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**EFFECTS OF RESET STATORS AND A ROTATING,  
GROOVED STATOR HUB ON PERFORMANCE OF  
A 1.92-PRESSURE-RATIO COMPRESSOR STAGE**

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EFFECTS OF RESET STATORS AND A ROTATING, GROOVED STATOR  
HUB ON PERFORMANCE OF A 1.92-PRESSURE-RATIO  
COMPRESSOR STAGE

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SUMMARY

The overall and blade-element performance of a highly loaded transonic fan stage with two different stator modifications is compared with that for the original configuration. Tests were conducted with stators reset  $2^{\circ}$  open, and the reset stators were also run with a rotating, circumferentially grooved stator hub. Detailed radial and circumferential surveys of the flow conditions were made over the stable operating range at rotative speeds of 70, 90, and 100 percent of design speed. The performance of the stage with the reset stators indicated a small increase in stage efficiency, pressure ratio, and maximum weight flow at each speed. Performance with reset stators and rotating, grooved stator hub resulted in an additional increase in stage efficiency and pressure ratio. Failure of the stator blades precluded a complete run at 100 percent speed. The rotating, grooved stator hub reduced losses in the stator hub region.

INTRODUCTION

A research program on high-pressure-ratio axial-flow fan stages for advanced air-breathing engines is being conducted at Lewis. As part of this program a single-stage fan (stage 18-13) designed for a stage pressure ratio of 2.0 at a tip speed of 422 meters per second was tested (ref. 1). A comparison of overall performance for rotor and stage indicated a mismatch between rotor and stator. At the maximum flow for 70, 90, and 100 percent of design speed, the rotor efficiency was at its peak value, and stage efficiency was below its peak value. From the stator blade-element data, it was apparent that high losses in the stator hub region were responsible for the decay in stage performance.

An attempt was made to reduce the stator hub losses and thus improve stage performance by (1) resetting the stators 2° open and (2) using a rotating, grooved hub with the reset stators. These two modifications will be called mod 1 and mod 2, respectively, in this report.

This report presents the overall and blade-element data for both modified configurations. The overall rotor and stage performances for the modified configurations are compared with the original stage of reference 1 (stage 18-13). Stator radial distributions of performance parameters, blade-element performance, and circumferential distribution of stator total-pressure ratio are also compared for all three configurations. Data were obtained over the stable operating range for 70, 90, and 100 percent of design speed. Data were also obtained at near stall for 50, 60, and 80 percent of design speed. The symbols and equations are given in appendixes A and B; the abbreviations and units used for the tabular data are presented in appendix C.

## APPARATUS AND PROCEDURE

### Compressor Test Facility

The compressor stage was tested in the Lewis single-stage compressor facility which is described in detail in reference 2. A schematic diagram of the facility is shown in figure 1. Atmospheric air enters the test facility at an inlet located on the roof of the building and flows through the flow measuring orifice into the plenum chamber upstream of the test stage. The air then passes through the experimental compressor stage into the collector and is exhausted to the atmosphere.

### Test Stage

The design of the original rotor and stator used in this investigation is discussed in reference 1. The overall design parameters for stage 18 - 13 are listed in table I, and the flow path is shown in figure 2. The blade-element design parameters for rotor 18 and stator 13 are given in tables II and III. The blade geometry for the original configuration is given in table IV for rotor 18 and in table V for stator 13. Photographs of the rotor and stator are presented in figure 3. In mod 1 the stator blades were reset 2° open; in mod 2 the stationary stator hub liner was replaced with a rotating, circumferentially grooved stator hub (fig. 4). The grooves were located under the stator blades and were approximately 0.25 centimeter deep and 0.25 centimeter wide. The lands between the grooves were 0.76 centimeter wide. The circumferentially grooved hub reset stator configuration is designated as mod 2.

## Instrumentation

The compressor weight flow was determined from measurements on a calibrated thin-plate orifice. The orifice temperature used was determined from an average of two Chromel-Alumel thermocouples. Orifice pressures were measured by calibrated transducers.

Radial surveys of the flow were made upstream of the rotor, between the rotor and stator, and downstream of the stator. Photographs of the survey probes are shown in figure 5. Total pressure, total temperature, and flow angle were measured with the combination probe (fig. 5(a)), and the static pressure was measured with an 8° C-shaped wedge probe (fig. 5(b)). Each probe was positioned with a null-balancing, stream-directional sensitive control system that automatically aligned the probe to the direction of flow. The thermocouple material was iron-constantan. The probes were calibrated in an air tunnel. A combination probe and a wedge static probe were used at each of the three measuring stations.

Inner and outer wall static-pressure taps were located at the same stations as the survey probes. The circumferential locations of both types of survey probes along with inner and outer wall static pressure taps are shown in figure 6. The combination probes downstream of the stator (station 3) were circumferentially traversed one stator blade passage (5.8°) counterclockwise from the nominal values shown.

An electronic speed counter, in conjunction with a magnetic pickup, was used to measure rotative speed (rpm).

The estimated errors in the data, based on the inherent accuracies of the instrumentation and recording system, are as follows:

Weight flow, kg/sec . . . . .	±0.3
Rotative speed, rpm . . . . .	±30
Flow angle, deg . . . . .	±1
Temperature, K . . . . .	±0.6
Rotor-inlet total pressure, N/cm <sup>2</sup> . . . . .	±0.01
Rotor-outlet total pressure, N/cm <sup>2</sup> . . . . .	±0.10
Stator-outlet total pressure, N/cm <sup>2</sup> . . . . .	±0.10
Rotor-inlet static pressure, N/cm <sup>2</sup> . . . . .	±0.04
Rotor-outlet static pressure, N/cm <sup>2</sup> . . . . .	±0.07
Stator-outlet static pressure, N/cm <sup>2</sup> . . . . .	±0.07

## Test Procedure

The stage survey data were taken over a range of weight flows from maximum to the near-stall conditions. At 70, 90, and 100 percent of design speed, radial surveys

were taken at several weight flows. At 50, 60, and 80 percent of design speed, radial surveys were taken for the near-stall weight flow only. Data were recorded at 11 radial positions for each speed and weight flow.

At each radial position the combination probe behind the stator was circumferentially traversed to nine different locations across the stator gap. The wedge probe was set at midgap because previous studies showed that the static pressure across the stator gap was constant. Values of pressure, temperature, and flow angle were recorded at each circumferential position. At the last circumferential position values of pressure, temperature, and flow angle were also recorded at stations 1 and 2. All probes were then traversed to the next radial position, and the circumferential traverse procedure repeated.

### Calculation Procedure

Because of the physical construction of the C-shaped static-pressure wedges, it was not possible to obtain static-pressure measurements at 5-, 10-, and 95-percent span. The static pressure at 95-percent span was obtained by assuming a linear variation in static pressure between the values at the inner wall and the probe measurement at 90-percent span. A similar variation was assumed between the static-pressure measurements at the outer wall and the 30-percent span to obtain the static pressure at 5- and 10-percent span.

At each radial position averaged values of the nine circumferential measurements of pressure, temperature, and flow angle downstream of the stator (station 3) were obtained. The nine values of total temperature were mass averaged to obtain the stator-outlet total temperature presented. The nine values of total pressure were energy averaged. The measured values of pressure, temperature, and flow angle were used to calculate axial and tangential velocities at each circumferential position. The flow angles presented for each radial position are calculated based on the mass-averaged axial and tangential velocities. To obtain the overall performance, the radial values of total temperature were mass averaged and the values of total pressure were energy averaged. At each measuring station, the integrated weight flow was computed based on the radial survey data. The data, measured at the three measuring stations, have been translated to the blade leading and trailing edges by the method presented in reference 3. Orifice weight flow, total pressures, static pressures, and temperatures were all corrected to sea-level conditions based on the rotor-inlet conditions.

## RESULTS AND DISCUSSION

The results of this investigation are presented in the form of overall performance, radial distribution of performance parameters, blade-element performance, and circumferential distributions of total-pressure ratio across one stator blade passage.

Comparisons of rotor and stage overall performance are made for all three configurations at 70 and 90 percent of design speed. Because of a stator failure, only the maximum flow data point was obtained for the mod 2 configuration at design speed. Comparisons of the rotor performance are made only on the basis of overall performance. The flow conditions in the rotor were not expected to be appreciably affected by the modifications to the stator. Comparisons of stator radial distributions of performance parameters are made at stage peak efficiency conditions for 70 and 90 percent of design speeds. Comparisons of stator blade-element performance are made for 5-, 70-, 90-, and 95-percent span locations at 70 and 90 percent of design speed. Stator circumferential distributions of total-pressure ratio for the 70-, 90-, and 95-percent span location are compared at stage peak efficiency conditions for 70 and 90 percent of design speed.

Rotor and stator data for mods 1 and 2 are presented in tabular form in tables VI to XI. For the mod 1 configuration, overall performance is presented in table VI, rotor and stator blade-element data are presented in tables VII and VIII. For the mod 2 configuration, overall performance is presented in table IX, rotor and stator blade-element data are presented in tables X and XI. Tabular data for the baseline configuration is presented in reference 1.

### OVERALL PERFORMANCE

The overall rotor and stage performances are presented in figures 7 and 8 for all three configurations. Overall performance is presented only for near-stall conditions at 50, 60, and 80 percent of design speed. For the 70 and 90 percent of design speeds, data are presented for a range of weight flows from choke to stall. For design speed, data are presented over a range of weight flows from choke to stall for the baseline configuration and mod 1; but for mod 2 only the maximum weight flow data point is presented.

For all speeds the rotor overall performance (fig. 7) is essentially the same for all configurations. The maximum weight flows for mods 1 and 2 are larger than the maximum weight flow of the baseline configuration. For 70 and 90 percent of design speed the rotor efficiency is increasing with weight flows, and the overall stage performance (fig. 8) for the modified configurations shows a greater efficiency than the

baseline configuration. At 70 percent of design speed mod 1 shows about a 2-point improvement and mod 2 a 5-point improvement in stage efficiency over the baseline configuration. For both mods 1 and 2 stage peak efficiency occurs at a higher weight flow than for the baseline configuration. At 90 percent of design speed mod 1 shows no improvement but mod 2 shows about a 3-point improvement in stage efficiency compared with the baseline configuration. At design speed mod 1 shows no improvement in stage efficiency.

## RADIAL DISTRIBUTION OF STATOR PERFORMANCE PARAMETERS

Radial distributions of stator loss coefficient, loss parameters, suction-surface incidence angles, deviation angles, meridional velocity ratios, and diffusion factors are shown in figures 9 and 10 for the 70 and 90 percent of design speeds for all configurations. The radial distributions are presented for the stage peak efficiency weight flow of each configuration. The basic trends in radial distributions are the same at both speeds. From 5 to 60 percent span the loss coefficients and diffusion factors are essentially the same for all three configurations. At 70-percent span the loss coefficients and diffusion factors for the mods 1 and 2 differ slightly from the baseline configuration. At 90- and 95-percent span the loss coefficients for mod 1 and the baseline configurations are essentially the same, but the loss coefficient is considerably lower for mod 2. This indicates that in the stator hub region (90- and 95-percent span) the reset of the stators 2° open (mod 1) did not lessen the high losses and that the rotating grooved hub (mod 2) did reduce the losses substantially. Apparently the high losses in the hub region of the baseline configuration were due primarily to separated flow in the region rather than choke.

The radial distribution of deviation angle for mods 1 and 2 differ by 4° to 7° from the values for the baseline configuration (ref. 1). A reexamination of the raw data for the baseline configuration (ref. 1) showed that the combination probe, used to measure flow angle at the stator exit, gave angle measurements that were 5° higher than those obtained from the static wedge probes. Had the angles from the wedge probe been used in the calculation of the stator deviation angles, the stator deviation angles for the baseline configuration would have been approximately the same as those for the modified configurations. These flow angle irregularities did not appreciably affect pressure and low measurements.

## STATOR BLADE-ELEMENT PERFORMANCE

Plots of stator diffusion factor, loss coefficient and meridional velocity ratio as



functions of suction-surface incidence angle are presented in figures 11 and 12 for 70 and 90 percents of design speed. Blade-element plots are presented for 5-, 70-, 90-, and 95-percent span locations. For both the 70 and 90 percent of design speeds, the largest difference in blade-element performance for the three configurations occurred at the 90- and 95-percent span locations. At these locations the levels of loss coefficient for the baseline configuration and mod 1 (reset stators) are about the same, and mod 2 (reset stators-rotating grooved hub) shows substantially lower losses over the complete range of incidence angles. At 90 percent of design speed, for both the 90- and 95-percent span locations, the mod 2 configuration operates at incidence angles that are about  $4^\circ$  lower than the mod 1 configuration. This is due primarily to an increase in flow in this region due to lower loss levels.

Modification 2 (reset stator-rotating grooved hub) was very effective in reducing the losses at the 90- and 95-percent span locations for both 70 and 90 percent of design speeds, whereas mod 1 (reset stators only) shows little or no improvement in the level of losses over the baseline configuration.

At 70 percent design speed, at both 90- and 95-percent spans (fig. 11(c) and (d)) the high level of losses at the lower incidence angles indicates choking in the stators for both the baseline and mod 1 configurations. However, the stators for the mod 2 configuration are probably not choked at the 90-percent span location but are very near the choke condition at the 95-percent span location. At 90 percent of design speed (fig. 12), at the lower incidence angles, the stators are choked at both the 90 and 95 percent span locations for all three configurations.

## STATOR-EXIT CIRCUMFERENTIAL DISTRIBUTION OF TOTAL PRESSURE RATIO

Circumferential distributions of stator total-pressure ratio are presented in figures 13 and 14 for 70 and 90 percent design speed for all three configurations. These distributions are presented for 70-, 90-, and 95 percent span location for stage peak efficiency conditions. Stator total-pressure ratios are based on stator-exit gapwise distribution of total pressure and rotor-exit total pressure for a given percent span. The rotor and stator-exit radius for a given percent span is based on design streamlines.

For a given radial location, the general trends in stator-exit circumferential distributions of total pressure are similar for both the 70 and 90 percent of design speeds. For the 70-percent span location (figs. 13(a) and 14(a)) the total-pressure wakes out of the stators are well defined and are about the same for all three configurations. At 90- and 95-percent spans (figs. 13(b) and (c) and 14(b) and (c)) the peak pressure ratio for both the baseline configuration and mod 1 occurs at the same circumferential location as the stator trailing edge. The lack of a well-defined wake is indicative of a flow

separation on the blade suction surface and a radial shift of flow through the stators. For 90- and 95-percent span mod 1 shows little improvement over the baseline configuration, but mod 2 shows a well-defined total-pressure wake at both the 90- and 95-percent span location. Also at these locations mod 2 shows a definite improvement in stator performance over the baseline configuration and mod 1.

### CONCLUDING REMARKS

The stage used in this investigation (stage 18-13) has a rotor designed for a pressure ratio of 2.0 (constant from hub to tip) at a tip speed of 422 meters per second. Since this tip speed is relatively low for this pressure ratio level, large blade camber is required in the region of high supersonic inlet relative Mach numbers. These high Mach numbers result in strong shocks and high losses in the rotor blade row. The constant rotor-exit pressure ratio requires large tangential velocities out of the rotor hub and thus produces a high stator hub inlet Mach number (0.96) and high loading (diffusion factor = 0.66). To facilitate measurements between rotor and stator blade rows, the stator blade row was located approximately 3.0 centimeters downstream of the rotor trailing edge. This additional axial spacing allows a thicker hub wall boundary layer to develop, thus creating a more severe stator hub inlet condition.

For mod 1 and the baseline configuration the hub boundary layer at the stator inlet is thick because of the diffusion of the axial and tangential components of velocity. For mod 2 (reset stator rotating grooved hub), the rotating hub extended from the rotor hub trailing edge to the stator trailing edge. This configuration would have a thinner boundary layer at the stator inlet because the rotating hub prevents the diffusion of the tangential component of velocity. Also, rotation of the hub under the stator vanes tends to energize the flow in the blade boundary-layer region at the stator hub. Part of the improvement in stator hub losses for mod 2 can be attributed to a thinner hub wall boundary layer entering the stators. The rotating hub under the stators is also beneficial because it energizes the flow and probably retards flow separation on the blade surface in the vicinity of the stator hub.

### SUMMARY OF RESULTS

The overall and blade-element performances of a highly loaded transonic fan stage with two stator modifications are compared with those for the original configuration (baseline). The stators were first reset 2° open (mod 1) and then the reset stators were tested with a rotating circumferentially grooved hub (mod 2). Detailed radial

surveys of the flow conditions in front of the rotor, between the rotor and stator, and behind the stator were made over the stage stable operating flow range at 70, 90, and 100 percent of design speed. This investigation yielded the following results:

1. Resetting the stator  $2^{\circ}$  open resulted in an increase in maximum flow at the 70, 90, and 100 percent speeds and a slight improvement in stage peak efficiency at 70 and 90 percent of design speeds.
2. The rotating grooved stator hub configuration showed a substantial improvement in stage efficiency at 70 and 90 percent of design speed.
3. The rotating grooved stator hub configuration was very effective in reducing losses at the 90- and 95-percent span locations for both 70 and 90 percent of design speed. However, mod 1 shows very little or no improvement in the level of losses over the baseline configuration.
4. Stator circumferential distribution of total pressure ratio at the 90- and 95-percent span locations indicates a flow separation on the blade suction surface for both mod 1 and baseline configuration.

Lewis Research Center,

National Aeronautics and Space Administration,

Cleveland, Ohio, October 1, 1976,

505-04.

## APPENDIX A

### SYMBOLS

$A_{an}$	annulus area at rotor leading edge, $m^2$
$A_f$	frontal area at rotor leading edge, $m^2$
$C_p$	specific heat at constant pressure, $1004 J/(kg)(K)$
$D$	diffusion factor
$i_{mc}$	mean incidence angle, angle between inlet air direction and line tangent to blade mean camber line at leading edge, deg
$i_{ss}$	suction-surface incidence angle, angle between inlet air direction and line tangent to blade suction at leading edge, deg
$N$	rotative speed, rpm
$P$	total pressure, $N/cm^2$
$p$	static pressure, $N/cm^2$
$r$	radius, cm
$SM$	stall margin
$T$	total temperature, K
$U$	wheel speed, m/sec
$V$	air velocity, m/sec
$W$	weight flow, kg/sec
$Z$	axial distance referenced from rotor blade hub leading edge, cm
$\alpha_c$	cone angle, deg
$\alpha_s$	slope of streamline, deg
$\beta$	air angle, angle between air velocity and axial direction, deg
$\beta'_c$	relative meridional air angle based on cone angle $\arctan(\tan \beta'_m \cos \alpha_c / \cos \alpha_s)$ , deg
$\gamma$	ratio of specific heats (1.40)
$\delta$	ratio of rotor-inlet total pressure to standard pressure of $10.13 N/cm^2$
$\delta^o$	deviation angle, angle between exit air direction and tangent to blade mean camber line at trailing edge, deg

$\eta$	efficiency
$\theta$	ratio of rotor-inlet total temperature to standard temperature (288.2 K)
$\kappa_{mc}$	angle between blade mean camber line and meridional plane, deg
$\kappa_{ss}$	angle between blade suction-surface camber line at leading edge and meridional plane, deg
$\sigma$	solidity, ratio of chord to spacing
$\bar{\omega}$	total loss coefficient
$\bar{\omega}_p$	profile loss coefficient
$\bar{\omega}_s$	shock loss coefficient

Subscripts:

ad	adiabatic (temperature rise)
id	ideal
LE	blade leading edge
m	meridional direction
mom	momentum rise
p	polytropic
TE	blade trailing edge
z	axial direction
$\theta$	tangential direction

Superscript:

'	relative to blade
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## APPENDIX B

### EQUATIONS

Suction-surface incidence angle

$$i_{ss} = (\beta'_c)_{LE} - \kappa_{ss} \quad (B1)$$

Mean incidence angle

$$i_{mc} = (\beta'_c)_{LE} - (\kappa_{mc})_{LE} \quad (B2)$$

Deviation angle

$$\delta^0 = (\beta'_c)_{TE} - (\kappa_{mc})_{TE} \quad (B3)$$

Diffusion factor

$$D = 1 - \frac{V'_{TE}}{V'_{LE}} + \left| \frac{(rV_\theta)_{TE} - (rV_\theta)_{LE}}{(r_{TE} + r_{LE})\sigma(V'_{LE})} \right| \quad (B4)$$

Total loss coefficient

$$\bar{\omega} = \frac{(P'_{id})_{TE} - P'_{TE}}{P'_{LE} - p_{LE}} \quad (B5)$$

Profile loss coefficient

$$\bar{\omega}_p = \bar{\omega} - \bar{\omega}_s \quad (B6)$$

Total loss parameter

$$\frac{\bar{\omega} \cos (\beta'_m)_{TE}}{2\sigma} \quad (B7)$$

Profile loss parameter

$$\frac{\bar{w}_p \cos(\beta'_m)_{TE}}{2\sigma} \quad (B8)$$

Adiabatic (temperature-rise) efficiency

$$\eta_{ad} = \frac{\left(\frac{P_{TE}}{P_{LE}}\right)^{(\gamma-1)/\gamma} - 1}{\frac{T_{TE}}{T_{LE}} - 1} \quad (B9)$$

Momentum-rise efficiency

$$\eta_{mom} = \frac{\left(\frac{P_{TE}}{P_{LE}}\right)^{(\gamma-1)/\gamma} - 1}{\frac{(UV_\theta)_{TE} - (UV_\theta)_{LE}}{T_{LE} C_p}} \quad (B10)$$

Equivalent weight flow

$$\frac{W\sqrt{\theta}}{\delta} \quad (B11)$$

Equivalent rotative speed

$$\frac{N}{\sqrt{\theta}} \quad (B12)$$

Weight flow per unit annulus area

$$\frac{\left(\frac{W\sqrt{\theta}}{\delta}\right)}{A_{an}} \quad (B13)$$

Weight flow per unit frontal area

$$\frac{\left(\frac{W\sqrt{\theta}}{\delta}\right)}{A_f} \quad (\text{B14})$$

Head-rise coefficient

$$\frac{C_{pT_{LE}}}{U_{tip}^2} \left[ \left(\frac{P_{TE}}{P_{LE}}\right)^{(\gamma-1)/\gamma} - 1 \right] \quad (\text{B15})$$

Flow coefficient

$$\left(\frac{V_z}{U_{tip/LE}}\right) \quad (\text{B16})$$

Stall margin

$$SM = \left[ \frac{\left(\frac{P_{TE}}{P_{LE}}\right)_{stall} \times \left(\frac{W\sqrt{\theta}}{\delta}\right)_{ref}}{\left(\frac{P_{TE}}{P_{LE}}\right)_{ref} \times \left(\frac{W\sqrt{\theta}}{\delta}\right)_{stall}} - 1 \right] \times 100 \quad (\text{B17})$$

Polytropic efficiency

$$\eta_p = \frac{\ln\left(\frac{P_{TE}}{P_{LE}}\right)^{(\gamma-1)/\gamma}}{\ln\frac{T_{TE}}{T_{LE}}} \quad (\text{B18})$$



## APPENDIX C

### DEFINITIONS AND UNITS USED IN TABLES

ABS	absolute
AERO CHORD	aerodynamic chord, cm
BETAM	meridional air angle, deg
CONE ANGLE	angle between axial direction and conical surface representing blade element, deg
DELTA INC	difference between mean camber blade angle and suction-surface blade angle at leading edge, deg
DEV	deviation angle (eq. (B3)), deg
D-FACT	diffusion factor (eq. (B4))
EFF	adiabatic efficiency (eq. (B9))
IN	inlet (leading edge of blade)
INCIDENCE	incidence angle (suction surface, defined by eq. (B1) and mean defined by eq. (B2)), deg
KIC	angle between blade mean camber line at leading edge and meridional plane, deg
KOC	angle between blade mean camber line at trailing edge and meridional plane, deg
KTC	angle between blade mean camber line at transition point and meridional plane, deg
LOSS COEFF	loss coefficient (total defined by eq. (B5) and profile defined by eq. (B6))
LOSS PARAM	loss parameter (total defined by eq. (B7) and profile defined by eq. (B8))
MERID	meridional
MERID VEL R	meridional velocity ratio
OUT	outlet (trailing edge of blade)
PERCENT SPAN	percent of blade span from tip at rotor outlet
PHISS	suction-surface camber ahead of assumed shock location, deg
PRESS	pressure, $\text{N/cm}^2$

PROF	profile
RADII	radius, cm
REL	relative to blade
RI	inlet radius (leading edge of blade), cm
RO	outlet radius (trailing edge of blade), cm
RP	radial position
RPM	equivalent rotative speed, rpm
SETTING ANGLE	angle between aerodynamic chord and meridional plane, deg
SOLIDITY	ratio of aerodynamic chord to blade spacing
SPEED	speed, m/sec
SS	suction surface
STREAMLINE SLOPE	slope of streamline, deg
TANG	tangential
TEMP	temperature, K
TI	thickness of blade at leading edge, cm
TM	thickness of blade at maximum thickness, cm
TO	thickness of blade at trailing edge, cm
TOT	total
TOTAL CAMBER	difference between inlet and outlet blade mean camber lines, deg
VEL	velocity, m/sec
WT FLOW	equivalent weight flow, kg/sec
X FACTOR	ratio of suction-surface camber ahead of assumed shock location of multiple-circular-arc blade section to that of a double-circular-arc blade section
ZIC	axial distance to blade leading edge from inlet, cm
ZMC	axial distance to blade maximum thickness point from inlet, cm
ZOC	axial distance to blade trailing edge from inlet, cm
ZTC	axial distance to transition point from inlet, cm

## REFERENCES

1. Lewis, George W. Jr.; Reid, Lonnie; and Tysl, Edward R.: Design and Performance of a High-Pressure Ratio, Highly Loaded Axial-Flow Transonic Compressor Stage. NASA TM X-3100, 1974.
2. Urasek, Donald C.; and Janetzke, David C.: Performance of a Tandem-Bladed Transonic Compressor Rotor with Tip Speed of 1375 Feet Per Second. NASA TM X-2484, 1972.
3. Ball, Calvin L.; Janetzke, David C.; and Reid, Lonnie: Performance of 1380-Foot-Per-Second-Tip-Speed Axial-Flow Compressor Rotor with Blade Tip Solidity of 1.5. NASA TM X-2379, 1972.
4. Schlichting, Hermann: Boundary Layer Theory. 4th ed., McGraw-Hill Book Co., Inc., 1960.

TABLE I. - DESIGN OVERALL PARAMETERS

FOR STAGE 18-13

ROTOR TOTAL PRESSURE RATIO.....	2.000
STAGE TOTAL PRESSURE RATIO.....	1.925
ROTOR TOTAL TEMPERATURE RATIO.....	1.241
STAGE TOTAL TEMPERATURE RATIO.....	1.241
ROTOR ADIABATIC EFFICIENCY.....	0.907
STAGE ADIABATIC EFFICIENCY.....	0.852
ROTOR POLYTROPIC EFFICIENCY.....	0.915
STAGE POLYTROPIC EFFICIENCY.....	0.865
ROTOR HEAD RISE COEFFICIENT.....	0.356
STAGE HEAD RISE COEFFICIENT.....	0.335
FLOW COEFFICIENT.....	0.477
WT FLOW PER UNIT FRONTAL AREA.....	149.930
WT FLOW PER UNIT ANNULUS AREA.....	201.973
WT FLOW.....	29.484
RPM.....	16100.000
TIP SPEED.....	421.817

TABLE II. - DESIGN BLADE-ELEMENT PARAMETERS FOR ROTOR 18

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
TIP	25.019	24.359	0.	54.9	66.4	55.4	288.2	1.289	10.13	2.000
1	24.442	23.871	-0.	52.7	65.0	54.3	288.2	1.272	10.13	2.000
2	23.906	23.383	0.	50.5	63.8	52.4	288.2	1.259	10.13	2.000
3	21.655	21.433	0.	49.3	59.8	45.4	288.2	1.241	10.13	2.000
4	19.590	19.726	0.	50.2	57.1	37.1	288.2	1.234	10.13	2.000
5	19.288	19.482	0.	50.5	56.7	35.7	288.2	1.234	10.13	2.000
6	18.983	19.238	0.	50.7	56.4	34.2	288.2	1.233	10.13	2.000
7	18.676	18.994	0.	50.9	56.1	32.7	288.2	1.233	10.13	2.000
8	18.367	18.750	0.	51.2	55.8	31.1	288.2	1.233	10.13	2.000
9	16.777	17.531	0.	52.5	54.2	22.0	288.2	1.230	10.13	2.000
10	14.079	15.580	0.	56.4	51.6	2.3	288.2	1.232	10.13	2.000
11	13.384	15.093	0.	58.0	50.8	-4.3	288.2	1.235	10.13	2.000
HUB	12.700	14.605	-0.	59.7	49.9	-11.5	288.2	1.238	10.13	2.000

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
TIP	184.1	248.9	460.2	251.5	184.1	143.0	0.	203.8	421.8	410.7
1	192.0	245.7	454.6	255.0	192.0	148.9	-0.	195.4	412.1	402.5
2	198.3	246.8	449.2	257.2	198.3	156.9	0.	190.5	403.0	394.2
3	212.9	254.6	422.6	236.4	212.9	166.0	0.	193.0	365.1	361.3
4	213.8	265.5	393.4	212.9	213.8	169.8	0.	204.1	330.3	332.6
5	213.3	257.4	388.9	209.6	213.3	170.2	0.	206.2	325.2	328.5
6	212.6	269.3	384.2	206.3	212.6	170.6	0.	208.4	320.1	324.3
7	211.8	271.3	379.5	203.1	211.8	171.0	0.	210.7	314.9	320.2
8	210.8	273.3	374.6	200.0	210.8	171.3	0.	212.9	309.7	316.1
9	204.2	284.3	348.8	186.5	204.2	172.9	0.	225.6	282.9	295.6
10	188.3	307.2	303.0	170.0	188.3	169.9	0.	256.0	237.4	262.7
11	184.1	314.9	291.2	167.5	184.1	167.0	0.	267.0	225.7	254.5
HUB	180.0	323.6	279.7	166.7	180.0	163.3	-0.	279.4	214.1	246.2

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		STREAMLINE SLOPE		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
TIP	0.558	0.673	1.394	0.680	0.558	0.387	-8.64	10.94	0.777	1.596
1	0.583	0.668	1.381	0.694	0.583	0.405	-7.80	-2.37	0.775	1.591
2	0.604	0.675	1.368	0.704	0.604	0.429	-6.88	-8.89	0.791	1.584
3	0.652	0.704	1.294	0.654	0.652	0.459	-1.83	-1.92	0.780	1.569
4	0.655	0.740	1.205	0.593	0.655	0.473	3.36	3.22	0.794	1.564
5	0.653	0.746	1.191	0.585	0.653	0.475	4.15	3.97	0.798	1.559
6	0.651	0.752	1.176	0.576	0.651	0.476	4.94	4.73	0.803	1.552
7	0.648	0.758	1.161	0.568	0.648	0.478	5.75	5.50	0.807	1.546
8	0.645	0.765	1.146	0.560	0.645	0.479	6.56	6.29	0.813	1.540
9	0.623	0.800	1.064	0.525	0.623	0.487	10.87	10.42	0.847	1.515
10	0.571	0.873	0.919	0.483	0.571	0.483	18.67	18.05	0.903	1.377
11	0.558	0.898	0.882	0.477	0.558	0.476	20.81	20.18	0.907	1.313
HUB	0.545	0.925	0.846	0.476	0.545	0.467	22.97	22.39	0.907	1.249

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
TIP	0.	2.4	-0.1	6.3	0.581	0.757	0.250	0.150	0.042	0.025
1	5.00	2.7	-0.0	5.9	0.562	0.805	0.197	0.100	0.033	0.017
2	10.00	3.0	0.0	5.6	0.546	0.843	0.156	0.063	0.027	0.011
3	30.00	4.1	-0.0	5.5	0.558	0.908	0.095	0.016	0.017	0.003
4	47.50	5.0	-0.0	6.0	0.582	0.933	0.075	0.010	0.014	0.002
5	50.00	5.2	-0.0	6.1	0.585	0.935	0.073	0.012	0.014	0.002
6	52.50	5.3	-0.0	6.3	0.588	0.937	0.073	0.015	0.014	0.003
7	55.00	5.4	-0.0	6.4	0.591	0.939	0.072	0.017	0.014	0.003
8	57.50	5.6	-0.0	6.6	0.594	0.941	0.070	0.019	0.013	0.004
9	70.00	6.2	-0.0	7.6	0.600	0.950	0.066	0.029	0.013	0.006
10	90.00	6.9	-0.0	10.0	0.589	0.942	0.096	0.088	0.016	0.015
11	95.00	7.0	-0.0	10.5	0.581	0.933	0.120	0.117	0.019	0.019
HUB	100.00	7.1	0.0	11.1	0.567	0.920	0.152	0.152	0.023	0.023

TABLE III. - DESIGN BLADE-ELEMENT PARAMETERS FOR STATOR 13

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
TIP	23.876	23.876	47.8	0.	47.8	0.	372.0	1.000	20.26	0.964
1	23.443	23.463	45.3	-0.	45.3	-0.	366.5	1.000	20.26	0.963
2	23.050	23.092	43.8	0.	43.8	0.	362.9	1.000	20.26	0.964
3	21.431	21.579	43.1	0.	43.1	0.	357.6	1.000	20.26	0.974
4	19.979	20.262	44.2	0.	44.2	0.	355.7	1.000	20.26	0.972
5	19.770	20.076	44.4	0.	44.4	0.	355.6	1.000	20.26	0.971
6	19.562	19.890	44.6	0.	44.6	0.	355.5	1.000	20.26	0.971
7	19.353	19.705	44.8	0.	44.8	0.	355.3	1.000	20.26	0.970
8	19.145	19.522	45.0	0.	45.0	0.	355.2	1.000	20.26	0.970
9	18.107	18.622	46.1	0.	46.1	0.	354.6	1.000	20.26	0.966
10	16.497	17.242	48.7	0.	48.7	0.	355.1	1.000	20.26	0.930
11	16.123	16.900	49.7	0.	49.7	0.	355.8	1.000	20.26	0.905
HUB	15.748	16.510	50.8	-0.	50.8	-0.	356.7	1.000	20.26	0.871

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
TIP	282.3	190.9	282.3	190.9	189.5	190.9	209.2	0.	0.	0.
1	279.8	189.8	279.8	189.8	196.7	189.8	199.1	-0.	0.	0.
2	279.1	189.6	279.1	189.6	201.4	189.6	193.2	0.	0.	0.
3	282.4	195.2	282.4	195.2	206.1	195.2	193.0	0.	0.	0.
4	289.0	197.6	289.0	197.6	207.2	197.6	201.5	0.	0.	0.
5	290.4	197.8	290.4	197.8	207.5	197.8	203.2	0.	0.	0.
6	291.8	198.0	291.8	198.0	207.7	198.0	204.9	0.	0.	0.
7	293.3	198.3	293.3	198.3	208.0	198.3	206.7	0.	0.	0.
8	294.8	198.7	294.8	198.7	208.3	198.7	208.5	0.	0.	0.
9	303.2	199.9	303.2	199.9	210.3	199.9	218.5	0.	0.	0.
10	321.7	185.6	321.7	185.6	212.2	185.6	241.9	0.	0.	0.
11	328.0	176.1	328.0	176.1	212.1	176.1	250.2	0.	0.	0.
HUB	335.2	163.0	335.2	163.0	211.9	163.0	259.7	-0.	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		STREAMLINE SLOPE		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
TIP	0.773	0.506	0.773	0.506	0.519	0.506	-1.12	0.01	1.007	1.161
1	0.771	0.507	0.771	0.507	0.542	0.507	-0.25	0.32	0.965	1.128
2	0.773	0.509	0.773	0.509	0.558	0.509	0.43	0.55	0.942	1.110
3	0.790	0.529	0.790	0.529	0.577	0.529	2.63	1.43	0.947	1.112
4	0.814	0.538	0.814	0.538	0.583	0.538	5.12	2.52	0.953	1.136
5	0.818	0.538	0.818	0.538	0.585	0.538	5.53	2.69	0.953	1.145
6	0.823	0.539	0.823	0.539	0.586	0.539	5.96	2.86	0.953	1.151
7	0.828	0.540	0.828	0.540	0.587	0.540	6.40	3.04	0.953	1.160
8	0.833	0.541	0.833	0.541	0.589	0.541	6.86	3.22	0.954	1.172
9	0.861	0.545	0.861	0.545	0.597	0.545	9.47	4.19	0.951	1.249
10	0.921	0.504	0.921	0.504	0.608	0.504	14.72	5.46	0.875	1.399
11	0.941	0.476	0.941	0.476	0.609	0.476	16.21	5.44	0.830	1.454
HUB	0.964	0.439	0.964	0.439	0.610	0.439	17.81	5.28	0.769	1.520

RP	PERCENT SPAN		INCIDENCE MEAN SS		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
TIP	0.	6.2	-0.0	11.6	0.542	0.	0.111	0.111	0.033	0.033	
1	5.00	6.2	0.0	10.5	0.528	0.	0.113	0.113	0.033	0.033	
2	10.00	6.2	-0.0	9.8	0.518	0.	0.111	0.111	0.032	0.032	
3	30.00	6.3	0.0	9.0	0.490	0.	0.076	0.076	0.020	0.020	
4	47.50	6.2	0.0	8.8	0.488	0.	0.079	0.079	0.020	0.020	
5	50.00	6.2	0.0	8.8	0.489	0.	0.080	0.080	0.020	0.020	
6	52.50	6.2	0.0	8.8	0.490	0.	0.081	0.081	0.020	0.020	
7	55.00	6.2	0.0	8.7	0.492	0.	0.082	0.082	0.020	0.020	
8	57.50	6.2	0.0	8.7	0.493	0.	0.083	0.083	0.020	0.020	
9	70.00	6.1	0.0	8.4	0.501	0.	0.089	0.088	0.020	0.020	
10	90.00	6.0	0.0	8.4	0.574	0.	0.166	0.157	0.034	0.032	
11	95.00	6.0	0.0	8.4	0.612	0.	0.218	0.202	0.044	0.043	
HUB	100.00	6.0	0.1	8.5	0.662	0.	0.289	0.262	0.057	0.051	

TABLE IV. - BLADE GEOMETRY FOR ROTOR 18

RP	TIP	1	2	3	4	5	6	7	8	9	10	11	HUB	BLADE ANGLES				DELTA		CONE
														KIC	KTC	KOC	INC	INC	ANGLE	
PERCENT	SPAN	RI	RO											DELTA	CONE					
														INC	ANGLE					
	0.	25.019	24.359	63.50	60.06	48.60	2.49	-15.536											6.20	0.057
	5.	24.442	23.971	61.91	58.53	47.71	2.75	-12.940											6.23	0.302
	10.	23.906	23.383	60.51	57.10	46.55	3.00	-11.383											6.25	0.629
	30.	21.655	21.433	55.62	51.09	39.82	4.08	-4.201											6.25	2.192
	48.	19.590	19.726	52.08	45.52	31.18	5.03	2.263											6.23	4.214
	55.	18.983	19.238	51.14	44.24	27.97	5.30	4.131											6.22	4.545
	63.	18.676	18.994	50.68	43.63	26.26	5.43	5.075											6.22	4.886
	78.	18.367	18.760	50.22	42.97	24.48	5.56	6.033											6.21	5.240
	90.	14.079	15.280	48.02	39.76	14.38	6.16	10.944											6.20	5.608
	95.	13.364	15.093	43.76	34.81	-14.81	6.97	21.167											6.15	7.635
	100.	12.700	14.605	42.89	34.15	-22.54	7.04	22.957											5.99	11.508

TABLE V. - BLADE GEOMETRY FOR STATOR 13

RP	TIP	1	2	3	4	5	6	7	8	9	10	11	HUB	BLADE ANGLES				DELTA		CONE
														KIC	KTC	KOC	INC	INC	ANGLE	
PERCENT	SPAN	RI	RO											DELTA	CONE					
														INC	ANGLE					
	0.	33.876	33.876	41.63	33.98	-11.65	6.20	0.057											6.20	0.057
	5.	23.445	23.463	39.10	32.44	-10.50	6.23	0.302											6.25	0.629
	10.	23.050	23.092	37.57	31.54	-9.78	6.25	2.192											6.25	2.192
	30.	21.431	21.579	36.87	31.42	-8.95	6.25	4.214											6.23	4.214
	48.	19.979	20.262	38.00	32.55	-8.78	6.23	4.545											6.22	4.545
	55.	19.562	19.800	38.44	32.96	-8.76	6.22	4.886											6.22	4.886
	63.	19.353	19.705	38.67	33.10	-8.74	6.21	5.240											6.21	5.240
	78.	19.145	19.522	38.89	33.10	-8.70	6.20	5.608											6.20	5.608
	90.	16.107	18.622	40.08	32.83	-8.44	6.15	7.635											6.02	11.023
	95.	16.123	16.900	43.12	33.57	-8.36	6.02	11.023											5.99	11.508
	100.	15.748	16.510	45.57	34.25	-8.49	5.94	11.308											5.94	11.308

TABLE IV. - BLADE GEOMETRY FOR ROTOR 18

RP	TIP	1	2	3	4	5	6	7	8	9	10	11	HUB	AXIAL DIMENSIONS				AREA
														ZIC	ZMC	ZTC	ZOC	
BLADE THICKNESSES	TI	TM	TO											AREA				
														RATIO				
	0.051	0.152	0.051	1.148	2.212	2.267	3.523											1.048
	0.051	0.163	0.051	1.087	2.213	2.225	3.573											1.047
	0.051	0.173	0.051	1.031	2.213	2.183	3.626											1.046
	0.051	0.216	0.051	0.812	2.205	1.966	3.847											1.040
	0.051	0.256	0.051	0.627	2.193	1.719	4.048											1.045
	0.051	0.262	0.051	0.602	2.181	1.681	4.076											1.045
	0.051	0.267	0.051	0.578	2.188	1.643	4.125											1.045
	0.051	0.273	0.051	0.554	2.185	1.604	4.175											1.042
	0.051	0.279	0.051	0.529	2.182	1.563	4.163											1.041
	0.051	0.309	0.051	0.396	2.164	1.341	4.236											1.038
	0.051	0.360	0.051	0.149	2.126	0.924	4.466											1.039
	0.051	0.373	0.051	0.076	2.117	0.807	4.488											1.040
	0.051	0.386	0.051	0.000	2.107	0.687	4.512											1.040

TABLE V. - BLADE GEOMETRY FOR STATOR 13

RP	TIP	1	2	3	4	5	6	7	8	9	10	11	HUB	AXIAL DIMENSIONS				AREA
														ZIC	ZMC	ZTC	ZOC	
BLADE THICKNESSES	TI	TM	TO											AREA				
														RATIO				
	0.051	0.279	0.051	7.621	9.332	8.792	11.414											1.108
	0.051	0.279	0.051	7.589	9.339	8.715	11.414											1.090
	0.051	0.279	0.051	7.570	9.344	8.662	11.414											1.078
	0.051	0.279	0.051	7.559	9.346	8.571	11.413											1.057
	0.051	0.279	0.051	7.569	9.344	8.528	11.411											1.040
	0.051	0.279	0.051	7.571	9.343	8.523	11.411											1.036
	0.051	0.279	0.051	7.573	9.342	8.517	11.411											1.035
	0.051	0.279	0.051	7.575	9.342	8.511	11.410											1.035
	0.051	0.279	0.051	7.572	9.341	8.453	11.410											1.040
	0.051	0.279	0.051	7.583	9.338	8.399	11.407											1.051
	0.051	0.279	0.051	7.589	9.337	8.390	11.407											1.059
	0.051	0.279	0.051	7.596	9.335	8.383	11.407											1.079

TABLE VI. - OVERALL PERFORMANCE FOR STAGE 18-13 MOD 1

(a) 60 Percent of design speed

Parameter	Reading
	1253
ROTOR TOTAL PRESSURE RATIO	1.275
STAGE TOTAL PRESSURE RATIO	1.254
ROTOR TOTAL TEMPERATURE RATIO	1.086
STAGE TOTAL TEMPERATURE RATIO	1.086
ROTOR TEMP. RISE EFFICIENCY	0.837
STAGE TEMP. RISE EFFICIENCY	0.776
ROTOR MOMENTUM RISE EFFICIENCY	0.857
ROTOR HEAD RISE COEFFICIENT	0.330
STAGE HEAD RISE COEFFICIENT	0.307
FLOW COEFFICIENT	0.317
WT FLOW PER UNIT FRONTAL AREA	76.11
WT FLOW PER UNIT ANNULUS AREA	102.53
WT FLOW AT ORIFICE	14.97
WT FLOW AT ROTOR INLET	15.08
WT FLOW AT ROTOR OUTLET	14.88
WT FLOW AT STATOR OUTLET	15.23
ROTATIVE SPEED	9579.1
PERCENT OF DESIGN SPEED	59.5

(b) 70 Percent of design speed

Parameter	Reading				
	1258	1259	1260	1261	1262
ROTOR TOTAL PRESSURE RATIO	1.350	1.368	1.385	1.392	1.395
STAGE TOTAL PRESSURE RATIO	1.261	1.332	1.352	1.361	1.363
ROTOR TOTAL TEMPERATURE RATIO	1.099	1.104	1.109	1.115	1.121
STAGE TOTAL TEMPERATURE RATIO	1.099	1.105	1.110	1.115	1.121
ROTOR TEMP. RISE EFFICIENCY	0.901	0.900	0.886	0.859	0.822
STAGE TEMP. RISE EFFICIENCY	0.691	0.815	0.816	0.800	0.768
ROTOR MOMENTUM RISE EFFICIENCY	0.922	0.921	0.909	0.888	0.856
ROTOR HEAD RISE COEFFICIENT	0.294	0.310	0.321	0.327	0.328
STAGE HEAD RISE COEFFICIENT	0.225	0.283	0.298	0.304	0.304
FLOW COEFFICIENT	0.423	0.401	0.376	0.349	0.320
WT FLOW PER UNIT FRONTAL AREA	115.40	109.98	103.92	97.34	90.34
WT FLOW PER UNIT ANNULUS AREA	155.45	148.16	139.99	131.13	121.70
WT FLOW AT ORIFICE	22.69	21.63	20.44	19.14	17.77
WT FLOW AT ROTOR INLET	22.77	21.69	20.50	19.19	17.75
WT FLOW AT ROTOR OUTLET	22.82	21.81	20.66	19.49	17.94
WT FLOW AT STATOR OUTLET	23.56	21.98	20.70	19.44	18.09
ROTATIVE SPEED	11322.9	11286.9	11293.3	11303.0	11336.1
PERCENT OF DESIGN SPEED	70.3	70.1	70.1	70.2	70.4

(c) 80 Percent of design speed

Parameter	Reading
	1251
ROTOR TOTAL PRESSURE RATIO	1.541
STAGE TOTAL PRESSURE RATIO	1.487
ROTOR TOTAL TEMPERATURE RATIO	1.159
STAGE TOTAL TEMPERATURE RATIO	1.159
ROTOR TEMP. RISE EFFICIENCY	0.826
STAGE TEMP. RISE EFFICIENCY	0.757
ROTOR MOMENTUM RISE EFFICIENCY	0.837
ROTOR HEAD RISE COEFFICIENT	0.332
STAGE HEAD RISE COEFFICIENT	0.303
FLOW COEFFICIENT	0.329
WT FLOW PER UNIT FRONTAL AREA	104.14
WT FLOW PER UNIT ANNULUS AREA	140.29
WT FLOW AT ORIFICE	20.48
WT FLOW AT ROTOR INLET	20.51
WT FLOW AT ROTOR OUTLET	20.25
WT FLOW AT STATOR OUTLET	20.69
ROTATIVE SPEED	12919.6
PERCENT OF DESIGN SPEED	80.2

(d) 90 Percent of design speed

Parameter	Reading				
	1249	1248	1245	1246	1247
ROTOR TOTAL PRESSURE RATIO	1.704	1.706	1.725	1.744	1.732
STAGE TOTAL PRESSURE RATIO	1.533	1.627	1.661	1.680	1.668
ROTOR TOTAL TEMPERATURE RATIO	1.186	1.187	1.192	1.200	1.201
STAGE TOTAL TEMPERATURE RATIO	1.184	1.185	1.191	1.198	1.199
ROTOR TEMP. RISE EFFICIENCY	0.885	0.883	0.879	0.862	0.847
STAGE TEMP. RISE EFFICIENCY	0.704	0.806	0.817	0.807	0.790
ROTOR MOMENTUM RISE EFFICIENCY	0.871	0.876	0.886	0.880	0.866
ROTOR HEAD RISE COEFFICIENT	0.331	0.333	0.341	0.348	0.346
STAGE HEAD RISE COEFFICIENT	0.261	0.301	0.315	0.323	0.321
FLOW COEFFICIENT	0.419	0.416	0.400	0.375	0.358
WT FLOW PER UNIT FRONTAL AREA	139.40	138.53	134.23	127.70	122.40
WT FLOW PER UNIT ANNULUS AREA	187.79	186.62	180.85	172.02	164.88
WT FLOW AT ORIFICE	27.41	27.24	26.40	25.11	24.07
WT FLOW AT ROTOR INLET	27.61	27.42	26.57	25.25	24.19
WT FLOW AT ROTOR OUTLET	27.01	26.80	25.90	24.81	23.81
WT FLOW AT STATOR OUTLET	28.82	28.05	26.81	25.66	24.72
ROTATIVE SPEED	14478.9	14447.4	14441.3	14448.5	14386.2
PERCENT OF DESIGN SPEED	89.9	89.7	89.7	89.7	89.4

(e) 100 Percent of design speed

Parameter	Reading			
	1250	1252	1254	1263
ROTOR TOTAL PRESSURE RATIO	1.885	1.915	1.967	1.965
STAGE TOTAL PRESSURE RATIO	1.672	1.821	1.872	1.878
ROTOR TOTAL TEMPERATURE RATIO	1.235	1.238	1.249	1.254
STAGE TOTAL TEMPERATURE RATIO	1.232	1.235	1.247	1.252
ROTOR TEMP. RISE EFFICIENCY	0.845	0.858	0.857	0.839
STAGE TEMP. RISE EFFICIENCY	0.681	0.794	0.795	0.784
ROTOR MOMENTUM RISE EFFICIENCY	0.832	0.857	0.870	0.872
ROTOR HEAD RISE COEFFICIENT	0.322	0.334	0.347	0.346
STAGE HEAD RISE COEFFICIENT	0.257	0.305	0.319	0.321
FLOW COEFFICIENT	0.417	0.413	0.400	0.381
WT FLOW PER UNIT FRONTAL AREA	150.61	149.05	145.85	140.95
WT FLOW PER UNIT ANNULUS AREA	202.89	200.79	196.48	189.88
WT FLOW AT ORIFICE	29.62	29.31	28.68	27.72
WT FLOW AT ROTOR INLET	29.79	29.50	28.87	27.87
WT FLOW AT ROTOR OUTLET	28.84	28.57	28.08	27.67
WT FLOW AT STATOR OUTLET	31.34	29.86	29.31	28.44
ROTATIVE SPEED	16119.9	16060.8	16102.2	16095.6
PERCENT OF DESIGN SPEED	100.1	99.8	100.0	100.0



TABLE VII. - MOD 1 BLADE-ELEMENT DATA AT

## BLADE EDGES FOR ROTOR 18

(a) 60 Percent of design speed; reading 1253

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.5	60.5	71.6	56.0	288.7	1.106	10.11	1.270
2	23.906	23.383	0.5	53.5	70.3	53.0	288.4	1.100	10.13	1.265
3	21.656	21.433	0.5	47.7	67.2	47.1	288.1	1.083	10.13	1.263
4	19.591	19.726	0.5	48.4	64.6	37.5	288.0	1.082	10.13	1.277
5	19.289	19.482	0.5	48.5	64.2	37.4	288.1	1.081	10.14	1.270
6	18.984	19.238	0.5	50.0	63.8	37.4	287.8	1.079	10.13	1.262
7	18.677	18.994	0.5	51.6	63.5	36.3	288.1	1.080	10.13	1.256
8	18.367	18.750	0.5	52.5	63.1	35.0	288.3	1.080	10.13	1.255
9	16.777	17.531	0.4	51.0	61.4	24.5	287.9	1.079	10.14	1.274
10	14.079	15.580	0.5	54.2	58.0	2.8	288.0	1.082	10.14	1.305
11	13.383	15.093	0.5	57.1	57.3	-7.5	288.0	1.087	10.13	1.323

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	81.8	150.1	258.5	132.2	81.8	73.9	0.8	130.7	246.0	240.2
2	85.6	147.6	254.4	145.9	85.6	87.9	0.8	118.6	240.3	235.1
3	91.1	146.9	234.7	145.0	91.1	98.8	0.8	108.7	217.1	214.9
4	93.1	157.5	216.9	131.7	93.1	104.5	0.8	117.8	196.7	198.0
5	93.3	155.6	214.1	129.8	93.3	103.1	0.8	116.6	193.5	195.5
6	93.2	153.6	211.5	124.3	93.2	98.7	0.8	117.7	190.7	193.2
7	93.0	153.4	208.1	118.2	93.0	95.3	0.8	120.2	187.0	190.2
8	93.2	154.3	205.9	114.6	93.2	93.8	0.8	122.5	184.4	188.3
9	91.3	164.9	190.5	114.1	91.3	103.8	0.7	128.1	167.9	175.4
10	87.7	185.7	165.4	108.8	87.7	108.7	0.7	150.6	140.9	156.0
11	85.7	196.7	158.5	107.7	85.7	106.8	0.7	165.2	134.0	151.1

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.242	0.427	0.763	0.376	0.242	0.210	0.904	1.167
2	0.253	0.421	0.752	0.416	0.253	0.250	1.026	1.154
3	0.270	0.422	0.695	0.417	0.270	0.284	1.084	1.123
4	0.276	0.454	0.642	0.380	0.276	0.301	1.122	1.088
5	0.276	0.449	0.634	0.374	0.276	0.297	1.105	1.076
6	0.276	0.443	0.627	0.359	0.276	0.285	1.059	1.067
7	0.275	0.442	0.616	0.341	0.275	0.275	1.025	1.052
8	0.276	0.445	0.610	0.330	0.276	0.270	1.007	1.043
9	0.270	0.477	0.564	0.330	0.270	0.300	1.137	0.979
10	0.260	0.540	0.489	0.316	0.260	0.316	1.239	0.840
11	0.253	0.572	0.469	0.314	0.253	0.311	1.247	0.801

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	SS				TOT	PROF	TOT	PROF
1	5.00	9.4	6.6	7.6	0.632	0.670	0.327	0.327	0.053	0.053	
2	10.00	9.6	6.6	6.2	0.556	0.697	0.292	0.292	0.050	0.050	
3	30.00	11.5	7.4	7.2	0.500	0.830	0.163	0.163	0.029	0.029	
4	47.50	12.5	7.5	6.3	0.521	0.884	0.126	0.126	0.024	0.024	
5	50.00	12.6	7.4	7.8	0.521	0.870	0.143	0.143	0.026	0.026	
6	52.50	12.7	7.4	9.5	0.540	0.865	0.149	0.149	0.027	0.027	
7	55.00	12.8	7.4	10.1	0.563	0.838	0.185	0.185	0.034	0.034	
8	57.50	12.9	7.3	10.6	0.576	0.837	0.189	0.189	0.035	0.035	
9	70.00	13.3	7.2	10.1	0.541	0.904	0.127	0.127	0.024	0.024	
10	90.00	13.3	6.4	10.5	0.504	0.961	0.070	0.070	0.012	0.012	
11	95.00	13.5	6.5	7.4	0.497	0.955	0.092	0.092	0.015	0.015	

TABLE VII. - Continued.

(b) 70 Percent of design speed; reading 1258

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	-0.0	34.7	65.0	52.9	288.9	1.102	10.10	1.319
2	23.906	23.383	-0.0	32.5	63.9	50.6	288.6	1.095	10.13	1.325
3	21.656	21.433	-0.0	34.1	60.3	45.3	288.3	1.090	10.13	1.330
4	19.591	19.726	-0.0	36.3	57.4	38.4	288.0	1.094	10.14	1.330
5	19.289	19.482	-0.0	37.8	57.0	36.6	287.9	1.095	10.14	1.334
6	18.984	19.238	-0.0	39.4	56.6	35.5	288.0	1.100	10.14	1.328
7	18.677	18.994	-0.0	41.8	56.3	33.5	287.8	1.102	10.14	1.326
8	18.367	18.750	-0.0	40.7	55.9	32.5	287.9	1.101	10.14	1.334
9	16.777	17.531	-0.0	42.0	54.2	24.4	287.7	1.101	10.14	1.363
10	14.079	15.580	-0.0	48.6	50.7	3.1	287.7	1.113	10.14	1.424
11	13.383	15.093	-0.0	51.9	50.0	-4.8	287.9	1.120	10.12	1.453

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	135.0	171.0	320.0	233.2	135.0	140.6	-0.0	97.3	290.1	283.3
2	139.1	177.3	315.7	235.4	139.1	149.5	-0.0	95.3	283.3	277.1
3	146.6	182.0	295.8	214.2	146.6	150.7	-0.0	102.0	256.9	254.3
4	148.4	189.7	275.5	195.1	148.4	152.8	-0.0	112.4	232.1	233.6
5	148.4	192.2	272.5	189.1	148.4	151.8	-0.0	117.9	228.5	230.7
6	148.3	192.4	269.5	182.7	148.3	148.7	-0.0	122.1	225.1	228.1
7	147.8	194.3	266.2	173.6	147.8	144.8	-0.0	129.5	221.4	225.2
8	147.5	196.2	263.2	176.3	147.5	148.7	-0.0	127.9	218.0	222.5
9	143.8	207.0	245.6	168.9	143.8	153.9	-0.0	138.4	199.1	208.1
10	136.3	234.5	215.4	155.2	136.3	155.0	-0.0	176.0	166.7	184.5
11	133.0	243.7	207.2	151.0	133.0	150.4	-0.0	191.7	158.8	179.1

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.403	0.490	0.954	0.667	0.403	0.403	1.041	1.240
2	0.415	0.510	0.943	0.678	0.415	0.430	1.075	1.233
3	0.439	0.526	0.886	0.619	0.439	0.436	1.028	1.224
4	0.445	0.549	0.826	0.565	0.445	0.442	1.030	1.197
5	0.445	0.556	0.817	0.547	0.445	0.439	1.022	1.188
6	0.444	0.556	0.808	0.527	0.444	0.429	1.003	1.178
7	0.443	0.561	0.798	0.501	0.443	0.418	0.980	1.168
8	0.442	0.567	0.789	0.510	0.442	0.430	1.008	1.158
9	0.431	0.601	0.736	0.490	0.431	0.447	1.070	1.097
10	0.407	0.684	0.644	0.452	0.407	0.452	1.137	0.946
11	0.397	0.711	0.619	0.440	0.397	0.439	1.131	0.905

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	2.8	0.0	4.5	0.358	0.808	0.134	0.132	0.023	0.023
2	10.00	3.1	0.1	3.8	0.339	0.882	0.079	0.078	0.014	0.014
3	30.00	4.6	0.5	5.4	0.365	0.941	0.043	0.042	0.008	0.008
4	47.50	5.3	0.3	7.3	0.389	0.909	0.075	0.075	0.014	0.014
5	50.00	5.4	0.2	7.0	0.407	0.899	0.086	0.086	0.016	0.016
6	52.50	5.5	0.2	7.5	0.427	0.841	0.144	0.144	0.027	0.027
7	55.00	5.6	0.2	7.2	0.459	0.822	0.167	0.167	0.031	0.031
8	57.50	5.7	0.2	8.0	0.440	0.853	0.139	0.139	0.026	0.026
9	70.00	6.2	-0.0	9.9	0.430	0.918	0.088	0.088	0.016	0.016
10	90.00	6.0	-0.8	10.8	0.425	0.939	0.091	0.091	0.016	0.016
11	95.00	6.2	-0.8	10.0	0.429	0.940	0.101	0.101	0.016	0.016

TABLE VII. - Continued.

(c) 70 Percent of design speed; reading 1259

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	-0.0	38.8	66.3	53.0	288.6	1.109	10.10	1.346
2	23.906	23.383	-0.0	36.7	65.0	50.7	288.5	1.103	10.13	1.351
3	21.656	21.433	-0.0	37.8	61.5	45.4	288.2	1.098	10.13	1.353
4	19.591	19.726	-0.0	40.2	58.8	37.9	288.0	1.100	10.14	1.355
5	19.289	19.482	-0.0	40.9	58.5	36.6	288.1	1.101	10.14	1.358
6	18.984	19.238	-0.0	42.7	58.1	35.3	288.2	1.104	10.14	1.351
7	18.677	18.994	-0.0	43.8	57.8	34.1	287.9	1.106	10.14	1.346
8	18.367	18.750	-0.0	43.5	57.3	32.4	288.0	1.105	10.14	1.353
9	16.777	17.531	-0.0	44.5	55.7	24.8	287.9	1.103	10.14	1.370
10	14.079	15.580	-0.0	49.8	52.5	4.0	287.9	1.112	10.14	1.428
11	13.383	15.093	-0.0	53.1	51.7	-5.2	288.0	1.120	10.12	1.458

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	126.8	169.9	315.4	219.8	126.8	132.4	-0.0	106.5	288.8	282.0
2	131.9	175.5	312.1	221.9	131.9	140.6	-0.0	104.9	282.8	276.6
3	138.8	179.1	291.1	201.6	138.8	141.6	-0.0	109.7	255.8	253.2
4	140.2	188.1	270.7	182.1	140.2	143.7	-0.0	121.4	231.6	233.2
5	140.0	189.5	267.6	178.5	140.0	143.3	-0.0	124.0	228.1	230.4
6	139.8	189.8	264.6	171.1	139.8	139.5	-0.0	128.6	224.6	227.6
7	139.2	190.1	261.1	165.6	139.2	137.1	-0.0	131.7	220.8	224.6
8	139.1	192.9	257.7	165.5	139.1	139.8	-0.0	132.9	217.0	221.5
9	135.2	200.9	239.8	157.7	135.2	143.2	-0.0	140.9	198.1	207.0
10	127.8	227.8	209.9	147.4	127.8	147.0	-0.0	174.0	166.4	184.2
11	124.8	239.1	201.4	144.1	124.8	143.5	-0.0	191.3	158.1	178.3

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.378	0.485	0.939	0.627	0.378	0.378	1.044	1.264
2	0.393	0.503	0.931	0.636	0.393	0.403	1.066	1.256
3	0.415	0.516	0.870	0.580	0.415	0.408	1.020	1.240
4	0.419	0.543	0.810	0.525	0.419	0.414	1.025	1.213
5	0.419	0.546	0.800	0.515	0.419	0.413	1.023	1.204
6	0.418	0.546	0.791	0.493	0.418	0.402	0.998	1.193
7	0.416	0.547	0.781	0.477	0.416	0.395	0.985	1.182
8	0.416	0.556	0.771	0.477	0.416	0.403	1.005	1.169
9	0.404	0.581	0.716	0.456	0.404	0.414	1.060	1.105
10	0.381	0.663	0.626	0.429	0.381	0.428	1.150	0.957
11	0.372	0.696	0.600	0.419	0.372	0.417	1.150	0.912

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	4.0	1.3	4.6	0.399	0.815	0.141	0.138	0.024	0.024
2	10.00	4.2	1.2	3.9	0.383	0.871	0.095	0.093	0.017	0.017
3	30.00	5.9	1.8	5.5	0.404	0.924	0.060	0.059	0.011	0.011
4	47.50	6.8	1.7	6.7	0.434	0.911	0.080	0.080	0.015	0.015
5	50.00	6.9	1.7	7.0	0.442	0.906	0.087	0.087	0.016	0.016
6	52.50	7.0	1.7	7.4	0.466	0.863	0.133	0.133	0.025	0.025
7	55.00	7.1	1.7	7.9	0.481	0.839	0.161	0.161	0.030	0.030
8	57.50	7.2	1.6	7.9	0.474	0.856	0.147	0.147	0.028	0.028
9	70.00	7.7	1.5	10.3	0.465	0.913	0.100	0.100	0.018	0.018
10	90.00	7.8	0.9	11.6	0.446	0.957	0.068	0.068	0.012	0.012
11	95.00	7.9	0.9	9.7	0.447	0.948	0.094	0.094	0.015	0.015

TABLE VII. - Continued.

(d) 70 Percent of design speed; reading 1260

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	-0.0	42.9	67.7	53.5	288.6	1.116	10.10	1.358
2	23.906	23.583	-0.0	41.3	66.5	50.4	288.5	1.112	10.13	1.379
3	21.656	21.433	-0.0	41.6	63.1	46.3	288.1	1.104	10.13	1.354
4	19.591	19.726	-0.0	43.4	60.5	37.5	288.0	1.107	10.14	1.378
5	19.289	19.482	-0.0	44.4	60.2	36.2	288.0	1.107	10.14	1.376
6	18.984	19.238	-0.0	45.5	59.8	35.5	288.0	1.108	10.14	1.367
7	18.677	18.994	-0.0	46.6	59.4	34.6	287.9	1.109	10.14	1.360
8	18.367	18.750	-0.0	46.3	59.1	33.3	288.1	1.109	10.14	1.362
9	16.777	17.531	-0.0	47.0	57.5	25.3	287.9	1.106	10.14	1.378
10	14.079	15.580	-0.0	51.5	54.3	4.4	288.0	1.113	10.14	1.430
11	13.383	15.093	-0.0	54.5	53.5	-5.2	288.0	1.122	10.13	1.464

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	118.3	168.8	311.9	207.8	118.3	123.7	-0.0	114.8	288.5	281.8
2	122.8	176.2	307.8	207.4	122.8	132.4	-0.0	116.3	282.2	276.0
3	129.8	174.9	286.7	189.3	129.8	130.8	-0.0	116.1	255.6	253.0
4	131.1	187.5	266.2	171.5	131.1	136.1	-0.0	128.9	231.6	233.2
5	130.7	188.2	262.7	166.8	130.7	134.5	-0.0	131.5	227.9	230.2
6	130.5	187.3	259.5	161.2	130.5	131.3	-0.0	133.7	224.3	227.3
7	130.4	187.0	256.3	156.1	130.4	128.5	-0.0	135.8	220.6	224.4
8	129.9	188.4	253.1	155.8	129.9	130.2	-0.0	136.2	217.2	221.7
9	126.8	197.0	235.8	148.7	126.8	134.4	-0.0	144.1	198.7	207.7
10	120.1	222.4	205.7	138.9	120.1	138.5	-0.0	174.0	167.0	184.8
11	117.5	235.6	197.7	137.5	117.5	136.9	-0.0	191.7	159.0	179.3

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.352	0.480	0.927	0.591	0.352	0.352	1.045	1.294
2	0.365	0.503	0.916	0.592	0.365	0.378	1.078	1.284
3	0.387	0.501	0.855	0.543	0.387	0.375	1.008	1.264
4	0.391	0.539	0.794	0.493	0.391	0.391	1.038	1.235
5	0.390	0.541	0.784	0.479	0.390	0.387	1.029	1.224
6	0.389	0.538	0.774	0.463	0.389	0.377	1.006	1.213
7	0.389	0.537	0.765	0.448	0.389	0.369	0.986	1.200
8	0.388	0.541	0.755	0.448	0.388	0.374	1.003	1.190
9	0.378	0.568	0.703	0.429	0.378	0.388	1.059	1.126
10	0.357	0.645	0.612	0.403	0.357	0.402	1.153	0.974
11	0.350	0.684	0.588	0.399	0.350	0.397	1.165	0.930

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	5.5	2.7	5.1	0.439	0.808	0.157	0.154	0.027	0.026	
2	10.00	5.7	2.7	3.6	0.432	0.859	0.115	0.112	0.021	0.020	
3	30.00	7.4	3.3	6.4	0.444	0.893	0.091	0.091	0.016	0.016	
4	47.50	8.4	3.4	6.3	0.471	0.900	0.098	0.098	0.018	0.018	
5	50.00	8.6	3.4	6.6	0.482	0.891	0.110	0.110	0.021	0.021	
6	52.50	8.7	3.4	7.6	0.498	0.864	0.141	0.141	0.026	0.026	
7	55.00	8.8	3.3	8.3	0.512	0.838	0.172	0.172	0.032	0.032	
8	57.50	8.9	3.4	8.8	0.505	0.849	0.164	0.164	0.030	0.030	
9	70.00	9.4	3.3	10.9	0.497	0.906	0.113	0.113	0.021	0.021	
10	90.00	9.6	2.7	12.1	0.476	0.948	0.085	0.085	0.014	0.014	
11	95.00	9.7	2.7	9.7	0.470	0.946	0.102	0.102	0.016	0.016	

TABLE VII. - Continued.

(e) 70 Percent of design speed; reading 1261

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	-0.0	48.2	69.4	54.1	288.6	1.128	10.10	1.381
2	23.906	23.323	-0.0	45.6	68.1	50.7	288.5	1.124	10.13	1.391
3	21.656	21.433	-0.0	45.5	65.0	47.0	288.2	1.112	10.13	1.374
4	19.591	19.726	-0.0	45.9	62.4	37.7	288.1	1.111	10.14	1.389
5	19.289	19.482	-0.0	46.3	62.0	37.1	288.0	1.111	10.14	1.382
6	18.984	19.238	-0.0	47.6	61.7	36.7	288.1	1.110	10.14	1.374
7	18.677	18.994	-0.0	49.4	61.3	35.5	287.9	1.111	10.14	1.366
8	18.367	18.750	-0.0	49.1	61.0	34.7	288.0	1.110	10.14	1.362
9	16.777	17.531	-0.0	49.0	59.3	24.5	287.9	1.110	10.14	1.394
10	14.079	15.580	-0.0	52.8	56.1	4.9	287.9	1.114	10.14	1.431
11	13.383	15.093	-0.0	55.5	55.3	-4.9	288.0	1.122	10.13	1.459

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	108.9	169.9	309.6	193.0	108.9	113.2	-0.0	126.7	289.8	283.0
2	113.9	176.5	305.3	195.1	113.9	123.5	-0.0	126.1	283.2	277.0
3	120.0	173.5	283.5	178.2	120.0	121.5	-0.0	123.9	256.8	254.2
4	121.3	185.9	261.7	163.4	121.3	129.3	-0.0	133.5	231.9	233.5
5	121.1	184.7	258.1	160.1	121.1	127.6	-0.0	133.5	227.9	230.2
6	121.2	183.6	255.5	154.4	121.2	123.8	-0.0	135.6	224.9	227.9
7	120.9	183.7	251.9	146.9	120.9	119.6	-0.0	139.5	221.0	224.8
8	120.6	183.3	248.4	146.0	120.6	120.0	-0.0	138.6	217.2	221.7
9	117.7	196.7	230.7	141.9	117.7	129.0	-0.0	148.4	198.4	207.3
10	111.8	217.3	200.6	131.9	111.8	131.4	-0.0	173.1	166.5	184.3
11	109.6	230.0	192.6	130.6	109.6	130.1	-0.0	189.6	158.3	178.5

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.323	0.480	0.919	0.546	0.323	0.320	1.039	1.336
2	0.338	0.501	0.907	0.554	0.338	0.351	1.084	1.322
3	0.357	0.495	0.844	0.509	0.357	0.347	1.012	1.301
4	0.361	0.533	0.779	0.468	0.361	0.371	1.066	1.262
5	0.361	0.529	0.768	0.459	0.361	0.366	1.054	1.248
6	0.361	0.526	0.761	0.443	0.361	0.355	1.021	1.240
7	0.360	0.527	0.750	0.421	0.360	0.343	0.989	1.226
8	0.359	0.525	0.740	0.418	0.359	0.344	0.995	1.212
9	0.350	0.566	0.686	0.408	0.350	0.371	1.097	1.143
10	0.332	0.629	0.596	0.382	0.332	0.380	1.175	0.985
11	0.326	0.666	0.572	0.378	0.326	0.377	1.187	0.939

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	7.2	4.4	5.7	0.493	0.755	0.219	0.214	0.037	0.036	
2	10.00	7.3	4.3	3.9	0.476	0.796	0.182	0.179	0.033	0.032	
3	30.00	9.3	5.2	7.1	0.484	0.851	0.137	0.136	0.024	0.024	
4	47.50	10.3	5.3	6.5	0.497	0.886	0.120	0.120	0.022	0.022	
5	50.00	10.4	5.3	7.5	0.501	0.875	0.134	0.134	0.025	0.025	
6	52.50	10.6	5.3	8.8	0.518	0.862	0.149	0.149	0.027	0.027	
7	55.00	10.7	5.2	9.3	0.543	0.840	0.178	0.178	0.033	0.033	
8	57.50	10.8	5.2	10.3	0.538	0.840	0.181	0.181	0.033	0.033	
9	70.00	11.3	5.1	10.1	0.519	0.903	0.125	0.125	0.023	0.023	
10	90.00	11.4	4.6	12.5	0.497	0.947	0.091	0.091	0.015	0.015	
11	95.00	11.5	4.5	10.0	0.490	0.936	0.126	0.126	0.020	0.020	

TABLE VII. - Continued.

(f) 70 Percent of design speed; reading 1262

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.0	60.0	71.5	56.3	288.7	1.147	10.10	1.394
2	23.906	23.383	-0.0	53.8	70.2	53.1	288.5	1.140	10.13	1.530
3	21.656	21.433	0.	48.3	67.0	47.2	288.1	1.120	10.13	1.379
4	19.591	19.726	-0.0	48.0	64.4	38.4	288.1	1.115	10.13	1.595
5	19.289	19.482	-0.0	48.3	64.0	38.5	288.1	1.114	10.14	1.365
6	18.984	19.238	-0.0	49.4	63.7	37.9	288.1	1.113	10.14	1.377
7	18.677	18.994	-0.0	50.8	63.3	37.0	288.1	1.113	10.14	1.370
8	18.367	18.750	-0.0	51.4	63.0	36.0	288.0	1.112	10.14	1.367
9	16.777	17.531	-0.0	50.8	61.2	25.9	287.9	1.112	10.14	1.395
10	14.079	15.580	0.0	53.3	57.9	5.3	287.9	1.116	10.14	1.444
11	13.383	15.093	-0.0	56.3	57.0	-4.8	288.0	1.123	10.13	1.463

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	96.9	175.0	305.3	157.6	96.9	87.4	0.0	151.6	289.6	282.8
2	102.2	173.9	301.4	171.1	102.2	102.6	-0.0	140.4	283.5	277.3
3	108.8	173.5	278.9	169.9	108.8	115.4	0.	129.5	256.8	254.2
4	111.3	183.8	257.8	157.0	111.3	123.0	-0.0	136.6	232.5	234.1
5	111.7	181.5	254.9	154.3	111.7	120.8	-0.0	135.5	229.1	231.4
6	111.6	180.5	251.5	148.7	111.6	117.4	-0.0	137.1	225.4	228.4
7	111.6	180.3	248.3	142.8	111.6	114.0	-0.0	139.7	221.8	225.6
8	111.4	180.6	245.2	139.3	111.4	112.6	-0.0	141.1	218.5	223.0
9	109.6	192.7	227.6	135.4	109.6	121.8	-0.0	149.3	199.4	208.4
10	104.8	216.1	197.4	129.7	104.8	129.2	0.0	173.2	167.2	185.1
11	103.1	228.0	189.3	127.0	103.1	126.6	-0.0	189.6	158.7	179.0

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.287	0.491	0.904	0.442	0.287	0.245	0.902	1.530
2	0.303	0.490	0.893	0.482	0.303	0.289	1.004	1.335
3	0.323	0.493	0.828	0.483	0.323	0.328	1.061	1.355
4	0.331	0.525	0.766	0.449	0.331	0.352	1.105	1.293
5	0.332	0.519	0.757	0.441	0.332	0.345	1.081	1.282
6	0.331	0.516	0.747	0.425	0.331	0.336	1.052	1.268
7	0.332	0.516	0.738	0.408	0.332	0.326	1.021	1.255
8	0.331	0.516	0.729	0.398	0.331	0.322	1.011	1.245
9	0.326	0.553	0.676	0.389	0.326	0.350	1.111	1.169
10	0.311	0.624	0.586	0.375	0.311	0.373	1.233	1.004
11	0.306	0.659	0.562	0.367	0.306	0.366	1.227	0.954

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	9.3	6.6	8.0	0.625	0.662	0.342	0.335	0.055	0.054
2	10.00	9.4	6.4	6.4	0.563	0.690	0.308	0.303	0.052	0.051
3	30.00	11.4	7.3	7.3	0.510	0.800	0.200	0.198	0.035	0.035
4	47.50	12.4	7.3	7.3	0.517	0.865	0.150	0.150	0.028	0.028
5	50.00	12.4	7.3	8.9	0.519	0.853	0.165	0.165	0.030	0.030
6	52.50	12.6	7.3	9.9	0.535	0.848	0.173	0.173	0.031	0.031
7	55.00	12.6	7.2	10.8	0.553	0.834	0.192	0.192	0.035	0.035
8	57.50	12.8	7.2	11.6	0.561	0.830	0.200	0.200	0.036	0.036
9	70.00	13.2	7.0	11.5	0.541	0.889	0.149	0.149	0.027	0.027
10	90.00	13.2	6.4	12.9	0.499	0.955	0.082	0.082	0.014	0.014
11	95.00	13.2	6.2	10.1	0.500	0.933	0.137	0.137	0.022	0.022

TABLE VII. - Continued.

(g) 80 Percent of design speed; reading 1251

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.5	57.1	70.7	55.4	289.4	1.182	10.09	1.529
2	23.906	23.383	0.5	54.0	69.5	52.0	288.8	1.179	10.12	1.535
3	21.656	21.433	0.5	52.3	66.2	46.7	287.9	1.160	10.14	1.516
4	19.591	19.726	0.5	51.8	63.6	37.3	287.9	1.155	10.14	1.537
5	19.289	19.482	0.5	52.2	63.2	37.9	288.3	1.154	10.14	1.515
6	18.984	19.238	0.5	52.6	62.9	37.6	287.3	1.148	10.14	1.506
7	18.677	18.994	0.5	53.5	62.5	36.2	288.1	1.150	10.14	1.504
8	18.367	18.750	0.5	54.0	62.1	34.7	288.0	1.150	10.14	1.504
9	16.777	17.531	0.4	52.3	60.4	24.9	287.8	1.146	10.14	1.541
10	14.079	15.580	0.5	55.6	56.9	3.7	287.9	1.150	10.14	1.596
11	13.383	15.093	0.5	58.6	56.4	-8.4	287.9	1.161	10.13	1.645

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	115.8	198.7	349.8	190.2	115.8	108.0	1.1	166.8	331.2	323.4
2	120.7	202.8	344.4	193.5	120.7	119.1	1.1	164.1	323.6	316.5
3	128.6	201.1	318.7	179.3	128.6	122.9	1.1	159.1	292.8	289.7
4	130.9	212.5	294.8	165.2	130.9	131.4	1.1	167.0	265.3	267.1
5	131.0	207.7	290.8	161.4	131.0	127.3	1.2	164.1	260.8	263.4
6	130.8	206.0	286.9	157.9	130.8	125.1	1.1	163.6	256.5	259.9
7	131.1	207.3	283.7	152.9	131.1	123.3	1.1	166.7	252.7	257.0
8	130.8	208.8	279.9	149.4	130.8	122.8	1.1	168.8	248.6	253.8
9	128.7	220.6	260.2	148.6	128.7	134.8	0.9	174.7	227.1	237.3
10	123.3	244.4	226.0	138.4	123.3	138.2	1.0	201.6	190.4	210.7
11	119.6	263.0	216.2	138.6	119.6	137.2	1.0	224.4	181.1	204.2

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.344	0.552	1.038	0.528	0.344	0.300	0.932	1.509
2	0.359	0.566	1.024	0.540	0.359	0.332	0.987	1.511
3	0.384	0.566	0.951	0.505	0.384	0.346	0.955	1.506
4	0.391	0.602	0.880	0.468	0.391	0.372	1.004	1.462
5	0.391	0.588	0.867	0.457	0.391	0.360	0.972	1.444
6	0.391	0.585	0.857	0.448	0.391	0.355	0.957	1.431
7	0.391	0.587	0.846	0.433	0.391	0.349	0.941	1.416
8	0.390	0.592	0.835	0.424	0.390	0.348	0.939	1.402
9	0.384	0.630	0.776	0.424	0.384	0.385	1.047	1.320
10	0.367	0.702	0.673	0.398	0.367	0.397	1.121	1.131
11	0.356	0.758	0.644	0.399	0.356	0.395	1.146	1.081

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	8.5	5.7	7.0	0.591	0.708	0.294	0.261	0.048	0.043
2	10.00	8.7	5.7	5.2	0.570	0.729	0.274	0.243	0.048	0.042
3	30.00	10.5	6.5	6.9	0.565	0.790	0.219	0.196	0.039	0.035
4	47.50	11.6	6.5	6.1	0.573	0.844	0.182	0.170	0.034	0.032
5	50.00	11.6	6.5	8.3	0.576	0.820	0.212	0.203	0.039	0.037
6	52.50	11.8	6.5	9.6	0.581	0.836	0.191	0.183	0.035	0.033
7	55.00	11.8	6.4	10.0	0.594	0.823	0.212	0.206	0.039	0.038
8	57.50	11.9	6.4	10.2	0.601	0.823	0.217	0.212	0.040	0.039
9	70.00	12.3	6.2	10.5	0.568	0.899	0.139	0.138	0.026	0.026
10	90.00	12.2	5.4	11.4	0.546	0.953	0.086	0.086	0.015	0.015
11	95.00	12.6	5.6	6.5	0.535	0.947	0.110	0.110	0.017	0.017

TABLE VII. - Continued.

(h) 90 Percent of design speed; reading 1249

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.5	46.8	65.0	51.4	288.7	1.205	10.07	1.728
2	23.906	23.383	0.5	44.2	63.7	49.7	288.7	1.192	10.12	1.711
3	21.656	21.433	0.5	44.7	59.9	44.0	288.1	1.182	10.13	1.694
4	19.591	19.726	0.5	47.1	56.9	33.9	288.0	1.184	10.14	1.693
5	19.289	19.482	0.5	48.6	56.5	33.2	288.1	1.184	10.14	1.674
6	18.984	19.238	0.5	49.9	56.1	32.6	287.8	1.184	10.14	1.648
7	18.677	18.994	0.5	50.2	55.7	31.9	288.2	1.183	10.14	1.639
8	18.367	18.750	0.5	49.3	55.4	31.0	287.7	1.178	10.15	1.638
9	16.777	17.531	0.4	49.1	53.7	22.2	288.0	1.175	10.15	1.682
10	14.079	15.580	0.5	54.5	50.4	0.1	287.9	1.186	10.15	1.770
11	13.383	15.093	0.4	58.1	49.7	-10.0	287.9	1.199	10.12	1.815

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	172.1	228.2	407.4	250.6	172.1	156.3	1.6	166.3	370.9	362.2
2	178.3	230.0	402.7	255.1	178.3	165.0	1.6	160.3	362.7	354.8
3	189.6	234.2	378.0	231.4	189.6	166.5	1.6	164.7	328.7	325.3
4	192.2	251.2	352.2	206.1	192.2	171.1	1.6	183.9	296.8	298.8
5	192.5	250.0	348.9	197.6	192.5	165.4	1.6	187.4	292.7	295.6
6	191.9	247.6	344.3	189.1	191.9	159.3	1.6	189.5	287.5	291.3
7	192.1	247.0	341.0	186.3	192.1	158.1	1.6	189.7	283.4	288.2
8	191.1	247.1	336.2	187.8	191.1	161.0	1.6	187.4	278.2	284.0
9	186.0	260.0	314.2	183.7	186.0	170.1	1.3	196.6	254.5	266.0
10	175.5	289.7	275.2	168.2	175.5	168.2	1.4	235.9	213.4	236.1
11	170.8	302.8	264.0	162.7	170.8	160.2	1.3	256.9	202.7	228.6

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.519	0.634	1.228	0.697	0.519	0.434	0.908	1.449
2	0.538	0.644	1.216	0.714	0.538	0.462	0.926	1.443
3	0.575	0.660	1.147	0.652	0.575	0.469	0.878	1.449
4	0.584	0.712	1.070	0.584	0.584	0.485	0.890	1.461
5	0.585	0.708	1.060	0.560	0.585	0.469	0.859	1.460
6	0.583	0.701	1.046	0.536	0.583	0.451	0.830	1.456
7	0.584	0.699	1.036	0.527	0.583	0.448	0.823	1.454
8	0.581	0.702	1.022	0.533	0.581	0.457	0.843	1.454
9	0.564	0.743	0.953	0.525	0.564	0.486	0.914	1.405
10	0.530	0.835	0.832	0.485	0.530	0.485	0.958	1.212
11	0.515	0.873	0.797	0.469	0.515	0.462	0.938	1.156

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	2.7	-0.0	3.0	0.500	0.825	0.162	0.116	0.029	0.021
2	10.00	2.9	-0.1	2.9	0.477	0.862	0.123	0.079	0.023	0.015
3	30.00	4.2	0.1	4.1	0.499	0.891	0.102	0.066	0.019	0.012
4	47.50	4.9	-0.2	2.7	0.538	0.884	0.121	0.091	0.024	0.018
5	50.00	4.9	-0.2	3.6	0.558	0.860	0.147	0.119	0.029	0.023
6	52.50	5.0	-0.3	4.6	0.577	0.832	0.179	0.153	0.035	0.030
7	55.00	5.1	-0.4	5.7	0.580	0.829	0.184	0.160	0.035	0.031
8	57.50	5.2	-0.4	6.5	0.566	0.850	0.162	0.138	0.031	0.026
9	70.00	5.7	-0.5	7.8	0.545	0.917	0.100	0.087	0.019	0.017
10	90.00	5.7	-1.2	7.8	0.541	0.953	0.074	0.074	0.013	0.012
11	95.00	5.9	-1.1	4.8	0.549	0.932	0.121	0.121	0.019	0.019



TABLE VII. - Continued.

(i) 90 Percent of design speed; reading 1248

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.5	47.7	65.1	51.8	288.8	1.207	10.08	1.713
2	23.906	23.383	0.5	44.9	63.9	49.8	288.8	1.193	10.12	1.709
3	21.656	21.433	0.5	44.9	60.1	43.8	288.0	1.183	10.13	1.697
4	19.591	19.726	0.5	47.2	57.1	34.3	288.0	1.184	10.14	1.697
5	19.289	19.482	0.5	48.4	56.7	33.7	287.7	1.184	10.14	1.679
6	18.984	19.238	0.5	49.8	56.3	32.9	288.3	1.186	10.14	1.659
7	18.677	18.994	0.5	49.9	56.0	32.3	287.6	1.182	10.14	1.648
8	18.367	18.750	0.5	49.5	55.5	31.3	288.1	1.179	10.14	1.647
9	16.777	17.531	0.4	49.3	53.9	23.0	287.9	1.175	10.15	1.682
10	14.079	15.580	0.5	54.4	50.7	1.8	287.9	1.186	10.14	1.761
11	13.383	15.093	0.4	58.1	50.0	-10.7	287.7	1.202	10.12	1.844

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	170.8	226.4	405.7	246.2	170.8	152.3	1.5	167.5	369.5	360.9
2	176.7	229.3	401.3	251.7	176.6	162.5	1.6	161.8	361.9	354.0
3	187.7	234.1	376.1	229.8	187.7	165.9	1.6	165.1	327.5	324.1
4	190.7	249.3	351.0	205.0	190.7	169.4	1.6	182.9	296.4	298.4
5	190.2	247.5	346.9	197.6	190.2	164.4	1.6	185.0	291.7	294.6
6	190.4	246.4	343.3	189.5	190.4	159.1	1.6	188.1	287.3	291.1
7	189.5	244.9	338.8	186.6	189.5	157.6	1.6	187.4	282.4	287.2
8	189.7	245.5	335.1	186.5	189.7	159.3	1.6	186.7	277.9	283.7
9	183.7	256.0	312.1	181.2	183.7	166.7	1.3	194.2	253.7	265.1
10	173.2	283.9	273.7	165.5	173.2	165.4	1.4	230.7	213.3	236.1
11	168.7	305.0	262.6	164.1	168.7	161.2	1.3	258.8	202.6	228.5

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.514	0.628	1.222	0.683	0.514	0.423	0.892	1.447
2	0.533	0.641	1.211	0.704	0.533	0.454	0.920	1.444
3	0.569	0.660	1.141	0.648	0.569	0.468	0.884	1.449
4	0.579	0.706	1.066	0.581	0.579	0.480	0.888	1.465
5	0.578	0.701	1.054	0.560	0.578	0.466	0.864	1.464
6	0.578	0.696	1.042	0.535	0.578	0.449	0.835	1.461
7	0.576	0.694	1.029	0.528	0.576	0.446	0.832	1.461
8	0.576	0.696	1.017	0.529	0.576	0.452	0.840	1.458
9	0.557	0.730	0.946	0.517	0.557	0.476	0.908	1.403
10	0.523	0.816	0.826	0.476	0.523	0.475	0.955	1.215
11	0.509	0.879	0.792	0.473	0.509	0.465	0.956	1.159

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	2.8	0.1	3.4	0.510	0.803	0.183	0.138	0.033	0.025
2	10.00	3.1	0.1	3.0	0.484	0.856	0.130	0.087	0.024	0.016
3	30.00	4.4	0.3	3.9	0.501	0.893	0.101	0.065	0.019	0.012
4	47.50	5.0	0.0	3.1	0.538	0.887	0.118	0.089	0.023	0.017
5	50.00	5.2	-0.0	4.1	0.554	0.868	0.140	0.112	0.027	0.022
6	52.50	5.2	-0.1	5.0	0.573	0.835	0.178	0.152	0.034	0.029
7	55.00	5.3	-0.1	6.1	0.574	0.841	0.173	0.148	0.033	0.028
8	57.50	5.3	-0.2	6.8	0.568	0.855	0.158	0.135	0.030	0.026
9	70.00	5.9	-0.2	8.6	0.548	0.916	0.102	0.090	0.019	0.017
10	90.00	6.0	-0.8	9.5	0.545	0.944	0.090	0.090	0.015	0.015
11	95.00	6.2	-0.8	4.2	0.543	0.948	0.095	0.095	0.015	0.015

TABLE VII. - Continued.

(j) 90 Percent of design speed; reading 1245

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.5	49.9	66.1	52.4	288.7	1.215	10.08	1.741
2	23.906	23.383	0.5	46.9	64.9	50.4	288.8	1.201	10.11	1.738
3	21.656	21.433	0.5	47.2	61.1	44.7	288.1	1.188	10.13	1.717
4	19.591	19.726	0.5	48.7	58.2	35.2	287.9	1.188	10.14	1.718
5	19.289	19.482	0.5	49.9	57.8	34.5	287.9	1.188	10.14	1.704
6	18.984	19.238	0.5	50.7	57.4	33.8	288.1	1.190	10.14	1.685
7	18.677	18.994	0.5	51.0	57.1	32.8	287.5	1.188	10.14	1.678
8	18.367	18.750	0.5	50.4	56.6	31.4	288.3	1.186	10.15	1.666
9	16.777	17.531	0.4	51.0	55.2	24.1	287.8	1.180	10.15	1.695
10	14.079	15.580	0.5	55.7	52.1	3.7	287.9	1.186	10.14	1.749
11	13.383	15.093	0.4	59.3	51.5	-11.2	287.9	1.204	10.13	1.861

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	163.0	225.1	402.3	237.8	163.0	145.0	1.5	172.2	369.3	360.6
2	168.7	227.2	397.4	243.6	168.7	155.4	1.5	165.8	361.3	353.4
3	180.1	230.5	372.4	220.3	180.1	156.5	1.6	169.1	327.5	324.2
4	182.8	245.0	346.8	198.1	182.8	161.8	1.6	184.0	296.2	298.3
5	182.7	244.0	343.0	190.7	182.7	157.1	1.5	186.7	291.8	294.7
6	182.7	242.9	339.0	185.0	182.7	153.7	1.6	188.0	287.1	291.0
7	181.9	242.6	334.4	181.5	181.9	152.5	1.6	188.6	282.2	287.0
8	181.9	244.7	330.9	182.7	181.9	156.0	1.6	188.5	277.9	283.7
9	175.9	250.7	307.9	172.7	175.9	157.7	1.2	194.9	253.9	265.3
10	164.3	272.7	267.7	153.9	164.3	153.6	1.3	225.4	212.6	235.3
11	160.2	301.4	257.4	156.8	160.2	153.8	1.2	259.2	202.8	228.7

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.490	0.622	1.209	0.657	0.490	0.401	0.890	1.470
2	0.508	0.632	1.196	0.678	0.508	0.432	0.921	1.465
3	0.545	0.647	1.127	0.618	0.545	0.439	0.869	1.474
4	0.554	0.692	1.050	0.559	0.554	0.457	0.885	1.494
5	0.554	0.689	1.039	0.538	0.554	0.443	0.860	1.493
6	0.553	0.684	1.026	0.521	0.553	0.433	0.841	1.491
7	0.551	0.685	1.013	0.512	0.551	0.431	0.839	1.492
8	0.550	0.691	1.001	0.516	0.550	0.440	0.857	1.493
9	0.532	0.712	0.931	0.491	0.532	0.448	0.896	1.418
10	0.495	0.780	0.806	0.440	0.495	0.439	0.935	1.223
11	0.482	0.866	0.774	0.451	0.482	0.442	0.960	1.172

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	3.8	1.1	4.0	0.530	0.799	0.195	0.148	0.034	0.026
2	10.00	4.1	1.1	3.6	0.503	0.850	0.142	0.097	0.026	0.018
3	30.00	5.4	1.3	4.8	0.524	0.887	0.111	0.073	0.020	0.013
4	47.50	6.1	1.1	4.1	0.553	0.891	0.119	0.087	0.023	0.017
5	50.00	6.2	1.1	4.9	0.570	0.875	0.138	0.107	0.026	0.021
6	52.50	6.3	1.0	5.9	0.581	0.846	0.173	0.144	0.033	0.027
7	55.00	6.4	1.0	6.6	0.585	0.849	0.172	0.144	0.033	0.027
8	57.50	6.5	0.9	6.9	0.575	0.866	0.155	0.128	0.029	0.024
9	70.00	7.1	1.0	9.6	0.570	0.906	0.119	0.107	0.022	0.020
10	90.00	7.4	0.6	11.4	0.575	0.932	0.113	0.113	0.019	0.019
11	95.00	7.7	0.7	3.7	0.562	0.953	0.090	0.090	0.014	0.014

TABLE VII. - Continued.

(k) 90 Percent of design speed; reading 1246

RP	RADI		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.5	53.6	67.7	52.7	288.9	1.236	10.07	1.772
2	23.906	23.383	0.5	50.7	66.4	49.7	288.8	1.221	10.11	1.777
3	21.656	21.453	0.5	49.4	62.7	45.1	288.1	1.198	10.13	1.738
4	19.591	19.726	0.5	49.8	59.9	36.0	288.0	1.192	10.14	1.739
5	19.289	19.482	0.5	51.2	59.5	35.8	287.8	1.192	10.14	1.718
6	18.984	19.238	0.5	52.7	59.2	35.0	288.0	1.193	10.15	1.703
7	18.677	18.994	0.5	53.3	58.9	33.7	287.3	1.191	10.15	1.694
8	18.367	18.750	0.5	52.4	58.4	32.6	288.1	1.189	10.15	1.697
9	16.777	17.531	0.4	53.0	57.0	25.0	287.8	1.181	10.15	1.700
10	14.079	15.580	0.5	56.4	54.0	5.3	287.8	1.187	10.15	1.754
11	13.383	15.093	0.4	59.8	53.2	-10.1	288.0	1.202	10.13	1.851

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	151.6	228.5	398.8	223.4	151.6	135.5	1.4	184.0	370.2	361.6
2	157.2	232.5	393.0	227.8	157.1	147.2	1.4	179.9	361.6	353.7
3	168.4	229.6	367.3	211.7	168.4	149.4	1.5	174.4	327.9	324.5
4	171.3	242.3	341.4	193.2	171.3	156.3	1.5	185.2	296.8	298.8
5	171.2	239.7	337.4	185.3	171.2	150.2	1.5	186.8	292.3	295.2
6	171.0	239.0	333.5	176.9	171.0	144.8	1.5	190.2	287.8	291.7
7	169.5	239.1	327.9	171.6	169.5	142.8	1.5	191.7	282.2	287.0
8	169.9	239.9	324.5	173.7	169.9	146.3	1.5	190.2	278.0	283.8
9	163.8	245.2	300.6	162.7	163.8	147.5	1.2	195.9	253.2	264.6
10	153.6	266.5	261.4	148.2	153.6	147.6	1.2	221.9	212.8	235.5
11	150.2	294.2	250.9	150.2	150.2	147.8	1.2	254.3	202.2	228.0

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.454	0.627	1.195	0.613	0.454	0.371	0.894	1.511
2	0.471	0.643	1.179	0.630	0.471	0.407	0.937	1.504
3	0.508	0.642	1.107	0.592	0.508	0.417	0.887	1.515
4	0.517	0.682	1.030	0.544	0.517	0.440	0.912	1.543
5	0.517	0.675	1.018	0.521	0.517	0.423	0.878	1.544
6	0.516	0.672	1.006	0.497	0.516	0.407	0.847	1.545
7	0.512	0.673	0.990	0.483	0.512	0.402	0.842	1.536
8	0.512	0.675	0.978	0.489	0.512	0.412	0.861	1.520
9	0.493	0.695	0.905	0.461	0.493	0.418	0.900	1.435
10	0.461	0.760	0.785	0.422	0.461	0.421	0.961	1.241
11	0.450	0.843	0.752	0.430	0.450	0.424	0.985	1.183

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	5.4	2.7	4.3	0.570	0.754	0.257	0.204	0.045	0.036
2	10.00	5.7	2.7	3.0	0.547	0.808	0.197	0.147	0.036	0.027
3	30.00	7.0	3.0	5.3	0.545	0.866	0.139	0.097	0.025	0.018
4	47.50	7.8	2.8	4.9	0.562	0.891	0.123	0.086	0.024	0.016
5	50.00	7.9	2.8	6.2	0.580	0.873	0.145	0.109	0.027	0.021
6	52.50	8.0	2.7	7.1	0.600	0.850	0.175	0.140	0.033	0.026
7	55.00	8.2	2.8	7.5	0.609	0.850	0.178	0.146	0.033	0.027
8	57.50	8.2	2.7	8.1	0.596	0.862	0.166	0.138	0.031	0.026
9	70.00	8.9	2.8	10.5	0.594	0.903	0.129	0.117	0.024	0.022
10	90.00	9.3	2.5	12.9	0.584	0.931	0.119	0.119	0.020	0.020
11	95.00	9.4	2.4	4.8	0.574	0.950	0.099	0.099	0.016	0.016

TABLE VII. - Continued.

(L) 90 Percent of design speed; reading 1247

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.5	55.5	68.8	53.5	289.1	1.234	10.06	1.761
2	23.906	23.383	0.5	52.5	67.4	49.8	289.1	1.226	10.11	1.777
3	21.656	21.433	0.5	50.7	63.8	45.7	288.0	1.199	10.14	1.722
4	19.591	19.726	0.5	51.0	61.2	37.5	287.8	1.191	10.15	1.711
5	19.289	19.482	0.5	52.2	60.8	37.3	288.2	1.191	10.15	1.691
6	18.984	19.238	0.5	53.1	60.5	37.0	287.4	1.189	10.15	1.676
7	18.677	18.994	0.5	54.6	60.2	35.7	287.7	1.190	10.15	1.655
8	18.367	18.750	0.5	54.5	59.9	34.3	287.7	1.188	10.15	1.668
9	16.777	17.531	0.4	54.4	58.4	24.5	287.8	1.185	10.15	1.697
10	14.079	15.580	0.5	56.4	55.3	5.0	287.8	1.187	10.15	1.758
11	13.383	15.093	0.4	59.8	55.1	-9.7	288.2	1.198	10.09	1.848

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	143.1	226.8	394.8	216.2	143.1	128.6	1.3	186.9	369.3	360.6
2	149.4	233.4	389.5	219.8	149.4	142.0	1.3	185.3	361.1	353.2
3	159.9	227.4	362.6	206.1	159.9	144.0	1.4	176.0	326.8	323.4
4	161.6	236.0	335.6	187.5	161.6	148.7	1.4	183.3	295.5	297.6
5	161.8	233.3	331.1	179.6	161.8	142.9	1.4	184.4	290.3	293.2
6	160.6	231.5	326.6	173.9	160.6	139.0	1.4	185.1	285.8	289.6
7	160.3	231.9	322.2	165.3	160.3	134.2	1.4	189.2	280.9	285.7
8	159.6	233.3	318.1	164.0	159.6	135.5	1.4	189.9	276.5	282.3
9	154.7	244.3	295.0	156.3	154.7	142.2	1.1	198.7	252.3	263.6
10	146.1	266.1	256.5	147.8	146.1	147.2	1.2	221.7	212.0	234.6
11	139.7	291.3	244.0	148.5	139.7	146.4	1.1	251.8	201.2	226.9

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.427	0.622	1.179	0.593	0.427	0.353	0.899	1.536
2	0.447	0.644	1.166	0.606	0.447	0.391	0.950	1.528
3	0.481	0.634	1.090	0.575	0.481	0.402	0.901	1.543
4	0.486	0.663	1.010	0.527	0.486	0.418	0.920	1.581
5	0.486	0.654	0.996	0.504	0.486	0.401	0.883	1.575
6	0.484	0.651	0.983	0.489	0.484	0.391	0.865	1.565
7	0.482	0.551	0.969	0.464	0.482	0.377	0.837	1.546
8	0.480	0.656	0.957	0.461	0.480	0.381	0.849	1.533
9	0.465	0.691	0.886	0.442	0.465	0.402	0.919	1.447
10	0.438	0.756	0.769	0.421	0.438	0.419	1.008	1.248
11	0.418	0.835	0.729	0.426	0.418	0.420	1.048	1.192

RP	PERCENT	INCIDENCE		DEV	D-FACT.	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	6.5	3.8	5.1	0.586	0.750	0.263	0.207	0.045	0.036
2	10.00	6.7	3.7	3.0	0.568	0.789	0.222	0.170	0.041	0.031
3	30.00	8.2	4.1	5.8	0.556	0.844	0.165	0.120	0.030	0.022
4	47.50	9.2	4.1	6.4	0.570	0.867	0.154	0.112	0.029	0.021
5	50.00	9.2	4.0	7.7	0.587	0.846	0.180	0.141	0.033	0.026
6	52.50	9.4	4.1	9.0	0.597	0.842	0.186	0.151	0.034	0.028
7	55.00	9.5	4.1	9.5	0.620	0.828	0.208	0.177	0.038	0.032
8	57.50	9.7	4.1	9.8	0.618	0.835	0.203	0.175	0.037	0.032
9	70.00	10.3	4.2	10.1	0.610	0.881	0.164	0.153	0.030	0.028
10	90.00	10.6	3.7	12.7	0.577	0.935	0.115	0.115	0.019	0.019
11	95.00	11.3	4.3	5.2	0.567	0.971	0.059	0.059	0.009	0.009

TABLE VII. - Continued.

(m) 100 Percent of design speed; reading 1250

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.5	50.5	64.9	53.3	288.7	1.271	10.07	1.890
2	23.906	23.383	0.5	47.0	63.6	50.9	288.4	1.248	10.12	1.893
3	21.656	21.433	0.5	47.2	59.8	44.4	288.1	1.233	10.13	1.888
4	19.591	19.726	0.5	49.9	56.7	34.4	287.9	1.230	10.14	1.860
5	19.289	19.482	0.5	51.9	56.3	34.6	288.0	1.230	10.14	1.814
6	18.984	19.238	0.5	53.1	55.8	34.2	288.2	1.230	10.14	1.788
7	18.677	18.994	0.5	53.8	55.4	33.0	288.3	1.229	10.14	1.781
8	18.367	18.750	0.5	52.8	55.1	30.8	288.1	1.226	10.14	1.804
9	16.777	17.531	0.4	50.5	53.3	22.2	288.0	1.217	10.15	1.881
10	14.079	15.580	0.5	55.2	49.8	3.8	287.9	1.224	10.15	1.949
11	13.383	15.093	0.4	58.7	49.0	-7.9	287.9	1.244	10.13	2.011

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	193.1	249.3	455.7	265.2	193.1	158.6	1.7	192.4	414.5	404.8
2	199.5	251.7	449.4	272.6	199.5	171.8	1.8	183.9	404.4	395.6
3	211.9	259.2	421.7	246.5	211.9	176.2	1.8	190.2	366.4	362.6
4	215.7	275.4	392.7	214.8	215.7	177.2	1.8	210.8	330.0	332.3
5	215.9	270.5	388.6	202.8	215.9	166.9	1.8	212.8	324.9	328.2
6	215.9	268.4	384.5	195.0	215.9	161.3	1.8	214.6	320.0	324.2
7	215.8	269.1	380.4	189.7	215.8	159.1	1.8	217.1	315.1	320.4
8	215.3	273.5	375.9	192.6	215.3	165.5	1.8	217.7	309.9	316.4
9	210.1	286.8	351.3	196.9	210.1	182.3	1.5	221.4	283.0	295.7
10	199.3	306.1	309.0	175.1	199.3	174.8	1.6	251.3	237.7	263.0
11	194.8	325.4	296.9	170.8	194.8	169.1	1.5	278.0	225.6	254.4

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.586	0.679	1.383	0.722	0.586	0.432	0.822	1.590
2	0.607	0.693	1.368	0.750	0.607	0.473	0.861	1.579
3	0.648	0.721	1.290	0.685	0.648	0.490	0.831	1.568
4	0.661	0.772	1.204	0.602	0.661	0.497	0.822	1.550
5	0.662	0.757	1.191	0.568	0.662	0.467	0.773	1.543
6	0.662	0.750	1.178	0.545	0.662	0.451	0.747	1.535
7	0.661	0.753	1.166	0.531	0.661	0.445	0.737	1.527
8	0.660	0.767	1.152	0.541	0.660	0.464	0.768	1.521
9	0.643	0.813	1.074	0.558	0.643	0.517	0.868	1.490
10	0.607	0.873	0.941	0.500	0.607	0.498	0.877	1.354
11	0.592	0.929	0.903	0.488	0.592	0.483	0.868	1.289

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	2.7	-0.1	4.9	0.537	0.736	0.260	0.163	0.045	0.028
2	10.00	2.8	-0.2	4.2	0.507	0.806	0.185	0.092	0.033	0.016
3	30.00	4.2	0.1	4.5	0.531	0.854	0.146	0.068	0.027	0.013
4	47.50	4.6	-0.4	3.3	0.579	0.842	0.170	0.109	0.033	0.021
5	50.00	4.7	-0.5	5.1	0.605	0.808	0.209	0.150	0.040	0.029
6	52.50	4.7	-0.6	6.3	0.621	0.787	0.233	0.178	0.044	0.034
7	55.00	4.8	-0.6	6.8	0.630	0.783	0.241	0.189	0.046	0.036
8	57.50	4.9	-0.7	6.3	0.617	0.811	0.212	0.163	0.041	0.031
9	70.00	5.2	-0.9	7.8	0.570	0.914	0.106	0.072	0.020	0.014
10	90.00	5.1	-1.7	11.5	0.577	0.936	0.100	0.093	0.017	0.016
11	95.00	5.2	-1.8	6.9	0.584	0.906	0.166	0.164	0.026	0.026

TABLE VII. - Continued.

(n) 100 Percent of design speed; reading 1252

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.5	53.0	65.0	53.0	288.8	1.274	10.08	1.931
2	23.906	23.383	0.5	48.2	63.8	50.8	288.6	1.255	10.12	1.931
3	21.656	21.433	0.5	48.3	60.1	44.5	288.1	1.235	10.13	1.917
4	19.591	19.726	0.5	50.6	56.9	35.2	287.9	1.235	10.14	1.904
5	19.289	19.482	0.5	52.3	56.5	36.1	287.8	1.234	10.14	1.850
6	18.984	19.238	0.5	52.8	56.1	35.3	288.0	1.233	10.14	1.838
7	18.677	18.994	0.5	53.5	55.7	34.7	287.7	1.231	10.14	1.821
8	18.367	18.750	0.5	52.7	55.3	33.1	288.0	1.228	10.14	1.831
9	16.777	17.531	0.4	51.4	53.6	24.1	288.0	1.219	10.15	1.899
10	14.079	15.580	0.5	55.2	50.4	6.6	287.9	1.223	10.15	1.942
11	13.383	15.093	0.4	59.9	49.8	-10.5	287.9	1.249	10.12	2.079

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	190.6	251.5	451.6	251.3	190.6	151.3	1.7	200.9	411.2	401.5
2	196.7	251.6	446.1	265.6	196.7	167.8	1.7	187.4	402.1	393.3
3	208.7	257.1	418.0	240.1	208.7	171.2	1.8	191.8	364.0	360.2
4	213.6	272.3	391.4	211.5	213.6	172.9	1.8	210.3	329.8	332.1
5	213.6	265.1	387.0	200.5	213.6	162.1	1.8	209.8	324.5	327.8
6	213.4	264.2	382.6	195.9	213.4	159.8	1.8	210.4	319.4	323.7
7	212.8	262.8	377.8	190.1	212.8	156.3	1.8	211.2	314.0	319.3
8	212.5	264.9	373.4	191.5	212.5	160.4	1.8	210.8	308.8	315.3
9	206.5	277.9	348.4	189.9	206.5	173.4	1.5	217.2	282.1	294.8
10	194.4	294.9	305.1	169.3	194.4	168.2	1.5	242.3	236.6	261.8
11	189.1	328.9	292.9	167.8	189.1	165.0	1.5	284.4	225.2	253.9

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.578	0.684	1.369	0.683	0.578	0.412	0.794	1.580
2	0.598	0.690	1.356	0.729	0.598	0.460	0.853	1.574
3	0.638	0.714	1.278	0.667	0.638	0.475	0.820	1.564
4	0.654	0.761	1.199	0.591	0.654	0.483	0.809	1.554
5	0.655	0.739	1.186	0.559	0.655	0.452	0.759	1.547
6	0.653	0.736	1.172	0.546	0.653	0.445	0.749	1.539
7	0.652	0.733	1.157	0.530	0.652	0.436	0.735	1.531
8	0.651	0.740	1.143	0.535	0.650	0.448	0.755	1.523
9	0.631	0.784	1.064	0.536	0.631	0.489	0.839	1.497
10	0.591	0.837	0.928	0.481	0.591	0.477	0.865	1.353
11	0.574	0.938	0.889	0.479	0.574	0.471	0.873	1.293

RP	PERCENT SPAN		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	2.8	0.0	4.6	0.569	0.754	0.248	0.155	0.043	0.027	
2	10.00	3.0	0.0	4.1	0.521	0.812	0.185	0.095	0.033	0.017	
3	30.00	4.4	0.3	4.7	0.543	0.870	0.132	0.056	0.024	0.010	
4	47.50	4.9	-0.2	4.0	0.586	0.861	0.153	0.091	0.030	0.018	
5	50.00	4.9	-0.3	6.5	0.608	0.823	0.196	0.138	0.037	0.026	
6	52.50	5.0	-0.3	7.4	0.614	0.814	0.209	0.154	0.039	0.029	
7	55.00	5.1	-0.4	8.4	0.623	0.809	0.216	0.165	0.040	0.031	
8	57.50	5.1	-0.4	8.6	0.613	0.828	0.197	0.149	0.037	0.028	
9	70.00	5.6	-0.5	9.7	0.584	0.918	0.104	0.070	0.019	0.013	
10	90.00	5.7	-1.2	14.3	0.586	0.936	0.102	0.095	0.017	0.016	
11	95.00	6.0	-1.0	4.4	0.592	0.932	0.125	0.123	0.020	0.019	

TABLE VII. - Continued.

(o) 100 Percent of design speed; reading 1254

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.5	55.0	66.0	52.4	288.7	1.293	10.06	2.019
2	23.906	23.383	0.5	50.9	64.7	50.2	288.5	1.274	10.13	2.006
3	21.656	21.433	0.5	50.4	60.9	44.4	288.1	1.248	10.13	1.971
4	19.591	19.726	0.5	51.8	57.9	35.7	287.9	1.241	10.14	1.948
5	19.289	19.482	0.5	52.7	57.5	35.8	288.1	1.240	10.14	1.918
6	18.984	19.238	0.5	54.3	57.0	35.7	288.3	1.241	10.14	1.892
7	18.677	18.994	0.5	55.0	56.6	34.9	287.6	1.238	10.15	1.880
8	18.367	18.750	0.5	54.0	56.3	33.5	288.2	1.236	10.15	1.888
9	16.777	17.531	0.4	53.0	54.6	25.0	288.0	1.228	10.14	1.932
10	14.079	15.580	0.5	56.3	51.5	8.9	287.9	1.228	10.15	1.947
11	13.383	15.093	0.4	60.8	50.8	-11.3	287.8	1.252	10.13	2.138

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	182.4	257.4	449.1	241.9	182.4	147.6	1.6	210.8	412.1	402.4
2	190.0	257.0	443.8	253.0	190.0	162.0	1.7	199.5	402.7	393.9
3	201.6	258.5	415.1	230.7	201.6	164.7	1.7	199.2	364.5	360.8
4	205.6	269.7	386.8	205.4	205.5	166.9	1.7	211.9	329.5	331.7
5	205.9	265.9	382.8	198.9	205.9	161.3	1.8	211.4	324.5	327.8
6	206.8	263.5	379.8	189.3	206.8	153.7	1.8	214.1	320.3	324.6
7	206.3	262.6	375.1	183.8	206.3	150.6	1.7	215.2	315.1	320.4
8	205.7	264.1	370.5	186.0	205.7	155.1	1.7	213.7	310.0	316.4
9	200.7	274.8	346.4	182.4	200.7	165.3	1.4	219.5	283.7	296.5
10	187.7	286.2	301.7	160.8	187.7	158.8	1.5	238.1	237.7	263.0
11	182.9	328.6	289.7	163.3	182.9	160.1	1.4	286.9	226.1	255.0

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.552	0.696	1.358	0.654	0.552	0.399	0.809	1.604
2	0.576	0.701	1.346	0.690	0.576	0.442	0.853	1.593
3	0.615	0.714	1.265	0.637	0.615	0.455	0.817	1.583
4	0.628	0.751	1.181	0.572	0.628	0.465	0.812	1.573
5	0.629	0.739	1.169	0.553	0.629	0.448	0.783	1.566
6	0.631	0.731	1.159	0.525	0.631	0.427	0.743	1.560
7	0.630	0.730	1.146	0.511	0.630	0.419	0.730	1.553
8	0.628	0.735	1.131	0.518	0.628	0.432	0.754	1.547
9	0.612	0.771	1.055	0.512	0.612	0.464	0.824	1.524
10	0.570	0.807	0.915	0.454	0.570	0.448	0.846	1.370
11	0.554	0.936	0.878	0.465	0.554	0.456	0.875	1.308

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	3.8	1.0	4.0	0.594	0.760	0.257	0.161	0.045	0.028
2	10.00	3.9	0.9	3.4	0.554	0.804	0.205	0.113	0.037	0.020
3	30.00	5.3	1.2	4.6	0.567	0.862	0.147	0.070	0.027	0.013
4	47.50	5.8	0.8	4.5	0.598	0.872	0.147	0.084	0.028	0.016
5	50.00	5.9	0.7	6.2	0.609	0.851	0.172	0.113	0.033	0.021
6	52.50	5.9	0.6	7.8	0.631	0.830	0.198	0.141	0.037	0.026
7	55.00	6.0	0.6	8.7	0.640	0.830	0.200	0.146	0.037	0.027
8	57.50	6.1	0.5	9.0	0.627	0.844	0.186	0.135	0.035	0.025
9	70.00	6.6	0.4	10.6	0.605	0.910	0.118	0.080	0.022	0.015
10	90.00	6.8	-0.0	16.6	0.607	0.920	0.131	0.124	0.022	0.021
11	95.00	7.0	0.1	3.6	0.604	0.963	0.071	0.069	0.011	0.011

TABLE VII. - Concluded.

(p) 100 Percent of design speed; reading 1263

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	-0.0	56.7	67.2	54.1	288.7	1.303	10.08	1.991
2	23.906	23.383	-0.0	52.9	66.0	50.8	288.6	1.286	10.12	2.007
3	21.656	21.433	-0.0	50.7	62.4	45.2	288.2	1.254	10.12	1.972
4	19.591	19.726	-0.0	51.3	59.4	37.0	288.0	1.245	10.14	1.959
5	19.289	19.482	-0.0	52.5	59.0	37.2	288.0	1.244	10.15	1.927
6	18.984	19.238	-0.0	53.2	58.6	37.0	287.8	1.244	10.15	1.903
7	18.677	18.994	-0.0	54.0	58.2	36.1	287.9	1.243	10.15	1.891
8	18.367	18.750	-0.0	53.4	57.8	34.9	287.9	1.239	10.15	1.891
9	16.777	17.531	-0.0	52.8	56.2	27.4	287.9	1.228	10.15	1.919
10	14.079	15.580	-0.0	56.1	52.9	10.6	287.8	1.233	10.15	1.940
11	13.383	15.093	-0.0	59.7	52.1	-8.9	287.9	1.253	10.12	2.144

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	173.3	252.4	446.8	236.1	173.3	138.5	-0.0	211.0	411.8	402.2
2	179.1	256.4	440.9	244.5	179.1	154.5	-0.0	204.5	402.8	394.0
3	190.5	255.8	411.7	230.0	190.5	162.0	-0.0	197.9	364.9	361.2
4	195.5	265.8	383.8	207.9	195.5	166.1	-0.0	207.5	330.2	332.5
5	195.5	261.6	379.3	200.0	195.5	159.4	-0.0	207.5	325.0	328.3
6	195.2	259.0	374.9	194.2	195.2	155.1	-0.0	207.4	320.0	324.3
7	195.2	258.6	370.5	188.2	195.2	152.0	-0.0	209.2	314.8	320.2
8	194.6	259.1	365.5	188.6	194.6	154.6	-0.0	207.9	309.4	315.9
9	189.7	266.4	340.7	181.6	189.7	161.2	-0.0	212.0	283.0	295.7
10	179.6	281.2	297.7	159.6	179.6	156.9	-0.0	233.4	237.4	262.7
11	175.5	324.6	285.9	165.9	175.5	163.9	-0.0	280.2	225.7	254.5

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.523	0.678	1.347	0.635	0.523	0.372	0.799	1.632
2	0.541	0.695	1.332	0.663	0.541	0.419	0.853	1.626
3	0.578	0.704	1.249	0.633	0.578	0.446	0.851	1.619
4	0.595	0.738	1.167	0.577	0.595	0.461	0.850	1.612
5	0.595	0.725	1.154	0.554	0.595	0.442	0.815	1.605
6	0.594	0.717	1.141	0.538	0.594	0.430	0.795	1.599
7	0.594	0.716	1.127	0.521	0.594	0.421	0.779	1.592
8	0.592	0.719	1.112	0.523	0.592	0.429	0.795	1.586
9	0.576	0.745	1.034	0.508	0.576	0.451	0.850	1.568
10	0.544	0.790	0.901	0.448	0.544	0.441	0.873	1.390
11	0.530	0.923	0.864	0.472	0.530	0.466	0.934	1.325

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	SS				TOT	PROF	TOT	PROF
1	5.00	4.9	2.2	2.2	5.7	0.606	0.718	0.308	0.206	0.052	0.035
2	10.00	5.2	2.2	2.2	4.0	0.575	0.769	0.250	0.152	0.045	0.027
3	30.00	6.8	2.7	2.7	5.3	0.565	0.843	0.172	0.089	0.031	0.016
4	47.50	7.3	2.3	2.3	5.8	0.587	0.865	0.159	0.090	0.030	0.017
5	50.00	7.4	2.2	2.2	7.6	0.601	0.845	0.184	0.119	0.034	0.022
6	52.50	7.5	2.2	2.2	9.1	0.610	0.828	0.206	0.144	0.038	0.026
7	55.00	7.5	2.1	2.1	9.9	0.621	0.823	0.216	0.157	0.039	0.029
8	57.50	7.6	2.1	2.1	10.5	0.612	0.836	0.201	0.146	0.037	0.027
9	70.00	8.1	2.0	2.0	13.0	0.597	0.898	0.136	0.094	0.025	0.017
10	90.00	8.2	1.3	1.3	18.2	0.604	0.896	0.176	0.169	0.029	0.028
11	95.00	8.3	1.3	1.3	6.0	0.587	0.964	0.070	0.068	0.011	0.011



TABLE VIII. - BLADE-ELEMENT DATA AT BLADE

EDGES FOR STATOR 13 MOD 1

(a) 60 Percent of design speed; reading 1253

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	54.8	0.6	54.8	0.6	319.2	0.994	12.85	0.977
2	23.050	23.091	48.2	-0.7	48.2	-0.7	317.1	0.997	12.81	0.987
3	21.430	21.580	42.7	-3.8	42.7	-3.8	312.0	1.002	12.80	0.996
4	19.980	20.262	43.4	-2.9	43.4	-2.9	311.6	0.999	12.94	0.984
5	19.771	20.076	43.5	-3.2	43.5	-3.2	311.6	0.999	12.88	0.987
6	19.563	19.891	44.9	-4.0	44.9	-4.0	310.6	1.000	12.79	0.993
7	19.352	19.705	46.6	-4.2	46.6	-4.2	311.2	1.000	12.73	0.998
8	19.144	19.522	47.5	-4.2	47.5	-4.2	311.4	0.998	12.72	0.999
9	18.108	18.621	45.4	-4.2	45.4	-4.2	310.7	1.002	12.91	0.997
10	16.497	17.242	47.0	0.8	47.0	0.8	311.7	1.005	13.22	0.961
11	16.124	16.901	49.4	3.4	49.4	3.4	313.1	1.001	13.40	0.917

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	162.9	112.7	162.9	112.7	94.0	112.7	133.0	1.2	0.	0.
2	161.3	117.8	161.3	117.8	107.5	117.8	120.3	-1.3	0.	0.
3	160.2	124.2	160.2	124.2	117.8	123.9	108.7	-8.2	0.	0.
4	169.4	125.6	169.4	125.6	123.1	125.4	116.3	-6.4	0.	0.
5	167.1	125.0	167.1	125.0	121.3	124.8	114.9	-7.0	0.	0.
6	163.9	124.8	163.9	124.8	116.0	124.5	115.8	-8.7	0.	0.
7	162.5	125.5	162.5	125.5	111.7	125.2	118.0	-9.2	0.	0.
8	162.7	126.3	162.7	126.3	109.9	125.9	120.0	-9.4	0.	0.
9	174.3	138.2	174.3	138.2	122.4	137.8	124.0	-10.2	0.	0.
10	194.5	136.6	194.5	136.6	132.6	136.6	142.2	1.8	0.	0.
11	203.6	113.9	203.6	113.9	132.5	113.7	154.6	6.8	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.465	0.319	0.465	0.319	0.268	0.319	1.198	0.860
2	0.461	0.334	0.461	0.334	0.308	0.334	1.095	0.765
3	0.462	0.355	0.462	0.355	0.340	0.354	1.052	0.674
4	0.490	0.360	0.490	0.360	0.356	0.359	1.019	0.706
5	0.483	0.358	0.483	0.358	0.351	0.358	1.029	0.694
6	0.474	0.358	0.474	0.358	0.336	0.357	1.073	0.701
7	0.470	0.360	0.470	0.360	0.323	0.359	1.120	0.718
8	0.470	0.362	0.470	0.362	0.318	0.361	1.146	0.733
9	0.506	0.397	0.506	0.397	0.355	0.396	1.126	0.755
10	0.567	0.391	0.567	0.391	0.387	0.391	1.030	0.866
11	0.594	0.324	0.594	0.324	0.387	0.324	0.858	0.952

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	17.7	11.4	13.1	0.543	0.	0.165	0.165	0.048	0.048
2	10.00	12.8	6.6	11.1	0.485	0.	0.097	0.097	0.028	0.028
3	30.00	7.8	1.6	7.2	0.418	0.	0.032	0.032	0.008	0.008
4	47.50	7.4	1.2	7.9	0.437	0.	0.104	0.104	0.026	0.026
5	50.00	7.3	1.1	7.6	0.430	0.	0.085	0.085	0.021	0.021
6	52.50	8.6	2.3	6.8	0.422	0.	0.047	0.047	0.011	0.011
7	55.00	10.0	3.7	6.5	0.414	0.	0.014	0.014	0.003	0.003
8	57.50	10.7	4.5	6.5	0.411	0.	0.006	0.006	0.001	0.001
9	70.00	7.4	1.3	6.2	0.378	0.	0.017	0.017	0.004	0.004
10	90.00	6.3	0.3	11.1	0.442	0.	0.198	0.198	0.040	0.040
11	95.00	7.7	1.7	13.8	0.582	0.	0.391	0.391	0.078	0.078

TABLE VIII. - Continued.

(b) 70 Percent of design speed; reading 1258

RP	RADI I		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	27.8	-2.9	27.8	-2.9	318.3	0.995	13.32	0.919
2	23.050	23.091	26.9	-5.0	26.9	-5.0	316.0	1.000	13.41	0.951
3	21.430	21.580	28.8	-5.9	28.8	-5.9	314.4	1.001	13.48	0.962
4	19.980	20.262	30.9	-6.3	30.9	-6.3	314.9	1.003	13.49	0.968
5	19.771	20.076	32.3	-6.2	32.3	-6.2	315.4	1.002	13.53	0.969
6	19.563	19.891	33.8	-6.4	33.8	-6.4	316.9	0.998	13.46	0.974
7	19.352	19.705	36.1	-6.7	36.1	-6.7	317.2	0.997	13.44	0.976
8	19.144	19.522	34.9	-6.9	34.9	-6.9	316.8	0.998	13.52	0.973
9	18.108	18.621	35.7	-7.2	35.7	-7.2	316.8	1.002	13.82	0.984
10	16.497	17.242	40.4	0.2	40.4	0.2	320.3	1.003	14.44	0.790
11	16.124	16.901	43.0	2.8	43.0	2.8	322.3	0.998	14.71	0.697

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	212.5	207.1	212.5	207.1	188.0	206.8	99.1	-10.3	0.	0.
2	214.1	221.4	214.1	221.4	191.0	220.6	96.7	-19.4	0.	0.
3	211.8	230.7	211.8	230.7	185.6	229.4	102.0	-23.7	0.	0.
4	216.0	241.1	216.0	241.1	185.4	239.6	111.0	-26.5	0.	0.
5	217.3	243.6	217.3	243.6	183.7	242.2	116.2	-26.4	0.	0.
6	215.9	245.4	215.9	245.4	179.4	243.8	120.0	-27.2	0.	0.
7	215.5	246.8	215.5	246.8	174.0	245.1	127.1	-28.8	0.	0.
8	218.7	249.6	218.7	249.6	179.3	247.8	125.3	-30.0	0.	0.
9	229.9	270.5	229.9	270.5	186.8	268.4	134.0	-33.7	0.	0.
10	256.4	210.4	256.4	210.4	195.2	210.4	166.2	0.6	0.	0.
11	263.1	166.4	263.1	166.4	192.4	166.2	179.5	8.2	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.616	0.601	0.616	0.601	0.545	0.600	1.100	0.616
2	0.624	0.647	0.624	0.647	0.556	0.644	1.155	0.624
3	0.618	0.678	0.618	0.678	0.542	0.674	1.236	0.618
4	0.631	0.710	0.631	0.710	0.541	0.706	1.293	0.631
5	0.635	0.718	0.635	0.718	0.536	0.714	1.318	0.635
6	0.628	0.723	0.628	0.723	0.522	0.719	1.359	0.641
7	0.627	0.728	0.627	0.728	0.506	0.723	1.408	0.719
8	0.637	0.737	0.637	0.737	0.522	0.732	1.382	0.694
9	0.673	0.805	0.673	0.805	0.547	0.799	1.437	0.762
10	0.754	0.607	0.754	0.607	0.574	0.607	1.078	0.979
11	0.774	0.473	0.774	0.473	0.566	0.472	0.864	1.071

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	-9.3	-15.5	9.6	0.174	0.	0.358	0.358	0.104	0.104
2	10.00	-8.5	-14.8	6.8	0.120	0.	0.214	0.214	0.061	0.061
3	30.00	-6.1	-12.3	5.0	0.068	0.	0.167	0.167	0.044	0.044
4	47.50	-5.1	-11.3	4.5	0.041	0.	0.135	0.135	0.033	0.033
5	50.00	-3.9	-10.1	4.6	0.039	0.	0.132	0.132	0.032	0.032
6	52.50	-2.6	-8.8	4.4	0.028	0.	0.112	0.112	0.027	0.027
7	55.00	-0.5	-6.7	4.1	0.028	0.	0.102	0.102	0.024	0.024
8	57.50	-1.9	-8.1	3.8	0.027	0.	0.111	0.111	0.026	0.026
9	70.00	-2.3	-8.4	3.3	-0.014	0.	0.062	0.062	0.014	0.014
10	90.00	-0.3	-6.3	10.5	0.309	0.	0.668	0.668	0.137	0.137
11	95.00	1.3	-4.7	13.2	0.495	0.	0.926	0.926	0.185	0.185

TABLE VIII. - Continued.

(c) 70 Percent of design speed; reading 1259

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	31.8	-2.0	31.8	-2.0	320.0	1.000	13.60	0.970
2	23.050	23.091	30.9	-2.9	30.9	-2.9	318.3	1.001	13.69	0.986
3	21.430	21.580	32.4	-6.1	32.4	-6.1	316.3	1.001	13.71	0.992
4	19.980	20.262	34.7	-6.1	34.7	-6.1	316.7	1.001	13.74	0.990
5	19.771	20.076	35.4	-6.0	35.4	-6.0	317.1	0.999	13.76	0.987
6	19.563	19.891	37.1	-5.8	37.1	-5.8	318.1	0.997	13.69	0.992
7	19.352	19.705	38.3	-5.9	38.3	-5.9	318.3	0.996	13.65	0.993
8	19.144	19.522	37.9	-6.0	37.9	-6.0	318.4	0.997	13.72	0.989
9	18.108	18.621	38.4	-6.6	38.4	-6.6	317.6	1.001	13.89	0.996
10	16.497	17.242	41.8	-1.4	41.8	-1.4	320.1	1.004	14.48	0.912
11	16.124	16.901	44.5	1.7	44.5	1.7	322.5	1.002	14.76	0.859

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	206.0	170.0	206.0	170.0	175.1	169.9	108.5	-5.9	0.	0.
2	207.3	180.9	207.3	180.9	177.9	180.6	106.5	-9.1	0.	0.
3	204.8	185.4	204.8	185.4	172.9	184.3	109.7	-19.6	0.	0.
4	210.4	189.7	210.4	189.7	172.9	188.6	119.8	-20.1	0.	0.
5	211.1	190.0	211.1	190.0	172.2	188.9	122.2	-20.0	0.	0.
6	209.5	190.8	209.5	190.8	167.1	189.9	126.5	-19.4	0.	0.
7	208.7	190.6	208.7	190.6	163.9	189.6	129.2	-19.6	0.	0.
8	211.9	191.6	211.9	191.6	167.3	190.6	130.1	-19.9	0.	0.
9	219.8	204.9	219.8	204.9	172.3	203.5	136.5	-23.4	0.	0.
10	246.5	193.3	246.5	193.3	183.7	193.2	164.3	-4.8	0.	0.
11	255.4	178.9	255.4	178.9	182.1	178.8	179.1	5.3	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.594	0.485	0.594	0.485	0.505	0.485	0.970	0.594
2	0.600	0.519	0.600	0.519	0.515	0.518	1.015	0.600
3	0.594	0.534	0.594	0.534	0.502	0.531	1.066	0.620
4	0.611	0.547	0.611	0.547	0.502	0.544	1.091	0.678
5	0.613	0.548	0.613	0.548	0.500	0.545	1.097	0.692
6	0.607	0.550	0.607	0.550	0.484	0.548	1.136	0.726
7	0.605	0.550	0.605	0.550	0.475	0.547	1.157	0.747
8	0.615	0.553	0.615	0.553	0.485	0.550	1.139	0.749
9	0.640	0.593	0.640	0.593	0.502	0.589	1.181	0.797
10	0.722	0.554	0.722	0.554	0.538	0.554	1.052	0.974
11	0.748	0.509	0.748	0.509	0.533	0.509	0.982	1.075

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	-5.3	-11.6	10.5	0.336	0.	0.143	0.143	0.041	0.041
2	10.00	-4.5	-10.7	8.9	0.286	0.	0.063	0.063	0.018	0.018
3	30.00	-2.5	-8.7	4.9	0.262	0.	0.037	0.037	0.010	0.010
4	47.50	-1.2	-7.5	4.7	0.262	0.	0.046	0.046	0.011	0.011
5	50.00	-0.8	-7.0	4.7	0.264	0.	0.057	0.057	0.014	0.014
6	52.50	0.7	-5.5	4.9	0.257	0.	0.035	0.035	0.008	0.008
7	55.00	1.6	-4.6	4.9	0.257	0.	0.030	0.030	0.007	0.007
8	57.50	1.1	-5.1	4.8	0.263	0.	0.050	0.050	0.012	0.012
9	70.00	0.4	-5.7	3.9	0.230	0.	0.016	0.016	0.004	0.004
10	90.00	1.1	-4.9	9.0	0.354	0.	0.301	0.301	0.062	0.062
11	95.00	2.8	-3.1	12.1	0.432	0.	0.454	0.454	0.091	0.091

TABLE VIII. - Continued.

(d) 70 Percent of design speed; reading 1260

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL	PRESS
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	35.8	-1.1	35.8	-1.1	322.1	1.002	13.81	0.978
2	23.050	23.091	35.4	-2.0	35.4	-2.0	320.8	1.001	13.97	0.986
3	21.430	21.580	36.2	-5.4	36.2	-5.4	318.1	1.001	13.82	0.995
4	19.980	20.262	38.0	-4.7	38.0	-4.7	318.8	0.999	13.97	0.986
5	19.771	20.076	38.9	-4.8	38.9	-4.8	318.9	0.999	13.95	0.984
6	19.563	19.891	40.1	-4.9	40.1	-4.9	319.2	0.998	13.87	0.989
7	19.352	19.705	41.1	-4.9	41.1	-4.9	319.5	0.997	13.78	0.995
8	19.144	19.522	40.7	-5.1	40.7	-5.1	319.4	0.997	13.81	0.994
9	18.108	18.621	41.0	-5.9	41.0	-5.9	318.4	1.002	13.98	0.999
10	16.497	17.242	43.8	-0.7	43.8	-0.7	320.7	1.005	14.50	0.931
11	16.124	16.901	46.1	2.7	46.1	2.7	323.0	1.001	14.83	0.875

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	199.9	157.2	199.9	157.2	162.2	157.2	116.9	-3.1	0.	0.
2	203.8	167.1	203.8	167.1	166.2	167.0	118.0	-5.9	0.	0.
3	196.5	167.5	196.5	167.5	158.5	166.8	116.1	-15.7	0.	0.
4	206.7	171.5	206.7	171.5	162.8	170.9	127.2	-14.1	0.	0.
5	206.4	170.8	206.4	170.8	160.7	170.2	129.6	-14.2	0.	0.
6	204.2	170.8	204.2	170.8	156.3	170.2	131.4	-14.7	0.	0.
7	202.7	171.6	202.7	171.6	152.7	170.9	133.3	-14.8	0.	0.
8	204.4	172.4	204.4	172.4	154.9	171.7	133.4	-15.2	0.	0.
9	212.7	184.5	212.7	184.5	160.6	183.5	139.5	-19.1	0.	0.
10	237.6	176.4	237.6	176.4	171.6	176.4	164.3	-2.3	0.	0.
11	248.9	158.3	248.9	158.3	172.5	158.1	179.4	7.5	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.574	0.445	0.574	0.445	0.465	0.445	0.959	0.681
2	0.587	0.475	0.587	0.475	0.479	0.475	1.005	0.709
3	0.567	0.479	0.567	0.479	0.457	0.477	1.052	0.685
4	0.598	0.491	0.598	0.491	0.471	0.489	1.050	0.746
5	0.597	0.489	0.597	0.489	0.465	0.487	1.059	0.760
6	0.590	0.489	0.590	0.489	0.451	0.487	1.089	0.772
7	0.585	0.491	0.585	0.491	0.441	0.489	1.119	0.784
8	0.590	0.493	0.590	0.493	0.447	0.491	1.108	0.783
9	0.617	0.530	0.617	0.530	0.466	0.527	1.143	0.828
10	0.693	0.502	0.693	0.502	0.500	0.502	1.028	0.982
11	0.727	0.448	0.727	0.448	0.504	0.447	0.916	1.083

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	-1.3	-7.5	11.4	0.387	0.	0.111	0.111	0.032	0.032
2	10.00	-0.0	-6.3	9.7	0.353	0.	0.068	0.068	0.019	0.019
3	30.00	1.4	-4.9	5.6	0.325	0.	0.024	0.024	0.006	0.006
4	47.50	2.0	-4.2	6.1	0.339	0.	0.066	0.066	0.016	0.016
5	50.00	2.7	-3.5	6.0	0.343	0.	0.074	0.074	0.018	0.018
6	52.50	3.7	-2.6	5.8	0.336	0.	0.053	0.053	0.013	0.013
7	55.00	4.5	-1.7	5.8	0.328	0.	0.022	0.022	0.005	0.005
8	57.50	3.9	-2.3	5.7	0.328	0.	0.029	0.029	0.007	0.007
9	70.00	3.0	-3.1	4.5	0.299	0.	0.005	0.005	0.001	0.001
10	90.00	3.1	-3.0	9.6	0.398	0.	0.252	0.252	0.052	0.052
11	95.00	4.4	-1.5	13.1	0.499	0.	0.424	0.424	0.085	0.085

TABLE VIII. - Continued.

(e) 70 Percent of design speed; reading 1261

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	41.3	-0.8	41.3	-0.8	325.5	0.998	13.95	0.977
2	23.050	23.091	39.7	-1.2	39.7	-1.2	324.3	0.999	14.09	0.981
3	21.430	21.580	40.2	-4.3	40.2	-4.3	320.4	1.000	13.92	0.995
4	19.980	20.262	40.6	-3.6	40.6	-3.6	320.1	0.999	14.08	0.984
5	19.771	20.076	40.9	-3.8	40.9	-3.8	319.9	0.999	14.01	0.986
6	19.563	19.891	42.3	-4.1	42.3	-4.1	319.8	0.999	13.93	0.990
7	19.352	19.705	44.1	-4.3	44.1	-4.3	319.8	0.998	13.85	0.996
8	19.144	19.522	43.7	-4.5	43.7	-4.5	319.6	0.999	13.81	1.000
9	18.108	18.621	43.1	-4.9	43.1	-4.9	319.7	1.000	14.13	0.994
10	16.497	17.242	45.3	0.2	45.3	0.2	320.7	1.005	14.51	0.935
11	16.124	16.901	47.4	2.9	47.4	2.9	323.0	1.002	14.77	0.890

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	195.6	144.6	195.6	144.6	147.0	144.6	129.0	-2.1	0.	0.
2	200.2	153.0	200.2	153.0	154.0	153.0	127.9	-3.2	0.	0.
3	191.7	154.5	191.7	154.5	146.4	154.0	123.9	-11.5	0.	0.
4	202.7	157.6	202.7	157.6	154.0	157.3	131.8	-9.8	0.	0.
5	200.8	156.8	200.8	156.8	151.7	156.5	131.6	-10.5	0.	0.
6	198.3	156.3	198.3	156.3	146.8	155.9	133.3	-11.3	0.	0.
7	196.9	156.9	196.9	156.9	141.5	156.5	136.9	-11.8	0.	0.
8	196.3	158.3	196.3	158.3	141.9	157.8	135.7	-12.3	0.	0.
9	210.4	171.1	210.4	171.1	153.7	170.4	143.7	-14.7	0.	0.
10	230.0	159.5	230.0	159.5	161.9	159.5	163.5	0.6	0.	0.
11	241.0	144.8	241.0	144.8	163.1	144.6	177.5	7.4	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.557	0.407	0.557	0.407	0.419	0.407	0.983	0.775
2	0.572	0.432	0.572	0.432	0.440	0.432	0.993	0.783
3	0.550	0.439	0.550	0.439	0.420	0.437	1.053	0.757
4	0.584	0.449	0.584	0.449	0.444	0.448	1.022	0.784
5	0.579	0.446	0.579	0.446	0.437	0.445	1.031	0.780
6	0.571	0.445	0.571	0.445	0.423	0.444	1.062	0.791
7	0.567	0.447	0.567	0.447	0.407	0.445	1.106	0.818
8	0.565	0.451	0.565	0.451	0.408	0.450	1.113	0.809
9	0.608	0.489	0.608	0.489	0.444	0.487	1.109	0.861
10	0.669	0.452	0.669	0.452	0.471	0.452	0.986	0.983
11	0.701	0.408	0.701	0.408	0.474	0.408	0.887	1.076

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	4.2	-2.1	11.7	0.455	0.	0.121	0.121	0.035	0.035
2	10.00	4.3	-1.9	10.6	0.422	0.	0.096	0.096	0.027	0.027
3	30.00	5.4	-0.9	6.7	0.381	0.	0.029	0.029	0.008	0.008
4	47.50	4.6	-1.6	7.2	0.395	0.	0.080	0.080	0.020	0.020
5	50.00	4.8	-1.5	6.9	0.392	0.	0.069	0.069	0.017	0.017
6	52.50	5.9	-0.4	6.6	0.388	0.	0.051	0.051	0.012	0.012
7	55.00	7.4	1.2	6.4	0.383	0.	0.020	0.020	0.005	0.005
8	57.50	6.9	0.7	6.2	0.371	0.	-0.002	-0.002	-0.000	-0.000
9	70.00	5.1	-1.0	5.5	0.354	0.	0.025	0.025	0.006	0.006
10	90.00	4.6	-1.4	10.6	0.448	0.	0.252	0.252	0.052	0.052
11	95.00	5.7	-0.2	13.3	0.537	0.	0.393	0.393	0.079	0.079

TABLE VIII. - Continued.

(f) 70 Percent of design speed; reading 1262

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	54.1	0.6	54.1	0.6	331.1	0.991	13.97	0.972
2	23.050	23.091	48.4	0.2	48.4	0.2	328.8	0.995	13.98	0.981
3	21.430	21.580	43.1	-2.6	43.1	-2.6	322.7	1.000	13.97	0.993
4	19.980	20.262	42.7	-2.7	42.7	-2.7	321.3	0.998	14.14	0.981
5	19.771	20.076	43.0	-3.3	43.0	-3.3	321.0	0.999	14.04	0.987
6	19.563	19.891	44.2	-3.5	44.2	-3.5	320.7	0.999	13.96	0.992
7	19.352	19.705	45.5	-3.7	45.5	-3.7	320.6	0.999	13.89	0.998
8	19.144	19.522	46.2	-3.7	46.2	-3.7	320.4	1.000	13.85	1.002
9	18.108	18.621	45.0	-3.7	45.0	-3.7	320.3	1.001	14.14	0.999
10	16.497	17.242	45.8	1.1	45.8	1.1	321.3	1.004	14.64	0.930
11	16.124	16.901	48.3	3.4	48.3	3.4	323.4	1.001	14.83	0.892

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	190.6	129.3	190.6	129.3	111.8	129.3	154.4	1.3	0.	0.
2	190.5	135.7	190.5	135.7	126.4	135.7	142.4	0.4	0.	0.
3	189.7	143.3	189.7	143.3	138.5	143.1	129.5	-6.4	0.	0.
4	198.7	145.4	198.7	145.4	146.0	145.2	134.8	-6.9	0.	0.
5	195.7	144.9	195.7	144.9	143.1	144.6	133.5	-8.4	0.	0.
6	193.5	145.2	193.5	145.2	138.8	145.0	134.9	-8.8	0.	0.
7	192.1	146.1	192.1	146.1	134.5	145.8	137.1	-9.4	0.	0.
8	191.6	147.7	191.6	147.7	132.7	147.4	138.2	-9.4	0.	0.
9	204.4	161.2	204.4	161.2	144.5	160.8	144.5	-10.4	0.	0.
10	228.0	146.6	228.0	146.6	158.9	146.6	163.6	2.9	0.	0.
11	237.8	130.5	237.8	130.5	158.2	130.2	177.4	7.8	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.537	0.361	0.537	0.361	0.315	0.361	1.157	0.983
2	0.539	0.380	0.539	0.380	0.358	0.380	1.074	0.893
3	0.542	0.404	0.542	0.404	0.396	0.404	1.033	0.798
4	0.571	0.412	0.571	0.412	0.419	0.411	0.995	0.809
5	0.562	0.410	0.562	0.410	0.411	0.410	1.011	0.798
6	0.555	0.411	0.555	0.411	0.398	0.411	1.045	0.807
7	0.551	0.414	0.551	0.414	0.386	0.413	1.084	0.823
8	0.550	0.419	0.550	0.419	0.381	0.418	1.110	0.833
9	0.589	0.458	0.589	0.458	0.417	0.457	1.113	0.873
10	0.662	0.414	0.662	0.414	0.461	0.414	0.922	0.985
11	0.690	0.367	0.690	0.367	0.459	0.366	0.823	1.079

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00		17.0	10.8	13.1	0.554	0.	0.158	0.158	0.046	0.046
2	10.00		13.0	6.8	11.9	0.500	0.	0.106	0.106	0.030	0.030
3	30.00		8.2	2.0	8.4	0.434	0.	0.040	0.040	0.011	0.011
4	47.50		6.8	0.5	8.1	0.444	0.	0.095	0.095	0.024	0.024
5	50.00		6.8	0.6	7.4	0.436	0.	0.069	0.069	0.017	0.017
6	52.50		7.8	1.6	7.3	0.429	0.	0.044	0.044	0.011	0.011
7	55.00		8.9	2.7	7.1	0.421	0.	0.013	0.013	0.003	0.003
8	57.50		9.3	3.1	7.1	0.411	0.	-0.011	-0.011	-0.003	-0.003
9	70.00		7.1	0.9	6.7	0.380	0.	0.007	0.007	0.001	0.001
10	90.00		5.1	-0.9	11.5	0.498	0.	0.274	0.274	0.056	0.056
11	95.00		6.6	0.6	13.8	0.590	0.	0.397	0.397	0.079	0.079

TABLE VIII. - Continued.

(g) 80 Percent of design speed; reading 1251

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	50.5	0.2	50.5	0.2	342.2	0.994	15.43	0.968
2	23.050	23.091	48.3	0.2	48.3	0.2	340.3	0.996	15.53	0.973
3	21.430	21.580	47.1	-2.2	47.1	-2.2	333.9	1.001	15.37	0.987
4	19.980	20.262	46.5	-2.6	46.5	-2.6	332.5	0.998	15.58	0.959
5	19.771	20.076	47.0	-3.1	47.0	-3.1	332.6	0.997	15.36	0.982
6	19.563	19.891	47.4	-3.5	47.4	-3.5	330.0	1.001	15.28	0.988
7	19.352	19.705	48.3	-3.7	48.3	-3.7	331.4	0.998	15.25	0.992
8	19.144	19.522	48.7	-3.7	48.7	-3.7	331.3	0.997	15.25	0.993
9	18.108	18.621	46.5	-3.5	46.5	-3.5	329.9	1.002	15.62	0.995
10	16.497	17.242	48.3	1.6	48.3	1.6	331.0	1.006	16.19	0.909
11	16.124	16.901	50.8	5.2	50.8	5.2	334.3	0.998	16.66	0.824

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	220.0	149.1	220.0	149.1	139.9	149.1	169.9	0.4	0.	0.
2	222.8	155.5	222.8	155.5	148.1	155.5	166.4	0.6	0.	0.
3	217.3	159.0	217.3	159.0	148.0	158.8	159.2	-6.1	0.	0.
4	227.2	159.1	227.2	159.1	156.4	158.9	164.9	-7.2	0.	0.
5	221.3	159.3	221.3	159.3	151.1	159.1	161.7	-8.5	0.	0.
6	218.7	159.9	218.7	159.9	148.2	159.6	160.9	-9.8	0.	0.
7	219.1	161.7	219.1	161.7	145.8	161.3	163.6	-10.4	0.	0.
8	220.0	162.8	220.0	162.8	145.1	162.5	165.3	-10.6	0.	0.
9	233.2	179.9	233.2	179.9	160.5	179.5	169.1	-11.0	0.	0.
10	255.2	158.1	255.2	158.1	170.0	158.0	190.4	4.5	0.	0.
11	270.9	110.2	270.9	110.2	171.2	109.8	210.0	10.0	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.616	0.410	0.616	0.410	0.391	0.410	1.066	1.050
2	0.626	0.429	0.626	0.429	0.416	0.429	1.049	1.040
3	0.615	0.442	0.615	0.442	0.419	0.442	1.074	0.909
4	0.647	0.444	0.647	0.444	0.445	0.444	1.016	1.001
5	0.629	0.445	0.629	0.445	0.429	0.444	1.053	0.978
6	0.624	0.448	0.624	0.448	0.423	0.447	1.077	0.973
7	0.623	0.453	0.623	0.453	0.415	0.452	1.106	0.989
8	0.626	0.456	0.626	0.456	0.413	0.455	1.120	1.002
9	0.668	0.506	0.668	0.506	0.460	0.505	1.118	1.024
10	0.737	0.440	0.737	0.440	0.491	0.440	0.930	1.157
11	0.783	0.304	0.783	0.304	0.495	0.303	0.641	1.292

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	13.4	7.2	12.7	0.545	0.	0.143	0.143	0.041	0.041
2	10.00	13.0	6.7	12.0	0.514	0.	0.118	0.118	0.034	0.034
3	30.00	12.2	6.0	8.8	0.470	0.	0.058	0.058	0.015	0.015
4	47.50	10.6	4.3	8.2	0.486	0.	0.125	0.125	0.031	0.031
5	50.00	10.8	4.6	7.7	0.468	0.	0.075	0.075	0.018	0.018
6	52.50	11.0	4.7	7.3	0.457	0.	0.052	0.052	0.013	0.013
7	55.00	11.7	5.5	7.0	0.451	0.	0.034	0.034	0.008	0.008
8	57.50	11.9	5.7	7.0	0.448	0.	0.031	0.031	0.007	0.007
9	70.00	8.6	2.4	7.0	0.400	0.	0.020	0.020	0.005	0.005
10	90.00	7.6	1.5	12.0	0.526	0.	0.301	0.301	0.062	0.062
11	95.00	9.1	3.1	15.5	0.737	0.	0.529	0.528	0.105	0.105

TABLE VIII. - Continued.

(h) 90 Percent of design speed; reading 1249

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	38.5	-5.0	38.5	-5.0	348.0	0.998	17.41	0.891
2	23.050	23.091	37.2	-7.0	37.2	-7.0	344.2	1.001	17.31	0.924
3	21.430	21.580	38.4	-7.5	38.4	-7.5	340.7	0.998	17.17	0.925
4	19.980	20.262	40.9	-6.6	40.9	-6.6	340.9	0.996	17.17	0.931
5	19.771	20.076	42.5	-6.8	42.5	-6.8	341.2	0.997	16.98	0.942
6	19.563	19.891	44.0	-6.8	44.0	-6.8	340.9	0.995	16.72	0.957
7	19.352	19.705	44.3	-7.2	44.3	-7.2	340.9	0.994	16.62	0.966
8	19.144	19.522	43.3	-7.4	43.3	-7.4	338.9	0.998	16.62	0.967
9	18.108	18.621	42.5	-7.1	42.5	-7.1	338.3	1.000	17.06	0.942
10	16.497	17.242	46.5	-0.1	46.5	-0.1	341.4	1.004	17.96	0.715
11	16.124	16.901	49.9	2.6	49.9	2.6	345.2	0.999	18.37	0.633

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	272.3	251.8	272.3	251.8	213.2	250.9	169.3	-21.8	0.	0.
2	269.1	260.9	269.1	260.9	214.4	258.9	162.6	-31.8	0.	0.
3	265.0	264.6	265.0	264.6	207.6	262.3	164.7	-34.4	0.	0.
4	277.6	277.8	277.6	277.8	209.9	275.9	181.6	-32.1	0.	0.
5	273.2	280.3	273.2	280.3	201.4	278.4	184.7	-33.1	0.	0.
6	268.0	282.2	268.0	282.2	192.7	280.2	186.3	-33.6	0.	0.
7	266.6	284.6	266.6	284.6	190.8	282.3	186.2	-35.8	0.	0.
8	267.6	287.3	267.6	287.3	194.8	284.9	183.5	-36.9	0.	0.
9	281.8	302.2	281.8	302.2	207.8	299.8	190.4	-37.4	0.	0.
10	307.0	225.7	307.0	225.7	211.3	225.7	222.8	-0.5	0.	0.
11	314.3	194.9	314.3	194.9	202.4	194.7	240.5	9.0	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.770	0.707	0.770	0.707	0.603	0.705	1.176	0.994
2	0.765	0.738	0.765	0.738	0.609	0.733	1.208	0.977
3	0.756	0.755	0.756	0.755	0.592	0.749	1.264	0.990
4	0.796	0.798	0.796	0.798	0.602	0.793	1.314	1.077
5	0.782	0.806	0.782	0.806	0.576	0.800	1.382	1.097
6	0.765	0.814	0.765	0.814	0.550	0.808	1.454	1.108
7	0.761	0.822	0.761	0.822	0.545	0.815	1.480	1.105
8	0.767	0.831	0.767	0.831	0.558	0.824	1.462	1.086
9	0.813	0.881	0.813	0.881	0.600	0.874	1.443	1.135
10	0.892	0.632	0.892	0.632	0.614	0.632	1.068	1.349
11	0.911	0.539	0.911	0.539	0.587	0.538	0.962	1.476

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	1.4	-4.9	7.5	0.278	0.	0.335	0.335	0.097	0.097
2	10.00	1.8	-4.4	4.8	0.236	0.	0.235	0.235	0.067	0.067
3	30.00	3.6	-2.7	3.5	0.201	0.	0.237	0.237	0.062	0.062
4	47.50	4.9	-1.3	4.2	0.189	0.	0.203	0.203	0.050	0.050
5	50.00	6.3	0.1	4.0	0.169	0.	0.173	0.173	0.042	0.042
6	52.50	7.7	1.4	3.9	0.145	0.	0.132	0.132	0.032	0.032
7	55.00	7.7	1.5	3.5	0.131	0.	0.107	0.107	0.026	0.026
8	57.50	6.5	0.3	3.3	0.121	0.	0.103	0.103	0.024	0.024
9	70.00	4.6	-1.6	3.4	0.108	0.	0.165	0.165	0.037	0.037
10	90.00	5.8	-0.2	10.2	0.411	0.	0.707	0.702	0.145	0.144
11	95.00	8.2	2.2	13.0	0.524	0.	0.882	0.866	0.176	0.173



TABLE VIII. - Continued.

(i) 90 Percent of design speed; reading 1248

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	39.5	-2.1	39.5	-2.1	348.5	0.998	17.26	0.959
2	23.050	23.091	38.0	-2.9	38.0	-2.9	344.6	1.000	17.29	0.975
3	21.430	21.580	38.6	-5.4	38.6	-5.4	340.6	1.000	17.20	0.986
4	19.980	20.262	41.0	-4.7	41.0	-4.7	340.9	0.997	17.21	0.967
5	19.771	20.076	42.3	-4.8	42.3	-4.8	340.6	0.996	17.03	0.971
6	19.563	19.891	43.9	-5.0	43.9	-5.0	342.0	0.994	16.83	0.980
7	19.352	19.705	44.0	-5.3	44.0	-5.3	340.1	0.995	16.71	0.985
8	19.144	19.522	43.6	-5.5	43.6	-5.5	339.7	0.996	16.71	0.987
9	18.108	18.621	42.8	-6.4	42.8	-6.4	338.2	0.999	17.06	0.980
10	16.497	17.242	46.4	0.5	46.4	0.5	341.5	1.006	17.87	0.847
11	16.124	16.901	49.9	2.8	49.9	2.8	345.7	0.998	18.67	0.764

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	267.8	212.7	267.8	212.7	206.5	212.5	170.5	-7.9	0.	0.
2	266.9	219.2	266.9	219.2	210.4	218.9	164.2	-11.2	0.	0.
3	264.6	224.2	264.6	224.2	206.7	223.2	165.1	-21.2	0.	0.
4	275.0	225.1	275.0	225.1	207.4	224.4	180.6	-18.3	0.	0.
5	270.6	223.6	270.6	223.6	200.0	222.8	182.3	-18.7	0.	0.
6	266.8	224.2	266.8	224.2	192.3	223.3	185.0	-19.7	0.	0.
7	264.6	223.6	264.6	223.6	190.2	222.6	183.9	-20.7	0.	0.
8	265.5	225.7	265.5	225.7	192.4	224.6	182.9	-21.8	0.	0.
9	276.7	237.4	276.7	237.4	203.0	235.9	188.0	-26.4	0.	0.
10	300.8	202.7	300.8	202.7	207.4	202.7	217.9	1.8	0.	0.
11	316.6	177.9	316.6	177.9	203.8	177.7	242.3	8.6	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.755	0.588	0.755	0.588	0.582	0.588	1.029	1.004
2	0.757	0.611	0.757	0.611	0.597	0.610	1.040	0.989
3	0.755	0.630	0.755	0.630	0.590	0.627	1.080	0.994
4	0.788	0.633	0.788	0.633	0.594	0.631	1.082	1.071
5	0.774	0.629	0.774	0.629	0.572	0.627	1.114	1.081
6	0.760	0.630	0.760	0.630	0.548	0.628	1.161	1.097
7	0.756	0.630	0.756	0.630	0.543	0.627	1.170	1.090
8	0.759	0.636	0.759	0.636	0.550	0.633	1.168	1.081
9	0.797	0.673	0.797	0.673	0.585	0.669	1.162	1.120
10	0.872	0.563	0.872	0.563	0.601	0.562	0.977	1.314
11	0.918	0.489	0.918	0.489	0.591	0.488	0.872	1.487

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	2.4	-3.8	10.4	0.399	0.	0.129	0.129	0.037	0.037
2	10.00	2.6	-3.7	8.8	0.366	0.	0.081	0.081	0.023	0.023
3	30.00	3.8	-2.5	5.5	0.339	0.	0.046	0.046	0.012	0.012
4	47.50	5.1	-1.1	6.1	0.360	0.	0.098	0.098	0.024	0.024
5	50.00	6.2	-0.1	6.0	0.355	0.	0.088	0.088	0.021	0.021
6	52.50	7.5	1.3	5.7	0.345	0.	0.061	0.061	0.015	0.015
7	55.00	7.4	1.2	5.4	0.340	0.	0.048	0.048	0.012	0.012
8	57.50	6.7	0.5	5.2	0.332	0.	0.042	0.042	0.010	0.010
9	70.00	4.9	-1.3	4.1	0.315	0.	0.058	0.058	0.013	0.013
10	90.00	5.7	-0.3	10.9	0.470	0.	0.392	0.390	0.080	0.080
11	95.00	8.2	2.3	13.1	0.582	0.	0.562	0.544	0.112	0.109

TABLE VIII. - Continued.

(j) 90 Percent of design speed; reading 1245

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	42.0	-1.0	42.0	-1.0	350.7	1.000	17.54	0.969
2	23.050	23.091	40.2	-1.9	40.2	-1.9	347.0	1.002	17.57	0.980
3	21.430	21.580	41.2	-3.8	41.2	-3.8	342.3	1.001	17.40	0.991
4	19.980	20.262	42.7	-3.6	42.7	-3.6	341.9	0.998	17.42	0.973
5	19.771	20.076	44.1	-3.8	44.1	-3.8	342.0	0.997	17.29	0.978
6	19.563	19.891	45.0	-4.0	45.0	-4.0	342.8	0.993	17.10	0.984
7	19.352	19.705	45.3	-4.5	45.3	-4.5	341.5	0.995	17.03	0.987
8	19.144	19.522	44.5	-4.7	44.5	-4.7	341.9	0.993	17.11	0.981
9	18.108	18.621	44.8	-5.9	44.8	-5.9	339.5	0.997	17.20	0.982
10	16.497	17.242	48.2	-0.1	48.2	-0.1	341.4	1.006	17.74	0.982
11	16.124	16.901	51.5	2.0	51.5	2.0	346.6	0.997	18.85	0.798

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	261.8	196.5	261.8	196.5	194.5	196.5	175.3	-3.3	0.	0.
2	260.7	201.4	260.7	201.4	199.2	201.3	168.2	-6.7	0.	0.
3	256.6	204.1	256.6	204.1	193.0	203.7	169.2	-13.6	0.	0.
4	267.6	203.3	267.6	203.3	196.5	202.9	181.6	-12.7	0.	0.
5	264.3	202.9	264.3	202.9	189.8	202.5	183.9	-13.4	0.	0.
6	261.5	202.2	261.5	202.2	185.0	201.7	184.9	-14.2	0.	0.
7	260.5	202.2	260.5	202.2	183.2	201.5	185.1	-15.8	0.	0.
8	263.3	202.8	263.3	202.8	187.7	202.1	184.7	-16.5	0.	0.
9	268.0	210.8	268.0	210.8	190.3	209.6	188.7	-21.7	0.	0.
10	285.5	182.5	285.5	182.5	190.2	182.5	212.9	-0.3	0.	0.
11	309.8	165.6	309.8	165.6	192.7	165.5	242.6	5.8	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.734	0.538	0.734	0.538	0.545	0.538	1.010	1.041
2	0.735	0.555	0.735	0.555	0.562	0.555	1.010	1.018
3	0.728	0.568	0.728	0.568	0.547	0.566	1.055	1.025
4	0.763	0.566	0.763	0.566	0.560	0.565	1.032	1.082
5	0.752	0.565	0.752	0.565	0.540	0.564	1.067	1.097
6	0.742	0.564	0.742	0.564	0.525	0.562	1.091	1.099
7	0.741	0.564	0.741	0.564	0.521	0.562	1.100	1.100
8	0.749	0.566	0.749	0.566	0.534	0.564	1.077	1.093
9	0.767	0.591	0.767	0.591	0.545	0.588	1.102	1.130
10	0.821	0.504	0.821	0.504	0.547	0.504	0.959	1.288
11	0.894	0.454	0.894	0.454	0.556	0.453	0.859	1.497

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	4.9	-1.3	11.5	0.447	0.	0.102	0.102	0.030	0.030
2	10.00	4.8	-1.5	9.9	0.418	0.	0.068	0.068	0.019	0.019
3	30.00	6.4	0.1	7.1	0.393	0.	0.032	0.032	0.008	0.008
4	47.50	6.8	0.5	7.2	0.419	0.	0.083	0.083	0.021	0.021
5	50.00	7.9	1.7	7.0	0.414	0.	0.071	0.071	0.017	0.017
6	52.50	8.6	2.4	6.8	0.410	0.	0.051	0.051	0.012	0.012
7	55.00	8.7	2.5	6.3	0.408	0.	0.043	0.043	0.010	0.010
8	57.50	7.7	1.5	6.0	0.410	0.	0.060	0.060	0.014	0.014
9	70.00	6.8	0.7	4.6	0.388	0.	0.054	0.054	0.012	0.012
10	90.00	7.5	1.5	10.3	0.510	0.	0.330	0.329	0.068	0.067
11	95.00	9.8	3.9	12.4	0.615	0.	0.499	0.482	0.100	0.097

TABLE VIII. - Continued.

(k) 90 Percent of design speed; reading 1246

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	46.2	-0.3	46.2	-0.3	356.9	0.994	17.84	0.969
2	23.050	23.091	44.3	-1.1	44.3	-1.1	352.7	0.998	17.97	0.974
3	21.430	21.580	43.6	-3.0	43.6	-3.0	345.0	1.000	17.62	0.988
4	19.980	20.262	44.1	-2.9	44.1	-2.9	343.3	0.997	17.64	0.968
5	19.771	20.076	45.6	-3.1	45.6	-3.1	342.9	0.998	17.43	0.976
6	19.563	19.891	47.2	-3.4	47.2	-3.4	343.7	0.995	17.27	0.982
7	19.352	19.705	47.9	-3.9	47.9	-3.9	342.2	0.995	17.19	0.983
8	19.144	19.522	46.8	-4.1	46.8	-4.1	342.7	0.994	17.22	0.980
9	18.108	18.621	47.1	-4.9	47.1	-4.9	340.0	1.000	17.25	0.986
10	16.497	17.242	49.0	1.3	49.0	1.3	341.6	1.005	17.80	0.893
11	16.124	16.901	52.2	2.7	52.2	2.7	346.3	0.998	18.74	0.821

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	259.5	186.9	259.5	186.9	179.5	186.9	187.3	-0.9	0.	0.
2	261.3	192.5	261.3	192.5	187.1	192.5	182.5	-3.7	0.	0.
3	252.7	191.0	252.7	191.0	182.9	190.8	174.4	-10.1	0.	0.
4	262.9	187.1	262.9	187.1	188.9	186.8	182.9	-9.4	0.	0.
5	257.8	186.4	257.8	186.4	180.4	186.2	184.0	-10.2	0.	0.
6	254.8	185.9	254.8	185.9	173.1	185.5	187.0	-11.1	0.	0.
7	253.8	184.7	253.8	184.7	170.3	184.3	188.2	-12.6	0.	0.
8	255.4	185.0	255.4	185.0	174.8	184.5	186.3	-13.1	0.	0.
9	259.1	194.7	259.1	194.7	176.5	194.0	189.7	-16.5	0.	0.
10	277.5	167.0	277.5	167.0	181.9	166.9	209.6	3.9	0.	0.
11	301.1	152.5	301.1	152.5	184.4	152.4	238.1	7.2	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.720	0.508	0.720	0.508	0.498	0.508	1.041	1.123
2	0.730	0.526	0.730	0.526	0.523	0.526	1.029	1.114
3	0.712	0.527	0.712	0.527	0.516	0.526	1.043	1.062
4	0.746	0.518	0.746	0.518	0.536	0.517	0.989	1.092
5	0.731	0.516	0.731	0.516	0.511	0.515	1.032	1.101
6	0.720	0.515	0.720	0.515	0.489	0.514	1.072	1.121
7	0.719	0.512	0.719	0.512	0.483	0.511	1.082	1.131
8	0.723	0.513	0.723	0.513	0.495	0.512	1.056	1.112
9	0.738	0.542	0.738	0.542	0.503	0.540	1.099	1.145
10	0.795	0.459	0.795	0.459	0.521	0.459	0.918	1.269
11	0.866	0.416	0.866	0.416	0.530	0.416	0.826	1.470

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	9.1	2.9	12.2	0.490	0.	0.105	0.105	0.030	0.030
2	10.00	8.9	2.7	10.7	0.466	0.	0.086	0.086	0.025	0.025
3	30.00	8.8	2.5	7.9	0.437	0.	0.040	0.040	0.011	0.011
4	47.50	8.1	1.9	7.9	0.468	0.	0.105	0.105	0.026	0.026
5	50.00	9.4	3.2	7.6	0.460	0.	0.080	0.080	0.020	0.020
6	52.50	10.8	4.6	7.4	0.458	0.	0.060	0.060	0.015	0.015
7	55.00	11.2	5.0	6.8	0.461	0.	0.059	0.059	0.014	0.014
8	57.50	10.0	3.8	6.7	0.460	0.	0.068	0.068	0.016	0.016
9	70.00	9.1	3.0	5.6	0.426	0.	0.046	0.046	0.010	0.010
10	90.00	8.3	2.3	11.7	0.547	0.	0.314	0.314	0.064	0.064
11	95.00	10.5	4.5	13.1	0.643	0.	0.462	0.451	0.093	0.090

TABLE VIII. - Continued.

(l) 90 Percent of design speed; reading 1247

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	48.3	-0.1	48.3	-0.1	356.8	0.996	17.71	0.971
2	23.050	23.091	46.3	-0.5	46.3	-0.5	354.5	0.996	17.97	0.968
3	21.430	21.580	45.1	-2.3	45.1	-2.3	345.3	1.000	17.46	0.985
4	19.980	20.262	45.4	-3.1	45.4	-3.1	342.9	0.998	17.37	0.969
5	19.771	20.076	46.8	-3.3	46.8	-3.3	343.4	0.996	17.17	0.978
6	19.563	19.891	47.7	-3.5	47.7	-3.5	341.6	1.000	17.00	0.983
7	19.352	19.705	49.4	-3.7	49.4	-3.7	342.2	0.996	16.90	0.989
8	19.144	19.522	49.2	-3.8	49.2	-3.8	341.9	0.996	16.92	0.987
9	18.108	18.621	48.6	-3.4	48.6	-3.4	341.0	0.999	17.23	0.988
10	16.497	17.242	49.1	1.7	49.1	1.7	341.6	1.005	17.84	0.893
11	16.124	16.901	52.2	2.7	52.2	2.7	345.2	0.999	18.64	0.829

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	254.7	181.1	254.7	181.1	169.3	181.1	190.3	-0.3	0.	0.
2	259.9	187.1	259.9	187.1	179.5	187.1	188.0	-1.6	0.	0.
3	248.6	182.2	248.6	182.2	175.6	182.0	176.0	-7.4	0.	0.
4	254.3	174.8	254.3	174.8	178.6	174.5	181.0	-9.3	0.	0.
5	249.3	174.1	249.3	174.1	170.7	173.8	181.7	-9.9	0.	0.
6	246.0	174.0	246.0	174.0	165.6	173.7	182.0	-10.6	0.	0.
7	244.6	174.3	244.6	174.3	159.3	174.0	185.7	-11.1	0.	0.
8	245.9	175.2	245.9	175.2	160.8	174.8	186.0	-11.5	0.	0.
9	256.4	190.1	256.4	190.1	169.5	189.8	192.4	-11.2	0.	0.
10	277.0	163.6	277.0	163.6	181.4	163.5	209.4	4.8	0.	0.
11	298.1	149.5	298.1	149.5	182.5	149.3	235.7	7.0	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.705	0.491	0.705	0.491	0.469	0.491	1.070	1.151
2	0.724	0.509	0.724	0.509	0.500	0.509	1.042	1.154
3	0.699	0.501	0.699	0.501	0.494	0.501	1.037	1.077
4	0.720	0.482	0.720	0.482	0.506	0.481	0.977	1.085
5	0.704	0.480	0.704	0.480	0.482	0.479	1.018	1.090
6	0.695	0.480	0.695	0.480	0.468	0.479	1.049	1.094
7	0.690	0.482	0.690	0.482	0.449	0.481	1.092	1.121
8	0.695	0.485	0.695	0.485	0.454	0.483	1.087	1.123
9	0.728	0.528	0.728	0.528	0.481	0.527	1.120	1.168
10	0.793	0.449	0.793	0.449	0.519	0.449	0.902	1.268
11	0.857	0.408	0.857	0.408	0.525	0.408	0.818	1.456

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	11.2	5.0	12.4	0.505	0.	0.104	0.104	0.030	0.030
2	10.00	11.0	4.7	11.3	0.488	0.	0.107	0.107	0.031	0.031
3	30.00	10.2	4.0	8.6	0.462	0.	0.055	0.055	0.015	0.015
4	47.50	9.4	3.2	7.7	0.497	0.	0.107	0.107	0.027	0.027
5	50.00	10.6	4.4	7.5	0.489	0.	0.079	0.079	0.019	0.019
6	52.50	11.3	5.1	7.3	0.481	0.	0.060	0.060	0.015	0.015
7	55.00	12.8	6.6	7.1	0.479	0.	0.042	0.042	0.010	0.010
8	57.50	12.3	6.1	6.9	0.477	0.	0.048	0.048	0.011	0.011
9	70.00	10.7	4.5	7.1	0.435	0.	0.042	0.042	0.009	0.009
10	90.00	8.4	2.4	12.0	0.557	0.	0.315	0.315	0.065	0.065
11	95.00	10.5	4.6	13.0	0.648	0.	0.448	0.438	0.090	0.088

TABLE VIII. - Continued.

(m) 100 Percent of design speed; reading 1250

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN RATIO
1	23.444	23.465	42.1	-6.9	42.1	-6.9	366.9	0.993	19.03 0.878
2	23.050	23.091	39.7	-8.4	39.7	-8.4	359.9	1.000	19.16 0.916
3	21.430	21.580	40.6	-8.3	40.6	-8.3	355.3	0.998	19.12 0.912
4	19.980	20.262	43.7	-8.2	43.7	-8.2	354.3	0.995	18.86 0.918
5	19.771	20.076	46.0	-8.1	46.0	-8.1	354.2	0.993	18.40 0.941
6	19.563	19.891	47.3	-8.2	47.3	-8.2	354.3	0.993	18.14 0.960
7	19.352	19.705	48.1	-8.0	48.1	-8.0	354.3	0.992	18.07 0.972
8	19.144	19.522	46.8	-7.9	46.8	-7.9	353.3	0.993	18.30 0.964
9	18.108	18.621	43.6	-4.3	43.6	-4.3	350.3	1.001	19.08 0.926
10	16.497	17.242	47.2	4.7	47.2	4.7	352.6	1.009	19.78 0.705
11	16.124	16.901	50.6	7.4	50.6	7.4	358.1	0.996	20.38 0.599

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	292.0	264.4	292.0	264.4	216.5	262.5	195.9	-31.6	0.	0.
2	292.2	277.6	292.2	277.6	224.9	274.6	186.6	-40.7	0.	0.
3	292.1	282.1	292.1	282.1	221.6	279.1	190.2	-40.9	0.	0.
4	301.5	291.9	301.5	291.9	218.1	288.9	208.1	-41.4	0.	0.
5	291.7	292.8	291.7	292.8	202.7	289.9	209.7	-41.4	0.	0.
6	287.1	297.2	287.1	297.2	194.6	294.2	211.0	-42.3	0.	0.
7	286.4	301.7	286.4	301.7	191.4	298.8	213.1	-41.9	0.	0.
8	292.4	305.8	292.4	305.8	200.1	302.8	213.3	-42.1	0.	0.
9	310.5	343.6	310.5	343.6	224.7	342.6	214.3	-25.7	0.	0.
10	323.6	255.7	323.6	255.7	219.9	254.8	237.4	21.1	0.	0.
11	336.9	206.1	336.9	206.1	214.0	204.4	260.2	26.4	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.809	0.727	0.809	0.727	0.600	0.721	1.212	1.149
2	0.818	0.772	0.818	0.772	0.630	0.764	1.221	1.119
3	0.824	0.793	0.824	0.793	0.625	0.784	1.259	1.143
4	0.855	0.827	0.855	0.827	0.619	0.818	1.325	1.240
5	0.824	0.831	0.824	0.831	0.573	0.822	1.430	1.254
6	0.809	0.845	0.809	0.845	0.549	0.837	1.511	1.262
7	0.807	0.860	0.807	0.860	0.539	0.852	1.561	1.275
8	0.828	0.875	0.828	0.875	0.566	0.866	1.514	1.272
9	0.891	1.003	0.891	1.003	0.645	1.000	1.525	1.278
10	0.931	0.709	0.931	0.709	0.633	0.707	1.159	1.428
11	0.968	0.561	0.968	0.561	0.615	0.557	0.955	1.588

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	5.0	-1.2	5.6	0.320	0.	0.348	0.348	0.100	0.100
2	10.00	4.3	-1.9	3.4	0.271	0.	0.236	0.236	0.066	0.066
3	30.00	5.8	-0.5	2.6	0.244	0.	0.245	0.245	0.064	0.064
4	47.50	7.7	1.5	2.6	0.236	0.	0.216	0.215	0.053	0.053
5	50.00	9.8	3.6	2.7	0.206	0.	0.163	0.163	0.040	0.040
6	52.50	10.9	4.7	2.6	0.178	0.	0.113	0.113	0.027	0.027
7	55.00	11.4	5.2	2.8	0.159	0.	0.079	0.079	0.019	0.019
8	57.50	10.0	3.8	2.8	0.161	0.	0.100	0.099	0.023	0.023
9	70.00	5.7	-0.4	6.2	0.066	0.	0.183	0.181	0.041	0.041
10	90.00	6.5	0.5	15.0	0.343	0.	0.688	0.675	0.140	0.138
11	95.00	8.9	2.9	17.7	0.523	0.	0.887	0.850	0.176	0.169

TABLE VIII. - Continued.

(n) 100 Percent of design speed; reading 1252

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	45.0	-0.6	45.0	-0.6	367.9	0.994	19.47	0.949
2	23.050	23.091	41.1	-1.7	41.1	-1.7	362.1	0.999	19.54	0.964
3	21.430	21.580	41.9	-3.7	41.9	-3.7	355.7	0.999	19.41	0.980
4	19.980	20.262	44.5	-3.9	44.5	-3.9	355.5	0.994	19.32	0.954
5	19.771	20.076	46.5	-4.5	46.5	-4.5	355.0	0.993	18.77	0.976
6	19.563	19.891	47.0	-4.9	47.0	-4.9	355.2	0.992	18.64	0.980
7	19.352	19.705	47.8	-5.0	47.8	-5.0	354.2	0.994	18.47	0.991
8	19.144	19.522	46.9	-5.2	46.9	-5.2	353.7	0.992	18.58	0.987
9	18.108	18.621	44.9	-4.9	44.9	-4.9	351.1	0.999	19.26	0.978
10	16.497	17.242	47.4	1.8	47.4	1.8	352.2	1.011	19.71	0.863
11	16.124	16.901	52.1	3.3	52.1	3.3	359.7	0.997	21.04	0.771

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	289.2	208.5	289.2	208.5	204.4	208.5	204.6	-2.0	0.	0.
2	289.4	215.5	289.4	215.5	218.2	215.4	190.1	-6.4	0.	0.
3	287.3	221.6	287.3	221.6	213.9	221.1	191.8	-14.3	0.	0.
4	296.5	214.9	296.5	214.9	211.7	214.4	207.7	-14.6	0.	0.
5	284.9	213.1	284.9	213.1	196.0	212.4	206.7	-16.9	0.	0.
6	282.7	212.6	282.7	212.6	192.7	211.8	206.9	-18.1	0.	0.
7	279.7	214.2	279.7	214.2	187.8	213.4	207.3	-18.8	0.	0.
8	282.7	215.3	282.7	215.3	193.2	214.4	206.4	-19.7	0.	0.
9	298.2	232.0	298.2	232.0	211.4	231.2	210.3	-19.8	0.	0.
10	310.8	193.8	310.8	193.8	210.4	193.7	228.8	6.2	0.	0.
11	337.3	173.7	337.3	173.7	207.1	173.4	266.3	10.1	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.799	0.561	0.799	0.561	0.564	0.561	1.020	1.213
2	0.807	0.584	0.807	0.584	0.608	0.584	0.987	1.142
3	0.808	0.608	0.808	0.608	0.602	0.606	1.034	1.157
4	0.838	0.590	0.838	0.590	0.598	0.588	1.013	1.238
5	0.801	0.585	0.801	0.585	0.551	0.583	1.084	1.234
6	0.794	0.584	0.794	0.584	0.541	0.582	1.100	1.231
7	0.786	0.589	0.786	0.589	0.528	0.587	1.136	1.235
8	0.796	0.593	0.796	0.593	0.544	0.591	1.110	1.225
9	0.849	0.643	0.849	0.643	0.602	0.641	1.094	1.253
10	0.889	0.527	0.889	0.527	0.602	0.526	0.921	1.370
11	0.967	0.468	0.967	0.468	0.593	0.467	0.838	1.637

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	7.9	1.7	11.9	0.486	0.	0.148	0.148	0.043	0.043	
2	10.00	5.7	-0.6	10.1	0.449	0.	0.103	0.103	0.029	0.029	
3	30.00	7.0	0.8	7.2	0.419	0.	0.058	0.058	0.015	0.015	
4	47.50	8.5	2.3	6.9	0.460	0.	0.125	0.125	0.031	0.031	
5	50.00	10.3	4.1	6.2	0.443	0.	0.069	0.069	0.017	0.017	
6	52.50	10.7	4.4	5.9	0.440	0.	0.058	0.058	0.014	0.014	
7	55.00	11.2	5.0	5.7	0.427	0.	0.026	0.026	0.006	0.006	
8	57.50	10.1	3.9	5.5	0.427	0.	0.038	0.038	0.009	0.009	
9	70.00	6.9	0.8	5.6	0.393	0.	0.058	0.057	0.013	0.013	
10	90.00	6.7	0.7	12.2	0.520	0.	0.342	0.336	0.070	0.069	
11	95.00	10.4	4.4	13.7	0.633	0.	0.509	0.462	0.102	0.092	

TABLE VIII. - Continued.

(o) 100 Percent of design speed; reading 1254

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	47.3	0.1	47.3	0.1	373.2	0.994	20.31	0.948
2	23.050	23.091	44.1	-1.2	44.1	-1.2	367.5	0.999	20.31	0.962
3	21.430	21.580	44.3	-3.3	44.3	-3.3	359.5	0.999	19.97	0.976
4	19.980	20.262	45.9	-3.4	45.9	-3.4	357.2	0.996	19.75	0.957
5	19.771	20.076	46.9	-4.0	46.9	-4.0	357.4	0.994	19.45	0.967
6	19.563	19.891	48.8	-4.3	48.8	-4.3	357.6	0.992	19.19	0.979
7	19.352	19.705	49.5	-4.5	49.5	-4.5	356.1	0.995	19.07	0.985
8	19.144	19.522	48.4	-4.7	48.4	-4.7	356.2	0.996	19.16	0.983
9	18.108	18.621	46.8	-4.3	46.8	-4.3	353.6	0.998	19.60	0.977
10	16.497	17.242	48.8	2.2	48.8	2.2	353.5	1.010	19.76	0.881
11	16.124	16.901	53.4	3.5	53.4	3.5	360.3	0.998	21.65	0.777

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	292.2	203.0	292.2	203.0	198.3	203.0	214.6	0.2	0.	0.
2	290.9	209.2	290.9	209.2	208.9	209.2	202.4	-4.6	0.	0.
3	285.3	209.6	285.3	209.6	204.2	209.3	199.2	-11.9	0.	0.
4	291.4	201.9	291.4	201.9	202.9	201.6	209.2	-12.1	0.	0.
5	285.2	200.7	285.2	200.7	194.8	200.3	208.3	-13.9	0.	0.
6	279.8	200.2	279.8	200.2	184.3	199.6	210.5	-15.0	0.	0.
7	277.5	200.5	277.5	200.5	180.1	199.9	211.2	-15.7	0.	0.
8	279.9	202.5	279.9	202.5	185.9	201.8	209.3	-16.5	0.	0.
9	291.7	215.7	291.7	215.7	199.8	215.1	212.5	-16.0	0.	0.
10	298.8	176.8	298.8	176.8	196.8	176.7	224.8	6.7	0.	0.
11	334.6	161.6	334.6	161.6	199.6	161.3	268.6	9.9	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.802	0.541	0.802	0.541	0.544	0.541	1.023	1.279
2	0.805	0.562	0.805	0.562	0.578	0.562	1.001	1.222
3	0.797	0.569	0.797	0.569	0.570	0.568	1.025	1.206
4	0.819	0.550	0.819	0.550	0.570	0.549	0.993	1.250
5	0.799	0.547	0.799	0.547	0.546	0.546	1.028	1.242
6	0.782	0.546	0.782	0.546	0.515	0.544	1.083	1.258
7	0.777	0.547	0.777	0.547	0.504	0.545	1.110	1.266
8	0.784	0.553	0.784	0.553	0.521	0.551	1.086	1.247
9	0.825	0.593	0.825	0.593	0.565	0.591	1.077	1.271
10	0.848	0.477	0.848	0.477	0.558	0.477	0.898	1.347
11	0.956	0.433	0.956	0.433	0.570	0.432	0.808	1.661

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	SS				TOT	PROF	TOT	PROF
1	5.00	10.2	3.9	12.6	0.518	0.	0.151	0.150	0.044	0.044	
2	10.00	8.7	2.5	10.5	0.483	0.	0.109	0.109	0.031	0.031	
3	30.00	9.4	3.2	7.7	0.461	0.	0.069	0.069	0.018	0.018	
4	47.50	9.9	3.7	7.3	0.494	0.	0.122	0.122	0.030	0.030	
5	50.00	10.7	4.5	6.8	0.486	0.	0.095	0.095	0.023	0.023	
6	52.50	12.4	6.2	6.5	0.479	0.	0.064	0.063	0.015	0.015	
7	55.00	12.9	6.7	6.2	0.473	0.	0.047	0.047	0.011	0.011	
8	57.50	11.6	5.4	6.0	0.467	0.	0.051	0.051	0.012	0.012	
9	70.00	8.8	2.7	6.2	0.435	0.	0.065	0.064	0.014	0.014	
10	90.00	8.1	2.1	12.5	0.554	0.	0.317	0.315	0.065	0.064	
11	95.00	11.7	5.7	13.9	0.668	0.	0.503	0.453	0.100	0.090	

TABLE VIII. - Concluded.

(p) 100 Percent of design speed; reading 1263

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	49.4	-0.3	49.4	-0.3	376.1	0.992	20.06	0.961
2	23.050	23.091	46.4	-0.9	46.4	-0.9	371.3	0.996	20.32	0.954
3	21.430	21.580	44.7	-2.8	44.7	-2.8	361.4	1.000	19.97	0.981
4	19.980	20.262	45.4	-3.3	45.4	-3.3	358.5	0.996	19.86	0.950
5	19.771	20.076	46.8	-3.8	46.8	-3.8	358.3	0.996	19.55	0.971
6	19.563	19.891	47.6	-3.9	47.6	-3.9	357.9	0.994	19.31	0.979
7	19.352	19.705	48.5	-3.9	48.5	-3.9	357.8	0.993	19.19	0.986
8	19.144	19.522	47.7	-3.9	47.7	-3.9	356.7	0.995	19.19	0.985
9	18.108	18.621	46.6	-3.8	46.6	-3.8	353.5	0.999	19.48	0.980
10	16.497	17.242	48.6	2.5	48.6	2.5	354.8	1.006	19.69	0.882
11	16.124	16.901	51.9	4.8	51.9	4.8	360.6	0.997	21.71	0.775

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	282.8	195.5	282.8	195.5	183.9	195.5	214.8	-1.0	0.	0.
2	286.4	202.3	286.4	202.3	197.5	202.3	207.5	-3.2	0.	0.
3	281.6	202.9	281.6	202.9	200.2	202.7	197.9	-9.8	0.	0.
4	287.6	194.9	287.6	194.9	201.8	194.6	204.9	-11.4	0.	0.
5	280.6	194.1	280.6	194.1	192.3	193.6	204.4	-12.9	0.	0.
6	276.2	193.1	276.2	193.1	186.2	192.7	203.9	-13.0	0.	0.
7	274.4	194.0	274.4	194.0	182.0	193.5	205.3	-13.3	0.	0.
8	275.3	194.5	275.3	194.5	185.3	194.1	203.6	-13.2	0.	0.
9	282.6	204.5	282.6	204.5	194.3	204.0	205.3	-13.4	0.	0.
10	293.8	165.8	293.8	165.8	194.2	165.6	220.4	7.2	0.	0.
11	333.3	152.1	333.3	152.1	205.7	151.6	262.3	12.8	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.769	0.518	0.769	0.518	0.500	0.518	1.063	1.284
2	0.786	0.540	0.786	0.540	0.542	0.540	1.024	1.256
3	0.783	0.548	0.783	0.548	0.557	0.548	1.012	1.195
4	0.805	0.529	0.805	0.529	0.565	0.528	0.964	1.216
5	0.784	0.527	0.784	0.527	0.537	0.525	1.007	1.213
6	0.770	0.525	0.770	0.525	0.519	0.523	1.034	1.208
7	0.765	0.528	0.765	0.528	0.507	0.526	1.064	1.218
8	0.769	0.529	0.769	0.529	0.518	0.528	1.048	1.204
9	0.796	0.560	0.796	0.560	0.547	0.558	1.050	1.222
10	0.830	0.447	0.830	0.447	0.549	0.446	0.853	1.313
11	0.952	0.407	0.952	0.407	0.587	0.405	0.737	1.604

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	12.3	6.1	12.2	0.529	0.	0.121	0.121	0.035	0.035	
2	10.00	11.0	4.8	10.9	0.503	0.	0.109	0.109	0.031	0.031	
3	30.00	9.8	3.6	8.2	0.474	0.	0.057	0.057	0.015	0.015	
4	47.50	9.5	3.2	7.4	0.507	0.	0.115	0.115	0.029	0.029	
5	50.00	10.6	4.4	7.0	0.497	0.	0.086	0.086	0.021	0.021	
6	52.50	11.2	5.0	6.9	0.490	0.	0.064	0.064	0.015	0.015	
7	55.00	11.8	5.6	6.8	0.483	0.	0.044	0.044	0.011	0.011	
8	57.50	10.9	4.7	6.8	0.479	0.	0.045	0.045	0.011	0.011	
9	70.00	8.6	2.5	6.7	0.449	0.	0.058	0.058	0.013	0.013	
10	90.00	7.9	1.9	12.8	0.581	0.	0.325	0.324	0.067	0.066	
11	95.00	10.2	4.2	15.1	0.690	0.	0.509	0.470	0.101	0.094	



TABLE IX. - OVERALL PERFORMANCE FOR STAGE 18-13 MOD 2

(a) 50 Percent of design speed

(b) 60 Percent of design speed

Parameter	Reading 1274	Parameter	Reading 1275
ROTOR TOTAL PRESSURE RATIO	1.191	ROTOR TOTAL PRESSURE RATIO	1.274
STAGE TOTAL PRESSURE RATIO	1.181	STAGE TOTAL PRESSURE RATIO	1.259
ROTOR TOTAL TEMPERATURE RATIO	1.060	ROTOR TOTAL TEMPERATURE RATIO	1.084
STAGE TOTAL TEMPERATURE RATIO	1.060	STAGE TOTAL TEMPERATURE RATIO	1.085
ROTOR TEMP. RISE EFFICIENCY	0.852	ROTOR TEMP. RISE EFFICIENCY	0.847
STAGE TEMP. RISE EFFICIENCY	0.808	STAGE TEMP. RISE EFFICIENCY	0.804
ROTOR MOMENTUM RISE EFFICIENCY	0.893	ROTOR MOMENTUM RISE EFFICIENCY	0.888
ROTOR HEAD RISE COEFFICIENT	0.331	ROTOR HEAD RISE COEFFICIENT	0.330
STAGE HEAD RISE COEFFICIENT	0.313	STAGE HEAD RISE COEFFICIENT	0.314
FLOW COEFFICIENT	0.313	FLOW COEFFICIENT	0.319
WT FLOW PER UNIT FRONTAL AREA	64.31	WT FLOW PER UNIT FRONTAL AREA	76.60
WT FLOW PER UNIT ANNULUS AREA	86.63	WT FLOW PER UNIT ANNULUS AREA	103.19
WT FLOW AT ORIFICE	12.65	WT FLOW AT ORIFICE	15.06
WT FLOW AT ROTOR INLET	12.65	WT FLOW AT ROTOR INLET	15.11
WT FLOW AT ROTOR OUTLET	12.98	WT FLOW AT ROTOR OUTLET	15.43
WT FLOW AT STATOR OUTLET	12.94	WT FLOW AT STATOR OUTLET	15.50
ROTATIVE SPEED	8085.3	ROTATIVE SPEED	9559.6
PERCENT OF DESIGN SPEED	50.2	PERCENT OF DESIGN SPEED	59.4

(c) 70 Percent of design speed

(d) 80 Percent of design speed

Parameter	Reading					Parameter	Reading 1283
	1276	1279	1280	1281	1282		
ROTOR TOTAL PRESSURE RATIO	1.353	1.370	1.385	1.393	1.395	ROTOR TOTAL PRESSURE RATIO	1.538
STAGE TOTAL PRESSURE RATIO	1.311	1.350	1.369	1.374	1.373	STAGE TOTAL PRESSURE RATIO	1.505
ROTOR TOTAL TEMPERATURE RATIO	1.099	1.104	1.110	1.114	1.118	ROTOR TOTAL TEMPERATURE RATIO	1.155
STAGE TOTAL TEMPERATURE RATIO	1.101	1.105	1.111	1.114	1.118	STAGE TOTAL TEMPERATURE RATIO	1.154
ROTOR TEMP. RISE EFFICIENCY	0.910	0.905	0.890	0.873	0.846	ROTOR TEMP. RISE EFFICIENCY	0.847
STAGE TEMP. RISE EFFICIENCY	0.794	0.850	0.848	0.851	0.802	STAGE TEMP. RISE EFFICIENCY	0.802
ROTOR MOMENTUM RISE EFFICIENCY	0.943	0.941	0.925	0.909	0.883	ROTOR MOMENTUM RISE EFFICIENCY	0.881
ROTOR HEAD RISE COEFFICIENT	0.296	0.309	0.320	0.326	0.329	ROTOR HEAD RISE COEFFICIENT	0.332
STAGE HEAD RISE COEFFICIENT	0.264	0.294	0.308	0.312	0.313	STAGE HEAD RISE COEFFICIENT	0.314
FLOW COEFFICIENT	0.425	0.403	0.378	0.357	0.331	FLOW COEFFICIENT	0.337
WT FLOW PER UNIT FRONTAL AREA	115.79	110.94	104.64	99.53	92.69	WT FLOW PER UNIT FRONTAL AREA	106.60
WT FLOW PER UNIT ANNULUS AREA	155.98	149.45	140.96	134.08	124.86	WT FLOW PER UNIT ANNULUS AREA	143.60
WT FLOW AT ORIFICE	22.77	21.82	20.58	19.57	18.23	WT FLOW AT ORIFICE	20.96
WT FLOW AT ROTOR INLET	22.87	21.87	20.66	19.60	18.27	WT FLOW AT ROTOR INLET	20.90
WT FLOW AT ROTOR OUTLET	23.00	21.99	20.76	19.88	18.59	WT FLOW AT ROTOR OUTLET	21.49
WT FLOW AT STATOR OUTLET	23.51	22.20	21.01	20.02	18.73	WT FLOW AT STATOR OUTLET	21.63
ROTATIVE SPEED	11329.4	11333.9	11334.7	11331.3	11297.9	ROTATIVE SPEED	12895.1
PERCENT OF DESIGN SPEED	70.4	70.4	70.4	70.4	70.2	PERCENT OF DESIGN SPEED	80.1

(e) 90 Percent of design speed

(f) 100 Percent of design speed

Parameter	Reading					Parameter	Reading 1289
	1284	1285	1286	1287	1288		
ROTOR TOTAL PRESSURE RATIO	1.696	1.697	1.716	1.730	1.743	ROTOR TOTAL PRESSURE RATIO	1.863
STAGE TOTAL PRESSURE RATIO	1.538	1.626	1.674	1.688	1.697	STAGE TOTAL PRESSURE RATIO	1.757
ROTOR TOTAL TEMPERATURE RATIO	1.184	1.184	1.189	1.193	1.198	ROTOR TOTAL TEMPERATURE RATIO	1.230
STAGE TOTAL TEMPERATURE RATIO	1.184	1.184	1.189	1.192	1.196	STAGE TOTAL TEMPERATURE RATIO	1.229
ROTOR TEMP. RISE EFFICIENCY	0.886	0.885	0.885	0.877	0.871	ROTOR TEMP. RISE EFFICIENCY	0.846
STAGE TEMP. RISE EFFICIENCY	0.709	0.810	0.840	0.838	0.831	STAGE TEMP. RISE EFFICIENCY	0.763
ROTOR MOMENTUM RISE EFFICIENCY	0.891	0.897	0.911	0.910	0.909	ROTOR MOMENTUM RISE EFFICIENCY	0.855
ROTOR HEAD RISE COEFFICIENT	0.326	0.326	0.335	0.340	0.344	ROTOR HEAD RISE COEFFICIENT	0.316
STAGE HEAD RISE COEFFICIENT	0.262	0.298	0.318	0.324	0.326	STAGE HEAD RISE COEFFICIENT	0.284
FLOW COEFFICIENT	0.418	0.417	0.406	0.392	0.375	FLOW COEFFICIENT	0.416
WT FLOW PER UNIT FRONTAL AREA	139.82	139.64	136.69	133.07	128.59	WT FLOW PER UNIT FRONTAL AREA	150.68
WT FLOW PER UNIT ANNULUS AREA	188.35	188.10	184.13	179.25	173.23	WT FLOW PER UNIT ANNULUS AREA	202.99
WT FLOW AT ORIFICE	27.49	27.46	26.88	26.17	25.29	WT FLOW AT ORIFICE	29.63
WT FLOW AT ROTOR INLET	27.62	27.59	26.96	26.26	25.36	WT FLOW AT ROTOR INLET	29.75
WT FLOW AT ROTOR OUTLET	27.79	27.67	27.21	26.51	25.72	WT FLOW AT ROTOR OUTLET	29.45
WT FLOW AT STATOR OUTLET	29.40	28.68	27.84	27.11	26.20	WT FLOW AT STATOR OUTLET	31.23
ROTATIVE SPEED	14508.8	14516.7	14501.2	14499.1	14517.3	ROTATIVE SPEED	16103.4
PERCENT OF DESIGN SPEED	90.1	90.2	90.1	90.1	90.2	PERCENT OF DESIGN SPEED	100.0

TABLE X. - MOD 2 BLADE-ELEMENT DATA AT

BLADE EDGES FOR ROTOR 18

(a) 50 Percent of design speed; reading 1274

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	-0.0	55.2	71.9	55.6	288.4	1.070	10.12	1.185
2	23.906	23.383	-0.0	50.1	70.7	53.0	288.3	1.067	10.13	1.184
3	21.656	21.433	-0.0	45.2	67.6	46.9	288.1	1.059	10.13	1.186
4	19.591	19.726	-0.0	46.6	65.0	38.1	288.1	1.058	10.13	1.192
5	19.289	19.482	-0.0	46.6	64.7	38.1	288.0	1.057	10.13	1.188
6	18.984	19.238	-0.0	48.0	64.3	37.9	287.9	1.056	10.13	1.182
7	18.677	18.994	-0.0	50.1	64.0	36.9	287.7	1.056	10.13	1.178
8	18.367	18.750	-0.0	51.1	63.6	35.7	288.3	1.057	10.13	1.175
9	16.777	17.531	-0.0	48.7	61.9	26.5	288.0	1.056	10.13	1.188
10	14.079	15.580	-0.0	52.3	58.5	4.0	287.9	1.060	10.13	1.219
11	13.383	15.093	-0.0	54.2	58.0	-0.9	288.0	1.060	10.13	1.219

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	67.9	122.3	218.2	123.6	67.9	69.7	-0.0	100.4	207.3	202.5
2	71.0	122.4	214.6	130.5	71.0	78.6	-0.0	93.9	202.5	198.1
3	75.7	124.1	198.6	128.2	75.7	87.5	-0.0	88.1	183.6	181.7
4	77.3	131.9	182.9	115.2	77.3	90.6	-0.0	95.9	165.8	166.9
5	77.5	130.7	181.0	114.1	77.5	89.8	-0.0	94.9	163.6	165.2
6	77.3	128.9	178.3	109.3	77.3	86.3	-0.0	95.7	160.7	162.8
7	77.1	128.8	175.9	103.3	77.1	82.7	-0.0	98.7	158.1	160.8
8	77.1	128.8	173.2	99.6	77.1	80.9	-0.0	100.2	155.1	158.3
9	75.9	137.4	161.0	101.3	75.9	90.7	-0.0	103.2	142.0	148.3
10	73.1	158.5	140.0	97.0	73.1	96.8	-0.0	125.5	119.4	132.2
11	70.7	159.1	133.4	93.1	70.7	93.1	-0.0	129.0	113.1	127.5

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.200	0.351	0.643	0.355	0.200	0.200	1.027	0.990
2	0.210	0.353	0.633	0.376	0.210	0.226	1.106	0.979
3	0.224	0.359	0.587	0.371	0.224	0.253	1.156	0.957
4	0.228	0.382	0.540	0.334	0.228	0.263	1.172	0.923
5	0.229	0.379	0.535	0.331	0.229	0.261	1.160	0.917
6	0.228	0.374	0.527	0.317	0.228	0.250	1.116	0.906
7	0.228	0.374	0.520	0.300	0.228	0.240	1.072	0.897
8	0.228	0.373	0.511	0.289	0.228	0.234	1.051	0.883
9	0.224	0.399	0.476	0.294	0.224	0.264	1.195	0.833
10	0.216	0.462	0.414	0.283	0.216	0.282	1.325	0.717
11	0.209	0.464	0.394	0.271	0.209	0.271	1.316	0.682

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00		9.7	6.9	7.3	0.565	0.708	0.267	0.267	0.043	0.043
2	10.00		9.9	6.9	6.2	0.514	0.736	0.238	0.238	0.040	0.040
3	30.00		11.9	7.9	7.1	0.469	0.844	0.144	0.144	0.025	0.025
4	47.50		13.0	7.9	7.0	0.495	0.883	0.124	0.124	0.023	0.023
5	50.00		13.1	7.9	8.5	0.492	0.882	0.126	0.126	0.023	0.023
6	52.50		13.2	7.9	9.9	0.511	0.868	0.143	0.143	0.026	0.026
7	55.00		13.3	7.9	10.6	0.540	0.850	0.165	0.165	0.030	0.030
8	57.50		13.4	7.8	11.2	0.555	0.824	0.203	0.203	0.037	0.037
9	70.00		13.8	7.7	12.1	0.504	0.903	0.126	0.126	0.023	0.023
10	90.00		13.8	7.0	11.6	0.467	0.974	0.046	0.046	0.008	0.008
11	95.00		14.2	7.2	13.9	0.467	0.963	0.073	0.073	0.012	0.012

TABLE X. - Continued.

(b) 60 Percent of design speed; reading 1275

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	-0.0	56.0	71.6	55.7	288.5	1.100	10.11	1.267
2	23.906	23.383	-0.0	50.0	70.3	53.1	288.3	1.094	10.13	1.264
3	21.656	21.433	-0.0	46.5	67.1	47.3	288.2	1.082	10.13	1.263
4	19.591	19.726	-0.0	46.7	64.6	38.0	288.2	1.082	10.14	1.275
5	19.289	19.482	-0.0	46.7	64.2	38.4	287.8	1.080	10.13	1.267
6	18.984	19.238	-0.0	48.1	63.8	38.2	287.8	1.079	10.13	1.260
7	18.677	18.994	-0.0	49.5	63.4	37.3	288.1	1.079	10.14	1.254
8	18.367	18.750	-0.0	50.8	63.1	36.4	287.9	1.079	10.14	1.251
9	16.777	17.531	-0.0	49.3	61.4	26.3	288.1	1.080	10.14	1.273
10	14.079	15.580	-0.0	52.5	58.0	4.4	288.0	1.084	10.13	1.311
11	13.383	15.093	-0.0	54.4	57.2	-1.0	288.0	1.085	10.13	1.315

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	81.6	145.0	258.0	143.8	81.6	81.1	-0.0	120.2	244.7	239.0
2	85.6	144.4	254.4	154.6	85.6	92.7	-0.0	110.6	239.5	234.3
3	91.6	145.9	235.3	148.1	91.6	100.5	-0.0	105.7	216.7	214.5
4	93.2	156.0	216.8	135.9	93.2	107.1	-0.0	113.4	195.8	197.1
5	93.4	153.4	214.5	134.2	93.4	105.1	-0.0	111.7	193.1	195.1
6	93.4	151.7	211.9	128.9	93.4	101.3	-0.0	113.0	190.2	192.7
7	93.4	151.4	209.0	123.6	93.4	98.3	-0.0	115.2	186.9	190.1
8	93.2	151.4	206.4	118.9	93.2	95.6	-0.0	117.3	184.1	187.9
9	91.9	162.9	191.8	118.4	91.9	106.1	-0.0	123.5	168.3	175.9
10	88.1	185.6	166.2	113.3	88.1	113.0	-0.0	147.3	140.9	155.9
11	86.0	187.6	158.9	109.2	86.0	109.2	-0.0	152.5	133.6	150.7

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.241	0.413	0.762	0.410	0.241	0.231	0.994	1.165
2	0.253	0.412	0.752	0.441	0.253	0.265	1.084	1.154
3	0.271	0.419	0.697	0.426	0.271	0.289	1.097	1.124
4	0.276	0.450	0.642	0.392	0.276	0.309	1.149	1.087
5	0.277	0.442	0.636	0.387	0.277	0.303	1.125	1.080
6	0.277	0.438	0.628	0.372	0.277	0.292	1.084	1.069
7	0.277	0.437	0.619	0.356	0.277	0.283	1.052	1.056
8	0.276	0.437	0.611	0.343	0.276	0.276	1.026	1.047
9	0.272	0.471	0.568	0.342	0.272	0.307	1.156	0.985
10	0.261	0.539	0.492	0.329	0.261	0.328	1.282	0.844
11	0.254	0.545	0.470	0.317	0.254	0.317	1.269	0.803

RP	PERCENT SPAN		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	SS				TOT	PROF	TOT	PROF
1	5.00	9.4	6.6	7.3	0.575	0.699	0.285	0.285	0.046	0.046	
2	10.00	9.6	6.6	6.4	0.514	0.732	0.248	0.248	0.042	0.042	
3	30.00	11.4	7.3	7.4	0.486	0.840	0.150	0.150	0.026	0.026	
4	47.50	12.5	7.5	6.9	0.497	0.882	0.128	0.128	0.024	0.024	
5	50.00	12.6	7.4	8.8	0.497	0.872	0.139	0.139	0.025	0.025	
6	52.50	12.7	7.4	10.3	0.515	0.860	0.153	0.153	0.028	0.028	
7	55.00	12.8	7.4	11.1	0.534	0.845	0.174	0.174	0.031	0.031	
8	57.50	12.9	7.4	12.0	0.552	0.840	0.181	0.181	0.032	0.032	
9	70.00	13.4	7.2	11.8	0.517	0.897	0.136	0.136	0.025	0.025	
10	90.00	13.3	6.4	12.0	0.476	0.964	0.065	0.065	0.011	0.011	
11	95.00	13.4	6.4	13.8	0.477	0.964	0.072	0.072	0.012	0.012	

TABLE X. - Continued.

(c) 70 Percent of design speed; reading 1276

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	-0.0	34.1	65.1	53.1	288.5	1.098	10.10	1.323
2	23.906	23.383	-0.0	32.2	63.8	51.0	288.5	1.094	10.12	1.323
3	21.656	21.433	-0.0	33.2	60.2	45.6	288.1	1.091	10.13	1.533
4	19.591	19.726	-0.0	36.2	57.3	38.5	288.1	1.094	10.14	1.334
5	19.289	19.482	-0.0	37.7	56.9	36.9	287.9	1.095	10.14	1.336
6	18.984	19.238	-0.0	40.0	56.5	35.6	288.3	1.100	10.14	1.328
7	18.677	18.994	-0.0	41.1	56.2	34.1	288.0	1.102	10.14	1.328
8	18.367	18.750	-0.0	40.4	55.8	32.7	287.8	1.101	10.14	1.337
9	16.777	17.531	-0.0	41.5	54.0	25.2	288.0	1.101	10.14	1.363
10	14.079	15.580	-0.0	47.7	50.6	4.0	288.0	1.114	10.14	1.435
11	13.383	15.093	-0.0	50.7	49.8	-3.6	288.1	1.120	10.13	1.461

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	134.6	170.0	319.3	234.4	134.6	140.8	-0.0	95.3	289.5	282.7
2	139.9	175.8	316.4	236.4	139.9	148.7	-0.0	93.8	283.7	277.5
3	147.4	181.6	296.3	216.9	147.4	151.9	-0.0	99.5	257.0	254.4
4	149.1	189.6	276.0	195.8	149.1	153.1	-0.0	111.9	232.3	233.9
5	149.0	191.6	272.8	189.5	149.0	151.6	-0.0	117.1	228.5	230.8
6	149.1	191.7	270.1	180.6	149.1	146.9	-0.0	123.2	225.2	228.2
7	148.6	193.0	266.8	175.6	148.6	145.4	-0.0	126.9	221.6	225.3
8	148.1	195.5	263.4	177.0	148.1	148.9	-0.0	126.7	217.8	222.3
9	144.5	205.1	246.0	169.7	144.5	153.6	-0.0	135.9	199.1	208.1
10	137.4	235.6	216.6	158.8	137.4	158.4	-0.0	174.3	167.4	185.3
11	134.3	244.1	208.1	154.8	134.3	154.5	-0.0	188.9	159.0	179.3

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.402	0.488	0.953	0.673	0.402	0.404	1.046	1.239
2	0.418	0.506	0.945	0.681	0.418	0.428	1.063	1.233
3	0.442	0.525	0.888	0.627	0.442	0.439	1.030	1.223
4	0.447	0.549	0.827	0.566	0.447	0.443	1.027	1.197
5	0.447	0.554	0.818	0.548	0.447	0.439	1.017	1.187
6	0.447	0.553	0.809	0.521	0.447	0.424	0.986	1.177
7	0.445	0.557	0.800	0.507	0.445	0.420	0.979	1.166
8	0.444	0.565	0.790	0.512	0.444	0.431	1.006	1.155
9	0.433	0.595	0.737	0.492	0.433	0.445	1.063	1.095
10	0.411	0.686	0.647	0.463	0.411	0.461	1.153	0.949
11	0.401	0.711	0.621	0.451	0.401	0.451	1.151	0.904

RP	PERCENT SPAN		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	2.8	0.0	4.7	0.351	0.850	0.102	0.100	0.018	0.017	
2	10.00	3.0	-0.0	4.3	0.336	0.888	0.074	0.073	0.013	0.013	
3	30.00	4.5	0.4	5.7	0.355	0.941	0.043	0.042	0.008	0.008	
4	47.50	5.2	0.2	7.4	0.387	0.912	0.073	0.073	0.013	0.013	
5	50.00	5.3	0.1	7.3	0.406	0.904	0.082	0.082	0.015	0.015	
6	52.50	5.4	0.1	7.6	0.437	0.842	0.142	0.142	0.027	0.027	
7	55.00	5.5	0.1	7.9	0.450	0.829	0.159	0.159	0.030	0.030	
8	57.50	5.6	0.0	8.2	0.436	0.859	0.133	0.133	0.025	0.025	
9	70.00	6.0	-0.1	10.7	0.425	0.919	0.086	0.086	0.016	0.016	
10	90.00	5.9	-1.0	11.6	0.411	0.952	0.072	0.072	0.012	0.012	
11	95.00	6.0	-1.0	11.3	0.411	0.957	0.072	0.072	0.012	0.012	

TABLE X. - Continued.

(d) 70 Percent of design speed; reading 1279

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.0	38.5	66.1	53.5	288.5	1.108	10.10	1.347
2	23.906	23.383	0.0	36.3	64.9	51.3	288.3	1.102	10.13	1.352
3	21.656	21.433	0.0	37.1	61.4	45.7	288.3	1.098	10.13	1.357
4	19.591	19.726	0.0	38.9	58.7	39.2	288.0	1.099	10.13	1.352
5	19.289	19.482	0.0	39.9	58.3	37.5	288.2	1.101	10.14	1.358
6	18.984	19.238	0.0	41.5	57.9	36.2	288.3	1.104	10.14	1.354
7	18.677	18.994	-0.0	43.2	57.6	35.0	287.8	1.105	10.14	1.347
8	18.367	18.750	0.0	42.9	57.2	33.3	288.2	1.105	10.14	1.353
9	16.777	17.531	0.0	43.7	55.6	25.9	287.9	1.103	10.14	1.372
10	14.079	15.580	0.0	49.1	52.3	4.8	287.9	1.114	10.14	1.434
11	13.383	15.093	0.0	51.8	51.5	-2.3	288.0	1.119	10.12	1.457

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	128.0	168.3	316.6	221.4	128.0	131.7	0.0	104.8	289.5	292.8
2	132.8	173.8	313.3	223.9	132.8	140.0	0.0	102.9	285.8	277.6
3	140.2	179.0	292.5	204.3	140.2	142.8	0.0	107.9	256.8	254.1
4	141.3	185.1	271.9	185.9	141.3	144.0	0.0	116.3	232.3	233.9
5	141.3	188.1	269.0	181.9	141.3	144.3	0.0	120.6	228.9	231.2
6	141.4	188.7	266.1	175.2	141.4	141.4	0.0	125.0	225.4	228.4
7	140.8	188.8	262.7	168.0	140.8	137.6	-0.0	129.3	221.8	225.6
8	140.6	191.4	259.3	167.8	140.6	140.2	0.0	130.3	217.9	222.5
9	136.5	199.8	241.5	160.6	136.5	144.4	0.0	138.0	199.3	208.3
10	129.4	228.1	211.4	149.8	129.4	149.3	0.0	172.5	167.2	185.0
11	126.4	235.6	203.2	145.8	126.4	145.7	0.0	185.2	159.1	179.4

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.381	0.480	0.943	0.632	0.381	0.376	1.029	1.264
2	0.396	0.498	0.935	0.642	0.396	0.401	1.055	1.259
3	0.419	0.515	0.874	0.588	0.419	0.411	1.019	1.241
4	0.423	0.534	0.814	0.536	0.423	0.415	1.019	1.215
5	0.422	0.542	0.804	0.524	0.422	0.416	1.022	1.206
6	0.423	0.543	0.796	0.504	0.423	0.407	1.000	1.195
7	0.421	0.543	0.786	0.483	0.421	0.396	0.977	1.185
8	0.420	0.551	0.775	0.483	0.420	0.403	0.997	1.171
9	0.408	0.578	0.722	0.464	0.408	0.418	1.058	1.111
10	0.386	0.663	0.631	0.435	0.386	0.434	1.154	0.960
11	0.377	0.685	0.606	0.424	0.377	0.423	1.152	0.917

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	3.9	1.1	5.1	0.395	0.825	0.131	0.129	0.023	0.022	
2	10.00	4.1	1.1	4.5	0.377	0.881	0.087	0.085	0.015	0.015	
3	30.00	5.7	1.6	5.8	0.397	0.932	0.053	0.053	0.010	0.010	
4	47.50	6.6	1.6	8.1	0.418	0.912	0.078	0.078	0.014	0.014	
5	50.00	6.7	1.6	7.9	0.429	0.909	0.084	0.084	0.015	0.015	
6	52.50	6.8	1.5	8.2	0.450	0.870	0.125	0.125	0.023	0.023	
7	55.00	6.9	1.5	8.7	0.473	0.846	0.152	0.152	0.028	0.028	
8	57.50	7.0	1.4	8.9	0.466	0.856	0.145	0.145	0.027	0.027	
9	70.00	7.6	1.4	11.5	0.454	0.919	0.091	0.091	0.017	0.017	
10	90.00	7.5	0.7	12.5	0.437	0.950	0.078	0.078	0.013	0.013	
11	95.00	7.7	0.7	12.6	0.438	0.954	0.081	0.081	0.013	0.013	

TABLE X. - Continued.

(e) 70 Percent of design speed; reading 1280

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.	43.1	67.5	53.8	288.6	1.117	10.10	1.374
2	23.906	23.383	0.0	40.5	66.4	51.0	288.6	1.114	10.13	1.386
3	21.656	21.433	-0.0	41.0	63.0	46.6	288.1	1.105	10.13	1.371
4	19.591	19.726	0.0	43.4	60.4	38.2	288.1	1.106	10.14	1.377
5	19.289	19.482	0.0	43.3	60.1	37.0	287.8	1.106	10.14	1.381
6	18.984	19.238	0.0	44.5	59.7	36.6	288.0	1.107	10.14	1.368
7	18.677	18.994	0.0	46.3	59.3	35.9	288.2	1.108	10.14	1.358
8	18.367	18.750	0.0	46.3	59.0	34.7	288.1	1.107	10.14	1.357
9	16.777	17.531	0.0	46.4	57.4	26.6	287.9	1.105	10.14	1.376
10	14.079	15.580	0.0	51.1	54.1	4.9	288.0	1.115	10.14	1.436
11	13.383	15.093	0.0	53.5	53.2	-1.9	287.9	1.118	10.13	1.453

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	119.9	168.4	313.8	208.3	119.9	122.9	0.	115.1	290.0	283.2
2	124.2	175.1	310.2	211.6	124.2	133.2	0.0	113.6	284.3	278.0
3	131.1	175.0	288.8	192.4	131.1	132.2	-0.0	114.8	257.3	254.7
4	132.1	185.9	267.5	172.0	132.1	135.0	0.0	127.8	232.6	234.2
5	131.8	187.3	264.1	170.7	131.8	136.3	0.0	128.4	228.9	231.1
6	131.6	185.3	260.8	164.8	131.6	132.2	0.0	129.9	225.2	228.2
7	131.5	184.4	257.7	157.2	131.5	127.4	0.0	133.3	221.7	225.5
8	131.1	185.1	254.2	155.5	131.1	127.9	0.0	133.8	217.9	222.4
9	127.5	194.6	236.4	149.9	127.5	134.1	0.0	141.1	199.1	208.1
10	121.2	222.5	206.4	140.3	121.2	139.8	0.0	173.1	167.1	185.0
11	118.7	228.0	198.1	135.6	118.7	135.5	0.0	183.4	158.7	178.9

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.356	0.478	0.933	0.592	0.356	0.349	1.026	1.297
2	0.370	0.499	0.923	0.603	0.370	0.380	1.073	1.292
3	0.391	0.502	0.862	0.552	0.391	0.379	1.008	1.271
4	0.394	0.534	0.798	0.494	0.394	0.388	1.023	1.239
5	0.394	0.539	0.789	0.491	0.394	0.392	1.034	1.229
6	0.393	0.532	0.778	0.473	0.393	0.380	1.005	1.217
7	0.392	0.529	0.769	0.451	0.392	0.365	0.969	1.205
8	0.391	0.532	0.759	0.447	0.391	0.367	0.976	1.192
9	0.380	0.561	0.705	0.432	0.380	0.387	1.052	1.127
10	0.361	0.645	0.615	0.407	0.361	0.405	1.154	0.973
11	0.353	0.661	0.590	0.393	0.353	0.393	1.142	0.926

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	5.3	2.5	5.4	0.441	0.811	0.154	0.150	0.026	0.026
2	10.00	5.6	2.6	4.2	0.420	0.857	0.116	0.113	0.021	0.020
3	30.00	7.3	3.3	6.8	0.436	0.900	0.085	0.084	0.015	0.015
4	47.50	8.4	3.3	7.1	0.470	0.902	0.095	0.095	0.018	0.018
5	50.00	8.5	3.3	7.4	0.468	0.908	0.091	0.091	0.017	0.017
6	52.50	8.6	3.3	8.7	0.483	0.872	0.131	0.131	0.024	0.024
7	55.00	8.7	3.2	9.6	0.508	0.844	0.163	0.163	0.030	0.030
8	57.50	8.8	3.2	10.2	0.507	0.851	0.158	0.158	0.029	0.029
9	70.00	9.3	3.2	12.1	0.490	0.908	0.110	0.110	0.020	0.020
10	90.00	9.3	2.5	12.5	0.470	0.951	0.081	0.081	0.014	0.014
11	95.00	9.4	2.4	12.9	0.474	0.955	0.081	0.081	0.013	0.013

TABLE X. - Continued.

(f) 70 Percent of design speed; reading 1281

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.0	46.6	68.8	54.4	288.5	1.125	10.11	1.380
2	23.906	23.383	-0.0	44.2	67.8	51.3	288.4	1.121	10.12	1.391
3	21.656	21.433	0.0	44.1	64.4	47.1	288.2	1.110	10.13	1.376
4	19.591	19.726	-0.0	45.5	61.9	38.1	288.0	1.111	10.13	1.388
5	19.289	19.482	0.0	45.3	61.5	37.0	287.9	1.110	10.14	1.389
6	18.984	19.238	0.0	46.8	61.2	36.3	288.0	1.111	10.14	1.382
7	18.677	18.994	0.0	47.9	60.8	35.9	288.1	1.111	10.14	1.369
8	18.367	18.750	0.0	48.4	60.5	35.1	287.9	1.110	10.14	1.364
9	16.777	17.531	0.0	48.0	58.8	26.1	288.1	1.108	10.14	1.390
10	14.079	15.580	0.0	52.1	55.5	4.7	288.0	1.115	10.14	1.443
11	13.383	15.093	0.0	54.1	54.7	-1.1	288.1	1.118	10.13	1.453

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	112.3	167.8	310.8	198.1	112.3	115.3	0.0	121.9	289.8	285.0
2	115.8	174.1	306.1	199.7	115.8	124.9	-0.0	121.4	283.4	277.2
3	123.3	173.2	285.1	182.9	123.3	124.5	0.0	120.4	257.0	254.4
4	124.1	185.4	263.5	165.0	124.1	129.9	-0.0	132.3	232.5	234.1
5	124.1	186.0	260.2	163.9	124.1	130.8	0.0	132.3	228.7	231.0
6	124.1	185.6	257.5	157.9	124.1	127.1	0.0	135.2	225.7	228.7
7	123.8	183.7	253.8	152.1	123.8	123.2	0.0	136.2	221.6	225.3
8	123.5	183.2	250.5	148.5	123.5	121.5	0.0	137.1	217.9	222.5
9	120.5	194.4	232.9	145.0	120.5	130.2	0.0	144.4	199.3	208.2
10	114.7	220.4	202.7	135.9	114.7	135.4	0.0	173.9	167.1	184.9
11	112.3	223.9	194.4	131.1	112.3	131.1	0.0	181.5	158.7	179.0

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.334	0.475	0.923	0.561	0.334	0.326	1.027	1.324
2	0.344	0.495	0.910	0.567	0.344	0.355	1.078	1.316
3	0.367	0.495	0.849	0.522	0.367	0.356	1.009	1.292
4	0.370	0.531	0.785	0.473	0.370	0.372	1.047	1.259
5	0.370	0.534	0.775	0.470	0.370	0.375	1.054	1.247
6	0.370	0.532	0.767	0.453	0.370	0.364	1.025	1.238
7	0.369	0.526	0.756	0.436	0.369	0.353	0.995	1.222
8	0.368	0.525	0.746	0.426	0.368	0.348	0.984	1.210
9	0.359	0.559	0.693	0.417	0.359	0.375	1.080	1.143
10	0.341	0.638	0.603	0.393	0.341	0.392	1.181	0.984
11	0.334	0.648	0.578	0.380	0.334	0.379	1.168	0.937

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	6.6	3.8	6.0	0.474	0.769	0.202	0.197	0.034	0.033
2	10.00	7.0	4.0	4.5	0.459	0.819	0.157	0.154	0.028	0.027
3	30.00	8.7	4.6	7.2	0.467	0.869	0.118	0.117	0.021	0.021
4	47.50	9.9	4.8	6.9	0.493	0.887	0.117	0.117	0.022	0.022
5	50.00	9.9	4.8	7.4	0.489	0.891	0.115	0.115	0.021	0.021
6	52.50	10.1	4.8	8.4	0.508	0.874	0.136	0.136	0.025	0.025
7	55.00	10.1	4.7	9.6	0.523	0.844	0.171	0.171	0.031	0.031
8	57.50	10.3	4.7	10.6	0.530	0.845	0.173	0.173	0.031	0.031
9	70.00	10.8	4.6	11.7	0.506	0.910	0.114	0.114	0.021	0.021
10	90.00	10.8	4.0	12.3	0.483	0.961	0.067	0.067	0.011	0.011
11	95.00	10.9	3.9	13.7	0.485	0.953	0.088	0.088	0.014	0.014

TABLE X. - Continued.

(g) 70 Percent of design speed; reading 1282

RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
24.442	23.871	0.0	54.3	70.6	55.8	288.5	1.135	10.10	1.379
23.906	23.383	0.0	49.5	69.4	52.6	288.4	1.130	10.13	1.384
21.656	21.433	-0.0	47.6	66.2	47.1	288.1	1.116	10.13	1.380
19.591	19.726	0.	47.1	63.6	38.0	288.1	1.114	10.13	1.396
19.289	19.482	0.0	47.5	63.3	37.8	288.1	1.113	10.14	1.388
18.984	19.238	0.0	48.2	62.9	37.9	288.1	1.111	10.13	1.376
18.677	18.994	0.0	50.0	62.6	37.2	287.9	1.111	10.13	1.366
18.367	18.750	0.0	50.6	62.2	36.4	287.9	1.110	10.14	1.360
16.777	17.531	0.	49.8	60.5	26.6	288.0	1.110	10.14	1.393
14.079	15.580	-0.0	52.9	57.2	4.6	288.0	1.116	10.14	1.450
13.383	15.093	-0.0	55.0	56.3	-0.7	288.1	1.119	10.13	1.454

ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
102.0	169.0	306.7	175.6	102.0	98.7	0.0	137.2	289.2	282.5
106.0	171.8	301.8	183.7	106.0	111.7	0.0	130.5	282.6	276.4
112.8	173.0	279.7	171.5	112.8	116.8	-0.0	127.7	255.9	253.3
114.7	184.4	258.3	159.3	114.7	125.5	0.	135.0	231.5	233.1
114.7	182.7	255.4	156.3	114.7	123.5	0.0	134.7	228.2	230.4
114.7	180.1	252.2	152.0	114.7	120.0	0.0	134.3	224.6	227.6
114.5	179.1	248.6	144.5	114.5	115.2	0.0	137.1	220.7	224.4
114.1	178.6	245.0	140.7	114.1	113.3	0.0	138.0	216.9	221.4
112.6	191.4	228.7	138.1	112.6	123.5	0.	146.3	199.0	208.0
107.6	218.2	198.6	131.9	107.6	131.5	-0.0	174.1	166.9	184.7
105.9	220.3	190.8	126.4	105.9	126.4	-0.0	180.4	158.7	179.0

ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
0.302	0.476	0.909	0.495	0.302	0.278	0.968	1.359
0.314	0.486	0.895	0.520	0.314	0.316	1.054	1.347
0.335	0.493	0.831	0.489	0.335	0.333	1.035	1.317
0.341	0.527	0.768	0.456	0.341	0.359	1.095	1.276
0.341	0.523	0.759	0.447	0.341	0.353	1.077	1.267
0.341	0.515	0.750	0.435	0.341	0.343	1.046	1.254
0.341	0.512	0.739	0.414	0.341	0.330	1.005	1.239
0.339	0.511	0.729	0.403	0.339	0.325	0.993	1.226
0.335	0.550	0.680	0.397	0.335	0.355	1.097	1.159
0.320	0.631	0.590	0.382	0.320	0.380	1.222	0.996
0.314	0.636	0.566	0.365	0.314	0.365	1.193	0.948

PERCENT SPAN.	INCIDENCE		DEV.	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	MEAN	SS				TOT	PROF	TOT	PROF
5.00	8.4	5.6	7.4	0.555	0.711	0.273	0.267	0.044	0.043
10.00	8.7	5.7	5.8	0.512	0.747	0.238	0.234	0.041	0.040
30.00	10.5	6.5	7.2	0.504	0.831	0.163	0.162	0.029	0.029
47.50	11.6	6.6	6.8	0.507	0.875	0.137	0.137	0.025	0.025
50.00	11.7	6.6	8.2	0.512	0.867	0.148	0.148	0.027	0.027
52.50	11.8	6.5	9.9	0.520	0.858	0.158	0.158	0.029	0.029
55.00	11.9	6.5	10.9	0.544	0.843	0.177	0.177	0.032	0.032
57.50	12.1	6.5	11.9	0.552	0.838	0.186	0.186	0.033	0.033
70.00	12.5	6.3	12.1	0.529	0.898	0.134	0.134	0.024	0.024
90.00	12.5	5.6	12.3	0.492	0.969	0.056	0.056	0.009	0.009
95.00	12.4	5.5	14.1	0.499	0.947	0.105	0.105	0.017	0.017



TABLE X. - Continued.

(h) 80 Percent of design speed; reading 1283

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.0	52.4	70.3	55.4	289.2	1.172	10.09	1.530
2	23.906	23.383	0.0	49.0	69.1	51.9	288.8	1.169	10.12	1.542
3	21.656	21.433	0.0	48.7	65.6	47.2	288.0	1.154	10.13	1.518
4	19.591	19.726	0.0	49.3	63.2	38.2	288.0	1.152	10.14	1.533
5	19.289	19.482	-0.0	49.4	62.8	38.1	287.7	1.150	10.14	1.524
6	18.984	19.238	0.0	50.4	62.4	38.1	287.6	1.147	10.14	1.505
7	18.677	18.994	0.0	51.4	62.1	37.1	288.1	1.148	10.14	1.500
8	18.367	18.750	0.0	51.9	61.7	36.0	287.8	1.147	10.14	1.496
9	16.777	17.531	0.0	50.5	60.0	27.1	287.8	1.144	10.14	1.527
10	14.079	15.580	0.0	53.9	56.6	4.8	287.9	1.151	10.14	1.605
11	13.383	15.093	0.0	55.5	56.0	-0.7	287.9	1.154	10.13	1.614

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	118.4	192.3	350.9	206.7	118.4	117.3	0.0	152.4	330.4	322.6
2	123.3	198.2	345.2	210.8	123.3	130.1	0.0	149.5	322.4	315.3
3	132.8	197.9	321.3	192.2	132.8	130.7	0.0	148.6	292.6	289.6
4	133.9	209.6	296.6	174.0	133.9	136.7	0.0	158.9	264.6	266.5
5	134.1	207.5	293.2	171.5	134.1	135.0	-0.0	157.5	260.8	263.4
6	133.7	204.3	288.8	165.5	133.7	130.3	0.0	157.4	256.1	259.5
7	133.7	204.5	285.4	160.0	133.7	127.6	0.0	159.8	252.1	256.4
8	133.2	204.8	281.4	156.4	133.2	126.5	0.0	161.0	247.9	253.0
9	130.9	215.7	261.6	154.1	130.9	137.2	0.0	166.5	226.5	236.7
10	125.2	245.4	227.6	145.1	125.2	144.6	0.0	198.3	190.1	210.4
11	121.9	249.7	218.1	141.5	121.9	141.5	0.0	205.7	180.8	203.9

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.352	0.536	1.042	0.576	0.352	0.327	0.990	1.498
2	0.367	0.554	1.027	0.590	0.367	0.364	1.055	1.498
3	0.397	0.558	0.959	0.542	0.397	0.368	0.984	1.499
4	0.400	0.594	0.886	0.493	0.400	0.388	1.021	1.457
5	0.401	0.588	0.876	0.486	0.401	0.383	1.007	1.446
6	0.399	0.580	0.863	0.469	0.399	0.370	0.975	1.428
7	0.399	0.580	0.852	0.454	0.399	0.362	0.954	1.413
8	0.398	0.581	0.841	0.444	0.398	0.359	0.949	1.400
9	0.391	0.615	0.781	0.439	0.391	0.391	1.048	1.318
10	0.373	0.705	0.679	0.417	0.373	0.416	1.155	1.133
11	0.363	0.717	0.649	0.407	0.363	0.407	1.161	1.082

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	8.1	5.3	7.1	0.535	0.752	0.238	0.206	0.039	0.034
2	10.00	8.3	5.3	5.1	0.510	0.780	0.215	0.185	0.037	0.032
3	30.00	9.9	5.8	7.3	0.521	0.822	0.179	0.156	0.032	0.027
4	47.50	11.1	6.1	7.0	0.540	0.855	0.164	0.152	0.030	0.028
5	50.00	11.2	6.0	8.5	0.541	0.852	0.169	0.159	0.031	0.029
6	52.50	11.3	6.0	10.1	0.553	0.842	0.182	0.174	0.033	0.031
7	55.00	11.4	6.0	10.9	0.567	0.832	0.198	0.192	0.036	0.035
8	57.50	11.5	6.0	11.6	0.573	0.830	0.203	0.199	0.037	0.036
9	70.00	11.9	5.8	12.7	0.543	0.896	0.139	0.138	0.025	0.025
10	90.00	11.9	5.1	12.4	0.518	0.959	0.074	0.074	0.013	0.013
11	95.00	12.2	5.2	14.1	0.512	0.950	0.099	0.099	0.016	0.016

TABLE X. - Continued.

(i) 90 Percent of design speed; reading 1284

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	-0.0	45.5	65.2	52.2	288.7	1.203	10.08	1.709
2	23.906	23.383	0.	42.2	63.9	50.5	288.7	1.189	10.12	1.697
3	21.656	21.433	0.	42.7	60.1	44.7	288.1	1.180	10.13	1.685
4	19.591	19.726	0.0	45.1	57.1	35.3	288.0	1.182	10.14	1.686
5	19.289	19.482	-0.0	46.7	56.7	34.7	287.7	1.181	10.14	1.661
6	18.984	19.238	0.0	48.0	56.3	33.8	288.1	1.183	10.14	1.643
7	18.677	18.994	0.0	48.4	55.9	33.1	287.8	1.181	10.14	1.629
8	18.367	18.750	-0.0	47.5	55.6	31.7	288.3	1.179	10.14	1.637
9	16.777	17.531	0.	47.1	53.9	23.6	287.9	1.173	10.15	1.684
10	14.079	15.580	0.0	52.2	50.5	3.3	287.9	1.185	10.14	1.761
11	13.383	15.093	0.0	55.0	49.8	-4.3	287.9	1.193	10.13	1.793

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	171.9	224.4	409.3	256.6	171.9	157.3	-0.0	160.1	371.5	362.8
2	177.8	226.4	404.8	264.0	177.8	167.8	0.	151.9	363.7	355.7
3	189.6	231.8	380.0	239.6	189.6	170.2	0.	157.3	329.3	325.9
4	192.6	248.4	354.8	214.6	192.6	175.2	0.0	176.1	297.9	300.0
5	192.2	245.9	350.4	205.2	192.2	168.6	-0.0	179.0	293.0	295.9
6	192.2	245.6	346.7	197.9	192.2	164.5	0.0	182.4	288.5	292.4
7	191.5	244.2	341.9	193.5	191.5	162.2	0.0	182.6	283.3	288.1
8	191.2	246.5	338.0	195.6	191.2	166.5	-0.0	181.8	278.8	284.6
9	186.2	258.7	315.7	192.1	186.2	176.1	0.	189.6	255.0	266.4
10	175.9	286.5	276.8	175.8	175.9	175.5	0.0	226.5	213.7	236.5
11	171.6	295.7	266.1	170.2	171.6	169.7	0.0	242.1	203.3	229.2

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.518	0.624	1.234	0.713	0.518	0.437	0.915	1.459
2	0.537	0.633	1.222	0.739	0.537	0.470	0.944	1.456
3	0.575	0.653	1.153	0.676	0.575	0.480	0.898	1.459
4	0.585	0.704	1.078	0.608	0.585	0.497	0.910	1.473
5	0.584	0.697	1.065	0.582	0.584	0.478	0.877	1.470
6	0.584	0.695	1.053	0.560	0.584	0.465	0.856	1.466
7	0.582	0.692	1.039	0.548	0.582	0.459	0.847	1.463
8	0.580	0.699	1.026	0.555	0.580	0.472	0.871	1.462
9	0.565	0.740	0.957	0.549	0.565	0.504	0.946	1.417
10	0.532	0.825	0.837	0.506	0.532	0.505	0.998	1.224
11	0.518	0.852	0.803	0.490	0.518	0.489	0.989	1.169

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	2.9	0.2	3.8	0.485	0.817	0.166	0.117	0.029	0.021	
2	10.00	3.2	0.2	3.8	0.453	0.861	0.122	0.076	0.022	0.014	
3	30.00	4.4	0.3	4.9	0.476	0.895	0.097	0.058	0.018	0.011	
4	47.50	5.1	0.0	4.1	0.513	0.886	0.117	0.085	0.023	0.016	
5	50.00	5.2	-0.0	5.1	0.534	0.859	0.145	0.115	0.028	0.022	
6	52.50	5.2	-0.1	5.8	0.551	0.832	0.178	0.149	0.034	0.028	
7	55.00	5.3	-0.1	6.8	0.556	0.825	0.186	0.159	0.035	0.030	
8	57.50	5.4	-0.2	7.2	0.542	0.846	0.166	0.141	0.031	0.027	
9	70.00	5.8	-0.3	9.2	0.516	0.929	0.084	0.071	0.016	0.013	
10	90.00	5.8	-1.0	11.0	0.511	0.947	0.083	0.083	0.014	0.014	
11	95.00	6.0	-1.0	10.5	0.516	0.941	0.101	0.101	0.016	0.016	

TABLE X. - Continued.

(j) 90 Percent of design speed; reading 1285.

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.0	45.3	65.2	52.4	288.5	1.206	10.08	1.710
2	23.906	23.383	0.0	41.7	64.0	50.8	288.3	1.189	10.12	1.694
3	21.656	21.433	-0.0	43.2	60.1	44.7	288.2	1.179	10.13	1.685
4	19.591	19.726	-0.0	45.5	57.2	35.5	288.0	1.182	10.14	1.688
5	19.289	19.482	0.0	46.1	56.8	35.0	288.1	1.183	10.14	1.669
6	18.984	19.238	0.	47.7	56.4	34.1	288.4	1.184	10.14	1.652
7	18.677	18.994	-0.0	48.8	56.0	33.5	287.9	1.182	10.14	1.637
8	18.367	18.750	0.0	47.8	55.6	32.5	288.2	1.180	10.14	1.640
9	16.777	17.531	0.0	47.1	53.9	24.6	288.0	1.175	10.15	1.685
10	14.079	15.580	0.0	52.4	50.6	3.9	288.0	1.186	10.15	1.767
11	13.383	15.093	-0.0	55.2	49.9	-3.4	288.0	1.193	10.12	1.792

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	171.6	223.5	409.3	257.6	171.6	157.3	0.0	158.8	371.6	362.9
2	177.2	224.6	404.0	265.4	177.2	167.7	0.0	149.4	363.1	355.1
3	189.2	231.6	379.8	237.6	189.2	168.8	-0.0	158.6	329.3	325.9
4	191.9	247.1	354.3	212.9	191.9	173.3	-0.0	176.2	297.9	299.9
5	192.0	245.2	350.3	207.5	192.0	169.9	0.0	176.8	293.0	295.9
6	192.2	244.7	346.8	199.0	192.2	164.7	0.	180.9	288.7	292.6
7	191.5	243.1	342.5	192.2	191.5	160.3	-0.0	182.8	284.0	288.8
8	191.0	244.0	338.3	194.3	191.0	163.9	0.0	180.7	279.2	285.1
9	185.9	255.6	315.8	191.3	185.9	174.0	0.0	187.2	255.3	266.7
10	175.8	283.8	276.9	173.5	175.8	173.1	0.0	224.8	214.0	236.8
11	171.2	291.6	265.8	166.9	171.2	166.6	-0.0	239.4	203.4	229.4

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.517	0.621	1.234	0.715	0.517	0.437	0.916	1.461
2	0.535	0.628	1.220	0.743	0.535	0.469	0.946	1.455
3	0.574	0.653	1.152	0.670	0.574	0.476	0.892	1.460
4	0.583	0.700	1.076	0.603	0.583	0.491	0.903	1.475
5	0.583	0.694	1.064	0.587	0.583	0.481	0.885	1.470
6	0.583	0.691	1.053	0.562	0.583	0.465	0.857	1.467
7	0.582	0.688	1.041	0.544	0.582	0.453	0.837	1.466
8	0.580	0.691	1.027	0.550	0.580	0.464	0.858	1.465
9	0.564	0.729	0.957	0.546	0.564	0.496	0.936	1.419
10	0.531	0.815	0.837	0.499	0.531	0.497	0.985	1.226
11	0.516	0.838	0.802	0.480	0.516	0.479	0.973	1.170

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	2.9	0.2	4.0	0.481	0.806	0.178	0.129	0.031	0.023
2	10.00	3.2	0.2	4.0	0.446	0.858	0.125	0.078	0.022	0.014
3	30.00	4.4	0.4	4.9	0.482	0.897	0.095	0.056	0.017	0.010
4	47.50	5.2	0.1	4.4	0.517	0.887	0.116	0.084	0.022	0.016
5	50.00	5.2	0.0	5.4	0.526	0.863	0.143	0.113	0.027	0.022
6	52.50	5.2	-0.1	6.2	0.547	0.837	0.173	0.144	0.033	0.027
7	55.00	5.4	-0.1	7.2	0.561	0.830	0.182	0.155	0.034	0.029
8	57.50	5.4	-0.1	8.0	0.546	0.845	0.167	0.142	0.031	0.027
9	70.00	5.9	-0.3	10.1	0.518	0.922	0.093	0.079	0.017	0.015
10	90.00	5.9	-1.0	11.6	0.518	0.948	0.081	0.081	0.014	0.014
11	95.00	6.1	-0.9	11.4	0.526	0.938	0.107	0.107	0.017	0.017

TABLE X. - Continued.

(k) 90 Percent of design speed; reading 1286

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.0	46.9	65.9	52.8	288.7	1.214	10.07	1.734
2	23.906	23.383	0.0	44.2	64.7	51.0	288.7	1.198	10.11	1.721
3	21.656	21.433	0.0	44.6	60.9	45.1	288.1	1.184	10.14	1.705
4	19.591	19.726	0.0	45.5	58.0	36.4	288.0	1.184	10.14	1.710
5	19.289	19.482	-0.0	46.6	57.6	35.6	288.1	1.185	10.15	1.698
6	18.984	19.238	0.0	48.4	57.2	35.0	287.8	1.186	10.14	1.673
7	18.677	18.994	0.0	49.1	56.8	34.0	288.1	1.186	10.15	1.667
8	18.367	18.750	0.	48.1	56.5	33.2	287.9	1.182	10.14	1.669
9	16.777	17.531	0.0	48.0	54.8	25.5	287.9	1.177	10.15	1.698
10	14.079	15.580	0.0	53.3	51.6	5.2	287.9	1.187	10.15	1.769
11	13.383	15.093	0.0	55.7	50.9	-2.3	287.9	1.194	10.12	1.802

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	166.0	222.6	406.7	251.2	166.0	152.1	0.0	162.6	371.3	362.6
2	172.0	224.7	402.0	255.8	172.0	161.1	0.0	156.7	363.3	355.4
3	183.4	229.9	376.7	232.1	183.4	163.8	0.0	161.3	329.0	325.6
4	186.2	243.4	350.8	211.9	186.2	170.5	0.0	173.7	297.4	299.4
5	186.2	242.7	347.1	205.3	186.2	166.9	-0.0	176.2	292.9	295.8
6	185.6	240.7	342.7	195.2	185.6	159.8	0.0	180.0	288.1	292.0
7	185.5	241.0	338.8	190.3	185.5	157.8	0.0	182.1	283.6	288.4
8	185.0	241.2	334.8	192.5	185.0	161.1	0.	179.5	279.0	284.9
9	179.4	250.2	311.4	185.6	179.4	167.5	0.0	185.9	254.5	266.0
10	169.5	276.5	272.9	165.8	169.5	165.2	0.0	221.7	213.9	236.7
11	165.2	285.3	261.8	160.9	165.2	160.7	0.0	235.7	203.2	229.2

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.499	0.615	1.224	0.694	0.499	0.420	0.916	1.476
2	0.518	0.626	1.212	0.713	0.518	0.449	0.937	1.471
3	0.555	0.646	1.141	0.652	0.555	0.461	0.893	1.477
4	0.564	0.688	1.064	0.599	0.564	0.482	0.916	1.493
5	0.565	0.685	1.052	0.580	0.565	0.471	0.896	1.491
6	0.563	0.679	1.039	0.551	0.563	0.451	0.861	1.490
7	0.562	0.680	1.027	0.537	0.562	0.445	0.851	1.488
8	0.561	0.682	1.015	0.544	0.561	0.455	0.871	1.489
9	0.543	0.712	0.942	0.528	0.543	0.476	0.933	1.425
10	0.511	0.791	0.823	0.475	0.511	0.473	0.975	1.234
11	0.497	0.817	0.789	0.461	0.497	0.460	0.973	1.177

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	3.6	0.9	4.4	0.496	0.794	0.196	0.146	0.034	0.025	
2	10.00	3.9	0.9	4.2	0.473	0.848	0.139	0.092	0.025	0.016	
3	30.00	5.2	1.1	5.2	0.494	0.893	0.101	0.061	0.018	0.011	
4	47.50	5.9	0.9	5.2	0.514	0.901	0.104	0.071	0.020	0.014	
5	50.00	6.0	0.8	6.0	0.527	0.883	0.125	0.093	0.024	0.018	
6	52.50	6.1	0.8	7.1	0.552	0.851	0.162	0.132	0.030	0.025	
7	55.00	6.2	0.7	7.7	0.561	0.844	0.172	0.144	0.032	0.027	
8	57.50	6.3	0.7	8.7	0.546	0.864	0.151	0.124	0.028	0.023	
9	70.00	6.8	0.6	11.1	0.528	0.923	0.094	0.081	0.017	0.015	
10	90.00	6.9	0.0	12.8	0.537	0.946	0.088	0.088	0.015	0.015	
11	95.00	7.1	0.1	12.5	0.539	0.946	0.095	0.095	0.015	0.015	

TABLE X. - Continued.

(L) 90 Percent of design speed; reading 1287

RP	RADI		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.0	49.7	66.7	52.9	288.8	1.224	10.08	1.750
2	23.906	23.383	0.0	46.4	65.5	50.8	288.9	1.208	10.11	1.746
3	21.656	21.433	0.0	46.1	61.8	45.4	288.0	1.191	10.13	1.723
4	19.591	19.726	0.0	47.0	58.9	36.8	287.9	1.188	10.14	1.725
5	19.289	19.482	0.0	48.1	58.5	36.2	287.8	1.187	10.14	1.710
6	18.984	19.238	0.0	49.1	58.1	35.4	288.0	1.189	10.15	1.695
7	18.677	18.994	0.0	49.9	57.8	34.3	287.5	1.188	10.15	1.688
8	18.367	18.750	0.0	49.1	57.4	33.2	288.1	1.186	10.15	1.692
9	16.777	17.531	0.0	49.1	55.7	26.6	287.9	1.178	10.15	1.699
10	14.079	15.580	0.0	54.1	52.7	5.6	287.8	1.188	10.15	1.775
11	13.383	15.093	0.0	56.4	51.9	-1.0	288.0	1.194	10.12	1.791

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	159.9	224.0	403.9	240.0	159.9	144.9	0.0	170.8	370.9	362.2
2	165.5	226.1	398.9	246.7	165.5	155.8	0.0	163.8	363.0	355.1
3	176.7	228.8	373.4	226.0	176.7	158.8	0.0	164.8	329.0	325.6
4	179.8	241.6	347.9	205.8	179.8	164.8	0.0	176.7	297.9	299.9
5	179.6	240.0	343.6	198.7	179.6	160.4	0.0	178.6	293.0	295.9
6	179.5	239.2	339.6	192.3	179.5	156.7	0.0	180.7	288.3	292.1
7	178.6	239.4	335.0	186.6	178.6	154.2	0.0	183.1	283.4	288.2
8	178.7	240.7	331.4	188.4	178.7	157.7	0.0	181.8	279.1	284.9
9	173.4	245.6	308.0	179.9	173.4	160.9	0.0	185.5	254.6	266.0
10	163.1	272.8	268.9	160.7	163.1	159.9	0.0	221.0	213.8	236.5
11	159.2	278.1	257.9	153.9	159.2	153.9	0.0	231.6	202.9	228.8

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.480	0.616	1.213	0.661	0.480	0.399	0.906	1.493
2	0.498	0.627	1.200	0.684	0.498	0.432	0.942	1.489
3	0.534	0.641	1.129	0.633	0.534	0.445	0.899	1.498
4	0.544	0.681	1.053	0.580	0.544	0.465	0.917	1.519
5	0.543	0.677	1.040	0.560	0.543	0.452	0.893	1.517
6	0.543	0.673	1.027	0.541	0.543	0.441	0.873	1.515
7	0.541	0.675	1.014	0.526	0.541	0.435	0.863	1.516
8	0.540	0.679	1.002	0.531	0.540	0.445	0.882	1.517
9	0.524	0.697	0.930	0.510	0.524	0.456	0.928	1.436
10	0.491	0.780	0.809	0.459	0.491	0.457	0.981	1.243
11	0.479	0.794	0.775	0.439	0.479	0.439	0.967	1.183

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	4.4	1.7	4.5	0.526	0.773	0.226	0.174	0.039	0.030
2	10.00	4.7	1.7	4.1	0.496	0.831	0.162	0.113	0.029	0.020
3	30.00	6.1	2.0	5.5	0.508	0.882	0.116	0.074	0.021	0.014
4	47.50	6.8	1.8	5.6	0.529	0.898	0.110	0.074	0.021	0.014
5	50.00	6.9	1.7	6.6	0.543	0.884	0.128	0.093	0.024	0.018
6	52.50	7.0	1.7	7.5	0.557	0.860	0.156	0.124	0.029	0.023
7	55.00	7.1	1.7	8.0	0.567	0.859	0.160	0.129	0.030	0.024
8	57.50	7.2	1.6	8.7	0.555	0.869	0.151	0.121	0.028	0.022
9	70.00	7.7	1.6	12.2	0.541	0.918	0.103	0.089	0.019	0.016
10	90.00	7.9	1.1	13.2	0.549	0.949	0.084	0.084	0.014	0.014
11	95.00	8.1	1.1	13.8	0.556	0.933	0.122	0.122	0.020	0.020

TABLE X. - Continued.

(m) 90 Percent of design speed; reading 1288

RP	RAD II		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.0	52.2	67.9	54.3	288.9	1.226	10.07	1.751
2	23.906	23.383	0.0	48.8	66.6	50.8	288.9	1.217	10.11	1.771
3	21.656	21.433	-0.0	47.8	62.9	45.9	288.0	1.196	10.13	1.733
4	19.591	19.726	0.0	48.1	60.0	37.5	287.9	1.190	10.14	1.738
5	19.289	19.482	0.	48.7	59.7	36.9	287.7	1.190	10.14	1.728
6	18.984	19.238	0.0	49.8	59.3	36.4	288.1	1.191	10.15	1.712
7	18.677	18.994	0.0	50.7	58.9	35.0	287.7	1.192	10.15	1.707
8	18.367	18.750	0.0	50.4	58.5	33.8	287.9	1.190	10.15	1.706
9	16.777	17.531	0.0	50.4	56.9	27.4	287.8	1.182	10.15	1.710
10	14.079	15.580	0.0	55.0	53.9	5.7	287.8	1.190	10.15	1.788
11	13.383	15.093	0.0	56.7	53.2	0.2	288.1	1.196	10.13	1.801

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	151.0	220.6	400.6	231.5	151.0	135.1	0.0	174.4	371.1	362.4
2	157.4	227.7	395.9	237.3	157.4	149.9	0.0	171.3	363.3	355.3
3	168.3	227.1	369.5	219.2	168.3	152.6	-0.0	168.2	329.0	325.6
4	171.8	238.8	343.9	200.8	171.8	159.3	0.0	177.8	298.0	300.0
5	171.6	237.4	339.6	195.9	171.6	156.7	0.	178.4	293.0	296.0
6	171.7	236.3	336.1	189.4	171.7	152.5	0.0	180.5	288.9	292.7
7	171.3	237.2	331.6	183.4	171.3	150.2	0.0	183.6	284.0	288.8
8	170.9	238.1	327.5	182.6	170.9	151.7	0.0	183.5	279.3	285.1
9	166.2	242.1	304.6	173.9	166.2	154.3	0.0	186.6	255.3	266.8
10	155.8	270.1	264.6	155.9	155.8	155.1	0.0	221.1	213.9	236.7
11	152.2	274.3	254.2	150.5	152.2	150.5	0.0	229.3	203.7	229.7

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.452	0.606	1.200	0.636	0.452	0.371	0.895	1.522
2	0.472	0.629	1.187	0.656	0.472	0.414	0.953	1.516
3	0.507	0.634	1.114	0.612	0.507	0.426	0.906	1.527
4	0.518	0.672	1.038	0.565	0.518	0.448	0.927	1.551
5	0.518	0.668	1.025	0.551	0.518	0.441	0.913	1.550
6	0.518	0.664	1.014	0.532	0.518	0.428	0.888	1.551
7	0.517	0.667	1.001	0.516	0.517	0.422	0.877	1.552
8	0.516	0.670	0.988	0.514	0.516	0.427	0.887	1.538
9	0.501	0.685	0.918	0.492	0.501	0.436	0.928	1.454
10	0.468	0.770	0.795	0.444	0.468	0.442	0.995	1.254
11	0.456	0.781	0.763	0.429	0.456	0.429	0.989	1.199

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	5.6	2.9	5.9	0.546	0.767	0.235	0.179	0.040	0.030
2	10.00	5.8	2.8	4.1	0.521	0.817	0.183	0.131	0.033	0.023
3	30.00	7.2	3.2	6.0	0.524	0.868	0.135	0.090	0.024	0.016
4	47.50	8.0	2.9	6.3	0.539	0.899	0.113	0.073	0.021	0.014
5	50.00	8.1	2.9	7.3	0.546	0.892	0.122	0.084	0.023	0.016
6	52.50	8.2	2.9	8.4	0.561	0.867	0.154	0.117	0.028	0.022
7	55.00	8.3	2.8	8.8	0.573	0.858	0.167	0.131	0.031	0.024
8	57.50	8.3	2.8	9.4	0.568	0.867	0.159	0.127	0.029	0.024
9	70.00	8.9	2.7	13.0	0.557	0.908	0.120	0.106	0.022	0.019
10	90.00	9.2	2.3	13.4	0.560	0.950	0.086	0.086	0.015	0.015
11	95.00	9.4	2.4	15.0	0.562	0.935	0.122	0.122	0.020	0.020

TABLE X. - Concluded.

(n) 100 Percent of design speed; reading 1289

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	24.442	23.871	0.0	49.5	65.1	54.7	288.7	1.257	10.05	1.842
2	23.906	23.383	0.0	44.4	63.7	52.0	288.6	1.239	10.13	1.863
3	21.656	21.433	0.0	45.2	60.0	45.5	288.1	1.227	10.13	1.864
4	19.591	19.726	0.0	47.9	56.9	36.3	288.0	1.228	10.15	1.846
5	19.289	19.482	0.0	49.9	56.5	36.6	287.8	1.227	10.14	1.796
6	18.984	19.238	0.0	51.3	56.0	36.2	288.3	1.228	10.15	1.768
7	18.677	18.994	0.0	51.9	55.6	35.1	287.9	1.226	10.14	1.761
8	18.367	18.750	0.0	51.1	55.2	33.2	287.9	1.224	10.15	1.779
9	16.777	17.531	0.0	48.7	53.5	24.0	287.9	1.217	10.15	1.879
10	14.079	15.580	0.0	53.5	50.0	6.5	287.8	1.226	10.15	1.937
11	13.383	15.093	0.0	55.6	49.3	0.2	287.9	1.231	10.12	1.957

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	191.1	240.2	454.5	269.7	191.1	156.0	0.0	182.7	412.4	402.7
2	199.1	244.5	449.7	283.6	199.1	174.7	0.0	171.0	403.2	394.4
3	211.3	253.6	422.3	255.2	211.3	178.8	0.0	179.8	365.7	361.9
4	215.7	269.7	394.6	224.1	215.7	180.7	0.0	200.2	330.5	332.8
5	215.6	264.3	390.2	212.1	215.6	170.3	0.0	202.1	325.2	328.4
6	215.7	262.2	386.1	203.3	215.7	164.1	0.0	204.5	320.2	324.5
7	215.1	262.3	381.1	197.7	215.1	161.8	0.0	206.4	314.6	320.0
8	214.9	265.9	377.0	199.3	214.9	166.8	0.0	207.1	309.8	316.2
9	209.7	283.0	352.1	204.5	209.7	186.8	0.0	212.5	282.9	295.7
10	199.4	301.3	309.9	180.5	199.4	179.4	0.0	242.1	237.3	262.6
11	194.1	307.3	297.5	173.4	194.1	173.4	0.0	253.6	225.5	254.3

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.580	0.655	1.378	0.736	0.580	0.426	0.816	1.592
2	0.606	0.673	1.368	0.781	0.606	0.481	0.878	1.582
3	0.646	0.705	1.292	0.710	0.646	0.497	0.846	1.575
4	0.661	0.755	1.210	0.627	0.661	0.506	0.838	1.561
5	0.661	0.739	1.196	0.593	0.661	0.476	0.790	1.554
6	0.661	0.732	1.183	0.567	0.661	0.458	0.761	1.545
7	0.659	0.733	1.168	0.553	0.659	0.452	0.752	1.537
8	0.659	0.745	1.155	0.558	0.659	0.467	0.776	1.530
9	0.641	0.801	1.077	0.579	0.641	0.529	0.891	1.498
10	0.607	0.857	0.944	0.513	0.607	0.510	0.900	1.363
11	0.590	0.874	0.905	0.493	0.590	0.493	0.893	1.300

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00		2.9	0.1	6.3	0.521	0.741	0.248	0.151	0.041	0.025
2	10.00		2.9	-0.1	5.2	0.476	0.813	0.174	0.081	0.030	0.014
3	30.00		4.3	0.2	5.6	0.505	0.857	0.139	0.060	0.025	0.011
4	47.50		4.8	-0.2	5.1	0.553	0.838	0.172	0.108	0.033	0.020
5	50.00		4.9	-0.3	7.0	0.578	0.801	0.213	0.151	0.040	0.028
6	52.50		4.9	-0.4	8.2	0.596	0.777	0.241	0.184	0.045	0.034
7	55.00		5.0	-0.4	8.8	0.605	0.777	0.243	0.190	0.045	0.035
8	57.50		5.1	-0.5	8.7	0.595	0.800	0.222	0.171	0.041	0.032
9	70.00		5.4	-0.7	9.6	0.545	0.912	0.108	0.072	0.020	0.013
10	90.00		5.2	-1.6	14.2	0.557	0.919	0.126	0.118	0.021	0.020
11	95.00		5.4	-1.5	15.0	0.562	0.914	0.145	0.142	0.023	0.023

TABLE XI. - BLADE-ELEMENT DATA AT BLADE

EDGES FOR STATOR 13 MOD 2

(a) 50 Percent of design speed; reading 1274

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	49.1	1.7	49.1	1.7	308.7	0.998	11.99	0.986
2	23.050	23.091	44.9	0.2	44.9	0.2	307.7	0.999	11.99	0.990
3	21.430	21.580	40.3	-3.0	40.3	-3.0	305.2	1.000	12.01	0.993
4	19.980	20.262	41.7	-1.8	41.7	-1.8	304.9	0.998	12.08	0.989
5	19.771	20.076	41.6	-2.3	41.6	-2.3	304.5	0.999	12.04	0.990
6	19.563	19.891	43.0	-2.2	43.0	-2.2	304.2	1.000	11.98	0.992
7	19.352	19.705	45.1	-3.1	45.1	-3.1	303.9	1.000	11.93	0.998
8	19.144	19.522	46.1	-3.4	46.1	-3.4	304.8	0.998	11.91	1.000
9	18.108	18.621	43.1	-3.4	43.1	-3.4	304.1	1.001	12.04	0.998
10	16.497	17.242	45.2	-2.8	45.2	-2.8	305.2	1.002	12.35	0.989
11	16.124	16.901	46.3	3.8	46.3	3.8	305.3	1.002	12.34	0.969

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	135.2	96.3	135.2	96.3	88.5	96.2	102.3	2.9	0.	0.
2	135.1	99.7	135.1	99.7	95.8	99.7	95.3	0.4	0.	0.
3	136.2	104.1	136.2	104.1	103.9	104.0	88.1	-5.4	0.	0.
4	142.3	107.0	142.3	107.0	106.3	107.0	94.6	-3.4	0.	0.
5	140.8	106.3	140.8	106.3	105.3	106.2	93.5	-4.2	0.	0.
6	138.1	103.8	138.1	103.8	101.0	103.7	94.2	-4.0	0.	0.
7	136.9	105.6	136.9	105.6	96.7	105.5	96.9	-5.8	0.	0.
8	136.3	106.0	136.3	106.0	94.6	105.9	98.2	-6.3	0.	0.
9	146.1	115.4	146.1	115.4	106.7	115.2	99.9	-6.9	0.	0.
10	167.1	133.1	167.1	133.1	117.9	132.9	118.5	-6.5	0.	0.
11	167.0	120.3	167.0	120.3	115.4	120.0	120.7	8.0	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.390	0.276	0.390	0.276	0.255	0.276	1.087	0.646
2	0.390	0.286	0.390	0.286	0.276	0.286	1.041	0.602
3	0.395	0.300	0.395	0.300	0.301	0.300	1.000	0.543
4	0.414	0.309	0.414	0.309	0.309	0.309	1.006	0.571
5	0.409	0.307	0.409	0.307	0.306	0.307	1.008	0.561
6	0.401	0.300	0.401	0.300	0.294	0.299	1.027	0.567
7	0.398	0.305	0.398	0.305	0.281	0.305	1.091	0.588
8	0.396	0.306	0.396	0.306	0.274	0.306	1.119	0.598
9	0.425	0.334	0.425	0.334	0.311	0.333	1.080	0.603
10	0.488	0.385	0.488	0.385	0.345	0.385	1.128	0.715
11	0.488	0.347	0.488	0.347	0.337	0.346	1.040	0.730

RP	PERCENT SPAN		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	SS				TOT	PROF	TOT	PROF
1	5.00	12.0	5.8	14.2	0.501	0.	0.142	0.142	0.041	0.041	
2	10.00	9.5	3.2	12.0	0.462	0.	0.103	0.103	0.029	0.029	
3	30.00	5.4	-0.8	8.0	0.417	0.	0.073	0.073	0.019	0.019	
4	47.50	5.7	-0.5	9.0	0.418	0.	0.100	0.100	0.025	0.025	
5	50.00	5.4	-0.8	8.5	0.414	0.	0.087	0.087	0.021	0.021	
6	52.50	6.6	0.4	8.5	0.420	0.	0.077	0.077	0.019	0.019	
7	55.00	8.5	2.3	7.6	0.407	0.	0.023	0.023	0.005	0.005	
8	57.50	9.2	3.0	7.3	0.403	0.	0.002	0.002	0.000	0.000	
9	70.00	5.2	-1.0	7.0	0.372	0.	0.020	0.020	0.004	0.004	
10	90.00	4.5	-1.6	7.6	0.354	0.	0.074	0.074	0.015	0.015	
11	95.00	4.6	-1.4	14.2	0.411	0.	0.208	0.208	0.042	0.042	



TABLE XI. - Continued.

(b) 60 Percent of design speed; reading 1275

RP	RADI		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	49.8	1.3	49.8	1.3	317.3	0.996	12.80	0.980
2	23.050	23.091	44.6	0.2	44.6	0.2	315.5	0.999	12.80	0.988
3	21.450	21.580	41.4	-2.5	41.4	-2.5	311.8	1.001	12.80	0.995
4	19.980	20.262	41.6	-2.0	41.6	-2.0	311.6	0.998	12.92	0.984
5	19.771	20.076	41.6	-2.8	41.6	-2.8	310.9	1.000	12.84	0.989
6	19.563	19.891	43.0	-3.1	43.0	-3.1	310.6	1.000	12.76	0.994
7	19.352	19.705	44.4	-3.5	44.4	-3.5	310.9	0.999	12.71	0.997
8	19.144	19.522	45.7	-3.6	45.7	-3.6	310.5	1.000	12.68	1.001
9	18.108	18.621	43.7	-3.5	43.7	-3.5	311.1	1.000	12.90	0.994
10	16.497	17.242	45.2	-2.6	45.2	-2.6	312.0	1.003	13.29	0.987
11	16.124	16.901	46.4	4.3	46.4	4.3	312.3	1.004	13.32	0.956

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	160.2	111.2	160.2	111.2	103.4	111.2	122.4	2.4	0.	0.
2	159.8	116.5	159.8	116.5	113.7	116.5	112.2	0.3	0.	0.
3	159.9	123.0	159.9	123.0	119.9	122.9	105.7	-5.4	0.	0.
4	168.8	124.8	168.8	124.8	126.3	124.7	112.0	-4.3	0.	0.
5	165.7	123.5	165.7	123.5	123.8	123.4	110.1	-6.0	0.	0.
6	162.9	123.2	162.9	123.2	119.1	123.1	111.1	-6.7	0.	0.
7	161.6	123.3	161.6	123.3	115.4	123.0	113.1	-7.5	0.	0.
8	160.6	124.1	160.6	124.1	112.2	123.9	114.9	-7.9	0.	0.
9	173.2	133.7	173.2	133.7	125.3	133.5	119.6	-8.2	0.	0.
10	196.1	155.8	196.1	155.8	138.2	155.6	139.1	-7.1	0.	0.
11	197.1	140.1	197.1	140.1	136.0	139.7	142.8	10.5	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.458	0.315	0.458	0.315	0.296	0.315	1.075	0.770
2	0.458	0.331	0.458	0.331	0.326	0.331	1.024	0.704
3	0.461	0.352	0.461	0.352	0.346	0.351	1.025	0.652
4	0.488	0.357	0.488	0.357	0.365	0.357	0.987	0.673
5	0.479	0.354	0.479	0.354	0.358	0.354	0.996	0.658
6	0.471	0.353	0.471	0.353	0.345	0.353	1.033	0.665
7	0.467	0.353	0.467	0.353	0.334	0.353	1.066	0.680
8	0.464	0.356	0.464	0.356	0.324	0.355	1.104	0.696
9	0.502	0.384	0.502	0.384	0.363	0.383	1.065	0.721
10	0.572	0.448	0.572	0.448	0.403	0.447	1.126	0.838
11	0.575	0.401	0.575	0.401	0.396	0.400	1.027	0.862

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	12.7	6.5	13.8	0.523	0.	0.149	0.149	0.043	0.043	
2	10.00	9.3	3.0	11.9	0.470	0.	0.093	0.093	0.027	0.027	
3	30.00	6.5	0.3	8.4	0.414	0.	0.038	0.038	0.010	0.010	
4	47.50	5.6	-0.6	8.8	0.431	0.	0.103	0.103	0.026	0.026	
5	50.00	5.5	-0.8	8.0	0.425	0.	0.077	0.077	0.019	0.019	
6	52.50	6.6	0.4	7.6	0.418	0.	0.043	0.043	0.010	0.010	
7	55.00	7.8	1.6	7.3	0.415	0.	0.022	0.022	0.005	0.005	
8	57.50	8.9	2.7	7.1	0.407	0.	-0.007	-0.007	-0.002	-0.002	
9	70.00	5.7	-0.4	6.9	0.392	0.	0.040	0.040	0.009	0.009	
10	90.00	4.5	-1.5	7.8	0.355	0.	0.065	0.065	0.013	0.013	
11	95.00	4.7	-1.3	14.6	0.420	0.	0.221	0.221	0.044	0.044	

TABLE XI. - Continued.

(c) 70 Percent of design speed; reading 1276

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN RATIO
1	23.444	23.465	27.3	-1.7	27.3	-1.7	316.8	1.001	13.35 0.935
2	23.050	23.091	26.6	-2.7	26.6	-2.7	315.5	1.003	13.39 0.974
3	21.430	21.580	28.0	-5.8	28.0	-5.8	314.4	1.001	13.51 0.981
4	19.980	20.262	30.7	-5.6	30.7	-5.6	315.2	1.001	13.52 0.979
5	19.771	20.076	32.2	-5.6	32.2	-5.6	315.4	1.002	13.55 0.981
6	19.563	19.891	34.4	-5.3	34.4	-5.3	317.2	0.997	13.46 0.988
7	19.352	19.705	35.4	-5.4	35.4	-5.4	317.4	0.998	13.47 0.986
8	19.144	19.522	34.6	-5.5	34.6	-5.5	316.8	0.998	13.55 0.978
9	18.108	18.621	35.2	-6.6	35.2	-6.6	317.0	1.000	13.83 0.984
10	16.497	17.242	39.4	-4.9	39.4	-4.9	320.9	1.007	14.55 0.959
11	16.124	16.901	41.6	-1.0	41.6	-1.0	322.5	1.002	14.80 0.866

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	211.9	177.9	211.9	177.9	188.4	177.8	97.0	-5.4	0.	0.
2	212.2	195.9	212.2	195.9	189.7	195.7	95.1	-9.2	0.	0.
3	212.1	205.4	212.1	205.4	187.2	204.3	99.6	-20.6	0.	0.
4	216.1	209.5	216.1	209.5	185.7	208.5	110.5	-20.4	0.	0.
5	216.8	211.9	216.8	211.9	183.5	210.9	115.4	-20.6	0.	0.
6	214.5	213.1	214.5	213.1	177.0	212.1	121.1	-19.8	0.	0.
7	214.7	213.3	214.7	213.3	174.9	212.4	124.5	-20.0	0.	0.
8	218.2	213.6	218.2	213.6	179.6	212.6	124.1	-20.6	0.	0.
9	228.2	229.3	228.2	229.3	186.4	227.8	131.6	-26.3	0.	0.
10	259.4	260.5	259.4	260.5	200.4	259.5	164.6	-22.2	0.	0.
11	266.1	227.4	266.1	227.4	198.9	227.4	176.8	-3.9	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.616	0.511	0.616	0.511	0.548	0.511	0.944	0.616
2	0.618	0.567	0.618	0.567	0.553	0.566	1.032	0.618
3	0.619	0.598	0.619	0.598	0.547	0.595	1.091	0.619
4	0.631	0.610	0.631	0.610	0.542	0.607	1.122	0.631
5	0.633	0.617	0.633	0.617	0.536	0.614	1.149	0.633
6	0.624	0.620	0.624	0.620	0.515	0.618	1.199	0.664
7	0.624	0.621	0.624	0.621	0.508	0.618	1.214	0.696
8	0.636	0.622	0.636	0.622	0.523	0.619	1.184	0.681
9	0.667	0.671	0.667	0.671	0.545	0.666	1.222	0.742
10	0.763	0.764	0.763	0.764	0.590	0.761	1.295	0.962
11	0.783	0.658	0.783	0.658	0.585	0.658	1.143	1.046

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	-9.8	-16.1	10.8	0.300	0.	0.287	0.287	0.083	0.083
2	10.00	-8.7	-15.0	9.1	0.217	0.	0.116	0.116	0.033	0.033
3	30.00	-6.9	-13.1	5.2	0.182	0.	0.082	0.082	0.022	0.022
4	47.50	-5.2	-11.5	5.2	0.180	0.	0.088	0.088	0.022	0.022
5	50.00	-4.0	-10.2	5.2	0.176	0.	0.080	0.080	0.020	0.020
6	52.50	-2.0	-8.2	5.4	0.165	0.	0.053	0.053	0.013	0.013
7	55.00	-1.2	-7.4	5.4	0.167	0.	0.059	0.059	0.014	0.014
8	57.50	-2.2	-8.4	5.2	0.178	0.	0.091	0.091	0.022	0.022
9	70.00	-2.7	-8.9	3.9	0.149	0.	0.063	0.063	0.014	0.014
10	90.00	-1.3	-7.3	5.5	0.141	0.	0.129	0.129	0.026	0.026
11	95.00	-0.0	-6.0	9.5	0.278	0.	0.403	0.403	0.081	0.081

TABLE XI. - Continued.

(d) 70 Percent of design speed; reading 1279

RP	RADI I		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	31.5	-1.0	31.5	-1.0	319.5	1.000	13.60	0.966
2	23.050	23.091	30.5	-2.4	30.5	-2.4	317.8	1.002	13.69	0.988
3	21.430	21.580	31.7	-5.5	31.7	-5.5	316.5	1.001	13.75	0.991
4	19.980	20.262	33.5	-5.8	33.5	-5.8	316.4	1.001	13.70	0.992
5	19.771	20.076	34.4	-5.5	34.4	-5.5	317.2	1.000	13.77	0.986
6	19.563	19.891	35.9	-5.3	35.9	-5.3	318.3	0.997	13.72	0.989
7	19.352	19.705	37.6	-5.1	37.6	-5.1	318.1	0.997	13.66	0.994
8	19.144	19.522	37.3	-5.2	37.3	-5.2	318.6	0.998	13.72	0.990
9	18.108	18.621	37.5	-6.4	37.5	-6.4	317.5	1.001	13.91	0.993
10	16.497	17.242	41.1	-5.6	41.1	-5.6	320.8	1.005	14.54	0.984
11	16.124	16.901	43.0	-0.9	43.0	-0.9	322.3	1.004	14.75	0.932

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	204.2	160.9	204.2	160.9	174.1	160.9	106.7	-2.8	0.	0.
2	205.5	174.6	205.5	174.6	177.0	174.5	104.4	-7.3	0.	0.
3	205.2	180.3	205.2	180.3	174.5	179.5	108.0	-17.2	0.	0.
4	207.9	182.5	207.9	182.5	173.3	181.6	114.8	-18.3	0.	0.
5	210.4	183.0	210.4	183.0	173.6	182.2	118.8	-17.4	0.	0.
6	209.4	183.4	209.4	183.4	169.5	182.6	122.9	-16.8	0.	0.
7	207.8	183.9	207.8	183.9	164.5	183.2	126.9	-16.5	0.	0.
8	210.8	185.1	210.8	185.1	167.8	184.4	127.6	-16.7	0.	0.
9	219.3	197.2	219.3	197.2	174.0	195.9	133.6	-22.0	0.	0.
10	248.0	226.0	248.0	226.0	186.9	225.0	162.9	-21.9	0.	0.
11	253.9	213.7	253.9	213.7	185.6	213.6	173.3	-3.4	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.589	0.458	0.589	0.458	0.503	0.458	0.924	0.539
2	0.595	0.500	0.595	0.500	0.513	0.500	0.986	0.595
3	0.596	0.519	0.596	0.519	0.506	0.517	1.029	0.596
4	0.604	0.526	0.604	0.526	0.503	0.523	1.048	0.626
5	0.611	0.527	0.611	0.527	0.504	0.524	1.049	0.659
6	0.607	0.528	0.607	0.528	0.491	0.525	1.077	0.695
7	0.602	0.530	0.602	0.530	0.477	0.527	1.114	0.729
8	0.611	0.532	0.611	0.532	0.486	0.530	1.099	0.729
9	0.639	0.569	0.639	0.569	0.507	0.566	1.126	0.774
10	0.726	0.655	0.726	0.655	0.547	0.651	1.204	0.960
11	0.744	0.615	0.744	0.615	0.543	0.615	1.151	1.030

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	-5.6	-11.8	11.5	0.367	0.	0.161	0.161	0.047	0.047
2	10.00	-4.8	-11.1	9.4	0.305	0.	0.058	0.058	0.017	0.017
3	30.00	-3.1	-9.4	5.5	0.283	0.	0.041	0.041	0.011	0.011
4	47.50	-2.4	-8.7	5.0	0.280	0.	0.038	0.038	0.009	0.009
5	50.00	-1.8	-8.0	5.3	0.288	0.	0.062	0.062	0.015	0.015
6	52.50	-0.4	-6.7	5.5	0.285	0.	0.049	0.049	0.012	0.012
7	55.00	1.0	-5.2	5.6	0.279	0.	0.029	0.029	0.007	0.007
8	57.50	0.4	-5.8	5.5	0.283	0.	0.044	0.044	0.010	0.010
9	70.00	-0.4	-6.6	4.1	0.259	0.	0.027	0.027	0.006	0.006
10	90.00	0.4	-5.6	4.9	0.239	0.	0.053	0.053	0.011	0.011
11	95.00	1.4	-4.6	9.5	0.295	0.	0.222	0.222	0.044	0.044

TABLE XI. - Continued.

(e) 70 Percent of design speed; reading 1280

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL	PRESS
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	36.0	-0.9	36.0	-0.9	322.4	1.001	13.88	0.979
2	23.050	23.091	34.6	-1.5	34.6	-1.5	321.5	1.000	14.04	0.985
3	21.430	21.580	35.6	-4.9	35.6	-4.9	318.2	1.001	13.89	0.994
4	19.980	20.262	38.0	-4.1	38.0	-4.1	318.7	0.999	13.96	0.987
5	19.771	20.076	37.8	-4.1	37.8	-4.1	318.4	1.000	13.99	0.982
6	19.563	19.891	39.0	-4.2	39.0	-4.2	318.9	0.997	13.86	0.990
7	19.352	19.705	40.9	-4.1	40.9	-4.1	319.3	0.997	13.76	0.997
8	19.144	19.522	40.8	-4.3	40.8	-4.3	318.9	0.998	13.75	0.996
9	18.108	18.621	40.4	-5.8	40.4	-5.8	318.2	1.001	13.95	0.997
10	16.497	17.242	43.3	-4.6	43.3	-4.6	321.0	1.005	14.55	0.992
11	16.124	16.901	45.1	1.6	45.1	1.6	321.8	1.006	14.72	0.945

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	199.2	153.6	199.2	153.6	161.1	153.6	117.1	-2.3	0.	0.
2	203.2	163.1	203.2	163.1	167.3	163.0	115.3	-4.4	0.	0.
3	197.1	163.6	197.1	163.6	160.2	163.0	114.8	-14.0	0.	0.
4	204.9	166.7	204.9	166.7	161.5	166.3	126.2	-11.9	0.	0.
5	206.3	165.7	206.3	165.7	163.0	165.3	126.5	-11.9	0.	0.
6	202.8	165.5	202.8	165.5	157.6	165.1	127.7	-12.0	0.	0.
7	200.1	165.6	200.1	165.6	151.3	165.2	130.9	-12.0	0.	0.
8	200.7	166.1	200.7	166.1	151.9	165.6	131.1	-12.4	0.	0.
9	210.6	177.2	210.6	177.2	160.3	176.3	136.6	-17.8	0.	0.
10	238.3	206.6	238.3	206.6	173.4	206.0	163.4	-16.4	0.	0.
11	242.2	193.1	242.2	193.1	170.9	193.1	171.7	5.5	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.571	0.435	0.571	0.435	0.462	0.435	0.954	0.683
2	0.584	0.463	0.584	0.463	0.481	0.463	0.974	0.686
3	0.569	0.467	0.569	0.467	0.462	0.465	1.017	0.684
4	0.592	0.477	0.592	0.477	0.467	0.475	1.030	0.739
5	0.597	0.473	0.597	0.473	0.472	0.472	1.014	0.736
6	0.586	0.473	0.586	0.473	0.455	0.472	1.048	0.744
7	0.577	0.473	0.577	0.473	0.436	0.472	1.091	0.768
8	0.579	0.475	0.579	0.475	0.438	0.473	1.090	0.769
9	0.610	0.508	0.610	0.508	0.465	0.505	1.100	0.807
10	0.695	0.594	0.695	0.594	0.506	0.592	1.188	0.973
11	0.706	0.552	0.706	0.552	0.499	0.551	1.129	1.029

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	-1.1	-7.3	11.6	0.402	0.	0.107	0.107	0.031	0.031
2	10.00	-0.8	-7.1	10.2	0.365	0.	0.070	0.070	0.020	0.020
3	30.00	0.8	-5.5	6.0	0.343	0.	0.033	0.033	0.009	0.009
4	47.50	2.0	-4.2	6.7	0.352	0.	0.060	0.060	0.015	0.015
5	50.00	1.6	-4.6	6.7	0.360	0.	0.084	0.084	0.020	0.020
6	52.50	2.6	-3.6	6.6	0.350	0.	0.049	0.049	0.012	0.012
7	55.00	4.2	-2.0	6.6	0.343	0.	0.017	0.017	0.004	0.004
8	57.50	4.0	-2.2	6.4	0.341	0.	0.018	0.018	0.004	0.004
9	70.00	2.5	-3.7	4.7	0.321	0.	0.016	0.016	0.004	0.004
10	90.00	2.6	-3.4	5.9	0.285	0.	0.028	0.028	0.006	0.006
11	95.00	3.4	-2.6	12.0	0.337	0.	0.195	0.195	0.039	0.039

TABLE XI. - Continued.

(f) 70 Percent of design speed; reading 1281

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	39.6	-0.2	39.6	-0.2	324.6	0.999	13.95	0.978
2	23.050	23.091	38.3	-0.6	38.3	-0.6	323.2	1.000	14.08	0.984
3	21.430	21.580	38.7	-3.7	38.7	-3.7	319.8	1.001	13.94	0.994
4	19.980	20.262	40.2	-2.7	40.2	-2.7	320.0	0.999	14.07	0.985
5	19.771	20.076	39.9	-3.0	39.9	-3.0	319.7	0.998	14.08	0.982
6	19.563	19.891	41.4	-3.2	41.4	-3.2	320.0	0.998	14.01	0.985
7	19.352	19.705	42.5	-3.5	42.5	-3.5	320.2	0.996	13.88	0.993
8	19.144	19.522	43.0	-3.6	43.0	-3.6	319.5	1.000	13.82	0.997
9	18.108	18.621	42.0	-4.7	42.0	-4.7	319.3	1.000	14.09	0.993
10	16.497	17.242	44.5	-3.3	44.5	-3.3	321.1	1.005	14.63	0.986
11	16.124	16.901	45.9	2.9	45.9	2.9	322.1	1.005	14.72	0.947

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	194.8	143.2	194.8	143.2	150.1	143.2	124.1	-0.4	0.	0.
2	198.6	152.4	198.6	152.4	155.9	152.4	123.1	-1.6	0.	0.
3	192.5	153.4	192.5	153.4	150.2	153.1	120.5	-9.9	0.	0.
4	202.5	156.5	202.5	156.5	154.7	156.3	130.6	-7.4	0.	0.
5	203.2	155.5	203.2	155.5	155.9	155.2	130.3	-8.1	0.	0.
6	201.2	155.2	201.2	155.2	151.0	155.0	132.9	-8.7	0.	0.
7	198.0	154.7	198.0	154.7	146.1	154.5	133.7	-9.4	0.	0.
8	196.8	155.7	196.8	155.7	143.8	155.4	134.3	-9.8	0.	0.
9	208.9	167.2	208.9	167.2	155.2	166.6	139.8	-13.8	0.	0.
10	234.5	193.4	234.5	193.4	167.4	193.1	164.2	-11.2	0.	0.
11	236.7	179.4	236.7	179.4	164.8	179.2	169.9	9.0	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.556	0.403	0.556	0.403	0.428	0.403	0.954	0.740
2	0.569	0.431	0.569	0.431	0.446	0.431	0.978	0.750
3	0.553	0.436	0.553	0.436	0.432	0.435	1.019	0.731
4	0.584	0.445	0.584	0.445	0.446	0.445	1.010	0.775
5	0.586	0.443	0.586	0.443	0.450	0.442	0.996	0.768
6	0.580	0.442	0.580	0.442	0.435	0.441	1.026	0.785
7	0.570	0.441	0.570	0.441	0.420	0.440	1.057	0.791
8	0.567	0.443	0.567	0.443	0.414	0.442	1.080	0.797
9	0.604	0.477	0.604	0.477	0.449	0.476	1.074	0.832
10	0.682	0.553	0.682	0.553	0.487	0.552	1.154	0.983
11	0.688	0.510	0.688	0.510	0.479	0.510	1.087	1.020

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00		2.5	-3.7	12.3	0.450	0.	0.115	0.115	0.033	0.033
2	10.00		2.9	-3.3	11.2	0.412	0.	0.079	0.079	0.023	0.023
3	30.00		3.9	-2.4	7.3	0.382	0.	0.032	0.032	0.009	0.009
4	47.50		4.2	-2.0	8.1	0.395	0.	0.073	0.073	0.018	0.018
5	50.00		3.7	-2.5	7.8	0.401	0.	0.088	0.088	0.022	0.022
6	52.50		5.0	-1.3	7.5	0.398	0.	0.073	0.073	0.018	0.018
7	55.00		5.9	-0.4	7.3	0.391	0.	0.036	0.036	0.009	0.009
8	57.50		6.2	0.0	7.1	0.381	0.	0.014	0.014	0.003	0.003
9	70.00		4.1	-2.1	5.7	0.363	0.	0.032	0.032	0.007	0.007
10	90.00		3.8	-2.3	7.1	0.325	0.	0.051	0.051	0.010	0.010
11	95.00		4.2	-1.8	13.2	0.375	0.	0.197	0.197	0.039	0.039

TABLE XI. - Continued.

(g) 70 Percent of design speed; reading 1282

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	47.7	0.9	47.7	0.9	327.6	0.997	13.93	0.978
2	23.050	23.091	43.8	0.3	43.8	0.3	326.0	0.999	14.02	0.981
3	21.430	21.580	42.3	-2.1	42.3	-2.1	321.5	1.001	13.98	0.990
4	19.980	20.262	41.8	-1.8	41.8	-1.8	321.0	0.998	14.15	0.978
5	19.771	20.076	42.2	-2.3	42.2	-2.3	320.8	0.998	14.07	0.981
6	19.563	19.891	42.9	-2.1	42.9	-2.1	320.2	0.999	13.94	0.988
7	19.352	19.705	44.7	-3.1	44.7	-3.1	319.8	1.000	13.85	0.995
8	19.144	19.522	45.3	-3.2	45.3	-3.2	319.4	1.000	13.78	0.998
9	18.108	18.621	44.0	-3.8	44.0	-3.8	319.8	1.001	14.12	0.993
10	16.497	17.242	45.4	-2.6	45.4	-2.6	321.3	1.005	14.70	0.981
11	16.124	16.901	46.9	4.1	46.9	4.1	322.4	1.004	14.73	0.947

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	188.8	131.2	188.8	131.2	127.0	131.2	139.7	2.1	0.	0.
2	191.4	136.9	191.4	136.9	138.2	136.9	132.4	0.7	0.	0.
3	189.7	142.4	189.7	142.4	140.3	142.3	127.7	-5.1	0.	0.
4	200.1	144.6	200.1	144.6	149.2	144.5	133.3	-4.5	0.	0.
5	197.6	143.8	197.6	143.8	146.5	143.7	132.7	-5.9	0.	0.
6	193.9	143.2	193.9	143.2	142.0	143.1	132.0	-5.2	0.	0.
7	191.3	143.4	191.3	143.4	135.9	143.2	134.6	-7.7	0.	0.
8	190.1	143.0	190.1	143.0	133.6	142.8	135.1	-7.9	0.	0.
9	203.9	157.1	203.9	157.1	146.7	156.8	141.6	-10.4	0.	0.
10	230.8	182.4	230.8	182.4	162.0	182.2	164.4	-8.2	0.	0.
11	231.5	167.0	231.5	167.0	158.3	166.6	168.9	12.1	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.535	0.367	0.535	0.367	0.360	0.367	1.033	0.861
2	0.544	0.384	0.544	0.384	0.393	0.384	0.991	0.821
3	0.543	0.402	0.543	0.402	0.402	0.402	1.014	0.785
4	0.575	0.410	0.575	0.410	0.429	0.410	0.968	0.797
5	0.568	0.407	0.568	0.407	0.421	0.407	0.981	0.790
6	0.557	0.406	0.557	0.406	0.408	0.406	1.008	0.785
7	0.549	0.407	0.549	0.407	0.390	0.406	1.053	0.805
8	0.546	0.406	0.546	0.406	0.384	0.405	1.069	0.811
9	0.588	0.447	0.588	0.447	0.423	0.446	1.069	0.851
10	0.671	0.520	0.671	0.520	0.471	0.519	1.124	0.989
11	0.671	0.473	0.671	0.473	0.459	0.472	1.053	1.018

RP	PERCENT SPAN	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	10.6	4.4	13.4	0.516	0.	0.124	0.124	0.036	0.036
2	10.00	8.4	2.2	12.1	0.480	0.	0.106	0.106	0.030	0.030
3	30.00	7.5	1.2	8.9	0.435	0.	0.057	0.057	0.015	0.015
4	47.50	5.8	-0.4	9.0	0.447	0.	0.112	0.112	0.028	0.028
5	50.00	6.0	-0.2	8.4	0.443	0.	0.096	0.096	0.024	0.024
6	52.50	6.5	0.3	8.7	0.432	0.	0.062	0.062	0.015	0.015
7	55.00	8.1	1.9	7.7	0.428	0.	0.027	0.027	0.006	0.006
8	57.50	8.5	2.3	7.5	0.425	0.	0.011	0.011	0.003	0.003
9	70.00	6.0	-0.1	6.7	0.395	0.	0.031	0.031	0.007	0.007
10	90.00	4.7	-1.3	7.8	0.360	0.	0.072	0.072	0.015	0.015
11	95.00	5.2	-0.8	14.5	0.410	0.	0.203	0.203	0.041	0.041

TABLE XI. - Continued.

(h) 80 Percent of design speed; reading 1283

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	45.4	1.2	45.4	1.2	338.8	0.998	15.43	0.974
2	23.050	23.091	43.0	1.1	43.0	1.1	337.6	0.998	15.60	0.974
3	21.430	21.580	43.2	-1.7	43.2	-1.7	332.5	1.000	15.39	0.986
4	19.980	20.262	43.9	-1.4	43.9	-1.4	331.7	0.997	15.55	0.970
5	19.771	20.076	44.0	-1.5	44.0	-1.5	330.9	0.998	15.45	0.974
6	19.563	19.891	45.0	-2.1	45.0	-2.1	330.0	1.000	15.26	0.985
7	19.352	19.705	46.0	-2.5	46.0	-2.5	330.6	0.997	15.21	0.989
8	19.144	19.522	46.5	-2.5	46.5	-2.5	330.0	0.998	15.17	0.993
9	18.108	18.621	44.6	-3.1	44.6	-3.1	329.1	1.001	15.49	0.990
10	16.497	17.242	46.3	-1.8	46.3	-1.8	331.3	1.005	16.28	0.975
11	16.124	16.901	47.2	4.4	47.2	4.4	332.4	1.005	16.35	0.931

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	217.8	149.7	217.8	149.7	152.8	149.7	155.2	3.1	0.	0.
2	222.5	156.2	222.5	156.2	162.9	156.2	151.7	3.1	0.	0.
3	217.0	156.8	217.0	156.8	158.1	156.8	148.7	-4.7	0.	0.
4	226.4	156.2	226.4	156.2	163.3	156.2	156.9	-3.7	0.	0.
5	223.6	155.6	223.6	155.6	160.9	155.6	155.2	-4.0	0.	0.
6	218.9	155.5	218.9	155.5	154.7	155.4	154.8	-5.7	0.	0.
7	217.9	156.5	217.9	156.5	151.3	156.4	156.9	-6.7	0.	0.
8	217.5	157.2	217.5	157.2	149.8	157.0	157.7	-6.9	0.	0.
9	229.8	171.1	229.8	171.1	163.7	170.9	161.2	-9.3	0.	0.
10	259.1	200.8	259.1	200.8	179.0	200.7	187.3	-6.3	0.	0.
11	262.4	185.2	262.4	185.2	178.2	184.6	192.6	14.2	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.612	0.413	0.612	0.413	0.429	0.413	0.979	0.938
2	0.628	0.432	0.628	0.432	0.459	0.432	0.959	0.929
3	0.616	0.437	0.616	0.437	0.449	0.437	0.992	0.910
4	0.646	0.437	0.646	0.437	0.466	0.437	0.956	0.940
5	0.637	0.435	0.637	0.435	0.459	0.435	0.967	0.927
6	0.624	0.435	0.624	0.435	0.441	0.435	1.004	0.924
7	0.620	0.438	0.620	0.438	0.431	0.438	1.034	0.938
8	0.620	0.440	0.620	0.440	0.427	0.440	1.048	0.945
9	0.659	0.481	0.659	0.481	0.469	0.480	1.044	0.965
10	0.749	0.566	0.749	0.566	0.517	0.566	1.121	1.126
11	0.758	0.519	0.758	0.519	0.515	0.517	1.036	1.158

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	TOT				PROF	TOT	PROF	
1	5.00	8.3	2.1	13.7	0.515	0.	0.116	0.116	0.034	0.034	
2	10.00	7.6	1.3	12.9	0.488	0.	0.112	0.112	0.032	0.032	
3	30.00	8.4	2.1	9.2	0.464	0.	0.060	0.060	0.016	0.016	
4	47.50	7.9	1.7	9.4	0.485	0.	0.123	0.123	0.030	0.030	
5	50.00	7.8	1.6	9.3	0.477	0.	0.107	0.107	0.026	0.026	
6	52.50	8.6	2.4	8.6	0.466	0.	0.064	0.064	0.016	0.016	
7	55.00	9.4	3.2	8.3	0.460	0.	0.047	0.047	0.011	0.011	
8	57.50	9.7	3.5	8.2	0.456	0.	0.032	0.032	0.008	0.008	
9	70.00	6.6	0.5	7.4	0.420	0.	0.040	0.040	0.009	0.009	
10	90.00	5.6	-0.4	8.6	0.375	0.	0.080	0.080	0.016	0.016	
11	95.00	5.5	-0.5	14.7	0.427	0.	0.219	0.219	0.044	0.044	

TABLE XI. - Continued.

(i) 90 Percent of design speed; reading 1284

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	37.2	-4.5	37.2	-4.5	347.2	0.998	17.22	0.899
2	23.050	23.091	35.1	-6.5	35.1	-6.5	343.4	1.001	17.17	0.927
3	21.430	21.580	36.4	-6.7	36.4	-6.7	339.8	1.000	17.07	0.926
4	19.980	20.262	38.8	-5.5	38.8	-5.5	340.3	0.998	17.10	0.917
5	19.771	20.076	40.5	-5.5	40.5	-5.5	339.9	0.999	16.84	0.930
6	19.563	19.891	41.9	-5.5	41.9	-5.5	340.9	0.994	16.67	0.939
7	19.352	19.705	42.4	-6.1	42.4	-6.1	340.0	0.997	16.53	0.949
8	19.144	19.522	41.3	-6.1	41.3	-6.1	339.8	0.995	16.61	0.945
9	18.108	18.621	40.2	-6.7	40.2	-6.7	337.6	1.001	17.08	0.933
10	16.497	17.242	43.7	-0.0	43.7	-0.0	341.2	1.014	17.86	0.853
11	16.124	16.901	46.0	7.8	46.0	7.8	343.4	0.999	18.16	0.693

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	269.7	248.0	269.7	248.0	214.9	247.3	163.0	-19.5	0.	0.
2	267.7	256.6	267.7	256.6	218.9	255.0	154.1	-29.0	0.	0.
3	264.9	260.8	264.9	260.8	213.2	259.0	157.3	-30.6	0.	0.
4	277.3	268.5	277.3	268.5	216.1	267.3	173.8	-25.8	0.	0.
5	271.3	269.9	271.3	269.9	206.1	268.6	176.4	-26.0	0.	0.
6	268.6	271.4	268.6	271.4	199.9	270.1	179.4	-26.1	0.	0.
7	266.0	273.4	266.0	273.4	196.6	271.9	179.2	-28.9	0.	0.
8	269.6	275.7	269.6	275.7	202.4	274.1	178.1	-29.2	0.	0.
9	284.1	294.8	284.1	294.8	216.9	292.8	183.5	-34.3	0.	0.
10	309.4	340.5	309.4	340.5	223.5	340.5	213.9	-0.1	0.	0.
11	314.8	221.9	314.8	221.9	218.5	219.9	226.6	30.1	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.763	0.696	0.763	0.696	0.608	0.694	1.151	0.948
2	0.761	0.726	0.761	0.726	0.623	0.721	1.165	0.913
3	0.757	0.744	0.757	0.744	0.609	0.739	1.215	0.934
4	0.796	0.769	0.796	0.769	0.620	0.765	1.237	1.018
5	0.777	0.773	0.777	0.773	0.591	0.770	1.303	1.037
6	0.767	0.779	0.767	0.779	0.571	0.775	1.351	1.054
7	0.760	0.785	0.760	0.785	0.562	0.781	1.383	1.052
8	0.772	0.794	0.772	0.794	0.580	0.789	1.354	1.040
9	0.822	0.857	0.822	0.857	0.627	0.851	1.350	1.081
10	0.901	1.000	0.901	1.000	0.651	1.000	1.523	1.276
11	0.916	0.620	0.916	0.620	0.636	0.614	1.006	1.363

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN		MEAN	SS				TOT	PROF	TOT	PROF
1	5.00		0.1	-6.1	8.0	0.276	0.	0.317	0.317	0.092	0.092
2	10.00		-0.2	-6.5	5.3	0.236	0.	0.227	0.227	0.064	0.064
3	30.00		1.6	-4.7	4.2	0.203	0.	0.234	0.234	0.062	0.062
4	47.50		2.9	-3.4	5.3	0.209	0.	0.243	0.243	0.060	0.060
5	50.00		4.4	-1.8	5.3	0.187	0.	0.213	0.213	0.052	0.052
6	52.50		5.5	-0.7	5.3	0.174	0.	0.189	0.189	0.046	0.046
7	55.00		5.7	-0.5	4.7	0.159	0.	0.161	0.161	0.038	0.038
8	57.50		4.5	-1.7	4.6	0.159	0.	0.169	0.169	0.040	0.040
9	70.00		2.3	-3.9	3.8	0.133	0.	0.188	0.188	0.042	0.042
10	90.00		3.0	-3.0	10.3	0.038	0.	0.359	0.357	0.074	0.073
11	95.00		4.4	-1.6	18.1	0.416	0.	0.733	0.727	0.145	0.144



TABLE XI. - Continued.

(j) 90 Percent of design speed; reading 1285

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	37.0	-1.9	37.0	-1.9	347.8	0.997	17.24	0.941
2	23.050	23.091	34.7	-3.6	34.7	-3.6	342.9	1.003	17.14	0.971
3	21.430	21.580	36.9	-4.9	36.9	-4.9	339.8	1.000	17.07	0.975
4	19.980	20.262	39.2	-4.5	39.2	-4.5	340.4	0.996	17.12	0.959
5	19.771	20.076	40.0	-4.5	40.0	-4.5	340.7	0.996	16.93	0.966
6	19.563	19.891	41.6	-4.8	41.6	-4.8	341.6	0.994	16.76	0.974
7	19.352	19.705	42.8	-5.0	42.8	-5.0	340.3	0.995	16.60	0.982
8	19.144	19.522	41.7	-5.2	41.7	-5.2	339.9	0.997	16.63	0.980
9	18.108	18.621	40.3	-6.1	40.3	-6.1	338.3	0.999	17.10	0.973
10	16.497	17.242	44.0	-5.8	44.0	-5.8	341.6	1.004	17.93	0.921
11	16.124	16.901	46.4	-2.4	46.4	-2.4	343.7	1.002	18.13	0.868

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	268.9	208.6	268.9	208.6	214.8	208.5	161.7	-7.0	0.	0.
2	266.0	218.5	266.0	218.5	218.6	218.1	151.6	-13.8	0.	0.
3	264.0	221.9	264.0	221.9	211.0	221.0	158.6	-19.0	0.	0.
4	275.1	222.8	275.1	222.8	213.2	222.1	173.9	-17.5	0.	0.
5	271.2	222.3	271.2	222.3	207.9	221.6	174.2	-17.5	0.	0.
6	267.8	222.5	267.8	222.5	200.2	221.7	177.9	-18.5	0.	0.
7	264.2	222.6	264.2	222.6	193.9	221.7	179.4	-19.5	0.	0.
8	266.2	224.0	266.2	224.0	198.8	223.1	177.0	-20.4	0.	0.
9	280.3	238.0	280.3	238.0	213.8	236.6	181.2	-25.4	0.	0.
10	305.5	254.6	305.5	254.6	219.7	253.3	212.4	-25.9	0.	0.
11	309.6	239.6	309.6	239.6	213.7	239.4	224.0	-10.1	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.760	0.577	0.760	0.577	0.607	0.577	0.971	0.938
2	0.757	0.609	0.757	0.609	0.622	0.608	0.997	0.894
3	0.754	0.623	0.754	0.623	0.603	0.621	1.048	0.946
4	0.789	0.627	0.789	0.627	0.611	0.625	1.042	1.020
5	0.776	0.625	0.776	0.625	0.595	0.623	1.066	1.019
6	0.764	0.626	0.764	0.626	0.571	0.623	1.107	1.042
7	0.754	0.627	0.754	0.627	0.553	0.624	1.143	1.055
8	0.761	0.631	0.761	0.631	0.568	0.628	1.122	1.035
9	0.808	0.675	0.808	0.675	0.617	0.671	1.107	1.065
10	0.887	0.720	0.887	0.720	0.638	0.717	1.153	1.265
11	0.898	0.673	0.898	0.673	0.620	0.672	1.120	1.346

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	-0.1	-6.3	10.6	0.406	0.	0.186	0.186	0.054	0.054
2	10.00	-0.6	-6.9	8.2	0.356	0.	0.093	0.093	0.027	0.027
3	30.00	2.1	-4.2	6.0	0.338	0.	0.080	0.080	0.021	0.021
4	47.50	3.2	-3.0	6.3	0.362	0.	0.123	0.123	0.030	0.030
5	50.00	3.8	-2.4	6.3	0.353	0.	0.104	0.104	0.025	0.025
6	52.50	5.2	-1.0	6.0	0.346	0.	0.082	0.082	0.020	0.020
7	55.00	6.2	-0.0	5.7	0.337	0.	0.058	0.058	0.014	0.014
8	57.50	4.9	-1.3	5.5	0.333	0.	0.062	0.062	0.015	0.015
9	70.00	2.3	-3.8	4.4	0.315	0.	0.078	0.078	0.018	0.018
10	90.00	3.3	-2.7	4.6	0.324	0.	0.197	0.196	0.040	0.040
11	95.00	4.7	-1.3	8.0	0.374	0.	0.325	0.320	0.065	0.064

TABLE XI. - Continued.

(k) 90 Percent of design speed; reading 1286

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	38.8	0.1	38.8	0.1	350.6	0.998	17.46	0.958
2	23.050	23.091	37.4	-0.8	37.4	-0.8	345.8	1.003	17.40	0.977
3	21.430	21.580	38.4	-2.9	38.4	-2.9	341.1	1.002	17.28	0.989
4	19.980	20.262	39.4	-2.5	39.4	-2.5	341.0	0.998	17.35	0.970
5	19.771	20.076	40.5	-2.3	40.5	-2.3	341.4	0.996	17.23	0.974
6	19.563	19.891	42.5	-2.5	42.5	-2.5	341.4	0.997	16.97	0.985
7	19.352	19.705	43.2	-2.6	43.2	-2.6	341.7	0.995	16.91	0.987
8	19.144	19.522	42.0	-2.9	42.0	-2.9	340.4	0.998	16.93	0.984
9	18.108	18.621	41.4	-4.8	41.4	-4.8	338.9	0.999	17.23	0.980
10	16.497	17.242	45.3	-3.3	45.3	-3.3	341.8	1.005	17.95	0.976
11	16.124	16.901	47.1	1.7	47.1	1.7	343.7	1.003	18.24	0.914

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	264.1	192.0	264.1	192.0	205.7	192.0	165.6	0.2	0.	0.
2	261.8	199.1	261.8	199.1	208.0	199.1	158.9	-2.8	0.	0.
3	259.7	202.8	259.7	202.8	203.5	202.5	161.3	-10.4	0.	0.
4	270.5	201.5	270.5	201.5	209.1	201.3	171.5	-8.7	0.	0.
5	267.5	200.5	267.5	200.5	203.5	200.4	173.6	-8.1	0.	0.
6	262.1	200.0	262.1	200.0	193.4	199.9	177.0	-8.6	0.	0.
7	261.2	199.6	261.2	199.6	190.4	199.4	178.8	-9.2	0.	0.
8	262.5	199.7	262.5	199.7	194.9	199.4	175.8	-10.0	0.	0.
9	272.2	210.8	272.2	210.8	204.2	210.0	180.0	-17.8	0.	0.
10	294.7	244.9	294.7	244.9	207.4	244.5	209.4	-14.0	0.	0.
11	301.0	227.0	301.0	227.0	204.7	226.9	220.6	6.9	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.741	0.526	0.741	0.526	0.578	0.526	0.933	0.966
2	0.740	0.549	0.740	0.549	0.588	0.549	0.957	0.950
3	0.739	0.564	0.739	0.564	0.579	0.564	0.995	0.967
4	0.773	0.562	0.773	0.562	0.598	0.561	0.963	1.004
5	0.763	0.559	0.763	0.559	0.581	0.559	0.985	1.016
6	0.746	0.558	0.746	0.558	0.550	0.557	1.034	1.040
7	0.743	0.557	0.743	0.557	0.542	0.556	1.047	1.050
8	0.748	0.557	0.748	0.557	0.556	0.556	1.023	1.028
9	0.781	0.591	0.781	0.591	0.586	0.589	1.029	1.060
10	0.851	0.690	0.851	0.690	0.599	0.689	1.179	1.250
11	0.869	0.634	0.869	0.634	0.591	0.634	1.109	1.326

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	1.7	-4.5	12.6	0.454	0.	0.136	0.136	0.039	0.039
2	10.00	2.0	-4.2	11.0	0.415	0.	0.074	0.074	0.021	0.021
3	30.00	3.5	-2.7	8.0	0.394	0.	0.035	0.035	0.009	0.009
4	47.50	3.4	-2.8	8.3	0.419	0.	0.091	0.091	0.023	0.023
5	50.00	4.3	-1.9	8.5	0.416	0.	0.083	0.083	0.020	0.020
6	52.50	6.1	-0.1	8.3	0.407	0.	0.049	0.049	0.012	0.012
7	55.00	6.6	0.4	8.1	0.407	0.	0.043	0.043	0.010	0.010
8	57.50	5.2	-1.0	7.8	0.406	0.	0.052	0.052	0.012	0.012
9	70.00	3.4	-2.7	5.6	0.387	0.	0.061	0.061	0.014	0.014
10	90.00	4.6	-1.4	7.1	0.322	0.	0.064	0.064	0.013	0.013
11	95.00	5.5	-0.5	12.1	0.384	0.	0.222	0.219	0.044	0.044

TABLE XI. - Continued.

(l) 90 Percent of design speed; reading 1287

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL	PRESS
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	41.9	0.3	41.9	0.3	353.6	0.992	17.64	0.954
2	23.050	23.091	39.8	-0.0	39.8	-0.0	348.8	0.999	17.65	0.973
3	21.430	21.580	40.0	-2.2	40.0	-2.2	342.9	1.001	17.46	0.988
4	19.980	20.262	41.0	-1.7	41.0	-1.7	342.0	0.999	17.50	0.973
5	19.771	20.076	42.2	-1.7	42.2	-1.7	341.7	0.999	17.34	0.978
6	19.563	19.891	43.2	-1.8	43.2	-1.8	342.5	0.997	17.19	0.985
7	19.352	19.705	44.1	-2.0	44.1	-2.0	341.5	0.997	17.13	0.986
8	19.144	19.522	43.1	-2.3	43.1	-2.3	341.8	0.996	17.17	0.984
9	18.108	18.621	42.7	-4.2	42.7	-4.2	339.2	0.999	17.24	0.983
10	16.497	17.242	46.3	-2.9	46.3	-2.9	341.8	1.006	18.01	0.976
11	16.124	16.901	48.1	3.4	48.1	3.4	344.0	1.004	18.13	0.925

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	260.6	181.2	260.6	181.2	194.0	181.2	173.9	1.1	0.	0.
2	259.8	191.1	259.8	191.1	199.7	191.1	166.2	-0.0	0.	0.
3	256.2	194.2	256.2	194.2	196.2	194.1	164.8	-7.3	0.	0.
4	266.0	193.0	266.0	193.0	200.8	192.9	174.5	-5.8	0.	0.
5	262.1	191.9	262.1	191.9	194.3	191.8	175.9	-5.8	0.	0.
6	259.5	192.0	259.5	192.0	189.1	192.0	177.7	-6.0	0.	0.
7	258.3	191.5	258.3	191.5	185.6	191.3	179.7	-6.6	0.	0.
8	260.5	192.3	260.5	192.3	190.1	192.2	178.1	-7.6	0.	0.
9	265.0	198.9	265.0	198.9	194.8	198.4	179.6	-14.7	0.	0.
10	288.8	231.2	288.8	231.2	199.6	230.9	208.7	-11.5	0.	0.
11	291.4	213.1	291.4	213.1	194.7	212.7	216.8	12.8	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.727	0.494	0.727	0.494	0.541	0.494	0.934	1.026
2	0.730	0.525	0.730	0.525	0.561	0.525	0.957	1.000
3	0.726	0.538	0.726	0.538	0.556	0.538	0.989	0.992
4	0.758	0.536	0.758	0.536	0.572	0.535	0.961	1.028
5	0.746	0.533	0.746	0.533	0.553	0.533	0.987	1.037
6	0.736	0.533	0.736	0.533	0.537	0.533	1.015	1.046
7	0.734	0.532	0.734	0.532	0.527	0.532	1.031	1.060
8	0.740	0.534	0.740	0.534	0.540	0.534	1.011	1.045
9	0.758	0.555	0.758	0.555	0.557	0.554	1.018	1.062
10	0.831	0.648	0.831	0.648	0.575	0.647	1.157	1.249
11	0.837	0.592	0.837	0.592	0.559	0.591	1.093	1.303

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	4.8	-1.5	12.8	0.497	0.	0.156	0.156	0.045	0.045
2	10.00	4.4	-1.9	11.8	0.447	0.	0.091	0.091	0.026	0.026
3	30.00	5.2	-1.1	8.8	0.420	0.	0.040	0.040	0.011	0.011
4	47.50	5.0	-1.2	9.1	0.441	0.	0.085	0.085	0.021	0.021
5	50.00	6.0	-0.2	9.0	0.437	0.	0.070	0.070	0.017	0.017
6	52.50	6.8	0.6	9.0	0.430	0.	0.049	0.049	0.012	0.012
7	55.00	7.5	1.3	8.8	0.431	0.	0.045	0.045	0.011	0.011
8	57.50	6.3	0.1	8.4	0.430	0.	0.054	0.054	0.013	0.013
9	70.00	4.7	-1.4	6.2	0.412	0.	0.053	0.053	0.012	0.012
10	90.00	5.6	-0.4	7.5	0.353	0.	0.066	0.066	0.013	0.013
11	95.00	6.4	0.4	13.8	0.405	0.	0.204	0.203	0.041	0.041

TABLE XI. - Continued.

(m) 90 Percent of design speed; reading 1288

RP	RADIUS		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL PRESS	
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	44.8	0.9	44.8	0.9	354.3	0.995	17.63	0.963
2	23.050	23.091	42.3	0.6	42.3	0.6	351.7	0.997	17.91	0.966
3	21.430	21.580	41.9	-1.5	41.9	-1.5	344.5	1.000	17.56	0.987
4	19.980	20.262	42.3	-1.1	42.3	-1.1	342.7	0.999	17.64	0.970
5	19.771	20.076	42.9	-1.1	42.9	-1.1	342.3	0.999	17.53	0.974
6	19.563	19.891	44.1	-1.2	44.1	-1.2	343.3	0.997	17.36	0.982
7	19.352	19.705	45.0	-1.4	45.0	-1.4	343.0	0.996	17.32	0.982
8	19.144	19.522	44.6	-1.6	44.6	-1.6	342.7	0.996	17.32	0.981
9	18.108	18.621	44.2	-3.7	44.2	-3.7	340.4	0.998	17.36	0.981
10	16.497	17.242	47.3	-1.7	47.3	-1.7	342.5	1.005	18.15	0.971
11	16.124	16.901	48.5	4.8	48.5	4.8	344.4	1.003	18.24	0.925

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	252.0	173.3	252.0	173.3	178.9	173.3	177.5	2.6	0.	0.
2	258.2	182.9	258.2	182.9	190.9	182.9	173.8	1.8	0.	0.
3	251.8	185.1	251.8	185.1	187.3	185.0	168.2	-5.0	0.	0.
4	261.0	182.3	261.0	182.3	193.1	182.2	175.6	-3.6	0.	0.
5	258.3	182.1	258.3	182.1	189.3	182.0	175.8	-3.5	0.	0.
6	255.2	182.2	255.2	182.2	183.3	182.2	177.5	-3.9	0.	0.
7	254.8	181.4	254.8	181.4	180.2	181.4	180.2	-4.5	0.	0.
8	255.8	181.7	255.8	181.7	182.0	181.6	179.7	-5.0	0.	0.
9	259.1	187.5	259.1	187.5	185.8	187.1	180.7	-12.0	0.	0.
10	284.1	218.8	284.1	218.8	192.5	218.8	208.9	-6.5	0.	0.
11	286.5	201.7	286.5	201.7	189.8	200.9	214.6	17.0	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.700	0.471	0.700	0.471	0.497	0.471	0.959	1.058
2	0.722	0.499	0.722	0.499	0.534	0.499	0.938	1.053
3	0.710	0.510	0.710	0.510	0.528	0.510	0.988	1.017
4	0.741	0.504	0.741	0.504	0.548	0.504	0.944	1.039
5	0.733	0.503	0.733	0.503	0.537	0.503	0.962	1.038
6	0.722	0.504	0.722	0.504	0.519	0.504	0.994	1.046
7	0.721	0.502	0.721	0.502	0.510	0.502	1.007	1.064
8	0.725	0.503	0.725	0.503	0.515	0.503	0.998	1.060
9	0.738	0.521	0.738	0.521	0.529	0.520	1.007	1.073
10	0.815	0.610	0.815	0.610	0.552	0.610	1.136	1.254
11	0.820	0.558	0.820	0.558	0.543	0.556	1.059	1.289

RP	PERCENT		INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS	SS				TOT	PROF	TOT	PROF
1	5.00	7.7	1.5	13.4	0.513	0.	0.134	0.134	0.039	0.039	
2	10.00	6.9	0.7	12.3	0.481	0.	0.116	0.116	0.033	0.033	
3	30.00	7.1	0.8	9.4	0.447	0.	0.044	0.044	0.012	0.012	
4	47.50	6.3	0.1	9.6	0.471	0.	0.098	0.098	0.024	0.024	
5	50.00	6.7	0.5	9.7	0.464	0.	0.087	0.087	0.021	0.021	
6	52.50	7.7	1.5	9.5	0.457	0.	0.062	0.062	0.015	0.015	
7	55.00	8.4	2.2	9.3	0.461	0.	0.061	0.061	0.015	0.015	
8	57.50	7.8	1.6	9.1	0.460	0.	0.064	0.064	0.015	0.015	
9	70.00	6.3	0.1	6.8	0.442	0.	0.062	0.062	0.014	0.014	
10	90.00	6.6	0.6	8.7	0.382	0.	0.081	0.081	0.017	0.016	
11	95.00	6.8	0.8	15.2	0.430	0.	0.209	0.208	0.042	0.042	

TABLE XI. - Concluded.

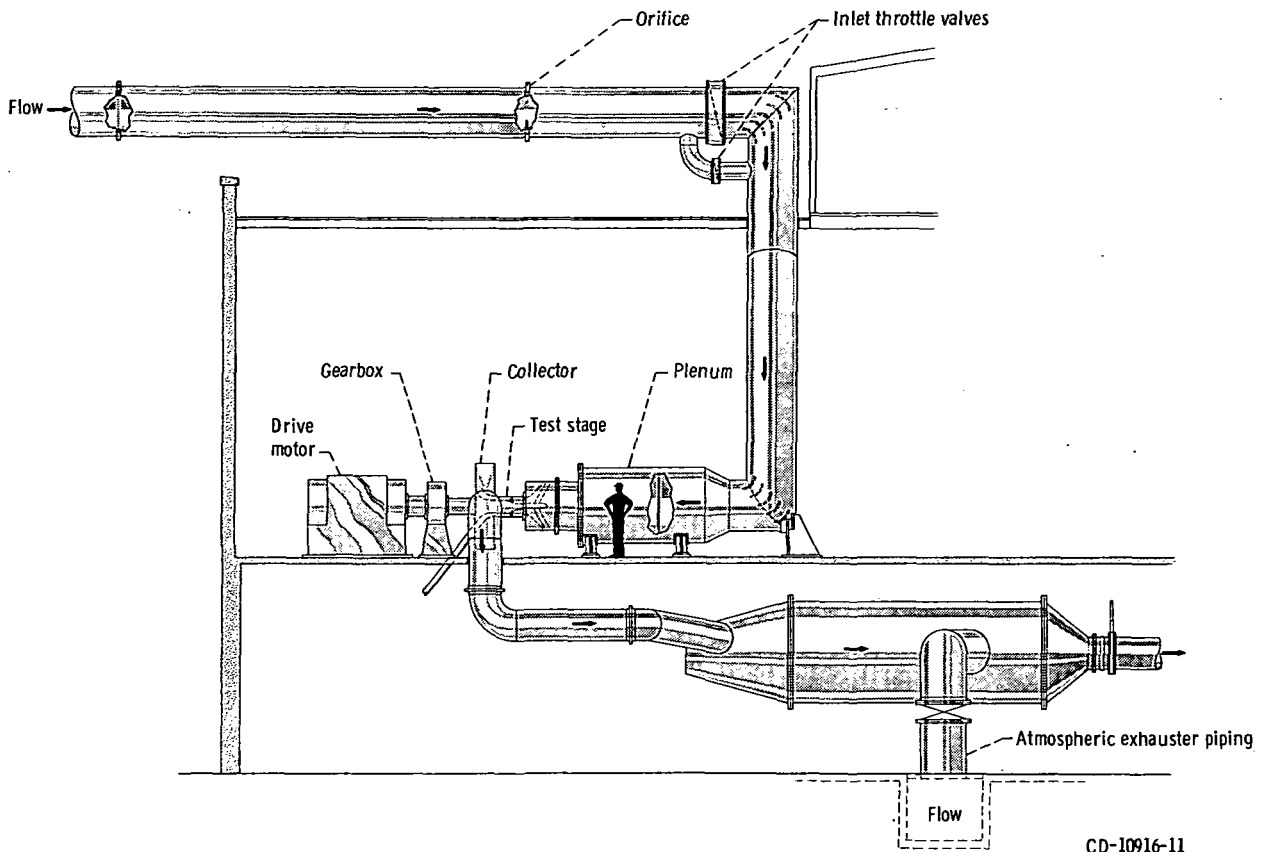
(n) 100 Percent of design speed; reading 1289

RP	RADII		ABS BETAM		REL BETAM		TOTAL TEMP		TOTAL	PRESS
	IN	OUT	IN	OUT	IN	OUT	IN	RATIO	IN	RATIO
1	23.444	23.465	41.3	-2.4	41.3	-2.4	363.1	0.997	18.52	0.943
2	23.050	23.091	37.1	-3.7	37.1	-3.7	357.8	1.002	18.87	0.958
3	21.430	21.580	38.5	-4.8	38.5	-4.8	353.6	1.000	18.88	0.961
4	19.980	20.262	41.5	-4.7	41.5	-4.7	353.7	0.994	18.72	0.941
5	19.771	20.076	43.8	-4.9	43.8	-4.9	353.2	0.994	18.21	0.966
6	19.563	19.891	45.4	-5.2	45.4	-5.2	353.9	0.992	17.94	0.980
7	19.352	19.705	46.0	-5.2	46.0	-5.2	352.8	0.993	17.86	0.986
8	19.144	19.522	45.1	-5.7	45.1	-5.7	352.4	0.993	18.05	0.979
9	18.108	18.621	41.6	-5.3	41.6	-5.3	350.2	1.001	19.07	0.964
10	16.497	17.242	45.1	-2.0	45.1	-2.0	353.0	1.008	19.65	0.890
11	16.124	16.901	46.8	1.9	46.8	1.9	354.5	1.002	19.80	0.790

RP	ABS VEL		REL VEL		MERID VEL		TANG VEL		WHEEL SPEED	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	282.0	224.0	282.0	224.0	212.0	223.8	186.0	-9.5	0.	0.
2	287.8	236.1	287.8	236.1	229.7	235.7	173.5	-15.3	0.	0.
3	288.6	240.8	288.6	240.8	225.8	240.0	179.8	-20.0	0.	0.
4	298.3	236.8	298.3	236.8	223.4	236.0	197.7	-19.4	0.	0.
5	287.8	237.2	287.8	237.2	207.7	236.4	199.2	-20.2	0.	0.
6	282.7	238.2	282.7	238.2	198.6	237.2	201.1	-21.6	0.	0.
7	281.5	239.6	281.5	239.6	195.3	238.6	202.6	-21.9	0.	0.
8	286.4	242.2	286.4	242.2	202.1	241.0	202.9	-24.0	0.	0.
9	310.1	265.3	310.1	265.3	232.0	264.2	205.8	-24.6	0.	0.
10	322.9	266.3	322.9	266.3	228.0	266.1	228.7	-9.3	0.	0.
11	325.8	214.7	325.8	214.7	223.1	214.5	237.4	6.9	0.	0.

RP	ABS MACH NO		REL MACH NO		MERID MACH NO		MERID PEAK SS	
	IN	OUT	IN	OUT	IN	OUT	VEL R	MACH NO
1	0.782	0.609	0.782	0.609	0.588	0.608	1.056	1.088
2	0.807	0.648	0.807	0.648	0.644	0.646	1.026	1.027
3	0.815	0.667	0.815	0.667	0.637	0.665	1.063	1.071
4	0.846	0.657	0.846	0.657	0.634	0.655	1.056	1.164
5	0.813	0.658	0.813	0.658	0.587	0.656	1.138	1.176
6	0.796	0.661	0.796	0.661	0.559	0.659	1.194	1.188
7	0.793	0.667	0.793	0.667	0.550	0.664	1.222	1.199
8	0.809	0.675	0.809	0.675	0.571	0.671	1.192	1.197
9	0.890	0.745	0.890	0.745	0.666	0.742	1.139	1.212
10	0.928	0.742	0.928	0.742	0.656	0.741	1.167	1.357
11	0.936	0.588	0.936	0.588	0.641	0.587	0.962	1.416

RP	PERCENT	INCIDENCE		DEV	D-FACT	EFF	LOSS COEFF		LOSS PARAM	
	SPAN	MEAN	SS				TOT	PROF	TOT	PROF
1	5.00	4.2	-2.1	10.1	0.406	0.	0.172	0.172	0.050	0.050
2	10.00	1.7	-4.6	8.1	0.366	0.	0.122	0.122	0.035	0.035
3	30.00	3.7	-2.6	6.2	0.349	0.	0.110	0.110	0.029	0.029
4	47.50	5.5	-0.7	6.1	0.385	0.	0.157	0.157	0.039	0.039
5	50.00	7.6	1.4	5.9	0.362	0.	0.097	0.097	0.024	0.024
6	52.50	9.0	2.7	5.6	0.347	0.	0.057	0.057	0.014	0.014
7	55.00	9.4	3.2	5.5	0.339	0.	0.041	0.041	0.010	0.010
8	57.50	8.3	2.1	5.0	0.341	0.	0.060	0.060	0.014	0.014
9	70.00	3.6	-2.5	5.2	0.310	0.	0.090	0.089	0.020	0.020
10	90.00	4.4	-1.6	8.4	0.323	0.	0.258	0.251	0.053	0.051
11	95.00	5.1	-0.9	12.2	0.479	0.	0.487	0.475	0.097	0.095



CD-10916-11

Figure 1. - Test facility schematic.

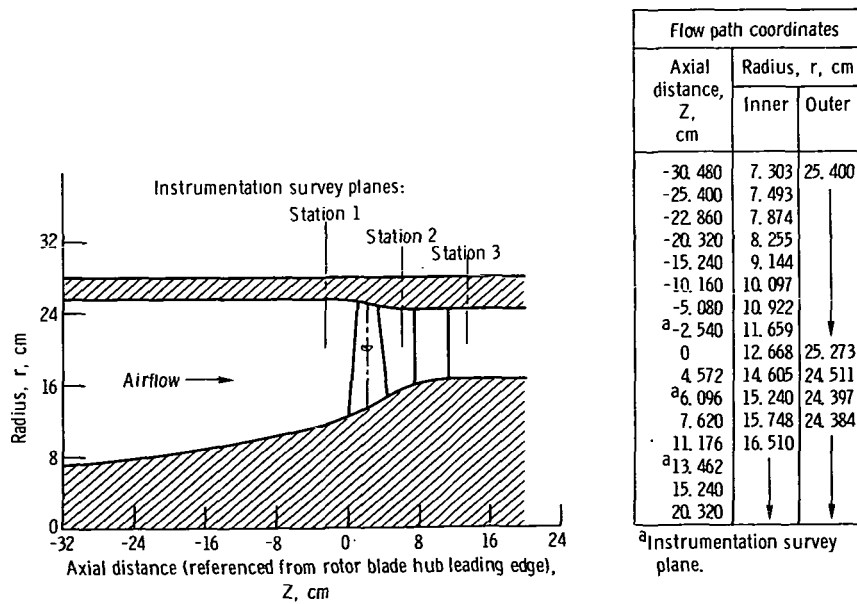
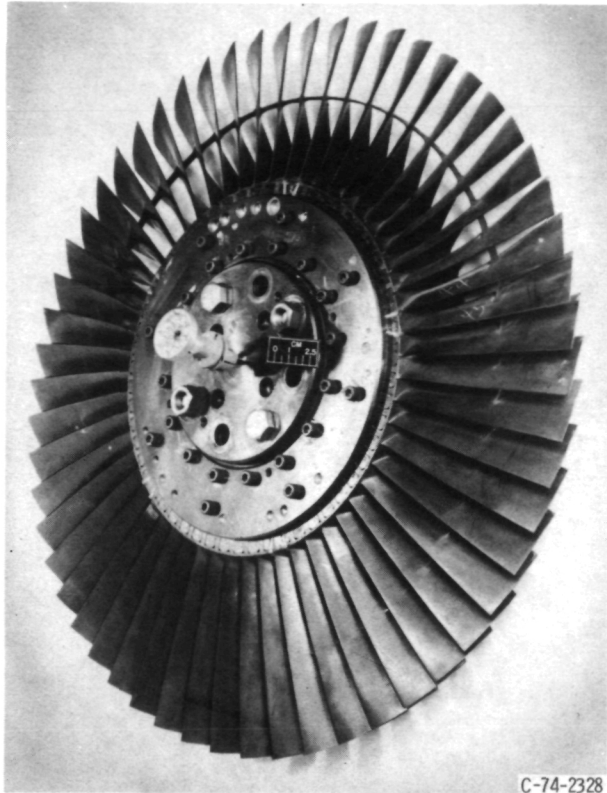
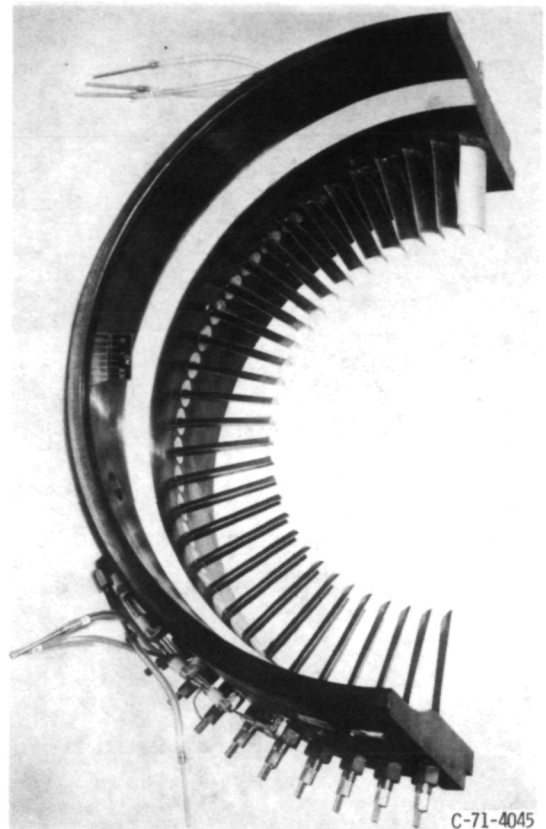


Figure 2. - Flow path for stage 18-13, showing axial location of instrumentation.



C-74-2328

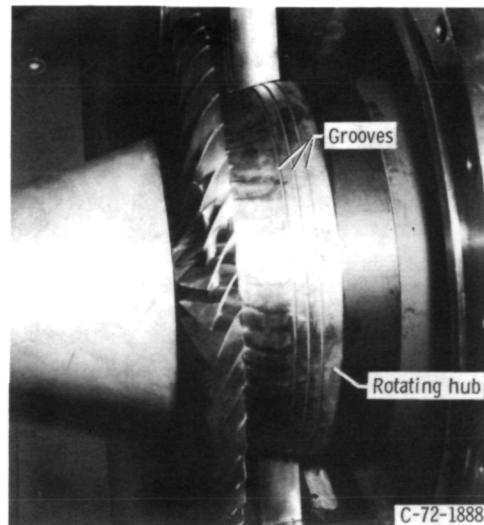
(a) Rotor 18.



C-71-4045

(b) Stator 13.

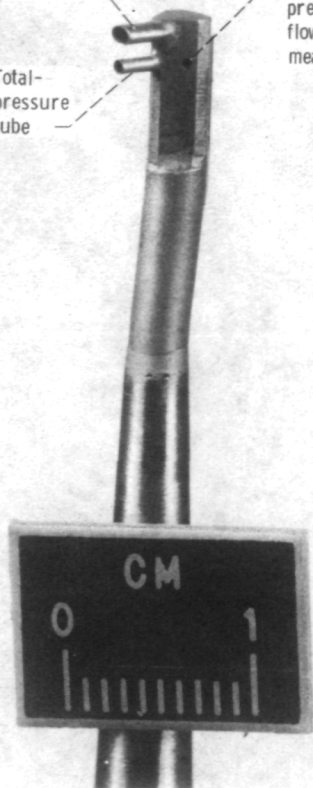
Figure 3. - Test stage.



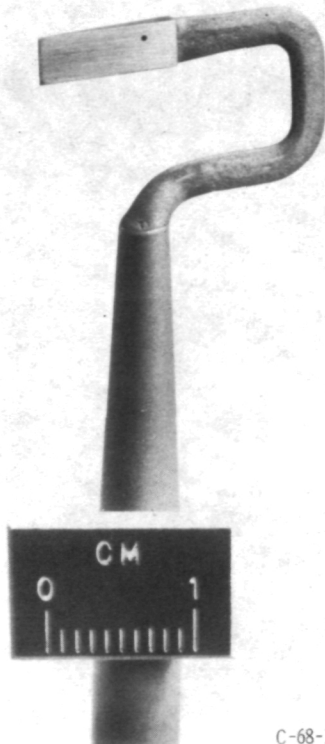
C-72-1888

Figure 4. - Rotating circumferential grooved stator hub for stage 18-13 mod 2.

Thermocouple  
Total-pressure tube  
Null-balancing pressure tap for flow angle measurement



C-74-3153



C-68-1280

(a) Combination total pressure, total temperature, and flow angle probe.

(b) Static pressure probe; 8° C-shaped wedge.

Figure 5. - Survey probes.

● Wall static pressure tap  
 —⊖— Combination probe  
 —□— Wedge static pressure probe

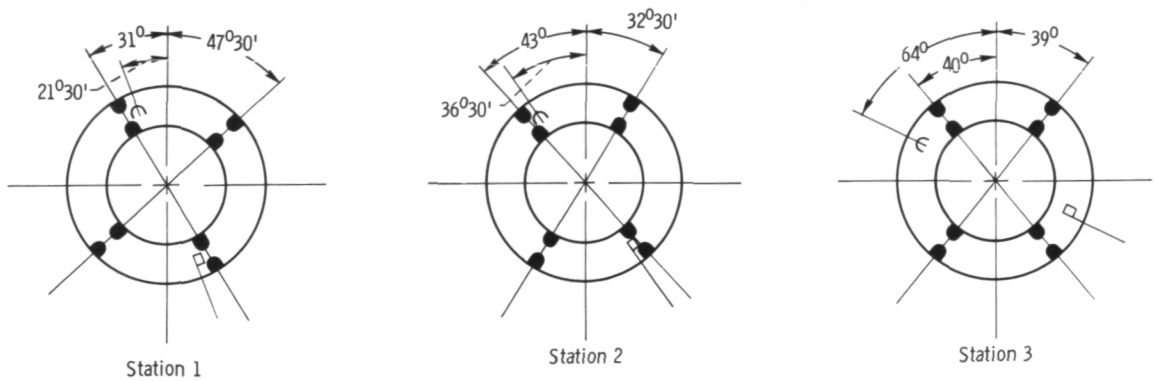


Figure 6. - Circumferential locations of measurements (looking downstream; clockwise rotation).



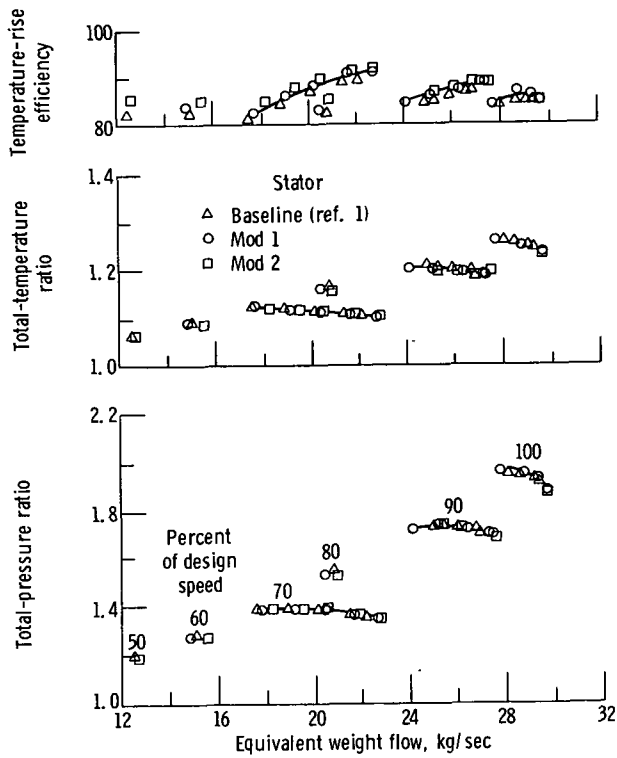


Figure 7. - Overall rotor performance with three stator configurations.

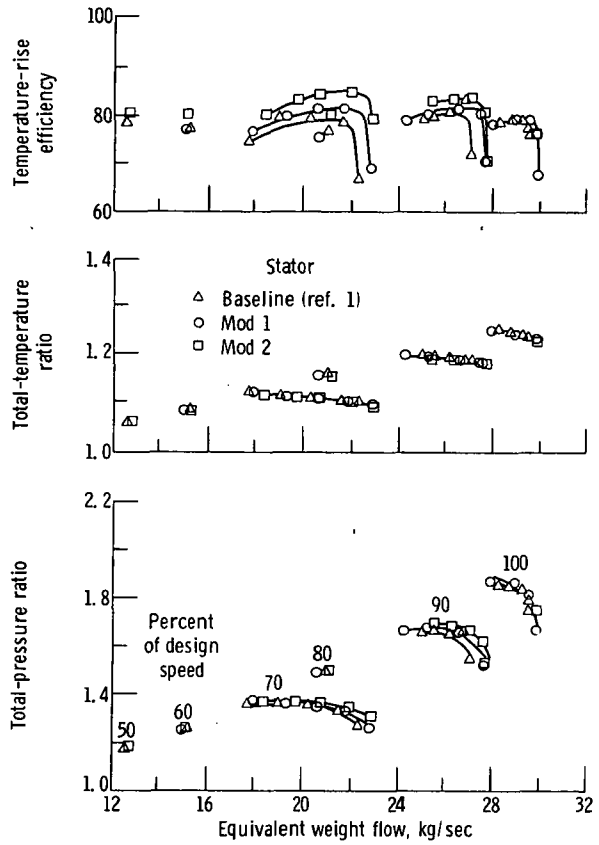


Figure 8. - Effect of stator modifications on compressor stage performance.

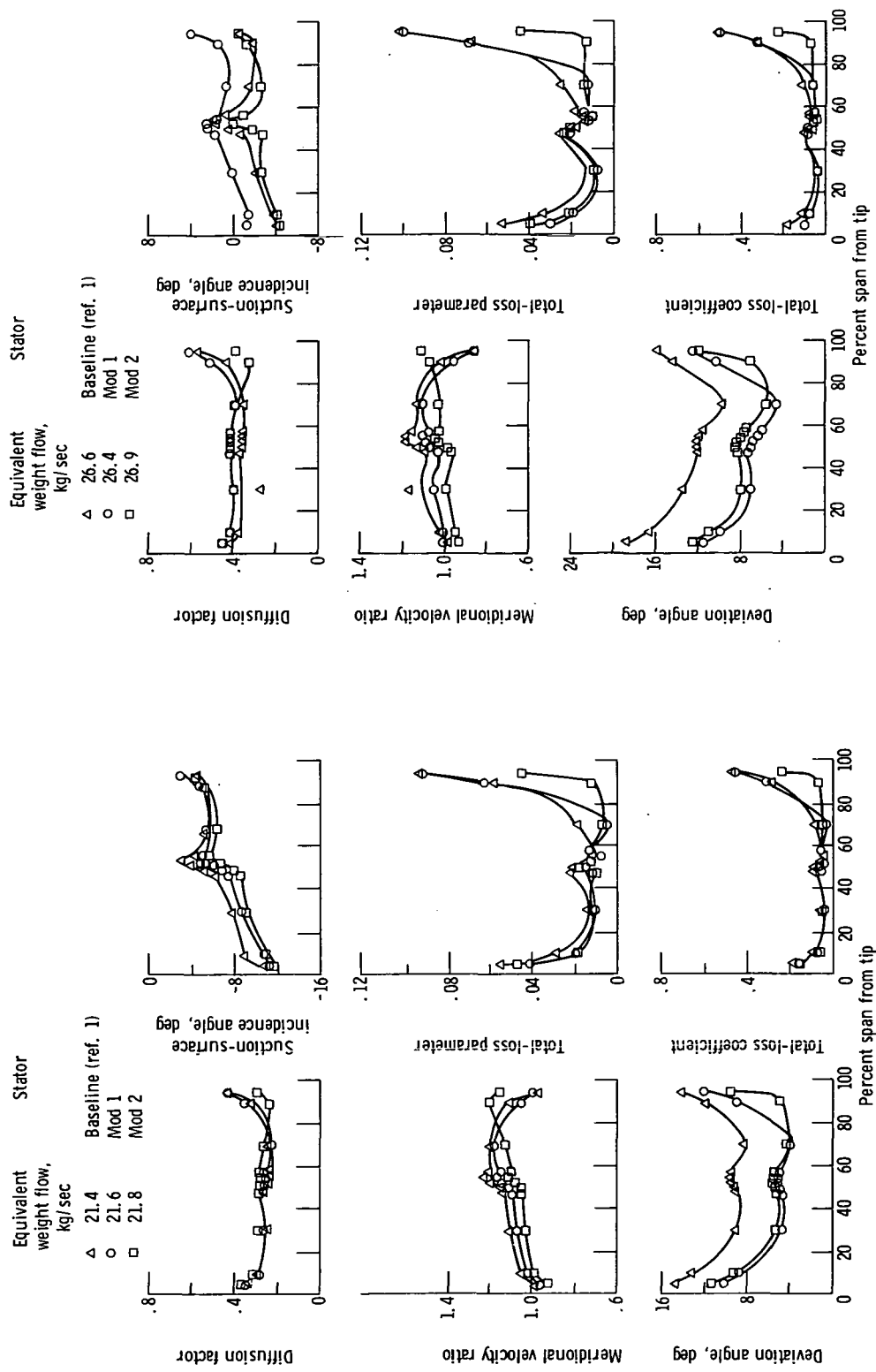


Figure 9. - Radial distribution of performance for three stator configurations at peak efficiency and 70 percent of design speed.

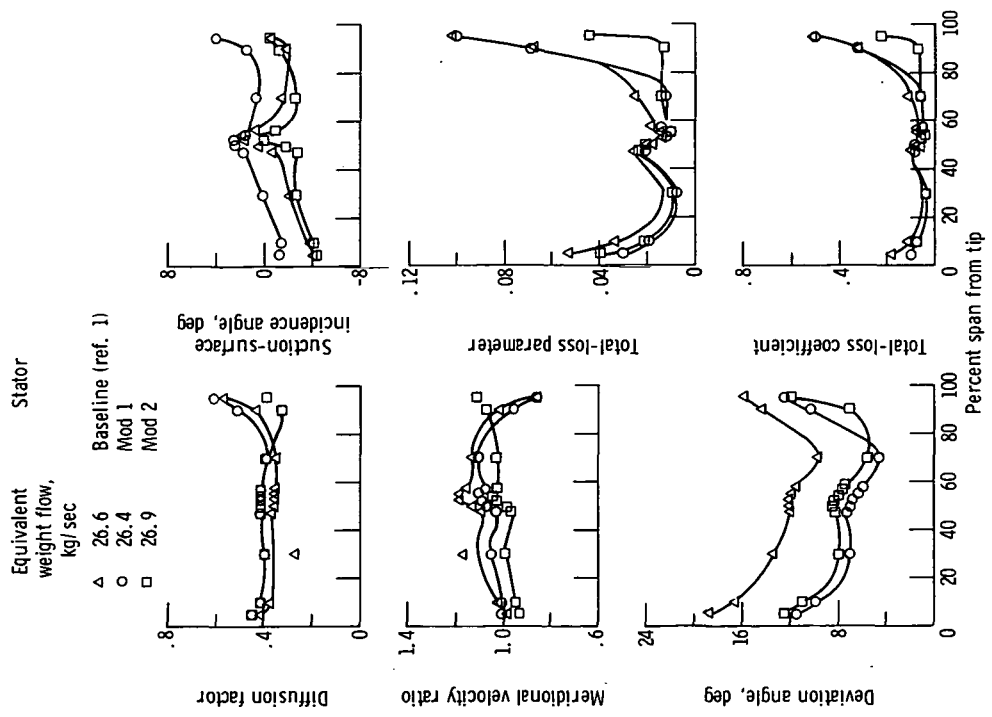
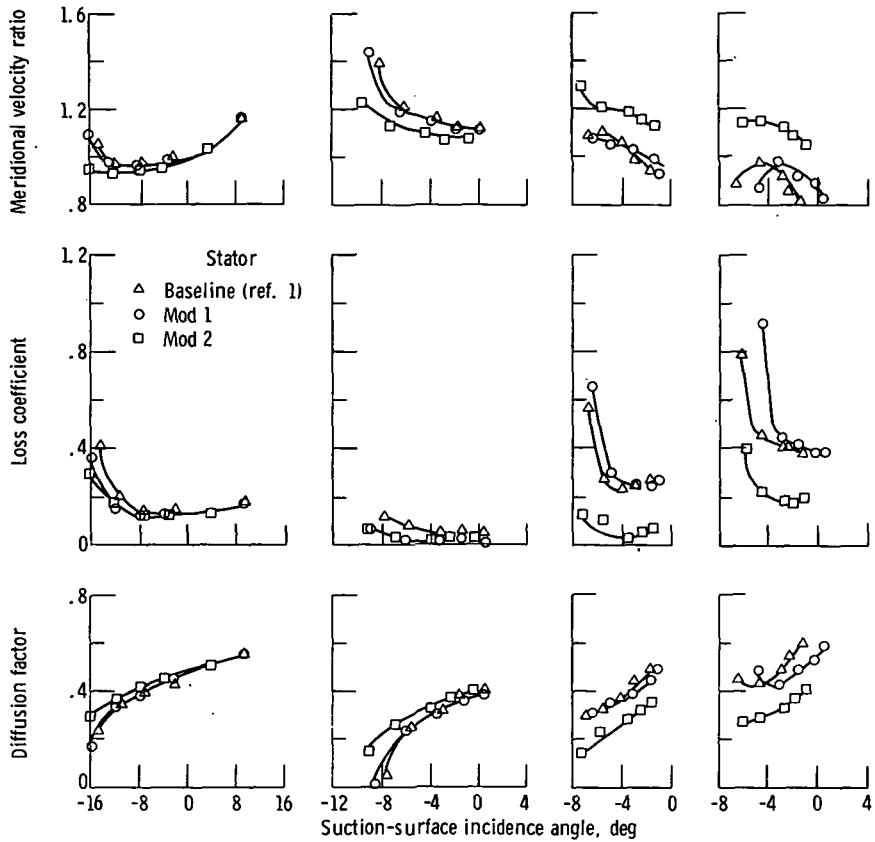
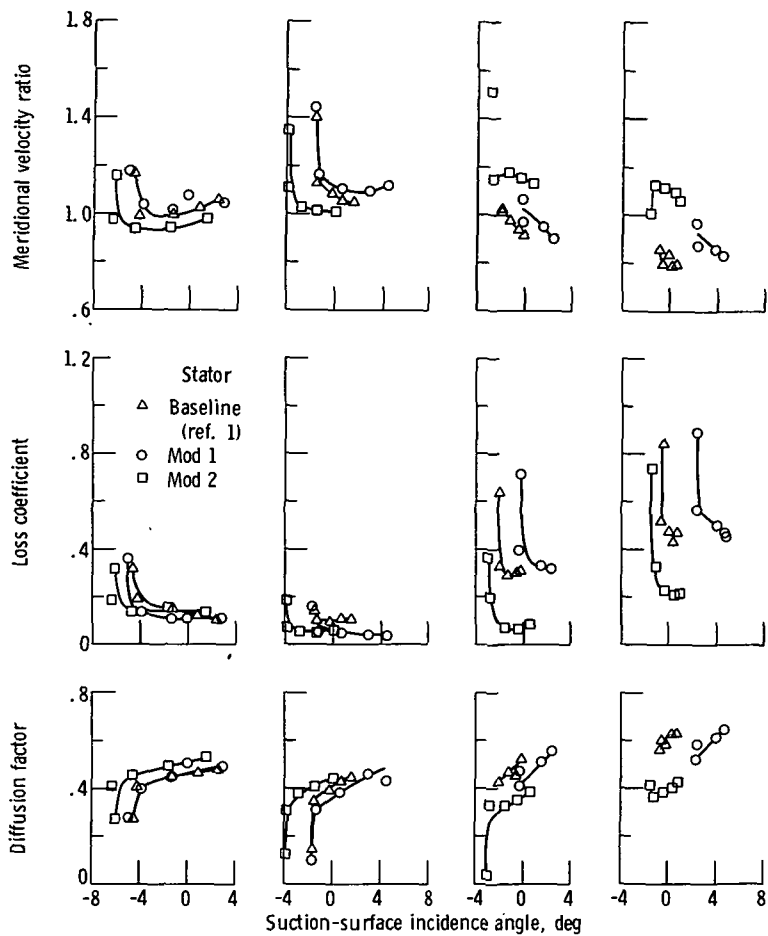


Figure 10. - Radial distribution of performance for three stator configurations at peak efficiency and 90 percent of design speed.



(a) 5 Percent span from tip. (b) 70 Percent span from tip. (c) 90 Percent span from tip. (d) 95 Percent span from tip.

Figure 11. - Comparisons of stator blade-element performance at four radial stations and at 70 percent of design speed.



(a) 5 Percent span from tip.      (b) 70 Percent span from tip.      (c) 90 Percent span from tip.      (d) 95 Percent span from tip.

Figure 12. - Comparisons of stator blade-element performance at four radial stations and at 90 percent of design speed.

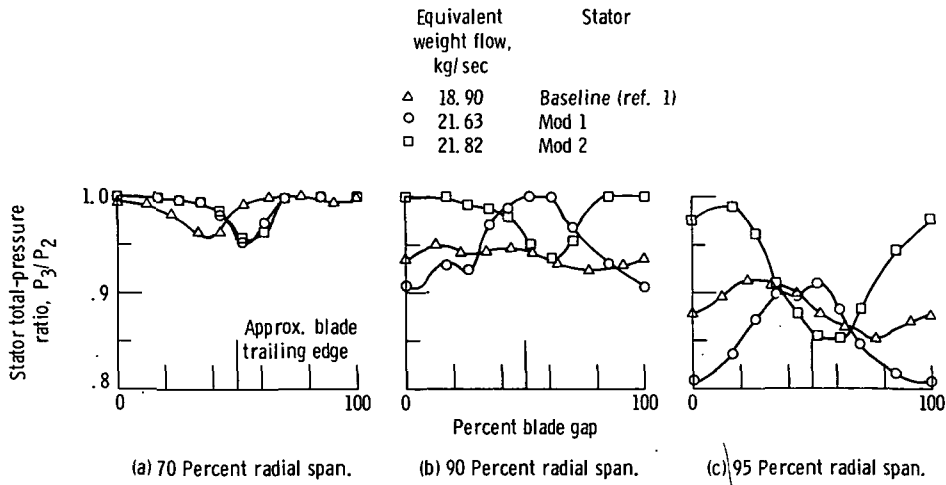


Figure 13. - Stator blade circumferential total-pressure-ratio distribution for peak efficiency at 70 percent of design speed.

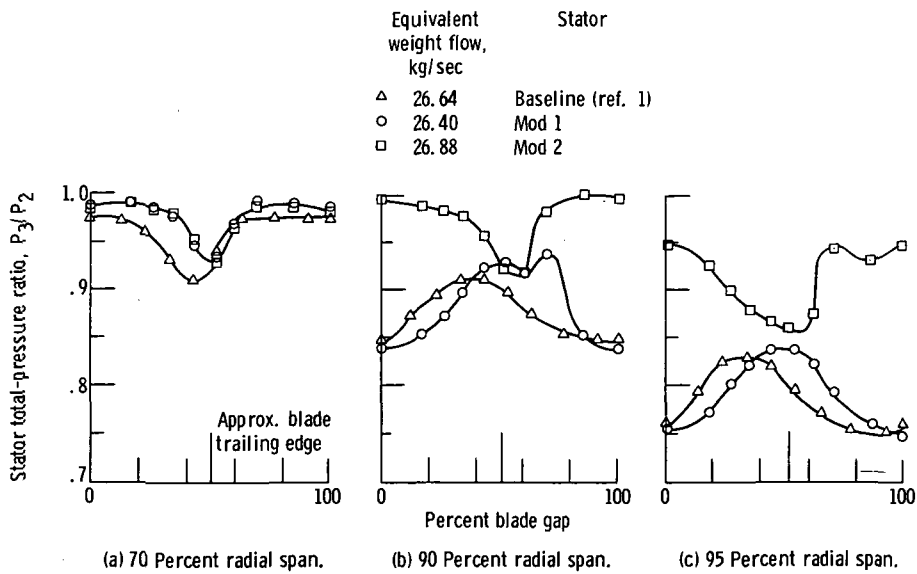


Figure 14. - Stator blade circumferential total-pressure-ratio distribution for peak efficiency at 90 percent of design speed.



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