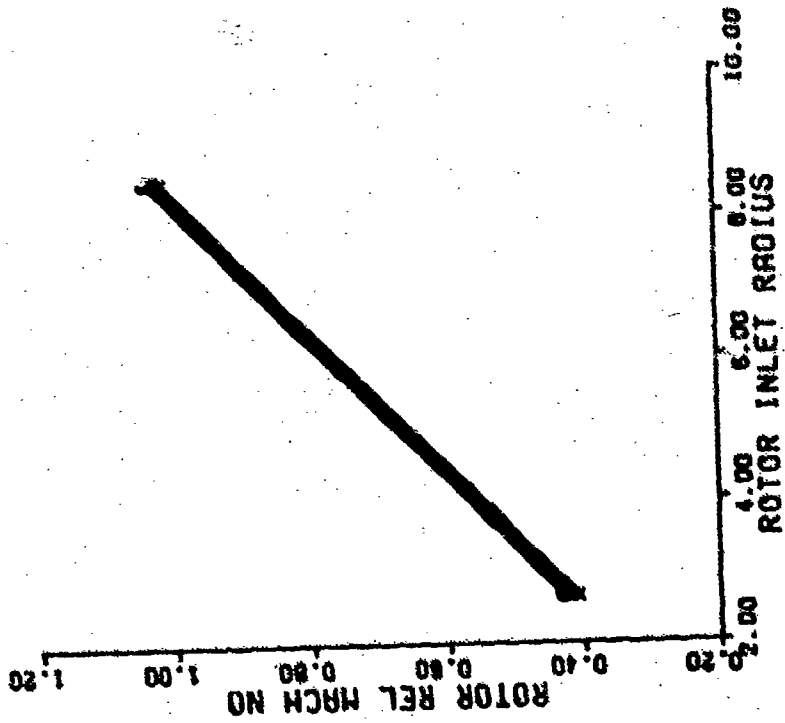


FIGURE 50 ROTOR RELATIVE MACH NUMBER VS INLET RADIUS (70% SPEED)

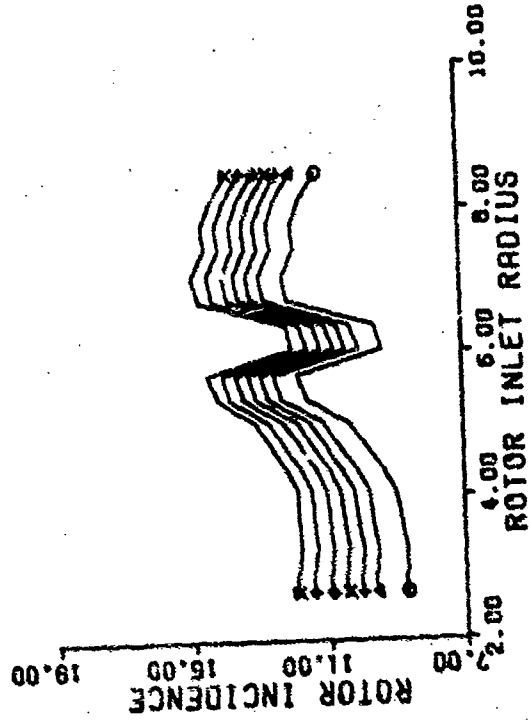


FIGURE 51 ROTOR INCIDENCE VS INLET RADIUS (70% SPEED)

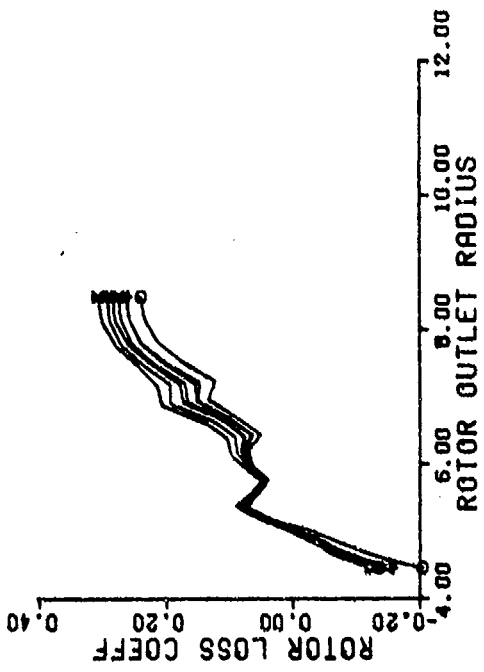


FIGURE 52 ROTOR LOSS COEFFICIENT VS
OUTLET RADIUS (70% SPEED)

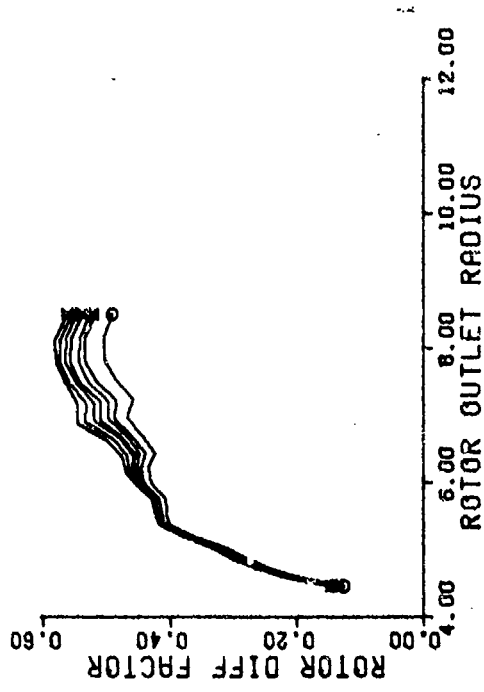


FIGURE 53 ROTOR DIFFUSION FACTOR VS
OUTLET RADIUS (70% SPEED)

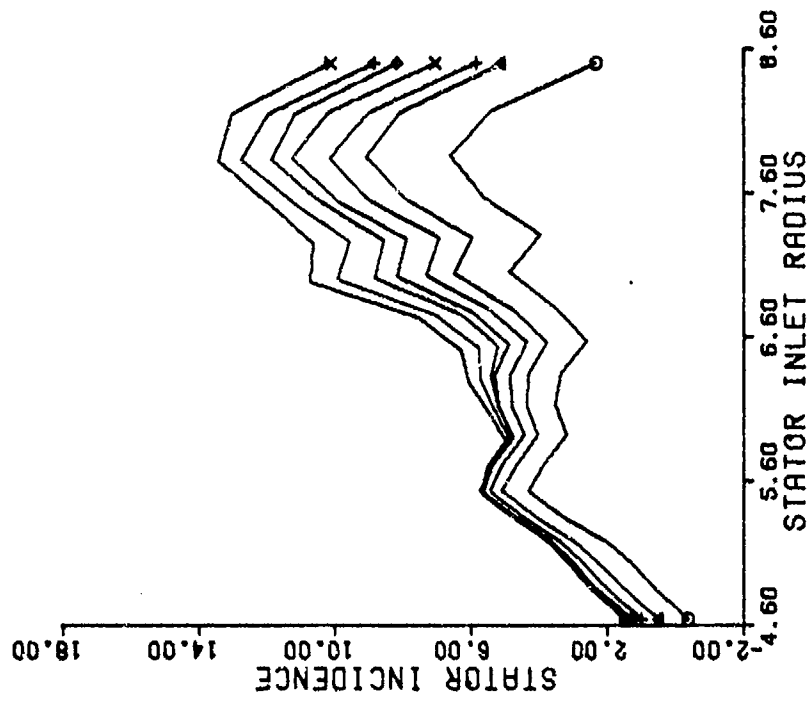


FIGURE 55 STATOR INCIDENCE VS INLET RADIUS (70% SPEED)

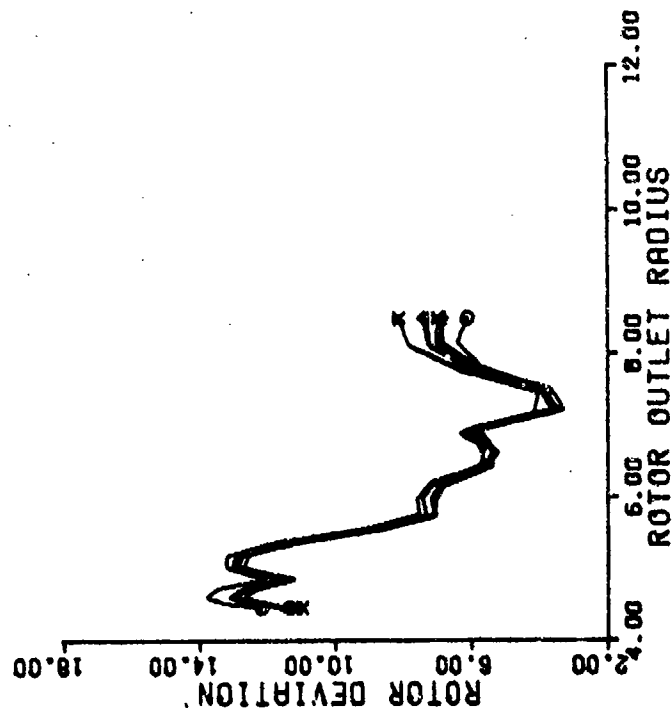


FIGURE 54 ROTOR DEVIATION VS OUTLET RADIUS (70% SPEED)

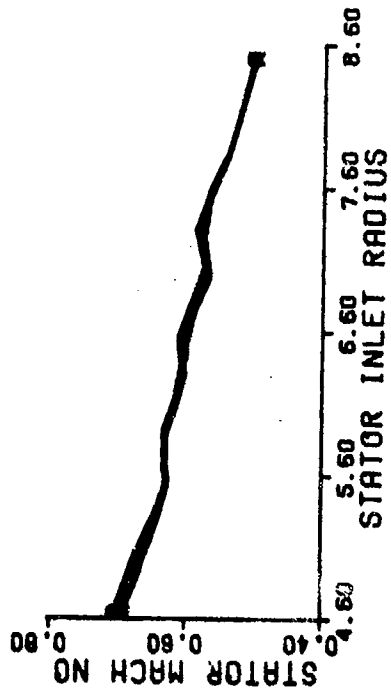


FIGURE 56 STATOR MACH NUMBER VS INLET RADIUS (70% SPEED)

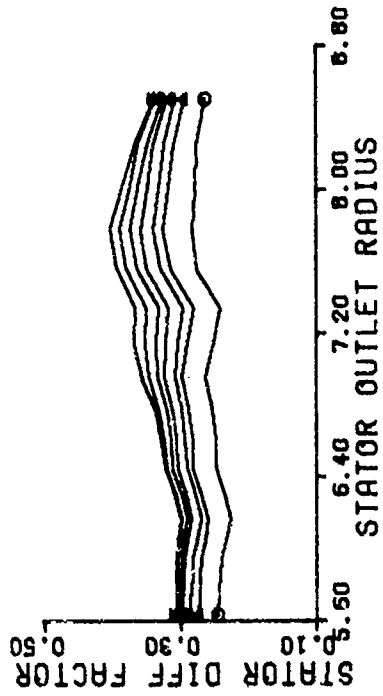


FIGURE 57 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (70% SPEED)

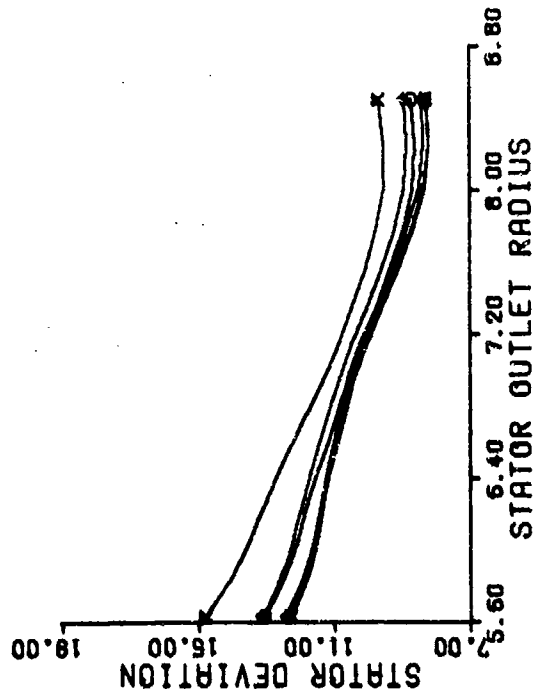


FIGURE 58 STATOR DEVIATION VS OUTLET RADIUS (70% SPEED)

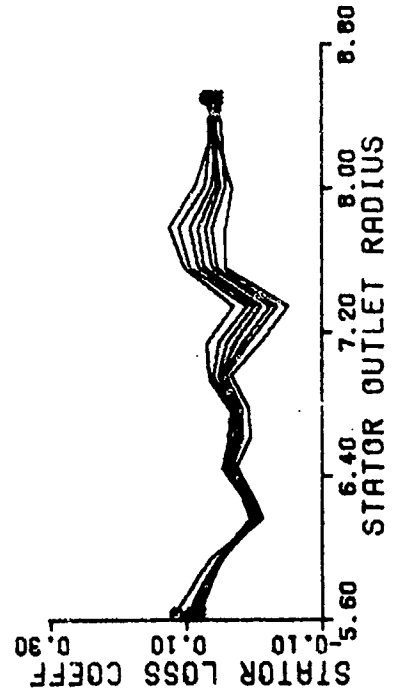


FIGURE 59 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (70% SPEED)

TABLE IX

IDENTIFICATION OF SYMBOLS
FOR 75%-SPEED ACROSS-BLADE FIGURES

TEST IDENTIFICATION	SYMBOL
601290401875	X
601290301275	+
601290200275	△
601290100075	⊖

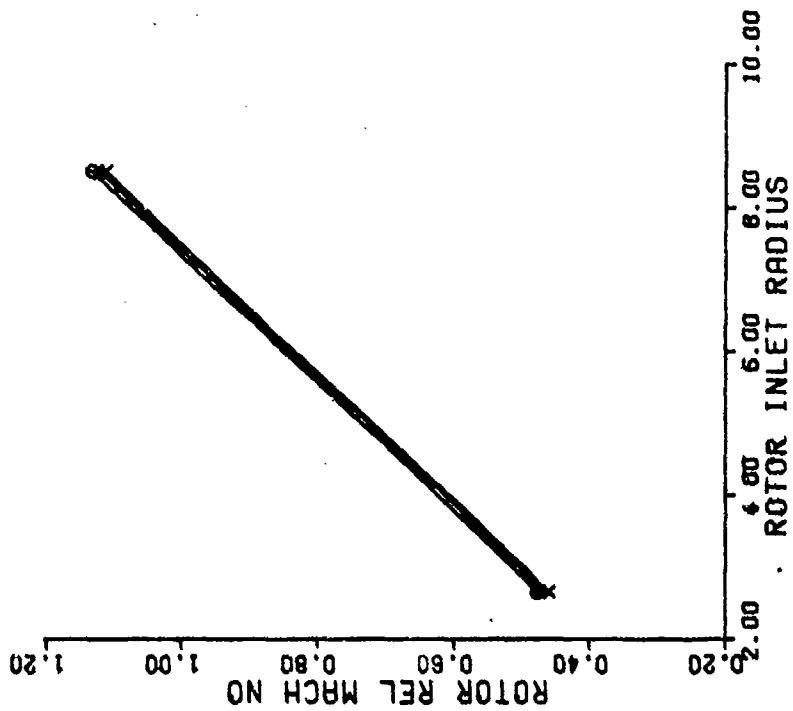


FIGURE 60 ROTOR RELATIVE MACH NUMBER VS INLET RADIUS (75% SPEED)

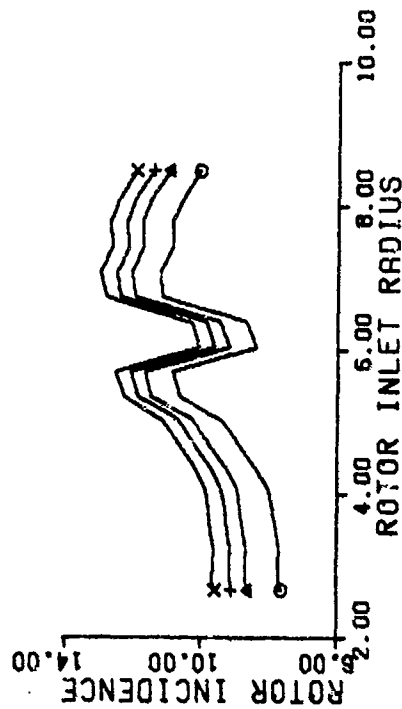


FIGURE 61 ROTOR INCIDENCE VS INLET RADIUS (75% SPEED)

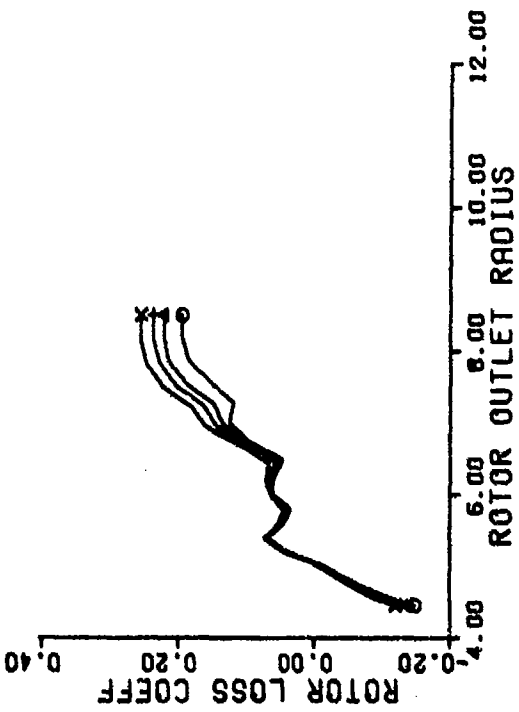


FIGURE 62 ROTOR LOSS COEFFICIENT VS
OUTLET RADIUS (75% SPEED)

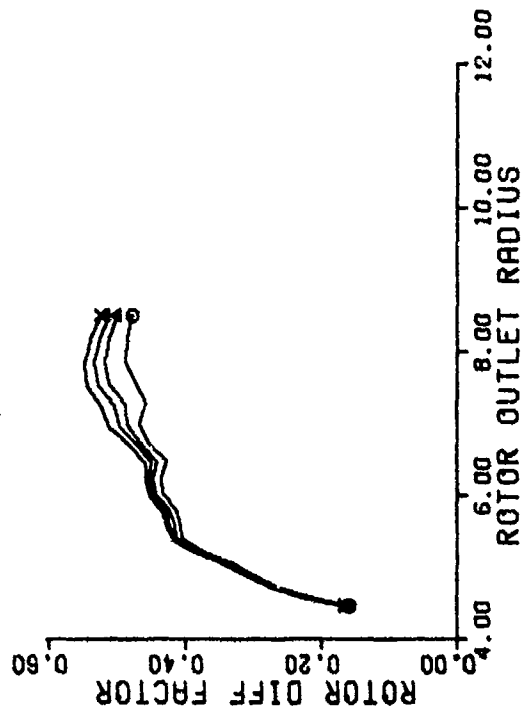


FIGURE 63 ROTOR DIFFUSION FACTOR VS
OUTLET RADIUS (75% SPEED)

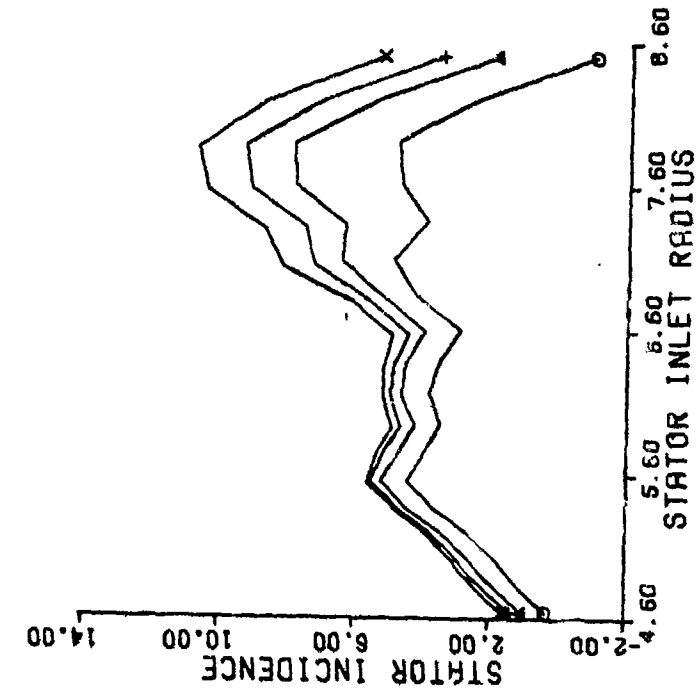


FIGURE 65 STATOR INCIDENCE VS INLET RADIUS (75% SPEED)

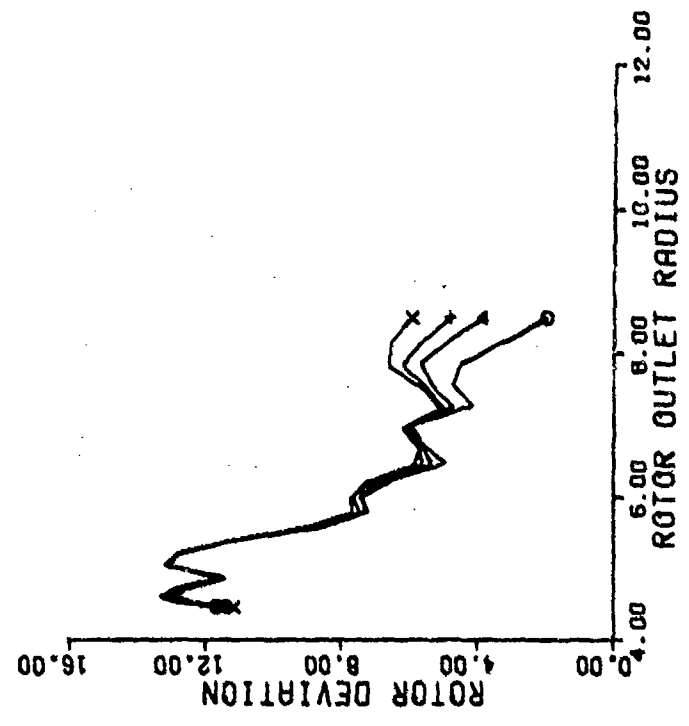


FIGURE 64 ROTOR DEVIATION VS OUTLET RADIUS (75% SPEED)

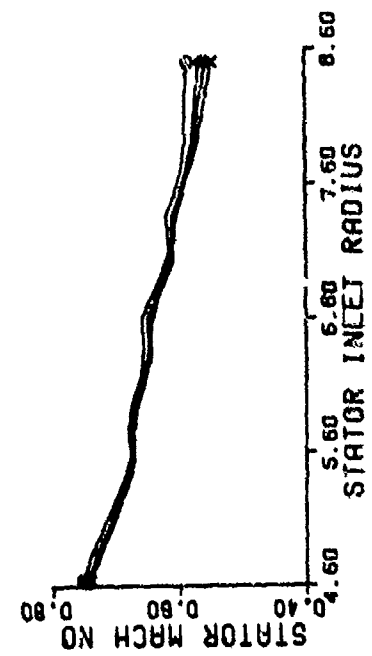


FIGURE 66 STATOR MACH NUMBER VS INLET RADIUS (75% SPEED)

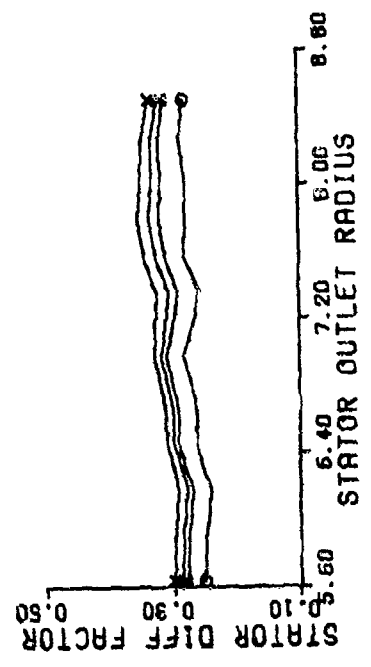


FIGURE 67 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (75% SPEED)

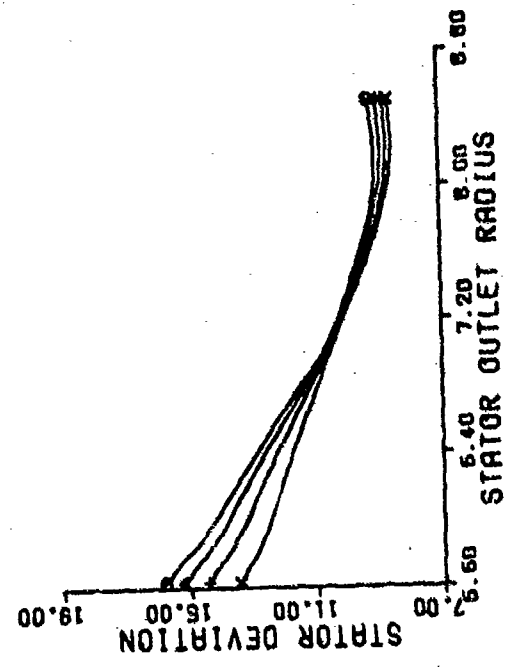


FIGURE 68 STATOR DEVIATION VS OUTLET RADIUS (75% SPEED)

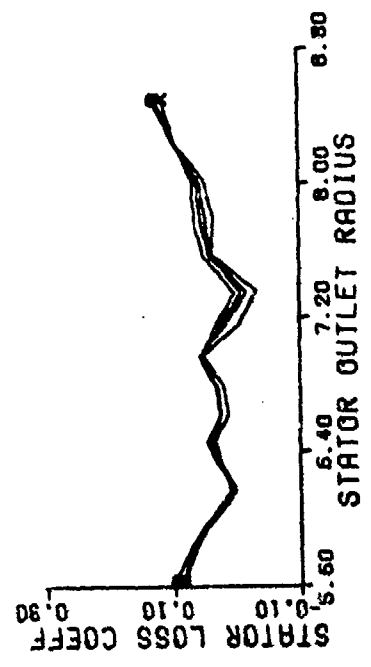


FIGURE 69 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (75% SPEED)

TABLE X

IDENTIFICATION OF SYMBOLS
FOR 80%-SPEED ACROSS BLADE FIGURES

TEST IDENTIFICATION	SYMBOL
512150501680	X
512150301280	+
512050200080	△
512050100280	⊙

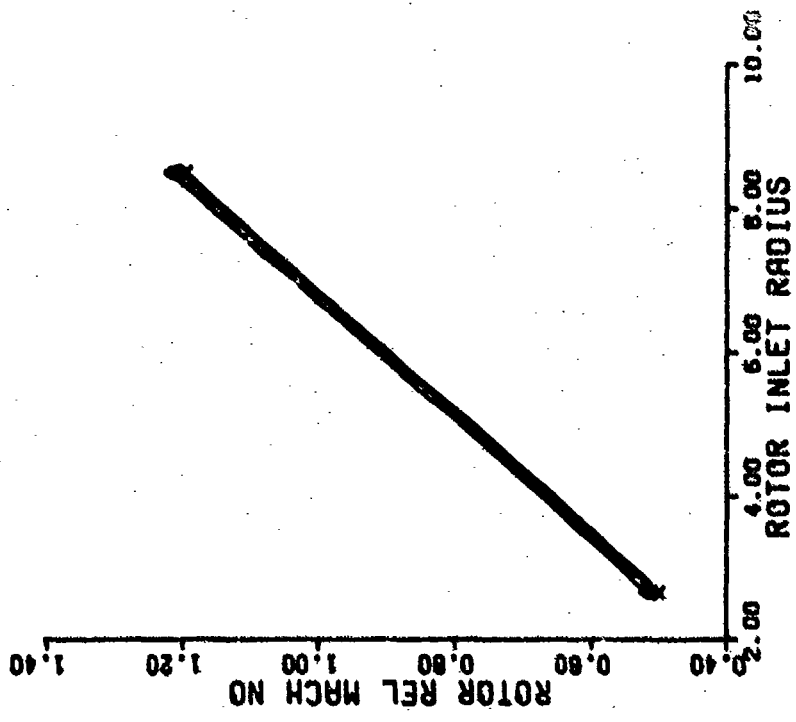


FIGURE 70 ROTOR RELATIVE MACH NUMBER VS INLET RADIUS (80% SPEED)

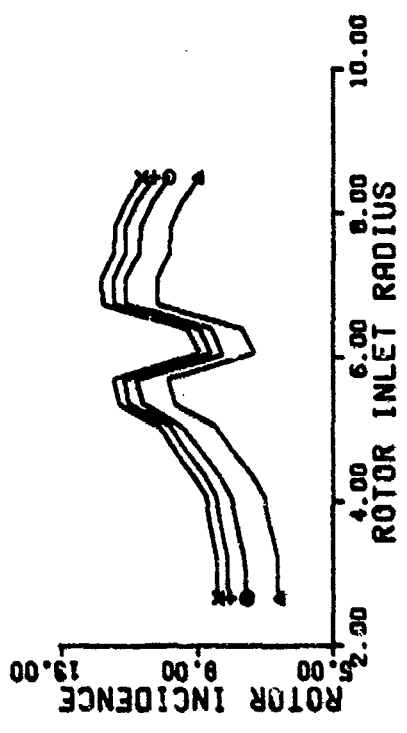


FIGURE 71 ROTOR INCIDENCE VS INLET RADIUS (80% SPEED)

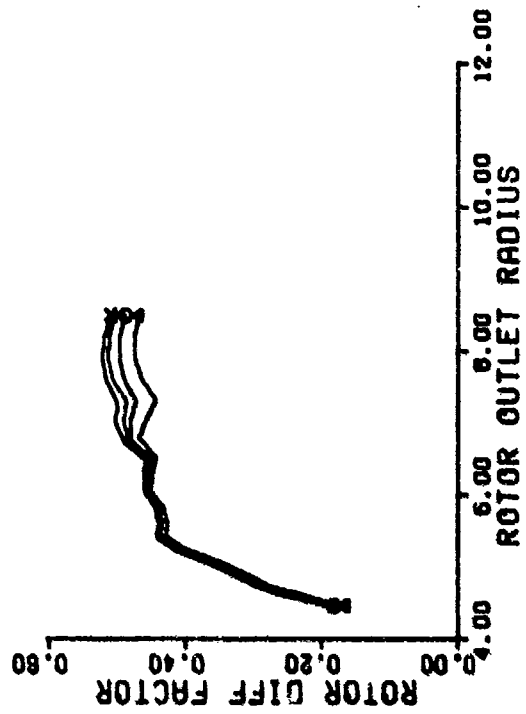


FIGURE 73 ROTOR DIFFUSION FACTOR VS
OUTLET RADIUS (80% SPEED)

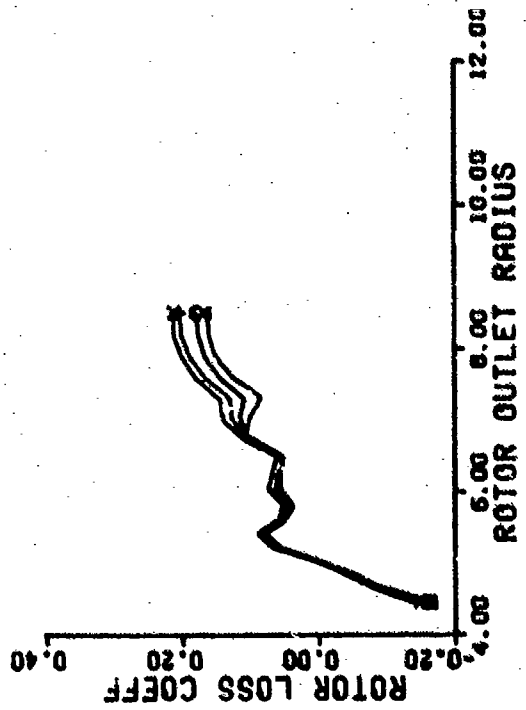


FIGURE 72 ROTOR LOSS COEFFICIENT VS
OUTLET RADIUS (85% SPEED)

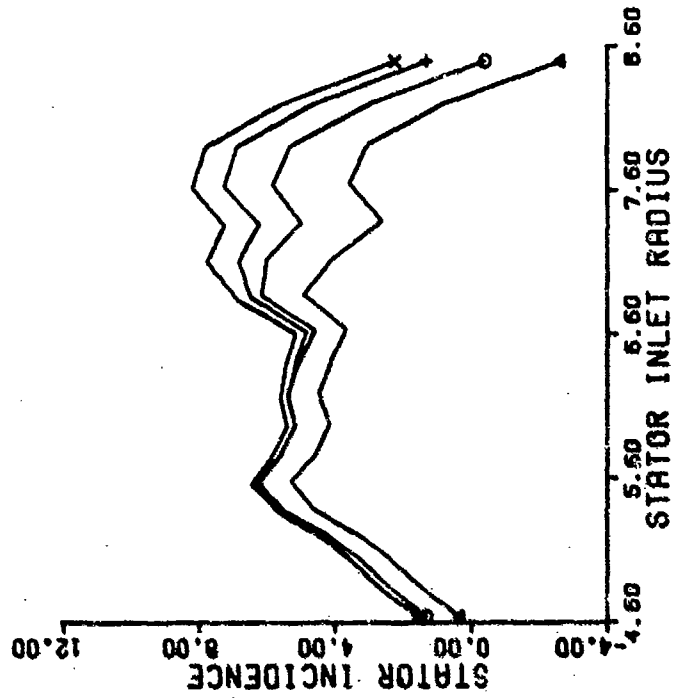


FIGURE 75 STATOR INCIDENCE VS INLET RADIUS (80% SPEED)

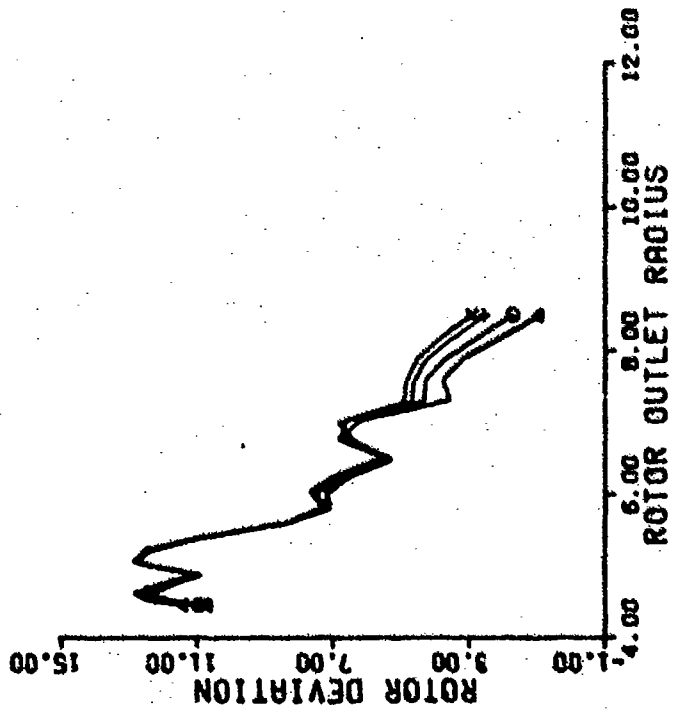


FIGURE 74 ROTOR DEVIATION VS OUTLET RADIUS (80% SPEED)

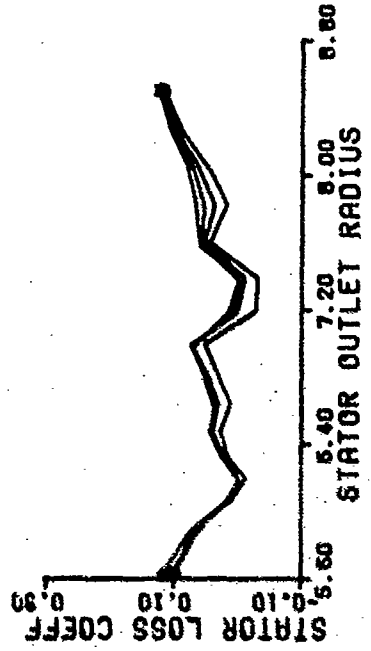
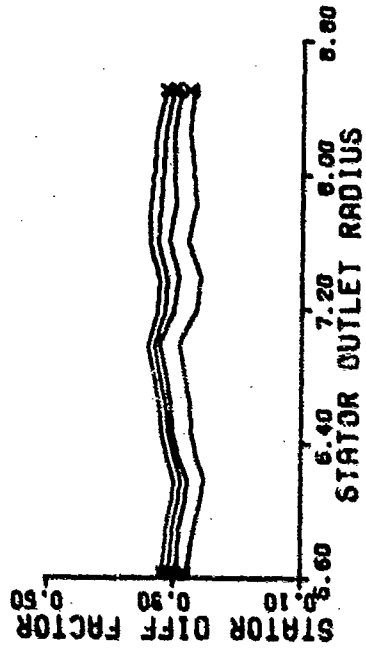
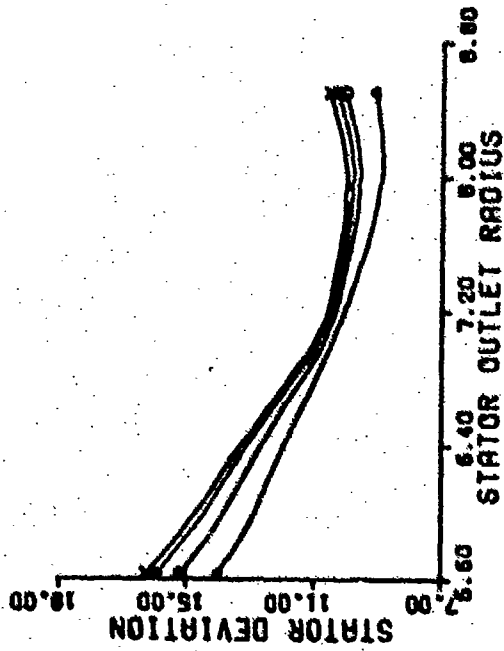
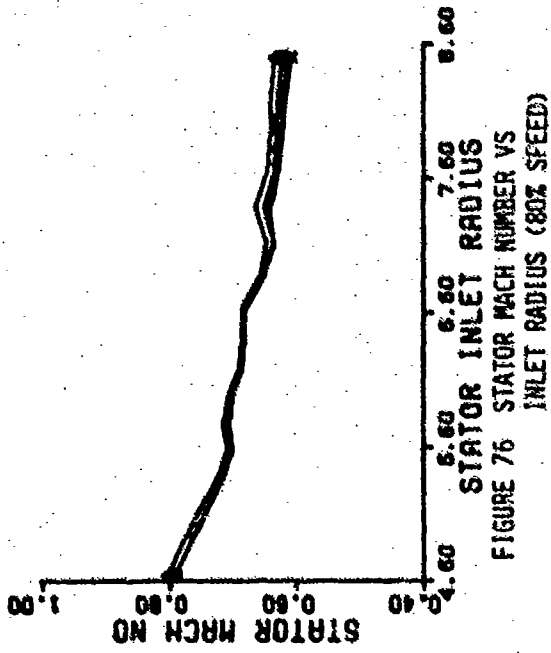


TABLE XI

IDENTIFICATION OF SYMBOLS
FOR 85%-SPEED ACROSS-BLADE FIGURES

TEST IDENTIFICATION	SYMBOL
512160802685	✕
512160702285	↑
512160601885	◇
512160501485	×
512160401085	+
512160300285	△
512160200085	⊙

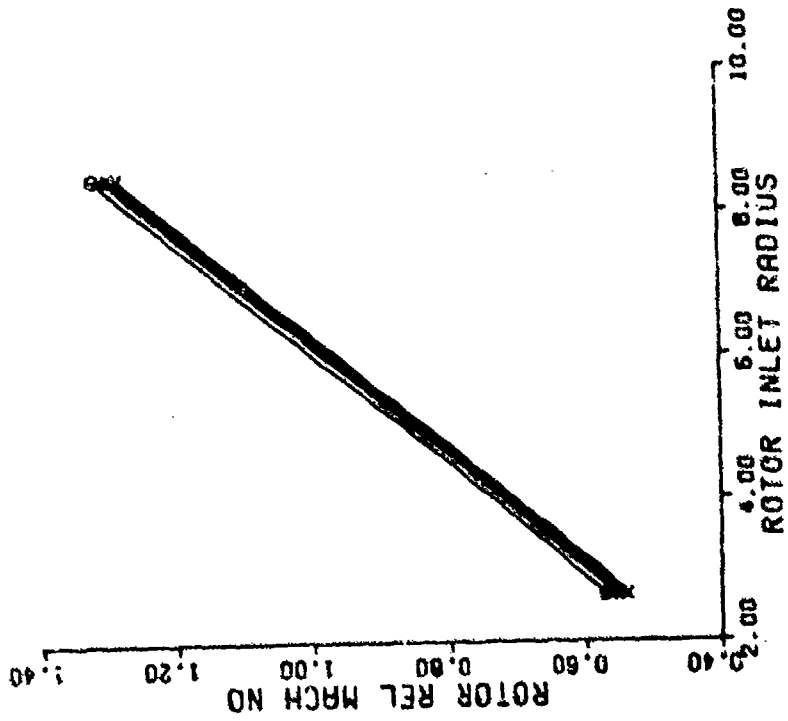


FIGURE 80 ROTOR RELATIVE MACH NUMBER
VS INLET RADIUS (85% SPEED)

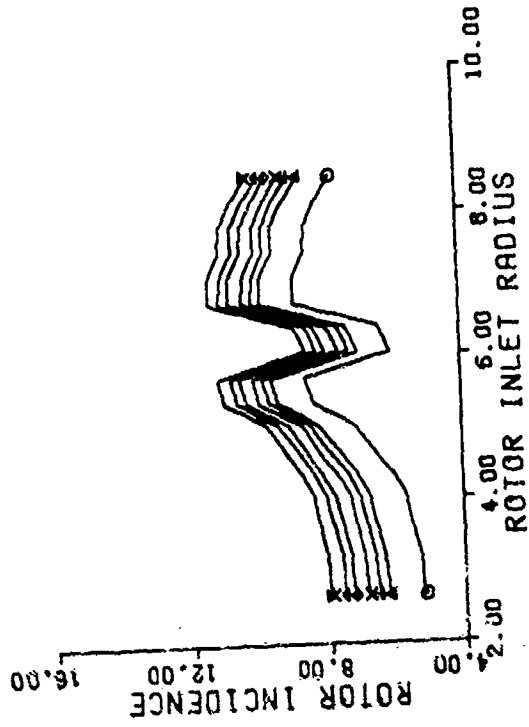


FIGURE 81 ROTOR INCIDENCE VS INLET
RADIUS (85% SPEED)

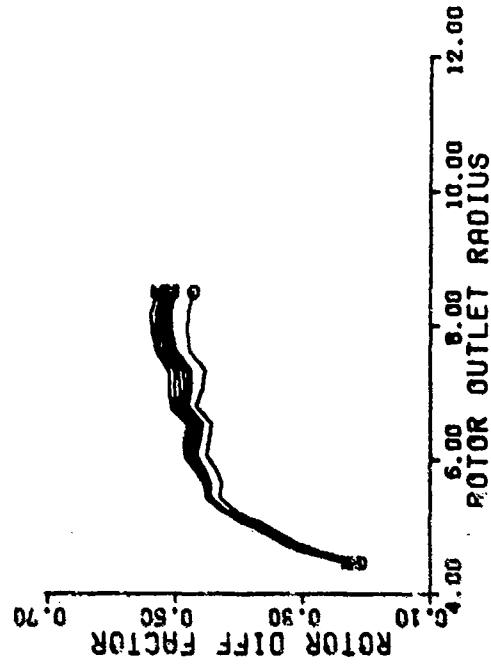


FIGURE 83 ROTOR DIFFUSION FACTOR VS
OUTLET RADIUS (85% SPEED)

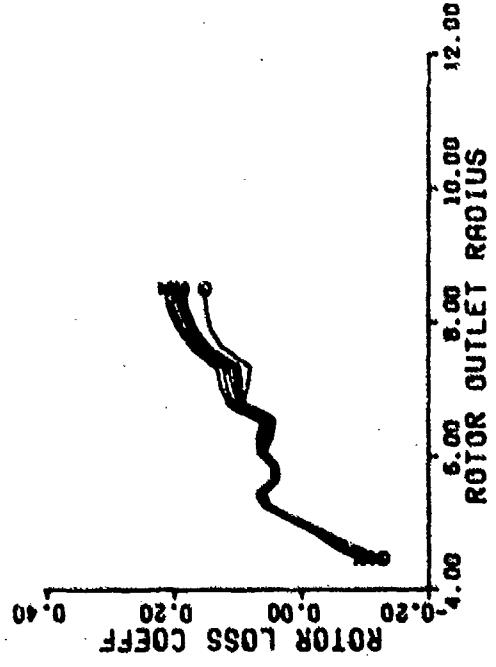


FIGURE 82 ROTOR LOSS COEFFICIENT VS
OUTLET RADIUS (85% SPEED)

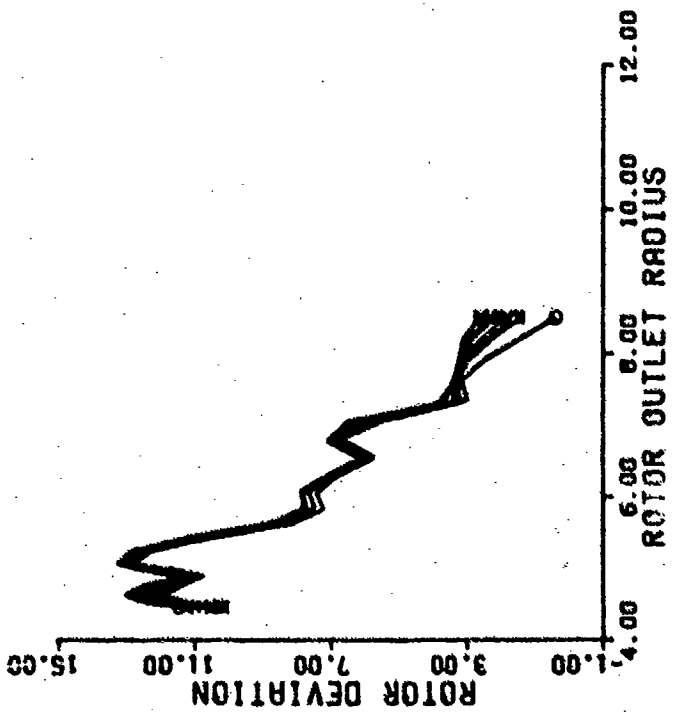


FIGURE 84 ROTOR DEVIATION VS OUTLET RADIUS (85% SPEED)

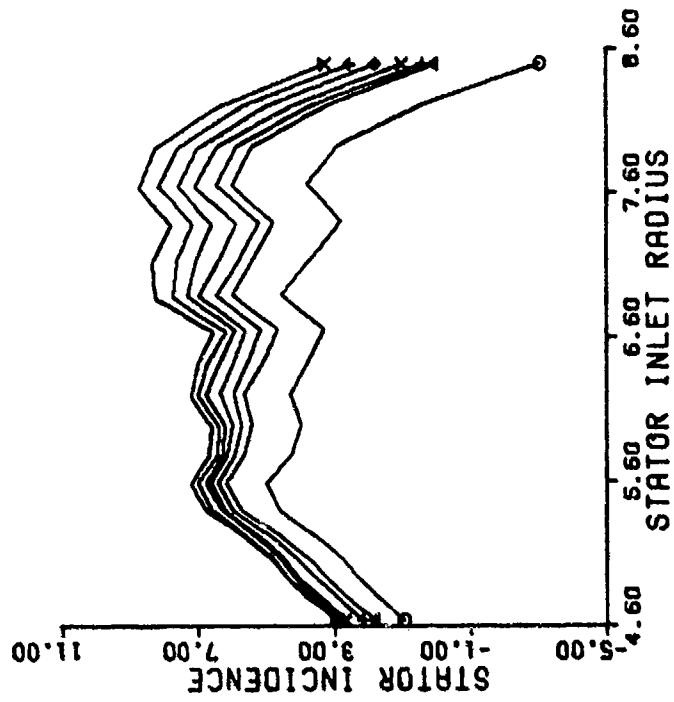


FIGURE 85 STATOR INCIDENCE VS INLET RADIUS (85% SPEED)

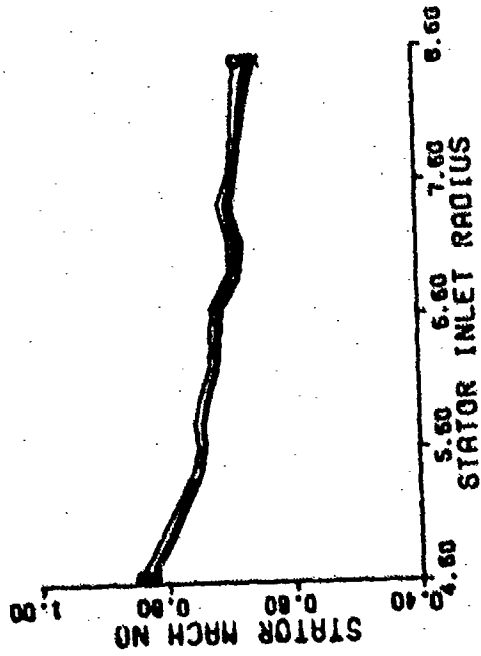


FIGURE 86 STATOR MACH NUMBER VS INLET RADIUS (85% SPEED)

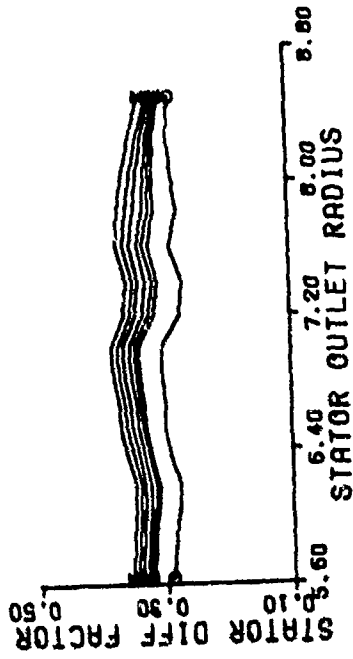


FIGURE 87 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (85% SPEED)

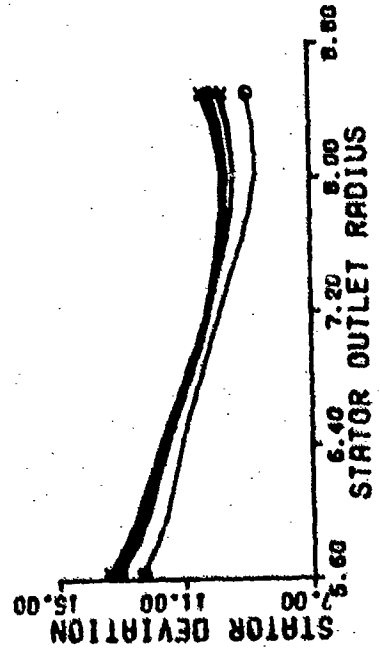


FIGURE 88 STATOR DEVIATION VS OUTLET RADIUS (85% SPEED)

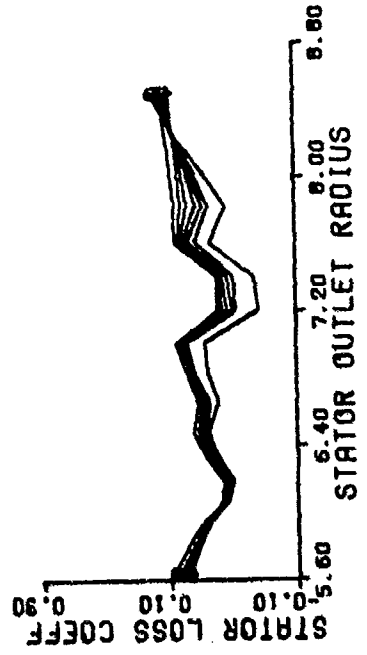


FIGURE 89 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (85% SPEED)

TABLE XII

IDENTIFICATION OF SYMBOLS
FOR 90%-SPEED ACROSS-BLADE FIGURES

TEST IDENTIFICATION	SYMBOL
601220703590	⌘
601220603090	⤴
601220502590	⊖
601220402090	⌘
601220301590	+
601150300290	△
512170300090	⊙

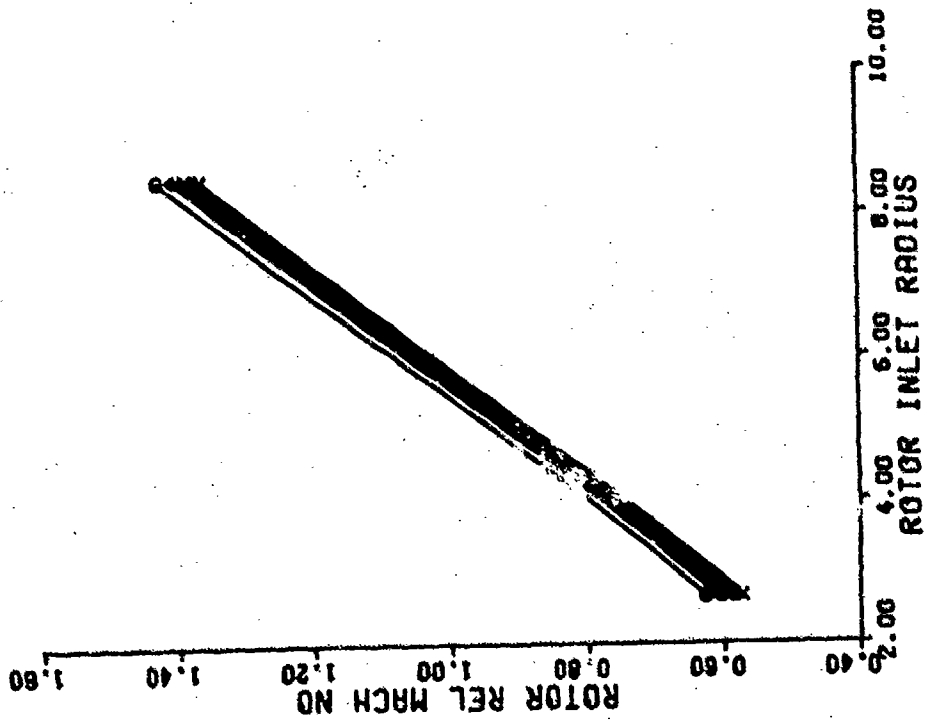


FIGURE 90 ROTOR RELATIVE MACH NUMBER VS INLET RADIUS (90% SPEED)

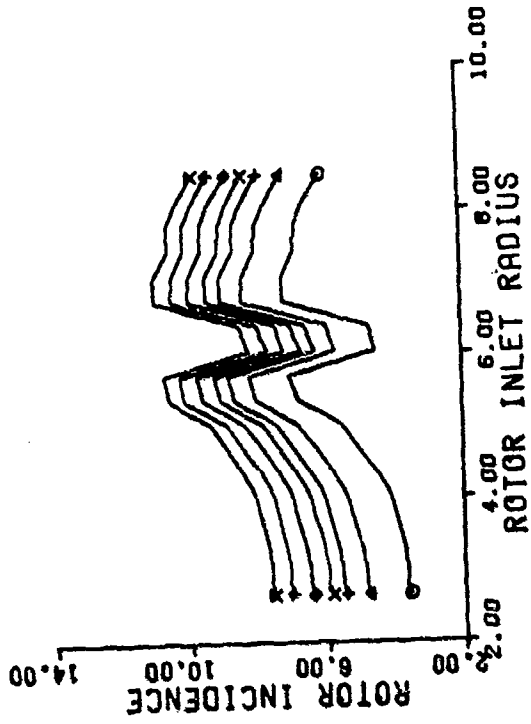


FIGURE 91 ROTOR INCIDENCE VS INLET RADIUS (90% SPEED)

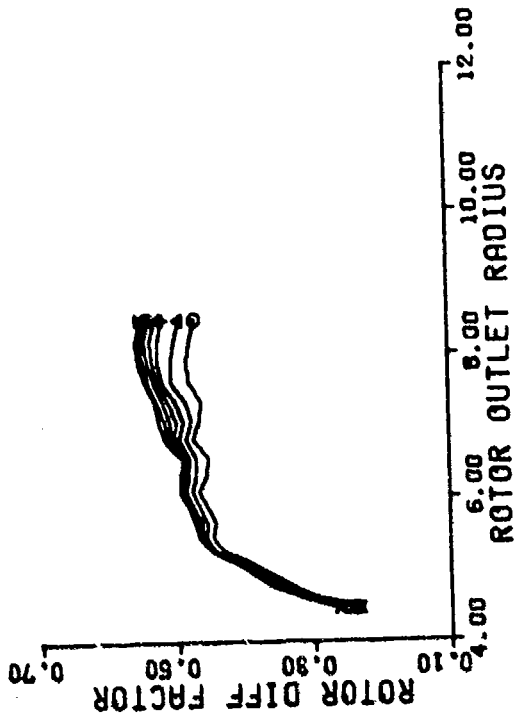


FIGURE 93 ROTOR DIFFUSION FACTOR VS
OUTLET RADIUS (90% SPEED)

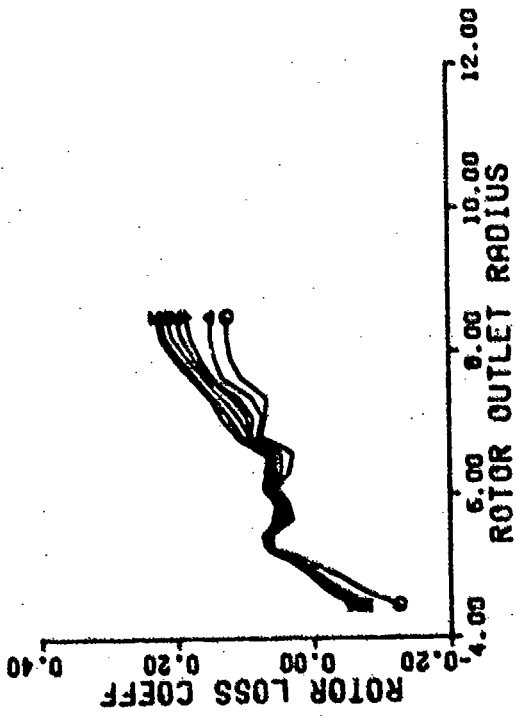


FIGURE 92 ROTOR LOSS COEFFICIENT VS
OUTLET RADIUS (90% SPEED)

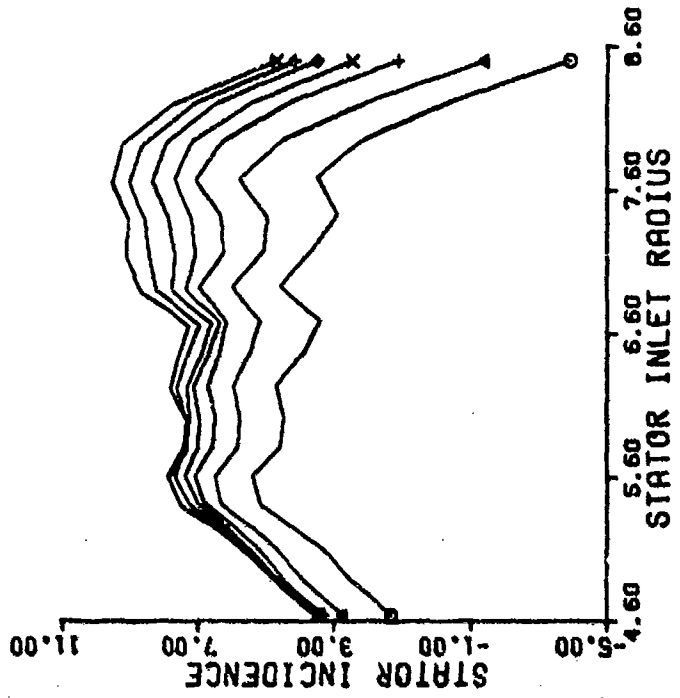


FIGURE 95 STATOR INCIDENCE VS INLET RADIUS (90% SPEED)

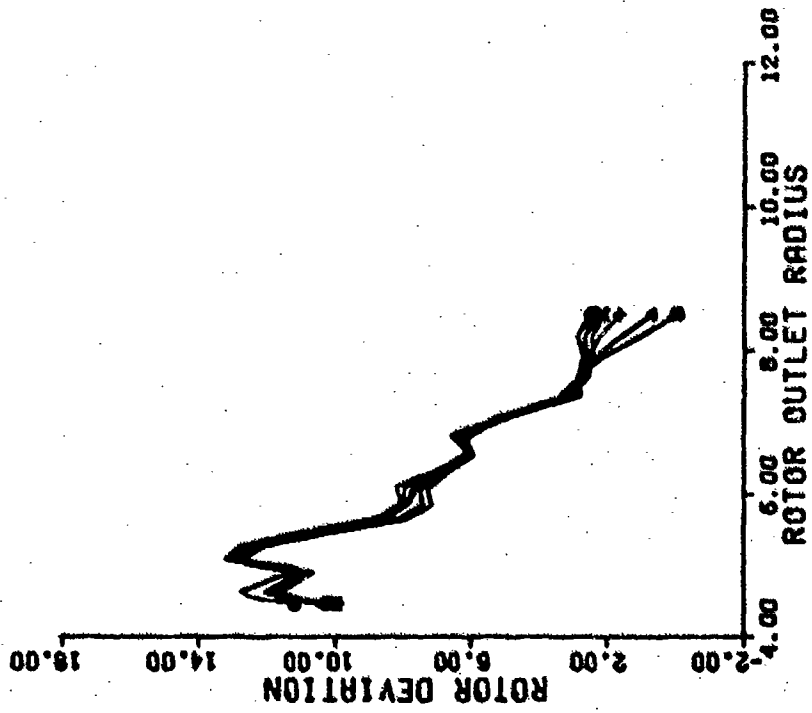


FIGURE 94 ROTOR DEVIATION VS OUTLET RADIUS (90% SPEED)

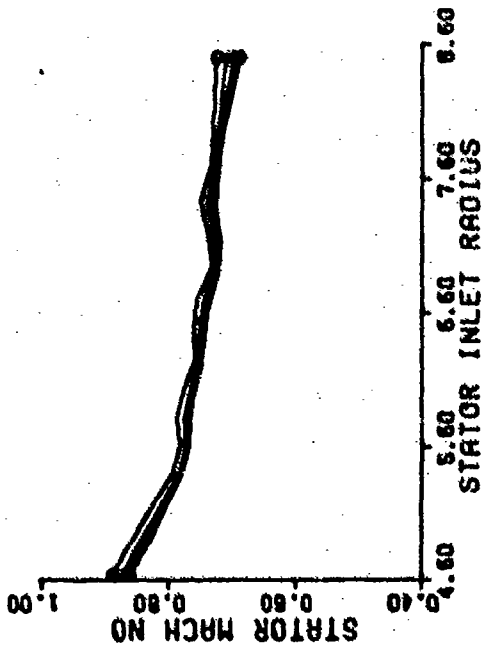


FIGURE 96 STATOR MACH NUMBER VS INLET RADIUS (90% SPEED)

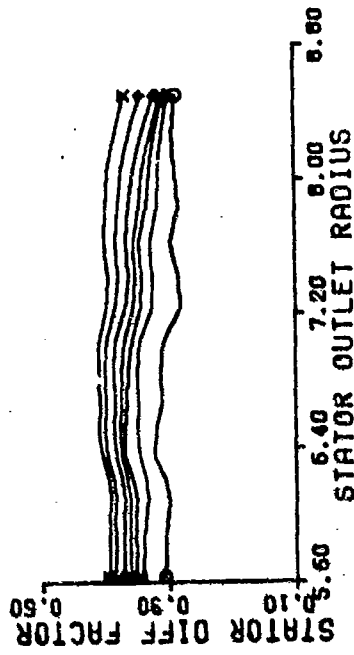


FIGURE 97 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (90% SPEED)

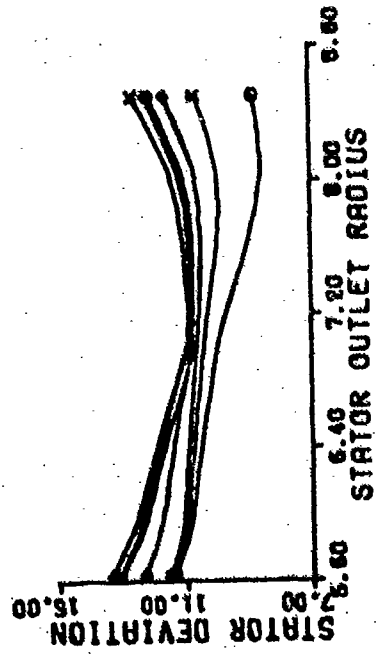


FIGURE 98 STATOR DEVIATION VS OUTLET RADIUS (90% SPEED)

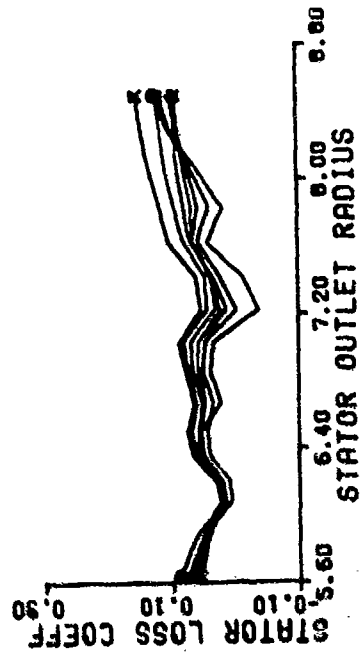


FIGURE 99 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (90% SPEED)

TABLE XIII

IDENTIFICATION OF SYMBOLS
FOR 95%-SPEED ACROSS-BLADE FIGURES

TEST IDENTIFICATION	SYMBOL
601290903795	Y
601290803295	Z
601290702895	X
601290602495	↑
601300502095	◇
601300401795	X
601300301095	+
601300200295	△
601300100095	⊙

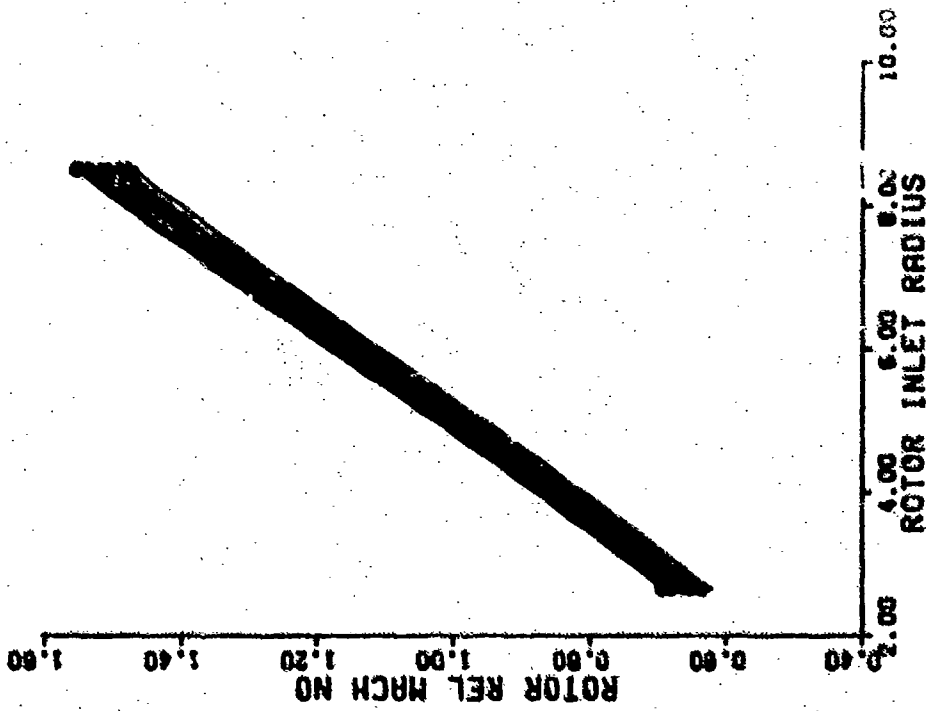
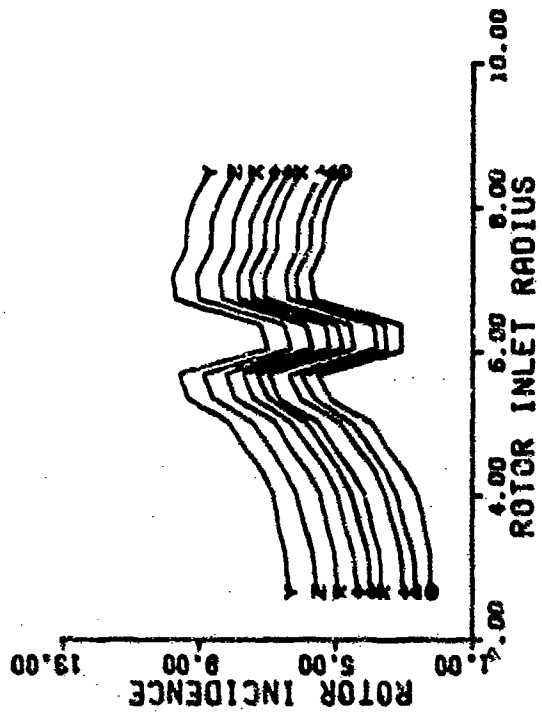


FIGURE 100 ROTOR RELATIVE MACH NUMBER VS INLET RADIUS (95% SPEED)



URE 101 ROTOR INCIDENCE VS INLET RADIUS (95% SPEED)

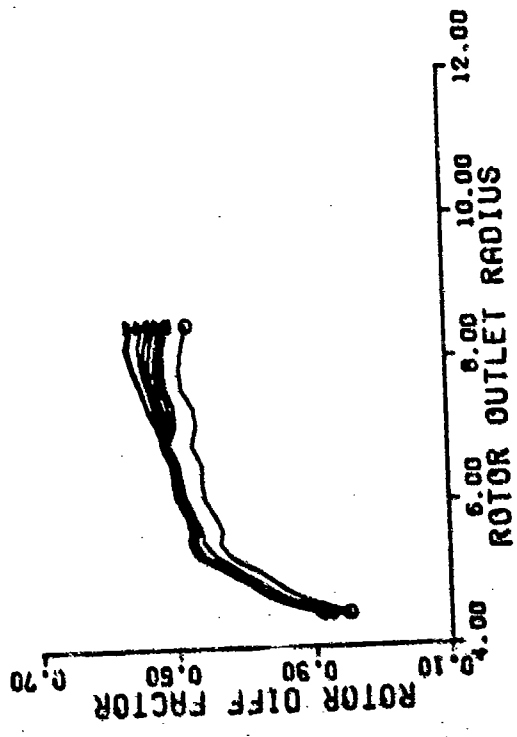


FIGURE 103 ROTOR DIFFUSION FACTOR VS
OUTLET RADIUS (95% SPEED)

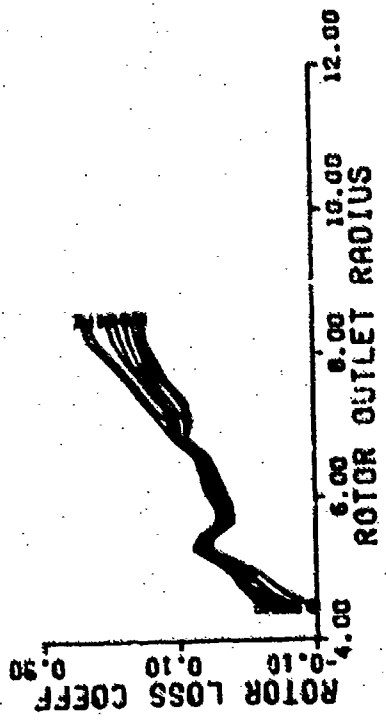


FIGURE 102 ROTOR LOSS COEFFICIENT VS
OUTLET RADIUS (95% SPEED)

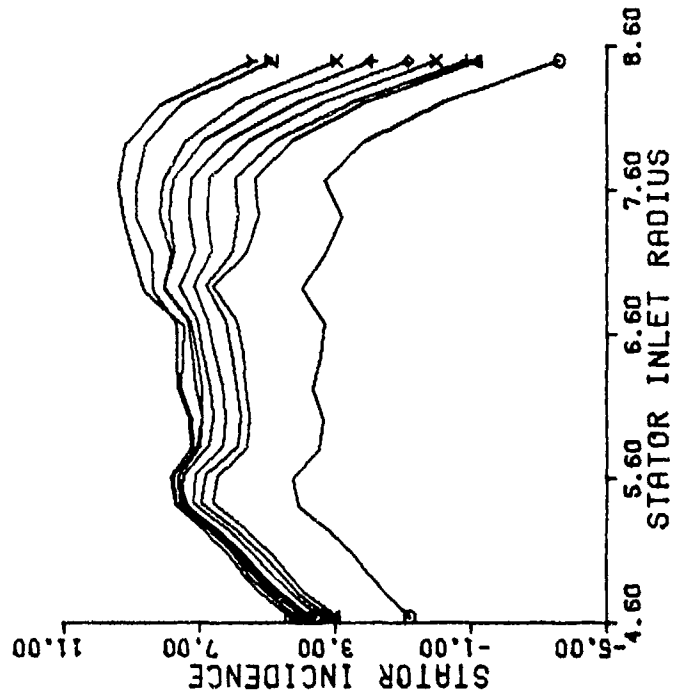


FIGURE 105 STATOR INCIDENCE VS INLET RADIUS (95% SPEED)

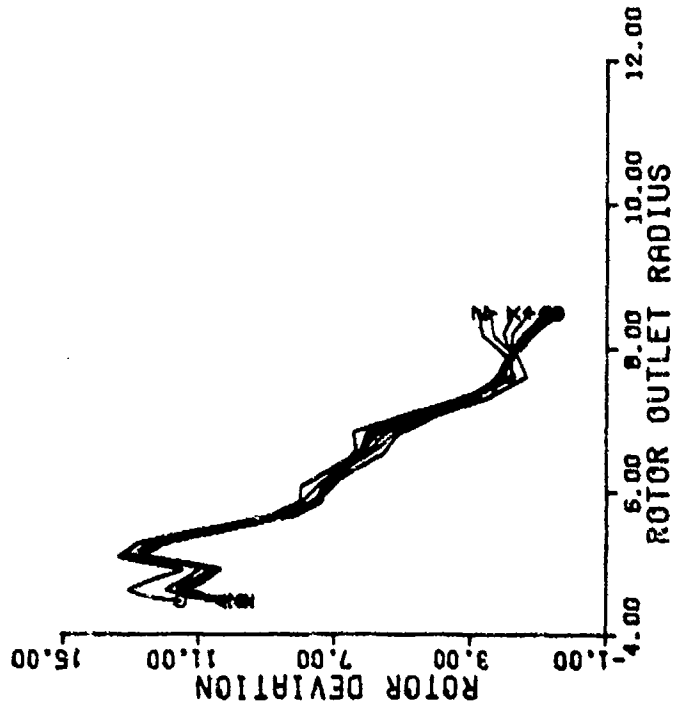


FIGURE 104 ROTOR DEVIATION VS OUTLET RADIUS (95% SPEED)

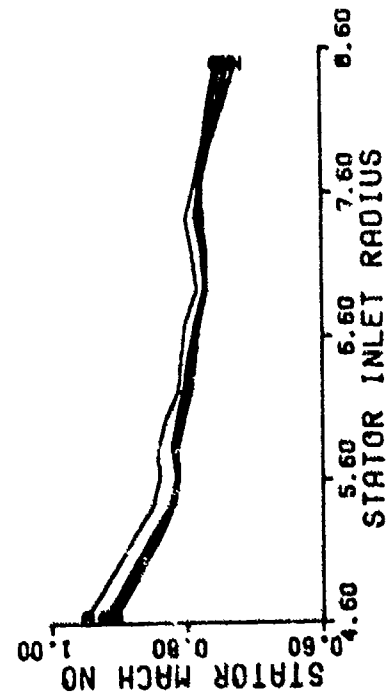


FIGURE 106 STATOR MACH NUMBER VS INLET RADIUS (95% SPEED)

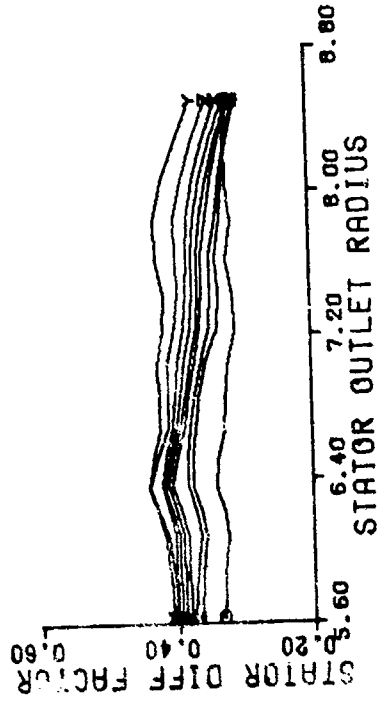


FIGURE 107 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (95% SPEED)

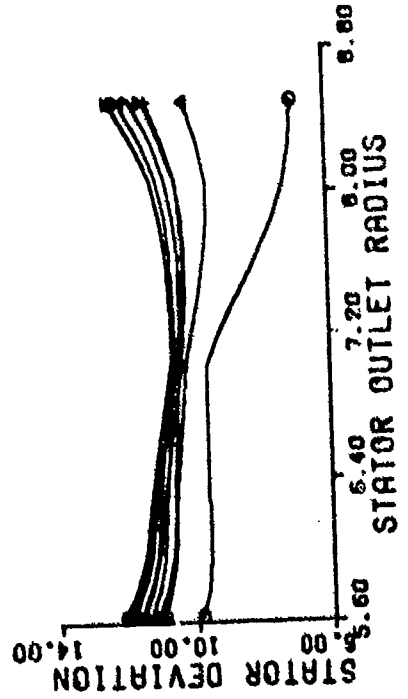


FIGURE 108 STATOR DEVIATION VS OUTLET RADIUS (95% SPEED)

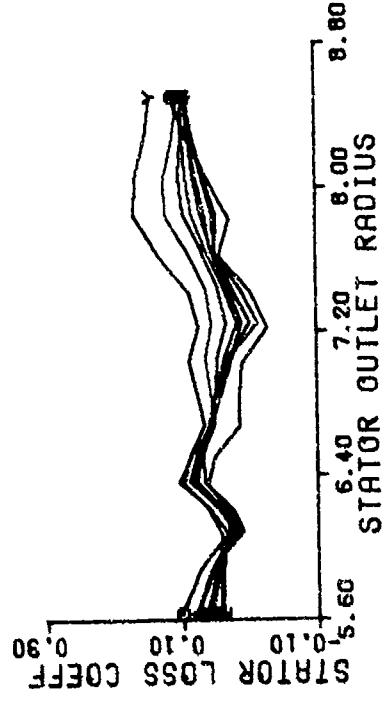


FIGURE 109 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (95% SPEED)

TABLE XIV

IDENTIFICATION OF SYMBOLS
FOR 100%-SPEED ACROSS-BLADE FIGURES

TEST IDENTIFICATION	SYMBOL
602200403100	Y
602200302700	Z
601221102600	X
601220902300	+
602200201900	◇
601220801600	X
601220101000	+
601160400200	△
601160200000	⊖

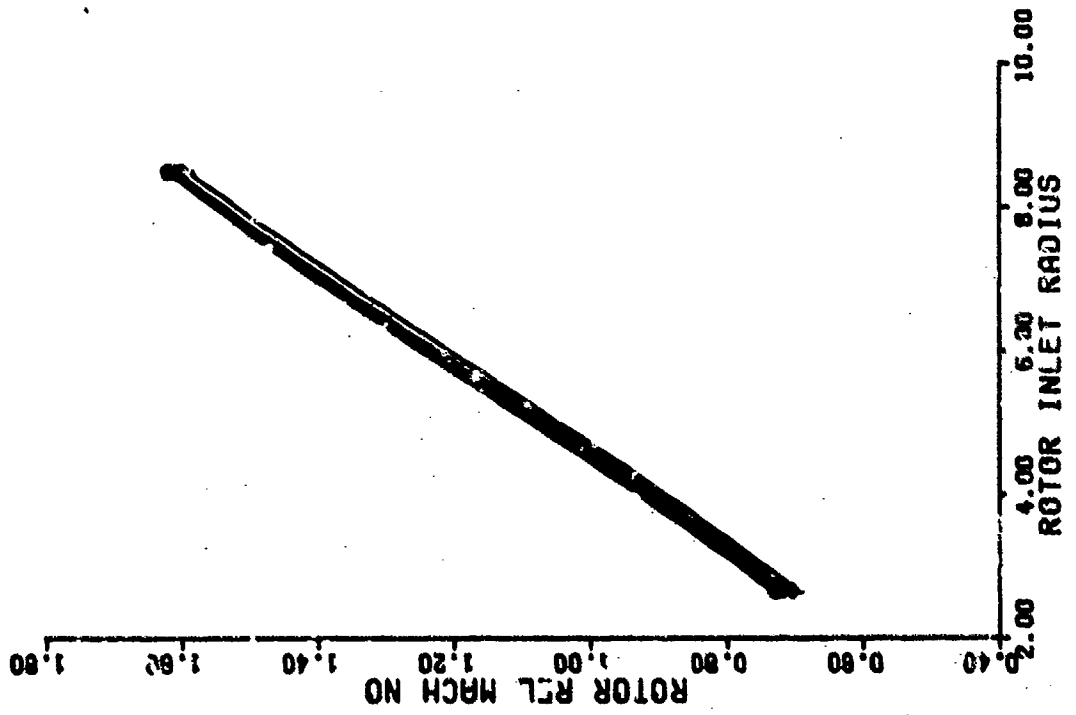


FIGURE 110 ROTOR RELATIVE MACH NUMBER VS INLET RADIUS (100% SPEED)

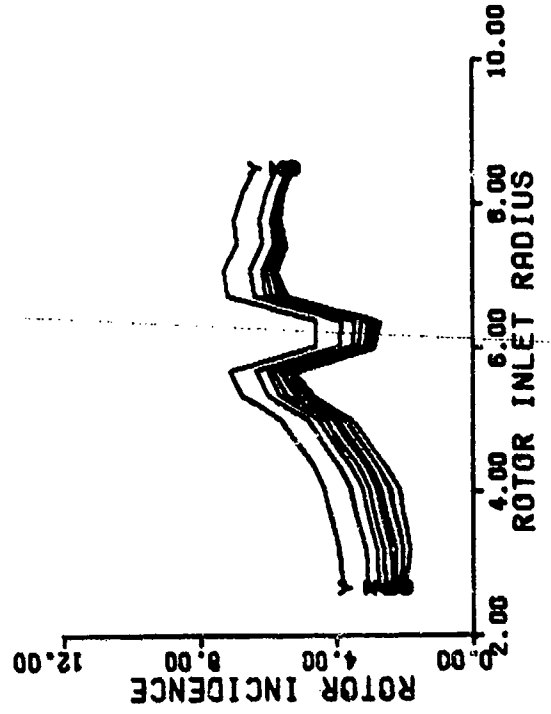


FIGURE 111 ROTOR INCIDENCE VS INLET RADIUS (100% SPEED)

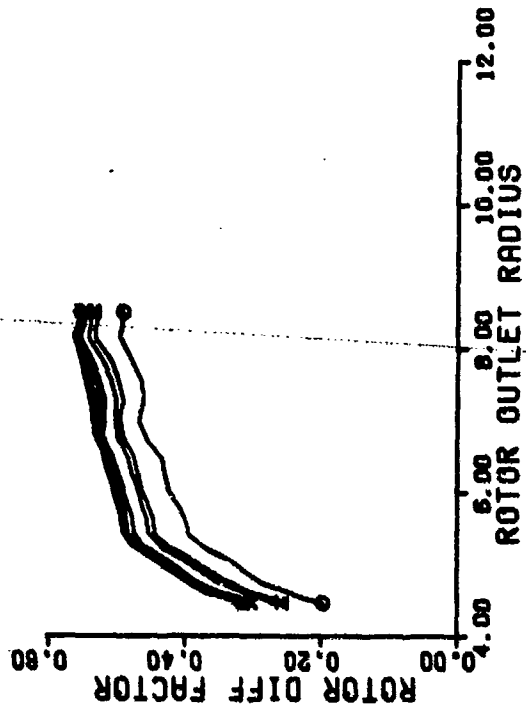


FIGURE 113 ROTOR DIFFUSION FACTOR VS
OUTLET RADIUS (100% SPEED)

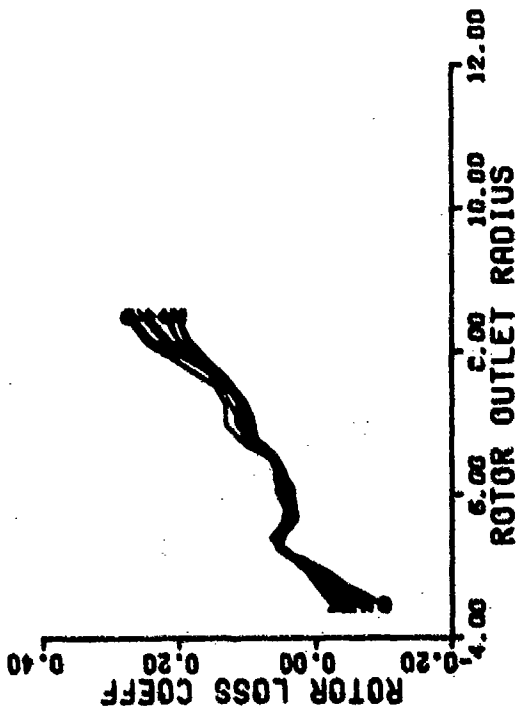


FIGURE 112 ROTOR LOSS COEFFICIENT VS
OUTLET RADIUS (100% SPEED)

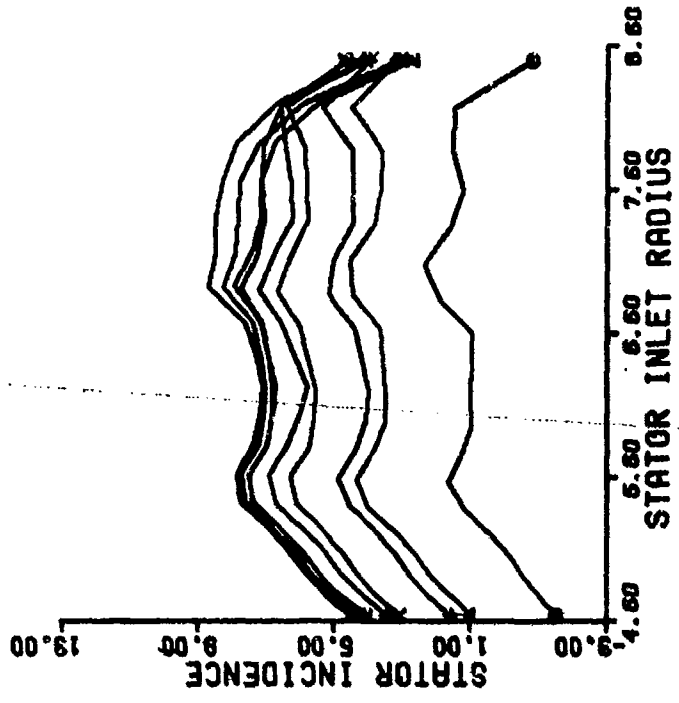


FIGURE 115 STATOR INCIDENCE VS INLET RADIUS (100% SPEED)

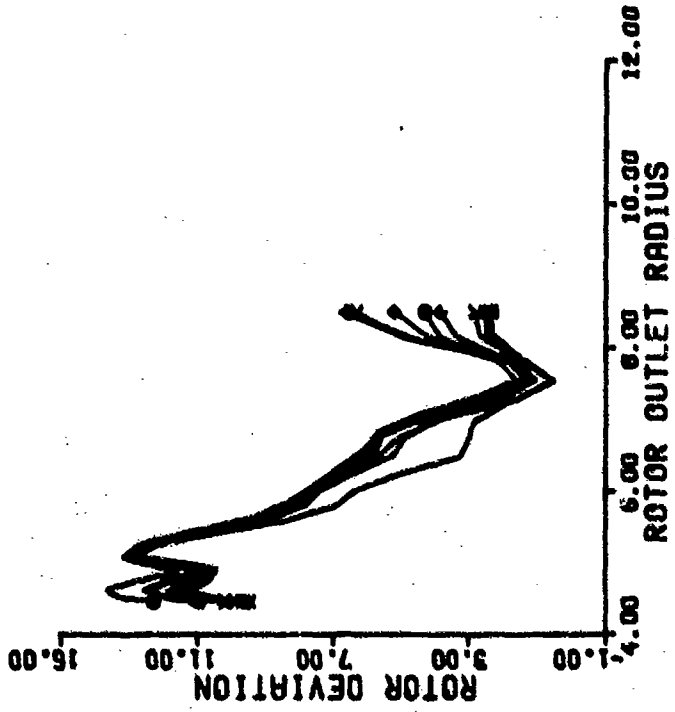


FIGURE 114 ROTOR DEVIATION VS OUTLET RADIUS (100% SPEED)

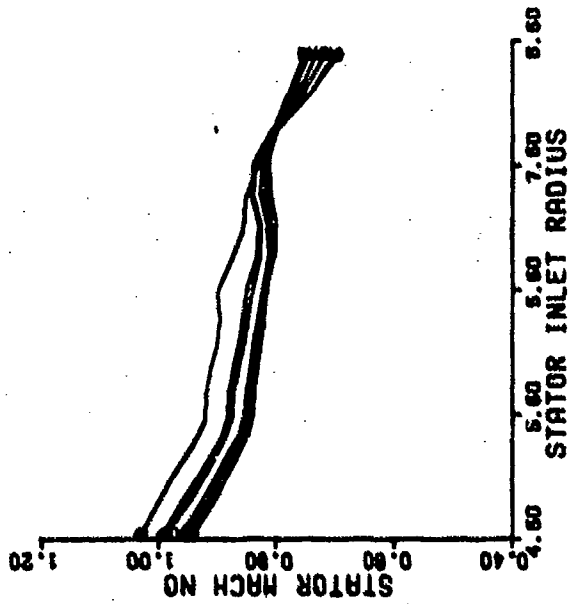


FIGURE 116 STATOR MACH NUMBER VS INLET RADIUS (100% SPEED)

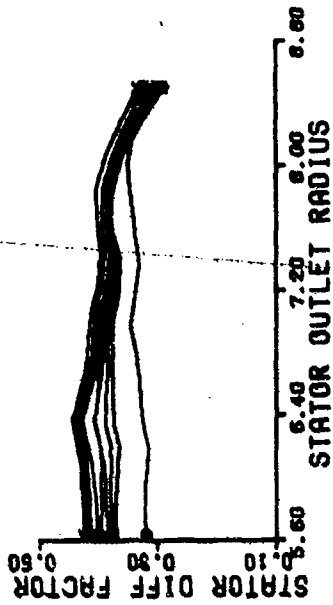


FIGURE 117 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (100% SPEED)

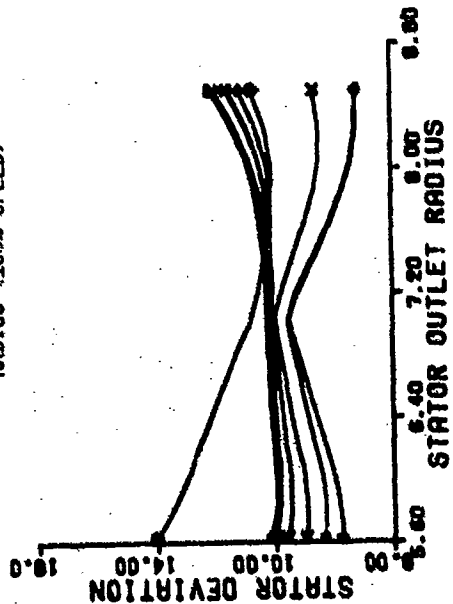


FIGURE 118 STATOR DEVIATION VS OUTLET RADIUS (100% SPEED)

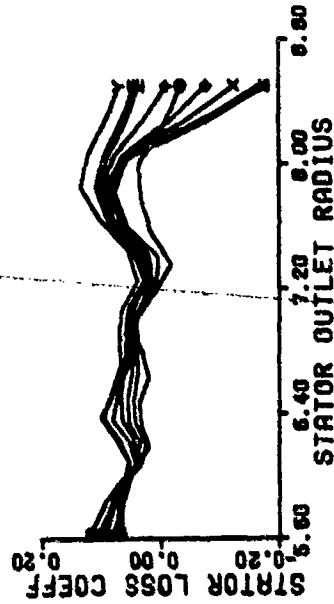


FIGURE 119 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (100% SPEED)

TABLE XV

IDENTIFICATION OF SYMBOLS
FOR 100% THRU-BLADE COMPARISON FIGURES

TEST IDENTIFICATION	SYMBOL
602200201900 CASE 1	⓪
602200201900 CASE 2	⚠

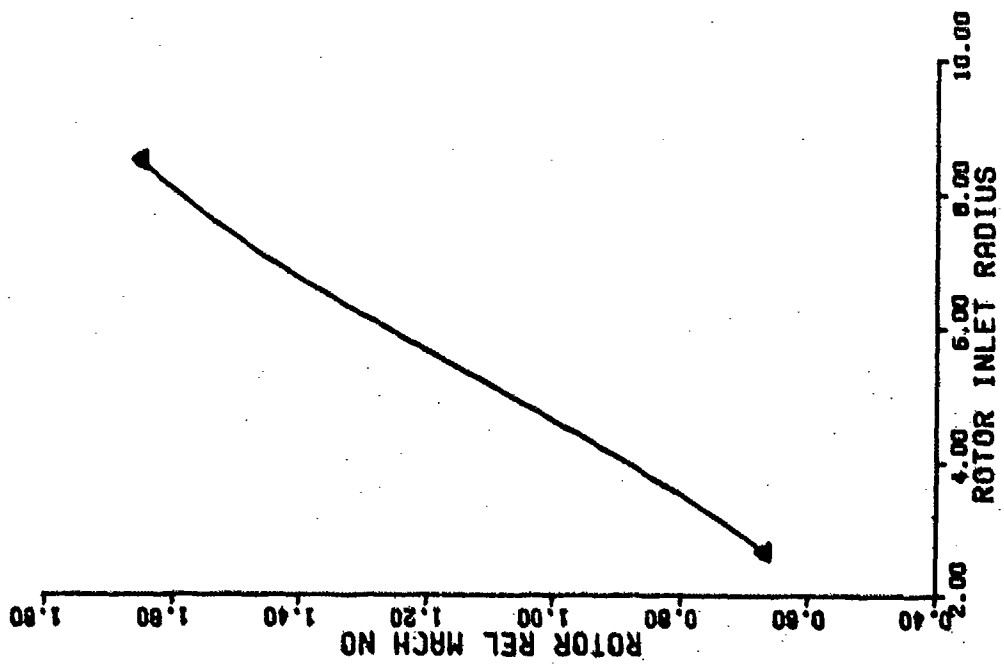


FIGURE 120 ROTOR RELATIVE MACH NUMBER VS INLET RADIUS (100% SPEED THRU-BLADE COMPARISON)

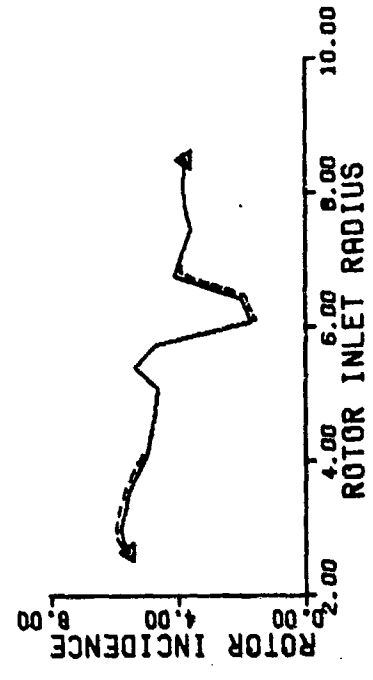


FIGURE 121 ROTOR INCIDENCE VS INLET RADIUS (100% SPEED THRU-BLADE COMPARISON)

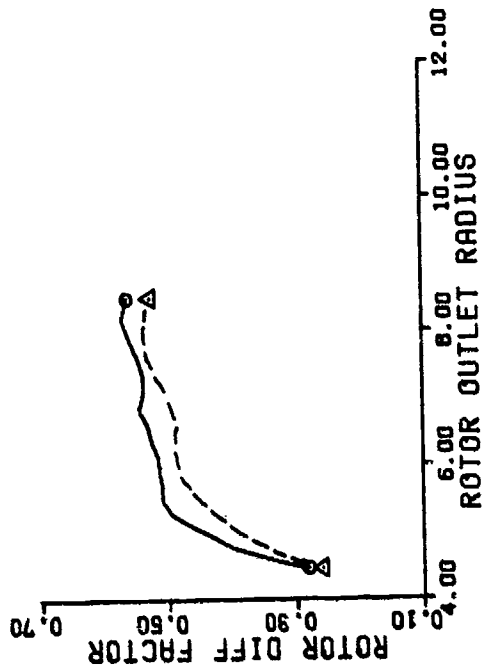


FIGURE 123 ROTOR DIFFUSION FACTOR VS OUTLET RADIUS (100% SPEED THRU-BLADE COMPARISON)

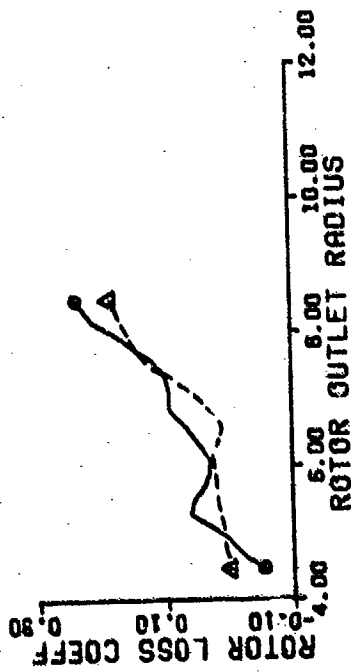


FIGURE 122 ROTOR LOSS COEFFICIENT VS OUTLET RADIUS (100% SPEED THRU-BLADE COMPARISON)

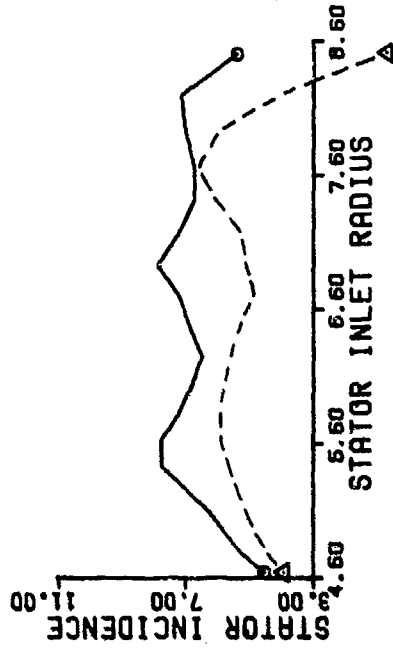


FIGURE 125 STATOR INCIDENCE VS INLET RADIUS
(100% SPEED THRU-BLADE COMPARISON)

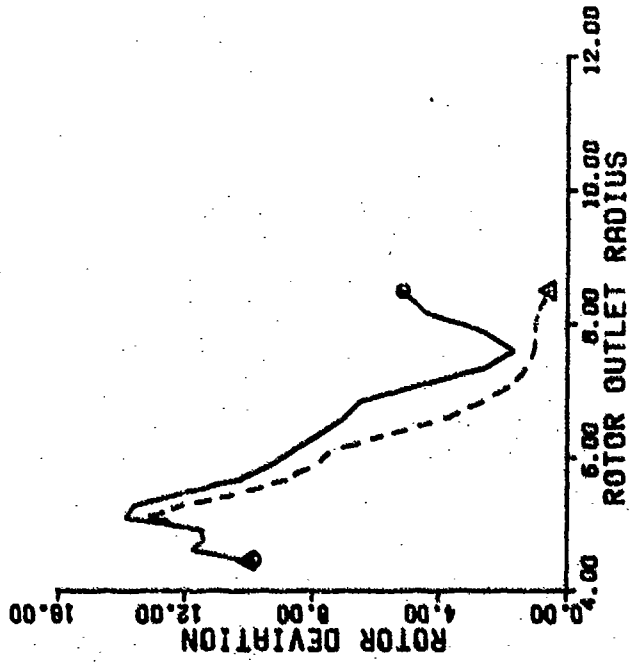


FIGURE 124 ROTOR DEVIATION VS OUTLET RADIUS
(100% SPEED THRU-BLADE COMPARISON)

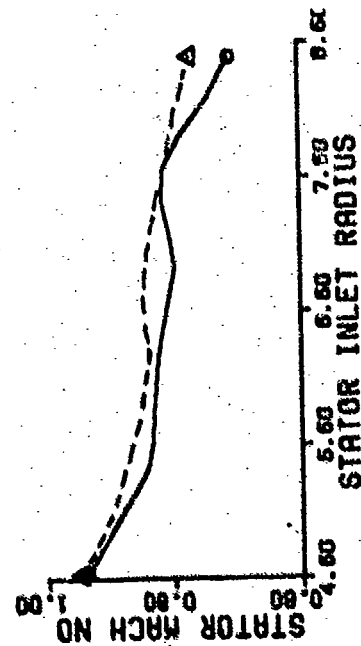


FIGURE 126 STATOR MACH NUMBER VS INLET RADIUS (100% SPEED THRU-BLADE COMPARISON)

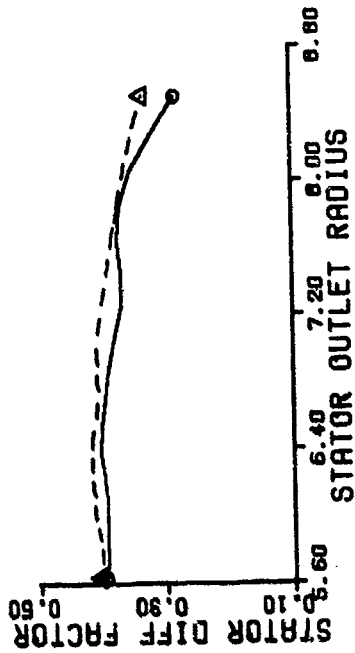


FIGURE 127 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (100% SPEED THRU-BLADE COMPARISON)

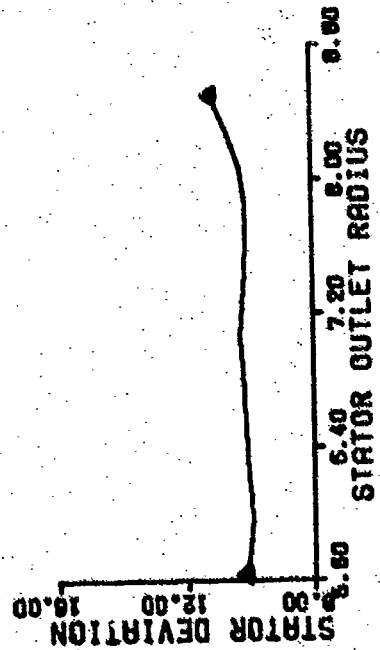


FIGURE 128 STATOR DEVIATION VS OUTLET RADIUS (100% SPEED THRU-BLADE COMPARISON)

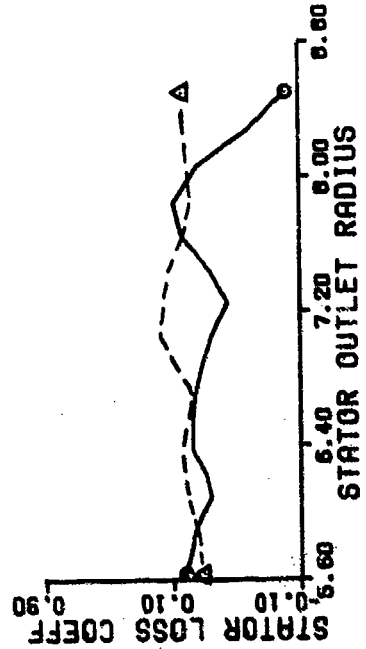


FIGURE 129 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (100% SPEED THRU-BLADE COMPARISON)

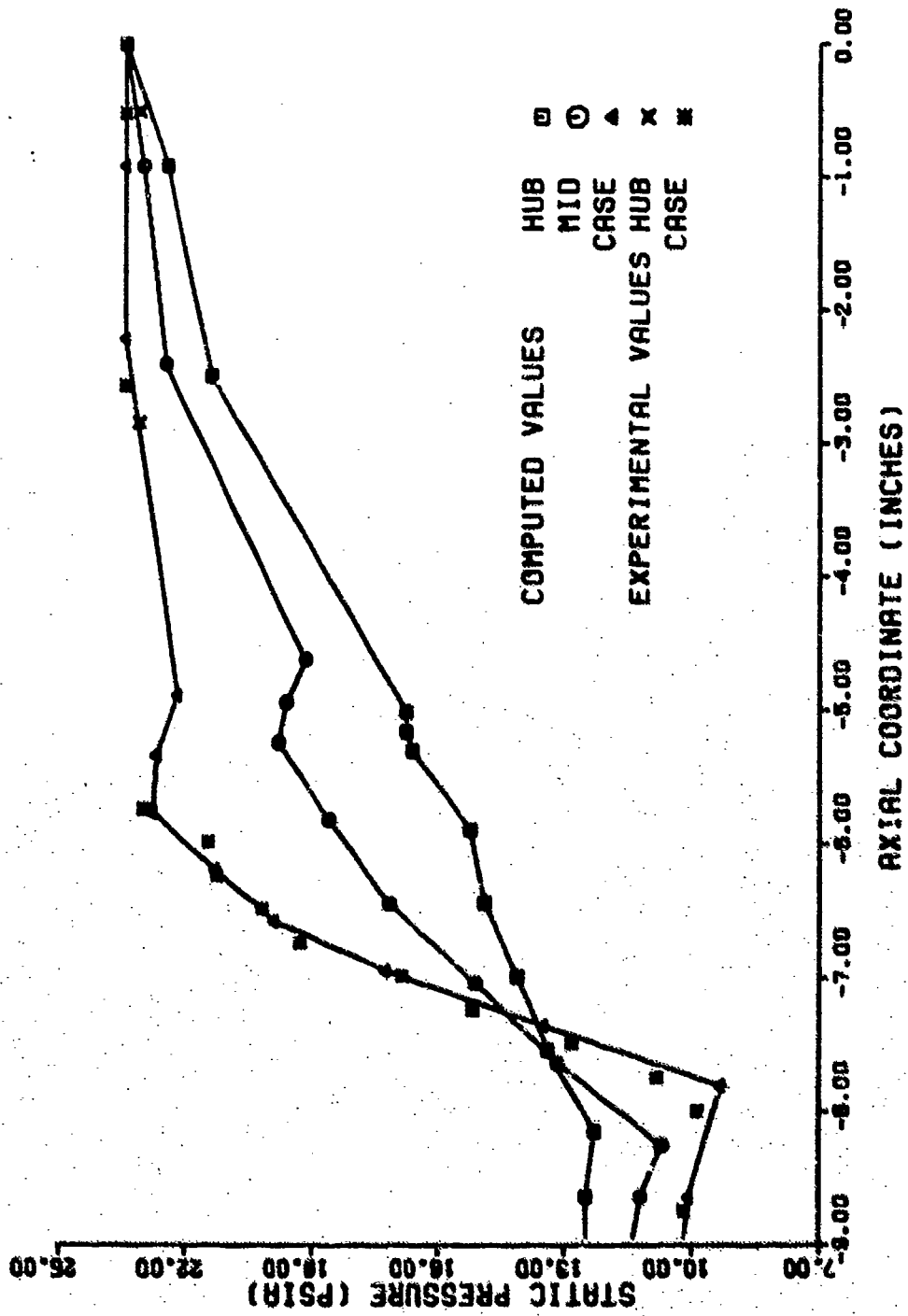


FIGURE 130. AXIAL STATIC PRESSURE DISTRIBUTION
(PT. 602200201900 CASE 1)

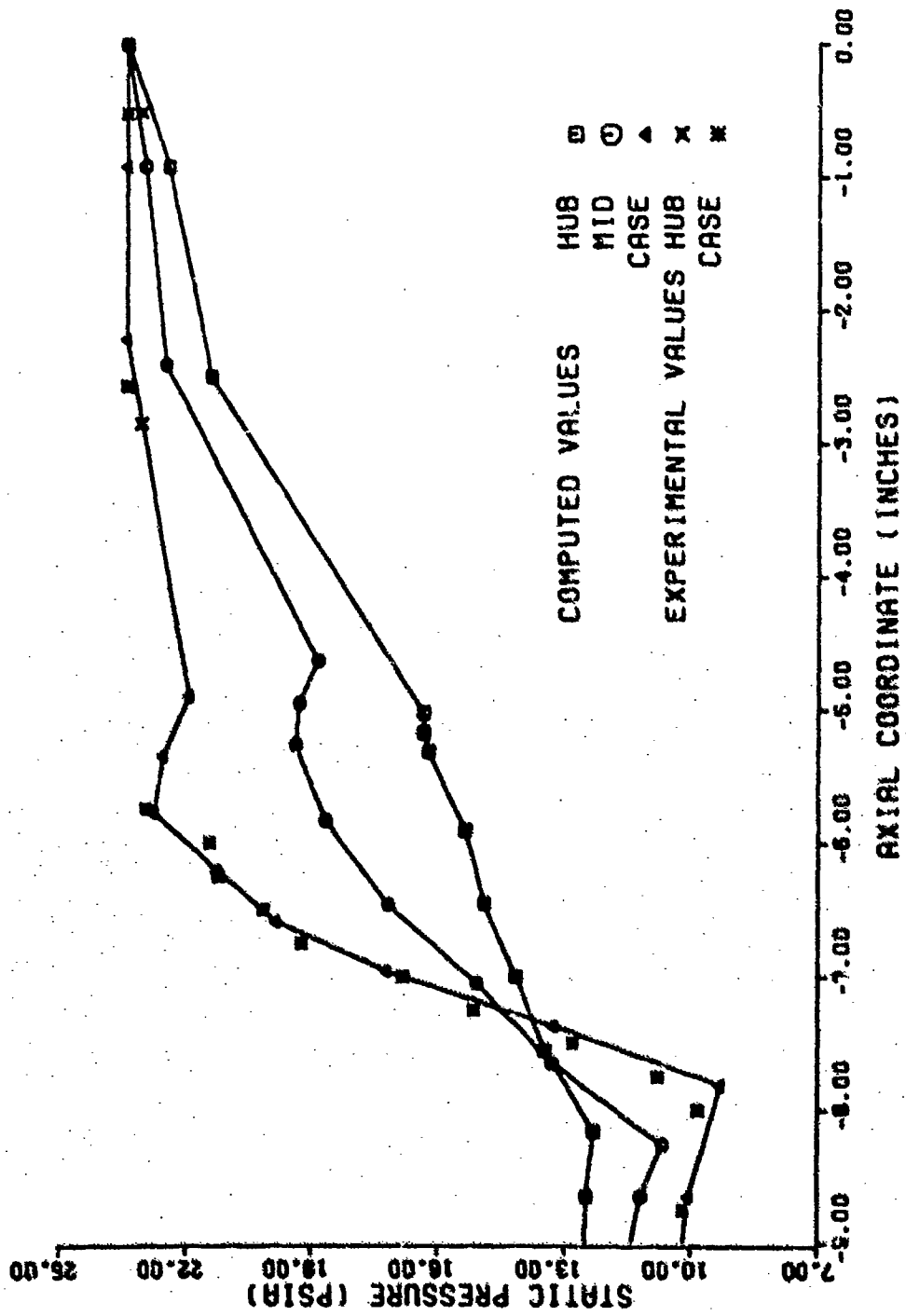


FIGURE 131. AXIAL STATIC PRESSURE DISTRIBUTION (PT. 602200201900 CASE 2)

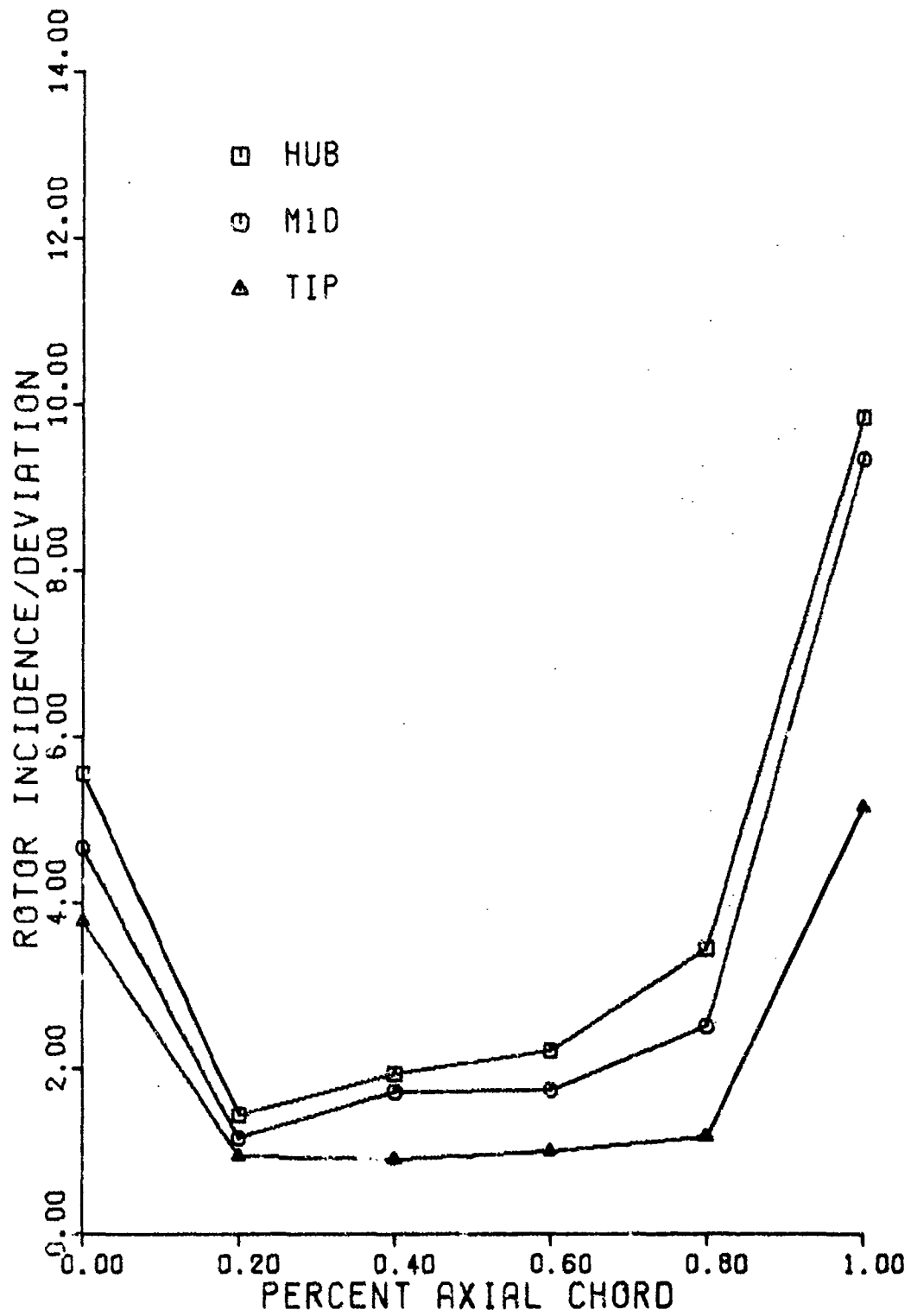


FIGURE 132. ROTOR THRU-BLADE DEVIATION ANGLE DISTRIBUTION (PT 602200201900 CASE 1)

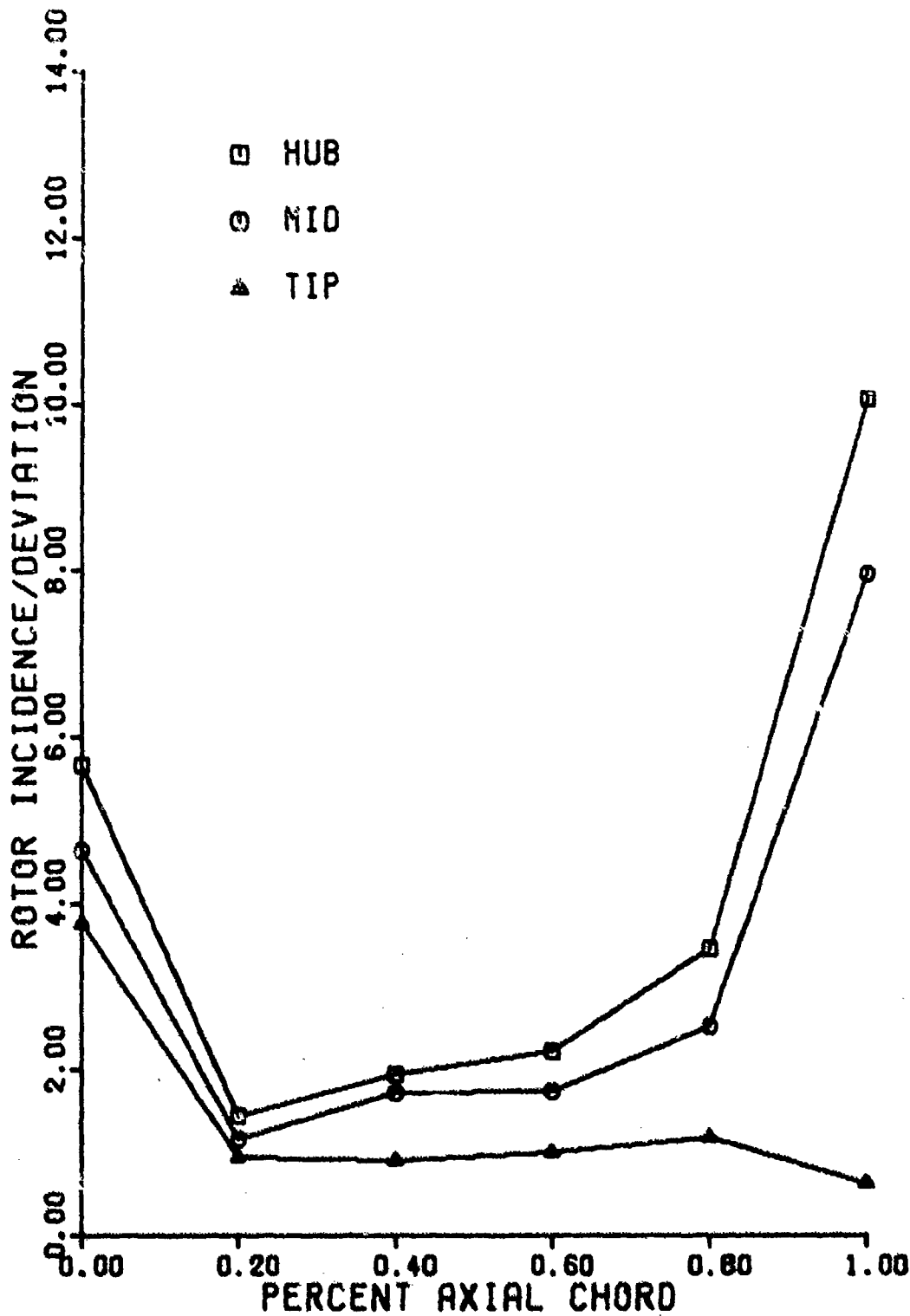


FIGURE 133. ROTOR THRU-BLADE DEVIATION ANGLE DISTRIBUTION (PT 602200201900 CASE 2)

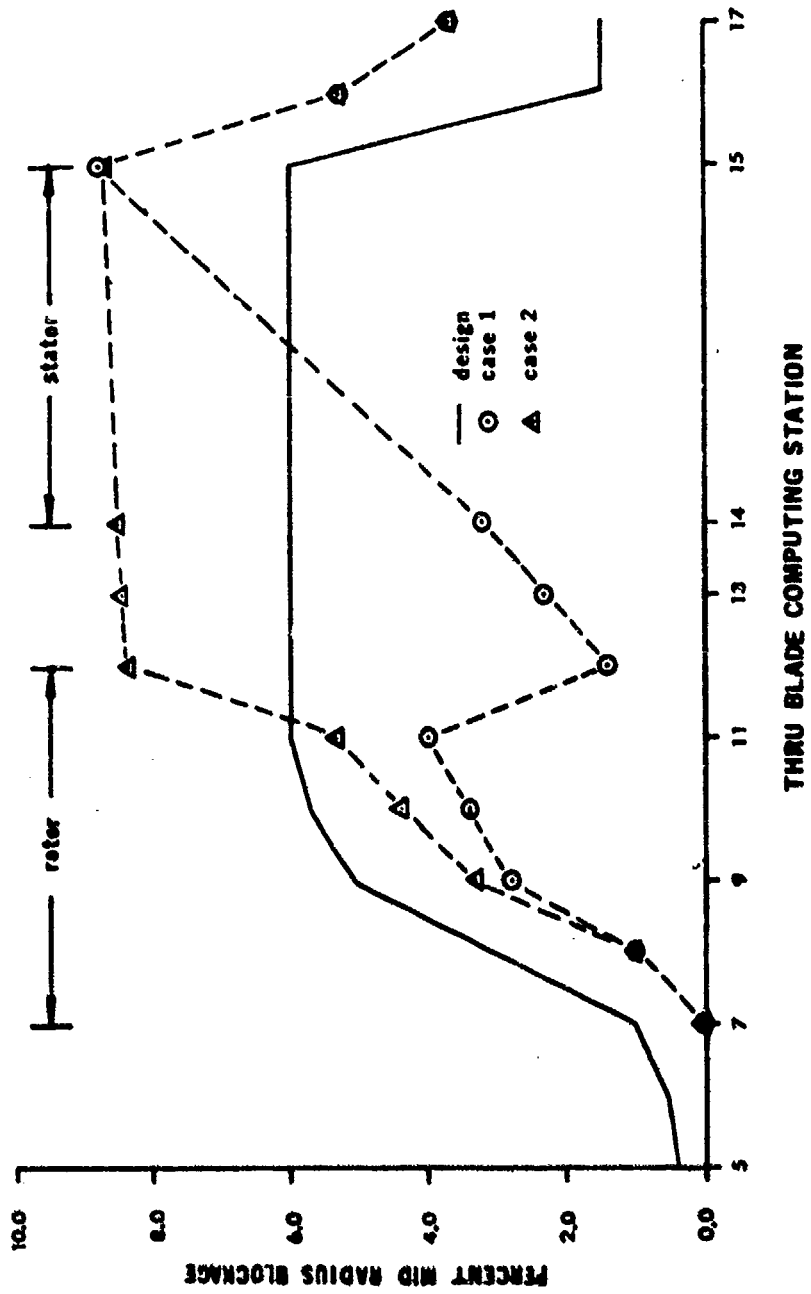


FIGURE 134. PERCENT MID RADIUS BLOCKAGE
COMPARISON (CASE 1, CASE 2
VS DESIGN)

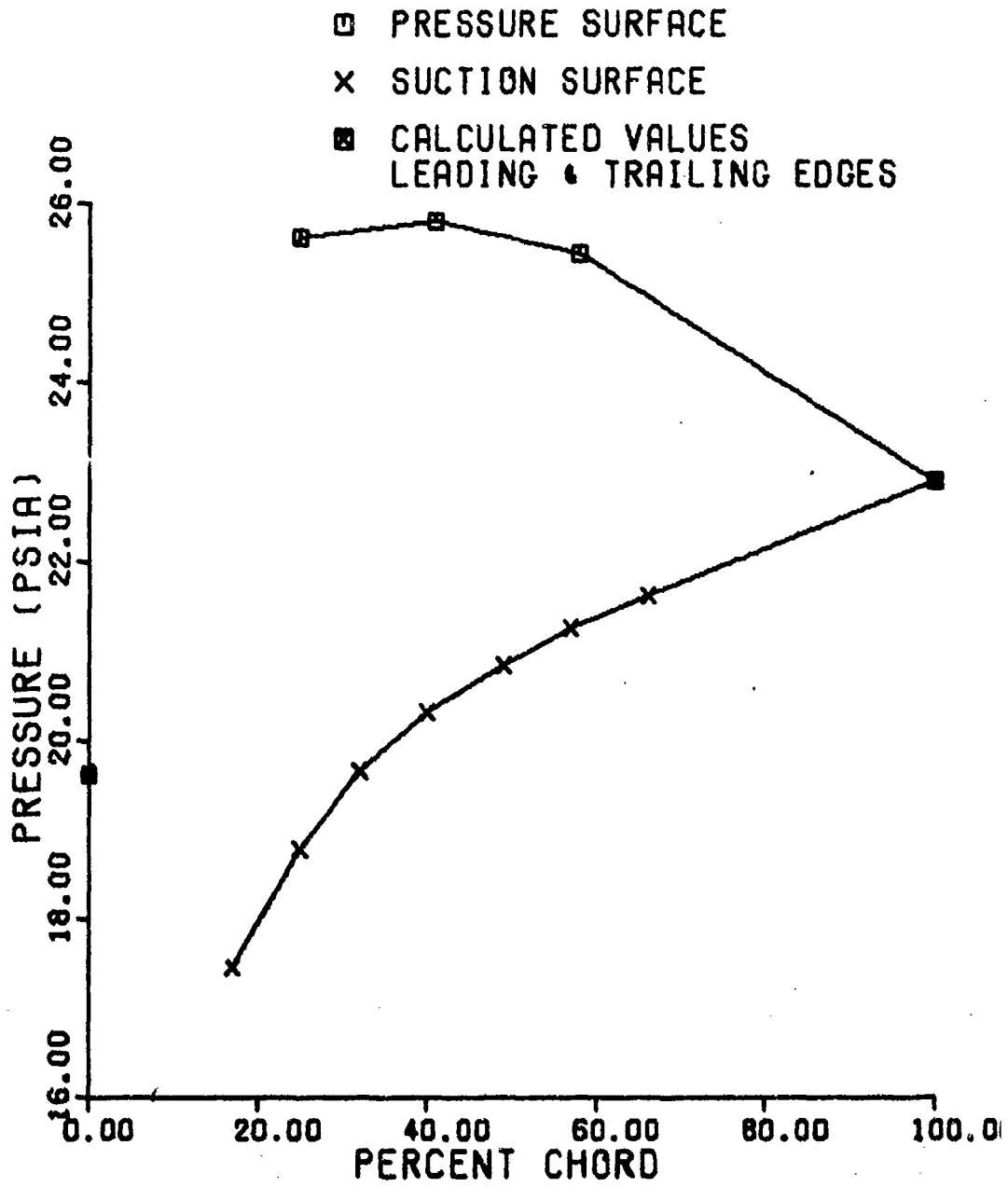


FIGURE 135. STATOR MID-SPAN SURFACE
 STATIC PRESSURE DISTRIBUTION
 FOR TEST POINT 601220201900

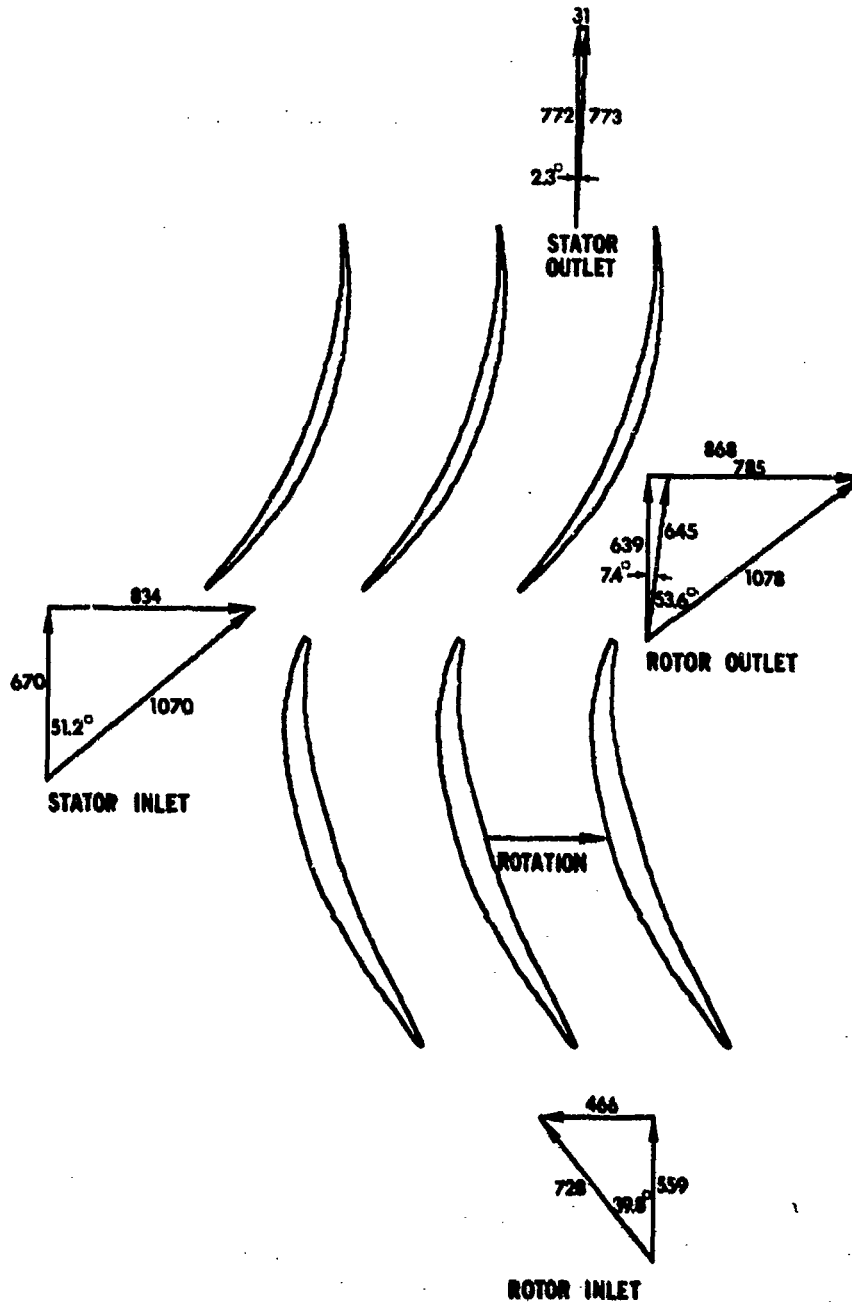


FIGURE 136. COMPRESSOR HUB GEOMETRY AND VELOCITY DIAGRAMS FOR TEST POINT 6012200201900

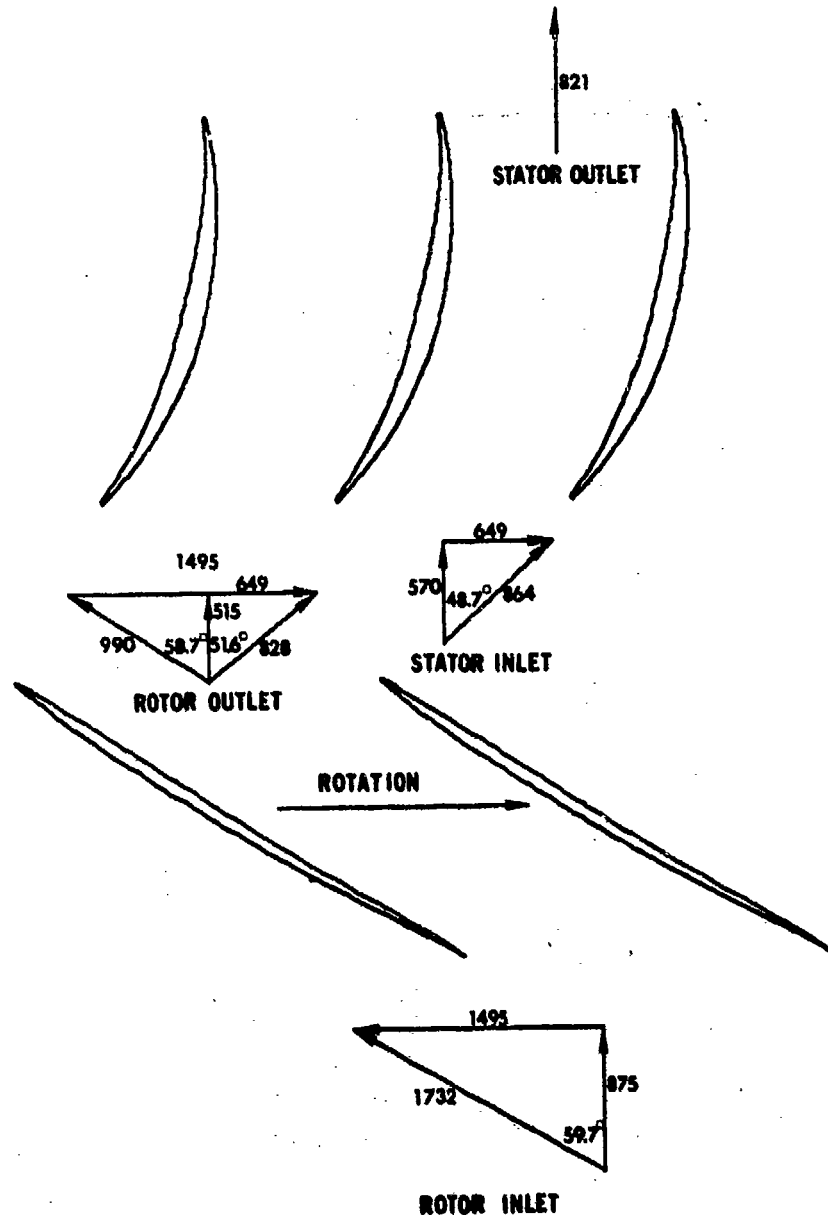
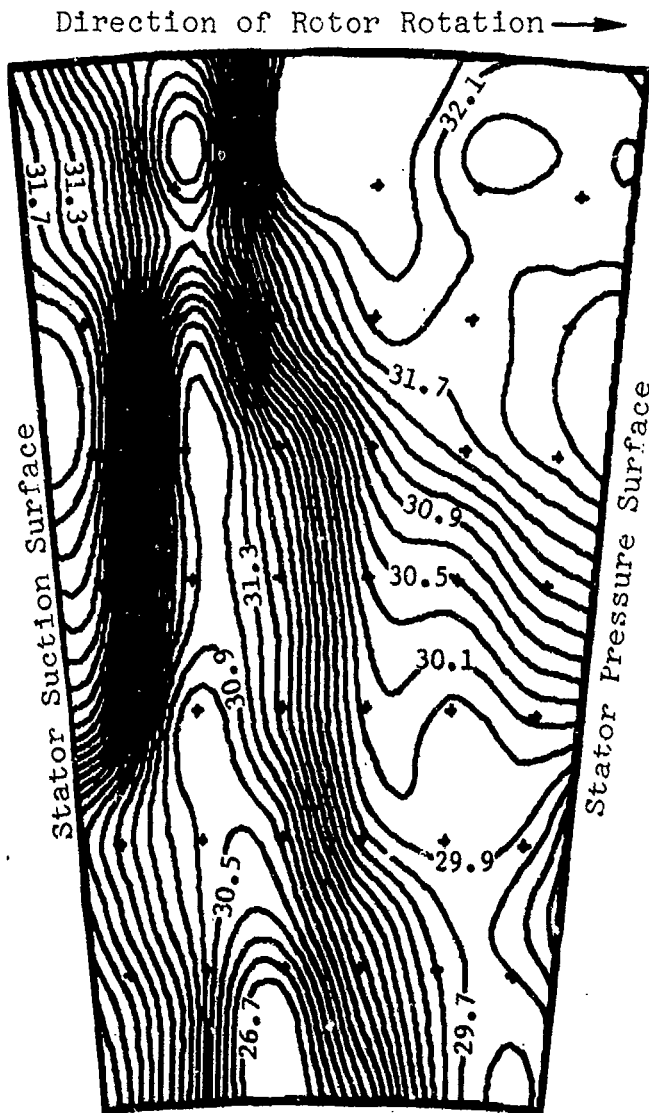


FIGURE 137. COMPRESSOR TIP GEOMETRY AND VELOCITY DIAGRAMS FOR TEST POINT 6012200201900



View Looking Downstream

FIGURE 138. STAGE EXIT CONTOUR PLOT OF TOTAL PRESSURE FOR TEST POINT 6012200201900.

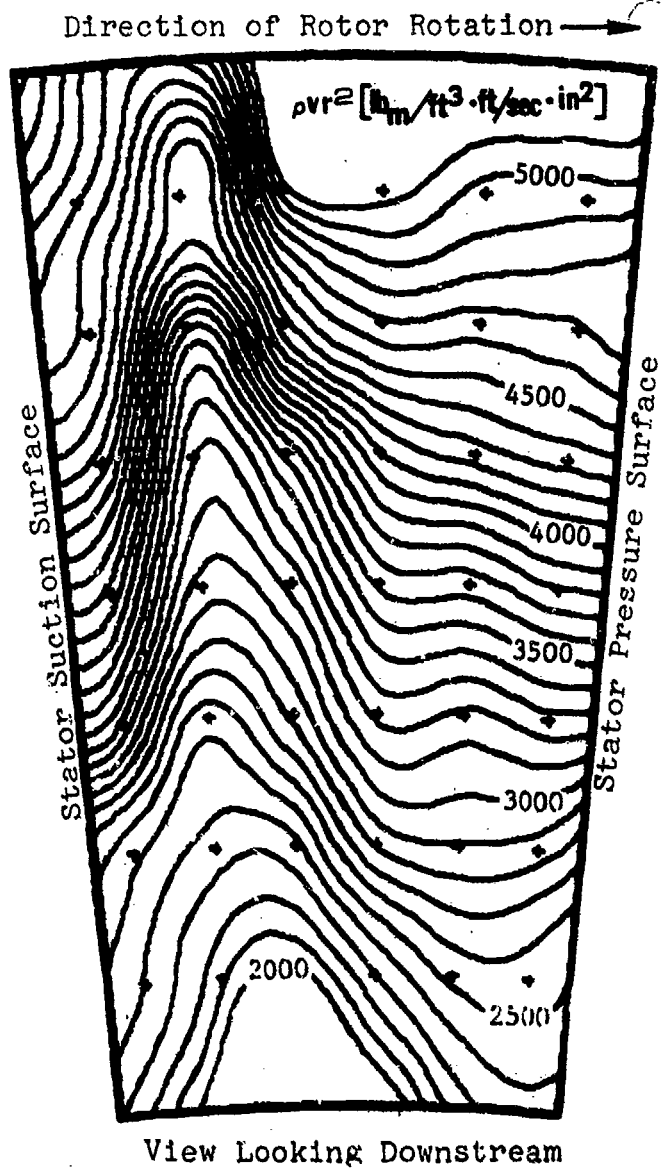
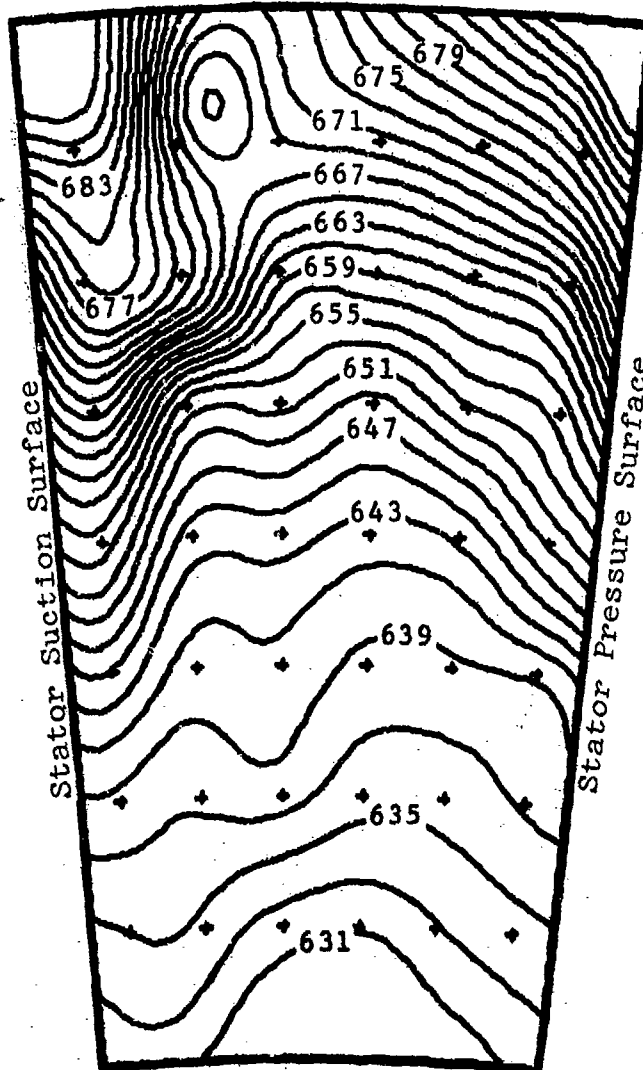


FIGURE 139. STAGE EXIT CONTOUR PLOT OF FLOW RATE PARAMETER FOR TEST POINT 6012200201900

Direction of Rotor Rotation →



View Looking Downstream

FIGURE 140. STAGE EXIT CONTOUR PLOT OF TOTAL TEMPERATURE FOR TEST POINT 6012200201900

TABLE XVI

IDENTIFICATION OF SYMBOLS
FOR DESIGN POINT COMPARISON FIGURES

POINT IDENTIFICATION	SYMBOL
602200201900 ACROSS BLADE ANALYSIS	⊙
602200201900 THRU-BLADE CASE 2 ANALYSIS	△
DESIGN PREDICTION	—

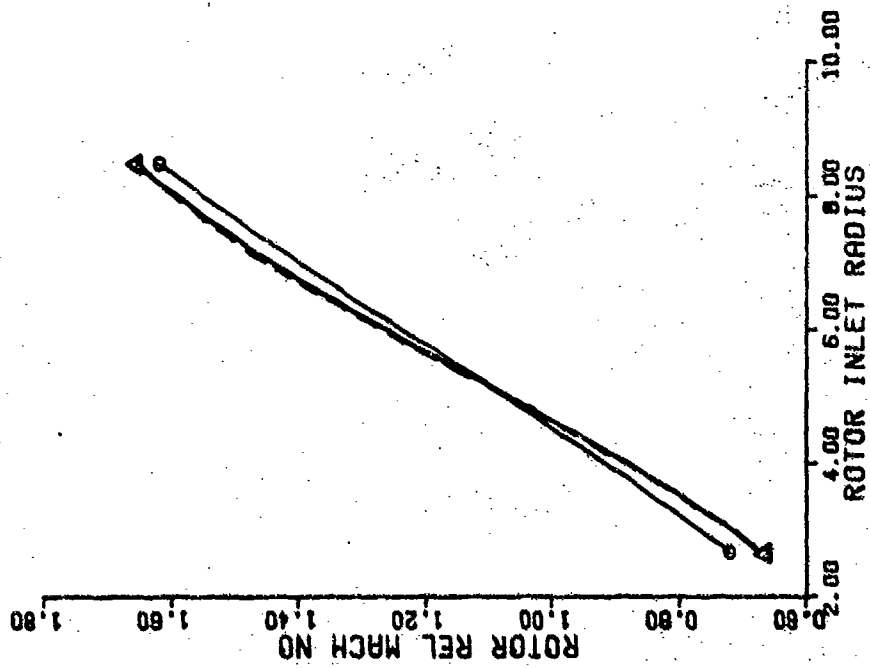


FIGURE 141 ROTOR RELATIVE MACH NUMBER VS INLET RADIUS (DESIGN POINT COMPARISON)

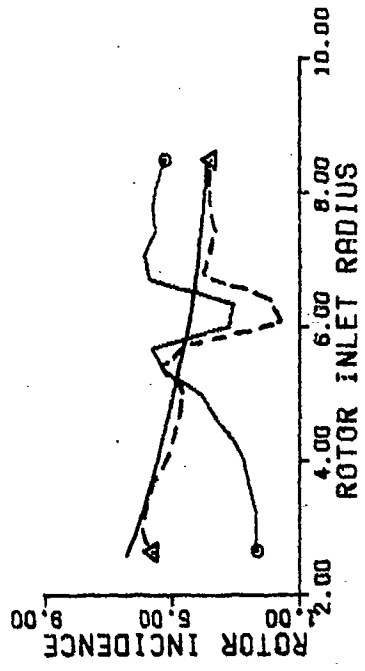


FIGURE 142 ROTOR INCIDENCE VS INLET RADIUS (DESIGN POINT COMPARISON)

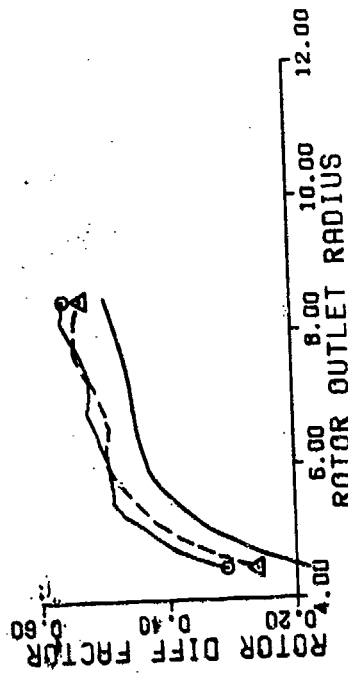


FIGURE 144 ROTOR DIFFUSION FACTOR VS OUTLET RADIUS (DESIGN POINT COMPARISON)

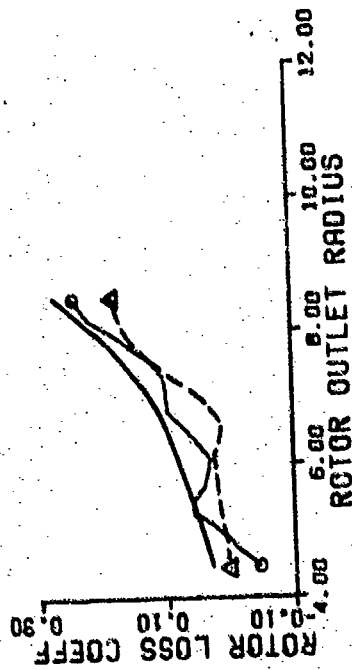


FIGURE 143 ROTOR LOSS COEFFICIENT VS OUTLET RADIUS (DESIGN POINT COMPARISON)

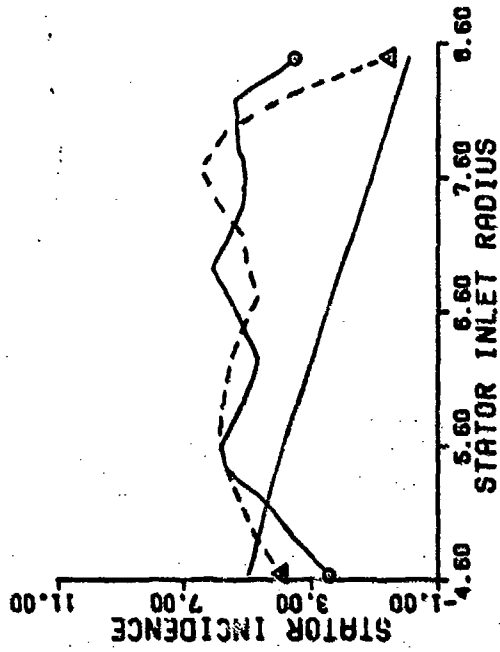


FIGURE 146 STATOR INCIDENCE VS INLET RADIUS
(DESIGN POINT COMPARISON)

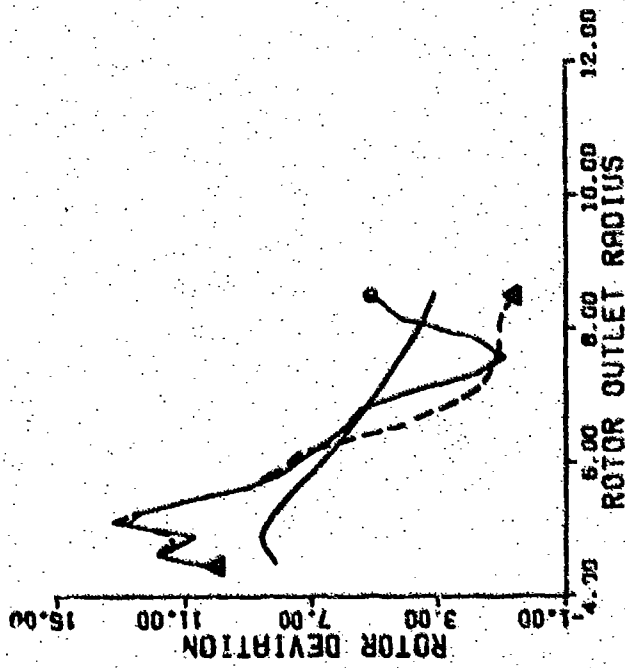


FIGURE 145 ROTOR DEVIATION VS OUTLET RADIUS
(DESIGN POINT COMPARISON)

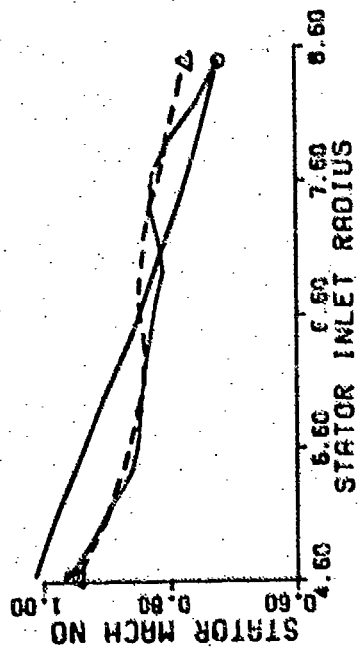


FIGURE 147 STATOR MACH NUMBER VS INLET RADIUS (DESIGN POINT COMPARISON)

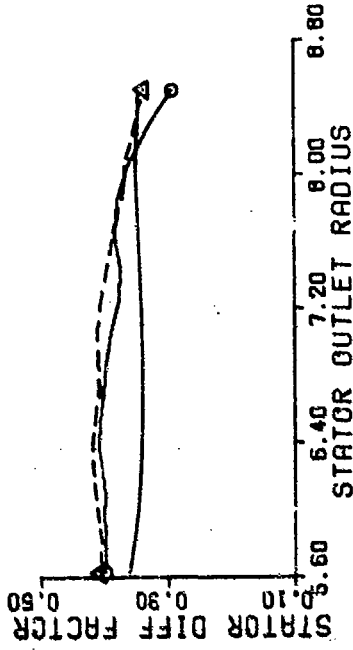


FIGURE 148 STATOR DIFFUSION FACTOR VS OUTLET RADIUS (DESIGN POINT COMPARISON)

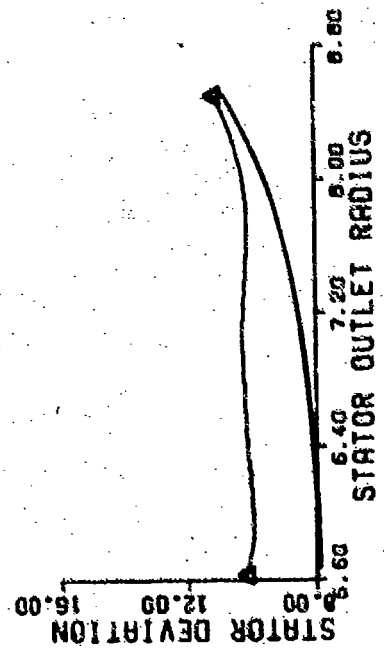


FIGURE 149 STATOR DEVIATION VS OUTLET RADIUS (DESIGN POINT COMPARISON)

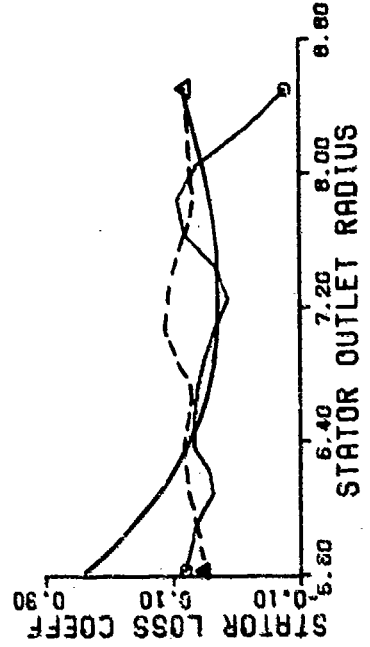


FIGURE 150 STATOR LOSS COEFFICIENT VS OUTLET RADIUS (DESIGN POINT COMPARISON)

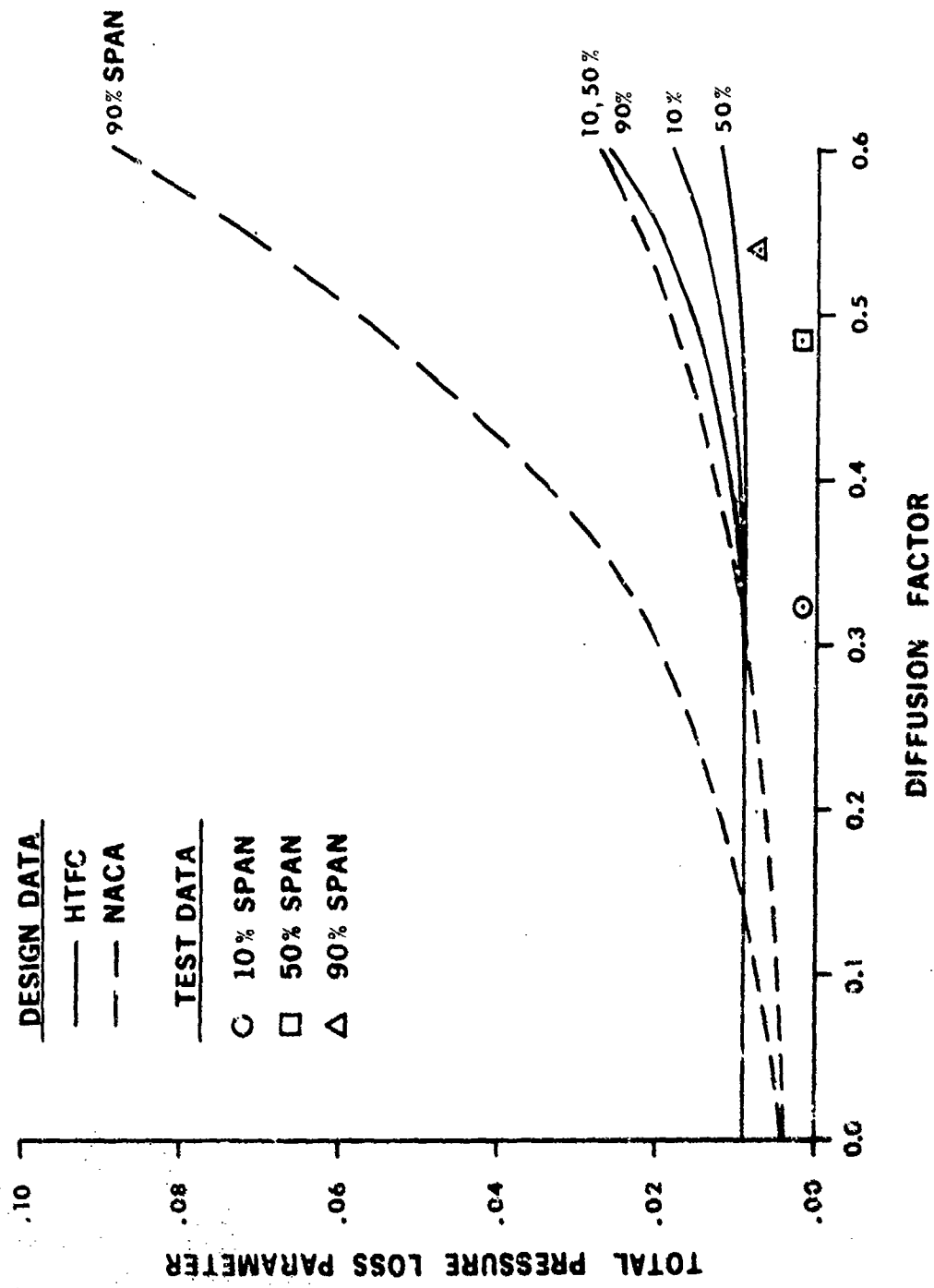


FIGURE 151. ROTOR TOTAL PRESSURE LOSS PARAMETER VS DIFFUSION FACTOR (PERCENT SPAN MEASURED FROM HUB)

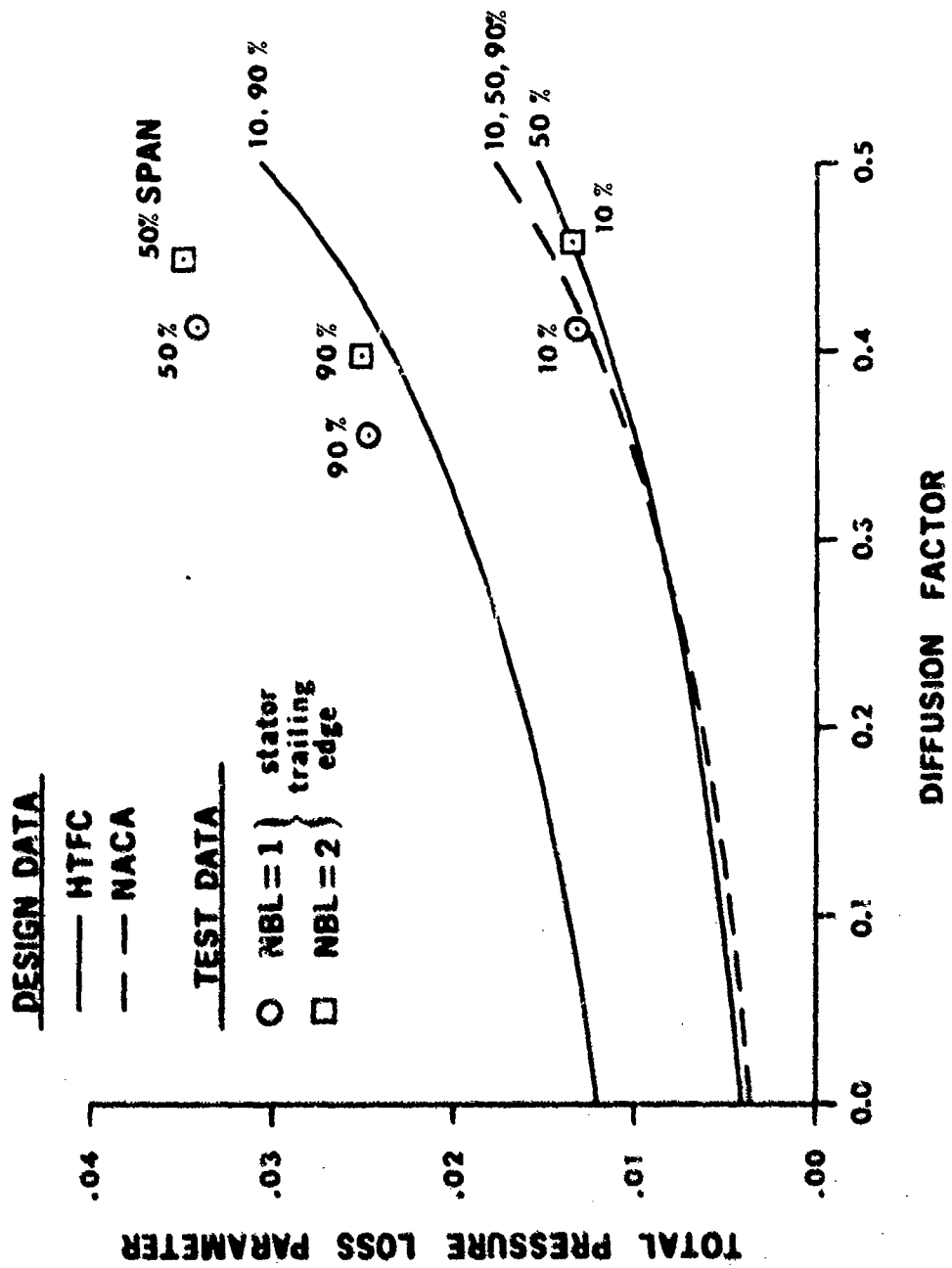


FIGURE 152. STATOR TOTAL PRESSURE LOSS PARAMETER VS DIFFUSION FACTOR (PERCENT SPAN MEASURED FROM HUB)

APPENDIX A

TEST POINT 602200201900 COMPUTER
PRINTOUT (THRU-BLADE ANALYSIS)

This Appendix presents the aerodynamic results (in the form of computer printout) of the Phase II Thru-Blade analysis of test point 602200201900. Both Case 1 and Case 2 analysis of this point is presented, with the complete input data for both cases included at the beginning of each listing.

AERODYNAMIC RESULTS CASE 1
TEST POINT 602200201900

PROGRAM U08280 --- AXIAL COMPRESSOR TEST DATA ANALYSIS

FIXED DATA PRINTOUT

HTFC CONFIGURATION 01, 100% SPEED, 019 THROTTLE THRU-BLADE 27APR76

NUMBER OF STATIONS 17
 NUMBER OF STAGES 12
 MAXIMUM NUMBER OF ITERATIONS 20
 MAXIMUM NUMBER OF AXIAL ITERATIONS 20
 TOTAL PRESSURE SOURCE INDICATOR 0
 TOTAL TEMPERATURE SOURCE INDICATOR 1
 STATION NUMBER FOR ROTOR EXIT DATA 14
 STATION NUMBER FOR STAGE EXIT DATA 16
 NUMBER OF ROTOR BLADES 23
 NUMBER OF STATOR BLADES 31
 MINIMUM NUMBER OF LINES PER PAGE 62
 MFL07

ANNULUS SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

RSTM XSTM
 0.0000 -10.4500
 13.3000 -10.4500

STATION 2 SPECIFIED BY 2 POINTS

RSTM XSTM
 0.0000 -14.9800
 9.6000 -14.0806

STATION 3 SPECIFIED BY 2 POINTS

RSTM XSTM
 0.0000 -10.6600
 0.9600 -12.0508

STATION 4 SPECIFIED BY 2 POINTS

RSTM XSTM
 1.5400 -9.7500
 0.5500 -11.1300

STATION 5 SPECIFIED BY 2 POINTS

RSTM XSTM
 2.0550 -9.1157
 0.5000 -9.8493

STATION 6 SPECIFIED BY 2 POINTS

RSTM XSTM
 2.3500 -8.6500
 0.5000 -8.6500

STATION 7 SPECIFIED BY 6 POINTS

RSTM XSTM
 2.6514 -8.1600
 3.0023 -8.2043
 3.0097 -8.2083
 3.7989 -8.1610
 7.7861 -7.9615
 8.5060 -7.8110

STATION 8 SPECIFIED BY 4 POINTS
 RSTN XSTN
 3.0363 -7.5550
 5.0700 -7.6500
 6.4800 -7.6100
 8.5000 -7.3750

STATION 9 SPECIFIED BY 4 POINTS
 RSTN XSTN
 3.3893 -7.0000
 5.3850 -7.0450
 6.2650 -7.0650
 8.5000 -6.9810

STATION 10 SPECIFIED BY 4 POINTS
 RSTN XSTN
 3.7385 -6.4510
 5.4200 -6.4510
 6.8500 -6.5200
 8.5000 -6.5900

STATION 11 SPECIFIED BY 4 POINTS
 RSTN XSTN
 4.9884 -5.9810
 6.7000 -5.9810
 8.7250 -5.9500
 8.5000 -6.2100

STATION 12 SPECIFIED BY 9 POINTS
 RSTN XSTN
 4.4612 -5.3150
 4.6800 -5.2700
 4.8800 -5.2600
 5.0800 -5.1900
 5.1064 -5.1717
 5.8592 -5.2485
 6.7345 -5.2700
 7.0661 -5.5016
 8.5000 -5.7840

STATION 13 SPECIFIED BY 4 POINTS
 RSTN XSTN
 4.5534 -5.1700
 5.2000 -5.0800
 5.8000 -4.9200
 6.5000 -5.3500

STATION 14 SPECIFIED BY 4 POINTS
 RSTN XSTN
 4.6435 -5.9250
 5.2500 -5.7750
 5.8200 -4.6500
 6.5000 -4.9000

STATION 15 SPECIFIED BY 2 POINTS
 RSTN XSTN
 5.6314 -2.4999
 8.5000 -2.2174

STATION 16 SPECIFIED BY 2 POINTS

RSTN XSTN
 5.7905 -.9200
 6.5000 -.9200

STATION 17 SPECIFIED BY 2 POINTS

RSTN XSTN
 5.7906 0.0000
 6.5000 0.0000

STATION CALCULATION SPECIFICATION AND BLADING DATA

STATION 2 NCALC = 0 NDATA = -0 NBL = -0
 STATION 3 NCALC = 0 NDATA = -0 NBL = -0
 STATION 4 NCALC = 0 NDATA = -0 NBL = -0
 STATION 5 NCALC = 0 NDATA = -0 NBL = -0
 STATION 6 NCALC = 0 NDATA = -0 NBL = -0
 STATION 7 NCALC = 1 NDATA = 13 NBL = 0

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2.5784	-37.2742	1.5001	.04431	.2473
3.0923	-40.2356	-.0115	.02809	.2450
3.6087	-42.7018	-.5848	.01653	.2461
4.1276	-44.9249	-3.8603	.01427	.2493
4.6521	-46.8218	-1.6131	.00976	.2584
5.1692	-47.9452	-.4674	.00971	.2564
5.6981	-47.5872	-.6891	.00837	.2590
6.2095	-50.3447	3.8824	.00835	.2535
6.7104	-51.6976	4.3686	.00853	.2482
7.2104	-53.1185	5.8390	.00802	.2417
7.7088	-54.7349	7.7197	.00886	.2342
8.2088	-56.7379	8.0574	.00571	.2290
				.2179

STATION 8 NCALC = 2 NDATA = 13 NBL = 0

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2.5046	-33.0728	-9.0542	.23679	.0620
3.0114	-34.9055	-6.5516	.16608	.0071
3.5218	-36.7144	-4.7090	.12832	.1024
4.0344	-39.2539	-4.7094	.10676	.1129
4.5431	-44.3794	-3.3637	.09351	.1233
5.0515	-44.5364	-2.4478	.06236	.1308
5.5585	-49.3286	-2.4478	.06353	.1356
6.0668	-51.9462	-1.3227	.05514	.1425
6.5763	-56.4003	1.7459	.04865	.1436
7.0788	-61.4395	6.5735	.04100	.1391
7.5788			.03891	.1337

STATION 9 NCALC = 2 NDATA = 13 NBL = 1
 RADIUS BETA EPSILON BLOCKAGE THETA
 2.5824 -18.8672 -6.8892 22285 -0.8238
 3.0888 -12.8386 -5.8195 22497 -0.8258
 4.0888 -5.5764 -3.5141 18288 -0.8282
 5.0888 -2.5152 -1.9536 13638 -0.8317
 6.0888 0.5272 -0.7388 9559 -0.8352
 7.0888 3.5704 -0.8761 6172 -0.8387
 8.0888 6.6136 -1.0829 3568 -0.8422
 9.0888 9.6568 -1.3545 1859 -0.8457
 10.0888 12.7000 -1.6859 959 -0.8488

STATION 10 NCALC = 2 NDATA = 13 NBL = 1
 RADIUS BETA EPSILON BLOCKAGE THETA
 2.5872 1.8294 -3.4487 31343 -0.8758
 3.5888 1.7718 -5.3716 27336 -0.8545
 4.5888 1.7142 -7.2945 23329 -0.8332
 5.5888 1.6566 -9.2174 19322 -0.8119
 6.5888 1.5990 -11.1403 15315 -0.7906
 7.5888 1.5414 -13.0632 11308 -0.7693
 8.5888 1.4838 -14.9861 7301 -0.7480
 9.5888 1.4262 -16.9090 3294 -0.7267

STATION 11 NCALC = 2 NDATA = 13 NBL = 1
 RADIUS BETA EPSILON BLOCKAGE THETA
 2.5920 24.4685 3.9977 15217 -0.8322
 3.5936 23.5251 3.8270 17484 -0.8462
 4.5952 22.5817 3.6563 19751 -0.8602
 5.5968 21.6383 3.4856 22018 -0.8742
 6.5984 20.6949 3.3149 24285 -0.8882
 7.6000 19.7515 3.1442 26552 -0.9022
 8.6016 18.8081 2.9735 28819 -0.9162
 9.6032 17.8647 2.8028 31086 -0.9302

STATION 12 NCALC = 4 NDATA = 13 NBL = 1
 RADIUS BETA EPSILON BLOCKAGE THETA
 2.6062 62.7951 6.1728 3854 -3289
 3.6078 62.5299 6.1439 38451 -1616
 4.6094 62.2647 6.1150 38362 -8843
 5.6110 62.0000 6.0861 38273 -5530
 6.6126 61.7352 6.0572 38184 -2217
 7.6142 61.4704 6.0283 38095 -1104
 8.6158 61.2056 6.0000 38006 -591
 9.6174 60.9408 5.9717 37917 -179

STATION 13 NCALC = 8 NDATA = 8 NBL = 2
 RADIUS BETA EPSILON BLOCKAGE THETA
 2.6212 62.7951 6.1728 3854 -3289
 3.6228 62.5299 6.1439 38451 -1616
 4.6244 62.2647 6.1150 38362 -8843
 5.6260 62.0000 6.0861 38273 -5530
 6.6276 61.7352 6.0572 38184 -2217
 7.6292 61.4704 6.0283 38095 -1104
 8.6308 61.2056 6.0000 38006 -591
 9.6324 60.9408 5.9717 37917 -179

STATION 14 NCALC = 1 NDATA = 11 NBL = 2

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.0000	45.3907	-22.4181	.01626	-.1839
4.1000	45.3907	-22.4181	.01626	-.1839
4.2000	45.3907	-22.4181	.01626	-.1839
4.3000	45.3907	-22.4181	.01626	-.1839
4.4000	45.3907	-22.4181	.01626	-.1839
4.5000	45.3907	-22.4181	.01626	-.1839
4.6000	45.3907	-22.4181	.01626	-.1839
4.7000	45.3907	-22.4181	.01626	-.1839
4.8000	45.3907	-22.4181	.01626	-.1839
4.9000	45.3907	-22.4181	.01626	-.1839
5.0000	45.3907	-22.4181	.01626	-.1839

STATION 15 NCALC = 3 NDATA = 11 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.0000	-0.4749	-1.1358	.00160	-.0330
4.1000	-0.4749	-1.1358	.00160	-.0330
4.2000	-0.4749	-1.1358	.00160	-.0330
4.3000	-0.4749	-1.1358	.00160	-.0330
4.4000	-0.4749	-1.1358	.00160	-.0330
4.5000	-0.4749	-1.1358	.00160	-.0330
4.6000	-0.4749	-1.1358	.00160	-.0330
4.7000	-0.4749	-1.1358	.00160	-.0330
4.8000	-0.4749	-1.1358	.00160	-.0330
4.9000	-0.4749	-1.1358	.00160	-.0330
5.0000	-0.4749	-1.1358	.00160	-.0330

STATION 16 NCALC = 0 NDATA = 0 NBL = 1

STATION 17 NCALC = 0 NDATA = 0 NBL = 1

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 4PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

OUTLET RADIUS = 4.4612 DEVIATION ANGLE (DEGREES)

0.0000	0.0000
1.0000	1.0000
2.0000	-1.4000
3.0000	-1.9200
4.0000	-2.2200
5.0000	-3.5000

OUTLET RADIUS = 5.8615 DEVIATION ANGLE (DEGREES)

0.0000	0.0000
1.0000	1.0000
2.0000	-1.4000
3.0000	-1.9200
4.0000	-2.2200
5.0000	-3.5000

OUTLET RADIUS = 8.5000 DEVIATION ANGLE (DEGREES)

0.0000	0.0000
1.0000	1.0000
2.0000	-1.4000
3.0000	-1.9200
4.0000	-2.2200
5.0000	-3.5000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000	0.0000
1.0000	1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000 0.0000
1.0000 1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 1

PSCALE= 3.00 PLOMER= 7.00 DAMPF= 5.00 NSAVE= 1

NMAX= 0 MFORCE= 0 NEX= 2

TEST_OAIA_PANIQUEI_EOR_POIMI_MD...1

* 682200201900

* 53.4882
 * 62.9967
 * 70.1274
 * 51.8708
 * .9239
 * .8648

TEST POINT TITLE

GAS CONSTANT
 AIR MASS FRACTION
 FLOWMATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 I IN/PT IN(SID)
 P IN/PT IN(SID)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS PRESSURE
 5. 1712
 6. 1712
 7. 1712
 8. 1712
 9. 1712
 10. 1712
 11. 1712
 12. 1712
 13. 1712
 14. 1712
 15. 1712

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS TEMPERATURE
 5. 1712
 6. 1712
 7. 1712
 8. 1712
 9. 1712
 10. 1712
 11. 1712
 12. 1712
 13. 1712
 14. 1712
 15. 1712

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
5. 1278	26.6423	29.4823
6. 1278	28.9232	30.9824
7. 1278	28.2572	30.3274
8. 1278	28.5886	30.6588
9. 1278	31.0543	33.1245
10. 1278	31.5543	33.6245

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS TEMPERATURE
 5. 1278
 6. 1278
 7. 1278
 8. 1278
 9. 1278
 10. 1278

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS ANGLE
 7. 5228
 8. 5228
 9. 5228

GASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	10.1659
-6.9010	9.6354
-7.7510	10.6065
-7.5010	13.6170
-7.9010	16.8270
-6.7510	19.2617
-6.5010	20.1440
-6.9010	21.4537
-5.7510	22.9983
-2.5619	23.4485

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8428	23.1069
-2.5080	23.1069

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MIS. ADD. DEVIATION	DIST. FACTOR	FRAC. TYPE BLOCKAGE
1	0.0000	1.0000	-0.0000	0.0000	0.0000
2	0.0000	1.0000	-0.0000	0.0000	0.0000
3	0.0000	1.0000	-0.0000	0.0000	0.0000
4	0.0000	1.0000	-0.0000	0.0000	0.0000
5	0.0000	1.0000	-0.0000	0.0000	0.0000
6	0.0000	1.0000	-0.0000	0.0000	0.0000
7	0.0000	1.0000	-0.0000	0.0000	0.0000
8	0.0000	1.0000	-0.0000	0.0000	0.0000
9	0.0000	1.0000	-0.0000	0.0000	0.0000
10	0.0000	1.0000	-0.0000	0.0000	0.0000
11	0.0000	1.0000	-0.0000	0.0000	0.0000
12	0.0000	1.0000	-0.0000	0.0000	0.0000
13	0.0000	1.0000	-0.0000	0.0000	0.0000
14	0.0000	1.0000	-0.0000	0.0000	0.0000
15	0.0000	1.0000	-0.0000	0.0000	0.0000
16	0.0000	1.0000	-0.0000	0.0000	0.0000
17	0.0000	1.0000	-0.0000	0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
NMACH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NJUMP	0																

RESULTS FOR TEST CASE NO. 1

PASS 22 STATION & UNCONVERGED FLOW/SPECIFIED FLOW = .9995 VOLD/VNEM(HUB) = 1.00046 VOLD/VNEM(CASE) = 1.00009

STATION 1 FLOW FIELD DESCRIPTION

STREAM LINE	RADIUS	MERID	VELOCITIES	TEMPERATURE	PRESSURE	MACH	WHIRL	ANGLE	SLOPE	RADIUS OF CURVATURE	SPECIFIC WEIGHT
			TOTAL	TOTAL	TOTAL	NO					
1	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
2	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
3	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
4	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
5	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
6	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
7	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
8	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
9	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
10	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
11	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
12	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
13	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
14	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
15	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
16	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
17	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
18	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
19	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
20	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
21	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744
22	0.0000	0.0000	0.0000	518.780	14.694	222222	0.0000	0.0000	0.0000	0.0000	0.0744

STATION 2 FLOW FIELD DESCRIPTION

STREAM LINE	RADIUS	MERID	VELOCITIES	TEMPERATURE	PRESSURE	MACH	WHIRL	ANGLE	SLOPE	RADIUS OF CURVATURE	SPECIFIC WEIGHT
			TOTAL	TOTAL	TOTAL	NO					
1	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0721
2	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0721
3	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0719
4	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0716
5	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0714
6	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0712
7	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0709
8	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0707
9	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0704
10	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0699
11	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0695
12	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0688
13	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0685
14	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0681
15	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0677
16	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0673
17	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0670
18	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0670
19	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0670
20	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0670
21	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0670
22	0.0000	0.0000	0.0000	518.780	14.694	33647	0.0000	0.0000	0.0000	0.0000	0.0670

STATION	5	FLOW FIELD DESCRIPTION	RADIUS	MERID	VELOCITIES	TEMPERATURES	PRESSURES	MACH	WHIRL	ANGLES	RADIUS OF CURVATURE	SPECIFIC WEIGHT
LINE				TANGEN	TOTAL	TOTAL	TOTAL	NO		SLOPE		
1	0550	531.31	0.00	518.708	495.265	14.694	12.499	4663	0.00	35.65	-6.378	0.679
2	1161	529.02	0.00	518.708	495.265	14.694	12.499	4843	0.00	35.65	-8.1702	0.681
3	2939	526.80	0.00	518.708	495.265	14.694	12.499	4820	0.00	37.143	-15.3172	0.681
4	7538	533.51	0.00	518.708	495.265	14.694	12.499	4901	0.00	22.07	-16.3172	0.679
5	5461	545.51	0.00	518.708	495.265	14.694	12.499	5134	0.00	22.07	-16.3172	0.679
6	2274	557.99	0.00	518.708	495.265	14.694	12.499	5134	0.00	11.13	-12.4993	0.664
7	4418	637.05	0.00	518.708	495.265	14.694	12.499	5271	0.00	11.13	-12.4993	0.654
8	0303	629.39	0.00	518.708	495.265	14.694	12.499	5301	0.00	11.13	-12.4993	0.654
9	2633	673.69	0.00	518.708	495.265	14.694	12.499	6217	0.00	7.8921	-15.1431	0.638
10	9293	689.61	0.00	518.708	495.265	14.694	12.499	6217	0.00	6.8921	-15.1431	0.638
11	2936	707.13	0.00	518.708	495.265	14.694	12.499	6533	0.00	3.249	-16.209	0.626
12	6541	717.13	0.00	518.708	495.265	14.694	12.499	6533	0.00	3.249	-16.209	0.626
13	0221	739.29	0.00	518.708	495.265	14.694	12.499	6615	0.00	2.251	-18.081	0.615
14	3999	748.29	0.00	518.708	495.265	14.694	12.499	6615	0.00	2.251	-18.081	0.615
15	1200	757.64	0.00	518.708	495.265	14.694	12.499	6702	0.00	1.672	-22.4874	0.607
16	5000	764.64	0.00	518.708	495.265	14.694	12.499	7103	0.00	1.672	-22.4874	0.607

STATION	6	FLOW FIELD DESCRIPTION	RADIUS	MERID	VELOCITIES	TEMPERATURES	PRESSURES	MACH	WHIRL	ANGLES	RADIUS OF CURVATURE	SPECIFIC WEIGHT
LINE				TANGEN	TOTAL	TOTAL	TOTAL	NO		SLOPE		
1	3009	533.26	0.00	518.708	495.265	14.694	12.499	4883	0.00	32.04	-37.767	0.679
2	3983	535.53	0.00	518.708	495.265	14.694	12.499	4903	0.00	32.04	-37.767	0.679
3	7538	542.63	0.00	518.708	495.265	14.694	12.499	4967	0.00	27.05	-129.1139	0.673
4	0103	558.14	0.00	518.708	495.265	14.694	12.499	5219	0.00	22.07	-14.296	0.661
5	2594	568.33	0.00	518.708	495.265	14.694	12.499	5629	0.00	20.44	-12.2963	0.654
6	1303	613.80	0.00	518.708	495.265	14.694	12.499	6101	0.00	16.44	-12.542	0.647
7	2005	620.15	0.00	518.708	495.265	14.694	12.499	6374	0.00	11.13	-11.14	0.647
8	3720	725.09	0.00	518.708	495.265	14.694	12.499	6790	0.00	9.49	-11.872	0.620
9	0171	764.06	0.00	518.708	495.265	14.694	12.499	6946	0.00	7.537	-11.320	0.612
10	1697	784.11	0.00	518.708	495.265	14.694	12.499	7281	0.00	4.33	-12.26	0.599
11	2621	791.31	0.00	518.708	495.265	14.694	12.499	7381	0.00	3.31	-13.501	0.599
12	1992	799.26	0.00	518.708	495.265	14.694	12.499	7515	0.00	2.1	-15.233	0.586
13	1000	799.26	0.00	518.708	495.265	14.694	12.499	790	0.00	0.00	-106.233	0.586

STATION 10 FLOW FIELD DESCRIPTION

STREAM SLINE	RADIUS	MERID	VELOCITIES	TOTAL	TEMPERATURE	TOTAL	PRESSURE	TOTAL	MACH	WHIRL	ANGLE	SLOPE	CURVATURE	SPECIFIC	HEIGHT
			WANGEN		STAT	STAT	STAT	STAT	NO	ANGLE	SLOPE				
1	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
2	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
3	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
4	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
5	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
6	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
7	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
8	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
9	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
10	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
11	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
12	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
13	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
14	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
15	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
16	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
17	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
18	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
19	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
20	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
21	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
22	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
23	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
24	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
25	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
26	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
27	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
28	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
29	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00
30	7.350	5.20	76.47	59.95	150.0	140.0	197.0	30.0	3.00	1.00	0.00	0.00	0.00	0.00	0.00

BLADE DATA

LOCN	SECTION	ANGLE	LEAN	REL	FLOW	INCIDENCE	COEFF	SPD	RELATIVE	TEMPERATURE	PRESSURE	DELTA	ISEMIGICP	POLYTRICP	EFFICIENCY
				ANGLE	ANGLE	COEFF	SPD	MACH NO	RELATIVE	TEMPERATURE	PRESSURE	DELTA	ISEMIGICP	POLYTRICP	EFFICIENCY
1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
2	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
3	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
6	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
7	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
12	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
13	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
15	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
16	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
17	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
18	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
19	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
20	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
21	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
22	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
23	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
24	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
25	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
26	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
27	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
28	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
29	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
30	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

STATION 10 INTEGRATED PERFORMANCE PRESSURE RATIO = 1.749 ISEN. EFF. = .926 POLY. EFF. = .931 DELTA T ON T = .165

STATION 12 FLOW FIELD DESCRIPTION

STREAM LINE	RADIUS	MERID	VELOCITIES	TEMPERATURES	PRESSURES	MACH	ANGLES	RADIUS OF CURVATURE	SPECIFIC WEIGHT
			TOTAL	STATIC	TOTAL	NO	WHIRL		
1	1074	58	137	336	29	94	56	1928	0.835
2	1067	57	137	335	29	94	56	1910	0.832
3	1060	56	137	335	29	94	56	1892	0.829
4	1053	55	137	335	29	94	56	1874	0.826
5	1046	54	137	335	29	94	56	1856	0.823
6	1039	53	137	335	29	94	56	1838	0.820
7	1032	52	137	335	29	94	56	1820	0.817
8	1025	51	137	335	29	94	56	1802	0.814
9	1018	50	137	335	29	94	56	1784	0.811
10	1011	49	137	335	29	94	56	1766	0.808
11	1004	48	137	335	29	94	56	1748	0.805
12	997	47	137	335	29	94	56	1730	0.802
13	990	46	137	335	29	94	56	1712	0.799
14	983	45	137	335	29	94	56	1694	0.796
15	976	44	137	335	29	94	56	1676	0.793
16	969	43	137	335	29	94	56	1658	0.790
17	962	42	137	335	29	94	56	1640	0.787
18	955	41	137	335	29	94	56	1622	0.784
19	948	40	137	335	29	94	56	1604	0.781
20	941	39	137	335	29	94	56	1586	0.778
21	934	38	137	335	29	94	56	1568	0.775
22	927	37	137	335	29	94	56	1550	0.772
23	920	36	137	335	29	94	56	1532	0.769
24	913	35	137	335	29	94	56	1514	0.766
25	906	34	137	335	29	94	56	1496	0.763
26	899	33	137	335	29	94	56	1478	0.760
27	892	32	137	335	29	94	56	1460	0.757
28	885	31	137	335	29	94	56	1442	0.754
29	878	30	137	335	29	94	56	1424	0.751
30	871	29	137	335	29	94	56	1406	0.748
31	864	28	137	335	29	94	56	1388	0.745
32	857	27	137	335	29	94	56	1370	0.742
33	850	26	137	335	29	94	56	1352	0.739
34	843	25	137	335	29	94	56	1334	0.736
35	836	24	137	335	29	94	56	1316	0.733
36	829	23	137	335	29	94	56	1298	0.730
37	822	22	137	335	29	94	56	1280	0.727
38	815	21	137	335	29	94	56	1262	0.724
39	808	20	137	335	29	94	56	1244	0.721
40	801	19	137	335	29	94	56	1226	0.718
41	794	18	137	335	29	94	56	1208	0.715
42	787	17	137	335	29	94	56	1190	0.712
43	780	16	137	335	29	94	56	1172	0.709
44	773	15	137	335	29	94	56	1154	0.706
45	766	14	137	335	29	94	56	1136	0.703
46	759	13	137	335	29	94	56	1118	0.700
47	752	12	137	335	29	94	56	1100	0.697
48	745	11	137	335	29	94	56	1082	0.694
49	738	10	137	335	29	94	56	1064	0.691
50	731	9	137	335	29	94	56	1046	0.688
51	724	8	137	335	29	94	56	1028	0.685
52	717	7	137	335	29	94	56	1010	0.682
53	710	6	137	335	29	94	56	992	0.679
54	703	5	137	335	29	94	56	974	0.676
55	696	4	137	335	29	94	56	956	0.673
56	689	3	137	335	29	94	56	938	0.670
57	682	2	137	335	29	94	56	920	0.667
58	675	1	137	335	29	94	56	902	0.664

BLADE DATA

LOCAT	SECTION	LEAM	REL FLOW ANGLE	DEVIATION	LOSS COEFF	BLADE SPEED	RELATIVE MACH NO	RELATIVE VELOCITY	RELATIVE PRESSURE	TEMPERATURE	RELATIVE TEMPERATURE	PRESSURE RATIO	DELTA T	EFFICIENCY	POLY TROPIC
1	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
2	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
3	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
4	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
5	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
6	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
7	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
8	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
9	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
10	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
11	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
12	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
13	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
14	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
15	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
16	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
17	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
18	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
19	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
20	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
21	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
22	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
23	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
24	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
25	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
26	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
27	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
28	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
29	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
30	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
31	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
32	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
33	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
34	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
35	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
36	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
37	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
38	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
39	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
40	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
41	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
42	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
43	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
44	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
45	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
46	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
47	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
48	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
49	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
50	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
51	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
52	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
53	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
54	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	0.8
55	1	1	3	58	0.19	784	5.666	64	2.2	569	776	0.1	217	0.175	

BLADE DATA

LOCAL SECTION	BLADE-ANGLES	REL FLOW ANGLE	DEVIATION	LOSS	BLADE SPEED	RELATIVE MACH NO	RELATIVITY	RELATIVE PRESSURE	TEMPERATURE	PRESSURE RATIO	DELTA T EFFICIENCY	POLYTROPIC EFFICIENCY
05	000	000	000	000	000	000	000	000	000	000	000	000
06	000	000	000	000	000	000	000	000	000	000	000	000
07	000	000	000	000	000	000	000	000	000	000	000	000
08	000	000	000	000	000	000	000	000	000	000	000	000
09	000	000	000	000	000	000	000	000	000	000	000	000
10	000	000	000	000	000	000	000	000	000	000	000	000
11	000	000	000	000	000	000	000	000	000	000	000	000
12	000	000	000	000	000	000	000	000	000	000	000	000
13	000	000	000	000	000	000	000	000	000	000	000	000
14	000	000	000	000	000	000	000	000	000	000	000	000
15	000	000	000	000	000	000	000	000	000	000	000	000
16	000	000	000	000	000	000	000	000	000	000	000	000
17	000	000	000	000	000	000	000	000	000	000	000	000
18	000	000	000	000	000	000	000	000	000	000	000	000
19	000	000	000	000	000	000	000	000	000	000	000	000
20	000	000	000	000	000	000	000	000	000	000	000	000
21	000	000	000	000	000	000	000	000	000	000	000	000
22	000	000	000	000	000	000	000	000	000	000	000	000
23	000	000	000	000	000	000	000	000	000	000	000	000
24	000	000	000	000	000	000	000	000	000	000	000	000
25	000	000	000	000	000	000	000	000	000	000	000	000
26	000	000	000	000	000	000	000	000	000	000	000	000
27	000	000	000	000	000	000	000	000	000	000	000	000
28	000	000	000	000	000	000	000	000	000	000	000	000
29	000	000	000	000	000	000	000	000	000	000	000	000
30	000	000	000	000	000	000	000	000	000	000	000	000
31	000	000	000	000	000	000	000	000	000	000	000	000
32	000	000	000	000	000	000	000	000	000	000	000	000
33	000	000	000	000	000	000	000	000	000	000	000	000
34	000	000	000	000	000	000	000	000	000	000	000	000
35	000	000	000	000	000	000	000	000	000	000	000	000
36	000	000	000	000	000	000	000	000	000	000	000	000
37	000	000	000	000	000	000	000	000	000	000	000	000
38	000	000	000	000	000	000	000	000	000	000	000	000
39	000	000	000	000	000	000	000	000	000	000	000	000
40	000	000	000	000	000	000	000	000	000	000	000	000
41	000	000	000	000	000	000	000	000	000	000	000	000
42	000	000	000	000	000	000	000	000	000	000	000	000
43	000	000	000	000	000	000	000	000	000	000	000	000
44	000	000	000	000	000	000	000	000	000	000	000	000
45	000	000	000	000	000	000	000	000	000	000	000	000
46	000	000	000	000	000	000	000	000	000	000	000	000
47	000	000	000	000	000	000	000	000	000	000	000	000
48	000	000	000	000	000	000	000	000	000	000	000	000
49	000	000	000	000	000	000	000	000	000	000	000	000
50	000	000	000	000	000	000	000	000	000	000	000	000

STATION 15 INTEGRATED PERFORMANCE PRESSURE RATIO = 2.065 ISEM EFF = .882 POLY EFF = .993 DELTA T ON T = .260

STATION 16 FLOW FIELD DESCRIPTION

STREAM LINE	RADIUS	VELOCITIES	TEMPERATURES	PRESSURES	MACH	WHIRL	ANGLES	RADIUS OF CURVATURE	SPECIFIC WEIGHT
1	000	000	000	000	000	000	000	000	000
2	000	000	000	000	000	000	000	000	000
3	000	000	000	000	000	000	000	000	000
4	000	000	000	000	000	000	000	000	000
5	000	000	000	000	000	000	000	000	000
6	000	000	000	000	000	000	000	000	000
7	000	000	000	000	000	000	000	000	000
8	000	000	000	000	000	000	000	000	000
9	000	000	000	000	000	000	000	000	000
10	000	000	000	000	000	000	000	000	000
11	000	000	000	000	000	000	000	000	000
12	000	000	000	000	000	000	000	000	000
13	000	000	000	000	000	000	000	000	000
14	000	000	000	000	000	000	000	000	000
15	000	000	000	000	000	000	000	000	000
16	000	000	000	000	000	000	000	000	000
17	000	000	000	000	000	000	000	000	000
18	000	000	000	000	000	000	000	000	000
19	000	000	000	000	000	000	000	000	000
20	000	000	000	000	000	000	000	000	000
21	000	000	000	000	000	000	000	000	000
22	000	000	000	000	000	000	000	000	000
23	000	000	000	000	000	000	000	000	000
24	000	000	000	000	000	000	000	000	000
25	000	000	000	000	000	000	000	000	000
26	000	000	000	000	000	000	000	000	000
27	000	000	000	000	000	000	000	000	000
28	000	000	000	000	000	000	000	000	000
29	000	000	000	000	000	000	000	000	000
30	000	000	000	000	000	000	000	000	000
31	000	000	000	000	000	000	000	000	000
32	000	000	000	000	000	000	000	000	000
33	000	000	000	000	000	000	000	000	000
34	000	000	000	000	000	000	000	000	000
35	000	000	000	000	000	000	000	000	000
36	000	000	000	000	000	000	000	000	000
37	000	000	000	000	000	000	000	000	000
38	000	000	000	000	000	000	000	000	000
39	000	000	000	000	000	000	000	000	000
40	000	000	000	000	000	000	000	000	000
41	000	000	000	000	000	000	000	000	000
42	000	000	000	000	000	000	000	000	000
43	000	000	000	000	000	000	000	000	000
44	000	000	000	000	000	000	000	000	000
45	000	000	000	000	000	000	000	000	000
46	000	000	000	000	000	000	000	000	000
47	000	000	000	000	000	000	000	000	000
48	000	000	000	000	000	000	000	000	000
49	000	000	000	000	000	000	000	000	000
50	000	000	000	000	000	000	000	000	000

STATION 17 FLOW FIELD DESCRIPTION

STREAM SLINE	RADIUS	MERZO	VELOCITIES- RANGEN	VELOCITIES- TOTAL	TEMPERATURES- TOTAL	TEMPERATURES- STATIC	MACH NO	WHIRL SLOPE	ANGLE- SLOPE	RADIUS OF CURVATURE	SPECIFIC HEIGHT
1	7.906	85	29.983	37	137	44	5.1	0	0.000	0.000	1957
2	6.822	79	29.983	37	137	44	5.1	0	0.000	0.000	1957
3	6.072	74	29.983	37	137	44	5.1	0	0.000	0.000	1957
4	5.522	70	29.983	37	137	44	5.1	0	0.000	0.000	1957
5	5.072	66	29.983	37	137	44	5.1	0	0.000	0.000	1957
6	4.722	62	29.983	37	137	44	5.1	0	0.000	0.000	1957
7	4.472	58	29.983	37	137	44	5.1	0	0.000	0.000	1957
8	4.322	54	29.983	37	137	44	5.1	0	0.000	0.000	1957
9	4.272	50	29.983	37	137	44	5.1	0	0.000	0.000	1957
10	4.322	46	29.983	37	137	44	5.1	0	0.000	0.000	1957
11	4.472	42	29.983	37	137	44	5.1	0	0.000	0.000	1957
12	4.722	38	29.983	37	137	44	5.1	0	0.000	0.000	1957
13	5.072	34	29.983	37	137	44	5.1	0	0.000	0.000	1957
14	5.522	30	29.983	37	137	44	5.1	0	0.000	0.000	1957
15	6.072	26	29.983	37	137	44	5.1	0	0.000	0.000	1957
16	6.822	22	29.983	37	137	44	5.1	0	0.000	0.000	1957
17	7.906	18	29.983	37	137	44	5.1	0	0.000	0.000	1957

ROTOR PERFORMANCE

LOCAT	INLET RADIUS	OUTLET RADIUS	INLET H. NO	INLET -RISE	OPTION	COEFF	FACTOR	FACTOR	DELTA H7U+2	DELTA H7U+2	SECTION- INLET	SECTION- OUTLET	LEAN- INLET	LEAN- OUTLET
1	4.322	7.906	85	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
2	4.322	6.822	79	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
3	4.322	6.072	74	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
4	4.322	5.522	70	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
5	4.322	5.072	66	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
6	4.322	4.722	62	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
7	4.322	4.472	58	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
8	4.322	4.322	54	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
9	4.322	4.272	50	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
10	4.322	4.322	46	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
11	4.322	4.472	42	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
12	4.322	4.722	38	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
13	4.322	5.072	34	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
14	4.322	5.522	30	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
15	4.322	6.072	26	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
16	4.322	6.822	22	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1
17	4.322	7.906	18	0.0	05	0.9	2.1	2.1	1.0	1.0	3.2	3.2	2.1	2.1

STATOR PERFORMANCE

STATION LOCATION	INLET RADIUS	OUTLET RADIUS	INLET M. NO.	INCID- ENCE	DEVI- ATION	LOSS COEFF	2-D D FACTOR	3-D D FACTOR	DELTA P ON Q	REL V RATIO	DELTA H/D+2	SECTION-ANGLES INLET	SECTION-ANGLES OUTLET	LEAN-ANGLES INLET	LEAN-ANGLES OUTLET
1	2.000	1.000	1	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	2.000	1.000	2	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	2.000	1.000	3	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	2.000	1.000	4	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	2.000	1.000	5	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	2.000	1.000	6	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	2.000	1.000	7	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	2.000	1.000	8	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	2.000	1.000	9	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	2.000	1.000	10	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	2.000	1.000	11	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	2.000	1.000	12	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	2.000	1.000	13	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	2.000	1.000	14	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	2.000	1.000	15	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	2.000	1.000	16	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	2.000	1.000	17	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	2.000	1.000	18	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19	2.000	1.000	19	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	2.000	1.000	20	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21	2.000	1.000	21	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
22	2.000	1.000	22	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	2.000	1.000	23	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24	2.000	1.000	24	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	2.000	1.000	25	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26	2.000	1.000	26	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27	2.000	1.000	27	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	2.000	1.000	28	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29	2.000	1.000	29	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	2.000	1.000	30	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	2.000	1.000	31	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
32	2.000	1.000	32	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
33	2.000	1.000	33	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
34	2.000	1.000	34	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	2.000	1.000	35	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36	2.000	1.000	36	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
37	2.000	1.000	37	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
38	2.000	1.000	38	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
39	2.000	1.000	39	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	2.000	1.000	40	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
41	2.000	1.000	41	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
42	2.000	1.000	42	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
43	2.000	1.000	43	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
44	2.000	1.000	44	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45	2.000	1.000	45	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46	2.000	1.000	46	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
47	2.000	1.000	47	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
48	2.000	1.000	48	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
49	2.000	1.000	49	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	2.000	1.000	50	0	0	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

WAKE AND BOUNDARY LAYER BLOCKAGES (PERCENT)

STATION	WAKE	BOUNDARY	LAYER	BLOCKAGES	(PERCENT)
1	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0
37	0.0	0.0	0.0	0.0	0.0
38	0.0	0.0	0.0	0.0	0.0
39	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0
43	0.0	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0	0.0
46	0.0	0.0	0.0	0.0	0.0
47	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0
49	0.0	0.0	0.0	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0

SUMMARY POINT NO. 1 THE CALCULATION IS CONVERGED PASS 51

TEST POINT TITLE = 60220201900 PRESSURE RATIO = 2.065 ISENTROPIC EFFY = .8821 POLYTROPIC EFFY = .8934 DEL T/T = .2604
 FLOW = 62.64 SPEED = 20152.4

AERODYNAMIC RESULTS CASE 2
TEST POINT 602200201900

PROGRAM J01210 - AIAL COMPASSION TEST DATA ANALYSIS
 FIXED DATA PRINTOUT

WTFC CONFIGURATION #1: 10% SP. 019 IN. HTLS 1480-BL407 27APR76

NUMBER OF STATIONS 17
 NUMBER OF STATIONS IN STATION 17
 MAXIMUM NUMBER OF STATIONS IN STATION 17
 MAXIMUM NUMBER OF STATIONS IN STATION 17
 TOTAL NUMBER OF STATIONS IN STATION 17
 TOTAL NUMBER OF STATIONS IN STATION 17
 STATION NUMBER FOR STATION 17
 STATION NUMBER FOR STATION 17
 NUMBER OF STATIONS IN STATION 17
 NUMBER OF STATIONS IN STATION 17
 NUMBER OF STATIONS IN STATION 17

ANNUAL SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

RS14 X514
 0.0000 -14.0000
 0.0000 -14.0000

STATION 2 SPECIFIED BY 2 POINTS

RS14 X514
 0.0000 -14.0000
 0.0000 -14.0000

STATION 3 SPECIFIED BY 2 POINTS

RS14 X514
 0.0000 -14.0000
 0.0000 -14.0000

STATION 4 SPECIFIED BY 2 POINTS

RS14 X514
 0.0000 -14.0000
 0.0000 -14.0000

STATION 5 SPECIFIED BY 2 POINTS

RS14 X514
 0.0000 -14.0000
 0.0000 -14.0000

STATION 6 SPECIFIED BY 2 POINTS

RS14 X514
 0.0000 -14.0000
 0.0000 -14.0000

STATION 7 SPECIFIED BY 2 POINTS

RS14 X514
 0.0000 -14.0000
 0.0000 -14.0000

0.0000 -14.0000
 0.0000 -14.0000
 0.0000 -14.0000

STATION 8 SPECIFIED BY 4 POINTS

RSIN	XSTN
3.0363	-7.5550
5.0700	-7.8500
6.5000	-7.5100
8.5000	-7.3750

STATION 9 SPECIFIED BY 4 POINTS

RSIN	XSTN
3.3033	-7.0000
5.3330	-7.3450
6.5000	-7.0550
8.5000	-6.9510

STATION 10 SPECIFIED BY 4 POINTS

RSIN	XSTN
3.7335	-9.4210
5.7330	-9.4510
6.5000	-8.9200
8.5000	-9.3500

STATION 11 SPECIFIED BY 4 POINTS

RSIN	XSTN
4.0010	-5.9010
5.7330	-5.9200
6.5000	-5.9200
8.5000	-6.2100

STATION 12 SPECIFIED BY 3 POINTS

RSIN	XSTN
4.5612	-5.1150
4.5000	-5.4000
4.5000	-5.2650
5.7330	-5.1830
5.7330	-5.1777
5.7330	-5.2455
7.0000	-5.1700
8.5000	-5.2010

STATION 13 SPECIFIED BY 4 POINTS

RSIN	XSTN
4.5330	-5.1700
5.7330	-5.0000
6.5000	-4.9500
8.5000	-4.9500

STATION 14 SPECIFIED BY 4 POINTS

RSIN	XSTN
4.6330	-2.0250
6.5000	-2.7750
6.5000	-2.5500
8.5000	-2.3000

STATION 15 SPECIFIED BY 2 POINTS

RSIN	XSTN
7.5330	-2.999
8.5000	-2.877

STATION 16 SPECIFIC 3Y 2 POINTS

RSTN XSTN
 2.7333 -0.2291
 6.5080 -0.9280

STATION 17 SPECIFIC 4Y 2 POINTS

RSTN XSTN
 5.7927 0.0000
 8.5900 0.9900

STATION CALCULATION SPECIFICATION AND BLADING DATA

STATION 2 NCALC = 0 NJATA = -9 NBL = -0
 STATION 3 NCALC = 0 NDATA = -0 NBL = -0
 STATION 4 NCALC = 0 NDATA = -J NBL = -0
 STATION 5 NCALC = 0 NDATA = -9 NBL = -0
 STATION 6 NCALC = 0 NDATA = -0 NBL = -0
 STATION 7 NCALC = 1 NDATA = 13 NBL = 0

RADIUS	ETA	EPSILON	BLOCKAGE	THETA
2.0754	-37.2742	1.0101	0.4331	24.73
3.0923	-40.7550	-0.0115	0.2509	24.20
4.0147	-42.7014	-0.0443	0.1803	24.01
5.0276	-43.3203	-3.0693	0.1427	24.33
6.0521	-43.7213	-1.0131	0.0978	25.34
7.0832	-47.5823	-0.0491	0.0937	25.80
8.0911	-47.9877	3.0425	0.0335	25.35
9.0935	-52.3347	4.0300	0.0309	24.42
10.0935	-51.5979	5.0379	0.0353	23.17
11.0935	-53.1199	6.0439	0.0382	23.20
12.0935	-54.7379	7.0717	0.0386	23.20
13.0935	-55.7379	8.0957	0.0371	21.79

STATION 8 NCALC = 2 NDATA = 13 NBL = 0

RADIUS	ETA	EPSILON	BLOCKAGE	THETA
2.0945	-33.0724	-9.0542	2.079	15.20
3.0914	-34.7155	-6.0513	1.288	16.71
4.0925	-35.7194	-4.0789	1.076	16.24
5.0935	-36.2333	-4.0789	0.835	11.23
6.0935	-42.0794	-3.0537	0.325	13.99
7.0935	-45.8305	-2.0131	0.243	13.31
8.0935	-49.0274	-1.0121	0.255	11.25
9.0935	-51.3702	1.0454	0.186	14.21
10.0935	-53.0953	3.0733	0.170	13.31
11.0935	-54.0953	5.0733	0.339	13.37

STATION 14 NCALC = 1 NDATA = 11 NBL = 2

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000

STATION 15 NCALC = 1 NDATA = 11 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000
1.0000	0.0000	0.0000	0.0000	0.0000

STATION 16 NCALC = 0 NDATA = 3 NBL = 1

STATION 17 NCALC = 0 NDATA = 0 NBL = 1

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 6PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

9.2826 5.0000

1.3000 1.0000

OUTLET RADIUS = 4.4612

M-COORD DEVIATION ANGLE (DEGREES)

2.0000 -1.5000

2.0000 -1.5000

2.0000 -3.5000

OUTLET RADIUS = 5.5015

M-COORD DEVIATION ANGLE (DEGREES)

2.0000 -1.5000

2.0000 -1.5000

2.0000 -2.5000

OUTLET RADIUS = 6.5010

M-COORD DEVIATION ANGLE (DEGREES)

2.0000 -1.5000

2.0000 -1.5000

2.0000 -1.5000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

9.2826 5.0000

1.3000 1.0000

OUTLET RADIUS = 0.0001

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

0.0000
1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 1

PSCALE = 3.00 PLOMER = 7.00 DAMPE = 5.000 NSAVE = 1

NMAX = 0 MFORCE = 0 NEX = 2

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE

GAS CONSTANT
 ATOR FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL TEMPERATURE
 INLET TOTAL PRESSURE
 INLET TOTAL PRESSURE (MPA)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	29.1712
5.1500	29.0913
5.1750	28.9975
5.2000	28.8902
5.2250	28.7697
5.2500	28.6365
5.2750	28.4910
5.3000	28.3337
5.3250	28.1650
5.3500	27.9853

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	633.351
5.1500	633.052
5.1750	632.753
5.2000	632.454
5.2250	632.155
5.2500	631.856
5.2750	631.557
5.3000	631.258
5.3250	630.959
5.3500	630.660

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	LEAK PRES	PEAK PRES
6.1270	29.9923	29.9923
6.1500	29.9923	29.9923
6.1750	29.9923	29.9923
6.2000	29.9923	29.9923
6.2250	29.9923	29.9923
6.2500	29.9923	29.9923
6.2750	29.9923	29.9923

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	633.397
6.1500	633.397
6.1750	633.397
6.2000	633.397
6.2250	633.397
6.2500	633.397
6.2750	633.397

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.2230	1.140
7.2500	1.140
6.4660	2.154

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	19.1669
-8.0010	19.8351
-9.7510	19.8129
-11.2510	19.1578
-13.0010	19.2615
-15.2510	19.1449
-18.0010	21.4937
-21.2510	21.9903
-25.0010	23.4483

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8433	23.1063
-4.5030	23.1063

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0100	1.1373	-0.000	-0.000	-0.000
7	0.0200	1.1373	-0.000	-0.000	-0.000
8	0.0500	1.1373	-0.000	-0.000	-0.000
9	0.0500	1.1373	-0.000	-0.000	-0.000
10	0.0500	1.1373	-0.000	-0.000	-0.000
11	0.0500	1.1373	-0.000	-0.000	-0.000
12	0.0500	1.1373	-0.000	-0.000	-0.000
13	0.0500	1.1373	-0.000	-0.000	-0.000
14	0.0500	1.1373	-0.000	-0.000	-0.000
15	0.0500	1.1373	-0.000	-0.000	-0.000
16	0.0500	1.1373	-0.000	-0.000	-0.000
17	0.0500	1.1373	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
RMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJHHP	0																

RESULTS FOR TEST POINT NO. 1
 PASS 23 STATION 5 UNCONVERGED.9 FLOW/SPECIFIED FLOW = .99396 VOLD/WHEM(HUB) = 1.00039 VOLD/WHEM(CASE) = 1.00000

STATION 1 FLOW FIELD DESCRIPTION

STREAM -LINE	RADIUS	VELOCITIES MERSI TANGEN	TOTAL	TEMPERATURES TOTAL	PRESSURE TOTAL	MACH NO	ANGLE SLOPE	RADIUS OF CURVATURE	SPECIFIC WEIGHT
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31	31
32	32	32	32	32	32	32	32	32	32
33	33	33	33	33	33	33	33	33	33
34	34	34	34	34	34	34	34	34	34
35	35	35	35	35	35	35	35	35	35
36	36	36	36	36	36	36	36	36	36
37	37	37	37	37	37	37	37	37	37
38	38	38	38	38	38	38	38	38	38
39	39	39	39	39	39	39	39	39	39
40	40	40	40	40	40	40	40	40	40
41	41	41	41	41	41	41	41	41	41
42	42	42	42	42	42	42	42	42	42
43	43	43	43	43	43	43	43	43	43
44	44	44	44	44	44	44	44	44	44
45	45	45	45	45	45	45	45	45	45
46	46	46	46	46	46	46	46	46	46
47	47	47	47	47	47	47	47	47	47
48	48	48	48	48	48	48	48	48	48
49	49	49	49	49	49	49	49	49	49
50	50	50	50	50	50	50	50	50	50

STATION 2 FLOW FIELD DESCRIPTION

STREAM -LINE	RADIUS	VELOCITIES MERSI TANGEN	TOTAL	TEMPERATURES TOTAL	PRESSURE TOTAL	MACH NO	ANGLE SLOPE	RADIUS OF CURVATURE	SPECIFIC WEIGHT
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31	31
32	32	32	32	32	32	32	32	32	32
33	33	33	33	33	33	33	33	33	33
34	34	34	34	34	34	34	34	34	34
35	35	35	35	35	35	35	35	35	35
36	36	36	36	36	36	36	36	36	36
37	37	37	37	37	37	37	37	37	37
38	38	38	38	38	38	38	38	38	38
39	39	39	39	39	39	39	39	39	39
40	40	40	40	40	40	40	40	40	40
41	41	41	41	41	41	41	41	41	41
42	42	42	42	42	42	42	42	42	42
43	43	43	43	43	43	43	43	43	43
44	44	44	44	44	44	44	44	44	44
45	45	45	45	45	45	45	45	45	45
46	46	46	46	46	46	46	46	46	46
47	47	47	47	47	47	47	47	47	47
48	48	48	48	48	48	48	48	48	48
49	49	49	49	49	49	49	49	49	49
50	50	50	50	50	50	50	50	50	50

STATION 11 FLOW FIELD DESCRIPTION

STREAM LINE	RADIUS	MERID	V-LOC	TANSEN	TOTAL	TEMPERATURE	STATIC	VELOCITY	MACH NO	RELATIVE PRESSURE	TEMPERATURE	RELATIVE PRESSURE	ANGLE	DELTA T	EFFICIENCY	POLY EFFICIENCY
1	0.084	658.20	0.70	0.23	0.93	595.65	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.787	0.787	
2	1.145	657.01	0.72	0.24	0.94	595.65	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.789	0.789	
3	3.464	653.9	0.75	0.25	0.95	600.7	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.804	0.804	
4	4.645	651.3	0.77	0.26	0.96	607.5	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.815	0.815	
5	8.062	644.4	0.80	0.27	0.98	615.0	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.827	0.827	
6	12.245	632.4	0.83	0.28	1.00	623.5	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.839	0.839	
7	17.195	615.9	0.86	0.29	1.02	633.0	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.851	0.851	
8	22.937	594.7	0.89	0.30	1.04	643.5	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.863	0.863	
9	29.580	568.7	0.92	0.31	1.06	655.0	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.875	0.875	
10	37.123	537.9	0.95	0.32	1.08	667.5	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.887	0.887	
11	45.666	502.4	0.98	0.33	1.10	681.0	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.899	0.899	
12	55.209	462.4	1.01	0.34	1.12	695.5	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.911	0.911	
13	65.752	417.9	1.04	0.35	1.14	711.0	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.923	0.923	
14	77.295	368.9	1.07	0.36	1.16	727.5	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.935	0.935	
15	89.838	315.4	1.10	0.37	1.18	745.0	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.947	0.947	
16	103.381	257.4	1.13	0.38	1.20	763.5	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.959	0.959	
17	117.924	194.9	1.16	0.39	1.22	783.0	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.971	0.971	
18	133.467	127.9	1.19	0.40	1.24	803.5	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.983	0.983	
19	149.010	56.4	1.22	0.41	1.26	825.0	25.4	24.7	0.33	15.3	525.0	15.3	4.6	0.995	0.995	
20	165.553	0.0	1.25	0.42	1.28	847.5	25.4	24.7	0.33	15.3	525.0	15.3	4.6	1.007	1.007	

BLADE DATA

LOCATION	SECTION	ANGLE	LEAN	REL ANGLE	REL FLOW	REL FLOW	REL FLOW	REL FLOW	REL FLOW	REL FLOW	REL FLOW	REL FLOW	REL FLOW	REL FLOW	REL FLOW	REL FLOW	REL FLOW
1	1	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
2	2	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
3	3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
4	4	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
5	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
6	6	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
7	7	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
8	8	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
9	9	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
10	10	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
11	11	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
12	12	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
13	13	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
14	14	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
15	15	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
16	16	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
17	17	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
18	18	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
19	19	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
20	20	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

STATION 11 INTEGRATED PERFORMANCE PRESSURE RATIO = 1.965 ISLN. EFF. = .935 POLY. EFF. = .941 DELTA T ON T = .227

STATION 12 FLOW FIELD DESCRIPTION

STREAM LINE	RADIUS	MERIC	VELOCITY	TOTAL	TEMPERATURE	TOTAL STATIC	RELATIVE MACH NO	RELATIVE VELOCITY	RELATIVE PRESSURE	MACH NO	HRSL	ANGLE SLOPE	RADIUS OF CURVATURE	SPECIFIC WEIGHT
1	1612	4	15	5470	97	33	5.27	5.27	2200	35	30	40	120	0.81
2	1400	4	15	5500	97	33	5.27	5.27	2200	35	30	40	120	0.81
3	1200	4	15	5530	97	33	5.27	5.27	2200	35	30	40	120	0.81
4	1000	4	15	5560	97	33	5.27	5.27	2200	35	30	40	120	0.81
5	800	4	15	5590	97	33	5.27	5.27	2200	35	30	40	120	0.81
6	600	4	15	5620	97	33	5.27	5.27	2200	35	30	40	120	0.81
7	400	4	15	5650	97	33	5.27	5.27	2200	35	30	40	120	0.81
8	200	4	15	5680	97	33	5.27	5.27	2200	35	30	40	120	0.81
9	100	4	15	5710	97	33	5.27	5.27	2200	35	30	40	120	0.81
10	50	4	15	5740	97	33	5.27	5.27	2200	35	30	40	120	0.81
11	25	4	15	5770	97	33	5.27	5.27	2200	35	30	40	120	0.81
12	12.5	4	15	5800	97	33	5.27	5.27	2200	35	30	40	120	0.81
13	6.25	4	15	5830	97	33	5.27	5.27	2200	35	30	40	120	0.81
14	3.125	4	15	5860	97	33	5.27	5.27	2200	35	30	40	120	0.81
15	1.5625	4	15	5890	97	33	5.27	5.27	2200	35	30	40	120	0.81
16	0.78125	4	15	5920	97	33	5.27	5.27	2200	35	30	40	120	0.81
17	0.390625	4	15	5950	97	33	5.27	5.27	2200	35	30	40	120	0.81
18	0.1953125	4	15	5980	97	33	5.27	5.27	2200	35	30	40	120	0.81
19	0.09765625	4	15	6010	97	33	5.27	5.27	2200	35	30	40	120	0.81
20	0.048828125	4	15	6040	97	33	5.27	5.27	2200	35	30	40	120	0.81
21	0.0244140625	4	15	6070	97	33	5.27	5.27	2200	35	30	40	120	0.81

BLADE DATA

LOCAT	SECTION	LENS	REL ANGLE	FLOW INCIDENCE	COEFF	SPEED	RELATIVE MACH NO	RELATIVE VELOCITY	RELATIVE PRESSURE	TEMPERATURE	RELATIVE PRESSURE	DELTA T	EFFICIENCY
1	17	00	0	0	0	0	0	0	0	0	0	0	0
2	17	00	0	0	0	0	0	0	0	0	0	0	0
3	17	00	0	0	0	0	0	0	0	0	0	0	0
4	17	00	0	0	0	0	0	0	0	0	0	0	0
5	17	00	0	0	0	0	0	0	0	0	0	0	0
6	17	00	0	0	0	0	0	0	0	0	0	0	0
7	17	00	0	0	0	0	0	0	0	0	0	0	0
8	17	00	0	0	0	0	0	0	0	0	0	0	0
9	17	00	0	0	0	0	0	0	0	0	0	0	0
10	17	00	0	0	0	0	0	0	0	0	0	0	0
11	17	00	0	0	0	0	0	0	0	0	0	0	0
12	17	00	0	0	0	0	0	0	0	0	0	0	0
13	17	00	0	0	0	0	0	0	0	0	0	0	0
14	17	00	0	0	0	0	0	0	0	0	0	0	0
15	17	00	0	0	0	0	0	0	0	0	0	0	0
16	17	00	0	0	0	0	0	0	0	0	0	0	0
17	17	00	0	0	0	0	0	0	0	0	0	0	0
18	17	00	0	0	0	0	0	0	0	0	0	0	0
19	17	00	0	0	0	0	0	0	0	0	0	0	0
20	17	00	0	0	0	0	0	0	0	0	0	0	0
21	17	00	0	0	0	0	0	0	0	0	0	0	0

STATION 12 INTEGRATED PERFORMANCE PRESSURE RATIO = 2.131 ISENTROPIC EFF. = 925 POLY. EFF. = 933 DELTA T ON I = 260

STATION 13 FLOW FIELD DESCRIPTION

STREAM-LINE	RADIUS	VELOCITY	TEMPERATURE	PRESSURE	MACH	ANGLE	WHIRL	SLOPE	RADIUS OF CURVATURE	SPECIFIC WEIGHT
		FT/SEC	DEG F	PSIA	NO	DEG	DEG	DEG	FT	LB/FT3
1	4.5232	352	31.037	207.357	94.000	48.000	1.523	15.037	99.8	0.825
2	4.6388	211	31.137	213.521	93.250	48.000	1.639	15.137	99.8	0.825
3	4.7383	121	31.237	219.685	92.500	48.000	1.738	15.237	99.8	0.825
4	4.8015	82	31.337	225.849	91.750	48.000	1.802	15.302	99.8	0.825
5	4.8360	62	31.437	231.977	91.000	48.000	1.866	15.366	99.8	0.825
6	4.8515	42	31.537	238.060	90.250	48.000	1.930	15.430	99.8	0.825
7	4.8670	32	31.637	244.103	89.500	48.000	1.994	15.494	99.8	0.825
8	4.8725	22	31.737	250.106	88.750	48.000	2.058	15.558	99.8	0.825
9	4.8780	12	31.837	256.069	88.000	48.000	2.122	15.622	99.8	0.825
10	4.8835	12	31.937	262.002	87.250	48.000	2.186	15.686	99.8	0.825
11	4.8890	12	32.037	267.895	86.500	48.000	2.250	15.750	99.8	0.825
12	4.8945	12	32.137	273.748	85.750	48.000	2.314	15.814	99.8	0.825
13	4.8950	12	32.237	279.561	85.000	48.000	2.378	15.878	99.8	0.825
14	4.8955	12	32.337	285.324	84.250	48.000	2.442	15.942	99.8	0.825
15	4.8960	12	32.437	291.047	83.500	48.000	2.506	16.006	99.8	0.825
16	4.8965	12	32.537	296.730	82.750	48.000	2.570	16.070	99.8	0.825
17	4.8970	12	32.637	302.373	82.000	48.000	2.634	16.134	99.8	0.825
18	4.8975	12	32.737	307.976	81.250	48.000	2.698	16.198	99.8	0.825
19	4.8980	12	32.837	313.539	80.500	48.000	2.762	16.262	99.8	0.825
20	4.8985	12	32.937	319.062	79.750	48.000	2.826	16.326	99.8	0.825
21	4.8990	12	33.037	324.545	79.000	48.000	2.890	16.390	99.8	0.825
22	4.8995	12	33.137	330.088	78.250	48.000	2.954	16.454	99.8	0.825
23	4.9000	12	33.237	335.591	77.500	48.000	3.018	16.518	99.8	0.825
24	4.9005	12	33.337	341.054	76.750	48.000	3.082	16.582	99.8	0.825
25	4.9010	12	33.437	346.477	76.000	48.000	3.146	16.646	99.8	0.825
26	4.9015	12	33.537	351.860	75.250	48.000	3.210	16.710	99.8	0.825
27	4.9020	12	33.637	357.203	74.500	48.000	3.274	16.774	99.8	0.825
28	4.9025	12	33.737	362.506	73.750	48.000	3.338	16.838	99.8	0.825
29	4.9030	12	33.837	367.769	73.000	48.000	3.402	16.902	99.8	0.825
30	4.9035	12	33.937	373.092	72.250	48.000	3.466	16.966	99.8	0.825
31	4.9040	12	34.037	378.375	71.500	48.000	3.530	17.030	99.8	0.825
32	4.9045	12	34.137	383.618	70.750	48.000	3.594	17.094	99.8	0.825
33	4.9050	12	34.237	388.831	70.000	48.000	3.658	17.158	99.8	0.825
34	4.9055	12	34.337	394.014	69.250	48.000	3.722	17.222	99.8	0.825
35	4.9060	12	34.437	399.167	68.500	48.000	3.786	17.286	99.8	0.825
36	4.9065	12	34.537	404.290	67.750	48.000	3.850	17.350	99.8	0.825
37	4.9070	12	34.637	409.383	67.000	48.000	3.914	17.414	99.8	0.825
38	4.9075	12	34.737	414.446	66.250	48.000	3.978	17.478	99.8	0.825
39	4.9080	12	34.837	419.469	65.500	48.000	4.042	17.542	99.8	0.825
40	4.9085	12	34.937	424.452	64.750	48.000	4.106	17.606	99.8	0.825
41	4.9090	12	35.037	429.395	64.000	48.000	4.170	17.670	99.8	0.825
42	4.9095	12	35.137	434.308	63.250	48.000	4.234	17.734	99.8	0.825
43	4.9100	12	35.237	439.191	62.500	48.000	4.298	17.798	99.8	0.825
44	4.9105	12	35.337	444.044	61.750	48.000	4.362	17.862	99.8	0.825
45	4.9110	12	35.437	448.867	61.000	48.000	4.426	17.926	99.8	0.825
46	4.9115	12	35.537	453.660	60.250	48.000	4.490	17.990	99.8	0.825
47	4.9120	12	35.637	458.423	59.500	48.000	4.554	18.054	99.8	0.825
48	4.9125	12	35.737	463.156	58.750	48.000	4.618	18.118	99.8	0.825
49	4.9130	12	35.837	467.859	58.000	48.000	4.682	18.182	99.8	0.825
50	4.9135	12	35.937	472.532	57.250	48.000	4.746	18.246	99.8	0.825
51	4.9140	12	36.037	477.175	56.500	48.000	4.810	18.310	99.8	0.825
52	4.9145	12	36.137	481.788	55.750	48.000	4.874	18.374	99.8	0.825
53	4.9150	12	36.237	486.371	55.000	48.000	4.938	18.438	99.8	0.825
54	4.9155	12	36.337	490.924	54.250	48.000	5.002	18.502	99.8	0.825
55	4.9160	12	36.437	495.447	53.500	48.000	5.066	18.566	99.8	0.825
56	4.9165	12	36.537	500.040	52.750	48.000	5.130	18.630	99.8	0.825
57	4.9170	12	36.637	504.593	52.000	48.000	5.194	18.694	99.8	0.825
58	4.9175	12	36.737	509.116	51.250	48.000	5.258	18.758	99.8	0.825
59	4.9180	12	36.837	513.609	50.500	48.000	5.322	18.822	99.8	0.825
60	4.9185	12	36.937	518.072	49.750	48.000	5.386	18.886	99.8	0.825
61	4.9190	12	37.037	522.505	49.000	48.000	5.450	18.950	99.8	0.825
62	4.9195	12	37.137	526.908	48.250	48.000	5.514	19.014	99.8	0.825
63	4.9200	12	37.237	531.281	47.500	48.000	5.578	19.078	99.8	0.825
64	4.9205	12	37.337	535.624	46.750	48.000	5.642	19.142	99.8	0.825
65	4.9210	12	37.437	540.037	46.000	48.000	5.706	19.206	99.8	0.825
66	4.9215	12	37.537	544.410	45.250	48.000	5.770	19.270	99.8	0.825
67	4.9220	12	37.637	548.753	44.500	48.000	5.834	19.334	99.8	0.825
68	4.9225	12	37.737	553.066	43.750	48.000	5.898	19.398	99.8	0.825
69	4.9230	12	37.837	557.349	43.000	48.000	5.962	19.462	99.8	0.825
70	4.9235	12	37.937	561.602	42.250	48.000	6.026	19.526	99.8	0.825
71	4.9240	12	38.037	565.825	41.500	48.000	6.090	19.590	99.8	0.825
72	4.9245	12	38.137	570.018	40.750	48.000	6.154	19.654	99.8	0.825
73	4.9250	12	38.237	574.181	40.000	48.000	6.218	19.718	99.8	0.825
74	4.9255	12	38.337	578.314	39.250	48.000	6.282	19.782	99.8	0.825
75	4.9260	12	38.437	582.417	38.500	48.000	6.346	19.846	99.8	0.825
76	4.9265	12	38.537	586.490	37.750	48.000	6.410	19.910	99.8	0.825
77	4.9270	12	38.637	590.533	37.000	48.000	6.474	19.974	99.8	0.825
78	4.9275	12	38.737	594.546	36.250	48.000	6.538	20.038	99.8	0.825
79	4.9280	12	38.837	598.529	35.500	48.000	6.602	20.102	99.8	0.825
80	4.9285	12	38.937	602.482	34.750	48.000	6.666	20.166	99.8	0.825
81	4.9290	12	39.037	606.405	34.000	48.000	6.730	20.230	99.8	0.825
82	4.9295	12	39.137	610.298	33.250	48.000	6.794	20.294	99.8	0.825
83	4.9300	12	39.237	614.161	32.500	48.000	6.858	20.358	99.8	0.825
84	4.9305	12	39.337	618.004	31.750	48.000	6.922	20.422	99.8	0.825
85	4.9310	12	39.437	621.817	31.000	48.000	6.986	20.486	99.8	0.825
86	4.9315	12	39.537	625.590	30.250	48.000	7.050	20.550	99.8	0.825
87	4.9320	12	39.637	629.333	29.500	48.000	7.114	20.614	99.8	0.825
88	4.9325	12	39.737	633.046	28.750	48.000	7.178	20.678	99.8	0.825
89	4.9330	12	39.837	636.729	28.000	48.000	7.242	20.742	99.8	0.825
90	4.9335	12	39.937	640.382	27.250	48.000	7.306	20.806	99.8	0.825
91	4.9340	12	40.037	644.005	26.500	48.000	7.370	20.870	99.8	0.825
92	4.9345	12	40.137	647.598	25.750	48.000	7.434	20.934	99.8	0.825
93	4.9350	12	40.237	651.161	25.000	48.000	7.498	20.998	99.8	0.825
94	4.9355	12	40.337	654.694	24.250	48.000	7.562	21.062	99.8	0.825
95	4.9360	12	40.437	658.197	23.500	48.000	7.626	21.126	99.8	0.825
96	4.9365	12	40.537	661.670	22.750	48.000	7.690	21.190	99.8	0.825
97	4.9370	12	40.637	665.113	22.000	48.000	7.754	21.254	99.8	0.825
98	4.9375	12	40.737	668.526	21.250	48.000	7.818	21.318	99.8	0.825
99	4.9380	12	40.837	671.909	20.500	48.000	7.882	21.382	99.8	0.825
100	4.9385	12	40.937	675.262	19.750	48.000	7.946	21.446	99.8	0.825
101	4.9390	12	41.037	678.585	19.000	48.000	8.010	21.510	99.8	0.825
102	4.9395	12	41.137	681.878	18.250	48.000	8.074	21.574	99.8	0.825
103	4.9400	12	41.237	685.141	17.500	48.000	8.138	21.638	99.8	0.825
104	4.9405	12	41.337	688.374	16.750	48.000	8.202	21.702	99.8	0.825
105	4.9410	12	41.437	691.577	16.000	48.000	8.266	21.766	99.8	0.825
106	4.9415	12								

BLADE DATA

LOCAT-ION	SECTION	ANGLE	LENN	REL FLOW ANGLE	INCIDENCE	COEFF	SPACES	RELATIVE MACH NO	VELOCITY	RELATIVE PRESSURE	TEMPERATURE	PRESSURE RATIO	DELTA T	ISENTROPIC EFFICIENCY	POLYTROPIC EFFICIENCY
1	465	37	202	3.9	0.000	0.000	0	0.957	1077.7	0.998	1097	1.098	217	0.991	0.991
1	465	37	202	3.9	0.000	0.000	0	0.957	1077.7	0.998	1097	1.098	217	0.991	0.991
1	465	37	202	3.9	0.000	0.000	0	0.957	1077.7	0.998	1097	1.098	217	0.991	0.991
1	465	37	202	3.9	0.000	0.000	0	0.957	1077.7	0.998	1097	1.098	217	0.991	0.991
1	465	37	202	3.9	0.000	0.000	0	0.957	1077.7	0.998	1097	1.098	217	0.991	0.991
1	465	37	202	3.9	0.000	0.000	0	0.957	1077.7	0.998	1097	1.098	217	0.991	0.991
1	465	37	202	3.9	0.000	0.000	0	0.957	1077.7	0.998	1097	1.098	217	0.991	0.991
1	465	37	202	3.9	0.000	0.000	0	0.957	1077.7	0.998	1097	1.098	217	0.991	0.991
1	465	37	202	3.9	0.000	0.000	0	0.957	1077.7	0.998	1097	1.098	217	0.991	0.991
1	465	37	202	3.9	0.000	0.000	0	0.957	1077.7	0.998	1097	1.098	217	0.991	0.991

STATION 14 INTEGRATED PERFORMANCE PRESSURE RATIO = 2.133 ISEM. EFF. = .925 POLY. EFF. = .933 DELTA T ON T = .264

STATION 15 FLOW FIELD DESCRIPTION

SIREAM -LINE	RADIUS	MERID	VELOCITY	TANGEN	TOTAL	TEMPERATURE	STATIC	RELATIVE PRESSURE	STATIC	MACH	WHIRL	ANGLE	SLOPE	RADIUS OF CURVATURE	SPECIFIC WEIGHT
1	631.4	770.2	100.0	0.0	770.2	0.957	51.0	0.957	217.0	0.957	0.000	0.000	0.000	7.717	0.991
1	631.4	770.2	100.0	0.0	770.2	0.957	51.0	0.957	217.0	0.957	0.000	0.000	0.000	7.717	0.991
1	631.4	770.2	100.0	0.0	770.2	0.957	51.0	0.957	217.0	0.957	0.000	0.000	0.000	7.717	0.991
1	631.4	770.2	100.0	0.0	770.2	0.957	51.0	0.957	217.0	0.957	0.000	0.000	0.000	7.717	0.991
1	631.4	770.2	100.0	0.0	770.2	0.957	51.0	0.957	217.0	0.957	0.000	0.000	0.000	7.717	0.991
1	631.4	770.2	100.0	0.0	770.2	0.957	51.0	0.957	217.0	0.957	0.000	0.000	0.000	7.717	0.991
1	631.4	770.2	100.0	0.0	770.2	0.957	51.0	0.957	217.0	0.957	0.000	0.000	0.000	7.717	0.991
1	631.4	770.2	100.0	0.0	770.2	0.957	51.0	0.957	217.0	0.957	0.000	0.000	0.000	7.717	0.991
1	631.4	770.2	100.0	0.0	770.2	0.957	51.0	0.957	217.0	0.957	0.000	0.000	0.000	7.717	0.991
1	631.4	770.2	100.0	0.0	770.2	0.957	51.0	0.957	217.0	0.957	0.000	0.000	0.000	7.717	0.991

BLADE DATA

LOCAT -ION	BLADE SECTION	ANGLE LEAD	REL FLOW ANGLE	PERVATION INCIDENCE	LOSS COEFF	BLADE SPEED	RELATIVE MACH NO	RELATIVE VELOCITY	RELATIVE PRESSURE	RELATIVE TEMPERATURE	PRESSURE RATIO	DELTA T EFFICIENCY	POLYTRPIC EFFICIENCY
1	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
2	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
3	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
4	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
5	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
6	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
7	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
8	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
9	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
10	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
11	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8
12	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037	1.910	2.177	9633.8

STATION 15 INTEGRATED PERFORMANCE PRESSURE RATIO = 2.055 ISN. EFF. = .882 POLY. EFF. = .894 OLLIA I ON I = .260

STATION 16 FLOW FIELD DESCRIPTION

STREAM -LINE	RADIUS	MERID VELOCITY	TOTAL VELOCITIES	TOTAL PRESSURE	RELATIVE STATIC	MACH NO	WHIRL ANGLE	WHIRL SLOPE	RADIUS OF CURVATURE	SPECIFIC WEIGHT
1	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
2	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
3	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
4	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
5	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
6	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
7	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
8	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
9	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
10	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
11	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037
12	7.891	0.337	2.222	18.111	0.541	0.000	0.177	770.232	2.800	631.037

STATOR PERFORMANCE

LOCAT	INLET RADIUS	OUTLET RADIUS	INLET H. NO	INCLD PERCE	DEVIATION	LOSS COEFF	FACTOR D	FACTOR	DELTA P ON Q	REL V RATIO	DELTA H2O/42	SECTION-ANGLE INLET	SECTION-ANGLE OUTLET	LEAN-ANGLE INLET	LEAN-ANGLE OUTLET
1	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
2	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
3	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
4	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
5	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
6	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
7	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
8	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
9	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
10	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
11	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
12	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
13	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
14	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
15	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
16	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911
17	5.0000	5.3111	3.0000	0.0000	1.0000	0.0000	4.1714	40.3237	3.9400	7.1529	0.0000	46.5275	7.3916	36.2203	16.9911

MAKE AND BOUNDARY LAYER BLOCKAGES (PERCENT)

STATION	INLET BLOCKAGE	OUTLET BLOCKAGE	INLET FACTOR	OUTLET FACTOR	LOSS COEFF	DEVIATION	INCLD PERCE	INLET H. NO	INLET RADIUS	OUTLET RADIUS	LOCAT
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	1
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	2
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	3
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	4
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	5
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	6
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	7
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	8
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	9
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	10
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	11
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	12
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	13
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	14
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	15
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	16
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	5.0	5.3111	17

SUMMARY POINT NO. 1 THE CALCULATION IS CONVERGED PASS 51

TEST POINT TITLE = 602200201500

FLOW = 62.64 SPEED = 20152.4 PRESSURE RATIO = 2.065 ISENTROPIC EFFY = .8323 POLYTROPIC EFFY = .8935 DEL T/T = .2603

APPENDIX B

TEST DATA, INPUT DATA FOR PHASE II DATA REDUCTION (ACROSS BLADE)

This Appendix lists the input data and test data in the form of computer listing for each data point on all speedlines. The input data or fixed data is given at the beginning of each speedline and applies to all points on that speedline. The test data for each data point includes the output deck from the Phase I analysis.

40% SPEEDLINE PHASE II INPUT DATA

PROGRAM U08298 - AXIAL COMPRESSOR TEST DATA ANALYSIS
 FIXED DATA PRINTOUT

HTFC CONFIGURATION 01; 40Z SPEED; ACROSS-BLADE ANALYSIS, 24MAR76

NUMBER OF STATIONS 12
 MAXIMUM NUMBER OF ITERATIONS 120
 TOTAL NUMBER OF BLADES 2
 STATION NUMBER FOR WHICH INDICATOR
 STATION NUMBER FOR WHICH INDICATOR
 NUMBER OF ROTOR BLADES 2
 NUMBER OF STATOR BLADES 2
 MAXIMUM NUMBER OF LINES PER PAGE 60
 WPL07

ANULUS SPECIFICATION
 STATION 1 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -10.4500
 13.3000 -10.4500

STATION 2 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -10.0000
 0.0000 -10.0000

STATION 3 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -10.0500
 0.0000 -12.0500

STATION 4 SPECIFIED BY 2 POINTS

RSTN XSTN
 1.5000 -9.7500
 2.5000 -11.1000

STATION 5 SPECIFIED BY 2 POINTS

RSTN XSTN
 2.0000 -9.1117
 0.5000 -9.0493

STATION 6 SPECIFIED BY 2 POINTS

RSTN XSTN
 2.1500 -8.1500
 0.3000 -8.0500

STATION 7 SPECIFIED BY 6 POINTS

RSTN XSTN
 0.0000 -8.1000
 0.0000 -8.1000
 0.0000 -8.1000
 0.0000 -8.1000
 0.0000 -8.1000
 0.0000 -8.1000

STATION 8 SPECIFIED BY 9 POINTS

RSTN	XSTN
4.4612	-5.3150
4.6000	-5.2000
5.0000	-5.2883
5.1066	-5.3390
5.1592	-5.3717
5.2700	-5.4295
5.3400	-5.4700
5.4661	-5.5016
5.5000	-5.5780

STATION 9 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.5516	-5.1700
5.2000	-5.2000
5.3000	-5.2100
5.5000	-5.3500

STATION 10 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.6435	-5.0250
5.2500	-4.7750
5.6200	-4.6500
6.5000	-4.9000

STATION 11 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.6314	-2.4998
6.5000	-2.2174

STATION 12 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7306	-1.9200
6.5000	-1.9200

STATION 13 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7000	0.8000
6.5000	0.8000

STATION CALCULATION SPECIFICATION AND BLADING DATA

STATION 2	WCALC = 0	WDATA = -3	NBL = -0
STATION 3	WCALC = 0	WDATA = -3	NBL = -0
STATION 4	WCALC = 0	WDATA = -0	NBL = -0
STATION 5	WCALC = 0	WDATA = -0	NBL = -0
STATION 6	WCALC = 0	WDATA = -3	NBL = -0

STATION 7 NCALC = 1 NDATA = 13 NSL = 1
RADIUS BETA EPSILON BLOCKAGE THETA
.....
.....

STATION 8 NCALC = 6 NDATA = 13 NSL = 1
RADIUS BETA EPSILON BLOCKAGE THETA
.....
.....

STATION 9 NCALC = 0 NDATA = 0 NSL = 2
STATION 10 NCALC = 1 NDATA = 11 NSL = 2
RADIUS BETA EPSILON BLOCKAGE THETA
.....
.....

STATION 11 NCALC = 3 NDATA = 11 NSL = 1
RADIUS BETA EPSILON BLOCKAGE THETA
.....
.....

STATION 12 NCALC = 8 NDATA = 0 NSL = 1
STATION 13 NCALC = 0 NDATA = 6 NSL = 1

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000
0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000
0.0000
1.0000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000
0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000
0.0000
1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 7

PSCALE= 0.00 PLOWE= 0.00 DAMPF= 7.000 NSAVE= 1

NMAX= 0 MFORCE= 0 NEX= 2

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE
 GAS CONSTANT FRACTION
 FLOW RATE (LBS/D)
 FLOW AREA (SQ IN)
 INLET TOTAL TEMPERATURE
 (INLET INLET)
 P INLET INLET

51020N13043
 5 51.6549
 5 22.2719
 5 282.000
 5 17.6579
 5 1.98172

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
0.1270	10.5401
0.1270	10.5401
0.1270	10.5401
0.1270	10.5401
0.1270	10.5401
0.1270	10.5401
0.1270	10.5401
0.1270	10.5401
0.1270	10.5401

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
0.1270	10.5401	10.5401
0.1270	10.5401	10.5401
0.1270	10.5401	10.5401
0.1270	10.5401	10.5401
0.1270	10.5401	10.5401
0.1270	10.5401	10.5401
0.1270	10.5401	10.5401

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549
0.1270	51.6549

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
0.1270	1.375
0.1270	1.375
0.1270	1.375

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	14.3099
-6.0010	14.3722
-7.7510	14.4570
-7.2510	14.6193
-7.7510	14.9330
-6.5010	15.1625
-6.2510	15.3221
-6.0010	15.4062
-6.0010	15.4487
-5.7510	15.541
-2.5130	15.4191
-	15.4191

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	15.3486
- .5088	15.3486

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. ADD. DEVIATION	DIST. FACTOR	FRAC. IE BLOCKAGE
1	0.0000	1.0000	0.000	0.000	0.000
2	0.0000	1.0000	0.000	0.000	0.000
3	0.0000	1.0000	0.000	0.000	0.000
4	0.0000	1.0000	0.000	0.000	0.000
5	0.0000	1.0000	0.000	0.000	0.000
6	0.1000	1.0000	0.000	0.000	0.000
7	0.0000	1.0000	0.000	0.000	0.000
8	0.0000	1.0000	0.000	0.000	0.000
9	0.0000	1.0000	0.000	0.000	0.000
10	0.0500	1.0000	0.000	0.000	0.000
11	0.0500	1.0000	0.000	0.000	0.000
12	0.0500	1.0000	0.000	0.000	0.000
13	0.0500	1.0000	0.000	0.000	0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 2

TEST POINT TITLE
 = 510290200140
 = 51.6212
 = 21.7508
 = 14.6944
 = 51.6708
 = .96134

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 ROTOR TOTAL TEMPERATURE
 INLET TOTAL TEMPERATURE
 P IN/PSI
 P IN/PSI

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	16.5540
5.3750	16.4906
5.6250	16.4222
5.8750	16.3536
6.1250	16.2823
6.3750	16.2090
6.6250	16.1323
6.8750	16.0523
7.1250	15.9693

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	535.618
5.3750	539.379
5.6250	543.042
5.8750	546.705
6.1250	550.368
6.3750	554.031
6.6250	557.694
6.8750	561.357
7.1250	565.020

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1250	16.4777	16.5007
6.3750	16.4244	16.4474
6.6250	16.3711	16.3941
6.8750	16.3178	16.3408
7.1250	16.2645	16.2875
7.3750	16.2112	16.2342
7.6250	16.1579	16.1809

STAGE OUTLET TOTAL TEMPERATURE (7 POINTS)

RADIUS	TEMPERATURE
6.1250	539.703
6.3750	543.464
6.6250	547.225
6.8750	550.986
7.1250	554.747
7.3750	558.508
7.6250	562.269

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.6250	7.170
7.1250	7.052
6.6250	6.934

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	14.3363
-8.0010	14.4044
-7.7510	14.4802
-7.5010	14.5364
-7.2510	14.9674
-7.0010	15.1849
-6.7510	15.3112
-6.5010	15.4583
-6.2510	15.4863
-6.0010	15.6005
-5.7510	15.4955
-2.5190	15.4955

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	15.4301
-2.5080	15.4301

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.1000	1.5000	-0.000	-0.000	-0.000
7	0.1000	1.5000	-0.000	-0.000	-0.000
8	0.0500	1.0000	-0.000	-0.000	-0.000
9	0.0500	1.0000	-0.000	-0.000	-0.000
10	0.0500	1.0000	-0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR UNIT NO. 1

TEST POINT FILE
 = 5102903015-0
 = 51.6259
 = 2.99157
 = 2.13787
 = 4.69792
 = 1.96220

TEST POINT FILE
 GAS CONSTANT
 MASS FRACTION
 ROTOR INLET TOTAL PRESSURE
 ROTOR INLET TOTAL TEMPERATURE
 P IN/P INLET(S)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS
 1.27000
 1.27000
 1.27000
 1.27000
 1.27000
 1.27000
 1.27000
 1.27000
 1.27000

PRESSURE
 10.53200
 10.53200
 10.53200
 10.53200
 10.53200
 10.53200
 10.53200
 10.53200
 10.53200

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS
 1.27000
 1.27000
 1.27000
 1.27000
 1.27000
 1.27000
 1.27000
 1.27000
 1.27000

TEMPERATURE
 510.29030
 510.29030
 510.29030
 510.29030
 510.29030
 510.29030
 510.29030
 510.29030
 510.29030

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS
 0.12700
 0.12700
 0.12700
 0.12700
 0.12700
 0.12700
 0.12700

1588 PSES PEAK POLE
 15.53200
 15.53200
 15.53200
 15.53200
 15.53200
 15.53200
 15.53200

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS
 0.12700
 0.12700
 0.12700
 0.12700
 0.12700
 0.12700
 0.12700

TEMPERATURE
 510.29030
 510.29030
 510.29030
 510.29030
 510.29030
 510.29030
 510.29030

STAGE OUTLET FLOW ANGLES (7 POINTS)

RADIUS
 0.12700
 0.12700
 0.12700
 0.12700
 0.12700
 0.12700
 0.12700

ANGLE
 2.99157
 2.13787
 4.69792
 1.96220

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	14.3584
-8.0010	14.4273
-7.7510	14.4915
-7.5010	14.6234
-7.2510	14.9905
-7.0010	15.2151
-6.7510	15.3437
-6.5010	15.4903
-6.2510	15.5050
-6.0010	15.6290
-5.7510	15.5124
-5.5130	15.5124

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8193	15.4794
-2.5090	15.4794

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. T.E. BLOCKAGE
1	0.0000	1.0000	-3.000	-0.0000	-0.000
2	0.0000	1.0000	-0.000	-0.0000	-0.0000
3	0.0000	1.0000	-0.000	-0.0000	-0.0000
4	0.0000	1.0000	-0.000	-0.0000	-0.0000
5	0.0000	1.0000	-0.000	-0.0000	-0.0000
6	0.0000	1.0000	-0.000	-0.0000	-0.0000
7	0.0000	1.0000	-0.000	-0.0000	-0.0000
8	0.1000	.5000	-0.000	-0.0000	-0.0000
9	0.0000	.5000	-0.000	-0.0000	-0.0000
10	0.0500	1.0000	-0.000	-0.0000	-0.0000
11	.0500	1.0000	-0.000	-0.0000	-0.0000
12	.0500	1.0000	-0.000	-0.0000	-0.0000
13	.0500	1.0000	-0.000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NWACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 4

TEST POINT TITLE
 GAS CONSTANT
 AIR FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL TEMPERATURE
 P IN/P IN(SID)

510290-33040
 53.81233
 20.7297
 80.8546
 14.6944
 518.708
 .96254

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	16.5663
6.1250	16.5663
7.1250	16.5663
8.1250	16.5663
9.1250	16.5663
10.1250	16.5663
11.1250	16.5663
12.1250	16.5663
13.1250	16.5663

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	615.782
6.1250	615.782
7.1250	615.782
8.1250	615.782
9.1250	615.782
10.1250	615.782
11.1250	615.782
12.1250	615.782
13.1250	615.782

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1250	16.5422	16.6122
7.1250	16.5422	16.6122
8.1250	16.5422	16.6122
9.1250	16.5422	16.6122
10.1250	16.5422	16.6122
11.1250	16.5422	16.6122
12.1250	16.5422	16.6122

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1250	317.823
7.1250	317.823
8.1250	317.823
9.1250	317.823
10.1250	317.823
11.1250	317.823
12.1250	317.823

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0238	1.530
7.1250	1.530
6.4550	1.530

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	14.3959
-8.0010	14.4570
-7.7510	14.5064
-7.5010	14.6023
-7.2510	14.6358
-7.0010	14.7261
-6.7510	14.8390
-6.5010	14.9451
-6.2510	15.0380
-6.0010	15.1196
-5.7510	15.1619
-5.5010	15.1996

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.6499	15.5587
-2.5080	15.5587

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.0000	0.0000
2	0.0000	1.0000	-0.000	-0.0000	0.0000
3	0.0000	1.0000	-0.000	-0.0000	0.0000
4	0.0000	1.0000	-0.000	-0.0000	0.0000
5	0.0000	1.0000	-0.000	-0.0000	0.0000
6	0.0000	1.0000	-0.000	-0.0000	0.0000
7	0.0000	1.0000	-0.000	-0.0000	0.0000
8	0.0000	1.0000	-0.000	-0.0000	0.0000
9	0.0000	1.0000	-0.000	-0.0000	0.0000
10	0.0000	1.0000	-0.000	-0.0000	0.0000
11	0.0500	1.0000	-0.000	-0.0000	0.0000
12	0.0500	1.0000	-0.000	-0.0000	0.0000
13	0.0500	1.0000	-0.000	-0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	0
NJUMP	= 0												

TEST DATA PRINTOUT FOR POINT NO. 5

TEST POINT TITLE
 GAS CONSTANT
 FLOW RATE FRACTION
 ROTOR TOTAL PRESSURE
 ROTOR TOTAL TEMPERATURE
 STAGE INLET TOTAL PRESSURE
 STAGE INLET TOTAL TEMPERATURE
 P INLET INLET

5102955040-0
 51.5226
 20.01049
 14.0727
 51.02739
 .90361

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
6.1250	16.5573
6.1250	16.5524
6.2500	16.5465
6.3750	16.5406
6.5000	16.5347
6.6250	16.5288
6.7500	16.5229
6.8750	16.5170
7.0000	16.5111
7.1250	16.5052
7.2500	16.4993
7.3750	16.4934
7.5000	16.4875
7.6250	16.4816
7.7500	16.4757
7.8750	16.4698
8.0000	16.4639
8.1250	16.4580
8.2500	16.4521
8.3750	16.4462
8.5000	16.4403
8.6250	16.4344
8.7500	16.4285
8.8750	16.4226
9.0000	16.4167

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
6.1250	515.785
6.1250	515.255
6.2500	514.725
6.3750	514.195
6.5000	513.665
6.6250	513.135
6.7500	512.605
6.8750	512.075
7.0000	511.545
7.1250	511.015
7.2500	510.485
7.3750	509.955
7.5000	509.425
7.6250	508.895
7.7500	508.365
7.8750	507.835
8.0000	507.305
8.1250	506.775
8.2500	506.245
8.3750	505.715
8.5000	505.185
8.6250	504.655
8.7500	504.125
8.8750	503.595
9.0000	503.065

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	16.5115	16.6107
6.2500	16.5072	16.6079
6.3750	16.5029	16.6051
6.5000	16.4986	16.6023
6.6250	16.4943	16.5995
6.7500	16.4900	16.5967
6.8750	16.4857	16.5939
7.0000	16.4814	16.5911
7.1250	16.4771	16.5883
7.2500	16.4728	16.5855
7.3750	16.4685	16.5827
7.5000	16.4642	16.5799
7.6250	16.4599	16.5771
7.7500	16.4556	16.5743
7.8750	16.4513	16.5715
8.0000	16.4470	16.5687
8.1250	16.4427	16.5659
8.2500	16.4384	16.5631
8.3750	16.4341	16.5603
8.5000	16.4298	16.5575
8.6250	16.4255	16.5547
8.7500	16.4212	16.5519
8.8750	16.4169	16.5491
9.0000	16.4126	16.5463

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	516.867
6.2500	516.812
6.3750	516.757
6.5000	516.702
6.6250	516.647
6.7500	516.592
6.8750	516.537
7.0000	516.482
7.1250	516.427
7.2500	516.372
7.3750	516.317
7.5000	516.262
7.6250	516.207
7.7500	516.152
7.8750	516.097
8.0000	516.042
8.1250	515.987
8.2500	515.932
8.3750	515.877
8.5000	515.822
8.6250	515.767
8.7500	515.712
8.8750	515.657
9.0000	515.602

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0220	1.568
7.0140	1.558
6.9960	4.721

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	14.4257
-6.0010	14.4665
-7.7510	14.5233
-7.5010	14.7000
-7.0010	15.0752
-6.7510	15.4120
-6.5010	15.4549
-6.2510	15.5732
-6.0010	15.5780
-5.7510	15.7101
-5.5010	15.6634
-5.2510	
-5.0010	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.6499	15.5991
-2.5399	15.5991

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. ADJ. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	0.0000	0.0000	0.0000
2	0.0000	1.0000	0.0000	0.0000	0.0000
3	0.0000	1.0000	0.0000	0.0000	0.0000
4	0.0000	1.0000	0.0000	0.0000	0.0000
5	0.0000	1.0000	0.0000	0.0000	0.0000
6	0.0000	1.0000	0.0000	0.0000	0.0000
7	0.0000	1.0000	0.0000	0.0000	0.0000
8	0.0000	1.0000	0.0000	0.0000	0.0000
9	0.0000	1.0000	0.0000	0.0000	0.0000
10	0.0000	1.0000	0.0000	0.0000	0.0000
11	0.0500	1.0000	0.0000	0.0000	0.0000
12	0.0500	1.0000	0.0000	0.0000	0.0000
13	0.0500	1.0000	0.0000	0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 6

TEST POINT TITLE
 * 510290605040
 = 53.6282
 = 40.184
 = 18.07623
 = 34.62944
 = 518.708
 = .96567

GAS CONSTANT
 FLOW MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(STD)

ROTOR OUTLET TOTAL PRESSURE (8 POINTS)
 PRESSURE
 16.513
 16.513
 16.513
 16.513
 16.513
 16.513
 16.513
 16.513

ROTOR OUTLET TOTAL TEMPERATURE (8 POINTS)
 TEMPERATURE
 515.679
 515.679
 515.679
 515.679
 515.679
 515.679
 515.679
 515.679

STAGE OUTLET TOTAL PRESSURES (7 POINTS)
 MEAN PRES PEAR PRES
 16.4918 16.5134
 16.4918 16.5134
 16.4918 16.5134
 16.4918 16.5134
 16.4918 16.5134
 16.4918 16.5134
 16.4918 16.5134

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)
 TEMPERATURE
 515.964
 515.964
 515.964
 515.964
 515.964
 515.964
 515.964

STAGE OUTLET FLOW ANGLES (3 POINTS)
 RADIUS ANGLE
 7.8228 7.727
 7.1450 5.481
 6.4668

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.75110	14.4750
-8.00110	14.5000
-7.75110	14.6000
-7.50110	14.7000
-7.25110	14.8000
-7.00110	14.9000
-6.75110	15.0000
-6.50110	15.1000
-6.25110	15.2000
-6.00110	15.3000
-5.75110	15.4000
-5.50110	15.5000
-5.25110	15.6000
-5.00110	15.7000

HUB STATIC PRESS. RES (2 POINTS)

X-COORD	PRESSURE
-2.8499	15.5291
-2.5080	15.5291

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.0000	1.0000	-0.0000	-0.0000	-0.0000
8	0.0000	1.0000	-0.0000	-0.0000	-0.0000
9	0.0000	1.0000	-0.0000	-0.0000	-0.0000
10	0.0500	1.0000	-0.0000	-0.0000	-0.0000
11	0.0500	1.0000	-0.0000	-0.0000	-0.0000
12	0.0500	1.0000	-0.0000	-0.0000	-0.0000
13	0.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	0												

TEST DATA PRINTOUT FOR POINT NO. 7

TEST POINT TITLE
 * 5102907105-0
 * 51.4177
 * 17.3553
 * 5.6092-1
 * 5.130709
 * .98235
 * .90753

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/PSI
 P IN/MP
 P IN/STD

ROTOR OUTLET TOTAL PRESSURE (8 POINTS)

RADIUS	PRESSURE
5.12500	10.3387
5.37500	10.3429
5.62500	10.3520
5.87500	10.3595
6.12500	10.3682
6.37500	10.3717
6.62500	10.3717
6.87500	10.3717
7.12500	10.3717
7.37500	10.3717
7.62500	10.3717
7.87500	10.3717
8.12500	10.3717

ROTOR OUTLET TOTAL TEMPERATURE (8 POINTS)

RADIUS	TEMPERATURE
5.12500	25.091
5.37500	25.091
5.62500	25.091
5.87500	25.091
6.12500	25.091
6.37500	25.091
6.62500	25.091
6.87500	25.091
7.12500	25.091
7.37500	25.091
7.62500	25.091
7.87500	25.091
8.12500	25.091

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.12500	10.3717	10.3717
6.37500	10.3717	10.3717
6.62500	10.3717	10.3717
6.87500	10.3717	10.3717
7.12500	10.3717	10.3717
7.37500	10.3717	10.3717
7.62500	10.3717	10.3717

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.12500	25.091
6.37500	25.091
6.62500	25.091
6.87500	25.091
7.12500	25.091
7.37500	25.091
7.62500	25.091

STAGE OUTLET FLOW ANGLE (3 POINTS)

RADIUS	ANGLE
7.37500	-1.510
7.62500	2.105
7.87500	2.105

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE	FRAC. TE BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION
-8.7510	14.5562	-0.0000	1.00000	-0.0000
-8.0010	14.6164	0.00000	1.00000	-0.0000
-7.7510	14.7401	0.00000	1.00000	-0.0000
-7.5010	14.8378	0.00000	1.00000	-0.0000
-7.2510	15.1205	0.00000	1.00000	-0.0000
-7.0010	15.2850	0.00000	1.00000	-0.0000
-6.7510	15.4121	0.00000	1.00000	-0.0000
-6.5010	15.4121	0.00000	1.00000	-0.0000
-6.2510	15.5406	0.00000	1.00000	-0.0000
-6.0010	15.7054	0.00000	1.00000	-0.0000
-5.7510	15.7054	0.00000	1.00000	-0.0000
-2.5674	15.5353	0.00000	1.00000	-0.0000
-2.5190	15.5353	0.00000	1.00000	-0.0000

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	15.5171
-2.5080	15.5171

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.00000	-0.0000	-0.0000	-0.0000
2	0.0000	1.00000	-0.0000	-0.0000	-0.0000
3	0.0000	1.00000	-0.0000	-0.0000	-0.0000
4	0.0000	1.00000	-0.0000	-0.0000	-0.0000
5	0.0000	1.00000	-0.0000	-0.0000	-0.0000
6	0.0000	1.00000	-0.0000	-0.0000	-0.0000
7	0.0000	1.00000	-0.0000	-0.0000	-0.0000
8	0.0000	1.00000	-0.0000	-0.0000	-0.0000
9	0.0000	1.00000	-0.0000	-0.0000	-0.0000
10	0.0000	1.00000	-0.0000	-0.0000	-0.0000
11	0.0500	1.00000	-0.0000	-0.0000	-0.0000
12	0.0500	1.00000	-0.0000	-0.0000	-0.0000
13	0.0500	1.00000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

50% SPEEDLINE PHASE 11 INPUT DATA

PROGRAM U00200 - AXIAL COMPRESSOR TEST DATA ANALYSIS
 FIXED DATA PRINTOUT

HTFC CONFIGURATION #1, 50% SPEED, ACROSS-BLADE ANALYSIS 23MAR76

NUMBER OF STATIONS 13
 NUMBER OF STAGES 13
 MAXIMUM NUMBER OF ITERATIONS 1000
 MAXIMUM NUMBER OF SUB-ITERATIONS 100
 TOTAL PRESSURE SOURCE INDICATOR 0
 TOTAL TEMPERATURE SOURCE INDICATOR 0
 STATION NUMBER FOR SOURCE EXIT DATA 0
 NUMBER OF ROTOR BLADES 13
 NUMBER OF STAGE BLADES 13
 MAXIMUM NUMBER OF LINES PER PAGE 25
 PLOT

=====

AMPLITUDE SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

RSTH XSTH
 0.0000 -18.4300
 13.3030 -18.4300

STATION 2 SPECIFIED BY 2 POINTS

RSTH XSTH
 0.0000 -14.9000
 9.4300 -14.8300

STATION 3 SPECIFIED BY 2 POINTS

RSTH XSTH
 0.0000 -10.6500
 0.9800 -10.5500

STATION 4 SPECIFIED BY 2 POINTS

RSTH XSTH
 1.5400 -9.7500
 8.5300 -11.1300

STATION 5 SPECIFIED BY 2 POINTS

RSTH XSTH
 2.0550 -9.1300
 6.5000 -9.0500

STATION 6 SPECIFIED BY 2 POINTS

RSTH XSTH
 2.3500 -8.2500
 6.3000 -8.0500

STATION 7 SPECIFIED BY 6 POINTS

RSTH XSTH
 2.4000 -7.1500
 3.4000 -7.0500
 4.4000 -7.0500
 5.4000 -7.0500
 6.4000 -7.0500
 7.4000 -7.0500

STATION 8 SPECIFIED BY 9 POINTS

RSTN	XSTN
4.4612	-5.3150
4.6000	-5.3000
4.8000	-5.2600
5.0000	-5.1850
5.1064	-5.1717
5.8592	-5.2485
6.7945	-5.3708
7.8661	-5.6016
8.5000	-5.7840

STATION 9 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.5534	-5.1700
5.2000	-5.0000
5.8000	-4.9500
6.5000	-5.3500

STATION 10 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.5435	-5.6750
5.2500	-4.7750
5.8200	-4.6500
6.5000	-4.9000

STATION 11 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.5314	-2.4949
6.5000	-2.2174

STATION 12 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7326	-0.9200
6.5000	-0.9200

STATION 13 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7326	6.5000
6.5000	6.5000

STATION CALCULATION SPECIFICATION AND BLADING DATA

STATION	NCALC	NCALC = 0	NDATA	NBL
2	NCALC = 0	NCALC = 0	NDATA = -0	NBL = -0
3	NCALC = 0	NCALC = 0	NDATA = -0	NBL = -0
4	NCALC = 0	NCALC = 0	NDATA = -0	NBL = -0
5	NCALC = 0	NCALC = 0	NDATA = -0	NBL = -0
6	NCALC = 0	NCALC = 0	NDATA = -0	NBL = -0

STATION 7 NCALC = 1 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2.5784	17	5001	04431	2473
3.5027	10	1113	07409	2450
4.0276	42	0000	01067	2449
4.2250	42	0000	01077	2456
4.2802	42	0000	00971	2459
4.3027	42	0000	00977	2459
4.3055	42	0000	00975	2459
4.3108	42	0000	00970	2441
4.3188	42	0000	00974	2459
4.3280	42	0000	00971	2459

STATION 8 NCALC = 4 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2.6365	62	49	03864	3309
3.1508	56	40	00042	1669
3.2599	42	00	00951	0041
4.5027	11	22	03749	0033
5.5079	15	20	00579	0952
6.0748	20	18	00577	1315
7.1137	36	13	00540	1571
8.1215	49	2	00854	1724
8.6137	54	12	00977	1790
				1626

STATION 9 NCALC = 0 NDATA = 0 NBL = 2

STATION 10 NCALC = 1 NDATA = 11 NBL = 2

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.0315	45	31	01626	1639
4.0317	43	22	01326	1480
4.0360	40	16	01084	1270
4.0369	36	19	01223	0945
4.0373	36	19	01466	0863
4.0385	35	16	01505	0797
4.0398	37	15	01623	0802
4.0458	40	2	01364	0846
4.0536	40	11	00830	0924

STATION 11 NCALC = 3 NDATA = 11 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.7500	9	1	00166	0030
4.7500	9	1	00458	0014
4.7500	8	0	00923	0000
4.7500	8	0	00979	0000
4.7500	8	0	00749	0000
4.7500	8	0	00722	0000
4.7500	8	0	00771	0001
4.7500	8	0	00770	0000
				0000

STATION 12 NCALC = 0 NDATA = 0 NBL = 1

STATION 13 NCALC = 0 NDATA = 0 NBL = 1

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 7

PSCALE= 0.00 PLOWER= 0.00 DAMPF= 7.000 NSAVE= 1

NMAX= 0 HFORCE= 0 NEX= 2

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE
 = 510290800050
 = 53.6066
 = 28.9251
 = 14.8944
 = 1.9813
 = .9213

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL TEMPERATURE
 INLET PRESSURE
 INLET INLET

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	17.6673
5.2500	17.6690
5.3750	17.7111
5.5000	17.7102
5.6250	17.7184
5.7500	17.7011
5.8750	17.5932
6.0000	17.5015

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	52.700
5.2500	52.702
5.3750	52.702
5.5000	52.706
5.6250	52.706
5.7500	52.700
5.8750	52.700
6.0000	52.709

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1250	17.5593	17.7447
6.2500	17.6120	17.7401
6.3750	17.6120	17.7401
6.5000	17.6120	17.7401
6.6250	17.6120	17.7401
6.7500	17.6120	17.7401
6.8750	17.6120	17.7401

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1250	52.940
6.2500	52.942
6.3750	52.942
6.5000	52.942
6.6250	52.942
6.7500	52.942
6.8750	52.942

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.4220	1.194
7.4220	1.527
6.4660	4.327

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	14.0679
-8.0010	14.1765
-7.7510	14.3337
-7.5010	14.5783
-7.2510	15.0599
-7.0010	15.4221
-6.7510	15.7185
-6.5010	15.8500
-6.2510	15.9183
-6.0010	16.0876
-5.7510	16.0879
-5.5190	15.8794

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	15.7750
-2.5088	15.7750

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MIJ ADD. DEVIATION	DIST. FACTOR	FRAC. IE BLOCKAGE
1	0.0000	1.0000	-0.000	0.0000	0.0000
2	0.0000	1.0000	-0.000	0.0000	0.0000
3	0.0000	1.0000	-0.000	0.0000	0.0000
4	0.0000	1.0000	-0.000	0.0000	0.0000
5	0.0000	1.0000	-0.000	0.0000	0.0000
6	0.0000	1.0000	-0.000	0.0000	0.0000
7	0.0000	1.0000	-0.000	0.0000	0.0000
8	0.1000	5.0000	-0.000	0.0000	0.0000
9	0.0000	5.0000	-0.000	0.0000	0.0000
10	0.0500	1.0000	-0.000	0.0000	0.0000
11	0.0500	1.0000	-0.000	0.0000	0.0000
12	0.0500	1.0000	-0.000	0.0000	0.0000
13	0.0500	1.0000	-0.000	0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NHACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	0
NJUMP	= 0												

TEST DATA PRINTOUT FOR POINT NO. 2

TEST POINT TITLE
 = 510290900150
 = 53.6086
 = 20.2157
 = 10.2067
 = 5.1870
 = .02313

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(STD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	17.6706
5.5000	17.5923
5.8750	17.7472
6.2500	17.6071
6.6250	17.7364
7.0000	17.5679
7.3750	17.7522
7.7500	17.5689
8.1250	17.5380

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	545.010
5.5000	546.563
5.8750	548.439
6.2500	548.012
6.6250	547.636
7.0000	549.746
7.3750	551.374
7.7500	553.774
8.1250	559.147

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	17.5805	17.7534
6.4660	17.6969	17.6397
6.8050	17.6344	17.7751
7.1440	17.6270	17.7593
7.4830	17.6213	17.7557
7.8220	17.5398	17.6286
8.1610	17.4672	17.5817

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	547.194
6.4660	548.670
6.8050	548.948
7.1440	549.554
7.4830	551.735
7.8220	551.067
8.1610	555.937

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.133
7.1440	1.220
6.4660	4.328

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	14.1157
-8.0010	14.2317
-7.7510	14.3685
-7.5010	14.5144
-7.2510	15.1025
-7.0010	15.5300
-6.7510	15.6912
-6.5010	15.7983
-6.2510	15.9281
-6.0010	15.9739
-5.7510	16.1622
-2.5674	16.0046
-0.5190	16.0046

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	15.9063
-0.5080	15.9063

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.1000	0.5000	-0.000	-0.000	-0.000
8	0.1000	0.5000	-0.000	-0.000	-0.000
9	0.0000	1.0000	-0.000	-0.000	-0.000
10	0.0500	1.0000	-0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NHACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

TEST DATA PRINTOUT FOR POINT NO. 3

TEST POINT TITLE
 = 51291J01050
 = 53.2322
 = 27.2267
 = 10.0291
 = 14.0291
 = 5.9233

GAS CONSTANT
 AIR MASS FRACTION
 FLOW VELOCITY
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 INLET INCLINATION
 INLET INCLINATION

ROTOR INLET TOTAL PRESSURE (9 POINTS)

RADIUS PRESSURE
 5.1220 17.6792
 5.1220 17.6792
 5.1220 17.6792
 5.1220 17.6792
 5.1220 17.6792
 5.1220 17.6792
 5.1220 17.6792
 5.1220 17.6792
 5.1220 17.6792

ROTOR JULET TOTAL TEMPERATURE (3 POINTS)

RADIUS TEMPERATURE
 5.1220 5.857
 5.1220 5.857
 5.1220 5.857
 5.1220 5.857
 5.1220 5.857
 5.1220 5.857
 5.1220 5.857
 5.1220 5.857
 5.1220 5.857

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS MEAN PRES PEAK PRES
 6.1220 17.5273 17.7216
 6.1220 17.5273 17.7216
 6.1220 17.5273 17.7216
 6.1220 17.5273 17.7216
 6.1220 17.5273 17.7216
 6.1220 17.5273 17.7216
 6.1220 17.5273 17.7216

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS TEMPERATURE
 6.1220 7.142
 6.1220 7.142
 6.1220 7.142
 6.1220 7.142
 6.1220 7.142
 6.1220 7.142
 6.1220 7.142

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS ANGLE
 7.0220 1.033
 7.0220 1.033
 7.0220 1.033

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7310	14.1293
-8.0010	14.2448
-7.7510	14.3765
-7.5010	14.5233
-7.0010	15.1194
-6.7510	15.2707
-6.5010	15.3878
-6.2510	15.4951
-6.0010	15.5885
-5.7510	15.6754
-5.5130	15.7565
-5.5130	15.8365

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8439	15.9412
-2.5080	15.9412

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. ICE BLOCKAGE
1	0.0000	1.0000	0.000	0.000	0.000
2	0.0000	1.0000	0.000	0.000	0.000
3	0.0000	1.0000	0.000	0.000	0.000
4	0.0000	1.0000	0.000	0.000	0.000
5	0.0000	1.0000	0.000	0.000	0.000
6	0.0000	1.0000	0.000	0.000	0.000
7	0.0000	1.0000	0.000	0.000	0.000
8	0.0000	1.0000	0.000	0.000	0.000
9	0.0000	1.0000	0.000	0.000	0.000
10	0.0500	1.0000	0.000	0.000	0.000
11	0.0500	1.0000	0.000	0.000	0.000
12	0.0500	1.0000	0.000	0.000	0.000
13	0.0500	1.0000	0.000	0.000	0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

TEST DATA PRINTOUT FOR POINT NO. 6

TEST POINT TITLE
 GAS CONSTANT
 AIR MASS FRACTION
 FLOW AREA USED
 ROTOR TOTAL PRESSURE
 ANGLE TOTAL TEMPERATURE
 P (IN/P IN/ST/D)

510291302650
 53.6060
 5.99212
 26.43315
 10.10944
 14.8700
 51.9819
 .95526

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
1.2500	17.6077
2.5000	17.6082
3.7500	17.6087
5.0000	17.6092
6.2500	17.6097
7.5000	17.6102
8.7500	17.6107
10.0000	17.6112

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
1.2500	546.033
2.5000	546.040
3.7500	546.047
5.0000	546.054
6.2500	546.061
7.5000	546.068
8.7500	546.075
10.0000	546.082

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1250	17.6202	17.7723
7.2500	17.6210	17.6530
8.3750	17.6219	17.6506
9.5000	17.6228	17.6970
10.6250	17.6237	17.7477
11.7500	17.6246	17.7470

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1250	547.347
7.2500	549.425
8.3750	549.402
9.5000	551.522
10.6250	551.500
11.7500	551.950

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.6250	1.509
8.8750	1.584
10.1250	6.520

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	14.2017
-8.0010	14.3047
-7.7510	14.4068
-7.5010	14.6654
-7.2510	15.2900
-6.7510	15.7960
-6.5010	15.6012
-6.2510	15.0454
-6.0010	16.0430
-5.7510	16.2779
-5.5010	16.1687
-5.2510	16.1667

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	16.0907
-5.5080	16.0907

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. ADJ. DEVIATION	DIST. FACTOR	FRAC. FILL BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.1000	1.5000	-0.0000	-0.0000	-0.0000
7	0.0000	1.0000	-0.0000	-0.0000	-0.0000
8	0.0000	1.0000	-0.0000	-0.0000	-0.0000
9	0.0000	1.0000	-0.0000	-0.0000	-0.0000
10	0.0500	1.0000	-0.0000	-0.0000	-0.0000
11	0.0500	1.0000	-0.0000	-0.0000	-0.0000
12	0.0500	1.0000	-0.0000	-0.0000	-0.0000
13	0.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 3

TEST POINT TITLE = 511250102350

GAS COEFFICIENT = 53.4896
 AIR MASS FRACTION = 26.6477
 FLOW RATE = 1011.43
 ROTOR SPEED = 1418.44
 INLET TOTAL PRESSURE = 518.708
 INLET TOTAL TEMPERATURE = 518.531
 P IN/P IN(STD) = .94608

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	17.7004
5.1500	17.6470
5.1750	17.6045
5.2000	17.5717
5.2250	17.5403
5.2500	17.5101
5.2750	17.4815
5.3000	17.4545

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	545.292
5.1500	545.375
5.1750	545.467
5.2000	545.565
5.2250	545.668
5.2500	545.775
5.2750	545.886
5.3000	545.999

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1250	17.6292	17.7787
6.1500	17.6233	17.6875
6.1750	17.6180	17.6014
6.2000	17.6134	17.5202
6.2250	17.6094	17.4443
6.2500	17.6059	17.3737
6.2750	17.6029	17.3085

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1250	546.760
6.1500	546.804
6.1750	546.851
6.2000	546.901
6.2250	546.954
6.2500	547.010
6.2750	547.069

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0250	.116
7.1500	1.577
6.4560	

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	14.1764
-6.0010	14.2940
-7.7510	14.3251
-7.2510	14.6592
-7.0010	15.5702
-6.5010	15.8521
-6.2510	16.0177
-6.0010	16.2404
-5.7510	16.1433
-2.5674	16.1435
-2.5130	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	16.0505
-2.5030	16.0505

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. ADD. DEVIATION	DIST. FACTOR	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
8	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
9	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
10	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
11	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
12	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000
13	0.0000	1.0000	-0.000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST OUTF. PRINTOUT FOR POINT NO. 5

TEST POINT TITLE
= 51125033550
= 53.4903
= 25.9617
= 10.10.4
= 5.48.703
= .95.069
= .94.729

GAS CONSTANT
AIR FRACTION
ROTOR SPEED
INLET TOTAL PRESSURE
INLET TEMPERATURE
P IN/P IN(STD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.12000	17.7017
5.12000	17.6209
5.12000	17.7000
5.12000	17.6332
5.12000	17.6300
5.12000	17.6300
5.12000	17.6323

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.12000	546.337
5.12000	546.262
5.12000	546.017
5.12000	546.227
5.12000	546.227
5.12000	546.744

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	17.6315	17.7822
6.1270	17.7020	17.8469
6.1270	17.6325	17.8187
6.1270	17.6321	17.8087
6.1270	17.6320	17.7915
6.1270	17.6322	17.7914

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	547.081
6.1270	549.581
6.1270	551.085
6.1270	554.085
6.1270	557.581
6.1270	559.217

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0220	4.49
7.0220	1.817
6.6560	4.309

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	14.2302
-8.0010	14.3247
-7.7510	14.4229
-7.5010	14.6823
-7.0010	15.5877
-6.7510	15.8010
-6.2510	16.0673
-6.0010	16.0563
-5.7510	16.2946
-2.5674	16.2345
-2.5190	16.2345

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	16.1384
-2.5080	16.1384

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	.1000	.5000	-0.000	-0.000	-0.000
9	0.0000	.5000	-0.000	-0.000	-0.000
10	0.0000	1.0000	-0.000	-0.000	-0.000
11	.0500	1.0000	-0.000	-0.000	-0.000
12	.0500	1.0000	-0.000	-0.000	-0.000
13	.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	0												

TEST DATA PRINTOUT FOR POINT NO. 7

TEST POINT TITLE
 = 51125050+450
 = 53.4894
 = 25.2068
 = 10.1670
 = 17.8127
 = 19.2628
 = .94637

GAS CONSTANT
 FLOW RATE FRACTION
 FLOW RATE
 ROTOR OUTLET TOTAL PRESSURE
 ROTOR OUTLET TOTAL TEMPERATURE
 ROTOR INLET TOTAL PRESSURE
 ROTOR INLET TOTAL TEMPERATURE
 P IN/P INSTD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	17.5982
5.5000	17.6741
5.8750	17.8136
6.2500	17.7810
6.6250	17.7645
7.0000	17.5001
7.3750	17.8127
7.7500	17.6956
8.1250	17.6506

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	545.567
5.5000	546.577
5.8750	549.104
6.2500	548.733
6.6250	548.285
7.0000	550.442
7.3750	557.467
7.7500	560.935
8.1250	567.439

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	17.6179	17.7807
6.4660	17.7254	17.8959
6.8050	17.6811	17.8760
7.1440	17.5765	17.7783
7.4830	17.5369	17.7663
7.8220	17.5287	17.8114
8.1610	17.5561	17.8223

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	547.047
6.4660	548.530
6.8050	550.104
7.1440	551.358
7.4830	554.931
7.8220	558.257
8.1610	560.133

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	-.001
7.1440	2.264
6.4660	4.710

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	14.2976
-8.9019	14.3383
-7.7510	14.4702
-7.5010	14.6972
-7.0010	15.1825
-6.7510	15.5470
-6.5010	15.7741
-6.2510	15.8542
-6.0010	16.0777
-5.7510	16.0508
-5.5010	16.3282
-5.2510	16.2791
-5.0010	16.2791

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	16.1773
-2.5030	16.1773

DISTRIBUED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	0.0000	1.0000	-0.000	-0.000	-0.000
9	0.0000	1.0000	-0.000	-0.000	-0.000
10	0.0000	1.0000	-0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

60% SPEEDLINE PHASE II INPUT DATA

PROGRAM 009299 --- AXIAL COMPRESSOR TEST DATA ANALYSIS
 FIXED DATA PRINTOUT

HTFC CONFIGURATION #1, 50% SPEED, ACROSS-BLADE ANALYSIS, 24MAR76

NUMBER OF STATIONS 13
 NUMBER OF STAGES 120
 MAXIMUM NUMBER OF ITERATIONS 20
 MAXIMUM NUMBER OF ARBITRARY ITERATIONS 1
 TOTAL PRESSURE SOURCE INDICATOR 1
 TOTAL TEMPERATURE SOURCE INDICATOR 1
 STATION NUMBER FOR SOURCE EXIT DATA 20
 STATION NUMBER FOR STAGE EXIT DATA 30
 NUMBER OF ROTOR BLADES 30
 MAXIMUM NUMBER OF LINES PER PAGE 30
 NPLOT 3

ANNULUS SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.3000 -18.4500
 13.3000 -18.4500

STATION 2 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -14.9000
 9.4000 -14.0800

STATION 3 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -10.6500
 8.9600 -12.8500

STATION 4 SPECIFIED BY 2 POINTS

RSTN XSTN
 1.5400 -9.7589
 8.5500 -11.1380

STATION 5 SPECIFIED BY 2 POINTS

RSTN XSTN
 2.0550 -9.1137
 8.5000 -9.6493

STATION 6 SPECIFIED BY 2 POINTS

RSTN XSTN
 2.3500 -9.6500
 8.5000 -9.6500

STATION 7 SPECIFIED BY 6 POINTS

RSTN XSTN
 2.6514 -8.1600
 3.8058 -8.2045
 5.0697 -9.2603
 6.3389 -9.1813
 7.6161 -7.9613
 8.5000 -7.8113

STATION 8 SPECIFIED BY 9 POINTS

RSTN	XSTN
4.4612	-5.3153
4.6300	-5.3090
5.0000	-5.2690
5.1064	-5.1717
5.2592	-5.2485
6.7343	-3.3703
7.6601	-2.6915
8.5000	-5.7840

STATION 9 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.5534	-5.1709
5.2000	-5.0000
6.0000	-4.9500
8.5000	-5.3500

STATION 10 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.6435	-5.2250
5.2500	-4.7750
5.6200	-4.6500
8.5000	-4.9000

STATION 11 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.5314	-2.6992
8.5000	-2.2174

STATION 12 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7905	-0.9200
8.5000	-0.9200

STATION 13 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7905	0.0000
8.5000	0.0000

STATION CALCULATION SPECIFICATION AND SLADING DATA

STATION	NCALC	NCALC = 0	NDATA	NDATA = -0	NBL	NBL = -0
STATION 2	NCALC = 0	NCALC = 0	NDATA = -0	NDATA = -0	NBL = -0	NBL = -0
STATION 3	NCALC = 0	NCALC = 0	NDATA = -0	NDATA = -0	NBL = -0	NBL = -0
STATION 4	NCALC = 0	NCALC = 0	NDATA = -0	NDATA = -0	NBL = -0	NBL = -0
STATION 5	NCALC = 0	NCALC = 0	NDATA = -0	NDATA = -0	NBL = -0	NBL = -0
STATION 6	NCALC = 0	NCALC = 0	NDATA = -0	NDATA = -0	NBL = -0	NBL = -0

STATION 7 NCALC = 1 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2.5784	37.2742	1.5001	0.4431	2.473
3.0927	-40.5350	-0.0115	0.02809	2.450
3.46276	-42.72010	-0.0643	0.014627	2.451
4.1690	-44.02102	-1.6131	0.09771	2.564
5.16881	-46.04525	-1.4891	0.0837	2.580
6.17055	-47.58477	3.6826	0.0835	2.335
7.21088	-51.04976	4.63370	0.0853	2.467
8.27058	-53.41910	6.93390	0.0802	2.342
	-56.7379	8.0574	0.0571	2.179

STATION 8 NCALC = 4 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2.6365	62.7951	49.1720	0.3064	3.309
3.0508	56.3762	49.2916	0.0042	1.869
3.3599	49.2507	33.45371	0.19510	0.816
3.5064	42.2090	22.01522	0.37109	0.041
3.5479	31.0249	22.01522	0.06779	0.052
3.5978	15.0249	13.1707	0.05779	1.171
3.6473	-20.01522	1.1220	0.0585	1.724
3.7121	-36.01522	2.4440	0.0494	1.790
3.8137	-49.01522	-12.4591	0.0977	1.626

STATION 9 NCALC = 0 NDATA = 0

STATION 10 NCALC = 1 NDATA = 11 NBL = 2

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.3315	45.307	41.401	0.1526	1.879
4.3427	43.0498	-22.07521	0.1336	1.870
4.3540	40.1671	-1.3016	0.1094	1.871
4.3653	36.2972	9.910	0.1001	1.895
4.3766	35.1082	-9.4790	0.1106	0.819
4.3879	33.1082	-9.3217	0.1305	0.637
4.3992	31.0249	7.7533	0.1653	0.632
4.4105	29.0249	11.5669	0.1360	0.846
4.4218	27.0249		0.0830	0.924

STATION 11 NCALC = 3 NDATA = 11 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.7500	-9.4349	-1.1369	0.1160	0.000
4.7500	-9.0238	-1.1163	0.0416	0.000
4.7500	-8.6127	-0.6777	0.0802	0.000
4.7500	-8.2016	-0.2592	0.0479	0.000
4.7500	-7.7905	0.1532	0.0779	0.000
4.7500	-7.3794	0.5717	0.1449	0.000
4.7500	-6.9683	0.9902	0.2129	0.000
4.7500	-6.5572	1.4087	0.2771	0.000
4.7500	-6.1461	1.8272	0.3470	0.000
4.7500	-5.7350	2.2457	0.4170	0.000
4.7500	-5.3239	2.6642	0.4870	0.000
4.7500	-4.9128	3.0827	0.5570	0.000
4.7500	-4.5017	3.5012	0.6270	0.000
4.7500	-4.0906	3.9197	0.6970	0.000
4.7500	-3.6795	4.3382	0.7670	0.000
4.7500	-3.2684	4.7567	0.8370	0.000
4.7500	-2.8573	5.1752	0.9070	0.000
4.7500	-2.4462	5.5937	0.9770	0.000
4.7500	-2.0351	6.0122	1.0470	0.000
4.7500	-1.6240	6.4307	1.1170	0.000
4.7500	-1.2129	6.8492	1.1870	0.000
4.7500	-0.8018	7.2677	1.2570	0.000
4.7500	-0.3907	7.6862	1.3270	0.000
4.7500	0.0204	8.1047	1.3970	0.000
4.7500	0.4315	8.5232	1.4670	0.000
4.7500	0.8426	8.9417	1.5370	0.000
4.7500	1.2537	9.3602	1.6070	0.000
4.7500	1.6648	9.7787	1.6770	0.000
4.7500	2.0759	10.1972	1.7470	0.000
4.7500	2.4870	10.6157	1.8170	0.000
4.7500	2.8981	11.0342	1.8870	0.000
4.7500	3.3092	11.4527	1.9570	0.000
4.7500	3.7203	11.8712	2.0270	0.000
4.7500	4.1314	12.2897	2.0970	0.000
4.7500	4.5425	12.7082	2.1670	0.000
4.7500	4.9536	13.1267	2.2370	0.000
4.7500	5.3647	13.5452	2.3070	0.000
4.7500	5.7758	13.9637	2.3770	0.000
4.7500	6.1869	14.3822	2.4470	0.000
4.7500	6.5980	14.8007	2.5170	0.000
4.7500	7.0091	15.2192	2.5870	0.000
4.7500	7.4202	15.6377	2.6570	0.000
4.7500	7.8313	16.0562	2.7270	0.000
4.7500	8.2424	16.4747	2.7970	0.000
4.7500	8.6535	16.8932	2.8670	0.000
4.7500	9.0646	17.3117	2.9370	0.000
4.7500	9.4757	17.7302	3.0070	0.000
4.7500	9.8868	18.1487	3.0770	0.000
4.7500	10.2979	18.5672	3.1470	0.000
4.7500	10.7090	18.9857	3.2170	0.000
4.7500	11.1201	19.4042	3.2870	0.000
4.7500	11.5312	19.8227	3.3570	0.000
4.7500	11.9423	20.2412	3.4270	0.000
4.7500	12.3534	20.6597	3.4970	0.000
4.7500	12.7645	21.0782	3.5670	0.000
4.7500	13.1756	21.4967	3.6370	0.000
4.7500	13.5867	21.9152	3.7070	0.000
4.7500	13.9978	22.3337	3.7770	0.000
4.7500	14.4089	22.7522	3.8470	0.000
4.7500	14.8200	23.1707	3.9170	0.000
4.7500	15.2311	23.5892	3.9870	0.000
4.7500	15.6422	24.0077	4.0570	0.000
4.7500	16.0533	24.4262	4.1270	0.000
4.7500	16.4644	24.8447	4.1970	0.000
4.7500	16.8755	25.2632	4.2670	0.000
4.7500	17.2866	25.6817	4.3370	0.000
4.7500	17.6977	26.1002	4.4070	0.000
4.7500	18.1088	26.5187	4.4770	0.000
4.7500	18.5199	26.9372	4.5470	0.000
4.7500	18.9310	27.3557	4.6170	0.000
4.7500	19.3421	27.7742	4.6870	0.000
4.7500	19.7532	28.1927	4.7570	0.000
4.7500	20.1643	28.6112	4.8270	0.000
4.7500	20.5754	29.0297	4.8970	0.000
4.7500	20.9865	29.4482	4.9670	0.000
4.7500	21.3976	29.8667	5.0370	0.000
4.7500	21.8087	30.2852	5.1070	0.000
4.7500	22.2198	30.7037	5.1770	0.000
4.7500	22.6309	31.1222	5.2470	0.000
4.7500	23.0420	31.5407	5.3170	0.000
4.7500	23.4531	31.9592	5.3870	0.000
4.7500	23.8642	32.3777	5.4570	0.000
4.7500	24.2753	32.7962	5.5270	0.000
4.7500	24.6864	33.2147	5.5970	0.000
4.7500	25.0975	33.6332	5.6670	0.000
4.7500	25.5086	34.0517	5.7370	0.000
4.7500	25.9197	34.4702	5.8070	0.000
4.7500	26.3308	34.8887	5.8770	0.000
4.7500	26.7419	35.3072	5.9470	0.000
4.7500	27.1530	35.7257	6.0170	0.000
4.7500	27.5641	36.1442	6.0870	0.000
4.7500	27.9752	36.5627	6.1570	0.000
4.7500	28.3863	36.9812	6.2270	0.000
4.7500	28.7974	37.3997	6.2970	0.000
4.7500	29.2085	37.8182	6.3670	0.000
4.7500	29.6196	38.2367	6.4370	0.000
4.7500	30.0307	38.6552	6.5070	0.000
4.7500	30.4418	39.0737	6.5770	0.000
4.7500	30.8529	39.4922	6.6470	0.000
4.7500	31.2640	39.9107	6.7170	0.000
4.7500	31.6751	40.3292	6.7870	0.000
4.7500	32.0862	40.7477	6.8570	0.000
4.7500	32.4973	41.1662	6.9270	0.000
4.7500	32.9084	41.5847	6.9970	0.000
4.7500	33.3195	42.0032	7.0670	0.000
4.7500	33.7306	42.4217	7.1370	0.000
4.7500	34.1417	42.8402	7.2070	0.000
4.7500	34.5528	43.2587	7.2770	0.000
4.7500	34.9639	43.6772	7.3470	0.000
4.7500	35.3750	44.0957	7.4170	0.000
4.7500	35.7861	44.5142	7.4870	0.000
4.7500	36.1972	44.9327	7.5570	0.000
4.7500	36.6083	45.3512	7.6270	0.000
4.7500	37.0194	45.7697	7.6970	0.000
4.7500	37.4305	46.1882	7.7670	0.000
4.7500	37.8416	46.6067	7.8370	0.000
4.7500	38.2527	47.0252	7.9070	0.000
4.7500	38.6638	47.4437	7.9770	0.000
4.7500	39.0749	47.8622	8.0470	0.000
4.7500	39.4860	48.2807	8.1170	0.000
4.7500	39.8971	48.6992	8.1870	0.000
4.7500	40.3082	49.1177	8.2570	0.000
4.7500	40.7193	49.5362	8.3270	0.000
4.7500	41.1304	49.9547	8.3970	0.000
4.7500	41.5415	50.3732	8.4670	0.000
4.7500	41.9526	50.7917	8.5370	0.000
4.7500	42.3637	51.2102	8.6070	0.000
4.7500	42.7748	51.6287	8.6770	0.000
4.7500	43.1859	52.0472	8.7470	0.000
4.7500	43.5970	52.4657	8.8170	0.000
4.7500	44.0081	52.8842	8.8870	0.000
4.7500	44.4192	53.3027	8.9570	0.000
4.7500	44.8303	53.7212	9.0270	0.000
4.7500	45.2414	54.1397	9.0970	0.000
4.7500	45.6525	54.5582	9.1670	0.000
4.7500	46.0636	54.9767	9.2370	0.000
4.7500	46.4747	55.3952	9.3070	0.000
4.7500	46.8858	55.8137	9.3770	0.000
4.7500	47.2969	56.2322	9.4470	0.000
4.7500	47.7080	56.6507	9.5170	0.000
4.7500	48.1191	57.0692	9.5870	0.000
4.7500	48.5302	57.4877	9.6570	0.000
4.7500	48.9413	57.9062	9.7270	0.000
4.7500	49.3524	58.3247	9.7970	0.000
4.7500	49.7635	58.7432	9.8670	0.000
4.7500	50.1746	59.1617	9.9370	0.000
4.7500	50.5857	59.5802	10.0070	0.000
4.7500	50.9968	60.0000	10.0770	0.000
4.7500	51.4079	60.4185	10.1470	0.000
4.7500	51.8190	60.8370	10.2170	0.000
4.7500	52.2301	61.2555	10.2870	0.000
4.7500	52.6412	61.6740	10.3570	0.000
4.7500	53.0523	62.0925	10.4270	0.000
4.7500	53.4634	62.5110	10.4970	0.000
4.7500	53.8745	62.9295	10.5670	0.000
4.7500	54.2856	63.3480	10.6370	0.000
4.7500	54.6967	63.7665	10.7070	0.000
4.7500	55.1078	64.1850	10.7770	0.000
4.7500	55.5189	64.6035	10.8470	0.000
4.7500	55.9300	65.0220	10.9170	0.000
4.7500	56.3411	65.4405	10.9870	0.000
4.7500	56.7522	65.8590	11.0570	0.000
4.7500	57.1633	66.2775	11.1270	0.000
4.7500	57.5744	66.6960	11.1970	0.000
4.7500	57.9855	67.1145	11.2670	0.000
4.7500	58.3966	67.5330	11.3370	0.000
4.7500	58.8077	67.9515	11.4070	0.000
4.7500	59.2188	68.3700	11.4770	0.000
4.7500	59.6299			

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000

0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

0.0000
1.0000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000

0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

0.0000
1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 7

PSCALE= 0.00 PLOWER= 0.00 DAMPF= 7.000 NSAVE= 1

NMAX= 0 MFORCE= 0 NEX= 2

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE
GAS CONSTANT
AIR FRACTION
FLOW RATE
ROTOR TOTAL PRESSURE
INLET TOTAL TEMPERATURE
INLET INCHES
P IN/P INCHES

= 51125063306J
= 53.62907
= 34.3820
= 12129.9
= 518.708
= .93188

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1270	12.1422
6.1270	12.0127
7.1270	12.0127
8.1270	12.1327
9.1270	12.0127
10.1270	12.0127
11.1270	12.0127
12.1270	12.0127
13.1270	12.0127
14.1270	12.0127

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1270	557.713
6.1270	557.713
7.1270	557.713
8.1270	557.713
9.1270	557.713
10.1270	557.713
11.1270	557.713
12.1270	557.713
13.1270	557.713
14.1270	557.713

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	4EAM PRES	PEAK PRES
6.1270	14.9272	19.2422
7.1270	14.9272	19.2422
8.1270	14.9272	19.2422
9.1270	14.9272	19.2422
10.1270	14.9272	19.2422
11.1270	14.9272	19.2422
12.1270	14.9272	19.2422

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	557.175
7.1270	557.175
8.1270	557.175
9.1270	557.175
10.1270	557.175
11.1270	557.175
12.1270	557.175

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.1270	1.117
8.1270	1.117
9.1270	1.117

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.7213
-8.0010	13.9153
-7.7510	14.1634
-7.5010	14.5205
-7.2510	15.0138
-7.0010	15.7374
-6.5010	16.1875
-6.2510	16.4445
-6.0010	16.8250
-5.7510	16.5037
-5.5010	16.5037

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.6493	16.3653
-2.5080	16.3653

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MIJ ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.0000	1.0000	-0.0000	-0.0000	-0.0000
8	0.0000	1.0000	-0.0000	-0.0000	-0.0000
9	0.0000	1.0000	-0.0000	-0.0000	-0.0000
10	0.0500	1.0000	-0.0000	-0.0000	-0.0000
11	0.0500	1.0000	-0.0000	-0.0000	-0.0000
12	0.0500	1.0000	-0.0000	-0.0000	-0.0000
13	0.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 2

 TEST POINT TITLE
 GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P INLET ANGLE
 P INLET INCHES

511253700263
 51.4915
 1.0332
 12.1397
 15.16708
 1.93106

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
1	1.482
2	1.472
3	1.462
4	1.452
5	1.442
6	1.432
7	1.422
8	1.412
9	1.402

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
1	1.072
2	1.062
3	1.052
4	1.042
5	1.032
6	1.022
7	1.012
8	1.002
9	0.992

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
1	1.072	1.072
2	1.062	1.062
3	1.052	1.052
4	1.042	1.042
5	1.032	1.032
6	1.022	1.022
7	1.012	1.012

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
1	1.072
2	1.062
3	1.052
4	1.042
5	1.032
6	1.022
7	1.012

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
1	1.072
2	1.062
3	1.052

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.8074
-8.0010	14.0043
-7.7510	14.2151
-7.5010	14.5787
-7.2510	15.2797
-7.0010	15.8435
-6.7510	16.1903
-6.5010	16.3041
-6.2510	16.5692
-6.0010	16.5745
-5.7510	16.9329
-5.5674	16.7016
-5.5190	16.7016

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	16.5685
-5.080	16.5685

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. ADD. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.0000	1.0000	-0.0000	-0.0000	-0.0000
8	0.0000	1.0000	-0.0000	-0.0000	-0.0000
9	0.0000	1.0000	-0.0000	-0.0000	-0.0000
10	0.0000	1.0000	-0.0000	-0.0000	-0.0000
11	0.0500	1.0000	-0.0000	-0.0000	-0.0000
12	0.0500	1.0000	-0.0000	-0.0000	-0.0000
13	0.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NUMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 3

TEST POINT TITLE
 = 511250901560
 = 57.4918
 = 33.99563
 = 33.1232
 = 121.6944
 = 14.6708
 = 18.95108
 = .93442

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(STO)
 ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	19.1620
5.5000	19.0719
5.8750	19.3249
6.2500	19.1261
7.0000	19.0315
7.7500	19.3754
8.1250	19.1743

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	256.9289
5.5000	252.1283
5.8750	256.1299
6.2500	251.2254
7.0000	257.9278
7.7500	272.441
8.1250	280.864

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1276	19.0410	19.2877
6.4560	19.2212	19.4041
6.8050	19.1413	19.3763
7.1490	19.1116	19.3413
7.4930	19.0917	19.3119
7.8220	19.0719	19.2877
8.1510	19.0523	19.2699

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1276	259.525
6.4560	261.620
6.8050	252.904
7.1490	257.211
7.4930	257.517
7.8220	272.420
8.1510	277.430

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.191
7.1490	1.250
6.4560	4.274

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.3604
-8.0010	14.0533
-7.7510	14.2460
-7.5010	14.3162
-7.2510	15.3329
-6.7510	15.2354
-6.5010	16.3267
-6.2510	16.3143
-5.7510	16.3943
-2.5574	16.8157
-1.5190	16.3157

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8449	16.6812
-1.5080	16.6912

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID DEVIATION	ADD. FACTOR	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	0.000	-0.000	-0.000
8	0.0000	1.0000	-0.000	0.000	-0.000	-0.000
9	0.0000	1.0000	-0.000	0.000	-0.000	-0.000
10	0.0000	1.0000	-0.000	0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NPUMP=	0												

TEST DATA PRINTOUT FOR POINT NO. 4

TEST POINT TITLE
GAS CONSTANT
AIR MASS FRACTION
FLOW RATE
ROTOR SPEED
INLET TOTAL PRESSURE
INLET TOTAL TEMPERATURE
P IN/PT IN(SID)
P IN/PT IN(SID)
= 51.1250002360
= 53.4934
= 22.15549
= 12.143.5
= 51.6944
= 51.6700
= .93192
= .93562

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRE-SURE
5.1250	19.1602
2.1250	19.0797
3.1250	19.1193
6.1250	19.1277
9.1250	19.0323
7.1250	19.3062
8.1250	19.0718
4.1250	19.0779

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	59.125
2.1250	58.493
3.1250	58.150
6.1250	58.1297
9.1250	58.1250
7.1250	58.1222
8.1250	58.1240
4.1250	58.1290
1.1250	58.1771

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	19.0474	19.2044
9.1270	19.0274	19.3120
7.1270	19.0274	19.3183
8.1270	19.0274	19.3240
5.1270	19.0274	19.3312
4.1270	19.0274	19.3301
3.1270	19.0274	19.3301

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	59.779
9.1270	59.041
7.1270	59.041
8.1270	59.293
5.1270	59.293
4.1270	59.293
3.1270	59.293

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.1270	1.382
8.1270	1.552
6.1270	4.292

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.9150
-8.0010	14.0930
-7.7510	14.2713
-7.5010	14.6127
-7.2510	15.3521
-7.0010	15.8979
-6.7510	16.2865
-6.5010	16.3933
-6.2510	16.6623
-6.0010	16.6385
-5.7510	17.0372
-2.5674	16.9020
-1.5190	16.9020

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8439	16.7681
-1.5080	16.7681

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	0.1000	.5000	-0.000	-0.000	-0.000
9	0.0000	.5000	-0.000	-0.000	-0.000
10	0.0000	1.0000	-0.000	-0.000	-0.000
11	.0500	1.0000	-0.000	-0.000	-0.000
12	.0500	1.0000	-0.000	-0.000	-0.000
13	.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NHACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 5

TEST POINT TITLE
 = 511251303060
 = 53.4935
 = 31.9558
 = 121.45.3
 = 14.6944
 = 518.708
 = .95884
 = .93660

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 I IN/T IN(STD)
 P IN/P IN(STD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
2.1250	19.1754
3.5000	19.1028
5.8750	19.3409
8.2500	19.1874
9.6250	19.1213
7.0000	19.0626
7.3750	19.4092
7.7500	19.2128
8.1250	19.0808

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
2.1250	558.230
3.5000	559.613
5.8750	562.919
8.2500	561.187
9.6250	564.716
7.0000	570.189
7.3750	576.721
7.7500	583.751

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	19.0258	19.2875
6.4660	19.2308	19.4365
6.8050	19.1633	19.4057
7.1440	19.0968	19.3503
7.4830	19.0623	19.3371
7.8220	19.0347	19.2892
8.1610	19.0184	19.2831

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	559.953
6.4660	562.273
6.8050	563.261
7.1440	565.343
7.4830	569.473
7.8220	574.239
8.1610	576.530

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.9220	1.679
7.1440	1.618
6.4660	4.369

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.9695
-8.0010	14.1249
-7.5010	14.3044
-7.2510	14.3844
-7.0010	15.9112
-6.7510	16.3084
-6.5010	16.4098
-6.2510	16.7031
-6.0010	16.6618
-5.7510	17.0769
-5.5190	16.9828

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	16.8417
-2.5088	16.8417

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.00000	-0.0000	-0.0000	-0.0000
2	0.0000	1.00000	-0.0000	-0.0000	-0.0000
3	0.0000	1.00000	-0.0000	-0.0000	-0.0000
4	0.0000	1.00000	-0.0000	-0.0000	-0.0000
5	0.0000	1.00000	-0.0000	-0.0000	-0.0000
6	0.0000	1.00000	-0.0000	-0.0000	-0.0000
7	0.0000	1.00000	-0.0000	-0.0000	-0.0000
8	0.0000	1.00000	-0.0000	-0.0000	-0.0000
9	0.0000	1.00000	-0.0000	-0.0000	-0.0000
10	0.0000	1.00000	-0.0000	-0.0000	-0.0000
11	0.0500	1.00000	-0.0000	-0.0000	-0.0000
12	0.0500	1.00000	-0.0000	-0.0000	-0.0000
13	0.0500	1.00000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	0												

TEST DATA PRINTOUT FOR POINT NO. 9

TEST POINT TITLE
 = 511251103660
 = 53.4939
 = 11.3323
 = 12.1497
 = 14.6908
 = 19.9515
 = 19.9378

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P (IN/PSI)
 P (MM/P IN/PSI)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)
 RADIUS
 PRESSURE
 19.1819
 19.1169
 19.1339
 19.1396
 19.2590
 19.0711
 19.4228
 19.2369
 19.0785

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS
 TEMPERATURE
 5.1250 558.103
 6.1650 559.452
 7.1750 562.566
 8.1250 562.003
 9.1250 561.505
 10.1250 564.634
 11.1250 571.938
 12.1250 577.938
 13.1250 585.274

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS MEAN PRES PEAK PRES
 6.1270 19.0466 19.2800
 7.1650 19.2192 19.4352
 8.1650 19.1472 19.4096
 9.1430 19.1691 19.3497
 10.220 19.0021 19.3226
 11.0917 19.0917 19.3112
 12.1610 19.0147 19.3211

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS TEMPERATURE
 6.1270 559.822
 7.1650 562.193
 8.1650 563.493
 9.1430 565.822
 10.220 570.560
 11.0917 574.560
 12.1610 577.068

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS ANGLE
 7.8220 2.266
 8.1650 2.191
 9.1650 2.493

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	14.0282
-8.0010	14.1478
-7.7510	14.3389
-7.5010	14.6438
-7.2510	15.3957
-7.0010	15.9031
-6.7510	15.2959
-6.5010	16.3830
-6.2510	16.7287
-6.0010	16.6616
-5.7510	17.1017
-5.5674	17.0378
-5.5190	17.0378

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	16.8915
-5.0880	16.8915

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. DEVIATION	DIST. FACTOR	FRAC. T.E. BLOCKAGE
1	0.0000	1.00000	-0.0000	-0.0000	-0.0000
2	0.0000	1.00000	-0.0000	-0.0000	-0.0000
3	0.0000	1.00000	-0.0000	-0.0000	-0.0000
4	0.0000	1.00000	-0.0000	-0.0000	-0.0000
5	0.0000	1.00000	-0.0000	-0.0000	-0.0000
6	0.0000	1.00000	-0.0000	-0.0000	-0.0000
7	0.0000	1.00000	-0.0000	-0.0000	-0.0000
8	0.1000	.50000	-0.0000	-0.0000	-0.0000
9	0.0000	.50000	-0.0000	-0.0000	-0.0000
10	0.0500	1.00000	-0.0000	-0.0000	-0.0000
11	0.0500	1.00000	-0.0000	-0.0000	-0.0000
12	0.0500	1.00000	-0.0000	-0.0000	-0.0000
13	0.0500	1.00000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

TEST DATA PRINTOUT FOR POINT NO. 7

TEST POINT TITLE
GAS CONSTANT
ATR MASS FRACTION
FLOW RATE
ROTOR SPEED
INLET TOTAL TEMPERATURE
INLET TOTAL TEMPERATURE
P IN/O IN(SID)

511251234060
53.49222
19.49522
30.14370
114.19744
51.80351
0.93

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	19.1790
5.4450	19.1167
5.7650	19.0544
6.0850	18.9921
6.4050	18.9298
6.7250	18.8675
7.0450	18.8052
7.3650	18.7429
7.6850	18.6806
8.0050	18.6183

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	528.131
5.4450	522.777
5.7650	517.423
6.0850	512.069
6.4050	506.715
6.7250	501.361
7.0450	496.007
7.3650	490.653
7.6850	485.299
8.0050	479.945

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	19.0275	19.2397
6.4690	19.1370	19.4503
6.8110	19.2465	19.6609
7.1530	19.3560	19.8715
7.4950	19.4655	20.0821
7.8370	19.5750	20.2927
8.1790	19.6845	20.5033

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	560.116
6.4690	563.528
6.8110	566.940
7.1530	570.352
7.4950	573.764
7.8370	577.176
8.1790	580.588

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	2.151
7.1440	2.131
6.4660	2.111

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	14.0811
-8.0010	14.1654
-7.7510	14.3726
-7.5010	14.6442
-7.2510	15.3835
-7.0010	15.8612
-6.7510	16.2448
-6.5010	16.3268
-6.2510	16.7107
-6.0010	16.6310
-5.7510	17.0980
-5.5010	17.0538
-5.2510	17.0538

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	16.9034
-2.5080	16.9034

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. I.E. BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	0.1000	.5000	-0.000	-0.000	-0.000
9	0.0000	.5000	-0.000	-0.000	-0.000
10	0.0000	.5000	-0.000	-0.000	-0.000
11	.0500	1.0000	-0.000	-0.000	-0.000
12	.0500	1.0000	-0.000	-0.000	-0.000
13	.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

70% SPEEDLINE PHASE II INPUT DATA

PROGRAM J00303 - AXIAL COMPRESSOR TEST DATA ANALYSIS
 FIXED DATA PRINTOUT

MTEC CONFIGURATION #1, 70% SPEED, ACROSS-BLADE ANALYSIS, 24MAR76

NUMBER OF STATIONS 12
 MAXIMUM NUMBER OF APPROXIMATIONS 120
 TOTAL PERCENTAGE USED FOR PROFILE EXIT DATA 100
 STATION NUMBER FOR BLADES 1000
 NUMBER OF STATION 1000
 MAXIMUM NUMBER OF LINES PER PAGE 2000

ANNULUS SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

RSIN X SIN
 16.9000 -16.9500
 15.1000 -15.2500

STATION 2 SPECIFIED BY 2 POINTS

RSIN X SIN
 9.0000 -14.9000
 9.0000 -14.8500

STATION 3 SPECIFIED BY 2 POINTS

RSIN X SIN
 6.0000 -10.5500
 6.0000 -10.5000

STATION 4 SPECIFIED BY 2 POINTS

RSIN X SIN
 1.5000 -9.7500
 0.5000 -12.1000

STATION 5 SPECIFIED BY 2 POINTS

RSIN X SIN
 2.0000 -7.1137
 0.5000 -9.6693

STATION 6 SPECIFIED BY 2 POINTS

RSIN X SIN
 2.0000 -8.6500
 0.5000 -8.6500

STATION 7 SPECIFIED BY 6 POINTS

RSIN X SIN
 2.0000 -8.6500
 0.5000 -8.6500
 0.5000 -8.6500
 0.5000 -8.6500
 0.5000 -8.6500

STATION 8 SPECIFIED BY 2 POINTS

RSIN	XSTN
4.00000	0.00000
4.00000	0.00000
4.00000	0.00000
4.00000	0.00000
4.00000	0.00000
4.00000	0.00000
4.00000	0.00000
4.00000	0.00000
4.00000	0.00000
4.00000	0.00000

STATION 9 SPECIFIED BY 2 POINTS

RSIN	XSTN
4.05884	-2.17000
4.02000	-2.12000
4.00000	-2.10000
4.00000	-2.10000

STATION 10 SPECIFIED BY 2 POINTS

RSIN	XSTN
4.00000	-2.12000
4.00000	-2.12000
4.00000	-2.12000
4.00000	-2.12000

STATION 11 SPECIFIED BY 2 POINTS

RSIN	XSTN
4.00000	-2.19222
4.00000	-2.21222

STATION 12 SPECIFIED BY 2 POINTS

RSIN	XSTN
4.00000	-2.12000
4.00000	-2.12000

STATION 13 SPECIFIED BY 2 POINTS

RSIN	XSTN
4.00000	0.00000
4.00000	0.00000

STATION CALCULATION SPECIFICATION AND BLANKING DATA

STATION	NCALC	NDATA	NBL
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0

STATION 7 NCALC = 1 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
3.7307	37.0	1.5001	.0431	.2420
3.7307	42.0	1.1119	.0430	.2403
3.7307	45.0	3.0093	.0430	.2380
3.7307	49.0	1.6171	.0430	.2360
3.7307	52.0	1.8921	.0430	.2340
3.7307	53.0	2.9390	.0430	.2320
3.7307	54.0	2.9390	.0430	.2300
3.7307	56.0	6.0574	.0430	.2279

STATION 8 NCALC = 4 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2.5305	52.0	4.9172	.0306	.3309
3.0305	56.0	4.9172	.0306	.3260
3.0305	42.0	3.1521	.0306	.3210
3.0305	41.0	2.0529	.0306	.3170
3.0305	42.0	3.3699	.0306	.3130
3.0305	43.0	1.2120	.0306	.3090
3.0305	44.0	2.4550	.0306	.3050
3.0305	45.0	2.5479	.0306	.3010
3.0305	46.0	12.4891	.0306	.2970

STATION 9 NCALC = 0 NDATA = 3 NBL = 2

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
1.8303	45.0	4.149	.0166	.1800
3.0303	40.0	3.221	.0166	.1770
3.0303	30.0	2.0919	.0166	.1740
3.0303	35.0	3.517	.0166	.1710
3.0303	37.0	2.7533	.0166	.1680
3.0303	40.0	7.6059	.0166	.1650

STATION 11 NCALC = 3 NDATA = 11 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.7530	19.0	1.103	.00160	.0030
5.0530	1.0	1.103	.00160	.0015
5.0530	1.0	1.677	.00160	.0000
5.0530	1.0	2.267	.00160	.0000
5.0530	1.0	3.155	.00160	.0000
5.0530	1.0	3.772	.00160	.0000
5.0530	1.0	4.071	.00160	.0000
5.0530	1.0	4.736	.00160	.0000

STATION 12 NCALC = 0 NDATA = 0 NBL = 1

STATION 13 NCALC = 0 NDATA = 0 NBL = 1

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000

0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

0.0000
1.0000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000

0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

0.0000
1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 7

PSCALE= 0.00 PLOWER= 0.00 DAMPF= 7.000 NSAVE= 1

NMAX= 0 MFORCE= 0 NEX= 2

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE
GAS CONSTANT
GAS FRACTION
FLOW RATE
ROTOR SPEED
INLET TOTAL PRESSURE
INLET TEMPERATURE
P IN/P IN(S)

51126010070
53.4650
.99646
41.3256
141.6944
516.708
.95163
.92145

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	20.1843
5.1500	20.1923
5.1750	20.1591
5.2000	20.1170
5.2250	20.1164
5.2500	20.1761
5.2750	20.2593
5.3000	20.9324
5.3250	20.7186

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	573.054
5.1500	574.203
5.1750	577.503
5.2000	575.324
5.2250	576.534
5.2500	585.232
5.2750	585.602
5.3000	585.903
5.3250	594.953

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	20.7396	21.0952
6.1500	21.0343	21.4436
6.1750	21.2409	21.8226
6.2000	21.4233	21.9385
6.2250	21.8844	21.9214
6.2500	20.8591	20.7609

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	574.571
6.1500	575.314
6.1750	577.495
6.2000	574.653
6.2250	582.903
6.2500	587.574

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0220	1.820
7.1500	1.731
6.0560	1.747

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.2455
-8.9010	13.5858
-7.7510	13.9173
-7.5010	14.3943
-7.2510	15.5444
-7.0010	16.2738
-6.7510	16.8061
-6.5010	16.8979
-6.2510	17.2876
-6.0010	17.3207
-5.7510	17.7809
-5.5674	17.3483
-5.5190	17.3483

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	17.1538
-5.5099	17.1538

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TIE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	0.0000	1.0000	-0.000	-0.000	-0.000
9	0.0000	1.0000	-0.000	-0.000	-0.000
10	0.0500	1.0000	-0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

TEST DATA PRINTOUT FOR POINT NO. 2

TEST POINT TITLE = 5112602J0270

GAS CONSTANT = 53.4659
 AIR MASS FRACTION = 19.9644
 FLOWRATE = 40.2509
 ROTOR SPEED = 14.1687
 INLET TOTAL PRESSURE = 518.6944
 INLET TOTAL TEMPERATURE = 518.708
 P INLET (INSTR) = 518.711
 P INLET (STATIC) = .92337

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	21.0547
6.1250	20.9401
7.1250	21.2281
8.1250	21.0072
9.1250	21.2595
10.1250	21.0321
11.1250	21.3424
12.1250	21.3905
13.1250	20.9603

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	573.4119
6.1250	574.7329
7.1250	576.4029
8.1250	576.0072
9.1250	579.1712
10.1250	581.1412
11.1250	581.3393
12.1250	579.3333
13.1250	579.3333

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1250	20.7035	21.1225
7.1250	20.9722	21.3125
8.1250	20.7525	21.2614
9.1250	21.1023	21.7223
10.1250	20.9237	21.1562
11.1250	20.7217	20.9256

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1250	575.153
7.1250	577.733
8.1250	578.413
9.1250	580.123
10.1250	580.713
11.1250	583.533

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.1250	.079
8.1250	1.547
9.1250	3.357

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.3635
-8.0010	13.7005
-7.7510	14.0109
-7.5010	14.5054
-7.2510	15.5802
-7.0010	16.4631
-6.7510	16.9705
-6.5010	17.0315
-6.2510	17.4403
-6.0010	17.4375
-5.7510	17.9884
-5.5010	17.9885
-5.2510	17.6385
-5.0010	17.6385

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.6499	17.4580
-2.5080	17.4580

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	-0.000	-0.0000	-0.000
2	0.0000	1.0000	-0.000	-0.0000	-0.000
3	0.0000	1.0000	-0.000	-0.0000	-0.000
4	0.0000	1.0000	-0.000	-0.0000	-0.000
5	0.0000	1.0000	-0.000	-0.0000	-0.000
6	0.0000	1.0000	-0.000	-0.0000	-0.000
7	0.0000	1.0000	-0.000	-0.0000	-0.000
8	0.1000	1.0000	-0.000	-0.0000	-0.000
9	0.0000	1.0000	-0.000	-0.0000	-0.000
10	0.0000	1.0000	-0.000	-0.0000	-0.000
11	0.0500	1.0000	-0.000	-0.0000	-0.000
12	0.0500	1.0000	-0.000	-0.0000	-0.000
13	0.0500	1.0000	-0.000	-0.0000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

TEST DATA PRINTOUT FOR POINT NO. 3

TEST POINT TITLE
 = 511260301470
 = 53.4673
 = 39.9535
 = 14.1642
 = 51.8708
 = .92460

GAS CONSTANT
 FLOW RATE FRACTION
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(SID)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	21.0994
6.1250	21.0625
7.1250	21.0256
8.1250	21.0256
9.1250	21.0256
10.1250	21.0256
11.1250	21.0256
12.1250	21.0256
13.1250	21.0256
14.1250	21.0256

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	573.257
6.1250	574.527
7.1250	577.710
8.1250	577.710
9.1250	581.100
10.1250	586.100
11.1250	590.100
12.1250	590.100
13.1250	601.629
14.1250	601.629

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	20.8123	21.1501
7.1270	21.1001	21.3628
8.1270	21.0769	21.4028
9.1270	21.1072	21.4828
10.1270	20.9872	21.2801
11.1270	20.8051	21.0017

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	575.097
7.1270	578.442
8.1270	580.715
9.1270	584.837
10.1270	591.572
11.1270	594.849

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0220	1.853
7.1500	1.859
6.6500	1.959

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.4287
-8.0010	13.7716
-7.7510	14.0654
-7.5010	14.5941
-7.2510	15.6023
-7.0010	19.5373
-6.7510	17.0358
-6.5010	17.0990
-6.2510	17.5119
-6.0010	17.4982
-5.7510	17.9515
-2.5674	17.7825
-1.5190	17.7855

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8433	17.6061
-1.5080	17.5061

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	0.000	0.000	0.000
2	0.0000	1.0000	0.000	0.000	0.000
3	0.0000	1.0000	0.000	0.000	0.000
4	0.0000	1.0000	0.000	0.000	0.000
5	0.0000	1.0000	0.000	0.000	0.000
6	0.0000	1.0000	0.000	0.000	0.000
7	0.0000	1.0000	0.000	0.000	0.000
8	0.1000	0.5000	0.000	0.000	0.000
9	0.0000	0.5000	0.000	0.000	0.000
10	0.0000	0.5000	0.000	0.000	0.000
11	0.0200	1.0000	0.000	0.000	0.000
12	0.0500	1.0000	0.000	0.000	0.000
13	0.0500	1.0000	0.000	0.000	0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	0												

TEST DATA PRINTOUT FOR POINT NO. 4

TEST POINT TITLE
 = 511260402070
 = 53.4663
 = 39.99642
 = 14.1842
 = 14.6944
 = 51.89708
 = 51.95119
 = .92261

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(SD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)
 RADIUS
 PRESSURE
 5.1250 21.1871
 6.1250 21.1901
 7.1250 21.1897
 8.1250 21.1871
 9.1250 21.1887
 10.1250 21.1824
 11.1250 21.1635

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)
 RADIUS
 TEMPERATURE
 5.1250 573.503
 6.1250 572.561
 7.1250 571.564
 8.1250 570.564
 9.1250 569.564
 10.1250 568.564
 11.1250 567.564

STAGE OUTLET TOTAL PRESSURES (7 POINTS)
 RADIUS MEAN PRES PEAK PRES
 6.1250 20.8327 21.1670
 7.1250 21.1216 21.1804
 8.1250 21.0771 21.1828
 9.1250 21.0326 21.1852
 10.1250 20.9881 21.1876
 11.1250 20.9436 21.1900

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)
 RADIUS TEMPERATURE
 6.1250 575.559
 7.1250 576.525
 8.1250 577.491
 9.1250 578.457
 10.1250 579.423
 11.1250 580.389

STAGE OUTLET FLOW ANGLES (3 POINTS)
 RADIUS ANGLE
 7.8220 1.339
 7.1250 1.268
 6.4250 4.093

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.4815
-8.0010	13.9239
-7.7510	14.1095
-7.5010	14.7151
-7.0010	15.0756
-6.7510	16.5881
-6.5010	17.1317
-6.2510	17.5520
-6.0010	17.5080
-5.7510	17.9828
-2.5674	17.8888
-2.5190	17.8888

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	17.7071
-2.5088	17.7071

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.1000	1.5000	-0.000	-0.000	-0.000
7	0.0000	.5000	-0.000	-0.000	-0.000
8	0.0000	.5000	-0.000	-0.000	-0.000
9	0.0500	1.0000	-0.000	-0.000	-0.000
10	.0500	1.0000	-0.000	-0.000	-0.000
11	.0500	1.0000	-0.000	-0.000	-0.000
12	.0500	1.0000	-0.000	-0.000	-0.000
13	.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	= 0												

TEST DATA PRINTOUT FOR POINT NO. 5

TEST POINT TITLE
 = 511260502670
 = 53.4660
 = 34.9052
 = 14.1652
 = 14.1652
 = 51.8709
 = .95223
 = .92660

GAS CONSTANT
 ATZ MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/MP IN(5/3)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)
 RADIUS PRESSURE
 5. 1250 21.1009
 6. 1270 20.9567
 7. 1290 21.3175
 8. 1310 21.1140
 9. 1330 21.3295
 10. 1350 21.0183
 11. 1370 21.5060
 12. 1390 21.1822
 13. 1410 21.1090

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)
 RADIUS TEMPERATURE
 5. 1250 573.289
 6. 1270 575.057
 7. 1290 578.021
 8. 1310 577.719
 9. 1330 584.392
 10. 1350 583.372
 11. 1370 593.030
 12. 1390 606.330

STAGE OUTLET TOTAL PRESSURES (7 POINTS)
 RADIUS MEAN PRES PEAK PRES
 6. 1270 20.8478 21.1660
 7. 1290 21.1240 21.4216
 8. 1310 21.4077 21.7330
 9. 1330 21.0286 21.4192
 10. 1350 20.8667 21.2669
 11. 1370 20.6932 21.1631

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)
 RADIUS TEMPERATURE
 6. 1270 575.272
 7. 1290 578.042
 8. 1310 579.975
 9. 1330 581.295
 10. 1350 586.594
 11. 1370 593.433
 12. 1390 597.289

STAGE OUTLET FLOW ANGLES (3 POINTS)
 RADIUS ANGLE
 7. 1290 1.879
 8. 1310 1.876
 9. 1330 4.120

CASING STATIC PRESSURES (13 POINTS)

X-COORD.	PRESSURE
-8.7510	13.5457
-8.0010	13.8794
-7.7510	14.1585
-7.5010	15.9244
-7.2510	16.5969
-6.9010	17.1379
-6.5010	17.5135
-6.2510	17.9140
-5.7510	17.9749
-5.5130	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8439	17.7852
-.5980	17.7852

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ARD. DEVIATION	DIST. FACTOR	FRAC. IEE BLOCKAGE
1	0.0000	1.0000	-3.000	0.0000	0.0000
2	0.0000	1.0000	-3.000	0.0000	0.0000
3	0.0000	1.0000	-3.000	0.0000	0.0000
4	0.0000	1.0000	-3.000	0.0000	0.0000
5	0.0000	1.0000	-3.000	0.0000	0.0000
6	0.0000	1.0000	-3.000	0.0000	0.0000
7	0.0000	1.0000	-3.000	0.0000	0.0000
8	0.0000	1.0000	-3.000	0.0000	0.0000
9	0.0000	1.0000	-3.000	0.0000	0.0000
10	0.0500	1.0000	-3.000	0.0000	0.0000
11	0.0500	1.0000	-3.000	0.0000	0.0000
12	0.0500	1.0000	-3.000	0.0000	0.0000
13	0.0500	1.0000	-3.000	0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	= 0												

TEST DATA PRINTOUT FOR POINT NO. 6

TEST POINT TITLE

GAS CONSTANT
 AIR MASS FRACTION
 FLOW AREA
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 INLET INCHES
 INLET INCHES

F 511260603170
 F 53.4560
 F 37.9904
 F 14.16517
 F 14.6944
 F 51.8700
 F .92785

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	21.09986
5.1500	21.09773
5.1750	21.09560
5.2000	21.09347
5.2250	21.09134
5.2500	21.08921
5.2750	21.08708
5.3000	21.08495
5.3250	21.08282
5.3500	21.08069

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	573.3273
5.1500	573.3273
5.1750	573.3273
5.2000	573.3273
5.2250	573.3273
5.2500	573.3273
5.2750	573.3273
5.3000	573.3273
5.3250	573.3273
5.3500	573.3273

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1750	21.0819	21.1885
6.1500	21.0819	21.1885
6.1250	21.0819	21.1885
6.1000	21.0819	21.1885
6.0750	21.0819	21.1885
6.0500	21.0819	21.1885
6.0250	21.0819	21.1885

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1750	575.2357
6.1500	575.2357
6.1250	575.2357
6.1000	575.2357
6.0750	575.2357
6.0500	575.2357
6.0250	575.2357

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0250	151
7.1500	2.098
6.4800	6.136

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.6124
-8.0010	13.9229
-7.2510	14.2033
-7.5010	14.8319
-7.2510	15.0245
-6.5010	15.9292
-6.7510	17.0421
-6.5010	17.1439
-6.2510	17.3495
-5.0010	17.4957
-5.7510	18.0276
-2.5130	18.0376

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8433	17.8435
-2.5000	17.8435

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. ADJ.	DIST. FACTOR	FRAC. TO BLOCKAGE
1	0.0000	1.0000	-0.000	0.0000	-0.0000
2	0.0000	1.0000	-0.000	0.0000	-0.0000
3	0.0000	1.0000	-0.000	0.0000	-0.0000
4	0.0000	1.0000	-0.000	0.0000	-0.0000
5	0.0000	1.0000	-0.000	0.0000	-0.0000
6	0.0000	1.0000	-0.000	0.0000	-0.0000
7	0.0000	1.0000	-0.000	0.0000	-0.0000
8	0.1000	.5000	-0.000	0.0000	-0.0000
9	0.0000	.5000	-0.000	0.0000	-0.0000
10	0.0500	1.0000	-0.000	0.0000	-0.0000
11	0.0500	1.0000	-0.000	0.0000	-0.0000
12	0.0500	1.0000	-0.000	0.0000	-0.0000
13	0.0500	1.0000	-0.000	0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	0												

TEST DATA PRINTOUT FOR POINT NO. 7

TEST POINT TITLE
 GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 I IN/1 IN(STD)
 P IN/P IN(STD)

5112607R3573
 53.4673
 37.3722
 14.1570
 14.6944
 51.8108
 .92527

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)
 RADIUS PRESSURE
 5.1250 21.0731
 3.5900 20.9573
 3.0750 21.2824
 6.2500 21.0933
 9.0000 20.9532
 7.0000 21.0499
 7.3750 21.1371
 9.1250 21.3772

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)
 RADIUS TEMPERATURE
 5.1250 573.3771
 3.5900 574.8552
 3.0750 575.8930
 6.2500 577.3363
 9.0000 581.2311
 7.0000 589.2313
 7.3750 596.1354
 9.1250 610.1354

STAGE OUTLET TOTAL PRESSURES (7 POINTS)
 RADIUS MEAN PRES PEAK PRES
 6.1250 20.6056 21.1363
 6.6500 21.0712 21.1440
 6.8125 20.9075 21.3582
 7.1625 20.8123 21.2922
 7.8250 20.8024 21.3150
 6.1513 20.5369 21.2324

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)
 RADIUS TEMPERATURE
 6.1250 575.2449
 6.6500 576.8902
 6.8125 579.3771
 7.1625 582.3302
 7.4225 586.3375
 6.1513 598.728

STAGE OUTLET FLOW ANGLES (3 POINTS)
 RADIUS ANGLE
 7.0223 2.316
 7.1543 2.164
 6.6500 4.170

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.5345
-9.0010	13.9607
-7.7510	14.2309
-7.5010	14.9202
-7.0010	15.9699
-6.7510	16.4687
-6.5010	16.9756
-6.2510	17.4664
-6.0010	17.9385
-5.7510	18.4429
-5.5010	18.9232
-5.2510	19.4559
-5.0010	19.9563

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8439	17.9619
-2.5980	17.3619

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. ADJ. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	0.0000	1.0000	-0.000	-0.000	-0.000
9	0.0000	1.0000	-0.000	-0.000	-0.000
10	0.0000	1.0000	-0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

75% SPEEDLINE PHASE II INPUT DATA

PROGRAM U00230 - AXIAL COMPRESSOR TEST DATA ANALYSIS
 FIXED DATA PRINTOUT

HTFC CONFIGURATION #1, 75% SPEED, ACROSS-BLADE ANALYSIS 23MAR76

13
 13200
 13200
 13200
 13200
 13200
 13200
 13200
 13200

NUMBER OF STATIONS
 NUMBER OF STAGES
 NUMBER OF INTERMEDIATE STATIONS
 NUMBER OF INTERMEDIATE STATIONS
 TOTAL PERCENTAGE OF STAGES
 STATION NUMBER FOR STAGE
 STATION NUMBER FOR STAGE
 NUMBER OF STAGES
 NUMBER OF STAGES
 NUMBER OF STAGES PER PAGE
 MPLOT

ANNULUS SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -14.4500
 13.5000 -18.4500

STATION 2 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -14.9000
 9.4000 -18.0000

STATION 3 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -12.6500
 8.9500 -12.2500

STATION 4 SPECIFIED BY 2 POINTS

RSTN XSTN
 1.5420 -2.7500
 8.5500 -11.1300

STATION 5 SPECIFIED BY 2 POINTS

RSTN XSTN
 2.0350 -2.1137
 8.5000 -2.2693

STATION 6 SPECIFIED BY 2 POINTS

RSTN XSTN
 2.3500 -2.6500
 8.5000 -2.6500

STATION 7 SPECIFIED BY 6 POINTS

RSTN XSTN
 2.6514 -6.1500
 2.8054 -5.2025
 2.9617 -5.2500
 3.1180 -5.1817
 3.2743 -5.1313
 3.4306 -5.0810

STATION 8 SPECIFIED BY 9 POINTS

RSTN	XSTN
4.4512	-5.3150
4.6000	-5.3000
4.8000	-5.2600
5.0000	-5.1920
5.1954	-5.1177
5.3592	-5.0275
5.7943	-5.3709
7.8661	-2.6015
8.5000	-5.7643

STATION 9 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.5534	-5.1700
5.2000	-5.0000
5.8000	-4.9500
6.5000	-5.3500

STATION 10 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.6435	-5.0250
5.2500	-4.7750
5.8200	-4.6500
6.5000	-4.3000

STATION 11 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.6314	-2.4999
6.5000	-2.2174

STATION 12 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7900	-0.9203
6.5000	-0.9200

STATION 13 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7305	0.6003
6.5000	0.6003

STATION CALCULATION SPECIFICATION AND BLADING DATA

STATION 2	NCALC = 0	NDATA = -0	NBL = -0
STATION 3	NCALC = 0	NDATA = -0	NBL = -0
STATION 4	NCALC = 0	NDATA = -0	NBL = -0
STATION 5	NCALC = 0	NDATA = -0	NBL = -0
STATION 6	NCALC = 0	NDATA = -0	NBL = -0

STATION 7 NCALC = 1 NDATA = 13 NBL = 1
 RADIUS BETA EPSILON BLOCKAGE THETA
 57.747 2.750 1.5001 0.2502 0.713
 50.000 2.750 1.5001 0.2502 0.713
 45.000 2.750 1.5001 0.2502 0.713
 40.000 2.750 1.5001 0.2502 0.713
 35.000 2.750 1.5001 0.2502 0.713
 30.000 2.750 1.5001 0.2502 0.713
 25.000 2.750 1.5001 0.2502 0.713
 20.000 2.750 1.5001 0.2502 0.713
 15.000 2.750 1.5001 0.2502 0.713
 10.000 2.750 1.5001 0.2502 0.713
 5.000 2.750 1.5001 0.2502 0.713
 0.000 2.750 1.5001 0.2502 0.713

STATION 8 NCALC = 4 NDATA = 13 NBL = 1
 RADIUS BETA EPSILON BLOCKAGE THETA
 63.05 2.751 1.723 0.2562 0.729
 60.00 2.751 1.723 0.2562 0.729
 55.00 2.751 1.723 0.2562 0.729
 50.00 2.751 1.723 0.2562 0.729
 45.00 2.751 1.723 0.2562 0.729
 40.00 2.751 1.723 0.2562 0.729
 35.00 2.751 1.723 0.2562 0.729
 30.00 2.751 1.723 0.2562 0.729
 25.00 2.751 1.723 0.2562 0.729
 20.00 2.751 1.723 0.2562 0.729
 15.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 5.00 2.751 1.723 0.2562 0.729
 0.00 2.751 1.723 0.2562 0.729

STATION 9 NCALC = 0 NDATA = 0 NBL = 2
 RADIUS BETA EPSILON BLOCKAGE THETA
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
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 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729

STATION 10 NCALC = 1 NDATA = 11 NBL = 2
 RADIUS BETA EPSILON BLOCKAGE THETA
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
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 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729

STATION 11 NCALC = 3 NDATA = 11 NBL = 1
 RADIUS BETA EPSILON BLOCKAGE THETA
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
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 10.00 2.751 1.723 0.2562 0.729
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 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729
 10.00 2.751 1.723 0.2562 0.729

STATION 12 NCALC = 0 NDATA = 0 NBL = 1

STATION 13 NCALC = 0 NDATA = 0 NBL = 1

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000
0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000
0.0000
1.0000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000
0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000
0.0000
1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 4
PSCALE= 0.00 PLOWER= 0.00 DAMPF= 7.000 NSAVE= 1
NMAX= 0 MFORCE= 0 NEX= 2

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE
 GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 TOTAL PRESSURE
 INLET TOTAL PRESSURE
 P IN/ IN(S/D)

601290130075
 53.4452
 45.2478
 14.6544
 518.208
 .90470

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
0	2.3167
1	2.29777
2	2.27779
3	2.25781
4	2.23783
5	2.21785
6	2.19787
7	2.17789
8	2.15791
9	2.13793

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
0	553
1	547.923
2	542.847
3	537.771
4	532.695
5	527.619
6	522.543
7	517.467
8	512.391
9	507.315

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
0	21.6007	22.2352
1	22.11002	22.4447
2	22.61927	22.6542
3	23.12852	22.8637
4	23.63777	23.0732
5	24.14702	23.2827
6	24.65627	23.4922
7	25.16552	23.7017

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
0	553.673
1	547.193
2	540.713
3	534.233
4	527.753
5	521.273
6	514.793
7	508.313

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
0	-1.340
1	1.467
2	3.534

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.3227
-8.7510	13.1917
-7.2510	14.2177
-7.2510	15.0075
-7.7510	16.1299
-6.7510	17.3331
-6.2510	18.1374
-6.2510	17.2696
-6.2510	17.6937
-6.2510	17.7423
-5.7510	13.4091
-5.7510	17.3253
-2.2510	17.9558

HUA STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.9499	17.7127
-2.5000	17.7127

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	0.000	0.0000	0.0000
2	0.0000	1.0000	0.000	0.0000	0.0000
3	0.0000	1.0000	0.000	0.0000	0.0000
4	0.0000	1.0000	0.000	0.0000	0.0000
5	0.0000	1.0000	0.000	0.0000	0.0000
6	0.0000	1.0000	0.000	0.0000	0.0000
7	0.0000	1.0000	0.000	0.0000	0.0000
8	0.0000	1.5000	0.000	0.0000	0.0000
9	0.0000	2.0000	0.000	0.0000	0.0000
10	0.0000	2.0000	0.000	0.0000	0.0000
11	0.0500	1.5000	0.000	0.0000	0.0000
12	0.0500	1.0000	0.000	0.0000	0.0000
13	0.0500	1.0000	0.000	0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	= 0												

TEST DATA PRINTOUT FOR POINT NO. 2

TEST POINT TITLE

601290200275
 E 53.4750
 E 49.1377
 E 12.232.1
 E 14.6730
 E 18.730
 E .90807

MASS CONSTANT
 FLOW RATE FRACTION
 FLOW AREA
 ROTOR TOTAL PRESSURE
 INLET TEMPERATURE
 INLET POINTS (3)
 P IN/P IN(SID)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	22.2573
5.2500	22.2499
5.3750	22.2426
5.5000	22.2353
5.6250	22.2280
5.7500	22.2207
5.8750	22.2134
6.0000	22.2061
6.1250	22.1988

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	24.1614
5.2500	24.1524
5.3750	24.1434
5.5000	24.1344
5.6250	24.1254
5.7500	24.1164
5.8750	24.1074
6.0000	24.0984
6.1250	24.0894

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	22.2033	22.2673
6.4350	22.1920	22.5449
6.8050	22.1787	22.4677
7.1330	22.1654	22.6046
7.4220	22.1521	22.5155
7.8220	22.1388	22.5274
8.1510	22.1255	22.2055

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	26.7057
6.4350	26.7997
6.8050	26.8937
7.1330	26.9877
7.4220	27.0817
7.8220	27.1757
8.1510	27.2697

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	-1.872
6.4350	3.323

CASING STATIC PRESSURES (13 POINTS):

X-COORD	PRESSURE
-8.7510	12.3904
-8.0010	13.4434
-7.7510	14.2475
-7.5010	14.9100
-7.2510	15.1165
-7.0010	15.7923
-6.7510	17.3455
-6.5010	17.4850
-6.2510	17.9090
-6.0010	18.5639
-5.7510	18.5290
-5.5190	18.2900

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	18.0662
-2.5080	18.0662

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. I/E BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	0.0000	1.0000	-0.000	-0.000	-0.000
9	0.0000	1.0000	-0.000	-0.000	-0.000
10	0.0500	1.0000	-0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	= 0												

TEST DATA PRINTOUT FOR POINT NO. 3

TEST POINT TITLE
 GAS CONSTANT
 FLOWMETER FRACTION
 ROTOR INLET TOTAL PRESSURE
 ROTOR INLET TOTAL TEMPERATURE
 P IN/P IN(SI)
 ROTOR JETLEY TOTAL PRESSURE (9 POINTS)
 PRESSURE
 RADIUS
 6.1200
 6.1200
 6.1200
 6.1200
 6.1200
 6.1200
 6.1200
 6.1200
 6.1200
 6.1200
 ROTOR JETLEY TOTAL TEMPERATURE (9 POINTS)
 TEMPERATURE
 621.417
 621.417
 621.417
 621.417
 621.417
 621.417
 621.417
 621.417
 621.417
 621.417
 STAGE OUTLET TOTAL PRESSURES (7 POINTS)
 RADIUS NEAR PSES PEAK PSES
 6.1200 22.1200
 6.1200 22.1200
 6.1200 22.1200
 6.1200 22.1200
 6.1200 22.1200
 6.1200 22.1200
 6.1200 22.1200
 STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)
 RADIUS TEMPERATURE
 6.1200 621.417
 6.1200 621.417
 6.1200 621.417
 6.1200 621.417
 6.1200 621.417
 6.1200 621.417
 6.1200 621.417
 STAGE OUTLET FLOW ANGLES (3 POINTS)
 RADIUS ANGLE
 6.1200 1.93
 6.1200 1.93
 6.1200 1.93

CASIN: STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.75110	13.1791
-8.75110	13.1341
-7.75110	14.1673
-7.75110	14.0913
-7.75110	17.3413
-6.75110	17.3413
-6.75110	16.9193
-6.75110	17.9193
-5.75110	18.9193
-2.75110	18.9193

HUR STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8473	19.1797
-5.180	18.1717

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV.	MID. ADJ. DEV.	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
9	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
11	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
12	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
13	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	INDICATOR
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. -----

TEST POINT TITLE
 * 601290631875
 * 51.4457
 * 9.7106
 * 2.8112
 * 12.8888
 * 51.8708
 * 1.91106

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P INLET INCHES

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
0.1250	22.2717
0.1250	22.1049
0.1250	22.0496
0.1250	22.0753
0.1250	22.2327
0.1250	22.0672
0.1250	22.0319

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
0.1250	601.065
0.1250	599.792
0.1250	599.722
0.1250	599.511
0.1250	599.306
0.1250	617.080

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
0.1270	22.0174	22.1031
0.1250	22.0106	22.0924
0.1250	22.0212	22.0561
0.1220	22.0532	22.0939

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
0.1270	617.313
0.1250	616.336
0.1250	616.047
0.1220	627.525

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
0.1270	1.204
0.1250	1.003

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	13.1812
-8.0010	13.6094
-7.7510	14.0326
-7.5010	14.4433
-7.2510	15.8115
-7.0010	16.5861
-6.7510	17.2933
-6.5010	17.5370
-6.2510	18.0765
-6.0010	17.9504
-5.7510	18.6783
-2.5674	18.5024
-2.5130	18.5024

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	18.2813
-2.5080	18.2813

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MTD ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.0000	-0.000
2	0.0000	1.0000	-0.000	-0.0000	-0.000
3	0.0000	1.0000	-0.000	-0.0000	-0.000
4	0.0000	1.0000	-0.000	-0.0000	-0.000
5	0.0000	1.0000	-0.000	-0.0000	-0.000
6	0.0000	1.0000	-0.000	-0.0000	-0.000
7	0.0000	1.0000	-0.000	-0.0000	-0.000
8	0.1000	.5000	-0.000	-0.0000	-0.000
9	0.1000	.5000	-0.000	-0.0000	-0.000
10	0.0000	.5000	-0.000	-0.0000	-0.000
11	.0500	1.0000	-0.000	-0.0000	-0.000
12	.0500	1.0000	-0.000	-0.0000	-0.000
13	.0500	1.0000	-0.000	-0.0000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NYMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

80% SPEEDLINE PHASE II INPUT DATA

PROGRAM UDD200 - AXIAL COMPRESSOR TEST DATA ANALYSIS
 FIXED DATA PRINTOUT

HTFC CONFIGURATION #1, 80% SPEED, ACROSS-BLADE ANALYSIS, 24MAR76

NUMBER OF STATIONS = 12
 NUMBER OF STREAM LINES = 20
 MAXIMUM NUMBER OF ITERATIONS = 120
 MAXIMUM NUMBER OF ARBITRARY ITERATIONS = 20
 TOTAL TEMPERATURE SOURCE INDICATOR = 1
 TOTAL TEMPERATURE SOURCE INDICATOR = 12
 STATION NUMBER FOR STAGE EXIT DATA = 20
 STATION NUMBER FOR ROTOR BLADES = 31
 NUMBER OF ROTOR BLADES = 60
 MAXIMUM NUMBER OF LINES PER PAGE = 60

ANNULUS SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

RSTN	XSTN
0.0000	-18.4500
13.3000	-18.4500

STATION 2 SPECIFIED BY 2 POINTS

RSTN	XSTN
0.0000	-14.9000
9.4800	-14.0500

STATION 3 SPECIFIED BY 2 POINTS

RSTN	XSTN
0.0000	-10.6500
8.9600	-12.8500

STATION 4 SPECIFIED BY 2 POINTS

RSTN	XSTN
1.5400	-9.7583
8.5500	-11.1380

STATION 5 SPECIFIED BY 2 POINTS

RSTN	XSTN
2.0550	-8.1137
8.5000	-9.6493

STATION 6 SPECIFIED BY 2 POINTS

RSTN	XSTN
2.3500	-8.6500
8.5000	-8.6500

STATION 7 SPECIFIED BY 6 POINTS

RSTN	XSTN
2.6514	-8.1600
3.6058	-8.2045
5.0537	-8.2603
6.3919	-8.1810
7.7851	-7.9615
8.5000	-7.8110

STATION 8 SPECIFIED BY 3 POINTS

RSTN	XSTN
4.4612	-5.3150
4.6090	-5.3380
4.8000	-5.2560
5.0000	-5.1890
5.1004	-5.1717
5.1532	-5.2155
5.7345	-5.3708
7.9501	-5.6015
8.5000	-5.7840

STATION 9 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.5534	-5.1700
5.2000	-5.3000
5.3000	-4.9500
8.5000	-5.3500

STATION 10 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.6435	-5.0250
5.2500	-4.7750
5.8200	-4.6500
8.5000	-4.3000

STATION 11 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.6314	-2.4999
8.5000	-2.2174

STATION 12 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7306	-0.9200
8.5000	-0.9200

STATION 13 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7906	0.0000
8.5000	0.0000

STATION CALCULATION SPECIFICATION AND BLADING DATA

STATION 2	NCALC = 0	NDATA = -0	NBL = -0
STATION 3	NCALC = 0	NDATA = -0	NBL = -0
STATION 4	NCALC = 0	NDATA = -0	NBL = -0
STATION 5	NCALC = 0	NDATA = -0	NBL = -0
STATION 6	NCALC = 0	NDATA = -0	NBL = -0

STATION 7 NCALC = 1 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2.57447	37.2742	1.5091	0.2402	24.30
3.50227	37.5321	1.5091	0.2402	24.30
3.50227	44.2742	-3.5091	0.1197	24.30
4.50227	44.2742	-3.5091	0.1197	24.30
5.50227	44.2742	-3.5091	0.1197	24.30
6.50227	44.2742	-3.5091	0.1197	24.30
7.50227	44.2742	-3.5091	0.1197	24.30
8.50227	44.2742	-3.5091	0.1197	24.30
9.50227	44.2742	-3.5091	0.1197	24.30
10.50227	44.2742	-3.5091	0.1197	24.30
11.50227	44.2742	-3.5091	0.1197	24.30
12.50227	44.2742	-3.5091	0.1197	24.30
13.50227	44.2742	-3.5091	0.1197	24.30

STATION 8 NCALC = 4 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2.33058	26.7951	49.1720	0.3064	33.99
3.33058	26.7951	49.1720	0.3064	33.99
4.33058	26.7951	49.1720	0.3064	33.99
5.33058	26.7951	49.1720	0.3064	33.99
6.33058	26.7951	49.1720	0.3064	33.99
7.33058	26.7951	49.1720	0.3064	33.99
8.33058	26.7951	49.1720	0.3064	33.99
9.33058	26.7951	49.1720	0.3064	33.99
10.33058	26.7951	49.1720	0.3064	33.99
11.33058	26.7951	49.1720	0.3064	33.99
12.33058	26.7951	49.1720	0.3064	33.99
13.33058	26.7951	49.1720	0.3064	33.99

STATION 9 NCALC = 0 NDATA = 0 NBL = 2

STATION 10 NCALC = 1 NDATA = 11 NBL = 2

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.8315	39.07	31.4501	0.1629	18.39
5.8315	40.1671	31.4501	0.1629	18.39
6.8315	38.2972	31.4501	0.1629	18.39
7.8315	39.1402	31.4501	0.1629	18.39
8.8315	39.1402	31.4501	0.1629	18.39
9.8315	39.1402	31.4501	0.1629	18.39
10.8315	39.1402	31.4501	0.1629	18.39
11.8315	39.1402	31.4501	0.1629	18.39
12.8315	39.1402	31.4501	0.1629	18.39
13.8315	39.1402	31.4501	0.1629	18.39

STATION 11 NCALC = 3 NDATA = 11 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.7500	39.4749	-1.1369	0.0169	0.00
5.7500	39.0334	-1.1369	0.0169	0.00
6.7500	38.1467	-1.1369	0.0169	0.00
7.7500	38.2907	-1.1369	0.0169	0.00
8.7500	39.2277	-1.1369	0.0169	0.00
9.7500	39.8622	-1.1369	0.0169	0.00

STATION 12 NCALC = 0 NDATA = 0 NBL = 1

STATION 13 NCALC = 0 NDATA = 0 NBL = 1

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000
0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000
0.0000
1.0000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000
0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000
0.0000
1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 4

PSCALE= 0.00 PLOWER= 3.00 DAMPF= 7.000 NSAVE= 1

NMAX= 0 MFORCL= 0 NEX= 2

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE
 GAS CONSTANT
 AIR MASS FRACTION
 FLOWRATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/T IN(STD)
 P IN/P IN(STD)

512050100290
 53.5265
 47.7049
 16.1804
 14.6944
 518.708
 .99410
 .90736

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	23.4279
5.5000	23.0623
5.8750	23.6392
6.2500	23.4541
6.6250	23.8436
7.0000	23.1900
7.3750	23.8453
7.7500	23.3186
8.1250	24.1692

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	590.842
5.5000	592.434
5.8750	590.389
6.2500	597.072
6.6250	594.034
7.0000	590.180
7.3750	599.652
7.7500	604.426
8.1250	622.425

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1250	23.0168	23.4307
6.4660	23.3132	23.7159
6.8050	23.2726	23.9989
7.1440	23.3930	23.7675
7.4830	23.4691	23.8147
7.8220	23.6071	23.8312
8.1610	23.6421	24.0165

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1250	592.573
6.4660	592.430
6.8050	596.562
7.1440	599.595
7.4830	601.595
7.8220	608.274
8.1610	614.862

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.965
7.1440	1.930
6.4660	3.327

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	12.5466
-8.0010	12.8649
-7.7510	14.2542
-7.5010	15.6353
-7.2510	16.5537
-7.0010	17.3893
-6.7510	17.8471
-6.5010	18.0339
-6.2510	18.5452
-6.0010	18.6223
-5.7510	19.3223
-2.5674	18.3537
-2.5190	18.9537

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	18.7256
-2.5080	18.7255

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	0.0000
2	0.0000	1.0000	-0.0000	-0.0000	0.0000
3	0.0000	1.0000	-0.0000	-0.0000	0.0000
4	0.0000	1.0000	-0.0000	-0.0000	0.0000
5	0.0000	1.0000	-0.0000	-0.0000	0.0000
6	0.0000	1.0000	-0.0000	-0.0000	0.0000
7	0.0000	1.0000	-0.0000	-0.0000	0.0000
8	0.1000	.5000	-0.0000	-0.0000	0.0000
9	0.1000	.5000	-0.0000	-0.0000	0.0000
10	0.0500	1.0000	-0.0000	-0.0000	0.0000
11	0.0500	1.0000	-0.0000	-0.0000	0.0000
12	0.0500	1.0000	-0.0000	-0.0000	0.0000
13	0.0500	1.0000	-0.0000	-0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 2

TEST POINT TITLE
 = 51255210000
 = 53.5220
 = 19.9095
 = 16.1074
 = 519070
 = .9035

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR OUTLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 INLET IN (IN)
 P INLET IN (IN)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1270	23.1264
5.1570	23.1264
5.1870	23.1264
5.2170	23.1264
5.2470	23.1264
5.2770	23.1264
5.3070	23.1264
5.3370	23.1264
5.3670	23.1264
5.3970	23.1264

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1270	590.142
5.1570	590.142
5.1870	590.142
5.2170	590.142
5.2470	590.142
5.2770	590.142
5.3070	590.142
5.3370	590.142
5.3670	590.142
5.3970	590.142

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	TEAM PRES	PEAK PRES
6.1270	23.9219	23.1264
6.1570	23.9219	23.1264
6.1870	23.9219	23.1264
6.2170	23.9219	23.1264
6.2470	23.9219	23.1264
6.2770	23.9219	23.1264
6.3070	23.9219	23.1264

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	590.233
6.1570	590.233
6.1870	590.233
6.2170	590.233
6.2470	590.233
6.2770	590.233
6.3070	590.233

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0220	1.770
7.1440	1.522
6.5660	3.127

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	12.3789
-8.0010	12.6370
-7.7510	13.9107
-7.5010	15.5057
-7.2510	16.2160
-7.0010	17.0842
-6.7510	17.5670
-6.5010	17.7249
-6.2510	18.4217
-6.0010	19.0305
-5.7510	19.3454
-5.5130	19.5454

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8439	18.2795
-1.5030	18.2795

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. ADD. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	0.000	0.0000	0.0000
2	0.0000	1.0000	0.000	0.0000	0.0000
3	0.0000	1.0000	0.000	0.0000	0.0000
4	0.0000	1.0000	0.000	0.0000	0.0000
5	0.0000	1.0000	0.000	0.0000	0.0000
6	0.0000	1.0000	0.000	0.0000	0.0000
7	0.0000	1.0000	0.000	0.0000	0.0000
8	0.0000	1.0000	0.000	0.0000	0.0000
9	0.0000	1.0000	0.000	0.0000	0.0000
10	0.0000	1.0000	0.000	0.0000	0.0000
11	0.0500	1.0000	0.000	0.0000	0.0000
12	0.0500	1.0000	0.000	0.0000	0.0000
13	0.0500	1.0000	0.000	0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 3

TEST POINT TITLE
 = 51215933012A0
 = 53.5605
 = 47.0934
 = 16.19648
 = 14.87244
 = 18.1208
 = .98878
 = .98871

GAS CONSTANT
 FLOW RATE FRACTION
 FLOW RATE
 ROTOR TOTAL PRESSURE
 ROTOR TOTAL TEMPERATURE
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(STD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
2.1250	4.11
2.1250	2.1150
2.1250	2.1094
2.1250	2.1038
2.1250	2.0982
2.1250	2.0926
2.1250	2.0870
2.1250	2.0814
2.1250	2.0758
2.1250	2.0702

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
2.1250	8.62
2.1250	8.62
2.1250	8.62
2.1250	8.62
2.1250	8.62
2.1250	8.62
2.1250	8.62
2.1250	8.62
2.1250	8.62
2.1250	8.62

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1250	1.0722	1.4891
6.1250	2.0722	2.4891
6.1250	3.0722	3.4891
6.1250	4.0722	4.4891
6.1250	5.0722	5.4891
6.1250	6.0722	6.4891
6.1250	7.0722	7.4891

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	8.05
6.1250	8.05
6.1230	8.05
6.1210	8.05
6.1190	8.05
6.1170	8.05
6.1150	8.05

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0220	-1.132
7.0250	2.071
6.6560	3.403

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE	FRAC. TO BLOCKAGE
-8.7510	12.6191	-0.0000
-8.0010	13.0517	-0.0000
-7.7510	14.3263	-0.0000
-7.5010	15.6173	-0.0000
-7.2510	16.4364	-0.0000
-6.7510	17.9948	-0.0000
-6.5010	18.1529	-0.0000
-6.2510	18.6700	-0.0000
-5.0010	19.3699	-0.0000
-2.7510	19.0942	-0.0000
-2.5130		-0.0000

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.6492	18.8697
-2.5080	18.8697

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TO BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.1000	.5000	-0.0000	-0.0000	-0.0000
8	0.1000	.5000	-0.0000	-0.0000	-0.0000
9	0.0500	1.0000	-0.0000	-0.0000	-0.0000
10	.0500	1.0000	-0.0000	-0.0000	-0.0000
11					
12					
13					

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT FILE
 * 51215051653
 * 51.5576
 * 51.5576
 * 51.5576
 * 51.5576
 * 51.5576
 * 51.5576

TEST POINT FILE
 GAS CONSTANT
 SPECIFIC HEAT RATIO
 ROTOR INLET TOTAL TEMPERATURE
 STATOR INLET TOTAL TEMPERATURE
 ROTOR INLET TOTAL PRESSURE
 STATOR INLET TOTAL PRESSURE

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)
 PRESSURE
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

TEMPERATURE
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

STAGE PRESS STAGE PRESS
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

TEMPERATURE
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576
 51.5576

STAGE OUTLET FLOW ANGLES (3 POINTS)

ANGLE
 1.274
 1.274
 1.274

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	12.7033
-6.7010	13.1365
-7.7510	14.4103
-7.2510	15.6405
-7.0010	16.6286
-6.7510	17.4810
-6.5010	18.1643
-6.2510	18.7305
-6.0010	19.2840
-5.7510	19.8211
-5.5674	19.2101
-5.5170	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8419	15.9613
-2.5810	15.9515

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	JISY. FACTOR	Y10 ADD. DEVIATION	DIST. FACTOR	FRAC. YEE BLOCKAGE
1	0.0000	1.0000	3.000	0.0000	0.0000
2	0.0000	1.0000	3.000	0.0000	0.0000
3	0.0000	1.0000	3.000	0.0000	0.0000
4	0.0000	1.0000	3.000	0.0000	0.0000
5	0.0000	1.0000	3.000	0.0000	0.0000
6	0.0000	1.0000	3.000	0.0000	0.0000
7	0.0000	1.0000	3.000	0.0000	0.0000
8	0.0000	1.0000	3.000	0.0000	0.0000
9	0.0000	1.0000	3.000	0.0000	0.0000
10	0.0000	1.0000	3.000	0.0000	0.0000
11	0.0500	1.0000	3.000	0.0000	0.0000
12	0.0500	1.0000	3.000	0.0000	0.0000
13	0.0500	1.0000	3.000	0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	0												

85% SPEEDLINE PHASE II INPUT DATA

PROGRAM U00200 - AXIAL COMPRESSOR TEST DATA ANALYSIS
 FILED DATA PRINT OUT

MTC CONFIGURATION #1, 95% SPEED, ACROSS-BLADE ANALYSIS 23MAR76

NUMBER OF STATIONS 11
 NUMBER OF STAGES 12
 NUMBER OF ROTOR BLADES PER STATION 12
 NUMBER OF STATOR BLADES PER STATION 12
 NUMBER OF ROTOR BLADES PER STAGE 12
 NUMBER OF STATOR BLADES PER STAGE 12
 NUMBER OF ROTOR BLADES PER STAGE 12
 NUMBER OF STATOR BLADES PER STAGE 12
 NUMBER OF ROTOR BLADES PER STAGE 12
 NUMBER OF STATOR BLADES PER STAGE 12
 NUMBER OF ROTOR BLADES PER STAGE 12
 NUMBER OF STATOR BLADES PER STAGE 12

ANNULUS SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

RSTN	XSTN
0.0000	-13.0000
0.0000	-16.0000

STATION 2 SPECIFIED BY 2 POINTS

RSTN	XSTN
0.0000	-15.0000
0.0000	-18.0000

STATION 3 SPECIFIED BY 2 POINTS

RSTN	XSTN
0.0000	-19.0000
0.0000	-22.0000

STATION 4 SPECIFIED BY 2 POINTS

RSTN	XSTN
0.0000	-9.7500
0.0000	-11.1300

STATION 5 SPECIFIED BY 2 POINTS

RSTN	XSTN
0.0000	-9.1137
0.0000	-9.6093

STATION 6 SPECIFIED BY 2 POINTS

RSTN	XSTN
0.0000	-9.0500
0.0000	-9.0500

STATION 7 SPECIFIED BY 6 POINTS

RSTN	XSTN
0.0000	-8.1600
0.0000	-8.2000
0.0000	-8.2600
0.0000	-8.3100
0.0000	-8.3500
0.0000	-8.3900

STATION 8 SPECIFIED BY 3 POINTS

PSTN	XSTN
4.4512	-5.1150
4.6300	-5.3000
4.8000	-5.2500
5.0000	-5.1500
5.2000	-5.1717
5.4000	-5.2400
5.6000	-5.3700
5.8000	-5.6015
6.0000	-5.7500

STATION 9 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.2500	-5.1700
5.2000	-5.0000
5.8000	-4.9500
6.5000	-5.3500

STATION 10 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.6300	-5.0250
5.2000	-4.7750
5.8000	-4.6500
6.5000	-4.3000

STATION 11 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.6314	-2.5993
8.5000	-2.2174

STATION 12 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7006	-0.3201
8.5000	-0.3200

STATION 13 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.8005	0.0000
8.5000	0.0000

STATION CALCULATION SPECIFICATION AND SLACING DATA

STATION 2	NCALC = 0	NDATA = -0	NPL = -0
STATION 3	NCALC = 0	NDATA = -0	NPL = -0
STATION 4	NCALC = 0	NDATA = -0	NPL = -0
STATION 5	NCALC = 0	NDATA = -0	NPL = -0
STATION 6	NCALC = 2	NDATA = -0	NPL = -0

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000

0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

0.0000
1.0000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000

0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

0.0000
1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 7

PSCALE= 0.00 PLOWER= 0.00 DAMPF= 7.000 NSAVE= 1

NMAX= 0 MFORCE= 0 NEX= 2

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT FILE
 GAS CONSTANT
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/A IN/ST/D

E 51216020003
 E 53.4679
 E 199637
 E 53.4051
 E 172312
 E 15.6708
 E 519519
 E .00913

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
6.1250	24.6933
6.1500	24.7056
6.1750	24.7179
6.2000	24.7302
6.2250	24.7425
6.2500	24.7548
6.2750	24.7671
6.3000	24.7794
6.3250	24.7917
6.3500	24.8040

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
6.1250	601.270
6.1500	601.355
6.1750	601.440
6.2000	601.525
6.2250	601.610
6.2500	601.695
6.2750	601.780
6.3000	601.865
6.3250	601.950
6.3500	602.035

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES.	PEAK PRES
6.1270	24.8093	24.8056
6.1500	24.8216	24.8179
6.1730	24.8339	24.8302
6.1960	24.8462	24.8425
6.2190	24.8585	24.8548
6.2420	24.8708	24.8671
6.2650	24.8831	24.8794

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	601.521
6.1500	601.606
6.1730	601.691
6.1960	601.776
6.2190	601.861
6.2420	601.946
6.2650	602.031

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
6.1270	1.142
6.1500	1.174
6.1730	1.214

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	11.3172
-8.0310	11.5254
-7.7510	13.2374
-7.2510	15.2133
-7.0010	17.2360
-6.7510	17.9807
-6.5010	18.2573
-6.2510	19.1410
-5.7510	19.9104
-2.2510	19.3657
-1.5190	19.3357

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	19.0601
-1.5050	19.0501

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TO BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.0000	1.0000	-0.0000	-0.0000	-0.0000
8	0.0000	1.0000	-0.0000	-0.0000	-0.0000
9	0.0000	1.0000	-0.0000	-0.0000	-0.0000
10	0.0500	1.0000	-0.0000	-0.0000	-0.0000
11	0.0500	1.0000	-0.0000	-0.0000	-0.0000
12	0.0500	1.0000	-0.0000	-0.0000	-0.0000
13	0.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 2

TEST POINT TITLE
 GAS CONSTANT
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(SID)

51216330265
 51.4638
 51.9634
 51.9653
 172.27.4
 118.6700
 195.132
 .89333

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS PRESSURE
 5. 7.457
 6. 7.457
 7. 7.457
 8. 7.457
 9. 7.457
 10. 7.457
 11. 7.457
 12. 7.457
 13. 7.457
 14. 7.457

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS TEMPERATURE
 5. 60.259
 6. 60.259
 7. 60.259
 8. 60.259
 9. 60.259
 10. 60.259
 11. 60.259
 12. 60.259
 13. 60.259
 14. 60.259

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS MEAN PRES PEAK PRES
 5. 7.457 24.717
 6. 7.457 24.717
 7. 7.457 24.717
 8. 7.457 24.717
 9. 7.457 24.717
 10. 7.457 24.717
 11. 7.457 24.717

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS TEMPERATURE
 5. 60.259
 6. 60.259
 7. 60.259
 8. 60.259
 9. 60.259
 10. 60.259
 11. 60.259

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS ANGLE
 7. 142
 8. 142
 9. 142

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	12.0349
-8.0010	13.7085
-7.7510	15.0878
-7.5010	16.3659
-7.0010	17.7075
-6.7510	18.4261
-6.5010	18.6319
-6.2510	19.2502
-6.0010	20.2145
-5.7510	19.8771
-5.5190	19.8771

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	19.6099
-2.5090	19.6099

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. ADJ.	DIST. FACTOR	FRAC. TO BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	0.000
2	0.0000	1.0000	-0.000	-0.000	0.000
3	0.0000	1.0000	-0.000	-0.000	0.000
4	0.0000	1.0000	-0.000	-0.000	0.000
5	0.0000	1.0000	-0.000	-0.000	0.000
6	0.1000	1.5000	-0.000	-0.000	0.000
7	0.1000	1.5000	-0.000	-0.000	0.000
8	0.0500	1.0000	-0.000	-0.000	0.000
9	0.0500	1.0000	-0.000	-0.000	0.000
10	0.0500	1.0000	-0.000	-0.000	0.000
11	0.0500	1.0000	-0.000	-0.000	0.000
12	0.0500	1.0000	-0.000	-0.000	0.000
13	0.0500	1.0000	-0.000	-0.000	0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 3

TEST POINT TITLE
 * 512161-91085
 * 51.98833
 * 172.1741
 * 14.0944
 * 1.95131
 * .68130

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 INLET ANGLE
 P INLET INLET

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	28.7394
5.1375	28.9591
5.1500	29.1770
5.1625	29.3951
5.1750	29.6126
5.1875	29.8296
5.2000	30.0461

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	608.672
5.1375	608.105
5.1500	607.538
5.1625	606.971
5.1750	606.404
5.1875	605.837
5.2000	605.270

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	25.7342	25.8732
6.1360	25.5529	25.7167
6.1450	25.3716	25.5602
6.1540	25.1903	25.4037
6.1630	25.0090	25.2472
6.1720	24.8277	25.0907
6.1810	24.6464	24.9342

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	605.320
6.1360	604.874
6.1450	604.428
6.1540	603.982
6.1630	603.536
6.1720	603.090
6.1810	602.644

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0220	1.179
7.1120	1.192
6.4660	1.235

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	12.0133
-8.0010	12.1159
-7.2510	13.3151
-7.5010	15.2252
-7.7510	17.2253
-6.2510	18.2074
-6.5010	18.3252
-6.7510	19.4782
-5.7510	20.2614
-2.5140	19.9752

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8439	19.7119
-2.5083	19.7119

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TIME BLOCKAGE
1	0.0000	1.0000	0.000	0.000	0.0000
2	0.0000	1.0000	0.000	0.000	0.0000
3	0.0000	1.0000	0.000	0.000	0.0000
4	0.0000	1.0000	0.000	0.000	0.0000
5	0.0000	1.0000	0.000	0.000	0.0000
6	0.1000	1.5000	0.000	0.000	0.0000
7	0.0000	1.5000	0.000	0.000	0.0000
8	0.0000	1.0000	0.000	0.000	0.0000
9	0.0000	1.0000	0.000	0.000	0.0000
10	0.0500	1.0000	0.000	0.000	0.0000
11	0.0500	1.0000	0.000	0.000	0.0000
12	0.0500	1.0000	0.000	0.000	0.0000
13	0.0500	1.0000	0.000	0.000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-3	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PALMQUIP FOR POINT NO. 4

TEST POINT FILE 4 210160511469
 GAS CONSTANT 51.793
 FLOW RATE FRACTION 51.793
 POINT NO. 4 51.793
 INLET TOTAL TEMPERATURE 51.793
 INLET PRESSURE 51.793
 INLET POINTS 51.793
 INLET POINTS 51.793

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
1.00000	20.00000
1.10000	20.00000
1.20000	20.00000
1.30000	20.00000
1.40000	20.00000
1.50000	20.00000
1.60000	20.00000
1.70000	20.00000
1.80000	20.00000
1.90000	20.00000

ROTOR OUTLET TOTAL TEMPERATURE (4 POINTS)

RADIUS	TEMPERATURE
1.00000	50.00000
1.10000	50.00000
1.20000	50.00000
1.30000	50.00000
1.40000	50.00000
1.50000	50.00000
1.60000	50.00000
1.70000	50.00000
1.80000	50.00000
1.90000	50.00000

STAGE OUTLET TOTAL PRESSURE (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
1.00000	20.00000	20.00000
1.10000	20.00000	20.00000
1.20000	20.00000	20.00000
1.30000	20.00000	20.00000
1.40000	20.00000	20.00000
1.50000	20.00000	20.00000
1.60000	20.00000	20.00000

STAGE OUTLET TOTAL TEMPERATURE (7 POINTS)

RADIUS	TEMPERATURE
1.00000	50.00000
1.10000	50.00000
1.20000	50.00000
1.30000	50.00000
1.40000	50.00000
1.50000	50.00000
1.60000	50.00000

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
1.00000	1.00000
1.10000	1.00000
1.20000	1.00000

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
8.7510	12.1513
-9.0910	12.2413
-7.7510	13.9454
-7.5010	15.9793
-7.0010	16.7326
-7.0010	17.8373
-6.7510	18.6021
-6.5010	18.7974
-5.2510	19.4199
-6.0010	19.5301
-5.7510	20.3283
-2.5674	20.0861
-2.5190	

HUR STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8+99	19.8261
- .5030	19.8261

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. ADD. DEVIATION	DIST. FACTOR	FRAC. TIME BLOCKAGE
1	0.0000	1.0000	-0.0000	0.0000	0.0000
2	0.0000	1.0000	-0.0000	0.0000	0.0000
3	0.0000	1.0000	-0.0000	0.0000	0.0000
4	0.0000	1.0000	-0.0000	0.0000	0.0000
5	0.0000	1.0000	-0.0000	0.0000	0.0000
6	0.0000	1.0000	-0.0000	0.0000	0.0000
7	0.1000	1.5000	-0.0000	0.0000	0.0000
8	0.0000	1.5000	-0.0000	0.0000	0.0000
9	0.0000	1.5000	-0.0000	0.0000	0.0000
10	0.0000	1.0000	-0.0000	0.0000	0.0000
11	0.0500	1.0000	-0.0000	0.0000	0.0000
12	0.0500	1.0000	-0.0000	0.0000	0.0000
13	0.0500	1.0000	-0.0000	0.0000	0.0000

SOLUTION TYPE INDICATORS

SOLUTION TYPE	1	2	3	4	5	6	7	8	9	10	11	12	13
STATION	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

TEST DATA PRINTOUT FOR POINT NO. 5

= 51216001895
 = 53.4634
 = 50.9323
 = 17.216.0
 = 14.8374
 = 5.86318
 = .89688

TEST POINT TITLE

GAS CONSTANT
 AIR MASS FRACTION
 FLOW VELOCITY
 ROTOR TOTAL PRESSURE
 ROTOR TOTAL TEMPERATURE
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(SI)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	25.4761
5.1875	25.1594
5.2500	25.0324
5.3125	25.0352
5.3750	25.4861
5.4375	25.2146

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	600.419
5.1875	603.192
5.2500	609.224
5.3125	604.880
5.3750	615.441
5.4375	623.130

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	24.421	26.8872
6.1660	24.7930	25.2399
6.2050	24.6930	25.2378
7.1440	24.6733	25.1113
7.4930	25.1474	25.8520
7.8220	25.5936	25.8474
8.1610		26.0471

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	602.603
6.1660	606.871
6.2050	609.950
7.1440	615.313
7.4930	625.850
7.8220	632.161

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.167
7.1440	3.819
6.1660	3.196

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-3.7510	12.2305
-8.0010	12.3844
-7.7510	14.1144
-7.5010	16.0241
-7.2510	18.8954
-6.7510	18.7275
-6.5010	18.9216
-6.2510	19.5338
-6.0010	19.6040
-5.7510	20.3988
-2.5674	20.2263
-2.5190	20.2253

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.0439	19.9723
-2.5080	19.9723

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	H/D DEV. A.D.	DIST. FACTOR	FRAC. T.E. BLOCKAGE
1	0.0000	1.00000	-0.0000	-0.0000	-0.0000
2	0.0000	1.00000	-0.0000	-0.0000	-0.0000
3	0.0000	1.00000	-0.0000	-0.0000	-0.0000
4	0.0000	1.00000	-0.0000	-0.0000	-0.0000
5	0.0000	1.00000	-0.0000	-0.0000	-0.0000
6	0.0000	1.50000	-0.0000	-0.0000	-0.0000
7	0.0000	1.50000	-0.0000	-0.0000	-0.0000
8	0.0000	1.50000	-0.0000	-0.0000	-0.0000
9	0.0000	1.50000	-0.0000	-0.0000	-0.0000
10	0.0000	1.00000	-0.0000	-0.0000	-0.0000
11	0.0500	1.00000	-0.0000	-0.0000	-0.0000
12	0.0500	1.00000	-0.0000	-0.0000	-0.0000
13	0.0500	1.00000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

TEST DATA PRINTOUT FOR POINT NO. 6

TEST POINT TITLE
 = 512150702235
 = 53.44648
 = 50.21042
 = 14.18944
 = 518.709
 = .89779

GAS CONSTANT
 ATOM. MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(SID)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	24.4633
5.1500	24.4633
5.1750	24.4633
5.2000	24.4633
5.2250	24.4633
5.2500	24.4633
5.2750	24.4633
5.3000	24.4633
5.3250	24.4633
5.3500	24.4633

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	601.745
5.1500	601.745
5.1750	601.745
5.2000	601.745
5.2250	601.745
5.2500	601.745
5.2750	601.745
5.3000	601.745
5.3250	601.745
5.3500	601.745

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	24.4633	24.4633
6.1560	24.4633	24.4633
6.1850	24.4633	24.4633
6.2140	24.4633	24.4633
6.2430	24.4633	24.4633
6.2720	24.4633	24.4633
6.3010	24.4633	24.4633

STAGE OUTLET TOTAL TEMPERATURE (7 POINTS)

RADIUS	TEMPERATURE
6.1270	602.925
6.1560	602.925
6.1850	602.925
6.2140	602.925
6.2430	602.925
6.2720	602.925
6.3010	602.925

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0220	1.600
7.1490	1.600
6.4660	1.600

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	12.2963
-8.0010	12.4802
-7.7510	14.2705
-7.5010	16.0333
-7.2510	17.0383
-7.0010	18.0954
-6.7510	18.8185
-6.5010	19.0126
-6.2510	19.6511
-6.0010	19.4447
-5.7510	20.3199
-5.5190	20.3139

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	20.0682
-.5080	20.0682

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MIS DEV. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.00000	-0.0000	-0.0000	-0.0000
2	0.0000	1.00000	-0.0000	-0.0000	-0.0000
3	0.0000	1.00000	-0.0000	-0.0000	-0.0000
4	0.0000	1.00000	-0.0000	-0.0000	-0.0000
5	0.0000	1.00000	-0.0000	-0.0000	-0.0000
6	0.0000	1.00000	-0.0000	-0.0000	-0.0000
7	0.0000	1.00000	-0.0000	-0.0000	-0.0000
8	0.0000	1.00000	-0.0000	-0.0000	-0.0000
9	0.0000	1.00000	-0.0000	-0.0000	-0.0000
10	0.0000	1.00000	-0.0000	-0.0000	-0.0000
11	0.0500	1.00000	-0.0000	-0.0000	-0.0000
12	0.0500	1.00000	-0.0000	-0.0000	-0.0000
13	0.0500	1.00000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	0												

TEST DATA PRINTOUT FOR POINT NO. 7

TEST POINT TITLE
 = 512160802685
 = 53.4626
 = 9.9653
 = 49.6247
 = 17.2252
 = 14.6944
 = 5.95159
 = .69893

GAS CONSTANT
 AIR MASS FRACTION
 FLOWRATE
 ROTOR SPEED
 INLET TOTAL TEMPERATURE
 INLET TOTAL TEMPERATURE
 P INLET IN(SID)
 P INLET IN(ISO)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)
 RADIUS PRESSURE
 5.1250 24.5463
 5.5000 24.6401
 5.8750 25.3237
 6.2500 25.1354
 6.6250 25.5135
 7.0000 24.9959
 7.3750 25.1157
 7.7500 26.3303
 8.1250

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)
 RADIUS TEMPERATURE
 5.1250 600.967
 5.5000 607.192
 5.8750 611.349
 6.2500 605.612
 6.6250 613.752
 7.0000 614.677
 7.3750 625.677
 7.7500 645.617
 8.1250

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	24.4639	24.3499
6.4660	24.9277	25.3723
6.8050	24.7534	25.3059
7.1440	24.8044	25.4593
7.4830	25.1221	25.7490
7.8220	25.4407	25.8904
8.1610	25.5069	26.0580

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	603.174
6.4660	606.994
6.8050	609.662
7.1440	612.033
7.4830	617.080
7.8220	624.483

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.379
7.1440	1.906
6.4660	3.354

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	12.3606
-8.0010	12.5695
-7.7510	14.4181
-7.5010	15.0392
-7.2510	17.1628
-7.0010	18.1748
-6.7510	19.9133
-6.5010	19.7193
-6.2510	19.5924
-6.0010	20.4385
-5.7510	20.4102
-5.5130	20.4102

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	20.1534
-5.5080	20.1594

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MIU ADD. DEVIATION	DIST. FACTOR	FRAC. T. BLOCKAGE
1	0.0000	1.0000	-0.000	-0.0000	-0.0000
2	0.0000	1.0000	-0.000	-0.0000	-0.0000
3	0.0000	1.0000	-0.000	-0.0000	-0.0000
4	0.0000	1.0000	-0.000	-0.0000	-0.0000
5	0.0000	1.0000	-0.000	-0.0000	-0.0000
6	0.0000	1.0000	-0.000	-0.0000	-0.0000
7	0.0000	1.0000	-0.000	-0.0000	-0.0000
8	0.1000	1.5000	-0.000	-0.0000	-0.0000
9	0.0000	1.5000	-0.000	-0.0000	-0.0000
10	0.0000	1.5000	-0.000	-0.0000	-0.0000
11	0.0500	1.0000	-0.000	-0.0000	-0.0000
12	0.0500	1.0000	-0.000	-0.0000	-0.0000
13	0.0500	1.0000	-0.000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

PRECEDING PAGE BLANK NOT FILMED

90% SPEEDLINE PHASE II INPUT DATA

PROGRAM U00201 - AXIAL COMPRESSOR TEST DATA ANALYSIS
 FIXED DATA PRINTOUT

HTFC CONFIGURATION #1, 90% SPEED, ACROSS-BLADE ANALYSIS, 24HART6

NUMBER OF STATIONS 13
 NUMBER OF STREAMLINES 120
 MAXIMUM NUMBER OF ITERATIONS 20
 MAXIMUM NUMBER OF ARBITRARY ITERATIONS 10
 TOTAL PRESSURE SOURCE INDICATOR 102
 STATION NUMBER FOR ROTOR STAGE 102
 STATION NUMBER FOR STAGE EXIT DATA 102
 NUMBER OF ROTOR BLADES 31
 NUMBER OF STATOR BLADES 31
 MAXIMUM NUMBER OF LINES PER PAGE 6

ANNULUS SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -10.0500
 13.3000 -10.4500

STATION 2 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -17.3000
 9.6000 -17.9000

STATION 3 SPECIFIED BY 2 POINTS

RSTN XSTN
 0.0000 -10.6500
 8.9500 -12.9500

STATION 4 SPECIFIED BY 2 POINTS

RSTN XSTN
 1.5000 -9.7500
 6.5500 -11.1300

STATION 5 SPECIFIED BY 2 POINTS

RSTN XSTN
 2.0500 -9.1100
 8.5000 -9.6000

STATION 6 SPECIFIED BY 2 POINTS

RSTN XSTN
 2.3500 -8.6500
 6.5000 -8.6500

STATION 7 SPECIFIED BY 6 POINTS

RSTN XSTN
 2.5500 -8.1600
 2.5500 -8.2000
 2.5500 -8.2600
 7.0000 -7.1900
 7.0000 -7.3600
 6.5000 -7.6100

STATION 6 SPECIFIED BY 9 POINTS

RSTM	XSTM
4.512	-2.1120
4.6000	-2.3000
4.7000	-2.2500
4.8000	-2.1717
4.9000	-2.0455
5.0000	-1.8703
5.1000	-1.6516
5.2000	-1.3910

STATION 9 SPECIFIED BY 4 POINTS

RSTM	XSTM
4.5333	-5.1700
5.2000	-2.0000
5.6000	-4.2500
6.5000	-2.3500

STATION 10 SPECIFIED BY 4 POINTS

RSTM	XSTM
4.6435	-5.0250
5.2500	-4.7750
5.8200	-4.6500
6.5000	-4.9000

STATION 11 SPECIFIED BY 2 POINTS

RSTM	XSTM
5.5314	-2.4993
6.5000	-2.2174

STATION 12 SPECIFIED BY 2 POINTS

RSTM	XSTM
5.7206	-1.9200
6.5000	-1.3200

STATION 13 SPECIFIED BY 2 POINTS

RSTM	XSTM
5.7906	0.0000
6.5000	0.7000

STATION CALCULATION SPECIFICATION AND BLADING DATA

STATION 2	NCALC = 0	WDATA = -3	NBL = -0
STATION 3	NCALC = 0	WDATA = -3	NBL = -0
STATION 4	NCALC = 0	WDATA = -3	NBL = -0
STATION 5	NCALC = 0	WDATA = -3	NBL = -3
STATION 6	NCALC = 3	WDATA = -3	NBL = -C

STATION 7 NCALC = 1 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
3.50000	37.2720	1.5001	0.4931	2473
3.50000	42.7320	-1.0649	0.2603	2450
3.50000	47.1920	-1.0603	0.0076	2493
3.50000	51.6520	-1.0674	0.0076	2364
3.50000	56.1120	3.6691	0.0086	2390
3.50000	60.5720	2.9370	0.0086	2334
3.50000	65.0320	2.0397	0.0086	2371
3.50000	69.4920	1.0574	0.0086	2279

STATION 8 NCALC = 4 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2.50000	75.1720	49.1720	0.0064	3309
2.50000	79.6320	40.4919	0.0064	1892
2.50000	84.0920	31.8118	0.0064	0045
2.50000	88.5520	23.1317	0.0064	0033
2.50000	93.0120	14.4516	0.0064	0025
2.50000	97.4720	5.7715	0.0064	0017
2.50000	101.9320	-2.9086	0.0064	0009
2.50000	106.3920	-11.5887	0.0064	0001
2.50000	110.8520	-20.2688	0.0064	0002
2.50000	115.3120	-28.9489	0.0064	0002
2.50000	119.7720	-37.6290	0.0064	0002
2.50000	124.2320	-46.3091	0.0064	0002

STATION 9 NCALC = 0 NDATA = 0 NBL = 2

STATION 10 NCALC = 1 NDATA = 11 NBL = 2

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.50000	39.07	11.4101	0.1326	1839
4.50000	43.53	12.4544	0.1326	1441
4.50000	47.99	13.4987	0.1326	1070
4.50000	52.45	14.5430	0.1326	0946
4.50000	56.91	15.5873	0.1326	0816
4.50000	61.37	16.6316	0.1326	0687
4.50000	65.83	17.6759	0.1326	0554
4.50000	70.29	18.7202	0.1326	0422
4.50000	74.75	19.7645	0.1326	0292
4.50000	79.21	20.8088	0.1326	0164
4.50000	83.67	21.8531	0.1326	0039

STATION 11 NCALC = 3 NDATA = 11 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
4.50000	47.49	-1.1363	0.0160	0030
4.50000	51.95	-1.1183	0.0160	0015
4.50000	56.41	-1.1003	0.0160	0000
4.50000	60.87	-1.0823	0.0160	0000
4.50000	65.33	-1.0643	0.0160	0000
4.50000	69.79	-1.0463	0.0160	0000
4.50000	74.25	-1.0283	0.0160	0000
4.50000	78.71	-1.0103	0.0160	0001
4.50000	83.17	-0.9923	0.0160	0001
4.50000	87.63	-0.9743	0.0160	0001
4.50000	92.09	-0.9563	0.0160	0000

STATION 12 NCALC = 0 NDATA = 0 NBL = 1

STATION 13 NCALC = 0 NDATA = 0 NBL = 1

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS
M-COORD LOSS COEFF/TOTAL LOSS COEFF
0.0000 0.0000
1.0000 1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)
0.0000 0.0000
1.0000 1.0000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS
M-COORD LOSS COEFF/TOTAL LOSS COEFF
0.0000 0.0000
1.0000 1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)
0.0000 0.0000
1.0000 1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 7
PSCALE= 0.00 PLOWER= 0.00 DAMPF= 7.000 NSAVE= 1
NMAX= 0 MFORCE= 0 NEX= 2

TEST DATA PRELIMINARY FOR POINT NO. 1

TEST POINT TITLE
 = 512170300033
 = 5129277
 = 5129272
 = 5129277
 = 5129272
 = 5129272
 = 5129272

GAS CONSTANT
 FLOW MASS FRACTION
 FLOW MASS FRACTION
 ROTOR TOTAL PRESSURE
 ROTOR TOTAL TEMPERATURE
 STAGE INLET TOTAL PRESSURE
 STAGE INLET TOTAL TEMPERATURE
 P INLET PRESSURE
 P INLET TEMPERATURE

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.12500	20.1244
5.12500	20.1244
5.12500	20.1244
5.12500	20.1244
5.12500	20.1244
5.12500	20.1244
5.12500	20.1244
5.12500	20.1244
5.12500	20.1244
5.12500	20.1244

MOTOR OUTLET TOTAL TEMPERATURE (3 POINTS)

RADIUS	TEMPERATURE
5.12500	609.811
5.12500	609.811
5.12500	609.811
5.12500	609.811
5.12500	609.811
5.12500	609.811
5.12500	609.811
5.12500	609.811
5.12500	609.811
5.12500	609.811

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
5.12500	25.5013	26.1742
5.12500	25.5013	26.1742
5.12500	25.5013	26.1742
5.12500	25.5013	26.1742
5.12500	25.5013	26.1742
5.12500	25.5013	26.1742
5.12500	25.5013	26.1742
5.12500	25.5013	26.1742
5.12500	25.5013	26.1742
5.12500	25.5013	26.1742

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
5.12500	611.162
5.12500	611.162
5.12500	611.162
5.12500	611.162
5.12500	611.162
5.12500	611.162
5.12500	611.162
5.12500	611.162
5.12500	611.162
5.12500	611.162

STAGE OUTLET FLOW ANGLES (1 POINTS)

RADIUS	ANGLE
5.12500	.127
5.12500	1.351
5.12500	1.351

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-5.7510	11.1545
-5.0010	10.9407
-7.7510	12.3390
-7.5010	13.1310
-7.2510	13.3586
-6.7510	15.2093
-6.5010	15.3224
-5.0010	19.3303
-3.7510	20.3302
-2.5130	20.2224

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.0433	19.4773
-5.030	19.6775

DISTRIBUTED BLOCKAGE SPLICIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. T. BLOCKAGE
1	0.3000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.5000	-0.000	-0.000	-0.000
8	0.0000	1.5000	-0.000	-0.000	-0.000
9	0.0000	1.5000	-0.000	-0.000	-0.000
10	0.0000	1.0000	-0.000	-0.000	-0.000
11	0.0000	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	7	5	2	7	8	9	10	11	12	13
NUMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 2

TEST POINT TITLE = 601150300290

GAS CONSTANT = 53.4324
 FLOW FRACTION = 5.99746
 ROTOR SPEED = 18.9112
 INLET TOTAL TEMPERATURE = 18.14078
 INLET TOTAL PRESSURE = 17.16778
 P IN/P IN(STD) = 51.87508
 = .88741

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	26.0523
5.1250	26.71055
5.6750	26.37604
6.2250	26.8475
6.7750	26.5973
7.3250	27.6232
7.8750	27.6630
8.4250	28.1882

ROTOR OUTLET TOTAL TEMPERATURE (3 POINTS)

RADIUS	TEMPERATURE
5.1250	61.0237
5.5000	61.137
5.8750	61.7643
6.2500	61.5483
6.6250	61.3078
7.0000	62.3750
7.3750	63.4753
7.7500	64.6650

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	25.6433	26.2164
6.4660	25.9285	26.5074
6.8050	26.0929	26.6495
7.1440	26.4781	27.0735
7.4830	26.9101	27.5132
7.8220	27.3355	27.7420
8.1610	27.7696	27.8611

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	61.781
6.4660	61.7384
6.8050	62.0343
7.1440	62.4863
7.4830	63.5171
7.8220	64.1624

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.259
7.1440	1.973
6.4660	2.670

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	11.4716
-8.0010	11.0724
-7.7510	13.0015
-7.5010	14.4347
-7.2510	15.7937
-7.0010	17.9025
-6.7510	18.7548
-6.5010	19.1521
-6.2510	19.9302
-6.0010	20.1911
-5.7510	21.1224
-5.5010	21.9409
-5.2510	20.8403

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	23.5177
-2.5080	20.5177

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADJ. DEVIATION	DIST. FACTOR	FRAC. T.E. BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	0.0000	1.0000	-0.000	-0.000	-0.000
9	0.0000	1.0000	-0.000	-0.000	-0.000
10	0.0500	1.0000	-0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NTACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 3

F 601220301590
 E 53.4192
 E 55.0068
 E 1015.6944
 E 518.708
 E .93250
 E .68457

TEST POINT TITLE
 GAS CONSTANT
 AIR MASS FRC. 10
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/7 IN/STO
 P IN/7 IN/STO

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)
 RADIUS PRESSURE
 3.1200 26.3915
 5.1200 27.1097
 6.2200 28.7352
 7.3200 29.7353
 8.4200 27.9979
 9.5200 28.1362

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)
 RADIUS TEMPERATURE
 3.1200 610.156
 5.1200 619.121
 6.2200 618.251
 7.3200 613.211
 8.4200 625.258
 9.5200 620.292

STAGE OUTLET TOTAL PRESSURES (7 POINTS)
 RADIUS MEAN PRES PEAK PRES
 6.1270 25.6688 26.2070
 6.4000 26.6126 26.2925
 6.8000 26.1302 29.6225
 7.1400 26.2433 27.2258
 7.4200 25.3302 27.6277
 8.1610 27.6409 29.0045

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)
 RADIUS TEMPERATURE
 6.1270 612.246
 6.4000 612.246
 6.8000 612.246
 7.1400 623.002
 7.4200 623.002
 8.1610 645.105

STAGE OUTLET FLOW ANGLES (3 POINTS)
 RADIUS ANGLE
 7.4200 7.445
 8.1610 2.204
 6.4660 2.896

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	11.6284
-8.0010	11.2237
-7.7510	13.8032
-7.5010	14.2209
-7.2510	18.1333
-6.7510	19.0546
-6.5010	19.3267
-6.2510	20.1293
-5.0010	21.2929
-2.5074	21.0929
-1.5120	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8443	20.7824
-1.5080	20.7824

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID DEV. ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	0.1000	.5000	-0.000	-0.000	-0.000
9	0.0000	.5000	-0.000	-0.000	-0.000
10	0.0500	1.0000	-0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 4

TEST POINT TITLE
 = 601220402090
 = 53.4185
 = 54.9789
 = 54.3882
 = 181.3864
 = 141.6944
 = 518.7708
 = 193223
 = .688634

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL TEMPERATURE
 INLET P IN (STD)
 P IN/P IN (STD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	26.0671
5.1910	25.8910
5.2570	25.5399
5.3230	27.0161
5.3890	26.8379
5.4550	27.9829
5.5210	28.1172

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	605.945
5.1910	613.146
5.2570	619.648
5.3230	616.389
5.3890	616.324
5.4550	625.148
5.5210	635.963
5.5870	639.320
5.6530	652.783

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	25.7148	26.2523
6.1930	25.9107	26.6116
6.2590	26.1883	26.7266
6.3250	26.1521	27.2248
6.3910	25.8383	27.5451
6.4570	27.0383	27.8929
6.5230	27.4702	28.0726

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	612.243
6.1930	615.694
6.2590	619.103
6.3250	621.915
6.3910	627.833
6.4570	636.540
6.5230	646.798

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.6228	0.541
7.1150	2.243
3.4660	2.556

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	11.7456
-8.0010	11.4045
-7.7510	13.5747
-7.5010	15.0316
-7.2510	16.5993
-7.0010	18.3143
-6.7510	19.2135
-6.5010	19.4811
-6.2510	20.2597
-6.0010	20.3051
-5.7510	21.3679
-5.5010	21.2606
-5.2510	21.2606

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8433	20.9533
-5.5080	20.9533

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. T.E. BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	0.1000	.5000	-0.000	-0.000	-0.000
9	0.0000	.5000	-0.000	-0.000	-0.000
10	0.0000	1.0000	-0.000	-0.000	-0.000
11	.0500	1.0000	-0.000	-0.000	-0.000
12	.0500	1.0000	-0.000	-0.000	-0.000
13	.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 5

TEST POINT TITLE
 = 601220502590
 = 53.4186
 = 53.9789
 = 53.6548
 = 181.3841
 = 14.6944
 = 518.708
 = .93173
 = .88844

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 I IN/T IN(STD)
 P IN/P IN(STD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	26.8778
5.5000	25.9029
5.8750	26.4399
6.2500	27.0738
6.6250	27.8097
7.0000	28.6484
7.3750	29.5904
7.7500	30.6364
8.1250	31.7874

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	614.021
5.5000	613.563
5.8750	613.288
6.2500	613.154
6.6250	615.136
7.0000	625.266
7.3750	626.325
7.7500	640.877
8.1250	655.971

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	25.7189	26.2866
6.4660	25.9799	26.5714
6.8050	26.2025	26.7385
7.1440	26.4935	27.1256
7.4830	26.9111	27.5864
7.8220	27.2995	27.9289
8.1610	27.4691	28.1276

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	612.230
6.4660	616.555
6.8050	619.599
7.1440	622.322
7.4830	628.855
7.8220	639.802
8.1610	648.415

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	.930
7.1440	2.771
5.4660	2.728

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	11.8621
-8.0010	11.6288
-7.7510	13.3149
-7.5010	15.2131
-7.2510	16.9314
-7.0010	18.4682
-6.7510	19.3449
-6.5010	19.5332
-6.2510	20.3684
-6.0010	20.3430
-5.7510	21.4206
-2.5674	21.3838
-2.5190	21.3838

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.6489	21.0818
-2.5080	21.0818

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. ADJ. DEVIATION	DIST. FACTOR	FRAC. TE. BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.0000	1.0000	-0.0000	-0.0000	-0.0000
8	0.0000	1.5000	-0.0000	-0.0000	-0.0000
9	0.0000	.5000	-0.0000	-0.0000	-0.0000
10	0.0000	.5000	-0.0000	-0.0000	-0.0000
11	0.0500	1.0000	-0.0000	-0.0000	-0.0000
12	0.0500	1.0000	-0.0000	-0.0000	-0.0000
13	0.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	0												

TEST DATA PRINTOUT FOR POINT NO. 6

TEST POINT TITLE
 = 601220603090
 = 53.4174
 = 53.9952
 = 52.8995
 = 181.437
 = 14.6944
 = 518.709
 = .93062
 = .89061

GAS CONSTANT
 AIR FRACTION
 FLOWRATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(STD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	26.6183
5.1250	26.6183
5.1250	26.6183
5.1250	26.6183
5.1250	26.6183
5.1250	26.6183
5.1250	26.6183
5.1250	26.6183
5.1250	26.6183
5.1250	26.6183

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	610.214
5.1250	614.033
5.1250	620.511
5.1250	620.264
5.1250	615.808
5.1250	615.714
5.1250	626.909
5.1250	642.584
5.1250	659.806

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	25.7207	26.3053
6.4660	25.9986	26.5878
6.8050	26.1743	26.7445
7.1440	26.4213	27.0738
7.4830	26.8662	27.5843
7.8220	27.2467	27.8938
8.1610	27.3924	28.0698

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	612.702
6.4660	617.069
6.8050	619.916
7.1440	622.877
7.4830	630.240
7.8220	641.155
8.1610	650.109

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.152
7.1440	2.036
6.4660	2.762

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	11.9745
-8.0010	11.8580
-7.7510	14.0591
-7.5010	15.3222
-7.2510	17.2760
-7.0010	18.5653
-6.7510	19.4179
-6.5010	19.6750
-6.2510	20.3450
-6.0010	20.3464
-5.7510	21.4597
-2.5674	21.4971
-0.5190	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	21.1923
-0.5050	21.1923

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID DEVIATION	DIST. FACTOR	FRAC. T. BLOCKAGE
1	0.0000	1.0000	-3.0000	-0.0000	-0.0000
2	0.0000	1.0000	-3.0000	-0.0000	-0.0000
3	0.0000	1.0000	-3.0000	-0.0000	-0.0000
4	0.0000	1.0000	-3.0000	-0.0000	-0.0000
5	0.0000	1.0000	-3.0000	-0.0000	-0.0000
6	0.0000	1.0000	-3.0000	-0.0000	-0.0000
7	0.0000	1.0000	-3.0000	-0.0000	-0.0000
8	0.1000	.5000	-0.0000	-0.0000	-0.0000
9	0.0000	.5000	-0.0000	-0.0000	-0.0000
10	0.0500	1.0000	-3.0000	-0.0000	-0.0000
11	.0500	1.0000	-3.0000	-0.0000	-0.0000
12	.0500	1.0000	-3.0000	-0.0000	-0.0000
13	.0500	1.0000	-3.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NATCH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 7

TEST POINT TITLE
 = 601220703590
 = 53.4175
 = 52.1504
 = 1614.42
 = 14.6944
 = 518.708
 = .89275

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 Y IN/T IN(STD)
 P IN/P IN(STD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	26.1462
5.5000	25.9643
5.8750	26.7919
6.2500	29.6402
6.6250	27.0855
7.0000	26.9361
7.3750	27.7327
7.7500	28.1319
8.1250	28.4030

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	610.192
5.5000	614.609
5.8750	620.820
6.2500	627.973
6.6250	629.206
7.0000	629.516
7.3750	631.747
7.7500	632.377
8.1250	632.377

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	25.7330	26.3149
6.4660	25.0474	26.6520
6.8050	26.1654	26.7598
7.1440	26.3754	27.0872
7.4830	26.7370	27.4957
7.8220	27.0848	27.7935
8.1610	27.2506	27.8492

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	612.902
6.4660	617.270
6.8050	620.515
7.1440	623.350
7.4830	631.490
7.8220	642.198
8.1610	651.577

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.917
7.1440	1.791
6.4660	2.488

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	12.0978
-8.0010	12.0577
-7.7510	14.3370
-7.5010	15.3174
-7.2510	17.4504
-7.0010	18.6906
-6.7510	19.4889
-6.5010	19.7875
-6.2510	20.3528
-6.0010	21.4805
-5.7510	21.5793
-5.5190	21.5793

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	21.2756
-2.5080	21.2756

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TEE BLOCKAGE
1	0.0000	1.00000	-0.000	-0.0000	-0.0000
2	0.0000	1.00000	-0.000	-0.0000	-0.0000
3	0.0000	1.00000	-0.000	-0.0000	-0.0000
4	0.0000	1.00000	-0.000	-0.0000	-0.0000
5	0.0000	1.00000	-0.000	-0.0000	-0.0000
6	0.0000	1.00000	-0.000	-0.0000	-0.0000
7	0.0000	1.00000	-0.000	-0.0000	-0.0000
8	0.1000	.50000	-0.000	-0.0000	-0.0000
9	0.0000	.50000	-0.000	-0.0000	-0.0000
10	0.0000	1.00000	-0.000	-0.0000	-0.0000
11	0.0500	1.00000	-0.000	-0.0000	-0.0000
12	0.0500	1.00000	-0.000	-0.0000	-0.0000
13	0.0500	1.00000	-0.000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

95% SPEEDLINE PHASE II INPUT DATA

PROGRAM U00223 - AXIAL COMPRESSION TEST DATA ANALYSIS
 FIXED DATA PRINTOUT

HTFC CONFIGURATION 01. 9% SPEED, ADDRESS-0140T ANALYSIS, 26M4476

NUMBER OF STATIONS 1
 MAXIMUM NUMBER OF REPLICATIONS 1
 TOTAL TEST POINTS 1
 STATION 1 SPECIFIED BY 2 POINTS
 NUMBER OF STATION 1 POINTS 2
 STATION 2 SPECIFIED BY 2 POINTS
 NUMBER OF STATION 2 POINTS 2
 STATION 3 SPECIFIED BY 2 POINTS
 NUMBER OF STATION 3 POINTS 2
 STATION 4 SPECIFIED BY 2 POINTS
 NUMBER OF STATION 4 POINTS 2
 STATION 5 SPECIFIED BY 2 POINTS
 NUMBER OF STATION 5 POINTS 2
 STATION 6 SPECIFIED BY 2 POINTS
 NUMBER OF STATION 6 POINTS 2
 STATION 7 SPECIFIED BY 6 POINTS
 NUMBER OF STATION 7 POINTS 6

AUGULS SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

ASTM ASTM
 0.1000 -10.0000
 11.0000 -10.0000

STATION 2 SPECIFIED BY 2 POINTS

ASTM ASTM
 0.2000 -10.0000
 0.4000 -10.0000

STATION 3 SPECIFIED BY 2 POINTS

ASTM ASTM
 0.0000 -10.0000
 0.0000 -10.0000

STATION 4 SPECIFIED BY 2 POINTS

ASTM ASTM
 1.5000 -9.7500
 0.5000 -11.1000

STATION 5 SPECIFIED BY 2 POINTS

ASTM ASTM
 2.0000 -9.1111
 0.5000 -9.0000

STATION 6 SPECIFIED BY 2 POINTS

ASTM ASTM
 2.0000 -9.0000
 0.5000 -9.0000

STATION 7 SPECIFIED BY 6 POINTS

ASTM ASTM
 2.0000 -9.1000
 0.0000 -9.0000
 0.0000 -9.0000
 0.0000 -9.0000
 0.0000 -9.0000

STATION 8 SPECIFIED BY 9 POINTS

RSTN	XSTN
4.4612	-5.3150
4.6000	-5.3080
4.8000	-5.2680
5.0000	-5.1890
5.1067	-5.1727
5.8592	-5.1485
6.7945	-5.3708
7.8561	-5.5016
8.5000	-5.7540

STATION 9 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.5534	-5.1700
5.2000	-5.0000
5.8000	-4.9500
8.5000	-5.3500

STATION 10 SPECIFIED BY 4 POINTS

RSTN	XSTN
4.6435	-5.0250
5.2500	-4.7750
5.8200	-4.8500
8.5000	-4.9000

STATION 11 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.6314	-2.4999
8.5000	-2.2174

STATION 12 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7906	-1.9200
8.5000	-1.9200

STATION 13 SPECIFIED BY 2 POINTS

RSTN	XSTN
5.7906	0.0000
8.5000	0.0000

STATION CALCULATION SPECIFICATION AND BLADING DATA

STATION	NCALC	J	NDATA	J	NBL	J	NBL	J	NBL
STATION 2	NCALC	= 0	NDATA	= -0	NBL	= -0			
STATION 3	NCALC	= 0	NDATA	= -0	NBL	= -0			
STATION 4	NCALC	= 0	NDATA	= -0	NBL	= -0			
STATION 5	NCALC	= 0	NDATA	= -0	NBL	= -0			
STATION 6	NCALC	= 0	NDATA	= -0	NBL	= -0			

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000
1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000
1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 9

PSCALE= 0.00 PLOWER= 0.00 DAMPF= 7.000 NSAVE= 1

NMAX= 0 MFORCE= 0 NEX= 2

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE
 = 60130019095
 GAS CONSTANT
 AIR FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(SID)
 = 53.4697
 = 61.32106
 = 1932.944
 = 518.4708
 = .95373

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	27.7595
6.1250	27.5276
7.1250	28.0973
8.1250	28.2129
9.1250	28.3129
10.1250	28.3795

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	621.583
6.1250	625.164
7.1250	627.466
8.1250	627.415
9.1250	627.311
10.1250	627.325

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	26.2978	27.0246
7.1270	27.0246	28.0246
8.1270	27.0246	28.0246
9.1270	27.0246	28.0246
10.1270	27.0246	28.0246
11.1270	27.0246	28.0246
12.1270	27.0246	28.0246

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	622.285
7.1270	622.285
8.1270	622.285
9.1270	622.285
10.1270	622.285
11.1270	622.285
12.1270	622.285

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.1270	526
8.1270	1040
9.1270	1756

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	10.4275
-8.0010	10.1577
-7.7510	10.9028
-7.5010	11.4773
-7.2510	12.8408
-7.0010	15.0037
-6.7510	16.1372
-6.5010	18.7010
-6.2510	19.6833
-6.0010	20.0868
-5.7510	21.3936
-5.5010	21.1262
-5.2510	21.1262

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	20.7047
-5.5060	20.7047

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.0000	1.0000	-0.0000	-0.0000	-0.0000
8	0.0000	1.0000	-0.0000	-0.0000	-0.0000
9	0.0000	1.0000	-0.0000	-0.0000	-0.0000
10	0.0000	1.0000	-0.0000	-0.0000	-0.0000
11	0.0500	1.0000	-0.0000	-0.0000	-0.0000
12	0.0500	1.0000	-0.0000	-0.0000	-0.0000
13	0.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 2

TEST POINT TITLE
 = 601300200295
 = 53.44694
 = 68.38899
 = 19.3229.2
 = 14.16944
 = 518.700
 = .85546

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/1 IN(SID)
 P IN/1 IN(STB)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	27.9325
5.5000	28.4597
5.8750	28.9869
6.2500	29.5141
6.6250	30.0413
7.0000	30.5685
7.3750	31.0957
7.7500	31.6229
8.1250	32.1501

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	82.735
5.5000	83.157
5.8750	83.579
6.2500	84.001
6.6250	84.423
7.0000	84.845
7.3750	85.267
7.7500	85.689
8.1250	86.111

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	27.3597	28.0661
6.5020	27.8869	28.5933
6.8770	28.4141	29.1205
7.2520	28.9413	29.6477
7.6270	29.4685	30.1749
8.0020	29.9957	30.7021
8.3770	30.5229	31.2293

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	83.843
6.5020	84.265
6.8770	84.687
7.2520	85.109
7.6270	85.531
8.0020	85.953
8.3770	86.375

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.6270	1.730
7.2520	1.625
6.8770	2.878

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	10.4937
-8.0010	10.2645
-7.7510	11.4862
-7.5010	13.1482
-7.2510	15.1154
-7.0010	16.7172
-6.7510	18.9910
-6.5010	19.7469
-6.2510	20.6709
-6.0010	20.9864
-5.7510	22.3196
-2.5674	22.1256
-2.5190	

WUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	21.7542
-2.5080	21.7542

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.1000	.5000	-0.0000	-0.0000	-0.0000
8	0.0000	.5000	-0.0000	-0.0000	-0.0000
9	0.0000	.5000	-0.0000	-0.0000	-0.0000
10	0.0000	1.0000	-0.0000	-0.0000	-0.0000
11	.0500	1.0000	-0.0000	-0.0000	-0.0000
12	.0500	1.0000	-0.0000	-0.0000	-0.0000
13	.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 3

TEST POINT TITLE
 = 601300301095
 = 53.4687
 = 60.5594
 = 19.117.8
 = 14.6944
 = 518.708
 = .934640
 = .85684

GAS CONSTANT
 AIR MASS FRACTION
 FLOWRATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/1 IN(SID)
 P IN/P IN(SID)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	27.9274
5.5000	27.5310
5.8750	28.15451
6.2500	28.7242
6.6250	28.3591
7.0000	28.3735
7.3750	30.0631
7.7500	30.4772
8.1250	30.3680

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	622.229
5.5000	625.103
5.8750	632.435
6.2500	632.168
6.6250	626.170
7.0000	648.433
7.3750	643.593
7.7500	653.712
8.1250	652.472

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	27.3959	28.1227
6.4560	27.7129	28.5047
6.8050	28.1533	28.4118
7.1440	28.7059	29.7087
7.4830	29.2459	30.0880
7.8220	30.0339	30.5673
8.1610	30.0095	30.6438

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	624.207
6.4560	627.507
6.8050	631.185
7.1440	635.590
7.4830	647.633
7.8220	652.523
8.1610	660.109

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.593
7.4830	1.879
6.8050	2.581

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	10.6028
-8.0910	10.3194
-7.7510	11.9626
-7.5010	13.6846
-7.2510	15.5307
-7.1010	17.3541
-6.7510	19.1849
-6.5010	19.8429
-6.2510	20.0943
-5.7510	22.3872
-2.5674	22.2863
-2.5190	22.2853

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	21.9166
-2.5080	21.9166

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	0.0000	1.5000	-0.000	-0.000	-0.000
9	0.0000	0.5000	-0.000	-0.000	-0.000
10	0.0500	0.5000	-0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

TEST DATA PRINTOUT FOR POINT NO. 4

TEST POINT TITLE
 = 601300401795
 = 53.4668
 = 59.9940
 = 59.7721
 = 19.3216
 = 14.6944
 = 15.8708
 = .94653
 = .85923

GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(STD)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	27.9520
5.2500	27.2517
5.3750	28.2426
5.5000	28.8072
5.6250	28.9831
5.7500	29.1848
5.8750	30.1850
6.0000	30.6439
6.1250	30.9920

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	621.819
5.2500	623.517
5.3750	633.352
5.5000	636.201
5.6250	643.147
5.7500	645.102
5.8750	652.342
6.0000	666.094

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1250	27.4313	28.2082
6.2500	27.4835	28.5243
6.3750	28.2680	28.9463
6.5000	28.7892	29.2849
6.6250	29.2903	30.1357
6.7500	29.6809	30.5299
6.8750	30.1075	30.7559

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1250	624.457
6.2500	627.042
6.3750	636.140
6.5000	638.631
6.6250	645.731
6.7500	647.147
6.8750	652.147

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0220	1.764
7.1440	1.976
6.2660	2.458

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	10.8157
-8.0010	10.4023
-7.7510	12.4028
-7.5010	14.2361
-7.2510	15.8549
-7.0010	18.3132
-6.7510	19.4301
-6.5010	19.9801
-6.2510	21.0107
-6.0010	21.1747
-5.7510	22.2053
-2.5674	22.5162
-2.5130	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	22.1657
-2.5030	22.1657

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TIE BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.0000	1.0000	-0.0000	-0.0000	-0.0000
8	0.0000	1.0000	-0.0000	-0.0000	-0.0000
9	0.0000	1.0000	-0.0000	-0.0000	-0.0000
10	0.0000	1.0000	-0.0000	-0.0000	-0.0000
11	0.0500	1.0000	-0.0000	-0.0000	-0.0000
12	0.0500	1.0000	-0.0000	-0.0000	-0.0000
13	0.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	= 0												

TEST DATA PRINTOUT FOR POINT NO. 5

TEST POINT TITLE
 = 601300502095
 = 53.4628
 = 99653
 = 59.3146
 = 19318.0
 = 14.6944
 = 518.706
 = .94537
 = .86117

GAS CONSTANT
 AIR MASS FRACTION
 FLOWRATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/AT IN(STO)
 P IN/MP IN(STO)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	27.9305
5.6750	27.6055
6.2250	28.5418
6.7750	29.0217
7.3250	29.2006
7.8750	30.0611
8.4250	30.6988
	31.0096

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	622.122
5.6750	623.924
6.2250	633.617
6.7750	626.943
7.3250	643.243
7.8750	643.683
8.4250	657.183
	667.582

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	27.9218	28.2090
6.6760	27.9164	28.6234
7.2250	28.3102	28.0175
7.7740	29.0224	28.8350
8.3230	29.2213	30.2350
8.8720	30.1213	30.6417
9.4210		30.7690

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	624.948
6.6760	624.493
7.2250	637.053
7.7740	646.688
8.3230	650.738
8.8720	663.733

STAGE OUTLET IN/MP ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	13.90
7.1750	13.91
6.5280	13.92

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	10.9276
-8.0010	10.4415
-7.7510	12.5815
-7.2510	14.4814
-7.0010	15.5209
-6.7510	18.0282
-6.5010	20.0677
-6.2510	21.2104
-5.7510	22.5692
-2.5619	22.6092

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	22.2642
-5.080	22.2642

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST FACTOR	MID. DEV.	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.0000	1.0000	-0.0000	-0.0000	-0.0000
8	0.0000	1.0000	-0.0000	-0.0000	-0.0000
9	0.0000	1.0000	-0.0000	-0.0000	-0.0000
10	0.0000	1.0000	-0.0000	-0.0000	-0.0000
11	0.0500	1.0000	-0.0000	-0.0000	-0.0000
12	0.0500	1.0000	-0.0000	-0.0000	-0.0000
13	0.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	0												

TEST DATA SUMMARY FOR POINT NO. 6

TEST POINT TITLE
 GAS CONSISTENT
 AIR MASS FRACTION
 FLOW RATE
 FLOW METER SERIAL NUMBER
 FLOW METER TOTAL PRESSURE
 FLOW METER TOTAL TEMPERATURE
 FLOW METER TOTAL HUMIDITY
 FLOW METER TOTAL WET BULB TEMPERATURE

601290602495
 5.164775
 5.164775
 5.164775
 5.164775
 5.164775
 5.164775
 5.164775

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	27.4025
5.1500	27.4025
5.1750	27.4025
5.2000	27.4025
5.2250	27.4025
5.2500	27.4025
5.2750	27.4025
5.3000	27.4025
5.3250	27.4025
5.3500	27.4025

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	62.6
5.1500	62.6
5.1750	62.6
5.2000	62.6
5.2250	62.6
5.2500	62.6
5.2750	62.6
5.3000	62.6
5.3250	62.6
5.3500	62.6

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	27.4025	28.1824
6.1500	27.4025	28.1824
6.1750	27.4025	28.1824
6.2000	27.4025	28.1824
6.2250	27.4025	28.1824
6.2500	27.4025	28.1824
6.2750	27.4025	28.1824
6.3000	27.4025	28.1824

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	62.6
6.1500	62.6
6.1750	62.6
6.2000	62.6
6.2250	62.6
6.2500	62.6
6.2750	62.6
6.3000	62.6

STAGE OUTLET FLOW ANGLES (8 POINTS)

RADIUS	ANGLE
7.1250	1.987
7.1500	1.987
7.1750	1.987
7.2000	1.987
7.2250	1.987
7.2500	1.987
7.2750	1.987
7.3000	1.987

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	11.0630
-8.0010	10.5008
-7.7510	12.8192
-7.5010	14.7495
-7.2510	16.1724
-7.0010	18.6751
-6.7510	19.7252
-6.5010	20.1728
-6.2510	21.1241
-6.0010	22.6313
-5.7510	22.7119
-2.5674	
-.5190	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8429	22.3661
-.5080	22.3661

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0500	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.0000	-0.0000	-0.0000	-0.0000
7	0.0000	1.0000	-0.0000	-0.0000	-0.0000
8	.1000	.5000	-0.0000	-0.0000	-0.0000
9	0.0000	.5000	-0.0000	-0.0000	-0.0000
10	0.0500	1.0000	-0.0000	-0.0000	-0.0000
11	.0500	1.0000	-0.0000	-0.0000	-0.0000
12	.0500	1.0000	-0.0000	-0.0000	-0.0000
13	.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	= 0												

TEST DATA PRINTOUT FOR POINT NO. 7

TEST POINT TITLE
 = 601290702895
 = 53.4465
 = 599703
 = 58.0571
 = 19291.2
 = 14.6944
 = 518.700
 = .87052

GAS CONSTANT
 AIR MASS FRACTION
 FLOWRATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(S/D)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	27.8621
5.2500	27.5876
5.3750	28.0110
5.5000	28.7587
5.6250	29.1087
5.7500	29.3013
5.8750	30.1329
6.0000	30.1081
6.1250	30.9985

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	621.194
5.2500	621.737
5.3750	623.457
5.5000	623.757
5.6250	623.757
5.7500	623.757
5.8750	623.757
6.0000	623.757
6.1250	626.955

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1250	27.4332	28.1918
6.2500	27.6433	28.5730
6.3750	28.2906	28.9564
6.5000	28.7200	29.7873
6.6250	29.2313	30.6223
6.7500	29.9616	30.7553

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1250	624.524
6.2500	628.644
6.3750	633.442
6.5000	637.316
6.6250	640.223
6.7500	651.452
6.8750	666.365

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0000	1.082
7.1250	1.251
6.4500	2.267

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	11.2115
-8.0010	10.5916
-7.7510	13.0946
-7.5010	15.0379
-7.2510	16.4719
-7.0010	18.7933
-6.7510	19.6788
-6.5010	20.1523
-6.2510	21.2081
-6.0010	22.6496
-5.7510	22.7972
-5.5010	
-5.2510	
-5.0010	
-4.7510	
-4.5010	
-4.2510	
-4.0010	
-3.7510	
-3.5010	
-3.2510	
-3.0010	
-2.7510	
-2.5010	
-2.2510	
-2.0010	
-1.7510	
-1.5010	
-1.2510	
-1.0010	
-0.7510	
-0.5010	
-0.2510	
0.0010	
0.2510	
0.5010	
0.7510	
1.0010	
1.2510	
1.5010	
1.7510	
2.0010	
2.2510	
2.5010	
2.7510	
3.0010	
3.2510	
3.5010	
3.7510	
4.0010	
4.2510	
4.5010	
4.7510	
5.0010	
5.2510	
5.5010	
5.7510	
6.0010	
6.2510	
6.5010	
6.7510	
7.0010	
7.2510	
7.5010	
7.7510	
8.0010	
8.2510	
8.5010	
8.7510	
9.0010	
9.2510	
9.5010	
9.7510	
10.0010	
10.2510	
10.5010	
10.7510	
11.0010	
11.2510	
11.5010	
11.7510	
12.0010	
12.2510	
12.5010	
12.7510	
13.0010	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.6499	22.4521
-2.5080	22.4521

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.00000	-0.0000	-0.0000	-0.0000
2	0.0000	1.00000	-0.0000	-0.0000	-0.0000
3	0.0000	1.00000	-0.0000	-0.0000	-0.0000
4	0.0000	1.00000	-0.0000	-0.0000	-0.0000
5	0.0000	1.00000	-0.0000	-0.0000	-0.0000
6	0.0000	1.00000	-0.0000	-0.0000	-0.0000
7	0.0000	1.00000	-0.0000	-0.0000	-0.0000
8	0.0000	1.00000	-0.0000	-0.0000	-0.0000
9	0.0000	1.00000	-0.0000	-0.0000	-0.0000
10	0.0000	1.00000	-0.0000	-0.0000	-0.0000
11	0.0000	1.00000	-0.0000	-0.0000	-0.0000
12	0.0000	1.00000	-0.0000	-0.0000	-0.0000
13	0.0000	1.00000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	= 0												

TEST DATA PRINTOUT FOR POINT NO. 8

TEST POINT TITLE
 = 601290003295
 = 53.66421
 = 57.24411
 = 51.36944
 = 51.8708
 = 51.84655
 = .87292

GAS CONSTANT
 GTR MASS FRACTION
 FLOWMETER COEFF
 ROTOR TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/A IN(Std)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	27.6793
5.3000	27.7825
5.4750	28.6499
5.6500	29.1816
5.8250	29.4610
6.0000	30.2114
6.1750	31.2143
6.3500	31.8341

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	621.375
5.3000	626.727
5.4750	635.141
5.6500	637.929
5.8250	645.017
6.0000	655.178
6.1750	665.175

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	27.4673	28.2770
6.3020	28.7450	29.6644
6.4770	28.5022	29.5247
6.6520	29.2311	30.1298
6.8270	29.4811	30.4512
7.0020	29.7347	30.7503

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	625.074
6.3020	629.208
6.4770	634.197
6.6520	638.133
6.8270	652.993
7.0020	659.146

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.6220	1.090
7.1460	1.826
6.6660	2.396

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	11.3927
-6.0010	10.7599
-7.7510	13.4671
-7.5010	13.3643
-7.2510	16.9404
-6.7510	16.9118
-6.5010	19.9930
-6.2510	20.2089
-6.0010	21.2875
-5.7510	21.1710
-5.5010	22.8917
-5.2510	22.8917

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8493	22.5399
-2.5080	22.5399

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADJ. DEVIATION	DIST. FACTOR	FRAC. IE BLOCKAGE
1	0.0000	1.00000	-0.000	-0.000	-0.0000
2	0.0000	1.00000	-0.000	-0.000	-0.0000
3	0.0000	1.00000	-0.000	-0.000	-0.0000
4	0.0000	1.00000	-0.000	-0.000	-0.0000
5	0.0000	1.00000	-0.000	-0.000	-0.0000
6	0.1000	1.50000	-0.000	-0.000	-0.0000
7	0.0000	1.50000	-0.000	-0.000	-0.0000
8	0.0000	1.00000	-0.000	-0.000	-0.0000
9	0.0000	1.00000	-0.000	-0.000	-0.0000
10	0.0500	1.00000	-0.000	-0.000	-0.0000
11	0.0500	1.00000	-0.000	-0.000	-0.0000
12	0.0500	1.00000	-0.000	-0.000	-0.0000
13	0.0500	1.00000	-0.000	-0.000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NWACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 9

TEST POINT TITLE
 = 601300301095
 = 53.4687
 = 99635
 = 60.5594
 = 19317.8
 = 14.6944
 = 5.8708
 = .94640
 = .85684

GAS CONSTANT
 AIR MASS FRACTION
 FLOWRATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 IN/P IN/STO
 P IN/P

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	27.9274
5.5000	27.5310
5.8750	26.5651
6.2500	26.7252
6.6250	26.9561
7.0000	26.9736
7.3750	30.0531
7.7500	30.4772
8.1250	30.8680

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	622.220
5.5000	625.103
5.8750	632.433
6.2500	632.160
6.6250	626.170
7.0000	649.393
7.3750	651.712
7.7500	652.472

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	27.3959	28.1227
6.4660	27.1129	28.5047
6.8050	26.1573	28.6116
7.1440	26.7052	28.7087
7.4830	29.2302	28.9090
7.8220	29.8406	30.5673
8.1610	30.0195	30.8438

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	624.267
6.4660	632.301
6.8050	632.205
7.1440	633.239
7.4830	643.221
7.8220	648.226
8.1610	650.189

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.690
7.1440	1.879
6.4660	2.861

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	10.6028
-8.0010	10.3194
-7.7510	11.9626
-7.5010	13.6846
-7.2510	15.5307
-7.0010	17.3541
-6.7510	19.1849
-6.5010	19.8527
-6.2510	20.8429
-6.0010	21.0943
-5.7510	22.3872
-2.5674	22.2863
-.5190	22.2863

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	21.9166
-.5080	21.9166

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. TO BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	.1000	.5000	-0.000	-0.000	-0.000
9	0.0000	.5000	-0.000	-0.000	-0.000
10	0.0000	.5000	-0.000	-0.000	-0.000
11	.0500	1.0000	-0.000	-0.000	-0.000
12	.0500	1.0000	-0.000	-0.000	-0.000
13	.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	0

NJUMP= 0

100% SPEEDLINE PHASE II INPUT DATA

PROGRAM U00200 - AXIAL COMPRESSOR TEST DATA ANALYSIS
 FIXED DATA PRINTOUT

MFC CONFIGURATION #1, 100% SPEED, ACROSS-BLADE ANALYSIS 23MAR76

NUMBER OF STATIONS 13
 NUMBER OF STAGES 12
 NUMBER OF VERTICES 20
 MAXIMUM NUMBER OF ITERATIONS 10
 MAXIMUM NUMBER OF ARBITRARY ITERATIONS 10
 TOTAL PRESSURE SOURCE INDICATOR 1
 TOTAL TEMPERATURE SOURCE INDICATOR 1
 STATION NUMBER FOR STAGE EXIT DATA 12
 STATION NUMBER FOR STAGE EXIT DATA 12
 NUMBER OF STATOR BLADES 3
 NUMBER OF ROTOR BLADES 1
 MAXIMUM NUMBER OF LINES PER PAGE 60
 NPLOT 3

ANNULUS SPECIFICATION

STATION 1 SPECIFIED BY 2 POINTS

RSTH XSTH
 0.3000 -16.2500
 13.3000 -19.4533

STATION 2 SPECIFIED BY 2 POINTS

RSTH XSTH
 0.0000 -14.9300
 9.4000 -14.0800

STATION 3 SPECIFIED BY 2 POINTS

RSTH XSTH
 0.0000 -10.3500
 8.9500 -12.9500

STATION 4 SPECIFIED BY 2 POINTS

RSTH XSTH
 1.5000 -9.7500
 6.2500 -11.1300

STATION 5 SPECIFIED BY 2 POINTS

RSTH XSTH
 2.0500 -9.1137
 6.5000 -9.6433

STATION 6 SPECIFIED BY 2 POINTS

RSTH XSTH
 2.3500 -8.6500
 6.5000 -8.6500

STATION 7 SPECIFIED BY 6 POINTS

RSTH XSTH
 3.6514 -8.1500
 5.6050 -5.2025
 6.0547 -6.2500
 6.3747 -5.1310
 6.5000 -7.9315
 6.5000 -7.4110

STATION 8 SPECIFIED BY 4 POINTS

RSTN	XSTM
7.0312	-5.3120
7.0310	-2.0320
7.0303	-2.0320
7.0300	-2.0347
7.0292	-2.0347
7.0282	-2.0370
7.0275	-2.0370
7.0269	-2.0370

STATION 9 SPECIFIED BY 4 POINTS

RSTN	XSTM
4.2537	-2.1700
5.2520	-3.0953
5.2500	-3.0953
6.2513	-5.3500

STATION 10 SPECIFIED BY 4 POINTS

RSTN	XSTM
7.9715	-5.0250
7.9700	-3.7750
7.9690	-5.0250
8.9690	-7.0300

STATION 11 SPECIFIED BY 2 POINTS

RSTN	XSTM
5.9314	-2.2373
6.9300	-2.2373

STATION 12 SPECIFIED BY 2 POINTS

RSTN	XSTM
5.7345	-1.3220
6.7330	-1.3220

STATION 13 SPECIFIED BY 2 POINTS

RSTN	XSTM
3.2206	0.2200
3.5100	0.2200

STATION CALCULATION, SPECIFICATION AND BLADING DATA

STATION 2	SCALE = 3	DATA = 0	HBL = -0
STATION 3	SCALE = 3	DATA = 0	HBL = -0
STATION 4	SCALE = 3	DATA = 0	HBL = -0
STATION 5	SCALE = 3	DATA = 0	HBL = -0
STATION 6	SCALE = 3	DATA = 0	HBL = -0

STATION 7 NCALC = 1 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2	0	1	0	0
3	0	1	0	0
4	0	1	0	0
5	0	1	0	0
6	0	1	0	0
7	0	1	0	0
8	0	1	0	0
9	0	1	0	0
10	0	1	0	0
11	0	1	0	0
12	0	1	0	0
13	0	1	0	0

STATION 8 NCALC = 4 NDATA = 13 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2	0	1	0	0
3	0	1	0	0
4	0	1	0	0
5	0	1	0	0
6	0	1	0	0
7	0	1	0	0
8	0	1	0	0
9	0	1	0	0
10	0	1	0	0
11	0	1	0	0
12	0	1	0	0
13	0	1	0	0

STATION 9 NCALC = 0 NDATA = 3 NBL = 2

STATION 10 NCALC = 1 NDATA = 11 NBL = 2

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2	0	1	0	0
3	0	1	0	0
4	0	1	0	0
5	0	1	0	0
6	0	1	0	0
7	0	1	0	0
8	0	1	0	0
9	0	1	0	0
10	0	1	0	0
11	0	1	0	0
12	0	1	0	0
13	0	1	0	0

STATION 11 NCALC = 3 NDATA = 11 NBL = 1

RADIUS	BETA	EPSILON	BLOCKAGE	THETA
2	0	1	0	0
3	0	1	0	0
4	0	1	0	0
5	0	1	0	0
6	0	1	0	0
7	0	1	0	0
8	0	1	0	0
9	0	1	0	0
10	0	1	0	0
11	0	1	0	0
12	0	1	0	0
13	0	1	0	0

STATION 12 NCALC = 5 NDATA = 9 NBL = 1

STATION 13 NCALC = 7 NDATA = 3 NBL = 1

ROTOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000 0.0000
1.0000 1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000 0.0000
1.0000 1.0000

STATOR GENERALIZED PERFORMANCE LOSS 2PTS DEVIATION 2PTS

M-COORD LOSS COEFF/TOTAL LOSS COEFF

0.0000 0.0000
1.0000 1.0000

OUTLET RADIUS = 0.0000

M-COORD DEVIATION ANGLE (DEGREES)

0.0000 0.0000
1.0000 1.0000

NUMBER OF TEST POINTS TO BE ANALYSED = 9

PSCALE= 0.00 PLOWR= 0.00 DAMPF= 7.000 NSAVE= 1

NMAX= 0 NFORCE= 0 NEX= 2

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE
 GAS CONSTANT
 AIR MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P INLET INLET

60116020002
 53.4535
 0.9681
 0.17841
 620.6944
 5.184708
 0.94301
 0.85249

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
2.1250	27.2023
3.1250	28.5696
4.1250	29.2027
5.1250	29.9163
6.1250	29.9163
7.1250	29.1041
8.1250	29.3490
9.1250	28.2152

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
2.1250	612.3152
3.1250	612.4294
4.1250	619.7110
5.1250	619.6605
6.1250	641.1500
7.1250	642.1500
8.1250	642.1500

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
0.1250	29.1717	29.7243
1.1250	29.1717	29.7243
2.1250	29.1717	29.7243
3.1250	29.1717	29.7243
4.1250	29.1717	29.7243
5.1250	29.1717	29.7243
6.1250	29.1717	29.7243

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
0.1250	610.2112
1.1250	610.2112
2.1250	610.2112
3.1250	610.2112
4.1250	610.2112
5.1250	610.2112
6.1250	610.2112

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
1.1250	2.144
2.1250	3.250

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
10.75110	10.0334
10.75110	19.7209
10.75110	10.2582
11.25110	11.9507
11.25110	11.7377
16.75110	13.9127
16.75110	15.5366
16.75110	17.4907
19.75110	16.6111
19.75110	19.0128
21.75110	21.3786
21.75110	21.3786

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.4499	20.3314
-1.5088	20.9314

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	0.000	0.0000	0.0000
2	0.0000	1.0000	0.000	0.0000	0.0000
3	0.0000	1.0000	0.000	0.0000	0.0000
4	0.0000	1.0000	0.000	0.0000	0.0000
5	0.0000	1.0000	0.000	0.0000	0.0000
6	0.1000	1.5000	0.000	0.0000	0.0000
7	0.0000	1.5000	0.000	0.0000	0.0000
8	0.0000	1.0000	0.000	0.0000	0.0000
9	0.0000	1.0000	0.000	0.0000	0.0000
10	0.0000	1.0000	0.000	0.0000	0.0000
11	0.0500	1.0000	0.000	0.0000	0.0000
12	0.0500	1.0000	0.000	0.0000	0.0000
13	0.0500	1.0000	0.000	0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 2

TEST POINT TITLE

G/C CONSTANT
 AIR FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL PRESSURE
 INLET TOTAL TEMPERATURE
 P IN/P IN(STD)

= 601160+00200
 = 53.4419
 = 53.99717
 = 52.9830
 = 20178.5
 = 518.6744
 = 51.8705
 = .85395

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	29.3461
5.4500	28.3070
5.8750	23.5255
6.2500	23.5852
6.6250	30.0285
7.0000	21.0347
7.3750	31.0890
7.7500	31.5861
8.1250	29.6643

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	632.162
5.4500	633.733
5.8750	640.363
6.2500	637.969
6.6250	634.659
7.0000	649.624
7.3750	652.977
7.7500	657.817
8.1250	676.024

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	23.4535	29.4915
6.4660	23.3705	29.5766
6.8050	23.1953	30.0518
7.1440	23.0232	30.5436
7.4830	35.1859	31.0032
7.8220	38.5176	31.0972
8.1610	30.2460	31.1972

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	632.453
6.4660	635.293
6.8050	637.387
7.1440	643.282
7.4830	651.223
7.8220	661.273
8.1610	667.603

STAGE OUTLET FLOW ANGLE (3 POINTS)

RADIUS	ANGLE
7.8220	1.322
7.1440	1.052
6.4660	3.461

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	10.1109
-8.0010	9.7466
-7.7510	10.5258
-7.5010	11.3039
-7.2510	13.5791
-7.0010	15.4169
-6.7510	17.4238
-6.5010	19.0250
-6.2510	19.9357
-6.0010	20.2391
-5.7510	21.7643
-2.5674	22.5902
-.5190	22.5902

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8439	22.1652
-.5080	22.1652

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. ADJ. DEVIATION	DIST. FACTOR	FRAC. TO BLOCKAGE
1	0.0000	1.0000	-0.000	-0.0000	-0.000
2	0.0000	1.0000	-0.000	-0.0000	-0.000
3	0.0000	1.0000	-0.000	-0.0000	-0.000
4	0.0000	1.0000	-0.000	-0.0000	-0.000
5	0.0000	1.0000	-0.000	-0.0000	-0.000
6	0.0000	1.0000	-0.000	-0.0000	-0.000
7	0.0000	1.0000	-0.000	-0.0000	-0.000
8	.1000	.5000	-0.000	-0.0000	-0.000
9	0.0000	.5000	-0.000	-0.0000	-0.000
10	0.0000	.5000	-0.000	-0.0000	-0.000
11	.0500	1.0000	-0.000	-0.0000	-0.000
12	.0500	1.0000	-0.000	-0.0000	-0.000
13	.0500	1.0000	-0.000	-0.0000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE
GAS CONSTANT
MAY FRACTION
FLOW RATE
ROTOR TOTAL PRESSURE
INLET TOTAL TEMPERATURE
INLET TOTAL PRESSURE
INLET TOTAL TEMPERATURE
INLET TOTAL PRESSURE
INLET TOTAL TEMPERATURE

= 691220101000
= 53.4192
= 62.9861
= 20174.4
= 14.6949
= 5.193120
= .86158

ROTOR INLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.12000	29.1774
5.40000	29.2307
5.68000	29.2798
5.96000	29.3246
6.24000	29.3651
6.52000	29.4014
6.80000	29.4335
7.08000	29.4614
7.36000	29.4852

ROTOR OUTLET TOTAL TEMPERATURE (3 POINTS)

RADIUS	TEMPERATURE
5.12000	631.933
5.40000	634.222
5.68000	637.555
5.96000	641.944
6.24000	646.389
6.52000	650.890
6.80000	655.447
7.08000	659.960
7.36000	676.533

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.12000	29.5242	29.5419
6.40000	29.5123	29.7312
6.68000	29.5275	30.1346
6.96000	29.5718	30.7627
7.24000	30.3186	31.2229
7.52000	30.7339	31.3659
7.80000	30.5737	31.5780

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.12000	645.715
6.40000	645.292
6.68000	645.317
6.96000	645.317
7.24000	645.317
7.52000	645.317
7.80000	645.317

STAGE INLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.52000	1.582
7.80000	1.582
8.08000	1.582

CASING STATIC PRESSURES (13 POINTS)

X-COORD	Y-COORD	PRESSURE
-8.7510	10.1214	10.1214
-8.0010	19.7825	19.7825
-7.7510	10.6161	10.6161
-7.5010	11.6368	11.6368
-7.2510	14.7394	14.7394
-7.0010	15.6594	15.6594
-6.7510	18.1912	18.1912
-6.5010	19.3593	19.3593
-6.2510	20.2504	20.2504
-6.0010	22.0492	22.0492
-5.7510	22.6183	22.6183
-5.5010	22.8183	22.8183

HUB STATIC PRESSURES (2 POINTS)

X-COORD	Y-COORD	PRESSURE
-2.8433	22.4069	22.4069
-1.5030	22.4069	22.4069

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. DEVIATION	DIST. FACTOR	FRAC. TOE BLOCKAGE
1	0.0000	1.0000	0.0000	0.0000	0.0000
2	0.0000	1.0000	0.0000	0.0000	0.0000
3	0.0000	1.0000	0.0000	0.0000	0.0000
4	0.0000	1.0000	0.0000	0.0000	0.0000
5	0.0000	1.0000	0.0000	0.0000	0.0000
6	0.0000	1.0000	0.0000	0.0000	0.0000
7	0.0000	1.0000	0.0000	0.0000	0.0000
8	0.0000	1.0000	0.0000	0.0000	0.0000
9	0.0000	1.0000	0.0000	0.0000	0.0000
10	0.0000	1.0000	0.0000	0.0000	0.0000
11	0.0000	1.0000	0.0000	0.0000	0.0000
12	0.0500	1.0000	0.0000	0.0000	0.0000
13	0.0500	1.0000	0.0000	0.0000	0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NHACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 1

TEST POINT TITLE

601220801600
 53.44186
 23.77610
 201.1911
 5.18707
 5.11190
 .86167

WSS CONSTANT

4.00000

ROMER FRACTION

0.00000

ROTOR SPEED

10000

INLET TOTAL PRESSURE

29.3579

INLET TEMPERATURE

29.7239

INLET HUMIDITY

0.00000

INLET TOTAL PRESSURE

29.3579

INLET TEMPERATURE

29.7239

INLET HUMIDITY

0.00000

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS

0.1250

0.1250

0.1250

0.1250

0.1250

0.1250

0.1250

0.1250

0.1250

0.1250

0.1250

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0.1250

0.1250

0.1250

0.1250

0.1250

0.1250

0.1250

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

TEMPERATURE

611.573

611.573

611.573

611.573

611.573

611.573

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611.573

611.573

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611.573

611.573

611.573

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

MEAN PRES

28.6257

28.6257

28.6257

28.6257

28.6257

28.6257

28.6257

28.6257

28.6257

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28.6257

28.6257

28.6257

PEAK PRES

29.4195

29.4195

29.4195

29.4195

29.4195

29.4195

29.4195

29.4195

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29.4195

29.4195

29.4195

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

TEMPERATURE

611.077

611.077

611.077

611.077

611.077

611.077

611.077

611.077

611.077

611.077

611.077

611.077

STAGE OUTLET FLOW ANGLES (3 POINTS)

ANGLE

1.643

1.643

1.643

1.643

1.643

CASING STATIC PRESSURES (13 POINTS)

X-COORD PRESSURE

8.7510 19.1438
 -8.0010 19.3209
 -7.7510 12.3902
 -7.2510 14.8189
 -7.0010 19.3577
 -6.7510 19.0030
 -6.5010 19.3155
 -6.2510 20.9074
 -5.0010 22.1708
 -5.7510 23.2551
 -2.5130 23.2551

HUB STATIC PRESSURES (2 POINTS)

X-COORD PRESSURE

-2.8439 22.8513
 -2.5030 22.3572

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. DEV. DEVIATION	DIST. FACTOR	FRAC. I.E. BLOCKAGE
1	0.0000	1.0000	-0.000	0.000	0.0000
2	0.0000	1.0000	-0.000	0.000	0.0000
3	0.0000	1.0000	-0.000	0.000	0.0000
4	0.0000	1.0000	-0.000	0.000	0.0000
5	0.0000	1.0000	-0.000	0.000	0.0000
6	0.0000	1.0000	-0.000	0.000	0.0000
7	0.0000	1.0000	-0.000	0.000	0.0000
8	0.1000	0.5000	-0.000	0.000	0.0000
9	0.0000	1.0000	-0.000	0.000	0.0000
10	0.0000	1.0000	-0.000	0.000	0.0000
11	0.0000	1.0000	-0.000	0.000	0.0000
12	0.0000	1.0000	-0.000	0.000	0.0000
13	0.0000	1.0000	-0.000	0.000	0.0000

SOLUTION TYPE INDICATORS

STATION 1 2 3 4 5 6 7 8 9 10 11 12 13
 NMACH 0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0

NJUMP= 0

TEST DATA PRINTOUTS FOR POINT NO. 5

TEST POINT TITLE
 602200201900
 53 48442
 52 62224
 51 62224
 50 62224
 49 62224
 48 62224

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)
 RADIUS PRESSURE
 6.1270 29.1712
 6.1460 29.1697
 6.1650 29.1682
 6.1840 29.1667
 6.2030 29.1652
 6.2220 29.1637
 6.2410 29.1622
 6.2600 29.1607
 6.2790 29.1592

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)
 RADIUS TEMPERATURE
 6.1270 61.1521
 6.1460 61.1521
 6.1650 61.1521
 6.1840 61.1521
 6.2030 61.1521
 6.2220 61.1521
 6.2410 61.1521
 6.2600 61.1521
 6.2790 61.1521

STAGE OUTLET TOTAL PRESSURES (7 POINTS)
 RADIUS YEAR PRES PEAK PRES
 6.1270 29.1621 29.4821
 6.1460 29.1621 29.4821
 6.1650 29.1621 29.4821
 6.1840 29.1621 29.4821
 6.2030 29.1621 29.4821
 6.2220 29.1621 29.4821
 6.2410 29.1621 29.4821

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)
 RADIUS TEMPERATURE
 6.1270 61.1521
 6.1460 61.1521
 6.1650 61.1521
 6.1840 61.1521
 6.2030 61.1521
 6.2220 61.1521
 6.2410 61.1521

STAGE OUTLET FLOW ANGLES (3 POINTS)
 RADIUS ANGLE
 7.822 1.330
 7.164 1.730
 6.506 2.130

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7519	10.1669
-8.0010	19.8351
-7.7510	10.9085
-7.5010	12.9128
-7.2510	15.1279
-7.0010	16.2816
-6.7510	19.1347
-6.5010	21.2440
-6.2510	21.4637
-6.0010	22.9903
-5.7510	23.4485
-5.5130	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	23.1063
-2.9280	23.1063

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MDU ADD. DEVIATION	DIST. FACTOR	FRAC. TE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.0000	-0.0000
2	0.0000	1.0000	-0.000	-0.0000	-0.0000
3	0.0000	1.0000	-0.000	-0.0000	-0.0000
4	0.0000	1.0000	-0.000	-0.0000	-0.0000
5	0.0000	1.0000	-0.000	-0.0000	-0.0000
6	0.0000	1.0000	-0.000	-0.0000	-0.0000
7	0.0000	1.0000	-0.000	-0.0000	-0.0000
8	0.0000	1.0000	-0.000	-0.0000	-0.0000
9	0.0000	1.0000	-0.000	-0.0000	-0.0000
10	0.0500	1.0000	-0.000	-0.0000	-0.0000
11	0.0500	1.0000	-0.000	-0.0000	-0.0000
12	0.0500	1.0000	-0.000	-0.0000	-0.0000
13	0.0500	1.0000	-0.000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 5

TEST POINT TITLE
 = 60122093230J
 = 53.43203
 = 6.033032
 = 6.033032
 = 6.033032
 = 6.033032
 = 6.033032

TEST POINT TITLE
 = 60122093230J
 = 53.43203
 = 6.033032
 = 6.033032
 = 6.033032
 = 6.033032
 = 6.033032

MOTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
1.1250	6.033032
1.2500	6.033032
1.3750	6.033032
1.5000	6.033032
1.6250	6.033032
1.7500	6.033032
1.8750	6.033032
2.0000	6.033032
2.1250	6.033032

MOTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMP. (ATUR)
1.1250	6.033032
1.2500	6.033032
1.3750	6.033032
1.5000	6.033032
1.6250	6.033032
1.7500	6.033032
1.8750	6.033032
2.0000	6.033032
2.1250	6.033032

STAGE OUTLET TOTAL PRESSURE (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
0.1250	6.033032	6.033032
0.2500	6.033032	6.033032
0.3750	6.033032	6.033032
0.5000	6.033032	6.033032
0.6250	6.033032	6.033032
0.7500	6.033032	6.033032
0.8750	6.033032	6.033032

STAGE OUTLET TOTAL TEMPERATURE (7 POINTS)

RADIUS	TEMPERATURE
0.1250	6.033032
0.2500	6.033032
0.3750	6.033032
0.5000	6.033032
0.6250	6.033032
0.7500	6.033032
0.8750	6.033032

STAGE OUTLET FLOW ANGLES (1 POINTS)

RADIUS	ANGLE
1.1250	1.328
1.2500	1.328
1.3750	1.328

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	10.2117
-8.0010	9.8991
-7.7510	11.4183
-7.5010	13.5908
-7.2510	15.6827
-7.0010	17.8002
-6.7510	19.7726
-6.5010	20.5084
-6.2510	21.6238
-6.0010	21.7869
-5.7510	23.3354
-2.5674	23.6983
-.5190	23.6983

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	23.3170
-.5080	23.3169

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	HUB ADD. DEVIATION	DIST. FACTOR	FRAC. TYPE BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.0000	-0.000	-0.000	-0.000
8	.1000	.5000	-0.000	-0.000	-0.000
9	0.0000	.5000	-0.000	-0.000	-0.000
10	0.0000	.5000	-0.000	-0.000	-0.000
11	.0500	1.0000	-0.000	-0.000	-0.000
12	.0500	1.0000	-0.000	-0.000	-0.000
13	.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NHACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	0
NJUMP=	0												

TEST DATA PREVIOUS FOR POINT NO. 2

F 601221132613
 E 53.6159
 E 61.92797
 E 61.9212
 E 20.16542
 E 5.155705
 E 1.93021
 E .96436

TEST POINT TITLE

GAS CONSTANT
 GAS MASS FRACTION
 FLOW RATE
 ROTOR SPEED
 INLET TOTAL TEMPERATURE
 INLET TOTAL PRESSURE
 P IN/PT INCHES

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
0.0	29.1217
1.0	29.1194
2.0	29.1171
3.0	29.1148
4.0	29.1125
5.0	29.1102
6.0	29.1079
7.0	29.1056
8.0	29.1033
9.0	29.1010

ROTOR JULET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
0.0	611.737
1.0	611.734
2.0	611.731
3.0	611.728
4.0	611.725
5.0	611.722
6.0	611.719
7.0	611.716
8.0	611.713
9.0	611.710

STAGE JULET TOTAL PRESSURE (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
0.0	29.1205	29.1205
1.0	29.1182	29.1182
2.0	29.1159	29.1159
3.0	29.1136	29.1136
4.0	29.1113	29.1113
5.0	29.1090	29.1090
6.0	29.1067	29.1067

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
0.0	611.9279
1.0	611.9279
2.0	611.9279
3.0	611.9279
4.0	611.9279
5.0	611.9279
6.0	611.9279

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.0	1.301
7.5	1.301
8.0	2.361

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	10.3869
-8.0010	19.9380
-7.7510	12.3139
-7.5010	14.0466
-7.2510	16.7871
-6.7510	20.0811
-6.5010	21.6344
-6.2510	23.5521
-5.7510	23.9106
-2.5190	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8499	21.5205
-2.5080	23.5205

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID ADD. DEVIATION	DIST. FACTOR	FRAC. OF BLOCKAGE
1	0.0000	1.0000	-0.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.1000	1.5000	-0.000	-0.000	-0.000
7	0.0000	1.5000	-0.000	-0.000	-0.000
8	0.0500	1.2000	-0.000	-0.000	-0.000
9	0.0500	1.0000	-0.000	-0.000	-0.000
10	0.0500	1.0000	-0.000	-0.000	-0.000
11	0.0500	1.0000	-0.000	-0.000	-0.000
12	0.0500	1.0000	-0.000	-0.000	-0.000
13	0.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

NJUMP= 0

TEST DATA PRINTOUT FOR POINT NO. 9

TEST POINT TITLE

602200302700
53.4891
12.1691
20.1694
31.8708
1.86652

CAS CONCENTRATION

WATER FRACTION

INLET TOTAL PRESSURE

OUTLET TOTAL PRESSURE

INLET TEMPERATURE

OUTLET TEMPERATURE

MOTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS

1.2500
1.2500
1.2500
1.2500
1.2500
1.2500
1.2500
1.2500
1.2500
1.2500

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS

1.2500
1.2500
1.2500
1.2500
1.2500
1.2500
1.2500
1.2500
1.2500
1.2500

STAGE OUTLET TOTAL PRESSURE (7 POINTS)

RADIUS

1.2500
1.2500
1.2500
1.2500
1.2500
1.2500
1.2500

STAGE OUTLET TOTAL TEMPERATURE (7 POINTS)

RADIUS

1.2500
1.2500
1.2500
1.2500
1.2500
1.2500
1.2500

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS

1.2500
1.2500
1.2500

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-6.7510	10.3046
-6.0010	19.8979
-7.7510	11.7691
-7.5010	14.0283
-7.2510	16.0189
-7.0010	19.5011
-6.7510	19.9380
-6.5010	20.5870
-6.2510	21.6797
-6.0010	23.4350
-5.7510	23.7640
-2.5130	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.0499	23.4225
-2.5080	23.4225

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID DEVIATION	DIST. FACTOR	FRAC. IE BLOCKAGE
1	0.0000	1.0000	-0.0000	-0.0000	-0.0000
2	0.0000	1.0000	-0.0000	-0.0000	-0.0000
3	0.0000	1.0000	-0.0000	-0.0000	-0.0000
4	0.0000	1.0000	-0.0000	-0.0000	-0.0000
5	0.0000	1.0000	-0.0000	-0.0000	-0.0000
6	0.0000	1.5000	-0.0000	-0.0000	-0.0000
7	0.1000	2.5000	-0.0000	-0.0000	-0.0000
8	0.0000	1.0000	-0.0000	-0.0000	-0.0000
9	0.0000	1.0000	-0.0000	-0.0000	-0.0000
10	0.0500	1.0000	-0.0000	-0.0000	-0.0000
11	0.0500	1.0000	-0.0000	-0.0000	-0.0000
12	0.0500	1.0000	-0.0000	-0.0000	-0.0000
13	0.0500	1.0000	-0.0000	-0.0000	-0.0000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP	0												

TEST DATA PRINTOUT FOR POINT NO. 3

TEST POINT TITLE
 = 6J2200403110
 = 53.4887
 = 60.4970
 = 51.8708
 = 51.8558
 = 8.8684

GAS CONSTANT
 FLOW FRACTION
 ROTOR SPEED
 INLET TOTAL TEMPERATURE
 P IN/P IN(SID)
 P IN/P IN(SID)

ROTOR OUTLET TOTAL PRESSURE (9 POINTS)

RADIUS	PRESSURE
5.1250	29.3927
5.5000	29.7194
5.8750	30.1099
6.2500	31.0433
7.0000	31.0535
7.3750	32.2601
7.7500	33.1983
8.1250	32.8116

ROTOR OUTLET TOTAL TEMPERATURE (9 POINTS)

RADIUS	TEMPERATURE
5.1250	330.731
5.5000	336.621
5.8750	343.557
6.2500	344.317
7.0000	339.357
7.3750	327.321
7.7500	323.985
8.1250	335.573

STAGE OUTLET TOTAL PRESSURES (7 POINTS)

RADIUS	MEAN PRES	PEAK PRES
6.1270	28.6083	28.6202
6.4050	28.9710	28.9750
7.1430	30.1609	30.1620
7.8220	31.7395	31.7424
8.1610	31.7220	32.7340

STAGE OUTLET TOTAL TEMPERATURES (7 POINTS)

RADIUS	TEMPERATURE
6.1270	633.955
6.4050	637.919
7.1430	641.637
7.8220	657.441
8.1610	671.420
	679.192

STAGE OUTLET FLOW ANGLES (3 POINTS)

RADIUS	ANGLE
7.8220	1.121
7.1440	1.513
6.4660	1.784

CASING STATIC PRESSURES (13 POINTS)

X-COORD	PRESSURE
-8.7510	10.7255
-8.0010	10.0285
-7.7510	12.0387
-7.5010	15.0007
-7.2510	19.4859
-7.0010	19.1183
-6.7510	20.2182
-6.5010	21.7559
-6.2510	21.6972
-6.0010	23.4849
-5.7510	23.3992
-2.5674	
-1.5130	

HUB STATIC PRESSURES (2 POINTS)

X-COORD	PRESSURE
-2.8439	23.5535
-1.5080	23.5535

DISTRIBUTED BLOCKAGE SPECIFICATION

STATION	BLOCKAGE	DIST. FACTOR	MID. ADD. DEVIATION	DIST. FACTOR	FRAC. BLOCKAGE
1	0.0000	1.0000	-9.000	-0.000	-0.000
2	0.0000	1.0000	-0.000	-0.000	-0.000
3	0.0000	1.0000	-0.000	-0.000	-0.000
4	0.0000	1.0000	-0.000	-0.000	-0.000
5	0.0000	1.0000	-0.000	-0.000	-0.000
6	0.0000	1.0000	-0.000	-0.000	-0.000
7	0.0000	1.5000	-0.000	-0.000	-0.000
8	.1000	.5000	-0.000	-0.000	-0.000
9	0.0000	.5000	-0.000	-0.000	-0.000
10	0.0000	1.0000	-0.000	-0.000	-0.000
11	.0500	1.0000	-0.000	-0.000	-0.000
12	.0500	1.0000	-0.000	-0.000	-0.000
13	.0500	1.0000	-0.000	-0.000	-0.000

SOLUTION TYPE INDICATORS

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13
NMACH	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
NJUMP=	0												

REFERENCES

1. Wennerstrom, A. J. and Frost, G. R., "Design of a 1500 ft/sec, Transonic, High-Through-Flow, Single-Stage Axial Flow Compressor with Low Hub/Tip Ratio." AFAPL TR-76-59, October 1976.
2. Hangen, R. L., Moore, D. G. and Wennerstrom, A. J., "Velocity Profile Measurements in a Model Settling Chamber." Internal ARL Paper (Available upon request), April 1969.
3. Stickney, T. M., "Recovery and Time Response Characteristics of Six Thermocouple Probes in Subsonic and Supersonic Flow." NACA TN 3455, 1955.
4. Buzzell, W. A., "Calibration Results for Stationary Pressure Rakes Sensing Yaw Angle Downstream of an Axial Compressor Stage." ARL TR 75-0104, April 1975.
5. Connell, J. W., "Data Reduction of Single Stage Compressor." ARL TR 75-0192, June 1975.
6. Hearsey, R. M., "Modifications to Compressor Test Data Analysis Program UD0200." ARL TR-74-0131, November 1974.