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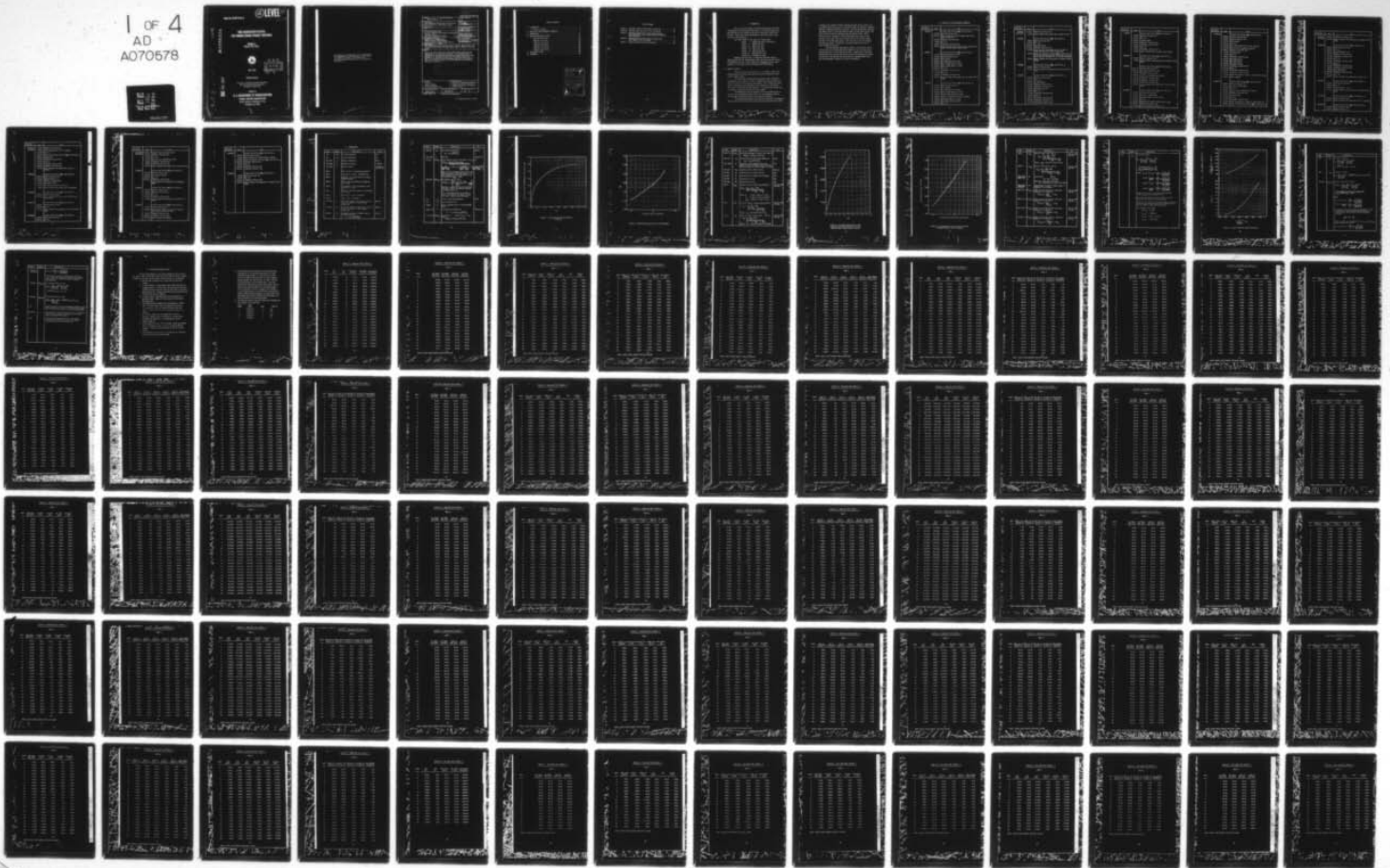
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Report No. FAA-RD-78-56, VI

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# TIME DEGRADATION FACTORS FOR TURBINE ENGINE EXHAUST EMISSIONS

VOLUME VI  
JT9D-3A TEST DATA



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INTERIM REPORT

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16. Abstract This is the sixth volume of an eight-volume report concerning the degradation of turbine engine emissions. This volume contains a compilation of all emission test data and analysis data used in the development of degradation factors for the JT9D-3A engine type. In addition, the volume contains maintenance data for the test units during the period of testing, as well as analyses of the samples of fuel used in each test.					
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## 1. INTRODUCTION

This is the sixth volume of an eight-volume report concerning the degradation of turbine engine emissions. This volume contains test data obtained for the JT9D-3A engine type as installed on the 747-100 aircraft. The engines, owned and operated by UAL, were tested in San Francisco by UAL personnel.

The other volumes of the report are listed below:

- Volume I - Program Description and Results
- Volume II - JT8D-9 Test Data
- Volume III - JT8D-7 Test Data
- Volume IV - JT3D-7 Test Data
- Volume V - JT3D-3B Test Data
- Volume VII - RB211-22B Test Data
- Volume VIII - CF700-2D Test Data

Regarding the test data, it should be noted that EPA test specifications were not followed where they conflicted with the interests of degradation testing. Hence, comparison of absolute emission levels presented in this report with EPA standards may be misleading.

### 1.1 CONTENT OF REPORT

There are four sections that make up the volume: Engine Test and Maintenance Chronology; Nomenclature; Emissions and Analysis Data; and Fuel Analysis Data.

The Engine Test and Maintenance Chronology section contains a chronological, unit-by-unit, listing of noteworthy events occurring to a particular engine in the course of the program. This includes test dates, dates and descriptions of maintenance, and the dates of installations onto other aircraft that may have occurred. If an engine was removed from the program, the date and reason are also included.

The Nomenclature section contains a listing and description of all the titles and column headings used in the two succeeding sections. This includes all equations used in the various calculations.

The Emissions and Analysis Data section includes all data gathered during a test, plus the results of any calculations performed on that data.

It consists of a number of tables arranged according to test series. For the JT9D-3A engine there were six such series; Baseline; 600 Hour; 1200 Hour; 1500 Hour; 1800 Hour; 2100 Hour and above. The hour designations represent the nominal value of time since baseline (TSB) for each engine tested. The actual values of TSB are scattered about the nominal values. Within each test series, the data is further subdivided into a table of data pertinent to an entire test for an engine and a series of seven tables for each of the eight modes tested. Thus there are a total of 57 tables for each test series. In addition, the section begins with a set of notes documenting the data.

The Fuel Analysis Data section contains a unit-by-unit listing of the results of analyses performed on samples of jet fuel used during the emission tests. During each engine test, a sample of fuel was taken from the same fuel tank as used during the test and subsequently analyzed. The results of the analyses include API gravity, hydrogen-carbon ratio and the percentages of paraffins, olefins and aromatics.

2. ENGINE TEST AND MAINTENANCE CHRONOLOGY

Unit No./ Serial No.	Date	Item
1/662794		Original Test A/C No. <u>8020</u> , Position No. <u>1</u>
	9/4/75	Baseline Emission Test
	10/17/75	Nozzle guide vane burned through; Engine Vane Control (EVC) trim
	11/12/75	"600-Hour" Emission Test
	1/8/76	EVC trim
	1/30/76	"1200-Hour" Emission Test
	3/17/76	Engine removed from program due to eroded nozzle guide vane and broken turbine blade
2/663025		Original Test A/C No. <u>8020</u> , Position No. <u>3</u>
	9/1/75	Uptrimmed engine 51 clicks
	9/4/75	Baseline Emission Test
	9/14/75	FCU replaced
	9/26/75	Uptrimmed engine 25 clicks
	10/3/75	Down-trimmed engine 7 clicks
	10/6/75	Down-trimmed engine 7 clicks
	10/17/75	EVC trim
	11/12/75	"600-Hour" Emission Test
	1/8/76	EVC trim
	1/30/76	"1200-Hour" Emission Test
3/17/76	Engine removed from program due to cracked turbine blade	
3/663059		Original Test A/C No. <u>8020</u> , Position No. <u>4</u>
	9/4/75	Baseline Emission Test
	9/14/75	FCU replaced
	9/22/75	Uptrimmed engine 16 clicks
	9/23/75	Down-trimmed engine 16 clicks
	9/26/75	Down-trimmed engine 26 clicks
	9/30/75	Number 15 and 16 fuel nozzles replaced
	10/6/75	Uptrimmed engine 13 clicks
	10/7/75	Uptrimmed engine 13 clicks
10/17/75	EVC trim	

Unit No./ Serial No.	Date	Item
3/663059 Continued	11/12/75	"600-Hour" Emission Test
	1/3/76	Engine removed from program due to engine failure
4/662802		Original Test A/C No. <u>8018</u> , Position No. <u>1</u>
	9/8/75	Baseline Emission Test
	11/7/75	EVC trim
	11/10/75	Recrimmed engine
	11/10/75	"600-Hour" Emission Test
	1/13/76	Engine removed from program due to oil leak in angle gear box and oil out of towershaft
	2/5/76	Engine reinstalled on A/C No. <u>8035</u> , Position No. <u>3</u> This engine had been removed but the repair did not affect gas path parameter so it has been reentered.
	3/4/76	Engine removed from program due to cracked turbine blades
5/663083		Original Test A/C No. <u>8018</u> , Position No. <u>2</u>
	9/8/75	Baseline Emission Test
	11/7/75	Engine removed From program due to failed turbine blade
6/662734		Original Test A/C No. <u>8018</u> , Position No. <u>3</u>
	9/8/75	Baseline Emission Test
	11/7/75	EVC trim
	11/10/75	Trimmed engine
	11/10/75	"600-Hour" Emission Test
	2/12/76	"1200-Hour" Emission Test
	2/16/76	Replaced nose cowl
	2/27/76	EVC trim
	4/7/76	"1500-Hour" Emission Test
	5/6/76	EVC trim
	5/21/76	"2100-Hour" Emission Test
	6/14/76	"2400-Hour" Emission Test
7/12/76	"2700-Hour" Emission Test	

Unit No./ Serial No.	Date	Item
7/662516	9/8/75	Original Test A/C No. <u>8018</u> , Position No. <u>4</u> Baseline Emission Test
	11/7/75	EVC trim
	11/10/75	Trimmed engine
	11/10/75	"600-Hour" Emission Test
	2/2/76	"1200-Hour" Emission Test
	2/27/76	EVC trim
	4/7/76	"1500-Hour" Emission Test
	4/8/76	Engine removed due to cracked turbine blade
8/663007	9/11/75	Original Test A/C No. <u>8011</u> , Position No. <u>1</u> Baseline Emission Test
	1/4/76	Engine removed from program due to cracked turbine blade
9/662619	9/11/75	Original Test A/C No. <u>8011</u> , Position No. <u>3</u> Baseline Emission Test
	10/10/75	Uptrimmed engine 25 clicks
	1/15/76	"600-Hour" Emission Test
	2/23/76	Throttle rig checked and adjusted
	3/1/76	"1200-Hour" Emission Test
	4/28/76	"1500-Hour" Emission Test
	5/20/76	"1800-Hour" Emission Test
	6/15/76	Engine removed from program due to turbine blade failure
10/662628	9/15/75	Original Test A/C No. <u>8032</u> , Position No. <u>1</u> Baseline Emission Test
	9/18/75	No noise trimmed engine
	9/22/75	Decreased engine trim 26 clicks
	11/7/75	EVC trim
	12/4/75	Replaced fuel nozzle, engine slow to start
	12/11/75	"600-Hour" Emission Test
	1/14/76	Engine removed due to loss of oil

Unit No./ Serial No.	Date	Item
11/662733		Original Test A/C No. <u>8032</u> , Position No. <u>2</u>
	9/18/75	No noise trimmed engine
	9/22/75	Baseline Emission Test
	10/5/75	FCU replaced
	11/7/75	EVC trim
	11/22/75	High stage bleed will not open, replaced
	12/2/75	Slow to start, replaced T <sub>12</sub> sensor
	12/15/75	"600-Hour" Emission Test
	1/8/76	Trimmed engine
	3/4/76	EVC trim
	3/8/76	"1200-Hour" Emission Test
	3/11/76	Retrimmed engine
	4/4/76	Retrimmed engine
	4/12/76	Rerigged throttle
	4/21/76	"1500-Hour" Emission Test
	5/11/76	EVC trim
	5/19/76	"1800-Hour" Emission Test
	6/17/76	"2100-Hour" Emission Test
	7/5/76	Bleed valve opens in cruise, replaced flow divider
	7/18/76	Engine removed
12/662424		Original Test A/C No. <u>8032</u> , Position No. <u>4</u>
	9/15/75	Baseline Emission Test
	9/18/75	No noise trimmed engine
	11/7/75	EVC trim
	12/4/75	Slow to start, replaced fuel nozzles
	12/11/75	"600-Hour" Emission Test
	1/8/76	Trimmed engine
	3/4/76	EVC trim
	3/11/76	"1200-Hour" Emission Test
	3/12/76	Engine removed due oil smell in cabin, EVC trim
	3/22/76	Engine reinstalled on A/C No. <u>8004</u> , Position No. <u>1</u>

Unit No./ Serial No.	Date	Item
12/662424 Continued	4/22/76	"1500-Hour" Emission Test
	4/25/76	Engine removed from program due to cracked turbine blade
13/663046		Original Test A/C No. <u>8010</u> , Position No. <u>1</u>
	9/16/75	Baseline Emission Test
	9/18/75	EVC trim
	9/20/75	Accomplished FCU trim
	12/4/75	"600-Hour" Emission Test
	2/27/76	"1200-Hour" Emission Test
	3/10/76	EVC trim
	3/31/76	"1500-Hour" Emission Test
	5/12/76	EVC trim
	5/13/76	"1800-Hour" Emission Test
	6/9/76	"2100-Hour" Emission Test
	8/9/76	Retrimmed engine
	8/10/76	"2700-Hour" Emission Test
8/31/76	EVC trim	
9/20/76	Engine removed from program due to disk limit	
14/663031		Original Test A/C No. <u>8010</u> , Position No. <u>2</u>
	9/16/75	Baseline Emission Test
	9/18/75	EVC trim
	9/20/75	Accomplished FCU trim
	11/13/75	Engine removed from program due to failed turbine blade
15/663092		Original Test A/C No. <u>8004</u> , Position No. <u>2</u>
	9/17/75	Baseline Emission Test
	11/25/75	Engine removed from program due to bird ingestion
16/662575		Original Test A/C No. <u>8004</u> , Position No. <u>3</u>
	9/17/75	Baseline Emission Test
	11/22/75	Checked throttle rig

Unit No./ Serial No.	Date	Item
16/662575 Continued	1/8/76	"600-Hour" Emission Test
	1/12/76	Engine removed due to fan rev damage
	1/21/76	EVC trim
	1/23/76	Engine reinstalled on A/C No. <u>8013</u> , Position No. <u>3</u>
	1/28/76	Replaced EVC
	3/25/76	"1200-Hour" Emission Test
	5/7/76	EVC trim
	5/19/76	"1500-Hour" Emission Test
	6/29/76	"1800-Hour" Emission Test
	7/4/76	Engine removed from program due to metal in tailpipe
17/662728		Original Test A/C No. <u>8004</u> , Position No. <u>4</u>
	9/17/75	Baseline Emission Test
	11/22/75	Checked throttle rig
	1/8/76	"600-Hour" Emission Test
	1/12/76	Replaced fan case
	1/23/76	EPR reads low replaced transmitter
	3/8/76	Engine removed from program due to eroded NGV
18/663069		Original Test A/C No. <u>8027</u> , Position No. <u>2</u>
	9/19/75	Baseline Emission Test
	11/11/75	Engine removed from program due to nozzle guide vane erosion
19/663075		Original Test A/C No. <u>8027</u> , Position No. <u>3</u>
	9/19/75	Baseline Emission Test
	10/3/75	EVC trim
	11/11/75	Engine removed from program due to failed turbine blade
20/663088		Original Test A/C No. <u>8003</u> , Position No. <u>1</u>
	9/22/75	Baseline Emission Test
	10/16/75	EVC trim

Unit No./ Serial No.	Date	Item
20/663088 Continued	10/26/75	Replaced high stage bleed valve
	11/21/75	'600-Hour" Emission Test
	2/2/76	EVC trim
	2/11/76	Hard to start, replaced T <sub>2</sub> sensor
	3/9/76	'1200-Hour" Emission Test
	4/8/76	'1500-Hour" Emission Test
	4/11/76	Engine removed from program due to turbine failure
21/662618		Original Test A/C No. <u>8018</u> , Position No. <u>4</u>
	4/13/76	Baseline Emission Test
	9/14/76	Fuel control replaced
	10/16/76	EVC trim
	10/20/76	'1500-Hour" Emission Test
		Engine removed from program due to compressor damage
22/663069		Original Test A/C No. <u>8018</u> , Position No. <u>2</u>
	11/10/75	Baseline Emission Test
	1/29/76	'600-Hour" Emission Test
	2/27/76	EVC trim
	4/13/76	'1200-Hour" Emission Test
	5/6/76	Engine removed from program due to metal in oil system
23/662607		Original Test A/C No. <u>8003</u> , Position No. <u>2</u>
	4/9/76	Baseline Emission Test
	6/28/76	Emission test aborted, due to high vibration during mode 3, cause not known
	7/15/76	'600-Hour" Emission Test
	9/24/76	'1200-Hour" Emission Test
	11/22/76	Engine removed from program

Unit No./ Serial No.	Date	Item
24/663059	3/31/76	Original Test A/C No. <u>8010</u> , Position No. <u>4</u> Baseline Emission Test
	5/8/76	Engine removed, 3.0 bleed actuator replaced
	5/26/76	Engine reinstalled on A/C No. <u>8013</u> , Position No. <u>1</u>
	6/29/76	"600-Hour" Emission Test
	8/9/76	EVC trim
	9/24/76	"1200-Hour" Emission Test
	11/22/76	"1500-Hour" Emission Test
25/662628	4/2/76	Original Test A/C No. <u>8020</u> , Position No. <u>1</u> Baseline Emission Test
	7/6/76	EVC trim
	8/24/76	"1200-Hour" Emission Test
	9/24/76	Engine removed from program due to broken turbine blades

### 3. NOMENCLATURE

Name	Symbol	Description	Unit
TSO	TSO	Time Since Overhaul	hrs
TSB	TSB	Time Since Baseline	hrs
AMB TEMP	$T_a$	Ambient temperature	deg R
AMB PRESS	$P_a$	Barometric pressure	in Hg abs
AMB HUMID	H	Ambient humidity	lbm H <sub>2</sub> O per lbm dry air
MODE 1		Idle, initial - 65 percent $N_2$ nominal	
MODE 2		Idle "plus", initial - 69 percent $N_2$	
MODE 3		Take-off - T.O. EPR from airline engine operating guide	
MODE 4		Climb - EPR corresponding to 85 percent T.O. thrust	
MODE 5		Intermediate - EPR corresponding to 60 percent T.O. thrust	
MODE 6		Approach - EPR corresponding to 30 percent T.O. thrust	
MODE 7		Idle "plus", final - see MODE 2	
MODE 8		Idle, final - see MODE 1	
N1 SPEED	$N_1$	Rotational speed of low pressure turbine, given as a percent of design speed (3400 rpm)	percent
N2 SPEED	$N_2$	Rotational speed of high pressure turbine, given as a percent of design speed (7807 rpm)	percent
CORR N1	$N_1'$	$N_1$ speed corrected to standard ambient conditions (Ref 1) $N_1' = N_1 \times \sqrt{518.7/T_a}$	percent

Name	Symbol	Description	Unit
CORR N2	$N_2'$	Corrected $N_2$ speed (Ref 1) $N_2' = N_2 \times \sqrt{518.7/T_a}$	percent
FUEL FLOW	F	Fuel Flow	lbm per hr
CB F/A	$(F/A)_{CB}$	Carbon balance fuel-air ratio (Ref 1, dry basis) $(F/A)_{CB} = \frac{(12+a) \times 4.77(1+0.25a)}{(1+0.25a)(32+3.73 \times 28+0.04 \times 40)} \div$ $\left[ \frac{100}{\frac{CO+CO_2+HC}{10^4} + 0.25a} - \frac{1}{2} \left( \frac{CO/10^4}{\frac{CO+CO_2+HC}{10^4}} \right) - \frac{(1+0.25a)HC/10^4}{\frac{CO+CO_2+HC}{10^4}} \right]$ where a is the hydrogen-carbon ratio of the fuel as obtained in the fuel analysis. (A mean value was used when the analysis was not available; $a_{mean} = 1.90$ )	
PERF F/A	$(F/A)_{PF}$	Performance fuel-air ratio $(F/A)_{PF} = F + \left( \frac{FP_7 \times A_j \times P_a \times EPR}{\sqrt{T_6}} - \frac{F}{3600} \right)$ where $FP_7$ is obtained from the curve shown in Figure 1 and $A_j$ , the nozzle discharge area equals 914 sq in.  EPR is obtained from the curve shown in Figure 2 for modes 1, 2, 7, and 8. Actual test data is used for the other modes.	
TT6	$T_{T6}$	Turbine interstage temperature	deg R
EPR	EPR	Engine pressure ratio	
THURST	TH	Thrust, obtained from $TH = TH' \times (P_a/29.92)$ (Ref 1)	
CORR FU FL	F'	Corrected fuel flow (Ref 1) $F' = F \times (29.92/P_a) \times \sqrt{518.7/T_a}$	lbm per hr
COR CB F/A	$(F/A)'_{CB}$	Corrected carbon balance fuel-air ratio (Ref 1) $(F/A)'_{CB} = (F/A)_{CB} \times (518.7/T_a)$	

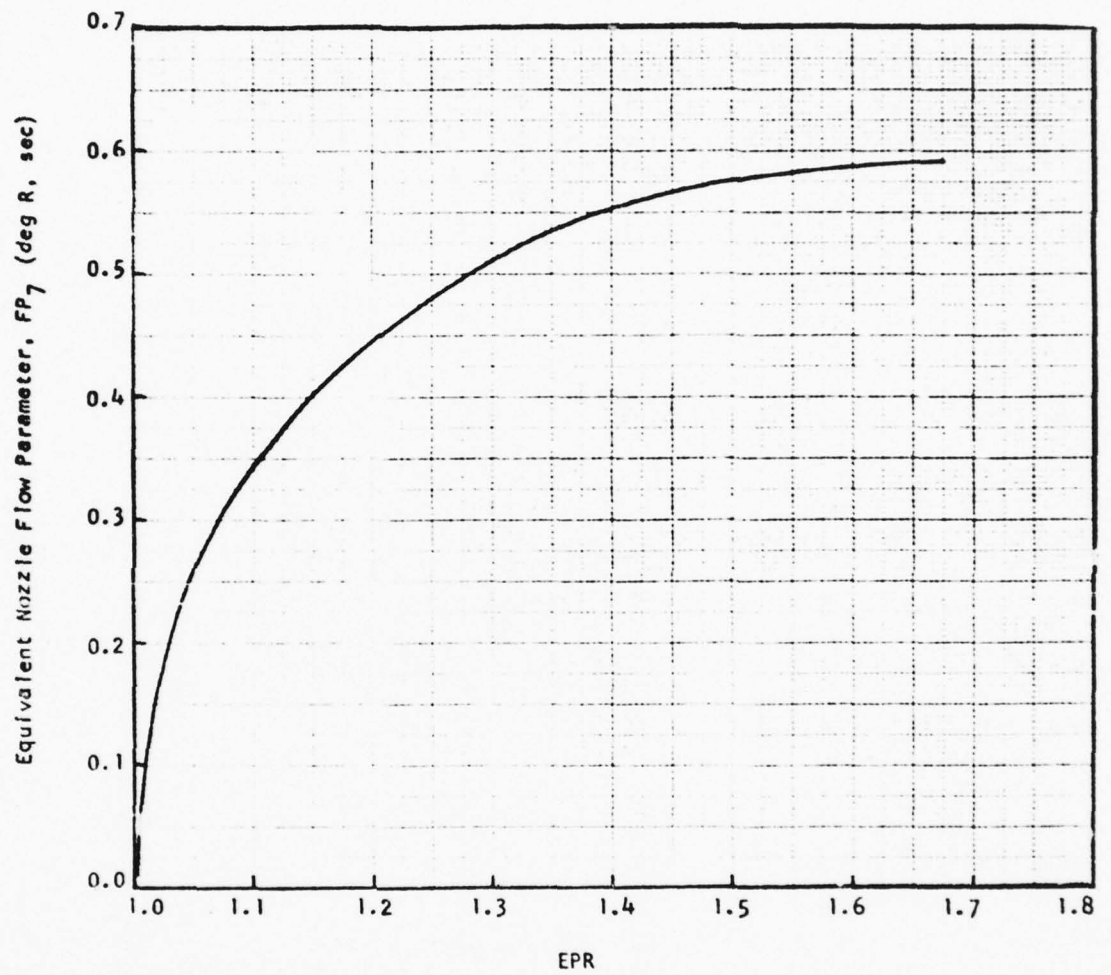


Figure 1. Equivalent Nozzle Flow Parameter versus EPR

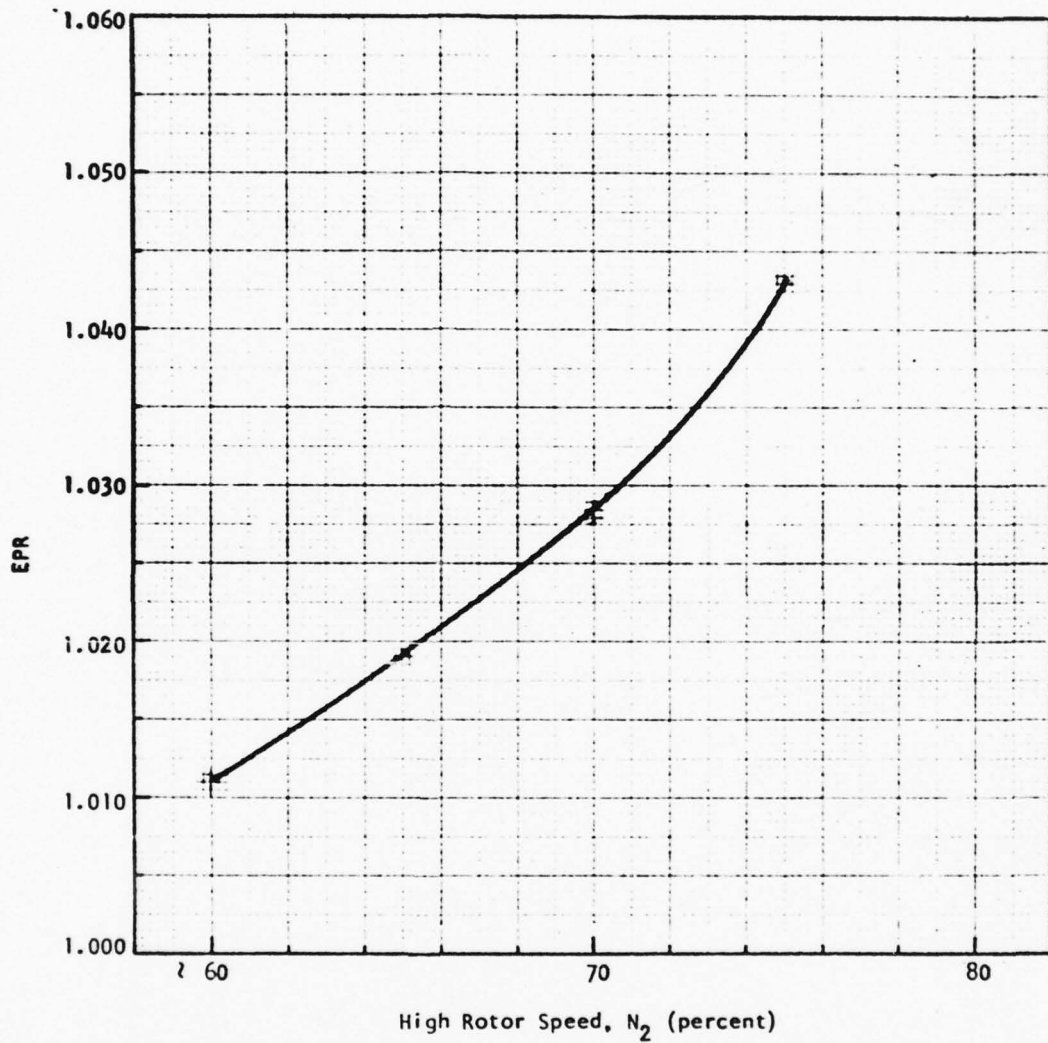


Figure 2. Mean EPR versus N<sub>2</sub> Curve in the Idle Regime

Name	Symbol	Description	Unit
COR PF F/A	$(F/A)'_{PF}$	Corrected performance fuel-air ratio (Ref 1) $(F/A)'_{PF} = (F/A)_{PF} \times (518.7/T_a)$	
CORR TT6	$T_{T6}$	Corrected turbine interstage temperature $T_{T6}' = T_{T6} \times (518.7/T_a)$	deg R
COR THRUST	TH'	Corrected thrust (obtained from curve shown in Fig 3 for modes 3 thru 6 and from the curve shown in Fig 4 for modes 1,2,7,8)	lbf
CO2 CONC	CO <sub>2</sub>	Concentration of carbon dioxide	percent
CO CONC	CO	Concentration of carbon monoxide	ppm
HC CONC	HC	Concentration of hydrocarbons (propane)	ppm
NO CONC	NO	Concentration of NO	ppm
NOX CONC	NO <sub>x</sub>	Concentration of NO <sub>x</sub>	ppm
CO2 EI	EI <sub>CO<sub>2</sub></sub>	Emission index of carbon dioxide (Ref 3)  $EI_{CO_2} = \frac{M_{CO_2} \times CO_2 \times 1000}{(M_C + a \times M_H) \left( \frac{CO}{10^4} + \frac{CO_2 + HC}{10^4} \right)}$ where: $M_C$ = atomic weight of carbon $M_H$ = atomic weight of hydrogen $M_{CO_2}$ = molecular weight of CO <sub>2</sub>	lbm per 1000 lbm fuel
CO EI	EI <sub>CO</sub>	Emission index of carbon monoxide (Ref 3)  $EI_{CO} = \frac{M_{CO} \times \frac{C}{10^4} \times 1000}{(M_C + a \times M_H) \left( \frac{CO}{10^4} + \frac{CO_2 + HC}{10^4} \right)}$ where: $M_{CO}$ = molecular weight of CO	lbm per 1000 lbm fuel
HC EI	EI <sub>HC</sub>	Emission index of hydrocarbons (Ref 3)  $EI_{HC} = \frac{M_{HC} \times \frac{HC}{10^4} \times 1000}{(M_C + a \times M_H) \left( \frac{CO}{10^4} + \frac{CO_2 + HC}{10^4} \right)}$ where: $M_{HC}$ = molecular weight of methane	lbm per 1000 lbm fuel

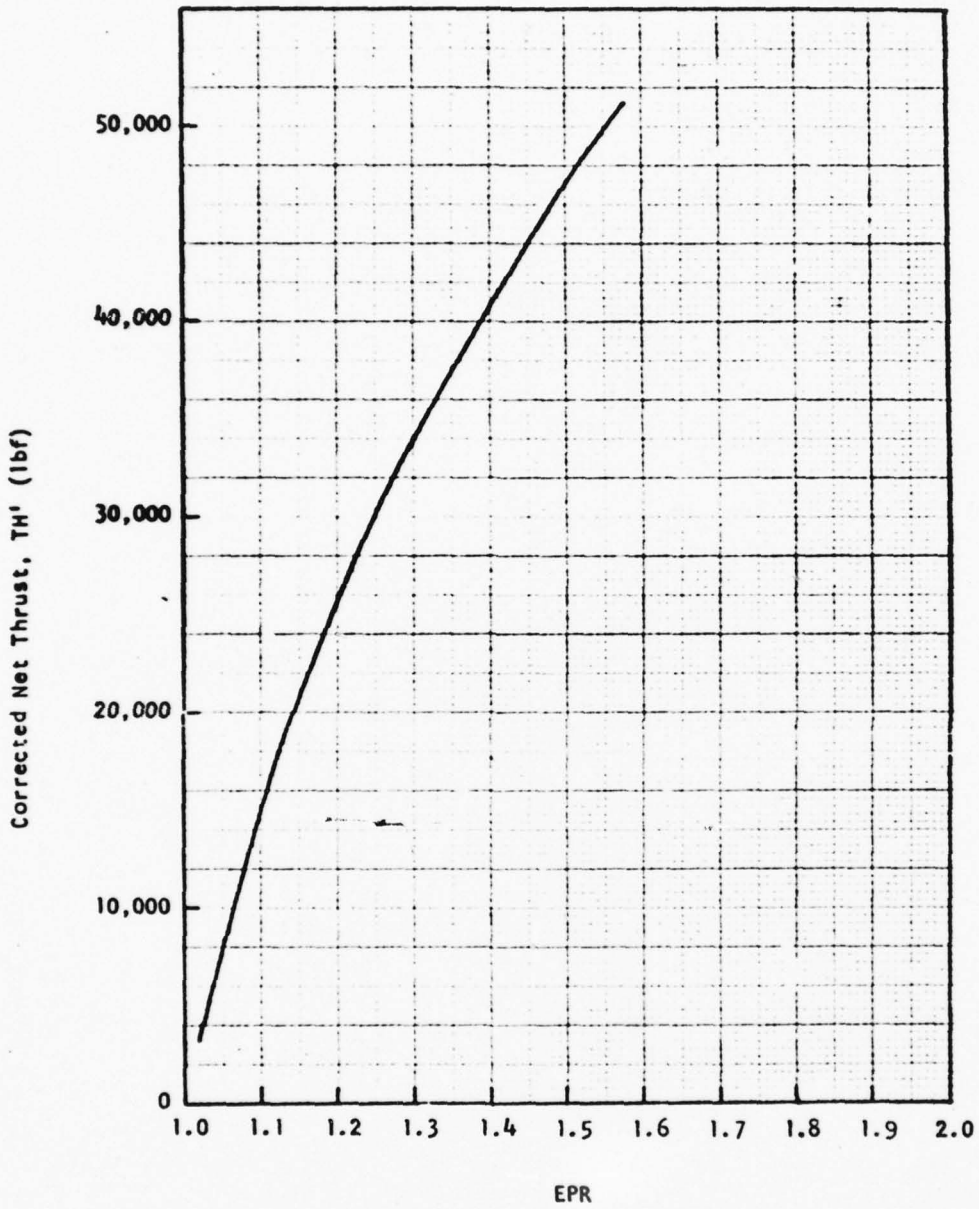


Figure 3. Estimated Engine Thrust versus Engine Pressure Ratio Characteristic with NAFEC Emissions Sampling Rake Installed

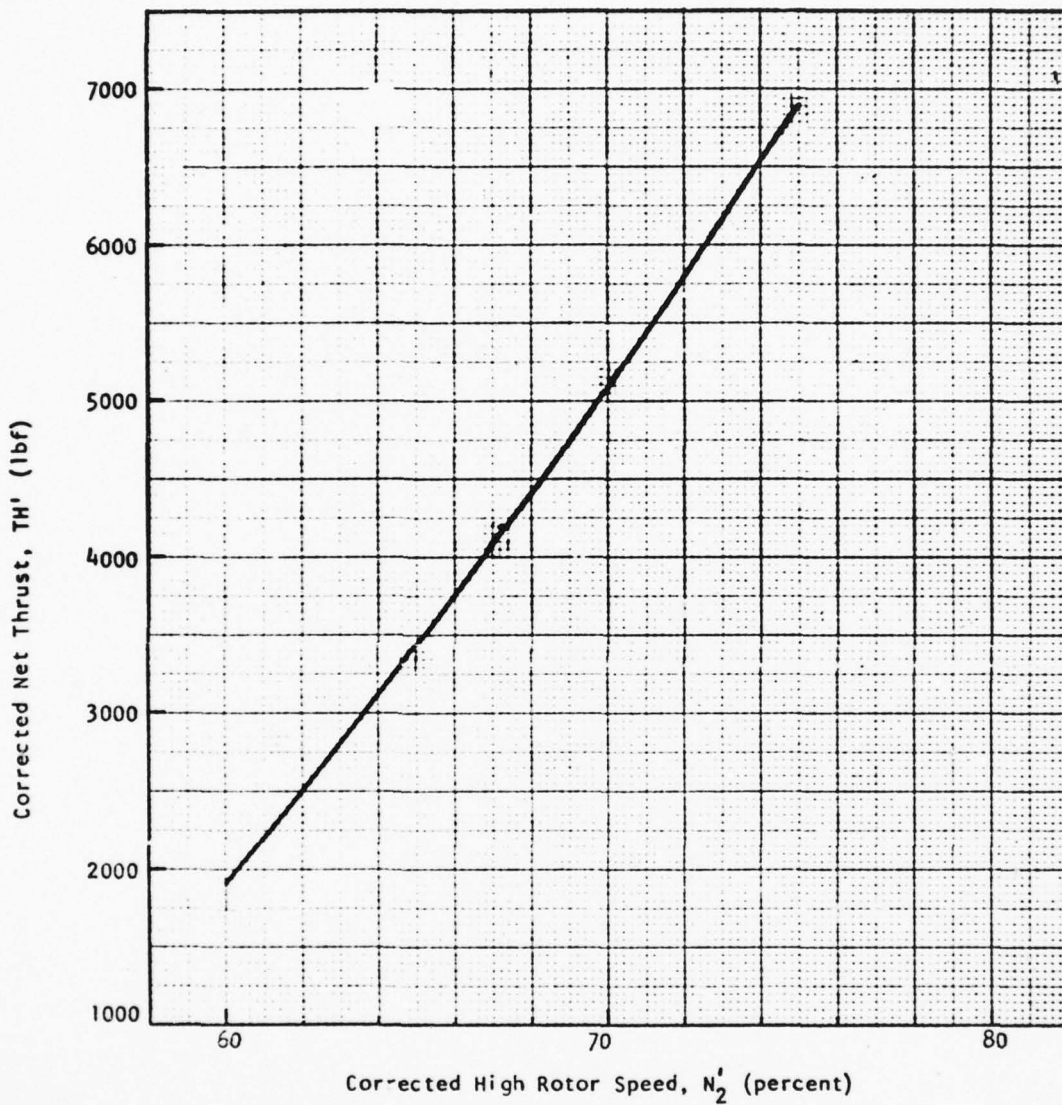


Figure 4. Estimated Engine Thrust versus Corrected High Rotor Speed in the Idle Regime

Name	Symbol	Description	Unit
NO EI	$EI_{NO}$	Emission index of NO (Ref 3) $EI_{NO} = \frac{M_{NO_2} \times \frac{NO}{10^4} \times 1000}{(M_C + a \times M_H) \left( \frac{CO}{10^4} + \frac{CO_2}{10^4} + \frac{HC}{10^4} \right)}$ where: $M_{NO_2}$ = molecular weight of $NO_2$	lbm per 1000 lbm fuel
NOX EI	$EI_{NO_x}$	Emission index of $NO_x$ (Ref 3) $EI_{NO_x} = \frac{M_{NO_2} \times \frac{NO_x}{10^4} \times 1000}{(M_C + a \times M_H) \left( \frac{CO}{10^4} + \frac{CO_2}{10^4} + \frac{HC}{10^4} \right)}$	lbm per 1000 lbm fuel
SMK NUMBER FRONT SIDE	SN	Smoke Number (Ref 3) $SN = 100 \times (1 - RS/RW)$ where RS = smoke spot reflectance RW = reflectance of clean filter paper	
SMK NUMBER CORRECTED	SN'	Smoke Number corrected in manner shown in Appendix III of Volume I	
NREC CO EI	$(EI_{CO})_{std}$	NREC corrected CO emission index (see Appendix II of Volume I) $(EI_{CO})_{std} = \frac{F_{CO}}{(F_{CO})_{std}} \times EI_{CO}$	lbm per 1000 lbm fuel
NREC HC EI	$(EI_{HC})_{std}$	NREC corrected HC emission index (see Appendix II of Volume I) $(EI_{HC})_{std} = \frac{F_{HC}}{(F_{HC})_{std}} \times EI_{HC}$	lbm per 1000 lbm fuel
NREC NO EI	$(EI_{NO})_{std}$	NREC corrected NO emission index (see Appendix II of Volume I) $(EI_{NO})_{std} = \frac{(F_{NO})_{std}}{F_{NO}} \times EI_{NO}$	lbm per 1000 lbm fuel
NREC NOX EI	$(EI_{NO_x})_{std}$	NREC corrected $NO_x$ emission index (see Appendix II of Volume I) $(EI_{NO_x})_{std} = \frac{(F_{NO_x})_{std}}{F_{NO_x}} \times EI_{NO_x}$	lbm per 1000 lbm fuel

Name	Symbol	Description
FCO	F <sub>CO</sub>	<p data-bbox="740 348 967 373">CO emission factor</p> $F_{CO} = \left[ \frac{P_{b,obs}}{P_{b,ref}} \right]^{3/4} \cdot \left[ \frac{T_{b,obs}}{T_{b,ref}} \right]^{1/2}$ $e \frac{T_{b,obs}/(400-F/A_{obs} \times 10^4)}{T_{b,ref}/(400-F/A_{ref} \times 10^4)}$ <p data-bbox="740 653 1317 726">where: <math>P_{b,ref} = P_{a,ref} \cdot f_1 \left( N_{2,ref} \sqrt{\frac{T_{a,ref}}{518.7}} \right)</math></p> $T_{b,ref} = \frac{T_{a,ref}}{518.7} \cdot f_2 \left( N_{2,ref} \sqrt{\frac{T_{a,ref}}{518.7}} \right)$ $P_{b,obs} = P_{a,obs} \cdot f_1 \left( N_{2,obs} \sqrt{\frac{T_{a,obs}}{518.7}} \right)$ $T_{b,obs} = \frac{T_{a,obs}}{518.7} \cdot f_2 \left( N_{2,obs} \sqrt{\frac{T_{a,obs}}{518.7}} \right)$ <p data-bbox="740 1010 1349 1062">where the functions <math>f_1</math> and <math>f_2</math> are obtained from curves supplied by P&amp;WA (see Fig 5)</p> <p data-bbox="740 1094 1373 1146">Subscript "obs" refers to actual values or values observed for a particular test and mode.</p> <p data-bbox="740 1167 1455 1251">Subscript "ref" refers to reference values, arbitrarily chosen as the average values for the baseline tests (and at take-off power where appropriate)</p> <p data-bbox="740 1272 1081 1297">The reference values were:</p> $F/A_{ref} = 0.0185$ $N_{2,ref} = 7430 \text{ rpm}$ $P_{a,ref} = 29.97 \text{ in Hg abs}$ $T_{a,ref} = 519.2 \text{ deg R}$

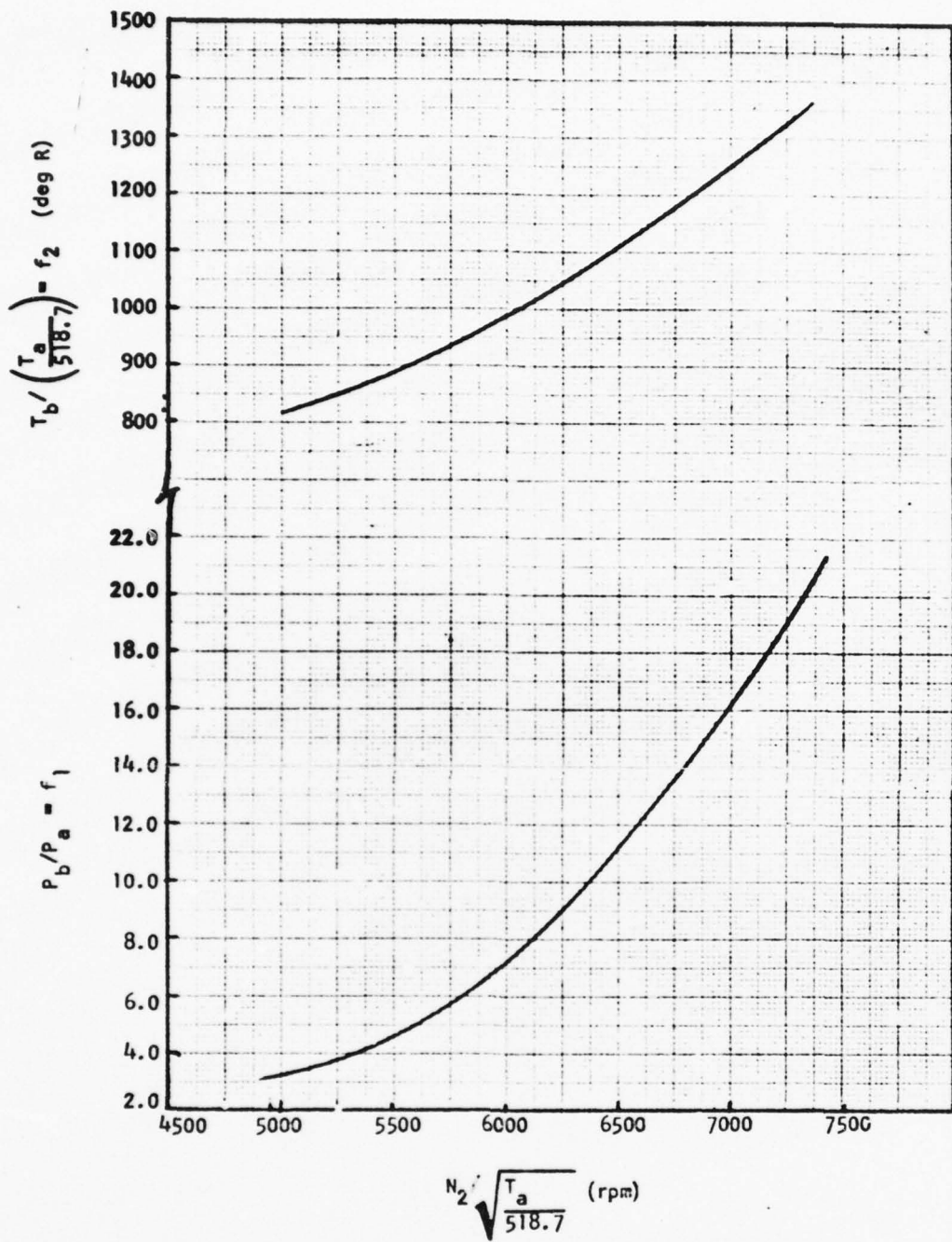


Figure 5. Typical Production Engine Performance

Name	Symbol	Description
FHC	$F_{HC}$	HC emission factor $F_{HC} = \left[ \frac{P_{b,obs}}{P_{b,ref}} \right]^{1.8} \left[ \frac{T_{b,obs}}{T_{b,ref}} \right]^{1/2} \cdot e^{0.00417 (T_{b,obs} - T_{b,ref})}$
FNO	$F_{NO}$	NO emission factor $F_{NO} = \left[ \frac{P_{b,obs}}{P_{b,ref}} \right]^{1/2} \cdot e^{\{0.00444 (T_{b,obs} - T_{b,ref}) - 19H\}}$
STD FCO	$(F_{CO})_{std}$	Corrected CO emission factor $(F_{CO})_{std} = \left[ \frac{P_{b,std}}{P_{b,ref}} \right]^{3/4} \cdot \left[ \frac{T_{b,std}}{T_{b,ref}} \right]^{1/2} \cdot \frac{e^{\frac{T_{b,std}}{400 - T_{a,std}} (F/A_{obs} / T_{a,obs}) \times 10^4}}{e^{\frac{T_{b,ref}}{400 - T_{a,ref}} (F/A_{ref}) \times 10^4}}$ <p>where:</p> $P_{b,std} = P_{a,std} \cdot f_1 \left( N_{2,std} \sqrt{\frac{T_{a,std}}{518.7}} \right)$ $T_{b,std} = \frac{T_{a,std}}{518.7} \cdot f_2 \left( N_{2,std} \sqrt{\frac{T_{a,std}}{518.7}} \right)$ <p>The values of the engine operating parameters in the standardized emission factors may be obtained by assuming that corrected thrust remains constant. Therefore,</p> $\frac{F/A}{T_a} \quad \text{and} \quad \frac{N_2}{T_a}$ <p>remain constant, and the equations for <math>T_{b,std}</math> and <math>P_{b,std}</math> should be modified to read:</p> $P_{b,std} = P_{a,std} \cdot f_1 \left( N_{2,obs} \sqrt{\frac{T_{a,obs}}{518.7}} \right)$

Name	Symbol	Description
STD FCO Continued		$T_{b, std} = f_2 \left( N_{2, obs} \sqrt{\frac{T_{a, obs}}{518.7}} \right)$ <p>Subscript "std" refers to standard day conditions (i.e., 518.7 deg R, 29.92 in Hg abs and 0.0 lbm H<sub>2</sub>O lbm dry air), or a value corrected to standard day condition.</p>
STD FHC	$(F_{HC})_{std}$	<p>Corrected HC emission index</p> $(F_{HC})_{std} = \left[ \frac{P_{b, std}}{P_{b, ref}} \right]^{1.8} \cdot \left[ \frac{T_{b, std}}{T_{b, ref}} \right]^{1/2} \cdot e^{0.00417 (T_{b, std} - T_{b, ref})}$
STD FNO	$(F_{NO})_{std}$	<p>Corrected NO emission index</p> $(F_{NO})_{std} = \left[ \frac{P_{b, std}}{P_{b, ref}} \right]^{1/2} \cdot e^{0.00444 (T_{b, std} - T_{b, ref})}$
API		Specific gravity of jet fuel measured at 60 deg F using "Relative Density or Density of Liquid-Balance Method" and converted to API gravity using a conversion table.
H/C RATIO	a	Hydrogen-carbon ratio as determined using a Sanda-Carlo Erba Model 1100 elemental analyzer and the indium sample encapsulation technique.
FIA		Fluorescent Indicator Adsorption - Fuel samples were analyzed for paraffin, olefin, and aromatic content using the ASTM Method D1319-70.

#### 4. EMISSIONS AND ANALYSIS DATA

The data which appears on the following pages consists of actual test data as well as calculated values which were used for analysis purposes. In examining this data, certain points should be noted, as listed below:

1. Data has been rounded off to no more than 4 significant figures.
2. In some instances, the NO analyzer gave higher readings than the NO<sub>x</sub> analyzer. In these cases, the NO<sub>x</sub> emission index and the NREC corrected emission index were set equal to the corresponding NO values. The NO<sub>x</sub> concentration and the FAA corrected emission index were not changed.
3. In certain tests, smoke data could not be obtained for a particular mode. Values of 0.0 are printed in the tables for these cases.
4. The JT9D-3A engines dropped out of the program at a rapid rate. For that reason, after the 1200 Hour test series, it was decided to test the remaining engines every 300 hours. In addition, units 21 and 23-25 were added to the program.
5. Unit 18 was removed from the program early and then returned. However, due to the nature of the maintenance performed (see Section 2), it was assigned a new unit number, number 22.
6. For the baseline test of unit 21 no mode 1 data was obtained, and for the 600 Hour test of unit 17, no mode 4 data was obtained. These units have been left out of the relevant tables.
7. For the 600 Hour test of unit 12, N<sub>2</sub> data was not available. Mean values were substituted instead.

8. The calibration gas concentrations for NO and NO<sub>x</sub> were questionable for the nominal 50 ppm bottle for tests conducted between October 10, 1975 and June 14, 1976; and for the nominal 200 ppm bottle for tests conducted between November 18, 1975 and April 22, 1976. The test data was processed in two different ways: the first assuming the stated concentrations were correct; and the second using calculated values for the concentrations. This is discussed in detail in Appendix IV of Volume I. In the following tables, the concentrations and emission indices of NO and NO<sub>x</sub> are based on the stated calibration gas concentrations, while the NREC corrected emission indices are based on the calculated values.
9. The following items of data were found to be erroneous and were changed in the data base:

Unit Number	Test Series	Mode	Quantity
1	"600-Hour"	5	NI
1	"3000-Hour"	2	EGT
6	"3000-Hour"	2	EIT
10	"600-Hour"	7	EPR
17	"600-Hour"	5	NI

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UNIT	TSO HR	TSR HR	AMB TEMP DEG R	AMB PRESS IN HG	AMB HUMID LR H <sub>2</sub> O/AIR
1	11776.	0.	521.7	29.91	.009350
2	11144.	0.	521.7	29.91	.009350
3	11796.	0.	521.7	29.91	.009350
4	12531.	0.	520.2	29.88	.008640
5	7733.	0.	520.2	29.88	.008640
6	14240.	0.	520.2	29.88	.008640
7	12394.	0.	520.2	29.88	.008640
8	10938.	0.	523.7	29.87	.009510
9	13685.	0.	523.7	29.87	.009510
10	12508.	0.	520.2	30.03	.008470
11	14058.	0.	514.7	29.97	.007700
12	13525.	0.	520.2	30.05	.008470
13	12124.	0.	517.2	30.04	.008140
14	10403.	0.	517.2	30.04	.008140
15	7623.	0.	516.2	30.00	.008270
16	12537.	0.	516.2	30.00	.008270
17	12332.	0.	516.2	30.00	.008270
18	11924.	0.	518.2	30.07	.007700
19	11274.	0.	518.2	30.08	.007700
20	8223.	0.	516.2	30.07	.008240
22	12033.	0.	514.2	30.13	.006610
23	14370.	0.	511.7	29.94	.007280
24	12803.	0.	508.7	30.10	.006310
25	13510.	0.	523.7	29.99	.006670

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MODF 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	-26.00	-63.20	-25.93	-63.02
2	28.00	-66.50	27.92	66.31
3	30.50	65.50	30.41	65.31
4	27.50	65.50	27.46	65.41
5	28.50	64.50	28.46	64.41
6	27.00	64.50	26.96	64.41
7	30.00	65.00	29.96	64.91
8	27.50	65.20	27.37	64.89
9	28.20	64.20	28.07	63.89
10	28.00	64.50	27.96	64.41
11	30.50	65.40	30.50	65.40
12	27.50	65.00	27.46	64.91
13	29.00	66.00	29.04	66.10
14	30.00	66.00	30.04	66.10
15	30.00	64.50	30.07	64.66
16	28.00	64.80	28.07	64.96
17	27.00	-63.50	27.07	63.65
18	28.50	65.00	28.51	65.03
19	28.00	65.00	28.01	65.03
20	29.00	64.70	29.07	64.86
22	28.50	65.50	28.62	65.79
23	27.00	65.00	27.18	65.44
24	29.00	65.00	29.28	65.64
25	29.00	65.50	28.86	65.19

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

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MODE 1

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LBF
1	1750.	.8710	.9470	1154.	1.020	-2806.
2	1900.	.8840	-.7700	1188.	1.020	3827.
3	2000.	-.5540	.8690	1147.	1.020	3502.
4	1800.	.8320	-.7800	1136.	1.015	3537.
5	2000.	.8040	.9460	1125.	1.020	3226.
6	1850.	.8450	.8870	1149.	1.020	3226.
7	2000.	.8230	.9320	1192.	1.020	3376.
8	1800.	.8180	.8120	1165.	1.020	3372.
9	1800.	.8380	.8870	1158.	1.015	3073.
10	1840.	-.6370	.8990	-1214.	1.020	3210.
11	1850.	.8250	.8100	1145.	1.020	3574.
12	1930.	.7600	.8840	1202.	-1.010	3358.
13	2000.	.8130	.8410	1183.	-1.010	3742.
14	-2100.	.8090	.8900	1201.	1.020	3742.
15	2000.	.7570	.9460	1134.	-1.030	3289.
16	1950.	.8500	.9000	1140.	1.020	3379.
17	1800.	.8180	.9340	1133.	1.020	2989.
18	1900.	.8300	.8630	1149.	1.020	3393.
19	1900.	.7750	.8630	1151.	1.020	3392.
20	1950.	.8500	.9010	1129.	-1.010	3340.
22	2000.	.9140	.8660	1152.	1.020	3631.
23	1800.	.9490	.8380	1199.	1.020	3542.
24	1900.	.8410	.8520	1124.	1.020	3585.
25	1800.	.8310	.7860	1163.	-1.025	3453.

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

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MODE 1

UNIT	CORR FII FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
1	1754.	.8660	.9420	1147.	-2805.
2	1905.	.8790	-.7650	1181.	3825.
3	2005.	-.5520	.8640	1137.	3501.
4	1800.	.8300	-.7770	1133.	3532.
5	2000.	.8010	.9430	1122.	3222.
6	1850.	.8420	.8810	1145.	3222.
7	2000.	.8210	.9290	1188.	3372.
8	1806.	.8110	.8050	1154.	3366.
9	1806.	.8300	.8780	1147.	3068.
10	1849.	-.6350	.8960	1210.	3222.
11	1853.	.8250	.8100	1145.	3530.
12	1911.	.7580	.8810	1199.	3372.
13	2005.	.8160	.8440	1186.	3756.
14	-2105.	.8110	.8930	1204.	3756.
15	2000.	.7610	.9500	1140.	3297.
16	1950.	.8540	.9040	1145.	3387.
17	1800.	.8220	.9390	1138.	2996.
18	1909.	.8310	.8540	1150.	3410.
19	1909.	.7760	.8640	1152.	3410.
20	1955.	.8540	.9060	1134.	3357.
22	2005.	.9220	.8740	1162.	3655.
23	1789.	.9620	.8500	-1216.	3544.
24	1893.	.8570	.8690	1146.	3607.
25	1813.	.8230	-.7780	1152.	3461.

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

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MODE 1

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.682	807.2	205.8	12.9	17.4
2	1.737	718.3	146.8	11.6	17.9
3	-0.992	-1190.4	163.0	10.5	15.8
4	1.610	808.2	186.1	12.3	17.4
5	1.591	584.7	123.8	13.6	19.2
6	1.624	824.1	219.0	11.0	17.7
7	1.607	729.9	155.9	8.5	17.2
8	1.579	764.8	186.3	15.0	17.3
9	1.632	709.0	161.3	15.7	17.6
10	-1.204	696.4	192.7	13.0	15.2
11	1.619	669.7	147.6	11.0	19.4
12	1.535	599.3	91.9	15.4	-20.9
13	1.595	618.3	146.4	11.3	17.6
14	1.615	-509.3	87.1	15.1	19.3
15	-1.441	798.0	216.5	10.9	15.5
16	1.641	804.0	202.3	14.3	17.3
17	1.585	781.6	171.7	11.6	14.3
18	1.641	674.9	114.1	13.9	16.8
19	1.496	744.8	182.3	13.3	16.1
20	1.648	743.7	188.9	10.4	16.9
22	1.779	803.7	195.7	16.9	19.4
23	1.823	841.3	268.7	12.6	15.8
24	1.688	-500.9	84.9	11.1	19.5
25	1.679	-408.0	-65.4	14.8	-20.7

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

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MODE 1

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	2909.	88.88	38.94	2.33	3.14	.65
2	2959.	77.85	27.34	2.07	3.18	2.67
3	-2699.	-206.09	48.48	3.00	-4.51	0.00
4	2915.	93.15	36.84	2.33	3.29	.53
5	2983.	69.80	25.39	2.66	3.76	2.70
6	2898.	93.60	42.74	2.05	3.30	1.89
7	2943.	85.08	31.22	1.62	3.28	2.01
8	2908.	89.64	37.52	2.88	3.32	0.00
9	2937.	81.18	31.73	2.95	3.31	.27
10	-2854.	105.03	49.94	3.21	3.76	1.33
11	2957.	77.86	29.48	2.09	3.71	1.59
12	2983.	75.50	19.91	3.19	-4.34	3.90
13	2955.	72.91	29.66	2.18	3.40	1.96
14	3008.	60.38	-17.73	2.95	3.75	.67
15	2872.	101.21	47.16	2.28	3.23	.93
16	2910.	90.73	39.21	2.66	3.20	1.97
17	2921.	91.69	34.60	2.24	2.75	2.53
18	2978.	77.94	22.63	2.64	3.19	1.72
19	2911.	92.23	38.78	2.70	3.28	2.38
20	2923.	83.94	36.64	1.93	3.13	1.72
22	2931.	84.27	35.25	2.91	3.33	1.96
23	2892.	84.97	46.61	2.09	2.61	3.28
24	-3025.	57.13	-16.64	2.07	3.65	1.04
25	-3042.	-47.04	-12.96	2.80	3.92	-4.35

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NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

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MODE 1

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	.3870	.2260	-2.4970	.3790	.2210	-2.9220
2	.4680	-.3040	2.9760	.4580	.2970	3.4790
3	-.3410	.2730	2.8050	-.3350	.2670	3.2810
4	.4190	.2720	2.8280	.4150	.2700	3.2990
5	.3850	.2440	2.6650	.3820	.2420	3.1100
6	.3980	.2440	2.6650	.3940	.2420	3.1100
7	.4040	.2580	2.7460	.4000	.2560	3.2030
8	.4100	.2640	2.7640	.3960	.2550	3.2000
9	.3930	.2390	2.6120	.3800	.2310	3.0250
10	-.3410	.2470	2.6800	-.3360	.2420	3.1100
11	.4140	.2710	2.8520	.4140	.2700	3.2980
12	.3850	.2610	2.7620	.3800	.2560	3.2030
13	.4250	.2890	2.9180	.4280	.2910	3.4360
14	.4230	.2890	2.9180	.4270	.2910	3.4360
15	.3690	.2450	2.6540	.3750	.2490	3.1560
16	.4050	.2530	2.7020	.4120	.2570	3.2130
17	.3680	.2250	-2.5200	.3740	.2180	2.9960
18	.4060	.2610	2.7810	.4060	.2590	3.2270
19	.3890	.2610	2.7810	.3890	.2590	3.2270
20	.4030	.2520	2.6900	.4090	.2540	3.1940
22	.4460	.2750	2.8920	.4600	.2810	3.3740
23	.4410	.2570	2.7410	.4660	.2710	3.3070
24	.4020	.2590	2.7720	.4310	.2770	3.3450
25	.4230	.2750	2.9760	.4080	.2640	3.2570

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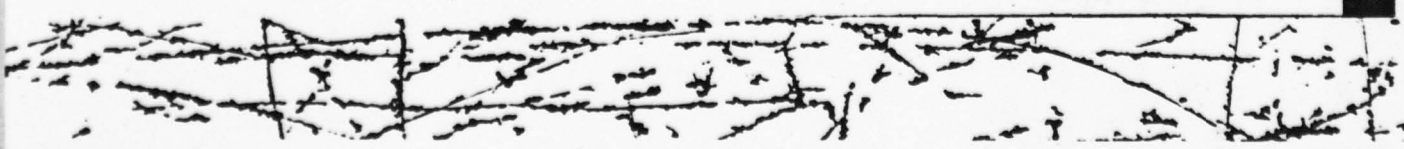
MODE 1

UNIT	NREC CO ET LB/KLB FU	NREC HC ET LB/KLB FU	NRE CNO ET LB/KLB FU	NR CNOX ET LB/KLB FU	SMK NUMFR CORRECTED
1	90.78	39.79	2.72	3.67	.65
2	79.59	27.95	2.42	3.72	1.38
3	-209.93	49.57	3.51	-5.27	0.00
4	94.05	37.18	2.72	3.84	.53
5	70.45	25.62	3.11	4.38	.68
6	94.49	43.12	2.39	3.85	1.89
7	85.88	31.50	1.89	3.83	2.01
8	92.77	38.85	3.34	3.85	0.00
9	84.02	32.84	3.42	3.83	.27
10	-106.33	50.84	3.73	4.36	1.33
11	77.93	29.57	2.42	4.30	1.59
12	76.50	20.29	3.70	-5.03	-3.90
13	72.30	29.53	2.57	4.01	.54
14	59.87	-17.65	3.47	4.41	.67
15	99.61	46.49	2.71	3.85	.93
16	89.21	38.65	3.16	3.81	1.34
17	90.20	34.11	2.67	3.27	2.53
18	77.92	22.75	3.07	3.71	1.72
19	92.24	39.00	3.14	3.80	1.78
20	82.69	36.28	2.29	3.72	.94
22	81.78	34.48	3.65	4.18	1.96
23	80.44	44.25	2.71	3.39	-3.28
24	-53.27	-15.58	2.68	4.73	1.04
25	-48.84	-13.51	3.29	4.61	1.99

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

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MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	-30.00	-67.00	-29.91	-66.81
2	32.50	-70.50	32.41	70.30
3	-36.30	69.70	36.20	69.50
4	33.00	70.00	32.95	69.90
5	34.00	69.50	33.95	69.40
6	33.00	69.20	32.95	69.10
7	35.00	69.50	34.95	69.40
8	31.50	69.00	31.35	68.67
9	35.50	70.00	35.33	69.67
10	32.50	68.50	32.45	68.40
11	-36.50	-70.10	-36.50	70.10
12	32.50	70.00	32.45	69.90
13	34.50	-71.00	34.55	-71.10
14	35.00	-70.50	35.05	-70.60
15	36.00	69.70	36.09	69.87
16	32.50	68.60	32.58	68.77
17	32.00	68.40	32.08	68.57
18	33.50	69.00	33.52	69.03
19	32.00	68.50	32.02	68.53
20	34.50	69.40	34.58	69.57
21	31.50	-68.50	31.56	68.63
22	32.00	69.00	32.14	69.30
23	31.00	69.00	31.21	69.47
24	33.00	69.50	33.22	70.18
25	33.30	69.50	33.14	69.17

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

MODE 2

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT6 DFG R	EPR	THRUST LRF
1	-2000.	.8730	.7660	1154.	1.020	-3989.
2	2250.	.8820	.7570	1197.	1.030	5209.
3	2450.	-.5540	.8280	1160.	1.030	4926.
4	2200.	.8500	.7380	1154.	1.020	5071.
5	2400.	.8230	.8050	1133.	1.030	4896.
6	2250.	.8570	.7710	1169.	1.030	4791.
7	2400.	.8470	.8290	1199.	1.030	4896.
8	2100.	.8350	.7250	1178.	1.025	4642.
9	2400.	.8550	.8150	1179.	1.020	4991.
10	2200.	-.5940	.7770	-1223.	1.020	4524.
11	2400.	.8470	.8060	1169.	1.030	5127.
12	2200.	.8590	.7520	1212.	1.020	5044.
13	2400.	.8290	.7950	1203.	1.020	-5476.
14	2450.	.8250	.8280	1215.	1.030	-5296.
15	2500.	-.7900	.8430	1160.	-1.040	5041.
16	2200.	.8600	.7530	1151.	1.020	4656.
17	2200.	.8070	.7550	1151.	1.020	4586.
18	2250.	.8450	.7680	1167.	1.025	4738.
19	2200.	-.7840	.7540	1158.	1.020	4562.
20	2400.	.8760	.8100	1156.	1.020	4924.
21	-2000.	.8580	-.6890	-1158.	1.025	4624.
22	2250.	.9160	.7660	1165.	1.025	4822.
23	2150.	.9350	.7450	1192.	-1.075	4911.
24	2250.	.8540	.7580	1160.	1.030	5134.
25	2150.	.8730	.7360	1188.	1.030	4797.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

MODE 2

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	COR TT6 DEG R	COR THRUST LRF
1	-2005.	.8680	.7510	1147.	-3987.
2	2256.	.8770	.7530	1190.	5207.
3	2456.	-.5510	.9240	1153.	4925.
4	2200.	.8480	.7360	1151.	5055.
5	2400.	.9210	.9030	-1129.	4890.
6	2250.	.8540	.7680	1165.	4785.
7	2400.	.8450	.9260	1196.	4890.
8	2107.	.8270	.7180	1166.	4634.
9	2408.	.8470	.9070	1168.	4983.
10	2211.	-.5920	.7740	-1219.	4540.
11	2404.	.8470	.9060	1169.	5136.
12	2212.	.8560	.7500	1208.	5065.
13	2406.	.9320	.7970	1206.	-5497.
14	2456.	.8270	.9300	-1219.	-5317.
15	2500.	-.7940	.9470	1165.	5054.
16	2200.	.8640	.7560	1156.	4668.
17	2200.	.8110	.7590	1156.	4598.
18	2260.	.8460	.7600	1168.	4762.
19	2211.	-.7840	.7550	1159.	4587.
20	2406.	.8810	.9140	1162.	4949.
21	-1995.	.8620	-.6920	-1162.	4621.
22	2256.	.9240	.7730	1175.	4855.
23	2137.	.9480	.7550	1208.	4915.
24	2242.	.9730	.7730	1182.	5165.
25	2165.	.8650	.7290	1177.	4809.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-JA - BASELINE TEST SERIES

MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.717	661.1	155.2	13.1	20.0
2	1.762	556.0	99.5	11.9	21.4
3	-1.004	-1199.4	113.9	11.9	21.5
4	1.696	570.4	104.9	12.5	22.1
5	1.662	429.9	75.6	15.5	23.1
6	1.690	632.0	148.4	11.2	21.0
7	1.691	572.6	99.9	8.9	20.4
8	1.643	623.5	135.3	15.0	20.5
9	1.719	472.7	76.2	17.4	23.2
10	-1.143	562.1	135.3	12.1	19.7
11	1.711	438.6	73.5	12.7	-25.3
12	1.738	445.3	56.9	16.5	24.7
13	1.668	423.1	84.6	12.4	22.1
14	1.672	375.7	55.9	16.0	22.4
15	-1.551	635.8	136.9	11.6	20.4
16	1.692	658.9	151.1	15.0	19.7
17	1.608	565.9	93.5	10.8	19.3
18	1.70	508.0	69.0	17.2	21.7
19	-1.538	623.4	144.1	12.8	18.7
20	1.749	548.9	109.6	10.2	21.5
21	1.752	-363.7	43.7	10.5	21.4
22	1.819	649.9	129.7	16.2	22.2
23	1.862	680.4	162.6	15.1	18.3
24	1.737	416.1	56.6	11.3	21.4
25	1.787	-301.1	37.9	17.5	-26.0

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* BASELINE TEST SERIES \*

MODE 2

UNIT	CO2 FI LB/KLB FU	CO EI LB/KLB FU	HC FI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SMK. NUMBER FRONT SIDE
1	2962.	72.59	29.28	2.36	3.61	2.22
2	3010.	60.44	18.59	2.13	3.83	2.25
3	-2734.	-208.08	-33.96	3.40	-6.14	1.94
4	3006.	64.33	20.32	2.32	4.09	-0.00
5	3043.	50.08	15.13	2.96	4.42	1.60
6	2973.	70.75	28.55	2.06	3.87	.27
7	3008.	64.80	19.42	1.65	3.78	2.80
8	2946.	71.62	26.69	2.82	3.87	2.54
9	3028.	52.99	14.67	3.20	4.27	.67
10	-2910.	-91.03	-37.63	3.23	-5.24	1.19
11	3043.	49.66	14.30	2.36	-4.70	1.72
12	3049.	49.70	10.91	3.03	4.54	1.69
13	3028.	48.90	14.80	2.35	4.19	-0.00
14	3052.	43.66	11.15	3.05	4.28	1.32
15	2961.	77.22	28.57	2.32	4.07	1.33
16	2946.	73.50	28.95	2.75	3.60	.66
17	3002.	67.26	19.10	2.10	3.77	3.33
18	3035.	57.62	13.45	3.21	4.05	.94
19	2960.	76.33	30.30	2.57	3.76	1.32
20	3005.	60.03	20.59	1.84	3.85	1.60
21	3074.	40.60	8.37	1.93	3.92	.65
22	2990.	67.97	23.31	2.79	3.81	1.95
23	2965.	69.72	28.63	2.55	3.09	2.09
24	3057.	46.61	10.88	2.08	3.94	1.95
25	-3080.	-33.02	7.15	3.15	-4.68	.79

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D 3A • BASELINE TEST SERIES •

MODE 2

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1	-.4800	-.3240	-3.0780	-.4700	-.3170	-3.5990
2	.6450	-.5760	4.1320	.6490	.5620	4.8260
3	-.4710	.5020	3.8360	-.4620	.4900	4.4810
4	.6150	.5300	3.9890	.6090	.5250	4.6510
5	.5720	.4860	3.8070	.5660	.4820	4.4390
6	.5720	.4620	3.7050	.5670	.4580	4.3210
7	.5840	.4860	3.8070	.5780	.4820	4.4390
8	.5510	.4440	3.6150	.5340	.4280	4.1780
9	.6170	.5230	3.9400	.5950	.5040	4.5510
10	-.4380	.4180	3.5270	-.4330	.4110	4.0900
11	.6210	.5450	4.0970	.6200	.5440	4.7390
12	.6220	.5360	4.0130	.6130	.5250	4.6510
13	-.6680	-.6410	-4.4100	.6740	-.6440	-5.1970
14	.6340	-.5890	-4.2130	.6400	-.5920	-4.9640
15	.5690	.5150	3.8950	.5790	.5230	4.6380
16	.5460	.4280	3.5360	.5560	.4350	4.2090
17	-.5130	.4150	3.4810	.5220	.4210	4.1440
18	.5590	.4550	3.7030	.5590	.4510	4.2980
19	-.5090	.4220	3.5610	-.5090	.4190	4.1330
20	.5970	.4910	3.7940	.6070	.4960	4.5100
21	.5390	-.4190	-3.6580	.5480	-.4260	-4.1660
22	.5960	.4620	3.7650	.6150	.4730	4.3980
23	.6040	.4620	3.6950	.6390	.4880	4.4690
24	.5940	.5140	3.9390	.6400	.5510	4.7740
25	.5990	.4830	3.9750	.5750	.4620	4.3430

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 2

UNIT	NREC CO FI LA/KLA FU	NREC HC EI LA/KLA FU	NRF CNO FI LA/KLA FU	NR CNOX EI LA/KLA FU	SMK NUMBER CORRECTED
1	74.20	29.95	2.76	4.23	2.22
2	61.85	19.03	2.49	4.47	2.25
3	-212.15	-34.76	3.98	-7.17	1.90
4	64.99	20.51	2.70	4.77	-0.00
5	50.58	15.27	3.45	5.16	.68
6	71.47	28.82	2.60	4.51	.27
7	65.46	19.61	1.97	4.41	1.09
8	74.26	27.68	3.27	4.47	2.54
9	54.99	15.22	3.70	4.93	.67
10	-92.17	-38.33	3.74	-6.07	1.19
11	49.70	14.35	2.73	5.44	1.08
12	50.42	11.13	3.51	5.26	1.35
13	48.45	16.71	2.77	4.94	-0.00
14	43.26	11.09	3.60	5.05	1.32
15	75.89	28.13	2.76	4.85	1.33
16	72.20	28.51	3.28	4.29	.66
17	66.11	18.81	2.50	4.49	-3.33
18	57.59	13.52	3.73	4.70	.94
19	76.33	30.48	2.99	4.37	1.32
20	59.06	20.36	2.18	4.58	1.60
21	39.94	8.23	2.36	4.79	.65
22	65.87	22.77	3.50	4.78	.93
23	65.86	27.11	3.31	4.01	1.99
24	43.25	10.15	2.71	5.12	1.95
25	-34.38	7.47	3.70	5.49	.79

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	90.80	95.30	90.54	95.03
2	91.00	-96.50	90.74	-96.22
3	90.40	95.00	90.14	94.73
4	90.50	-97.00	90.37	-96.86
5	90.00	95.00	89.87	94.86
6	89.50	95.20	89.37	95.06
7	90.00	94.00	89.87	93.86
8	89.00	95.70	88.57	95.24
9	91.00	95.20	90.56	94.74
10	88.50	95.50	88.37	95.36
11	90.50	95.00	90.50	95.00
12	90.50	95.50	90.37	95.36
13	91.00	95.50	91.13	95.64
14	-91.50	94.50	-91.63	94.64
15	89.50	94.30	89.72	94.53
16	91.00	94.90	91.22	95.13
17	91.00	95.00	91.22	95.23
18	91.00	94.60	91.04	94.65
19	90.00	95.40	90.04	95.45
20	89.50	94.30	89.72	94.53
21	88.50	93.00	88.67	93.18
22	90.00	94.00	90.39	94.41
23	89.00	94.50	89.61	95.14
24	88.50	-92.30	89.37	93.20
25	-87.50	-92.50	-87.08	-92.06

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 3

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TTA DEG R	FPR	THRUST LAF
1	15800.	1.8410	1.9220	1869.	1.400	40914.
2	16100.	1.8740	1.9720	1892.	1.400	40914.
3	15500.	1.8070	1.9770	1853.	1.400	40914.
4	-15000.	1.8800	1.8290	1878.	1.400	40955.
5	15700.	1.8140	1.9040	1854.	1.400	40955.
6	15700.	1.8810	1.9000	1845.	1.400	40955.
7	15500.	1.9320	1.8740	1844.	1.400	40955.
8	15700.	1.9140	1.9390	-1921.	1.400	40968.
9	16200.	1.9290	1.9890	1896.	1.400	40968.
10	-16900.	-1.4980	-2.0750	1914.	1.400	40750.
11	15800.	1.8230	1.9240	1880.	1.400	40832.
12	15800.	1.7740	1.9190	1880.	1.400	40730.
13	16300.	1.8990	1.9930	-1939.	-1.410	-41401.
14	16000.	1.8010	1.9120	1854.	-1.410	-41401.
15	15800.	1.8060	1.9130	1862.	1.400	40798.
16	15900.	1.8890	1.9360	1881.	1.400	40798.
17	16300.	1.8130	1.9800	1872.	1.400	40798.
18	-16400.	1.7950	1.9840	1865.	1.400	40696.
19	-16400.	1.9160	-2.0050	1905.	1.400	40682.
20	15700.	1.8350	1.9160	1872.	-1.395	40368.
21	15500.	1.8670	-1.8610	-1820.	1.400	40927.
22	16000.	1.8170	1.9230	1851.	1.400	40622.
23	15450.	1.8530	1.8670	1849.	1.400	40873.
24	-15100.	1.8080	-1.8040	1829.	1.400	40655.
25	-15050.	1.8700	1.8420	1876.	-1.395	40475.

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NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 3

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
1	15840.	1.8300	1.9110	1858.	40900.
2	16141.	1.8630	1.9610	1881.	40900.
3	15540.	1.7970	1.8660	1842.	40900.
4	-15002.	1.8740	-1.8240	1872.	40900.
5	15702.	1.8090	1.8990	1849.	40900.
6	15702.	1.8750	1.8940	1840.	40900.
7	15502.	1.9260	1.8690	1838.	40900.
8	15749.	1.8950	1.9210	1903.	40900.
9	16251.	1.9110	1.9700	1878.	40900.
10	-16987.	-1.4940	-2.0690	1908.	40900.
11	15826.	1.8230	1.9240	1880.	40900.
12	15889.	-1.7690	1.9140	1874.	40900.
13	16339.	1.8940	-1.9990	-1945.	-41560.
14	16038.	1.8060	1.9170	1860.	-41560.
15	15801.	1.8140	1.9220	1871.	40900.
16	15901.	1.8980	1.9450	1890.	40900.
17	16301.	1.8220	1.9900	1881.	40900.
18	-16474.	1.7910	1.9860	1867.	40900.
19	-16480.	1.9170	-2.0070	1907.	40900.
20	15741.	1.8440	1.9250	1881.	-40570.
21	15460.	1.8740	-1.8580	1827.	40900.
22	16040.	1.8330	1.9400	1867.	40900.
23	15356.	1.8780	1.8920	1874.	40900.
24	-15044.	1.8430	1.8390	1865.	40900.
25	15158.	1.8520	-1.8240	1858.	-40570.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* BASELINE TEST SERIES \*

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MODF 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	3.885	12.7	-39.0	328.0	-385.9
2	3.965	12.0	13.0	313.7	340.7
3	3.808	12.5	-55.7	256.9	-212.4
4	3.982	10.5	22.3	306.3	309.3
5	3.836	11.7	-37.5	291.2	324.1
6	3.980	11.9	33.9	287.0	-363.5
7	4.096	11.7	18.4	260.0	276.1
8	4.037	13.0	-39.4	300.4	297.2
9	4.072	15.6	32.6	317.0	323.7
10	-3.151	9.4	32.8	305.6	318.5
11	3.855	12.9	26.6	296.9	302.8
12	3.745	7.0	29.2	295.9	313.4
13	3.982	12.4	-32.8	-358.0	-365.5
14	3.799	13.3	25.3	306.2	304.1
15	3.816	12.9	33.9	244.5	254.7
16	3.998	13.9	26.0	293.1	295.9
17	3.837	12.8	16.8	297.4	304.9
18	3.800	13.0	16.2	298.1	299.4
19	4.054	12.4	-40.3	329.3	351.6
20	3.877	12.4	26.1	270.2	278.1
21	3.959	8.7	2.7	339.0	335.5
22	3.845	17.8	15.9	298.3	295.1
23	3.920	9.2	3.5	272.8	273.9
24	3.831	8.8	2.5	314.7	315.3
25	3.955	10.4	2.0	-357.2	360.0

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 3

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	-3145.	.65	-3.45	27.77	-32.66	13.91
2	3152.	.61	1.13	26.07	28.31	12.80
3	-3141.	.66	-5.03	22.16	22.16	9.91
4	3157.	.53	1.93	25.39	25.63	5.52
5	3153.	.61	-3.37	25.02	27.84	9.72
6	3154.	.60	2.94	23.78	30.12	10.67
7	3158.	.57	1.55	20.96	22.25	13.55
8	-3141.	.65	-3.35	24.43	24.43	7.03
9	-3143.	.77	2.75	25.57	26.12	-35.75
10	-3145.	.60	-3.57	-31.89	-33.24	19.03
11	3153.	.67	2.38	25.38	25.90	13.29
12	3148.	.38	2.69	26.00	27.54	-0.00
13	-3141.	.62	-3.43	29.53	30.14	6.67
14	-3144.	.70	2.29	26.49	26.49	15.66
15	3151.	.68	3.06	21.11	21.99	11.18
16	3153.	.70	2.25	24.16	24.40	12.00
17	3155.	.67	1.51	25.57	26.22	20.53
18	3158.	.69	1.47	25.90	26.01	13.77
19	3152.	.62	-3.43	26.77	28.59	-0.00
20	3149.	.64	2.32	22.94	23.61	10.44
21	3159.	.44	.24	28.28	28.28	7.53
22	3155.	.93	1.42	25.59	25.59	16.34
23	3152.	.47	.31	22.93	23.02	18.83
24	3159.	.46	.23	27.13	27.18	5.88
25	3150.	.53	.17	-29.74	29.97	7.43

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 3

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	98.6160	100.4060	84.8740	92.1570	96.8940	97.8570
2	-136.5620	-132.3010	-102.2370	-127.1520	-127.5680	-117.7720
3	84.7980	93.7890	81.1320	79.4240	90.5270	93.5620
4	-157.7190	-154.2110	-115.1160	-152.4580	-151.7040	-133.2480
5	86.8650	94.8560	82.4380	84.2380	93.3840	95.4990
6	109.7360	99.2560	84.9490	106.2130	97.7090	98.4010
7	103.1770	75.3300	70.8810	99.7930	74.1860	82.1400
8	-131.9630	107.7720	69.4480	116.8150	101.7440	101.0780
9	126.5140	96.2320	82.9730	111.9280	90.8990	93.8150
10	-42.4000	107.1550	89.3480	-41.3680	104.5280	102.9080
11	89.6160	96.6240	84.2810	89.7790	96.3340	97.4820
12	84.9730	107.2520	89.3780	82.1230	104.5280	102.9080
13	120.1150	109.9230	90.4050	124.8140	111.1840	107.2320
14	77.5520	87.7170	77.8530	80.2680	88.6940	92.3110
15	75.9720	84.3400	75.4670	80.5520	86.5100	90.8110
16	108.3580	96.6770	82.5680	115.5370	99.1970	99.3910
17	87.8300	98.8800	83.8100	93.2380	101.4630	100.8920
18	77.3270	89.1380	79.4520	78.1460	88.8710	92.4320
19	-128.4830	106.8850	89.5810	-130.0890	106.5100	104.2030
20	82.8420	84.7200	75.5930	87.8160	86.5100	90.8110
21	71.2470	61.5790	64.4660	74.9680	63.1090	74.0000
22	75.0960	80.7850	74.9110	83.1950	84.2030	89.2150
23	91.4820	91.5510	79.8560	108.8390	99.5250	99.6090
24	54.9160	57.0740	-58.9460	68.8090	63.4560	74.2610
25	64.1910	-51.5450	-58.3360	-57.3210	-48.4800	-62.5580

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

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MODE 3

UNIT	NREC LB/KLB	CO FU	EI	NREC LB/KLB	HC FU	EI	NRE LB/KLB	CNO FU	FI	NR LB/KLB	CNOX FU	EI	SMK CORRECTED	NUMER
1		.70		-3.58			32.02			-37.66			13.91	
2		.65		1.17			30.03			32.61			12.80	
3		.70		-5.21			25.55			25.55			9.91	
4		.55		1.96			29.39			29.67			5.52	
5		.63		-3.42			28.98			32.25			9.72	
6		.62		2.98			27.54			34.89			10.67	
7		.59		1.58			24.28			25.78			13.55	
8		.73		-3.55			27.61			27.61			5.62	
9		.87		2.91			28.91			29.53			14.06	
10		.61		-3.66			-36.73			-38.28			15.18	
11		.67		2.38			29.36			29.95			12.18	
12		.39		2.76			29.93			31.70			-0.00	
13		.60		-3.39			-35.02			-35.75			6.67	
14		.68		2.26			31.41			31.41			11.65	
15		.64		2.98			25.40			26.46			9.30	
16		.65		2.19			29.08			29.37			9.07	
17		.63		1.47			30.78			31.56			14.57	
18		.68		1.48			30.13			30.26			11.05	
19		.61		-3.44			31.14			33.25			-0.00	
20		.60		2.27			27.56			28.37			10.44	
21		.42		.23			-35.08			-35.08			6.99	
22		.84		1.37			30.47			30.47			11.11	
23		.39		.29			30.91			31.03			15.83	
24		.37		.20			-36.94			-37.00			5.46	
25		.59		.18			34.47			34.74			5.87	

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-JA • BASELINE TEST SERIES •

MODE 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	85.40	92.80	85.15	92.53
2	84.50	94.00	84.26	93.73
3	85.30	-94.70	85.05	-94.43
4	85.50	-94.50	85.38	-94.36
5	85.00	94.00	84.88	93.86
6	84.50	93.00	84.38	92.87
7	83.50	92.00	83.38	91.87
8	85.00	93.70	84.59	93.25
9	85.00	93.50	84.59	93.05
10	83.30	93.50	83.18	93.37
11	85.50	93.30	85.50	93.30
12	85.50	93.80	85.38	93.66
13	84.00	93.50	84.12	93.64
14	85.50	92.50	85.62	92.63
15	84.50	92.50	84.70	92.82
16	86.00	92.70	-86.21	92.92
17	85.00	92.80	85.21	93.02
18	85.00	92.70	85.04	92.74
19	84.00	92.60	84.04	92.64
20	84.00	93.00	84.20	93.22
21	83.00	91.50	83.16	91.68
22	84.50	93.00	84.87	93.41
23	83.50	92.30	84.07	92.93
24	82.50	91.20	83.31	92.09
25	83.80	91.90	83.40	91.46

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

MODE 4

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
1	12900.	1.6190	1.7440	1764.	1.310	34465.
2	12800.	1.6390	1.7050	1768.	-1.320	-35252.
3	12900.	1.6250	1.7160	1763.	-1.320	-35252.
4	13000.	1.6660	1.7650	1775.	1.310	34499.
5	13300.	1.6220	1.7970	1757.	1.310	34499.
6	13000.	1.6630	1.7510	1746.	1.310	34499.
7	12700.	1.6930	1.7440	1761.	1.300	33712.
8	13100.	1.6250	1.7910	1797.	1.310	34511.
9	13100.	1.6530	1.8190	1795.	1.300	33723.
10	13100.	-1.5010	1.7900	-1815.	1.310	34327.
11	13200.	1.6410	1.7870	1775.	1.310	34396.
12	13150.	1.5920	1.7790	1781.	1.310	34310.
13	12700.	1.5980	1.7500	1790.	1.300	33538.
14	13250.	-1.5540	1.7730	1741.	1.310	34321.
15	13000.	1.5760	1.7460	1750.	1.310	34367.
16	13300.	1.6860	1.8020	1779.	1.310	34367.
17	13000.	1.5740	1.7740	1750.	1.300	33582.
18	13100.	1.5750	1.7790	1743.	1.300	33499.
19	-13600.	1.6870	-1.8490	1800.	1.310	34270.
20	12800.	1.6480	1.7520	1770.	1.300	33499.
21	12700.	1.6250	1.6890	-1709.	1.310	34476.
22	13250.	1.6360	1.7720	1750.	1.310	34219.
23	12600.	1.6590	1.6850	1732.	1.310	34430.
24	12300.	1.5080	-1.6270	1714.	1.310	34247.
25	12600.	1.6980	1.7310	1775.	1.300	33588.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

MODE 4

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DFG R	COR THRUST LBF
1	12933.	1.6090	1.7340	1754.	34453.
2	12833.	1.6300	1.6950	1758.	-35240.
3	12933.	1.6160	1.7060	1752.	-35240.
4	13001.	1.6610	1.7600	1770.	34453.
5	13301.	1.6180	1.7920	1752.	34453.
6	13001.	1.6590	1.7460	1741.	34453.
7	12701.	1.6880	1.7390	1756.	33667.
8	13141.	1.6090	1.7740	1780.	34453.
9	13141.	1.6370	1.8010	1778.	33667.
10	13167.	-1.4970	1.7850	-1809.	34453.
11	13222.	1.6410	1.7870	1775.	34453.
12	13224.	1.5870	1.7740	1775.	34453.
13	12730.	1.6030	1.7550	1795.	33667.
14	13282.	-1.5590	1.7780	1746.	34453.
15	13001.	1.5840	1.7540	1758.	34453.
16	13301.	1.6940	1.8100	1787.	34453.
17	13001.	1.5810	1.7820	1758.	33667.
18	13159.	1.5760	1.7810	1744.	33667.
19	-13466.	1.6890	-1.9510	1802.	34453.
20	12933.	1.6560	1.7600	1778.	33667.
21	12667.	1.6310	1.6940	-1715.	34453.
22	13283.	1.6500	1.7880	1765.	34453.
23	12523.	1.6810	1.7080	1756.	34453.
24	-12254.	1.6190	1.6590	1748.	34453.
25	12690.	1.6820	1.7150	1758.	33667.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 4

UNIT	CO <sub>2</sub> CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NO <sub>x</sub> CONC PPM
1	3.409	12.6	-29.7	215.3	241.4
2	3.460	10.4	9.7	190.5	206.6
3	3.420	12.5	-40.7	171.5	159.1
4	3.521	10.5	18.8	201.6	205.7
5	3.425	10.9	-28.9	198.7	227.8
6	3.514	11.2	-27.9	191.5	243.3
7	3.580	12.2	15.8	171.8	186.9
8	3.424	12.5	14.0	189.9	191.8
9	3.482	12.9	18.9	200.3	206.7
10	-3.162	5.2	-20.2	226.5	232.9
11	3.469	13.0	9.8	209.3	219.3
12	3.355	6.6	-21.4	203.8	218.4
13	3.364	11.3	-21.0	208.8	215.0
14	-3.272	10.3	13.7	186.3	187.6
15	3.328	10.2	14.8	160.3	167.5
16	3.564	9.9	12.9	193.1	199.8
17	3.323	11.9	10.6	184.5	190.8
18	3.320	10.8	9.6	193.6	196.2
19	3.567	10.3	-22.4	222.0	236.9
20	3.477	11.9	17.8	184.5	198.3
21	3.437	7.8	1.4	228.1	226.6
22	3.457	17.1	9.4	214.5	212.5
23	3.503	8.8	1.8	188.1	187.2
24	3.358	8.7	1.7	211.6	209.0
25	3.585	7.8	2.9	-255.2	-254.0

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

MODE 4

UNIT	CO2 EI LR/KLR FU	CO EI LR/KLR FU	HC EI LR/KLR FU	NO EI LR/KLR FU	NOX EI LR/KLB FU	SMK NUMBER FRONT SIDE
1	3147.	.74	-2.99	20.77	23.29	10.35
2	3152.	.60	.97	18.14	19.67	12.08
3	-3144.	.73	-4.09	16.47	16.47	7.19
4	3157.	.60	1.84	18.90	19.28	8.51
5	3154.	.64	-2.91	19.13	21.93	10.14
6	3154.	.64	-2.74	17.97	22.83	8.05
7	3157.	.68	1.53	15.84	17.23	13.96
8	3144.	.73	1.41	18.25	18.43	5.09
9	-3145.	.74	1.86	18.92	19.52	14.70
10	3149.	.33	-2.20	-23.59	-24.25	12.70
11	3157.	.75	.99	19.91	20.86	10.93
12	3149.	.39	-2.20	20.00	21.43	-0.00
13	-3144.	.67	-2.14	20.40	21.02	3.73
14	3146.	.63	1.44	18.72	18.86	10.20
15	3155.	.62	1.54	15.89	16.61	9.01
16	3156.	.56	1.25	17.88	18.50	8.00
17	3156.	.72	1.10	18.32	18.94	16.12
18	3159.	.65	.99	19.21	19.47	10.17
19	3156.	.58	-2.16	20.53	21.91	12.23
20	3150.	.69	1.76	17.48	18.78	7.32
21	3159.	.46	.14	21.92	21.92	4.58
22	3156.	.99	.94	20.47	20.47	9.87
23	3152.	.51	.17	17.70	17.70	14.38
24	3159.	.52	.17	20.81	20.81	4.15
25	3150.	.44	.28	-23.44	23.44	3.76

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NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 4

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	35.2760	55.8550	58.0010	33.4260	53.9900	66.9900
2	45.6200	-74.4170	69.7320	43.1350	71.8750	80.4720
3	-49.7030	-87.5600	-77.5430	46.9890	-84.5310	-89.4420
4	-53.3060	-84.6000	-76.4580	-51.8900	-83.3010	-88.5870
5	44.0100	-75.3300	70.8810	42.8900	-74.1860	82.1400
6	40.8680	59.4130	60.8310	39.8160	58.5290	70.5190
7	37.2030	47.4240	52.6870	36.2410	46.7330	61.0980
8	41.5190	67.8540	66.0560	37.8730	64.1990	74.8180
9	42.8690	64.6880	64.0570	39.0400	61.2170	72.5710
10	30.8660	67.5670	66.0490	30.0420	65.9540	76.1270
11	41.1540	65.1380	65.1660	41.1960	64.9420	75.3730
12	39.7360	72.5950	69.1670	38.5920	70.7920	79.6840
13	38.7270	69.5560	66.9290	39.8160	70.3070	79.3310
14	29.5740	54.7630	57.4280	30.3550	55.3360	68.0460
15	31.6790	56.5410	58.2850	33.1740	57.9410	70.0660
16	41.6810	57.9210	59.1870	43.8530	59.3580	71.1540
17	32.5920	59.3290	60.1020	34.1330	60.8050	72.2580
18	31.9300	57.0250	59.5100	32.1680	56.8420	69.2160
19	40.8930	55.6920	58.6130	41.2370	55.4790	68.1570
20	40.1780	62.5170	62.0730	42.1360	63.7920	74.5130
21	29.6410	43.9750	52.0130	30.8520	45.0390	59.6670
22	39.3520	63.9580	64.3910	42.8470	66.5980	76.6040
23	36.9780	54.8540	57.2950	42.5510	59.4300	71.2090
24	26.5240	44.0010	49.9980	31.8320	48.8050	62.8280
25	37.1560	45.8820	54.1250	33.7110	43.1760	58.0750

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MONF 4

UNIT	NREC CO FI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO FI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	.78	-3.10	23.99	26.90	10.35
2	.63	1.01	20.94	22.70	12.09
3	.78	-4.24	20.54	20.54	7.19
4	.62	1.87	21.89	22.34	8.51
5	.66	-2.95	22.17	25.41	10.14
6	.66	-2.78	20.84	26.47	8.05
7	.70	1.55	18.36	19.98	13.73
8	.80	1.49	20.67	20.88	5.09
9	.82	-1.97	21.43	22.12	9.58
10	.34	-2.25	-27.18	27.95	10.31
11	.75	.98	23.02	24.13	9.96
12	.41	-2.26	23.04	24.69	-0.00
13	.65	-2.12	24.18	24.91	3.16
14	.61	1.43	22.18	22.35	9.13
15	.59	1.50	19.10	19.96	8.64
16	.53	1.22	21.49	22.24	8.00
17	.69	1.07	22.02	22.77	14.06
18	.65	1.00	22.34	22.65	10.10
19	.58	-2.17	23.88	25.48	9.94
20	.65	1.73	20.98	22.54	7.32
21	.44	.14	-27.18	27.18	4.58
22	.91	.90	24.35	24.35	9.87
23	.44	.16	21.99	21.99	11.32
24	.43	.15	26.15	26.15	3.90
25	.48	.30	-27.18	27.18	-2.37

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

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MODE 5

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	73.70	88.80	-73.49	88.54
2	75.60	90.50	75.38	90.24
3	76.40	-91.50	76.18	-91.24
4	74.00	90.50	73.89	90.37
5	75.50	-91.00	75.39	-90.87
6	74.50	89.50	74.39	89.37
7	75.00	89.00	74.89	88.87
8	75.50	90.20	75.14	89.77
9	75.50	90.00	75.14	89.57
10	74.50	90.00	74.39	89.87
11	76.00	88.50	76.00	88.50
12	76.00	90.50	75.89	90.37
13	75.00	90.00	75.11	90.13
14	76.00	89.00	76.11	89.13
15	74.00	88.40	74.18	88.61
16	76.00	89.80	76.18	90.02
17	76.00	89.50	76.18	89.72
18	76.00	89.70	76.04	89.74
19	75.50	89.40	75.54	89.44
20	75.00	90.20	75.18	90.42
21	75.00	89.50	75.15	89.67
22	75.00	89.50	75.33	89.89
23	73.50	89.20	74.00	89.81
24	74.00	88.50	74.72	89.37
25	75.50	89.10	75.14	88.67

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 5

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LBF
1	9000.	1.3470	1.5260	1579.	1.180	27648.
2	9450.	1.3870	1.5300	1620.	1.200	25809.
3	9500.	1.3760	1.5360	1615.	1.200	25809.
4	8900.	1.3470	1.5160	1590.	1.180	27672.
5	-10200.	1.4030	-1.6210	1624.	1.210	24622.
6	9200.	1.3900	1.5220	1592.	1.190	24753.
7	9400.	1.3970	1.5650	1611.	1.190	24753.
8	8900.	-1.2870	1.5250	1608.	1.180	27680.
9	9400.	1.3630	1.5810	1642.	1.190	24761.
10	9300.	-1.2520	1.5540	1640.	1.190	24629.
11	9300.	1.3570	1.5460	1617.	1.190	24679.
12	9500.	1.3390	1.5790	1622.	1.190	24617.
13	9300.	1.3270	1.5450	1622.	1.190	24625.
14	9300.	-1.2570	1.5230	1577.	1.190	24625.
15	8850.	-1.2530	1.4430	-1561.	1.190	24658.
16	9400.	1.3880	1.5560	1606.	1.190	24658.
17	9600.	1.3200	1.5880	1602.	1.190	24658.
18	9450.	1.3440	1.5670	1599.	1.195	25134.
19	9600.	1.3770	1.5930	1620.	1.190	24589.
20	9500.	1.4020	1.5300	1620.	1.200	25671.
21	9500.	1.3810	1.4850	1579.	1.210	24604.
22	9400.	1.3650	1.5380	1583.	1.190	24552.
23	8850.	1.3990	1.4520	1575.	1.190	24703.
24	9200.	1.3590	-1.4260	1575.	1.210	24628.
25	9400.	1.4650	1.5060	1631.	1.205	26132.

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

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MODE 5

UNIT	CORR FIJ FL LRM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
1	9023.	1.3390	1.5170	-1570.	23640.
2	9474.	1.3790	1.5210	1611.	25800.
3	9524.	1.3680	1.5270	1606.	25800.
4	8901.	1.3430	1.5110	1585.	23640.
5	-10201.	1.3990	-1.6160	1619.	26587.
6	9201.	1.3860	1.5170	1587.	24720.
7	9401.	1.3930	1.5610	1607.	24720.
8	8928.	-1.2750	1.5100	1592.	23640.
9	9429.	1.3500	1.5660	1626.	24720.
10	9348.	-1.2480	1.5500	1635.	24720.
11	9316.	1.3570	1.5460	1617.	24720.
12	9553.	1.3340	1.5740	1617.	24720.
13	9322.	1.3310	1.5500	1627.	24720.
14	9322.	-1.2600	1.5280	1582.	24720.
15	8851.	-1.2590	1.4500	-1568.	24720.
16	9401.	1.3940	1.5640	1614.	24720.
17	9601.	1.3260	1.5960	1610.	24720.
18	9694.	1.3450	1.5690	1600.	25260.
19	9647.	1.3790	1.5940	1622.	24720.
20	9525.	1.4090	1.5380	1628.	25800.
21	9475.	1.3860	1.4910	1585.	26587.
22	9423.	1.3770	1.5510	1596.	24720.
23	8796.	1.4190	1.4720	1597.	24720.
24	9166.	1.3860	1.4540	1606.	26587.
25	9467.	1.4510	1.4920	1616.	26193.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

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MODE 5

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	2.929	18.9	-23.1	102.4	119.1
2	2.920	15.2	7.6	105.4	116.2
3	2.890	17.3	-27.1	91.1	-80.0
4	2.878	18.3	-13.5	101.5	107.1
5	2.957	14.0	-18.4	116.2	-140.0
6	2.928	16.1	-21.2	105.2	131.7
7	2.946	17.4	-12.8	95.7	104.5
8	-2.702	18.9	11.3	95.5	97.3
9	2.866	16.1	-12.3	106.6	111.0
10	-2.630	16.9	-12.6	111.6	117.2
11	2.860	17.4	7.2	106.7	112.9
12	2.814	-7.8	-13.5	113.5	124.5
13	2.786	17.7	-13.6	107.3	111.7
14	-2.638	14.8	8.8	93.1	95.8
15	-2.637	20.0	9.2	-80.6	-85.0
16	2.925	18.1	8.1	97.4	104.6
17	2.780	18.6	7.8	100.9	107.0
18	2.834	11.0	6.7	111.0	113.7
19	2.904	15.1	10.9	111.2	120.1
20	2.952	17.3	9.5	106.6	116.5
21	2.913	9.1	.9	-133.1	131.3
22	2.876	22.3	5.0	114.0	115.6
23	2.947	16.8	1.3	97.8	99.7
24	2.867	14.6	1.3	118.0	117.9
25	3.085	12.5	2.2	-145.4	-143.8

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NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

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MODE 5

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMER FRONT SIDE
1	-3146.	1.34	-2.80	11.90	13.84	8.68
2	3152.	1.05	.89	11.90	13.11	8.82
3	-3145.	1.20	-3.23	10.36	10.36	4.82
4	3156.	1.30	-1.64	11.81	12.45	3.33
5	3155.	.95	-2.14	12.97	-15.62	5.35
6	3154.	1.10	-2.49	11.84	14.82	6.17
7	3157.	1.19	-1.50	10.72	11.71	10.20
8	-3145.	1.40	1.44	11.62	11.84	2.80
9	-3146.	1.12	-1.48	12.24	12.75	6.47
10	3150.	1.13	-1.65	13.97	14.67	5.46
11	3156.	1.22	.87	12.31	13.02	6.53
12	3150.	.56	-1.65	13.29	14.57	6.13
13	-3145.	1.27	-1.68	12.66	13.19	2.24
14	-3146.	1.12	1.14	11.61	11.94	6.58
15	3155.	1.53	1.20	10.09	10.63	2.93
16	3156.	1.24	.95	10.98	11.80	5.33
17	3156.	1.34	.97	11.98	12.70	10.53
18	3159.	.78	.82	12.93	13.25	6.53
19	3158.	.04	1.30	12.64	13.65	8.27
20	3151.	1.18	1.11	11.90	13.00	2.68
21	3159.	.62	.10	-15.09	15.09	4.55
22	3156.	1.56	.60	13.08	13.27	9.33
23	3151.	1.14	.15	10.94	11.15	9.74
24	3158.	1.03	.15	13.59	13.59	2.61
25	3149.	.81	.25	-15.52	-15.52	3.01

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 5

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	11.6530	24.9020	34.8370	11.1800	24.1220	40.3290
2	15.7170	35.0000	43.0660	15.0440	33.8740	49.8070
3	17.6050	-42.7190	-48.8570	16.8440	-41.3230	-56.4730
4	14.6250	35.2750	43.6450	14.3390	34.7750	50.6340
5	17.3560	-38.9840	-46.4830	17.0000	-38.4260	-53.9250
6	13.8320	28.8440	38.4840	13.5570	28.4420	44.6590
7	13.1080	26.1210	36.1850	12.8490	25.7610	41.9960
8	12.5750	32.4230	41.2730	11.7540	30.7780	46.9130
9	14.0060	31.1470	40.2500	13.0470	29.5730	45.7590
10	11.6510	32.1620	41.1900	11.3960	31.4260	47.5250
11	11.4670	23.9790	34.6760	11.4680	23.9070	40.1070
12	14.4520	35.6260	43.9050	14.1120	34.7750	50.6340
13	13.3170	32.8150	41.4890	13.5900	33.1350	49.1240
14	10.3670	26.8600	36.6240	-10.5640	27.1150	43.3510
15	-9.5330	23.9170	33.9080	-9.8600	24.4620	40.6780
16	14.4580	31.6410	40.3370	15.0120	32.3820	48.4220
17	12.3000	29.7590	38.8280	12.7440	30.4520	46.6040
18	13.1600	30.7270	40.2170	13.2250	30.6200	46.7600
19	13.4340	28.9690	38.7590	13.5000	28.8500	45.0570
20	15.7150	34.4620	42.5030	16.2990	35.1170	50.9470
21	13.6560	29.4900	40.4320	14.1000	30.1820	46.3460
22	13.4020	30.4000	40.1830	14.2820	31.5580	47.6500
23	13.6930	28.7580	38.1040	15.2610	31.0290	47.1510
24	11.7100	25.7410	35.7010	13.5430	28.4130	44.6300
25	15.0560	26.2450	38.0930	13.9240	24.7590	40.9800

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* BASELINE TEST SERIES \*

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MODE 5

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LA/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	1.39	-2.89	13.78	16.02	8.52
2	1.09	.92	13.76	15.16	8.82
3	1.26	-3.34	12.94	12.94	4.82
4	1.32	-1.66	13.70	14.44	3.33
5	.97	-2.17	15.04	-18.12	5.35
6	1.13	-2.53	13.74	17.20	6.17
7	1.21	-1.52	12.44	13.59	9.43
8	1.50	-1.52	13.20	13.46	2.05
9	1.20	-1.56	15.03	15.66	4.30
10	1.16	-1.69	16.12	16.93	5.46
11	1.22	.87	14.24	15.06	5.54
12	-.57	-1.69	15.33	16.80	5.74
13	1.25	-1.67	14.99	15.61	2.24
14	1.10	1.13	13.74	14.14	6.58
15	1.48	1.17	12.10	12.75	2.93
16	1.20	.93	13.19	14.17	5.33
17	1.29	.95	14.37	15.25	8.70
18	.78	.82	15.04	15.41	6.53
19	1.04	1.31	14.69	15.87	8.27
20	1.14	1.09	14.26	15.58	2.68
21	-.61	.10	-17.30	17.30	-.78
22	1.46	.58	15.51	15.73	7.68
23	1.02	.14	13.53	13.79	9.14
24	.89	.14	16.99	16.99	2.61
25	.88	.26	16.70	16.70	2.93

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

MODE 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	55.50	82.30	55.34	82.06
2	55.50	85.00	55.34	84.76
3	55.50	84.70	55.34	84.46
4	58.00	-86.00	57.92	-85.88
5	57.50	84.50	57.42	84.38
6	57.50	85.00	57.42	84.88
7	58.00	83.50	57.92	83.38
8	56.00	84.30	55.73	83.90
9	59.00	85.00	58.72	84.59
10	55.00	84.00	54.92	83.88
11	57.00	82.50	57.00	82.50
12	-59.50	-86.00	59.41	-85.88
13	58.00	85.00	58.08	85.12
14	57.50	84.00	57.58	84.12
15	56.00	82.50	56.14	82.70
16	58.00	84.50	58.14	84.70
17	58.00	83.90	58.14	84.10
18	59.00	84.80	59.03	84.84
19	57.00	83.80	57.03	83.84
20	58.50	85.00	58.64	85.21
21	-52.50	82.00	-52.60	82.16
22	56.00	84.50	56.24	84.87
23	54.50	84.00	54.87	84.57
24	54.50	82.00	55.03	82.80
25	54.90	82.80	54.64	82.40

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

MODE 6

UNIT	FUEL FLOW LPM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
1	4900.	1.0720	1.1690	1356.	1.080	12244.
2	5000.	1.0860	1.2120	1399.	1.080	12244.
3	4900.	1.0520	1.1790	1379.	1.080	12244.
4	5400.	1.1130	1.2710	1408.	1.085	-12947.
5	5600.	1.1000	1.2680	1392.	-1.090	-13638.
6	5200.	1.1190	1.2590	1390.	1.080	12256.
7	5400.	1.0980	1.3240	1424.	1.080	12256.
8	5000.	1.0310	1.2090	1388.	1.080	12260.
9	5500.	1.0730	-1.3590	-1444.	1.080	12260.
10	5000.	-0.9030	1.2230	1435.	1.080	12195.
11	5100.	1.0730	1.2270	1383.	1.080	12220.
12	-5800.	1.1140	-1.4230	-1439.	1.080	12189.
13	5500.	1.0840	1.3450	1431.	1.080	12193.
14	5300.	-1.0120	1.2750	1388.	1.080	12193.
15	5100.	-1.0120	1.1370	1365.	-1.090	-13586.
16	5500.	1.1240	1.3330	1403.	1.080	12209.
17	5500.	1.0450	1.3250	1386.	1.080	12209.
18	5650.	1.0710	1.2750	1401.	-1.090	-13552.
19	5300.	1.0780	1.2740	1390.	1.080	12175.
20	5650.	1.1570	1.3310	1426.	1.085	12866.
21	-4600.	1.0450	-1.0870	-1332.	1.080	12248.
22	5300.	1.1080	1.2780	1403.	1.080	12157.
23	4800.	1.1260	1.1500	1370.	1.080	12232.
24	4800.	1.0710	1.1300	-1338.	1.080	12167.
25	4800.	1.1360	1.1540	1385.	1.080	12211.

MODE 6

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	COR TT6 DEG R	COR THRUST LBF
1	4913.	1.0660	1.1620	-1348.	12240.
2	5013.	1.0800	1.2050	1391.	12240.
3	4913.	1.0460	1.1720	1371.	12240.
4	5401.	1.1100	1.2680	1404.	12930.
5	5601.	1.0970	1.2640	1388.	-13620.
6	5201.	1.1160	1.2550	1386.	12240.
7	5401.	1.0950	1.3200	1420.	12240.
8	5016.	-1.0210	1.1980	1375.	12240.
9	5517.	1.0630	1.3460	1430.	12240.
10	5026.	-.9000	1.2190	1431.	12240.
11	5109.	1.0730	1.2270	1383.	12240.
12	-5833.	1.1110	-1.4180	1434.	12240.
13	5513.	1.0870	1.3490	1435.	12240.
14	5313.	-1.0150	1.2790	1392.	12240.
15	5100.	-1.0170	1.1430	1371.	-13620.
16	5500.	1.1300	1.3390	1409.	12240.
17	5500.	1.0500	1.3320	1393.	12240.
18	5676.	1.0720	1.2760	1402.	-13620.
19	5326.	1.0790	1.2760	1391.	12240.
20	5665.	1.1630	1.3370	1433.	12930.
21	-4588.	1.0490	-1.0920	-1337.	12240.
22	5313.	1.1180	1.2890	1415.	12240.
23	4771.	1.1410	1.1660	1389.	12240.
24	4782.	1.0920	1.1520	1364.	12240.
25	4834.	1.1250	1.1430	1371.	12240.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-JA • BASELINE TEST SERIES •

MODE 6

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	2.238	85.4	-19.4	41.9	53.1
2	2.273	77.4	7.9	43.3	55.6
3	2.194	94.3	-21.1	36.1	-37.6
4	2.335	70.5	-12.0	49.3	59.2
5	2.303	49.3	-27.5	46.4	-65.3
6	2.343	82.9	-17.9	45.5	57.6
7	2.302	74.5	11.5	38.3	50.6
8	-2.150	98.4	10.6	39.8	48.1
9	2.244	59.7	9.6	45.8	52.4
10	-1.882	81.1	11.5	44.1	54.9
11	2.250	62.7	6.6	47.3	56.0
12	2.336	-32.6	8.4	-56.5	-65.1
13	2.265	73.1	-12.3	49.5	58.4
14	-2.116	54.4	7.2	43.9	51.2
15	-2.113	113.8	9.7	-33.7	46.8
16	2.354	94.7	8.6	43.8	55.3
17	2.189	76.0	8.1	44.2	54.0
18	2.250	-38.0	5.3	-55.5	-60.9
19	2.259	76.8	9.5	46.2	59.2
20	2.474	69.7	9.9	46.2	58.2
21	2.191	55.6	2.4	45.4	51.0
22	2.323	83.1	4.9	45.9	52.3
23	2.355	87.7	4.1	39.7	46.8
24	2.244	84.0	4.6	40.9	50.3
25	2.378	56.7	3.3	-55.7	59.8

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

TAX !

MODE 6

UNIT	CO2 EI LB/KLR FU	CO EI LB/KLR FU	HC EI LB/KLR FU	NO EI LB/KLR FU	NOX EI LB/KLR FU	SMK NUMBER FRONT SIDE
1	3136.	7.62	-2.97	6.14	7.77	5.02
2	3142.	6.81	1.19	6.25	8.04	1.33
3	-3133.	8.57	-3.30	5.39	-5.61	.65
4	3149.	6.05	1.76	6.95	8.35	2.40
5	3145.	4.29	-4.11	6.62	-9.31	1.97
6	3144.	7.08	-2.53	6.39	8.09	2.67
7	3148.	6.49	1.71	5.48	7.23	5.93
8	-3132.	9.12	1.68	6.06	7.32	.27
9	3139.	5.31	1.67	6.70	7.67	1.33
10	3137.	8.60	-2.09	-7.68	-9.57	1.73
11	3149.	5.59	1.00	6.92	8.19	1.62
12	3148.	-2.79	1.23	-7.96	-9.17	5.03
13	3136.	6.44	-1.87	7.16	8.45	1.00
14	3140.	5.14	1.17	6.81	7.95	4.00
15	3139.	-10.75	1.58	5.24	7.26	3.42
16	3144.	8.05	1.25	6.11	7.72	3.18
17	3146.	6.95	1.28	6.64	8.12	-6.99
18	-3155.	-1.39	.81	-8.13	-8.92	3.96
19	3148.	6.81	1.45	6.73	8.62	5.33
20	3143.	5.75	1.41	6.26	7.89	.81
21	-3151.	5.09	.37	6.83	7.67	1.17
22	3147.	7.17	.73	6.50	7.40	3.25
23	3140.	7.44	.59	5.53	6.52	1.97
24	3147.	7.49	.70	6.00	7.37	.91
25	3143.	6.77	.47	-7.69	8.26	2.89

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 6

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1	3.3790	6.7870	15.8400	3.2750	6.5960	18.4000
2	4.7950	11.6690	21.8480	4.6400	11.3260	25.3440
3	4.4150	10.9900	21.0670	4.2750	10.6680	24.4420
4	5.6460	-14.3380	-25.0110	5.5580	-14.1510	-29.0520
5	4.6000	10.6430	20.8430	4.5310	10.5090	24.2210
6	5.0230	11.7590	22.1420	4.9460	11.6090	25.7260
7	4.0650	8.7430	18.5310	4.0050	8.6340	21.5190
8	4.0820	10.0270	20.0340	3.8750	9.5660	22.8930
9	4.6920	11.4950	21.7550	4.4460	10.9610	24.8450
10	3.3920	9.7410	19.7670	3.3350	9.5330	22.8450
11	3.4950	7.2440	16.7680	3.4930	7.2230	19.3950
12	-5.6740	-14.4800	-25.1600	5.5630	-14.1510	-29.0520
13	4.8330	12.0930	22.4220	4.9070	12.1950	26.5120
14	3.8950	9.9160	19.8850	3.9500	9.9980	23.5060
15	7.2500	7.3750	16.6020	3.3330	7.5250	19.8640
16	4.7960	10.9790	21.0320	4.9330	11.2100	25.1860
17	4.0150	9.7580	19.5900	4.1220	9.9610	23.4540
18	4.6290	11.5690	22.0360	4.6410	11.5240	25.6120
19	4.1360	9.5050	19.5740	4.1460	9.4610	22.7420
20	5.3600	12.1930	22.3250	5.5080	12.3970	26.7800
21	3.1720	6.5910	16.2820	3.2440	6.7290	18.6140
22	4.7250	11.2070	21.7620	4.9560	11.5890	25.7000
23	4.5420	10.1800	20.1610	4.9300	10.9150	24.7810
24	3.3420	7.0390	16.2760	3.7160	7.6840	20.1090
25	3.9070	7.4670	17.7220	3.6910	7.0810	19.1720

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 6

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	7.86	-3.05	7.14	9.03	4.68
2	7.04	1.22	7.25	9.32	1.33
3	8.55	-3.40	6.25	-6.51	.65
4	6.15	1.79	8.07	9.70	2.40
5	4.75	-4.16	7.49	-10.82	1.97
6	7.19	-2.66	7.42	9.40	2.67
7	6.59	1.73	6.37	8.40	5.23
8	9.61	1.76	6.92	8.37	.27
9	5.61	1.54	7.66	8.75	1.33
10	8.75	-2.14	8.87	-11.07	1.35
11	5.59	1.01	8.00	9.47	1.62
12	-2.85	1.26	-9.19	-10.59	5.08
13	6.74	1.85	8.47	10.00	1.19
14	5.06	1.16	8.05	9.39	4.14
15	-10.57	1.55	6.27	8.69	3.42
16	7.83	1.22	7.72	9.24	3.18
17	6.77	1.25	7.95	9.72	-6.35
18	-7.38	.82	-9.45	10.37	3.70
19	6.80	1.46	7.82	10.02	5.33
20	5.60	1.39	7.49	9.44	.81
21	4.97	.36	8.39	-9.42	1.17
22	6.83	.71	8.25	9.39	2.53
23	6.86	.55	7.30	8.60	1.97
24	6.74	.64	7.96	9.79	.91
25	5.05	.50	8.96	9.60	1.59

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NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

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JT9D-3A • BASELINE TEST SERIES •

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	29.00	-66.50	28.92	-66.31
2	29.00	69.70	28.92	69.50
3	31.50	68.50	31.41	68.30
4	31.00	69.50	30.96	69.40
5	32.00	69.50	31.95	69.40
6	30.00	69.50	29.96	69.40
7	33.50	69.50	33.45	69.40
8	30.00	68.00	29.86	-67.67
9	29.00	-67.00	28.86	-66.68
10	28.40	-67.30	28.36	-67.20
11	-34.50	69.60	34.50	69.60
12	29.50	68.80	29.46	68.70
13	30.50	69.00	30.54	69.10
14	32.00	70.00	32.05	70.10
15	33.00	-67.60	33.08	-67.76
16	31.00	68.70	31.07	68.87
17	31.50	68.70	31.58	68.87
18	31.00	68.40	31.01	68.43
19	30.50	68.60	30.51	68.63
20	33.00	69.00	33.08	69.17
21	31.00	69.00	31.06	69.13
22	29.50	68.00	29.63	68.30
23	29.00	68.80	29.20	69.27
24	31.50	68.50	31.81	69.17
25	32.60	69.40	32.44	69.07

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 7

UNIT	FUFL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LBF
1	1900.	.8660	.7630	1167.	1.020	-7827.
2	2250.	.8770	.7770	1212.	1.020	4926.
3	2000.	.7990	.6900	1161.	1.020	4507.
4	2100.	.8480	.7160	1172.	1.020	4896.
5	2250.	.8170	.7580	1143.	-1.030	4896.
6	2000.	.8670	.6830	1178.	1.020	4896.
7	2300.	.8330	.7090	1215.	1.020	4896.
8	1900.	.7960	.6790	1174.	1.020	-4293.
9	1900.	.7950	.7330	1169.	1.020	-3952.
10	1900.	-.6610	.7320	1237.	1.020	-4106.
11	2200.	.7990	.7460	1169.	-1.030	4952.
12	2000.	.8640	.7010	1223.	1.020	4626.
13	2100.	.8510	.7310	1212.	-1.015	4767.
14	2250.	.8200	.7720	1217.	1.025	5117.
15	2200.	-.7760	.7930	1131.	-1.030	-4306.
16	2100.	.8480	.7190	1156.	1.020	4691.
17	2150.	.8040	.7330	1147.	1.020	4691.
18	2050.	.7950	.7040	1174.	1.020	4529.
19	2100.	.8010	.7200	1163.	1.020	4597.
20	2250.	.8430	.7650	1158.	1.020	4784.
21	2000.	.8360	.6890	1178.	1.025	4800.
22	2000.	.9050	.7230	1223.	1.020	4473.
23	1950.	.9160	.6840	1215.	1.020	4841.
24	2100.	.8300	.7190	1156.	1.020	4781.
25	2050.	.8650	.7030	1190.	1.026	4763.

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

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MODE 7

UNIT	CORR FU FL LBM/HR	COR CB X100	F/A COR PF X100	F/A CORR TT6 DEG R	COR THRUST LBF
1	1905.	.9610	.7580	1160.	-3825.
2	2256.	.8720	.7730	1205.	4925.
3	2005.	.7940	.6860	1155.	4506.
4	2100.	.8430	.7140	1169.	4890.
5	2250.	.8150	.7560	1140.	4890.
6	2000.	.8640	.6820	1174.	4890.
7	2300.	.8300	.7970	1212.	4890.
8	1906.	.7890	.6720	1163.	-4286.
9	1906.	.7870	.7260	1157.	-3946.
10	1910.	-.6590	.7300	1233.	-4121.
11	2204.	.7990	.7460	1169.	4960.
12	2011.	.8620	.6990	1219.	4645.
13	2105.	.8540	.7330	1215.	4785.
14	2255.	.8220	.7740	1221.	5137.
15	2200.	-.7800	.7970	1136.	-4317.
16	2100.	.8520	.7220	1162.	4703.
17	2150.	.8080	.7370	1152.	4703.
18	2059.	.7960	.7100	1175.	4552.
19	2110.	.8020	.7210	1164.	4622.
20	2256.	.8470	.7690	1163.	4808.
21	1995.	.8390	.6920	-1182.	4797.
22	2005.	.9130	.7300	1233.	4504.
23	1938.	.9290	.6930	1232.	4844.
24	2092.	.8460	.7330	1179.	4810.
25	2065.	.8570	.6960	1179.	4774.

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.701	677.8	152.7	9.5	19.0
2	1.748	620.9	95.6	7.9	20.1
3	1.567	651.6	133.2	6.6	-15.4
4	1.694	578.6	92.9	9.6	21.6
5	1.648	452.1	72.7	9.1	22.2
6	1.709	676.1	145.4	6.9	19.2
7	1.662	586.5	92.6	6.7	19.1
8	1.569	661.6	98.8	11.8	18.5
9	1.565	642.9	110.6	10.5	17.7
10	-1.284	617.7	121.3	7.8	18.8
11	1.613	418.2	67.5	11.1	-23.8
12	1.747	482.3	55.8	12.8	22.7
13	1.607	561.7	90.6	10.2	19.6
14	1.665	-348.5	51.8	13.2	21.6
15	-1.507	733.1	155.4	8.6	18.3
16	1.679	667.3	109.1	11.1	19.8
17	1.610	538.8	73.2	8.8	20.6
18	1.602	487.6	60.6	11.9	20.6
19	1.592	602.3	96.0	8.8	19.4
20	1.678	592.5	100.8	8.9	21.4
21	1.706	-367.7	38.5	11.6	21.2
22	1.792	688.8	129.3	12.4	20.9
23	1.809	676.5	141.3	14.2	17.6
24	1.676	434.5	70.6	10.2	20.2
25	1.773	-286.2	34.4	15.7	-25.1

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-JA • BASELINE TEST SERIES •

MODE 7

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBR FRONT SIDE
1	2958.	75.04	29.04	1.72	3.45	2.05
2	3000.	67.83	17.94	1.40	3.61	0.00
3	2958.	78.26	27.48	1.30	3.03	.51
4	3010.	65.44	18.06	1.78	4.01	1.85
5	3039.	53.06	14.66	1.75	4.27	.69
6	2969.	74.77	27.63	1.26	3.49	.94
7	3006.	67.53	18.32	1.27	3.61	.96
8	2970.	79.70	20.46	2.34	3.67	1.60
9	2967.	77.57	22.88	2.08	3.50	1.72
10	-2932.	-89.79	30.29	1.86	-4.49	.13
11	3043.	50.22	13.92	2.19	-4.69	1.07
12	3043.	53.47	10.63	2.32	4.14	1.18
13	3004.	63.26	17.53	1.89	3.63	0.00
14	3059.	-40.76	10.40	2.53	4.15	0.00
15	-2928.	-90.62	-33.00	1.75	3.71	1.33
16	2984.	75.46	21.20	2.07	3.67	1.72
17	3015.	64.23	16.22	1.72	4.03	-4.49
18	3036.	58.81	12.55	2.37	4.08	.79
19	2995.	72.11	19.74	1.72	3.81	1.19
20	2998.	66.25	19.69	1.67	4.00	.66
21	-3073.	-42.16	7.57	2.18	3.99	.92
22	2981.	72.95	23.54	2.15	3.64	1.96
23	2973.	70.74	25.39	2.44	3.03	2.62
24	3043.	50.21	14.01	1.93	3.83	1.18
25	-3084.	-31.68	6.54	-2.85	-4.57	.92

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NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* BASELINE TEST SERIES \*

MODE 7

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	-.4600	-.3040	-2.9760	-.4500	-.2970	-3.4790
2	.6120	.5020	3.8360	.5980	.4900	4.4810
3	.5140	.4140	3.4730	.5030	.4040	4.0590
4	.5840	.4860	3.8070	.5780	.4820	4.4390
5	.5690	.4860	3.8070	.5630	.4820	4.4390
6	.5940	.4860	3.8070	.5880	.4820	4.4390
7	.5770	.4860	3.8070	.5710	.4820	4.4390
8	-.4910	.3790	-3.3390	-.4750	.3660	3.8610
9	-.4500	-.3220	-3.0790	-.4340	-.3100	-3.5620
10	-.4170	-.3450	-3.2050	-.4110	-.3390	-3.7170
11	.5670	.5000	3.9110	.5670	.4990	4.5230
12	.5590	.4390	3.6130	.5520	.4300	4.1880
13	.5610	.4550	3.6680	.5660	.4580	4.3210
14	.6020	-.5410	4.0230	.6070	.5440	4.7400
15	-.4670	-.3660	-3.2690	-.4750	.3710	3.8980
16	.5450	.4350	3.5640	.5540	.4410	4.2430
17	.5250	.4350	3.5640	.5340	.4410	4.2430
18	.5090	.4150	3.5330	.5100	.4130	4.1010
19	.5210	.4280	3.5890	.5210	.4260	4.1660
20	.5570	.4570	3.6540	.5660	.4620	4.3430
21	.5520	.4520	3.8040	.5610	.4600	4.3320
22	.5400	.3950	3.4740	.5570	.4040	4.0570
23	.5820	.4460	3.6260	.6150	.4710	4.3850
24	.5260	.4320	3.5990	.5660	.4620	4.3440
25	.5900	.4760	3.9440	.5670	.4550	4.3100

MODE 7

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	76.70	29.70	2.01	4.03	2.05
2	69.40	18.37	1.64	4.22	0.00
3	79.96	28.11	1.52	3.54	.51
4	66.10	18.23	2.07	4.68	1.74
5	53.59	14.80	2.04	4.98	.69
6	75.54	27.89	1.47	4.07	.94
7	68.21	18.49	1.48	4.21	.96
8	82.54	21.20	2.71	4.24	1.60
9	80.29	23.70	2.40	4.05	1.07
10	-90.93	-30.85	2.16	5.20	.13
11	50.26	13.97	2.53	-5.43	1.07
12	54.24	10.83	2.69	4.80	.95
13	62.69	17.45	2.22	4.27	0.00
14	-40.39	10.35	2.98	4.89	0.00
15	-89.12	-32.51	2.09	4.42	1.33
16	74.14	20.88	2.46	4.37	1.72
17	63.13	15.97	2.05	4.79	-4.10
18	58.79	12.62	2.75	4.73	.79
19	72.10	19.85	2.00	4.43	1.09
20	65.21	19.48	1.99	4.75	.66
21	-41.48	7.45	2.67	4.88	.92
22	70.74	23.00	2.70	4.56	1.96
23	66.88	24.04	3.17	3.93	-2.41
24	46.70	13.08	2.50	4.98	1.18
25	-32.98	6.83	3.35	5.36	.66

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

MODE 8

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	25.50	-63.00	25.43	-62.82
2	26.50	-66.80	26.42	66.61
3	-30.50	-67.70	-30.41	-67.51
4	25.50	65.50	25.46	65.41
5	28.00	65.20	27.96	65.11
6	27.00	64.50	26.96	64.41
7	29.50	65.20	29.46	65.11
8	27.50	65.50	27.37	65.19
9	28.00	65.50	27.87	65.19
10	26.20	63.80	26.16	63.71
11	29.50	65.40	29.50	65.40
12	25.50	64.30	25.46	64.21
13	27.00	65.50	27.04	65.59
14	29.00	-66.50	29.04	66.60
15	-30.00	65.50	30.07	65.66
16	28.00	65.20	28.07	65.36
17	26.50	64.50	26.56	64.66
18	27.00	64.30	27.01	64.33
19	27.00	64.80	27.01	64.83
20	28.00	65.80	28.07	65.96
21	27.00	65.00	27.05	65.13
22	27.00	65.50	27.12	65.79
23	25.30	65.00	25.47	65.44
24	-30.00	-67.00	-30.29	-67.66
25	28.10	64.30	27.97	63.99

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

MODE 8

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
1	1700.	.8850	-.9490	1179.	1.020	-2746.
2	1850.	.8960	-.7370	1208.	1.020	-3924.
3	1950.	.8060	-.7080	1161.	1.020	-4228.
4	1700.	.8530	.7450	1163.	-1.010	3537.
5	1900.	.8190	.8460	1133.	1.020	3439.
6	1800.	.8760	.8680	1172.	1.020	3226.
7	1900.	.8320	.8720	1203.	1.020	3439.
8	1800.	.7910	.7910	1169.	1.020	3466.
9	1800.	.8000	.7900	1167.	-1.010	3466.
10	1700.	.7870	.8900	1224.	1.020	3001.
11	1800.	.8000	.7890	1149.	1.020	3524.
12	1700.	.8800	.8460	1217.	-1.010	3149.
13	1850.	.8640	.8220	1208.	-1.010	3580.
14	2000.	.8210	.8140	1210.	1.020	3904.
15	2000.	-.7770	.8580	1122.	-1.030	3605.
16	1850.	.8590	.8240	1143.	1.020	3507.
17	1800.	.8180	.8510	1134.	1.020	3289.
18	1800.	.7990	.8750	1163.	1.020	3183.
19	1800.	.8210	.8390	1172.	-1.010	3332.
20	1900.	.8520	.7960	1136.	-1.010	3693.
21	1700.	.8270	.7850	-1178.	1.020	3443.
22	1900.	.9110	.8470	1223.	1.020	3631.
23	1750.	.9390	.8240	1224.	1.015	3542.
24	2000.	-.7090	.7550	1136.	1.020	-4254.
25	1700.	.8440	.8260	1156.	1.020	3090.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

MODE 8

UNIT	CORR FU FL LRM/HR	COR CR X100	F/A COR PF F/A X100	CORR TT6 DEG R	COR THRUST LRF
1	1704.	.8800	-.9440	1173.	-2746.
2	1855.	.8900	-.7320	1201.	3922.
3	1955.	.8020	-.7040	1155.	-4227.
4	1700.	.8510	.7470	1160.	3532.
5	1900.	.8170	.8470	1129.	3434.
6	1800.	.8730	.8660	1169.	3222.
7	1900.	.8300	.8690	1199.	3434.
8	1806.	.7830	.7830	1157.	3461.
9	1804.	.7920	.7830	1156.	3461.
10	1709.	.7840	.8870	1221.	3012.
11	1803.	.8000	.7890	1149.	3530.
12	1710.	.8770	.8430	1214.	3162.
13	1854.	.8660	.8250	1212.	3593.
14	2005.	.8230	.8170	1213.	3919.
15	2000.	.7800	.8620	1127.	3614.
16	1850.	.8620	.8280	1149.	3516.
17	1800.	.8220	.8550	1140.	3297.
18	1808.	.8000	.8760	1164.	3199.
19	1809.	.8220	.8400	1173.	3349.
20	1905.	.8560	.8000	1142.	3712.
21	1696.	.8310	.7880	-1182.	3441.
22	1905.	.9190	.8550	1233.	3655.
23	1739.	.8520	.8350	-1241.	3544.
24	1993.	-.7430	.7700	1158.	-4279.
25	1712.	.8360	.8180	1145.	3098.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

MODE 8

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.711	796.5	209.0	9.9	17.1
2	1.761	729.1	144.6	7.2	18.3
3	1.578	673.1	143.4	6.4	16.3
4	1.655	804.4	183.2	9.3	17.8
5	1.626	605.9	110.2	8.5	19.2
6	1.691	825.3	213.3	6.9	16.8
7	1.625	735.9	156.8	5.6	14.2
8	1.530	744.0	162.1	11.5	17.2
9	1.567	679.8	124.4	10.3	17.0
10	1.518	728.1	185.3	7.7	17.4
11	1.572	645.5	135.9	9.7	19.9
12	1.752	641.2	94.4	12.0	19.8
13	1.696	669.9	147.8	8.9	17.4
14	1.544	-498.9	-75.8	11.4	19.5
15	-1.488	794.7	197.8	7.9	16.4
16	1.662	798.0	189.2	11.0	17.1
17	1.597	727.0	153.2	8.2	17.7
18	1.581	640.6	102.1	12.1	18.0
19	1.594	760.7	174.5	8.8	17.0
20	1.656	746.6	177.1	7.8	17.4
21	1.668	-481.0	-65.2	9.3	18.8
22	1.781	789.8	174.1	11.9	19.2
23	1.825	812.5	203.4	12.0	15.0
24	-1.472	-357.2	-66.2	10.4	-20.8
25	1.697	-468.6	-70.5	12.0	20.1

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • BASELINE TEST SERIES •

MODE 8

UNIT	CO2 FI LB/KLB FU	CO EI LB/KLB FU	HC FI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT STDF
1	2913.	86.32	38.91	1.77	3.05	2.74
2	2960.	78.03	26.58	1.27	3.21	1.32
3	2950.	80.06	29.31	1.25	3.18	.13
4	2924.	90.42	35.38	1.72	3.29	.53
5	2190.	70.93	22.17	1.64	3.69	1.10
6	2911.	90.40	40.15	1.24	3.02	1.07
7	2944.	84.84	31.05	1.76	2.69	.83
8	2917.	90.28	33.30	2.30	3.63	0.00
9	2953.	81.55	25.63	2.04	3.36	.93
10	2910.	88.81	38.43	1.54	3.49	.66
11	2942.	77.38	27.38	1.91	-3.93	.80
12	2998.	69.93	17.67	2.15	3.55	1.97
13	2957.	74.35	28.10	1.63	3.17	.27
14	-3018.	-58.26	-15.22	2.19	3.74	.66
15	2891.	98.23	42.01	1.60	3.34	0.00
16	2921.	89.24	36.35	2.03	3.14	0.00
17	2942.	85.22	30.85	1.58	3.41	3.31
18	2984.	76.93	21.36	2.38	3.55	1.99
19	2927.	88.90	35.04	1.69	3.27	1.32
20	2930.	84.09	34.26	1.45	3.23	.66
21	-3037.	-55.73	-12.97	1.74	3.58	.65
22	2944.	83.09	31.46	2.06	3.31	2.58
23	2924.	82.89	35.64	2.01	2.52	-3.51
24	-3045.	-47.04	-14.98	2.25	-6.49	.39
25	-3030.	-53.24	-13.76	2.24	3.75	1.57

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

J190-3A - BASELINE TEST SERIES -

MODE 8

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	.3890	.2240	-2.4780	.3800	.2190	-2.9000
2	-.4810	-.3140	3.0280	.4700	-.3070	3.5410
3	-.4830	-.3540	-3.2580	.4730	-.3560	-3.8090
4	.4270	.2720	2.8280	.4230	.2700	3.2090
5	.4070	.2640	2.7780	.4030	.2610	3.2420
6	.4080	.2440	2.6650	.4050	.2420	3.1100
7	.4120	.2640	2.7780	.4080	.2610	3.2420
8	.4080	.2730	2.8130	.3950	.2640	3.2570
9	.4110	.2730	2.8130	.3970	.2640	3.2570
10	.3690	.2330	2.5880	-.3640	.2290	3.0030
11	.4060	.2710	2.8520	.4050	.2700	3.2980
12	.4070	.2410	2.6490	.4010	.2370	3.0730
13	.4290	.2740	2.8340	.4330	.2750	3.3370
14	.4400	-.3050	3.0050	.4440	.3060	3.5380
15	.3990	.2730	2.8160	.4050	.2770	3.3490
16	.4180	.2650	2.7660	.4250	.2690	3.2900
17	.3880	.2450	2.6540	.3940	.2490	3.1560
18	.3790	.2410	2.6670	.3790	.2400	3.0950
19	.3980	.2550	2.7480	.3980	.2540	3.1890
20	.4320	.2840	2.8700	.4390	.2860	3.4090
21	.4020	.2580	2.8520	.4080	.2620	3.2450
22	.4450	.2750	2.8920	.4590	.2810	3.3740
23	.4380	.2570	2.7410	.4620	.2710	3.3070
24	.4270	-.3410	-3.1990	.4570	-.3650	-3.8550
25	.3970	.2420	2.7730	.3830	.2320	3.0370

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • BASELINE TEST SERIES •

MODE 8

UNIT	NREC CO FT LR/KLR FU	NPEC MC EI LR/KLR FU	NRE CNO EI LR/KLR FU	NR CNOX EI LR/KLR FU	SMK NUMBER CORRECTED
1	88.18	39.76	2.07	3.57	1.63
2	79.79	27.19	1.49	3.75	1.32
3	81.80	29.99	1.46	3.72	.13
4	91.30	35.69	2.00	3.84	.53
5	71.60	22.37	1.92	4.30	.68
6	91.28	40.51	1.45	3.52	1.07
7	85.65	31.33	1.24	3.14	.83
8	93.39	35.00	2.66	3.97	0.00
9	84.38	26.54	2.36	3.80	.93
10	89.96	39.53	1.78	4.05	.66
11	77.45	28.07	2.21	4.54	.68
12	70.80	18.00	2.49	4.11	1.97
13	73.70	28.06	1.92	3.74	.27
14	-57.77	-15.15	2.58	4.40	.66
15	96.65	41.41	1.91	3.97	0.00
16	87.72	35.83	2.41	3.74	0.00
17	83.82	30.41	1.88	4.05	-3.31
18	76.92	21.17	2.77	4.12	1.36
19	88.90	35.24	1.96	3.79	1.22
20	82.82	33.92	1.72	3.83	.66
21	-54.88	-12.76	2.15	4.37	.65
22	80.64	30.77	2.58	4.15	2.11
23	78.49	33.83	2.60	3.26	-3.19
24	-43.99	-14.01	2.92	-5.83	.39
25	-55.27	-14.35	2.63	4.41	1.45

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NOTE: MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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UNIT	TSO HR	TSR HR	AMB TEMP DEG R	AMB PRESS IN HG	AMB HUMID LR H2O/AIR
1	12396.	620.	521.2	30.25	.005050
2	11764.	620.	521.2	30.25	.005050
3	12416.	620.	521.2	30.25	.005050
4	13146.	615.	514.2	30.09	.006620
6	14855.	615.	514.2	30.14	.006610
7	13009.	615.	514.2	30.16	.006600
9	14486.	801.	507.2	30.35	.005300
10	13184.	676.	509.2	30.05	.006210
11	14643.	585.	510.7	30.46	.004950
12	14199.	674.	509.7	30.05	.006100
13	12776.	651.	509.7	30.08	.006580
16	13328.	791.	506.7	30.30	.006420
17	13123.	791.	506.7	30.27	.006420
20	8762.	539.	509.7	30.22	.004760
22	12582.	549.	508.7	30.17	.006300
23	15144.	774.	519.2	29.96	.008720
24	13429.	626.	518.7	29.92	.008280

JT90-3A \* 600 HOUR TEST SERIES \*

MODE 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	27.30	64.50	27.23	64.35
2	26.50	65.00	26.44	64.84
3	29.00	64.00	28.93	63.85
4	27.50	64.50	27.62	64.79
6	27.00	64.50	27.12	64.79
7	29.00	64.50	29.13	64.79
9	-31.00	65.00	-31.35	65.73
10	28.70	-63.00	28.97	63.58
11	29.50	64.50	29.73	65.00
12	28.00	65.00	28.25	65.57
13	29.50	65.50	29.76	66.08
16	29.00	64.40	29.34	65.16
17	30.00	64.70	30.35	65.46
20	29.00	65.00	29.25	65.57
22	26.80	-63.00	27.06	63.62
23	28.50	65.50	28.49	65.47
24	27.00	64.40	27.00	64.40

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 1

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
1	1900.	.9620	.9080	1179.	1.020	3169.
2	1900.	.9490	.8740	1194.	1.020	3317.
3	1900.	.8460	.9350	1140.	1.020	3021.
4	1800.	.9310	.8500	1140.	1.015	3316.
6	1850.	.9050	.8750	1147.	1.020	3310.
7	1900.	.8780	.9000	1152.	1.020	3308.
9	2050.	.8630	.9200	1142.	1.020	3587.
10	1900.	.9250	-1.0600	1187.	1.020	2963.
11	1920.	.8370	.8870	1118.	1.020	3341.
12	1870.	.9110	.8590	1174.	1.020	3570.
13	1900.	.9050	.8270	1161.	1.015	3730.
16	1900.	.9100	.8910	1118.	1.020	3409.
17	2050.	.9080	.9400	1125.	1.020	3509.
20	2030.	.8830	.9000	-1106.	1.015	3550.
22	1900.	.9360	-1.0370	1143.	1.020	2960.
23	2000.	.9470	.8950	-1215.	1.020	3548.
24	1840.	-.7530	.8880	1156.	1.016	3221.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 1

UNIT	CORR FII FL LAM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LAF
1	1926.	.9570	.9040	1174.	3204.
2	1926.	.9440	.8700	1188.	3353.
3	1926.	.8420	.9300	1134.	3054.
4	1802.	.9390	.8570	1150.	3334.
6	1856.	.9130	.8830	1157.	3334.
7	1907.	.8850	.9080	1162.	3334.
9	2056.	.8430	.9410	1167.	3638.
10	1891.	.9430	-1.0800	1209.	2975.
11	1940.	.8510	.9010	1136.	3401.
12	1862.	.9280	.8740	1195.	3586.
13	1894.	.9210	.8410	1182.	3750.
16	1901.	.9320	.9120	1145.	3451.
17	2050.	.9300	.9620	1152.	3550.
20	2032.	.8980	.9160	1125.	3586.
22	1897.	.9540	-1.0520	1166.	2985.
23	2004.	.9460	.8940	-1214.	3552.
24	1840.	-.7530	.8880	1156.	3220.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 1

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.881	792.4	188.0	17.5	-20.6
2	1.858	799.3	172.7	14.5	20.5
3	1.623	837.2	215.1	10.8	17.8
4	1.789	871.8	258.6	16.4	18.0
6	1.727	910.6	266.8	15.4	17.7
7	1.701	828.6	190.4	12.1	18.2
9	1.682	736.0	166.6	11.7	19.0
10	1.797	791.5	215.9	9.8	18.0
11	1.608	796.7	223.3	8.4	18.6
12	1.798	711.5	141.2	10.9	18.7
13	1.773	698.0	176.6	10.6	18.9
16	1.747	876.9	250.8	12.8	19.1
17	1.774	720.9	200.6	13.6	19.5
20	1.700	810.9	231.3	15.0	19.3
22	1.793	896.5	263.4	9.3	18.7
23	1.849	773.8	200.7	-19.4	17.6
24	1.508	-429.0	87.1	13.4	16.7

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 1

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	2944.	78.92	32.16	2.87	3.37	3.79
2	2947.	80.70	29.95	2.41	3.40	1.31
3	2992.	94.91	41.89	2.00	3.31	1.56
4	2994.	89.75	45.73	2.77	3.04	-6.86
6	2875.	96.52	48.59	2.69	3.08	1.96
7	2920.	90.55	35.75	2.17	3.27	2.74
9	2936.	81.75	31.79	2.14	3.47	2.47
10	2924.	81.98	38.41	1.67	3.07	1.97
11	2994.	91.27	43.95	1.59	3.49	1.17
12	2971.	74.81	25.51	1.88	3.23	1.95
13	2951.	73.35	32.15	1.84	3.27	1.32
16	2891.	92.37	45.38	2.22	3.30	2.40
17	2941.	76.07	36.37	2.35	3.39	1.18
20	2901.	88.09	43.17	2.67	3.44	.66
22	2887.	91.85	46.36	1.57	3.14	2.47
23	2939.	78.28	34.88	3.22	3.22	3.95
24	-3018.	-54.63	19.06	2.81	3.48	-5.23

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 1

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	.4450	.2500	2.8800	.4330	.2410	3.0980
2	.4540	.2640	2.9670	.4420	.2540	3.1920
3	.3930	.2390	2.8070	.3830	.2300	3.0190
4	.4250	.2460	2.7250	.4380	.2520	3.1800
6	.4160	.2470	2.7280	.4280	.2520	3.1800
7	.4070	.2470	2.7290	.4180	.2520	3.1800
9	.4110	.2630	2.8240	.4430	.2800	3.3640
10	.3850	-.2130	-2.4920	.4130	.2270	2.9880
11	.3940	.2510	2.7970	.4120	.2580	3.2220
12	.4270	.2590	2.7900	.4560	.2750	3.3320
13	.4380	.2730	2.8490	.4670	.2900	3.4320
16	.4100	.2450	2.6620	.4460	.2630	3.2520
17	.4170	.2530	2.7080	.4540	.2720	3.3100
20	.4180	.2610	2.8700	.4440	.2750	3.3320
22	.3890	-.2150	-2.4870	.4170	.2280	2.9920
23	.4630	.2730	2.8180	.4600	.2720	3.3120
24	.3670	.2420	2.6560	.3670	.2420	3.1080

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TFST SERIES \*

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MODE 1

UNIT	NREC LB/KLR FU	CO FI NRFC HC EI LB/KLR FU	NRE CNO FI NR CNOX EI LB/KLR FU	SMK CORRECTED	
1	81.09	33.42	3.31	3.89	2.14
2	82.92	31.13	2.78	3.93	1.31
3	97.40	43.53	2.32	3.82	.66
4	37.03	44.65	3.47	3.81	-4.65
6	93.76	47.59	3.36	3.86	1.46
7	88.05	35.05	2.72	4.09	2.66
9	75.77	29.88	2.73	4.44	2.47
10	76.48	36.06	2.15	3.95	1.74
11	87.20	42.72	1.97	4.32	1.06
12	70.00	24.01	2.41	4.14	1.32
13	69.25	30.30	2.38	4.23	1.32
16	85.00	42.37	2.92	4.33	1.61
17	69.95	33.90	3.09	4.45	.79
20	82.87	41.04	3.33	4.29	.66
22	85.57	43.67	2.03	4.06	1.59
23	78.63	35.09	3.78	3.78	-3.88
24	-54.61	19.06	3.29	4.08	2.66

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	32.20	68.70	32.12	68.54
2	32.60	69.39	32.52	69.13
3	34.00	68.80	33.92	68.63
4	32.50	69.00	32.64	69.30
6	34.00	69.50	34.15	69.80
7	34.00	69.00	34.15	69.30
9	-37.50	69.00	-37.92	69.78
10	35.60	69.40	35.93	70.04
11	36.00	70.00	36.28	70.55
12	-36.30	69.70	-36.62	70.31
13	34.00	69.20	34.30	69.81
16	33.00	68.60	33.39	69.41
17	33.50	68.70	33.89	69.51
20	35.00	69.50	35.31	70.11
22	32.40	69.00	32.72	69.67
23	-30.50	69.00	-30.49	68.97
24	32.50	69.00	32.50	69.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 2

UNIT	FUEL FLOW LRM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LRF
1	2220.	.9420	.7610	1178.	1.025	4537.
2	2250.	.9360	.7720	1205.	1.025	4744.
3	2300.	.9670	.7780	1151.	1.025	4572.
4	2200.	.9370	.7460	1154.	1.025	4828.
6	2400.	.9070	.8120	1170.	1.030	4994.
7	2400.	.8990	.8180	1170.	1.025	4817.
9	2550.	.8780	-.8630	1167.	1.030	4951.
10	2460.	.9420	.8520	1215.	1.030	5094.
11	2420.	.9450	.7880	1129.	1.027	5203.
12	2550.	.9220	-.8740	1201.	1.030	5190.
13	2270.	.9020	.7590	1170.	1.020	5006.
16	2250.	.9160	.7570	1136.	1.025	4832.
17	2350.	.9210	.7920	1140.	1.025	4871.
20	2400.	.9030	.7960	1133.	1.025	5089.
22	2370.	.9270	.8070	1169.	1.025	4945.
23	2100.	.9360	.7330	1214.	1.025	4732.
24	2160.	-.7550	.7450	1179.	1.024	4751.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

AD-A070 578

NORTHERN RESEARCH AND ENGINEERING CORP CAMBRIDGE MASS  
TIME DEGRADATION FACTORS FOR TURBINE ENGINE EXHAUST EMISSIONS. --ETC(U)  
MAY 78

F/G 13/2  
DOT-FA74NA-1100  
NL

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NREC-1238-11

FAA-RD-78-56-6

2 OF 4  
AD  
A070578

Frame 1	Frame 2	Frame 3	Frame 4	Frame 5	Frame 6	Frame 7	Frame 8	Frame 9	Frame 10	Frame 11	Frame 12
Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8	Table 9	Table 10	Table 11	Table 12
Table 13	Table 14	Table 15	Table 16	Table 17	Table 18	Table 19	Table 20	Table 21	Table 22	Table 23	Table 24
Table 25	Table 26	Table 27	Table 28	Table 29	Table 30	Table 31	Table 32	Table 33	Table 34	Table 35	Table 36
Table 37	Table 38	Table 39	Table 40	Table 41	Table 42	Table 43	Table 44	Table 45	Table 46	Table 47	Table 48
Table 49	Table 50	Table 51	Table 52	Table 53	Table 54	Table 55	Table 56	Table 57	Table 58	Table 59	Table 60
Table 61	Table 62	Table 63	Table 64	Table 65	Table 66	Table 67	Table 68	Table 69	Table 70	Table 71	Table 72

JT9D-3A \* 600 HOUR TEST SERIES \*

MODE 2

UNIT	CORR FU FL LRM/HR	COR CR X100	F/A COR PF X100	F/A COR TT6 DEG R	COR THRUST LBF
1	2250.	.9380	.7570	1172.	4587.
2	2290.	.9310	.7680	1199.	4797.
3	2331.	.8630	.7740	1145.	4622.
4	2207.	.9450	.7530	1164.	4855.
6	2407.	.9150	.8190	1181.	5031.
7	2409.	.9070	.8260	1181.	4855.
9	-2558.	.8980	-.8830	1193.	5022.
10	2448.	.9590	-.8680	-1238.	5116.
11	2445.	.8590	.8010	1147.	5297.
12	2539.	.9390	-.8870	-1222.	5213.
13	2222.	.9180	.7730	1191.	5033.
16	2252.	.9380	.7750	1163.	4893.
17	2350.	.9430	.8110	1167.	4928.
20	2403.	.9190	.8100	1153.	5140.
22	2367.	.9450	.8230	1191.	4986.
23	2104.	.9350	.7330	1212.	4738.
24	2160.	-.7550	.7450	1179.	4750.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.889	606.5	90.2	17.1	24.3
2	1.877	608.4	93.2	14.6	24.0
3	1.713	653.6	130.8	11.9	22.3
4	1.865	611.4	133.1	18.0	22.6
6	1.803	616.2	130.8	16.8	22.7
7	1.793	612.9	108.0	12.5	22.0
9	1.758	533.8	88.0	14.5	23.4
10	1.887	555.2	112.0	11.9	23.0
11	1.692	554.9	84.4	9.1	24.0
12	1.885	379.5	39.0	14.0	-25.1
13	1.798	557.8	121.5	12.0	22.3
16	1.799	721.0	169.2	15.0	22.6
17	1.839	580.9	122.4	16.2	23.9
20	1.795	590.0	130.6	15.2	24.2
22	1.839	654.4	134.8	10.0	22.5
23	1.844	689.3	166.3	-20.1	18.5
24	-1.534	-322.8	53.8	15.5	19.3

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 2

UNIT	CO2 FI	CO EI	HC FI	NO FI	NOX EI	SMK NUMBER FRONT SIDE
	LR/KLR FU	LR/KLR FU	LR/KLR FU	LR/KLR FU	LR/KLR FU	
1	3016.	61.54	15.75	2.86	4.05	3.27
2	3018.	62.26	14.63	2.46	4.04	1.44
3	2974.	72.24	24.83	2.15	4.04	1.31
4	2998.	62.54	23.38	3.02	3.80	1.69
6	2997.	65.12	23.75	2.92	3.94	2.47
7	3004.	65.34	19.77	2.19	3.85	1.69
9	3015.	58.25	16.49	2.59	4.20	1.96
10	3016.	56.48	19.58	1.98	3.85	2.37
11	3014.	62.92	16.44	1.70	4.46	.65
12	-3077.	39.42	6.96	2.38	4.28	1.55
13	3002.	59.26	22.18	2.10	3.89	2.61
16	2958.	75.44	30.42	2.57	3.89	.93
17	3005.	60.43	21.88	2.76	4.09	1.32
20	2994.	62.64	23.83	2.65	4.21	1.45
22	2986.	67.62	23.93	1.70	3.82	2.09
23	2967.	70.60	29.26	3.39	3.39	-3.65
24	3059.	40.99	11.73	3.24	4.02	1.97

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 2

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	.5980	.4760	3.8470	.5820	.4190	4.1340
2	.6260	.4780	4.0310	.6090	.4600	4.3920
3	.5640	.4430	3.8770	.5490	.4260	4.1660
4	.6060	.4610	3.7620	.6270	.4730	4.3980
6	.6210	.5050	3.9460	.6410	.5170	4.6100
7	.5870	.4630	3.7670	.6050	.4730	4.3980
9	.5800	.4810	3.8430	.6290	.5140	4.5990
10	.6340	.5030	3.9100	.6840	.5390	4.7150
11	.6230	-.5680	-4.2690	.6540	-.5870	-4.9380
12	.6410	.5290	4.0310	.6880	.5640	4.8330
13	.6000	.4860	3.8150	.6430	.5170	4.6120
16	.5740	.4480	3.6200	.6290	.4820	4.4430
17	.5840	.4560	3.6520	.6390	.4910	4.4850
20	.6210	.5160	4.0700	.6630	.5450	4.7440
22	.6030	.4740	3.7660	.6510	.5050	4.5550
23	.6050	.4510	3.6390	.6020	.4480	4.2760
24	-.5170	.4500	3.6630	.5170	.4510	4.2870

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-34 • 600 HOUR TEST SERIES •

MODE 2

UNIT	NREC LA/KLA	CO FU	FI	NREC LA/KLA	HC FU	FI	NRE LA/KLA	CNO FU	FI	NP LA/KLA	CNOX FU	ET	SMK CORRECTED	NUMA#
1		63.78		16.38			3.70			4.68			1.99	
2		64.02		15.22			2.97			4.66			.65	
3		74.22		25.83			2.49			4.67			.92	
4		60.53		22.79			3.79			4.77			1.58	
6		67.17		23.21			3.66			4.94			1.73	
7		67.79		19.35			2.74			4.83			1.72	
9		53.72		15.44			3.77			5.79			1.72	
10		52.75		18.24			2.57			4.98			1.99	
11		59.86		15.92			2.11			5.54			.65	
12		-76.72		6.52			3.07			5.51			1.55	
13		55.72		20.84			2.72			5.05			.26	
16		69.09		28.24			3.79			5.17			.53	
17		55.29		20.30			3.64			5.40			1.72	
20		59.66		22.57			3.31			5.27			1.45	
22		62.69		22.42			2.21			4.96			1.32	
23		70.92		29.45			3.98			7.98			-3.65	
24		40.97		11.73			3.79			4.71			1.06	

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 600 HOUR TFST SERIES •

MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	90.00	95.00	89.78	94.77
2	-92.00	94.60	-91.78	94.37
3	90.50	94.50	90.28	94.27
4	90.50	95.00	90.90	95.41
6	89.50	94.00	89.89	94.41
7	89.50	93.50	89.89	93.91
9	90.00	93.00	91.01	94.05
10	89.40	93.00	90.23	93.86
11	89.70	94.30	90.40	95.04
12	90.30	95.00	91.09	95.84
13	90.00	94.50	90.79	95.33
16	89.20	93.50	90.25	94.60
17	88.50	92.80	89.54	93.89
20	89.00	94.50	89.78	95.33
22	89.00	93.00	88.86	93.91
23	89.00	95.50	88.96	95.45
24	89.50	94.40	89.50	94.40

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 3

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TTG DEG R	EPR	THRUST LBF
1	15850.	1.7960	1.9070	1871.	1.400	40454.
2	16100.	1.9110	1.9460	1887.	1.400	40454.
3	16000.	1.8970	1.9190	1858.	1.400	40454.
4	15900.	1.9270	1.9340	1890.	1.400	40669.
6	15950.	1.8330	1.9100	1838.	1.400	40601.
7	15750.	1.8980	1.8910	1851.	1.400	40575.
9	15800.	1.8000	1.8800	1842.	1.400	-40321.
10	15450.	1.8180	1.8700	1869.	1.400	40723.
11	15750.	1.8310	1.8650	1849.	-1.403	40369.
12	15750.	1.7790	1.8970	1849.	1.400	40723.
13	15800.	1.8260	1.9210	1889.	1.400	40682.
16	15500.	1.8270	1.8420	1833.	1.400	40394.
17	15950.	1.9140	1.8920	1820.	1.400	40427.
20	15700.	1.8520	1.8780	1845.	1.400	40494.
22	15400.	1.8320	1.8310	1818.	1.400	40561.
23	15900.	1.9460	1.9310	1869.	1.400	40845.
24	15440.	1.9300	1.8860	1885.	1.400	40907.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 3

UNIT	CORR FU FL LAM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LAF
1	16067.	1.7880	1.8980	1862.	40900.
2	16317.	1.9010	1.9370	1878.	40900.
3	16215.	1.8880	1.9100	1849.	40900.
4	15921.	1.9440	1.9510	1907.	40900.
6	15997.	1.8490	1.9260	1854.	40900.
7	15807.	1.9140	1.9070	1867.	40900.
9	15848.	1.8410	1.9220	1883.	40900.
10	15374.	1.8520	1.9050	1904.	40900.
11	15910.	1.8600	1.8940	1878.	-41098.
12	15681.	1.8110	1.9300	1882.	40900.
13	15746.	1.8580	1.9550	-1922.	40900.
16	15512.	1.8710	1.8860	1876.	40900.
17	15949.	-1.9590	1.9370	1863.	40900.
20	15719.	1.8850	1.9110	1878.	40900.
22	15378.	1.8680	1.8670	1854.	40900.
23	15929.	1.9440	1.9290	1867.	40900.
24	15437.	1.9300	1.8860	1885.	40900.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	3.799	19.0	7.8	326.9	320.4
2	4.042	18.4	16.4	341.3	341.7
3	4.016	16.1	5.9	305.7	305.3
4	4.067	-20.1	-68.1	314.2	298.8
6	3.990	19.0	16.3	294.2	299.1
7	4.022	18.7	7.7	273.8	279.7
9	3.893	17.1	2.7	233.5	249.6
10	3.849	18.3	7.0	270.4	273.3
11	3.874	16.9	13.5	292.4	295.0
12	3.765	-23.2	4.9	249.2	251.7
13	3.862	14.2	6.4	303.2	316.6
16	3.872	14.8	1.8	222.6	231.7
17	4.058	-25.5	3.8	258.0	280.9
20	3.921	-19.2	8.9	266.9	261.4
22	3.879	14.8	1.4	234.7	251.0
23	4.127	-5.1	3.7	287.7	288.8
24	4.088	-3.3	6.2	348.1	353.3

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

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MODE 3

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NIMAER FRONT SIDE
1	3152.	-1.00	.71	28.36	28.36	19.61
2	3151.	.91	1.40	27.81	27.84	18.42
3	3153.	.80	.51	25.10	25.10	12.50
4	-3143.	-.99	-5.75	25.38	25.38	16.23
6	3155.	-.98	1.45	25.01	25.43	17.39
7	3157.	.90	.66	22.47	22.96	18.56
9	3149.	.90	.24	20.21	21.60	14.47
10	3155.	.95	.62	23.17	23.42	17.43
11	3153.	.88	1.20	24.88	25.10	14.60
12	3155.	-1.24	.45	21.84	22.05	15.58
13	3153.	.84	.57	25.88	27.02	10.26
16	3159.	.77	.16	18.98	19.76	18.45
17	3158.	-1.26	.32	20.99	22.85	25.26
20	3154.	-.98	.78	22.45	22.45	12.91
22	3157.	.77	.12	19.97	21.36	14.17
23	3157.	-.25	.31	23.01	23.10	18.68
24	3154.	-.16	.52	28.08	28.49	20.39

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 3

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD. FNO X100
1	83.0150	96.1370	88.6310	78.0170	91.4690	94.2030
2	108.5660	87.7180	83.4440	101.5120	83.4770	88.7100
3	102.1290	85.7180	82.1920	95.5710	81.5780	87.3840
4	125.5610	101.1620	86.9320	-141.1750	105.7680	103.7180
6	78.6500	80.8570	74.9350	87.2370	84.2030	89.2150
7	86.9220	72.0940	69.5200	96.9040	74.9500	82.6890
9	61.7080	69.3180	67.3140	79.7560	77.4380	84.4640
10	83.9790	66.8100	65.5420	79.7370	74.1710	82.1300
11	84.1820	91.0550	81.8870	100.9130	97.1160	98.0050
12	81.5430	104.8340	88.4480	100.4930	-116.1510	-110.4140
13	85.2510	93.9410	81.4250	105.7080	103.7910	102.4240
16	72.8210	77.9030	71.0460	96.3180	87.9620	91.8090
17	82.6000	66.1590	63.9300	111.5270	74.6740	82.4910
20	92.4790	94.7290	84.4850	114.8900	103.7910	102.4240
22	66.7180	67.6110	65.6380	84.1430	74.9740	82.7060
23	-143.5450	107.6100	88.9780	-142.0660	106.7000	104.3270
24	111.1370	83.9760	76.1000	111.5460	84.0010	89.0750

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

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MODE 3

UNIT	NREC LB/KLB	CO FU	EI	NREC LB/KLB	HC FU	EI	NRE LB/KLB	CNO FU	EI	NR LB/KLB	CNOX FU	EI	SMK CORRECTED	NUMBER
1		-1.07			.74			30.15			30.15		13.14	
2		-.98			1.47			29.56			29.60		14.45	
3		.86			.53			26.68			26.68		11.32	
4		.88			-5.50			30.29			30.29		10.91	
6		.89			1.39			29.78			30.28		13.86	
7		.81			.63			26.73			27.31		10.93	
9		.70			.22			27.41			29.30		10.77	
10		.76			.56			31.38			31.72		14.17	
11		.73			1.13			32.18			32.46		11.11	
12		-1.01			.41			29.46			29.75		10.60	
13		.68			.52			-35.18			-36.73		5.52	
16		.58			.14			24.53			25.54		8.23	
17		-.94			.29			29.26			31.86		18.37	
20		.79			.71			29.41			29.41		10.77	
22		.61			.11			27.19			29.08		11.40	
23		-.25			.31			26.98			27.08		15.83	
24		-.16			.52			32.86			33.35		10.82	

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 600 HOUR TEST SERIES \*

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MODE 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	95.40	92.70	85.19	92.49
2	85.50	93.00	85.29	92.78
3	85.30	92.70	85.10	92.48
4	85.00	93.00	85.37	93.41
6	84.00	92.50	84.37	92.90
7	84.00	91.50	84.37	91.90
9	84.50	91.50	85.45	92.53
10	83.50	91.10	84.28	91.95
11	83.50	91.60	84.15	92.31
12	84.70	93.00	85.44	93.82
13	84.50	93.00	85.24	93.82
16	83.00	92.00	83.98	93.08
20	83.00	91.50	83.73	92.30
22	82.50	92.00	83.31	92.90
23	84.00	93.50	83.96	93.45
24	84.00	92.00	84.00	92.00

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 4

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LBF
1	13225.	1.6330	1.7730	1773.	1.310	34077.
2	13200.	1.7060	1.7730	1781.	1.310	34077.
3	13200.	1.6860	1.7640	1763.	1.310	34077.
4	13100.	1.6760	1.7690	1781.	1.310	34259.
6	13100.	1.6490	1.7460	1741.	1.310	34202.
7	13100.	1.7170	1.7500	1752.	1.310	34179.
9	13000.	1.6230	1.7220	1745.	1.310	33965.
10	12850.	1.6450	1.7280	1763.	1.310	34304.
11	12850.	1.6510	1.7070	1746.	1.306	33533.
12	12900.	1.6080	1.7480	1734.	1.300	33521.
13	13100.	1.6570	1.7670	1775.	1.310	34270.
16	12750.	1.6530	1.7100	1727.	1.300	-33250.
20	12700.	1.6540	1.6850	1736.	1.310	34111.
22	12700.	1.6440	1.6840	1728.	1.310	34168.
23	12900.	1.7080	1.7390	1759.	1.310	34407.
24	-12240.	1.6100	1.6460	1748.	1.310	34459.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 4

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	COR TTA DEG R	COR THRUST LBF
1	13407.	1.6250	1.7650	1765.	34453.
2	13378.	1.6980	1.7650	1772.	34453.
3	13378.	1.6780	1.7560	1754.	34453.
4	13117.	1.6910	1.7850	1796.	34453.
6	13139.	1.6640	1.7610	1756.	34453.
7	13148.	1.7320	1.7660	1767.	34453.
9	13040.	1.6600	1.7610	1784.	34453.
10	12787.	1.6760	1.7600	1795.	34453.
11	12981.	1.6770	1.7360	1774.	34139.
12	12843.	1.6370	1.7790	1764.	33667.
13	13055.	1.6870	1.7980	1806.	34453.
16	12760.	1.6920	1.7500	1767.	33667.
20	12716.	1.6840	1.7140	1766.	34453.
22	12682.	1.6760	1.7170	1762.	34453.
23	12923.	1.7070	1.7370	1757.	34453.
24	-12238.	1.6100	-1.6460	1748.	34453.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MONF 4

UNIT	CO <sub>2</sub> CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NO <sub>x</sub> CONC PPM
1	3.448	-18.7	4.0	228.7	230.5
2	3.604	17.7	8.7	226.2	231.9
3	3.563	15.4	3.6	201.4	204.7
4	3.563	17.4	12.0	210.5	196.7
6	3.486	18.1	8.3	200.9	202.1
7	3.633	17.0	4.2	189.1	193.6
9	3.423	17.7	2.0	-146.7	170.7
10	3.476	18.7	3.6	192.7	196.5
11	3.488	17.2	6.6	197.5	199.3
12	3.398	-21.7	2.9	172.5	176.4
13	3.501	16.4	3.7	215.9	222.7
16	3.496	16.4	1.6	161.4	160.0
20	3.496	18.1	4.1	180.7	176.8
22	3.475	14.7	.9	165.6	173.4
23	3.614	6.5	2.1	193.6	192.9
24	3.400	11.2	5.5	214.2	216.2

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 600 HOUR TEST SERIES •

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MODE 4

UNIT	CO <sub>2</sub> FT LB/KLB FU	CO FT LB/KLB FU	HC FT LB/KLB FU	NO FT LB/KLB FU	NO <sub>X</sub> FT LB/KLB FU	SMK NUMBER FRONT SIDE
1	3153.	1.09	.40	21.86	22.03	14.29
2	3152.	.98	.83	20.68	21.20	15.71
3	3154.	.87	.35	18.66	18.94	8.91
4	3156.	.99	1.17	19.60	19.60	8.85
6	3157.	1.04	.82	19.02	19.13	13.02
7	3158.	.94	.79	17.18	17.60	15.61
9	3149.	1.04	.20	14.11	16.42	11.27
10	3156.	1.08	.36	18.29	18.64	15.47
11	3155.	.99	.65	18.68	18.85	11.04
12	3155.	-1.28	.29	16.75	17.13	10.16
13	3153.	.94	.37	20.33	20.97	5.39
16	3159.	.94	.16	15.25	15.25	9.34
20	3155.	1.04	.40	17.05	17.05	9.58
22	3157.	.85	.09	15.73	16.46	11.88
23	3157.	.36	.20	17.68	17.68	15.88
24	3153.	.66	.56	20.77	20.97	4.90

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

MODE 4

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1	36.2440	55.9130	62.4070	34.7580	53.2650	66.4190
2	45.6540	60.1410	65.3680	43.1520	57.2830	69.5480
3	41.2010	55.9130	62.4070	38.9820	53.2650	66.4190
4	43.3510	63.8250	64.7420	47.3880	66.5980	76.6040
6	37.2660	56.8060	59.6740	40.5650	59.0690	70.9320
7	37.1810	45.3210	51.6800	40.5950	47.0250	61.3430
9	30.4310	48.4980	53.5960	37.6230	53.9730	66.9770
10	29.6740	42.9060	49.4410	35.6030	47.4490	61.6980
11	32.6550	48.2190	54.3920	37.7320	51.1840	64.7670
12	37.4660	66.4920	65.6100	44.5600	73.3760	81.5570
13	42.0760	66.6110	65.0430	-50.3940	73.3760	81.5570
16	35.6210	54.8320	56.6620	44.9110	61.6650	72.9100
20	32.2900	46.8760	53.6780	38.2970	51.0540	64.6430
22	34.5060	53.3340	56.3920	41.8230	59.0120	70.8890
23	-50.1820	67.9340	65.8080	-49.7420	67.3740	77.1780
24	30.7080	47.9320	53.0660	30.7770	47.9470	62.1140

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

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MODE 4

UNIT	NREC CO LB/KLR FU	ET	NREC HC LB/KLR FU	ET	NRF CNO LB/KLR FU	ET	NR CNOX LB/KLR FU	ET	SMK NUMBER CORRECTED
1	-1.15		.42		23.27		23.45		11.77
2	-1.04		.87		22.01		22.56		10.67
3	.92		.37		19.84		20.16		7.31
4	.90		1.12		23.34		23.34		6.73
6	.96		.79		22.61		22.74		10.48
7	.86		.38		20.39		20.89		12.56
9	.84		.18		17.63		20.52		9.66
10	.90		.32		22.82		23.26		11.11
11	.86		.61		22.24		22.44		10.02
12	-1.08		.27		20.82		21.29		8.63
13	.79		.33		25.49		26.29		4.53
14	.75		.14		19.62		19.62		8.18
20	.98		.37		20.54		20.54		9.58
22	.70		.08		19.77		20.69		9.85
23	.36		.20		20.73		20.73		12.56
24	.66		.56		24.31		24.54		3.65

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 5

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	-72.40	89.50	-72.23	89.29
2	75.50	89.60	75.32	89.38
3	75.50	90.00	75.32	89.78
4	74.00	89.50	74.32	89.89
6	74.50	89.50	74.83	89.89
7	76.50	89.00	76.83	89.37
9	76.00	89.00	76.86	90.10
10	75.00	-87.90	75.70	88.72
11	75.30	88.40	75.89	89.09
12	75.80	90.00	76.47	-90.79
13	74.50	89.00	75.15	89.78
16	76.00	89.30	76.89	90.35
17	76.00	88.50	76.89	89.54
20	73.50	88.00	74.15	88.77
22	-71.50	88.50	-72.20	89.37
23	74.50	89.50	74.46	89.46
24	76.00	89.70	76.00	89.70

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 5

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LBF
1	9600.	1.4200	1.5350	1615.	1.200	25519.
2	9200.	1.4310	1.5330	1608.	1.185	23916.
3	9300.	1.4010	1.5230	1599.	1.190	24450.
4	9100.	1.4050	1.4960	1592.	1.190	24580.
6	9350.	1.3940	1.5310	1586.	1.190	24540.
7	10000.	1.4770	1.5690	1615.	1.210	26375.
9	9500.	1.3790	1.5050	1599.	1.200	25434.
10	9600.	1.4060	1.5130	1617.	1.200	25688.
11	9500.	1.4120	1.5100	1601.	1.198	25130.
12	9600.	1.3800	1.5360	1597.	1.200	25688.
13	8900.	1.3750	1.4580	1584.	1.190	24589.
16	9620.	1.4310	1.4900	1592.	1.210	26258.
17	10000.	1.4760	1.5650	1579.	1.210	26279.
20	9100.	1.3980	1.4820	1579.	1.190	24475.
22	8900.	1.3660	-1.4360	-1547.	1.190	24515.
23	9200.	1.4380	1.4470	1606.	1.210	24551.
24	9500.	1.3460	1.5050	1622.	1.210	26591.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 5

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
1	9729.	1.4130	1.5270	1607.	25800.
2	9324.	1.4240	1.5260	1600.	24180.
3	9425.	1.3940	1.5160	1591.	24720.
4	9112.	1.4170	1.5070	1605.	24720.
6	9378.	1.4060	1.5440	1600.	24720.
7	10036.	1.4900	1.5830	1629.	26587.
9	9529.	1.4100	1.5400	1635.	25800.
10	9354.	1.4320	1.5410	1647.	25800.
11	9597.	1.4340	1.5330	1626.	25584.
12	9558.	1.4040	1.5630	1625.	25800.
13	8870.	1.4000	1.4840	1612.	24720.
16	9627.	1.4650	1.5260	1629.	26587.
17	9999.	1.5110	1.5820	1616.	26587.
20	9111.	1.4230	1.5080	1607.	24720.
22	8887.	1.3930	1.4640	1577.	24720.
23	9217.	1.4360	-1.4460	1604.	26587.
24	9498.	1.7460	1.5050	1622.	26587.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-34 • 600 HOUR TEST SERIES •

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MODE 5

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	2.991	23.8	2.7	131.1	134.6
2	3.013	22.8	4.4	118.1	125.2
3	2.951	21.9	2.3	105.2	110.8
4	2.962	24.0	6.5	113.9	114.1
6	2.938	24.1	4.6	112.5	116.0
7	3.118	20.1	2.1	112.7	118.0
9	2.899	-26.7	1.8	85.3	99.7
10	2.963	24.0	2.1	111.1	114.7
11	2.976	20.8	3.5	112.6	115.6
12	2.908	24.8	1.7	100.4	104.0
13	2.896	25.3	2.6	104.0	109.7
16	3.019	25.0	1.4	103.2	100.8
17	3.114	-37.1	2.9	110.4	120.7
20	2.947	-26.6	2.0	98.6	100.4
22	2.879	23.0	.8	89.8	94.2
23	3.032	13.1	2.5	106.6	106.3
24	2.833	15.4	5.2	124.9	127.0

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TFST SERIES •

MODE 5

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3153.	1.60	.31	14.45	14.83	8.50
2	3152.	1.52	.51	12.91	13.69	8.94
3	3153.	1.49	.26	11.75	12.37	3.54
4	3156.	1.63	.76	12.69	12.71	4.76
6	3156.	1.65	.55	12.64	13.03	7.19
7	3158.	1.29	.23	11.93	12.50	-13.16
9	3148.	-1.84	.22	9.66	11.31	7.61
10	3155.	1.63	.25	12.37	12.77	9.54
11	3155.	1.41	.41	12.48	12.81	5.24
12	3155.	1.71	.20	11.38	11.80	3.97
13	3152.	1.76	.31	11.83	12.48	4.41
16	3157.	1.67	.17	11.28	11.28	8.01
17	3156.	-2.39	.32	11.70	12.78	11.97
20	3155.	-1.81	.23	11.04	11.24	5.77
22	3155.	1.60	.09	10.29	10.79	6.01
23	3156.	.87	.28	11.60	11.60	9.21
24	3152.	1.09	.63	14.52	14.77	3.92

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 5

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	14.7280	29.3130	41.4590	14.0810	27.9650	44.1910
2	15.2290	29.8970	41.9710	14.5550	28.5210	44.7360
3	15.2060	32.3710	44.1090	14.5400	30.8760	47.0060
4	14.4030	30.3370	40.1530	15.3930	31.5580	47.6500
6	14.1260	30.4270	40.1960	15.0700	31.5580	47.6500
7	15.4480	27.5630	37.7870	16.5370	28.5420	44.7560
9	13.0680	29.1710	38.9010	15.4290	32.2910	48.3370
10	11.7150	22.7030	33.2040	13.5100	24.9710	41.1970
11	12.7740	25.4630	36.4090	14.2700	26.9040	43.1410
12	14.8190	34.4750	43.2100	16.9950	-37.8380	-53.4010
13	12.8470	28.2200	37.7640	14.6810	30.8660	46.9970
16	14.9650	31.0030	39.5230	17.9790	34.6480	50.5170
17	14.5880	26.3260	35.7280	17.6080	29.4140	45.6050
20	11.7590	23.3250	34.6500	13.3920	25.2600	41.4900
22	11.8780	25.8490	35.7530	13.7240	28.4130	44.6300
23	15.1540	29.1570	38.4680	15.0450	28.9280	45.1330
24	13.1460	30.3400	39.7320	13.1660	30.3500	46.5060

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

MODE 5

UNIT	NREC CO LB/KLB FU	EI	NREC HC LB/KLB FU	EI	NRE CNO LB/KLB FU	EI	NR CNOX LB/KLB FU	EI	SMK NUMBER CORRECTED
1	1.67		.33		15.40		15.80		6.87
2	1.59		.53		13.76		14.59		8.94
3	1.55		.28		13.53		14.25		2.67
4	1.52		.73		15.06		15.08		3.46
6	1.54		.53		14.98		15.45		7.19
7	1.21		.22		14.13		14.80		11.05
9	1.56		.20		12.03		14.06		6.08
10	1.41		.23		15.34		15.85		8.44
11	1.26		.39		14.78		15.18		5.24
12	1.49		.18		14.07		14.58		3.97
13	1.54		.28		14.73		15.53		3.32
16	1.39		.15		14.42		14.42		6.80
17	-1.98		.29		14.94		16.32		10.31
20	1.59		.21		13.22		13.45		5.77
22	1.39		.08		12.84		13.47		5.97
23	.87		.28		13.61		13.61		9.21
24	1.09		.63		17.00		17.29		3.62

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

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MODF 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	56.00	82.70	55.87	82.50
2	56.90	85.00	56.76	84.80
3	57.00	84.00	56.86	83.80
4	57.50	85.00	57.75	85.37
6	55.50	84.50	55.74	84.87
7	56.50	83.50	56.75	83.86
9	57.00	83.00	57.64	83.94
10	54.50	81.70	55.01	82.46
11	58.30	82.60	58.75	83.24
12	57.00	83.00	57.50	83.73
13	57.00	84.00	57.50	84.74
16	56.70	83.50	57.37	84.48
17	56.00	82.00	56.66	82.97
20	57.50	84.30	58.01	85.04
22	55.10	84.00	55.64	84.82
23	56.00	85.00	55.97	84.96
24	58.00	84.00	58.00	84.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 6

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LRF
1	5100.	1.1360	1.2120	1374.	1.080	12106.
2	5350.	1.1900	1.2490	1421.	1.085	12789.
3	5200.	1.1300	1.2000	1388.	1.085	12789.
4	5400.	1.1560	1.3020	1397.	1.080	12171.
6	5100.	1.1380	1.2150	1372.	1.080	1215.
7	5400.	1.1580	1.2310	1370.	1.085	12827.
9	5100.	1.0850	1.2080	1376.	1.080	12067.
10	4900.	1.1120	1.1800	1394.	1.080	12187.
11	5250.	1.0900	1.1650	1356.	-1.088	-13107.
12	5380.	1.1560	1.2960	1352.	1.080	12187.
13	5300.	1.1610	1.2780	1297.	1.080	12175.
16	5200.	1.1420	1.1850	1359.	1.085	12770.
17	5300.	1.1580	1.2310	1350.	1.082	12371.
20	5500.	1.1400	1.3160	1338.	1.080	12118.
22	5400.	1.1450	1.2320	1367.	1.086	-12960.
23	5200.	1.1840	1.2630	1406.	1.080	12224.
24	5330.	1.0410	1.2090	1403.	-1.090	-13622.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 6

UNIT	CORR FU FL LRM/HR	COR CH F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
1	5169.	1.1300	1.2060	1367.	12240.
2	5422.	1.1840	1.2430	1414.	12930.
3	5270.	1.1250	1.1940	1381.	12930.
4	5407.	1.1660	1.3130	1409.	12240.
6	5115.	1.1480	1.2260	1384.	12240.
7	5420.	1.1690	1.2620	1402.	12930.
9	5116.	1.1100	1.2360	1407.	12240.
10	4876.	1.1330	1.2020	1420.	12240.
11	5303.	1.1070	1.1830	1377.	-13744.
12	5356.	1.1770	1.3190	1416.	12240.
13	5282.	1.1810	1.3000	1422.	12240.
16	5204.	1.1690	1.2130	1391.	12930.
17	5300.	1.1850	1.2600	1382.	12516.
20	5507.	1.2110	1.3390	1413.	12240.
22	5342.	1.1670	1.2560	1393.	13068.
23	5209.	1.1820	1.2610	1405.	12240.
24	5329.	1.0410	1.2090	1403.	-13620.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 6

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	2.379	84.1	3.8	47.0	55.9
2	2.494	76.9	4.0	50.7	-60.8
3	2.365	98.0	4.5	41.0	50.7
4	2.425	79.7	5.9	49.1	54.9
6	2.384	100.6	5.7	43.0	50.9
7	2.430	82.5	2.9	41.2	50.0
9	2.264	114.9	5.3	36.8	45.0
10	2.327	112.8	5.9	38.9	49.3
11	2.284	75.9	3.9	45.0	54.4
12	2.428	64.4	2.4	45.6	53.0
13	2.431	87.1	4.5	46.2	59.5
16	2.389	-134.5	6.1	41.9	47.7
17	2.424	113.7	6.9	41.1	52.1
20	2.495	86.4	4.2	47.6	56.1
22	2.399	89.8	2.7	40.8	50.2
23	2.482	80.4	6.2	48.8	50.7
24	2.179	53.0	6.5	49.9	54.2

NOTE- MINUS SIGNS DENOTE OULYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

MODE 6

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3143.	7.07	.54	6.50	7.72	4.08
2	3145.	6.17	.56	6.68	8.01	3.50
3	3141.	8.28	.65	5.69	7.04	1.32
4	3148.	6.58	.94	6.66	7.44	2.67
6	3145.	8.45	.92	5.93	7.02	4.79
7	3149.	6.80	.42	5.59	6.77	-6.17
9	-3133.	10.12	.81	5.32	6.51	1.56
10	3141.	9.69	.87	5.49	6.96	2.89
11	3146.	6.66	.59	6.49	7.84	2.09
12	3149.	5.32	.33	6.18	7.19	4.17
13	3143.	7.17	.64	6.24	8.04	1.31
16	3140.	-11.25	.88	5.76	6.55	2.24
17	3143.	9.38	.97	5.57	7.06	2.52
20	3146.	6.93	.58	6.27	7.39	3.64
22	3145.	7.09	.38	5.60	6.87	4.83
23	3146.	6.49	.85	6.46	6.72	3.82
24	3145.	4.87	1.03	-7.53	8.17	1.96

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 6

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1	3.9010	7.5520	18.1470	3.7650	7.2250	19.3980
2	5.5970	11.9470	23.8470	5.3910	11.4200	25.4710
3	4.5480	9.8120	21.1780	4.3870	9.3830	22.6300
4	5.3700	12.3590	23.1120	5.6510	12.8120	27.3260
6	4.9230	11.2170	21.7690	5.1670	11.5890	25.7000
7	4.4790	9.2190	19.3420	4.6990	9.5060	22.8070
9	3.8760	8.8130	18.7440	4.3700	9.6400	22.9980
10	3.3870	6.5760	15.7200	3.7580	7.1610	19.2990
11	3.7080	8.0160	18.0390	4.0040	8.4040	21.1970
12	4.2140	8.5260	18.3750	4.6740	9.2560	22.4480
13	4.8000	10.4000	20.4920	5.3310	11.2880	25.2920
16	4.4370	9.7120	19.4310	5.0710	10.7240	24.5190
17	3.7680	7.2050	16.2920	4.3000	7.9430	20.5050
20	5.2120	11.1410	22.0540	5.7840	11.9960	26.2470
27	4.7120	10.5250	20.6390	5.2790	11.4790	25.5510
23	5.5250	11.8900	22.1390	5.4920	11.8010	25.9850
24	4.0180	9.7590	19.7970	4.0220	9.7620	23.1730

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 600 HOUR TEST SERIES \*

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MODE 6

UNIT	NREC CO EI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMFR CORRECTED
1	7.33	.57	7.46	8.86	4.08
2	6.41	.54	7.67	9.19	1.99
3	8.58	.68	6.53	8.08	1.32
4	6.26	.81	8.45	9.45	2.00
6	8.05	.79	7.52	8.91	4.28
7	6.49	.40	7.07	8.57	-6.17
9	8.97	.74	7.01	8.58	.92
10	8.73	.79	7.24	9.17	2.27
11	6.16	.56	8.19	9.89	2.09
12	4.80	.31	8.11	9.43	2.68
13	6.45	.59	8.28	-10.66	1.31
16	9.84	.80	7.81	8.88	2.14
17	8.22	.88	7.54	9.54	2.27
20	6.25	.54	8.02	9.45	2.00
22	6.69	.35	7.44	9.14	4.02
23	6.53	.86	7.59	7.89	3.82
24	4.87	1.03	8.81	9.57	1.87

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 600 HOUR TEST SERIES \*

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	31.00	69.00	30.93	68.83
2	29.50	68.70	29.43	68.54
3	33.50	69.30	33.42	69.13
4	30.50	69.00	30.63	69.30
6	29.50	68.50	29.63	68.80
7	33.00	69.00	33.14	69.30
9	33.50	69.00	33.88	69.78
10	-34.50	69.20	-34.82	69.84
11	33.00	68.50	33.26	69.03
12	-35.00	69.00	-35.31	69.61
13	32.50	69.50	32.79	70.11
16	33.70	69.70	34.10	70.52
17	32.70	69.00	33.08	69.81
20	33.00	69.20	33.29	69.81
22	29.50	68.00	29.79	68.67
23	28.50	69.00	28.49	68.97
24	30.50	68.00	30.50	68.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 600 HOUR TEST SERIES •

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MODF 7

UNIT	FUEL FLOW LRM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LRF
1	2150.	.8990	.7350	1185.	1.025	4641.
2	2000.	.9180	.6980	1223.	1.022	4537.
3	2200.	.8500	.7420	1165.	1.025	4744.
4	2000.	.9180	.6780	1156.	1.020	4828.
6	2000.	.9220	.6910	1181.	1.025	4646.
7	2200.	.8710	.7500	1172.	1.025	4817.
9	2200.	.8380	.7400	1156.	1.025	4951.
10	2300.	.8740	.7990	1215.	1.020	5023.
11	2130.	.8010	.7110	-1127.	1.025	4678.
12	-2490.	.8940	-.8680	1212.	-1.030	4941.
13	2150.	.9030	.7350	1192.	1.020	5113.
16	2250.	.9050	.7470	1151.	1.025	5222.
17	2250.	.8960	.7550	1143.	1.025	4976.
20	2250.	.8800	.7490	1129.	1.025	4983.
22	2100.	.9080	.7480	1188.	1.025	4594.
23	2000.	.9320	.7020	1228.	1.020	4732.
24	1940.	-.7530	.6970	1190.	1.020	4401.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

MODE 7

UNIT	CORR FU FL LAM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LAF
1	2179.	.8950	.7310	1179.	4692.
2	2027.	.9340	.6940	1217.	4587.
3	2230.	.8460	.7380	1159.	4797.
4	2003.	.9260	.6840	1166.	4855.
6	2006.	.9300	.6970	1191.	4680.
7	2208.	.8790	.7570	1182.	4855.
9	2207.	.8570	.7570	1182.	5022.
10	2289.	.8900	-.9140	1238.	5045.
11	2152.	.8140	.7220	1145.	4762.
12	-2479.	.9100	-.8830	1233.	4962.
13	2143.	.9190	.7480	1213.	5140.
16	2252.	.9260	.7650	1178.	5287.
17	2250.	.9170	.7730	1170.	5034.
20	2253.	.8960	.7620	1149.	5033.
22	2097.	.9260	.7630	1212.	4633.
23	2004.	.9310	.7020	1227.	4738.
24	1940.	-.7530	.6970	1190.	4400.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.799	612.7	81.7	14.1	22.9
2	1.872	682.1	90.7	11.1	22.8
3	1.690	636.1	90.3	9.7	21.4
4	1.835	639.5	94.7	13.6	21.5
6	1.822	699.5	142.4	12.5	20.1
7	1.742	626.4	81.4	9.9	20.8
9	1.665	627.4	82.7	10.5	20.6
10	1.748	580.8	88.1	9.7	22.2
11	1.592	610.0	86.7	7.0	20.8
12	1.827	-383.0	34.8	11.0	-24.2
13	1.912	558.1	82.2	8.7	22.3
16	1.791	649.5	140.3	10.9	22.8
17	1.803	556.9	71.1	11.1	-23.8
20	1.744	618.0	132.6	10.4	22.9
22	1.814	632.4	95.8	8.6	20.9
23	1.834	752.5	154.2	-18.6	17.9
24	-1.518	-402.9	59.4	14.3	17.5

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 7

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3012.	65.30	14.96	2.47	4.01	1.96
2	3003.	69.65	15.91	1.86	3.82	1.69
3	2995.	71.75	17.50	1.79	3.97	1.99
4	3009.	66.73	16.97	2.34	3.69	1.48
6	2976.	72.71	25.44	2.13	3.42	2.20
7	3010.	68.89	15.38	1.79	3.75	2.49
9	2994.	71.79	16.26	1.97	3.88	1.82
10	3013.	63.71	16.60	1.74	4.01	1.05
11	2994.	73.04	17.83	1.38	4.09	1.04
12	-3076.	-41.05	6.42	1.94	4.26	2.23
13	3022.	59.22	14.99	1.52	3.89	.92
16	2982.	68.81	25.54	1.90	3.96	2.25
17	3031.	59.58	13.07	1.95	4.19	1.45
20	2984.	67.31	24.90	1.86	4.09	1.05
22	3006.	66.70	17.22	1.49	3.62	1.84
23	2962.	77.34	27.23	-3.14	3.14	2.36
24	3040.	51.35	13.01	-3.00	3.66	1.69

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 7

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	.5900	.4570	3.9390	.5740	.4390	4.2320
2	.5960	.4360	3.8470	.5800	.4190	4.1340
3	.5790	.4780	4.0310	.5640	.4600	4.3320
4	.5960	.4610	3.7620	.6160	.4730	4.3980
6	.5730	.4270	3.6140	.5910	.4370	4.2700
7	.5730	.4630	3.7670	.5900	.4730	4.3980
9	.5600	.4810	3.8430	.6060	.5140	4.5990
10	.5950	.48 0	3.8380	.6290	.5200	4.6270
11	.5190	.4390	3.7210	.5440	.4530	4.2990
12	.5840	.4680	3.7770	.6250	.4990	4.5260
13	.6190	.5120	3.9230	.6630	.5450	4.7440
16	.6350	-.5420	4.6070	-.6940	-.5840	-4.9270
17	.5880	.4800	3.7550	.6430	.5180	4.6140
20	.5910	.4900	3.9590	.6300	.5170	4.6120
22	.5410	.4010	3.4570	.5820	.4280	4.1760
23	.6030	.4510	3.6390	.6000	.4480	4.2760
24	-.4740	.3850	3.3850	-.4740	.3850	3.9630

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 7

UNIT	NREC LB/KLR	CO FU	EI	NPEC LB/KLB	HC FU	EI	NRE LB/KLR	CNO FU	EI	NR LB/KLR	CNOX FU	EI	SMK CORRECTED	NUMRER
1		67.11		15.56			2.85			4.63			1.72	
2		71.61		16.55			2.14			4.40			.66	
3		73.71		18.20			2.07			4.58			1.06	
4		64.60		16.55			2.94			4.63			1.48	
6		70.49		24.88			2.67			4.29			1.32	
7		66.88		15.06			2.25			4.71			2.00	
9		66.75		15.22			2.53			4.99			.66	
10		59.26		15.51			2.26			5.19			1.05	
11		69.68		17.28			1.71			5.07			.79	
12		-38.31		6.02			2.50			-5.48			1.32	
13		55.27		14.07			1.97			5.06			.92	
16		62.96		23.70			2.51			5.23			1.47	
17		54.56		12.13			2.57			-5.53			1.45	
20		63.11		23.50			2.32			5.12			.53	
22		61.96		16.16			1.93			4.70			1.84	
23		77.69		27.40			-3.69			3.69			1.33	
24		51.32		13.00			-3.51			4.29			1.20	

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 600 HOUR TEST SERIES \*

MODE A

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	25.70	64.50	25.64	64.35
2	26.00	65.50	25.94	65.34
3	28.00	64.30	27.93	64.15
4	26.50	65.50	26.62	65.79
6	25.50	64.50	25.61	64.78
7	28.50	64.50	28.62	64.78
9	-30.50	66.00	-30.84	-66.74
10	28.00	-63.20	28.26	63.79
11	29.30	65.40	29.53	65.91
12	26.50	65.00	26.73	65.57
13	28.50	65.50	28.75	66.08
16	28.50	64.90	28.84	65.66
17	28.70	65.50	29.04	66.27
20	27.50	64.50	27.74	65.07
22	25.10	-63.50	25.35	64.12
23	27.00	66.00	26.99	65.97
24	27.00	65.00	27.00	65.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

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MODE 8

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
1	1800.	.9420	.8680	1201.	1.015	3169.
2	1850.	.9580	.7990	1223.	1.020	3473.
3	1840.	.8480	.8810	1142.	1.020	3109.
4	1700.	.9190	-.7330	1143.	1.015	3635.
6	1750.	.9270	.8360	1170.	1.020	3310.
7	1900.	.8690	.9030	1160.	1.020	3306.
9	2000.	.8380	.8180	1143.	1.020	-3911.
10	1800.	.8760	-.9850	1190.	1.020	3023.
11	1870.	.8040	.7950	1116.	1.020	3630.
12	1720.	.8940	.7940	1187.	1.016	3570.
13	1800.	.9040	.7880	1176.	1.015	3730.
16	1850.	.8960	.8320	1125.	1.020	3571.
17	1950.	.9060	.8310	1129.	1.020	3769.
20	1900.	.8700	.8810	1109.	1.015	3388.
22	1800.	.9310	-.9460	1174.	1.016	3110.
23	1900.	.9460	.8170	1230.	1.020	3710.
24	1740.	-.7410	.8070	1187.	1.016	3401.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 8

UNIT	CORR FLL FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
1	1824.	.9370	.8640	1195.	3204.
2	1824.	.9530	.7950	1217.	3511.
3	1865.	.8440	.8770	1136.	3144.
4	1702.	.9280	.7400	1153.	3655.
6	1755.	.9360	.8430	1181.	3334.
7	1907.	.8770	.9110	1170.	3334.
9	2006.	.8570	.8370	1169.	-3967.
10	1791.	.8920	-1.0030	1212.	3036.
11	1889.	.8170	.8070	1134.	3696.
12	1712.	.9100	.9080	1207.	3586.
13	1794.	.9200	.8020	1196.	3750.
16	1851.	.9170	.8520	1152.	3616.
17	1950.	.9270	.8510	1156.	3813.
20	1902.	.8850	.8970	1129.	3422.
22	1797.	.9490	-.9640	1197.	3136.
23	1907.	.9450	.8160	1229.	3715.
24	1740.	-.7410	.8070	1187.	3400.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 8

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.836	821.3	185.8	13.0	20.4
2	1.872	838.1	173.3	10.6	20.1
3	1.633	817.6	202.3	8.9	18.1
4	1.789	825.8	191.9	12.4	18.6
6	1.788	887.9	232.3	11.5	17.6
7	1.691	802.5	172.2	9.5	17.9
9	1.631	727.1	162.3	9.4	19.4
10	1.691	792.9	218.4	8.0	17.8
11	1.556	748.4	179.7	5.1	17.9
12	1.760	722.7	144.3	8.7	18.2
13	1.775	702.0	168.3	7.4	18.6
16	1.724	850.3	235.9	8.1	19.2
17	1.780	705.8	165.7	9.2	-21.6
20	1.675	805.6	222.8	9.2	19.0
22	1.799	858.5	223.1	7.3	18.5
23	1.849	819.5	176.2	-16.5	16.2
24	-1.482	-468.3	-78.1	13.0	15.7

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 600 HOUR TEST SERIES •

MODE B

UNIT	CO2 FI LA/KLA FU	CO FI LA/KLB FU	HC FI LA/KLA FU	NO FI LA/KLA FU	NOX FI LA/KLB FU	SMK NUMBER FRONT SIDE
1	2935.	83.58	32.48	2.18	3.41	2.22
2	2942.	93.83	29.79	1.74	3.31	1.04
3	2907.	92.49	39.31	1.66	3.36	2.24
4	2931.	86.09	34.37	2.12	3.18	2.55
6	2903.	91.78	41.26	1.95	2.99	1.95
7	2932.	88.55	32.65	1.72	3.24	1.97
9	2933.	83.24	31.92	1.78	3.64	1.58
10	2909.	86.81	41.09	1.44	3.20	1.97
11	2917.	89.27	36.83	1.19	3.51	.52
12	2964.	77.45	26.57	1.54	3.21	1.56
13	2955.	74.39	30.63	1.29	3.24	2.34
16	2898.	91.00	43.37	1.42	3.38	.53
17	2960.	74.70	30.14	1.60	3.75	1.06
20	2903.	88.85	42.22	1.66	3.43	2.08
22	2911.	88.40	39.47	1.23	3.14	2.10
23	2943.	83.05	30.68	-2.75	2.75	2.61
24	-3013.	-60.61	17.37	-2.76	3.34	1.45

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 600 HOUR TEST SERIES •

MODE 8

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
1	.4370	.2500	2.8800	.4260	.2410	3.0980
2	.4720	.2790	-3.0570	.4600	.2680	3.2870
3	.3990	.2450	2.8440	.3880	.2350	3.0610
4	.4480	.2740	2.8900	.4620	.2810	3.3740
6	.4240	.2470	2.7280	.4370	.2520	3.1800
7	.4040	.2470	2.7290	.4150	.2520	3.1800
9	.4290	.2950	3.0030	.4630	-.3140	-3.5810
10	.3720	-.2160	-2.5120	.3980	.2300	3.0120
11	.4050	.2770	2.9500	.4240	.2850	3.3990
12	.4200	.2590	2.7900	.4490	.2750	3.3320
13	.4380	.2730	2.8490	.4670	.2900	3.4320
16	.4180	.2590	2.7410	.4540	.2780	3.3500
17	.4370	.2760	2.8380	.4760	.2960	3.4720
20	.4010	.2470	2.7870	.4260	.2600	3.2340
22	.3950	.2210	2.5400	.4240	.2350	3.0570
23	.4760	.2880	2.9020	.4740	.2870	3.4110
24	.3770	.2580	2.7520	.3780	.2580	3.2210

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT4D-3A • 600 HOUR TEST SERIES •

MODE 8

UNIT	NREC CO FI LA/KLA FU	NREC HC FI LA/KLA FU	NRE CNO FI LA/KLA FU	NR CNOX FI LA/KLA FU	SMK NUMFR CORRECTED
1	85.86	33.76	2.52	3.94	.93
2	86.15	30.96	2.01	3.82	.66
3	94.92	40.86	1.92	3.89	.93
4	83.46	33.55	2.66	3.99	1.73
6	89.11	40.41	2.44	3.74	1.72
7	86.12	32.02	2.15	4.05	1.74
9	77.17	29.97	2.27	-4.66	1.32
10	81.14	38.57	1.86	4.13	.67
11	85.33	35.78	1.48	4.34	.52
12	72.53	25.00	1.97	4.11	1.33
13	69.66	28.87	1.67	4.20	1.59
16	83.76	40.48	1.87	4.43	.53
17	68.65	28.07	2.10	-4.92	.53
20	83.66	40.15	2.07	4.28	1.32
22	82.35	37.17	1.59	4.06	1.99
23	83.42	30.87	-3.23	3.23	2.61
24	-60.58	-17.36	-3.23	3.91	1.45

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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UNIT	TSO HR	TSB HR	AMB TEMP DEG R	AMB PRESS IN HG	AMB HUMID LR H2O/AIR
1	12905.	1129.	508.7	30.20	.006290
2	12273.	1129.	514.7	30.20	.006940
6	15529.	1289.	510.7	30.16	.006450
7	13687.	1289.	510.7	30.16	.006450
9	14852.	1167.	502.2	29.86	.005190
11	15245.	1187.	511.2	29.99	.005770
12	14824.	1299.	519.7	30.10	.008000
13	13321.	1196.	513.2	30.22	.007390
16	13756.	1219.	518.7	30.32	.004600
20	9486.	1263.	514.7	30.01	.006640
22	13261.	1228.	513.2	29.90	.005940
23	15623.	1253.	525.7	30.06	.008990
24	14066.	1263.	524.7	30.06	.009220
25	14779.	1260.	523.2	30.06	.010180

JT9D-3A • 1200 HOUR TEST SERIES •

MODE 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	28.50	65.00	28.78	65.64
2	29.00	65.30	29.11	65.55
6	28.40	65.00	28.62	65.51
7	29.50	65.50	29.73	66.01
9	-31.50	66.00	-32.01	-67.08
11	30.50	65.00	30.72	65.68
12	26.40	65.50	26.37	65.64
13	28.50	64.50	28.65	64.84
16	29.00	65.00	29.00	65.00
20	28.50	64.00	28.61	64.25
22	28.00	64.50	28.15	64.84
23	28.00	65.20	27.81	64.76
24	-26.00	-62.50	-25.85	-62.14
25	30.00	66.00	29.87	65.72

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

MODE 1

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
1	2000.	.9550	.9070	1154.	1.020	3573.
2	2000.	.9350	.8790	1149.	1.022	3547.
6	2000.	.9220	.9040	1143.	1.022	3536.
7	2030.	.9400	.8880	1178.	-1.025	3699.
9	-2150.	.9050	.8940	1142.	1.020	-4085.
11	2000.	.8420	.8990	1120.	1.020	3546.
12	1850.	-1.0050	.8320	-1242.	1.015	3521.
13	1850.	.9000	.8770	1158.	1.020	3320.
16	2000.	.9080	.9020	1151.	1.020	3355.
20	1900.	.8970	.9410	1136.	1.015	3165.
22	1900.	.8750	.9150	1169.	1.020	3356.
23	1900.	.9280	.8720	-1217.	1.020	3314.
24	1750.	.8520	-1.0150	1154.	1.015	-2531.
25	1800.	.8640	-.7530	1176.	1.020	3616.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 1

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG P	COR THRUST LBF
1	1999.	.9730	.9250	1177.	3607.
2	2011.	.9420	.8860	1158.	3590.
6	2000.	.9370	.9180	1161.	3565.
7	2030.	.9550	.9020	1196.	3729.
9	-2111.	.9350	.9230	1179.	-4076.
11	1990.	.8540	.9130	1136.	3554.
12	1863.	1.0030	.8310	-1240.	3542.
13	1859.	.9090	.8860	1170.	3353.
16	2027.	.9080	.9020	1151.	3400.
20	1898.	.9040	.9480	1145.	3174.
22	1889.	.8850	.9240	1181.	3353.
23	1922.	.9160	.8600	1201.	3329.
24	1768.	.8420	-1.0030	1141.	-2542.
25	1816.	.8560	-.7470	1166.	3633.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 1

UNIT	CO <sub>2</sub> CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.864	767.0	197.6	8.3	19.2
2	1.806	863.8	217.0	-5.5	19.0
6	1.771	860.1	240.9	-5.3	15.8
7	1.841	779.3	162.5	8.8	17.1
9	1.764	755.0	195.0	9.2	17.8
11	1.645	675.4	169.8	8.7	16.2
12	-2.019	640.9	-69.5	12.1	17.8
13	1.736	765.8	236.5	10.0	15.0
16	1.743	876.6	240.8	11.9	15.6
20	1.720	831.0	255.7	7.6	15.0
22	1.679	862.8	234.2	12.5	15.1
23	1.795	790.6	226.9	6.7	15.6
24	1.680	559.6	151.5	13.3	16.9
25	1.741	-441.2	-77.9	14.7	18.6

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 1

UNIT	CO2 FI LB/KLB FU	CO EI LB/KLB FU	HC FI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SMK NIMRER FRONT SIDE
1	2939.	76.98	34.07	1.37	3.16	2.10
2	2910.	88.55	38.22	-.92	3.20	.26
6	2893.	89.40	43.02	-.90	2.71	3.12
7	2949.	79.43	28.45	1.48	2.86	1.32
9	2937.	80.00	35.49	1.60	3.09	-4.31
11	2944.	76.92	33.22	1.62	3.03	2.36
12	-3022.	61.04	-11.37	1.89	2.78	2.60
13	2907.	81.61	43.30	1.76	2.63	1.18
16	2891.	92.54	43.67	2.06	2.71	1.30
20	2888.	88.90	46.94	1.34	2.63	2.74
22	2891.	94.53	44.08	2.25	2.71	1.31
23	2913.	81.66	40.26	1.14	2.64	-4.52
24	2972.	63.00	29.29	2.45	3.13	.26
25	-3034.	-48.94	-14.85	2.69	3.40	.65

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 1

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	.4430	.2610	2.7780	.4770	.2770	3.3450
2	.4500	.2710	2.8490	.4610	.2740	3.3280
6	.4330	.2610	2.7860	.4580	.2730	3.3190
7	.4530	.2750	2.8690	.4800	.2880	3.4190
9	.4480	.2910	2.9570	-.5100	-.3320	-3.6790
11	.4030	.2580	2.8190	.4260	.2720	3.3130
12	-.4890	.2760	2.8680	.4840	.2710	3.3060
13	.4140	.2480	2.6820	.4290	.2540	3.1920
16	.4370	.2650	2.9720	.4330	.2580	3.2210
20	.4000	.2320	2.6450	.4110	.2380	3.0800
22	.4030	.2430	2.7420	.4200	.2540	3.1920
23	.4540	.2680	2.8190	.4290	.2520	3.1760
24	.3770	.2230	-2.4740	-.3600	-.2120	-2.8230
25	.4490	.2910	2.8660	.4330	.2790	3.3600

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 1

UNIT	NREC CO FI LA/KLA FU	NREC HC EI LA/KLA FU	NRE CNO EI LA/KLA FU	NR CNOX FI LA/KLB FU	SMK NUMBER CORRECTED
1	71.60	32.10	1.77	4.09	1.33
2	86.40	37.70	-1.16	4.02	.25
6	84.51	41.07	-1.16	3.46	2.40
7	75.01	27.15	1.90	3.66	1.32
9	70.18	31.12	2.14	4.13	2.66
11	72.87	31.51	2.05	3.82	1.33
12	61.78	-11.58	2.34	3.44	2.60
13	72.83	42.29	2.25	3.37	1.18
16	93.43	44.72	2.40	3.15	1.30
20	86.33	45.80	1.67	3.28	2.74
22	50.65	42.24	2.81	3.39	.66
23	86.39	42.80	1.28	2.97	-4.52
24	65.95	30.86	2.80	3.57	.26
25	-50.76	-15.50	3.15	3.98	.65

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	34.00	69.30	34.33	69.98
2	34.30	69.30	34.43	69.57
6	32.00	68.50	32.25	69.03
7	34.00	69.00	34.27	69.54
9	33.50	68.70	34.05	69.82
11	36.00	69.50	36.26	70.01
12	-36.00	69.00	-29.97	68.93
13	33.00	69.00	33.19	69.37
16	33.50	69.00	33.50	69.00
20	35.00	69.50	35.14	69.77
22	34.00	69.50	34.18	69.87
23	31.50	-68.20	31.29	-67.74
24	33.50	69.50	33.31	69.10
25	33.50	69.00	33.36	68.70

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 2

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LBF
1	2400.	.9670	.8110	1165.	1.030	5045.
2	2400.	.9410	.8140	1174.	1.030	4903.
6	2270.	.9070	.7750	1152.	-1.038	4724.
7	2400.	.9360	.8240	1187.	1.030	4899.
9	2250.	.8950	.7730	1152.	1.025	5047.
11	2500.	.8650	.8400	1143.	1.025	5091.
12	2100.	.9670	.7350	-1232.	1.025	4698.
13	2200.	.9030	.7480	1170.	1.030	4831.
16	2500.	.9110	.8450	1161.	1.025	4787.
20	2450.	.9120	.8280	1160.	1.020	5004.
22	2400.	.8870	.8190	1172.	1.030	5058.
23	2100.	.9210	.7480	1215.	1.025	-4290.
24	2270.	.8510	.7750	1187.	1.025	4764.
25	2050.	.8650	-.7080	1194.	1.025	4624.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 2

UNIT	CORR FII FL LAM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LAF
1	2399.	.9860	.8270	1188.	5092.
2	2413.	.9680	.8200	1183.	4949.
6	2270.	.9210	.7870	1170.	4762.
7	2401.	.9510	.8370	1205.	4938.
9	2209.	.9250	.7980	1190.	5037.
11	2488.	.8780	.8520	1160.	5103.
12	2115.	.9650	.7340	-1229.	4727.
13	2210.	.9120	.7560	1183.	4879.
16	2533.	.9110	.8450	1161.	4750.
20	2448.	.9190	.8350	1169.	5019.
22	2386.	.8960	.8280	1185.	5055.
23	2124.	.9090	.7380	1199.	-4311.
24	2293.	.8410	.7660	1173.	4786.
25	2369.	.8590	-.7010	1183.	4646.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1200 HOUR TEST SERIES •

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MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.936	578.2	118.8	11.7	23.6
2	1.886	632.2	81.3	7.2	23.5
6	1.750	687.2	164.9	-6.0	18.7
7	1.878	625.7	67.3	10.1	19.9
9	1.758	704.2	167.6	8.6	18.8
11	1.748	474.8	60.5	11.1	20.6
12	1.957	519.0	49.5	13.3	20.1
13	1.786	600.6	148.0	11.4	17.9
16	1.793	694.5	154.8	12.6	19.3
20	1.817	570.5	128.2	9.7	19.8
22	1.772	646.5	82.8	14.7	18.9
23	1.806	691.2	-178.1	7.4	17.6
24	1.730	-359.5	51.7	15.3	22.6
25	1.761	-356.1	55.6	17.6	21.3

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 2

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	300A.	57.26	20.21	1.91	3.83	1.83
2	3013.	64.36	14.22	1.21	3.92	1.04
6	2955.	72.63	29.93	-1.05	3.25	2.86
7	301A.	64.01	11.82	1.69	3.35	2.47
9	2957.	75.39	30.83	1.52	3.31	1.84
11	3042.	52.58	11.51	2.02	3.74	2.10
12	3045.	51.39	8.42	2.17	3.27	.92
13	2979.	63.76	27.00	2.00	3.11	3.13
16	2964.	73.10	27.98	2.19	3.33	3.10
20	299A.	59.92	23.13	1.67	3.41	2.34
22	3009.	69.85	15.77	2.61	3.36	.79
23	2951.	71.88	31.83	1.26	3.01	-3.37
24	3060.	40.49	10.00	2.82	4.18	1.32
25	3060.	39.39	10.57	3.19	3.87	3.01

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1200 HOUR TEST SERIES •

WAVE 2

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	.6450	.5000	3.8750	.6970	.5330	4.6960
2	.6290	.4890	3.8550	.6460	.4960	4.5100
6	.5640	.4310	3.5990	.5980	.4530	4.2990
7	.6080	.4700	3.7640	.6450	.4930	4.4970
9	.5640	.4520	3.6960	.6480	.5180	4.6170
11	.5970	.5060	3.9850	.6320	.5350	4.6990
12	.6250	.4540	3.7020	.6170	.4460	4.2650
13	.5900	.4670	3.7110	.6120	.4790	4.4260
16	.5960	.4410	3.9550	.5910	.4510	4.2870
20	.6220	.5000	3.9370	.6410	.5140	4.5960
22	.6070	.5000	3.9760	.6340	.5230	4.6390
23	.5610	-.3940	-3.4520	.5290	-.3700	-3.8830
24	.5880	.4900	3.8000	.5600	.4580	4.3210
25	.5710	.4500	3.5760	.5500	.4300	4.1890

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

MODE 2

UNIT	NREC LB/KLB	CO FU	EI	NREC LB/KLB	HC FU	EI	NRE LB/KLB	CNO FU	EI	NR LB/KLB	CNOX FU	EI	SMK CORRECTED	NUMER
1		53.00			18.96			2.48			4.98		1.83	
2		62.70			14.01			-1.52			4.93		1.04	
6		68.52			28.50			-1.34			4.16		1.87	
7		60.29			11.25			2.17			4.30		.93	
9		65.89			26.91			2.04			4.44		1.60	
11		49.62			10.88			2.56			4.74		1.33	
12		52.02			8.57			2.69			4.05		.92	
13		61.45			26.31			2.56			3.99		-2.68	
16		73.79			28.66			2.55			3.88		-3.10	
20		58.12			22.52			2.10			4.28		1.85	
22		66.80			14.69			3.27			4.21		.66	
23		76.16			-33.89			-1.42			-3.39		-3.37	
24		42.52			10.57			3.21			4.75		1.32	
25		40.90			11.04			3.74			4.54		.92	

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	88.50	93.50	89.37	94.41
2	89.00	93.20	89.35	93.56
6	-87.50	93.00	-88.18	93.73
7	88.50	93.50	89.19	94.23
9	89.00	-92.50	90.45	94.01
11	89.00	93.00	89.65	93.68
12	89.00	95.00	88.91	94.91
13	89.00	94.50	89.48	95.01
16	89.00	94.00	89.00	94.00
20	88.50	93.60	88.84	93.86
22	88.00	-92.50	88.47	-92.99
23	91.00	94.90	90.39	94.27
24	90.00	94.00	89.48	93.46
25	91.00	93.70	90.61	93.30

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 3

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
1	15500.	1.8190	1.8550	1845.	1.400	40521.
2	15600.	1.9040	1.8800	1871.	1.400	40521.
6	15700.	1.8000	1.8680	1818.	1.400	40575.
7	15450.	1.8810	1.8410	1826.	1.400	40575.
9	15700.	1.8330	1.8880	1838.	-1.405	-41313.
11	15400.	1.8050	1.8580	1851.	1.400	40805.
12	15600.	-1.7340	1.8690	1836.	1.400	40655.
13	15200.	1.8580	1.8310	1874.	1.400	40494.
16	15800.	1.8140	1.8980	1872.	1.400	-40360.
20	15300.	1.8070	1.8480	1856.	1.400	40777.
22	15500.	1.8150	1.8650	1829.	1.400	40927.
23	16100.	1.8430	1.9550	1880.	1.400	40710.
24	15500.	1.8190	1.8820	1881.	1.400	40716.
25	15400.	1.8650	1.8730	1889.	1.400	40710.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 3

UNIT	CORR FII FL LAM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
1	15494.	1.8550	1.8910	1882.	40900.
2	15485.	1.9190	1.8940	1885.	40900.
6	15703.	1.8280	1.8970	1847.	40900.
7	15453.	1.9110	1.8700	1854.	40900.
9	15417.	1.8930	1.9500	1898.	-41230.
11	15324.	1.8320	1.8860	1878.	40900.
12	15709.	-1.7300	1.8650	-1833.	40900.
13	15271.	1.8780	1.8510	1894.	40900.
16	16011.	1.8140	1.8980	1872.	40900.
20	15287.	1.8210	1.8620	1871.	40900.
22	15407.	1.8350	1.8850	1849.	40900.
23	16284.	1.8180	1.9290	1854.	40900.
24	15660.	1.7980	1.8610	1860.	40900.
25	15539.	1.8490	1.8570	1872.	40900.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	3.846	8.9	7.6	227.5	257.1
2	4.031	9.4	2.4	247.2	279.6
6	3.803	15.1	5.8	254.8	259.1
7	3.979	16.7	2.5	243.7	249.3
9	3.884	10.7	5.0	261.1	270.0
11	3.817	10.8	11.8	280.9	278.8
12	-3.659	9.7	1.4	251.1	250.2
13	3.926	13.5	18.6	283.8	280.0
16	3.838	9.2	5.6	266.1	274.0
20	3.823	8.9	6.6	241.1	246.6
22	3.847	8.1	2.2	256.2	251.8
23	3.895	11.6	5.4	271.0	275.7
24	3.844	9.3	3.1	346.9	357.1
25	3.944	12.5	3.3	340.5	345.0

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

MODE 3

UNIT	CO <sub>2</sub> EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3151.	.47	.68	19.49	22.02	21.69
2	3152.	.47	.20	20.21	22.86	16.93
6	3149.	.80	.52	22.06	22.43	17.30
7	3149.	.84	.22	20.17	20.63	21.03
9	3158.	.55	.44	22.19	22.95	16.00
11	3152.	.57	1.07	24.25	24.25	22.02
12	3149.	.53	.13	22.59	22.59	16.47
13	3148.	.69	1.63	23.79	23.79	10.00
16	3154.	.48	.51	22.86	23.54	13.59
20	3154.	.47	.59	20.80	21.27	16.67
22	3159.	.43	.20	21.99	21.99	20.00
23	3149.	.60	.48	22.90	23.30	18.59
24	3150.	.48	.28	29.71	-30.59	-4.64
25	3150.	.64	.29	28.43	28.81	5.26

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

MODE 3

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	70.5100	76.0570	70.8080	88.8240	84.2820	89.2700
2	83.7710	67.0330	65.9750	92.1370	69.0910	78.4420
6	60.6600	66.2940	65.1470	72.5220	71.8120	80.4260
7	83.7790	74.4880	70.2530	101.7920	80.7600	86.8110
9	62.1560	62.8380	62.7630	92.5730	76.7010	83.9400
11	61.1270	65.3090	65.7300	72.5970	71.0430	79.8670
12	69.8520	96.5370	83.8350	68.2330	94.3570	96.1550
13	93.1400	91.8840	79.8400	106.0770	96.4440	97.5560
16	73.6490	78.4230	77.3480	73.1360	76.5710	83.8470
20	67.6350	72.7940	70.2770	74.1470	75.9140	83.3780
22	56.8720	56.5590	60.3390	64.6220	-60.3680	-71.9250
23	91.5120	89.2660	80.0280	77.7250	81.4450	87.2920
24	72.6530	72.9750	69.6100	63.4640	67.4710	77.2490
25	79.0960	68.9640	65.5060	71.1710	64.8830	75.3290

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 3

UNIT	NREC LB/KLB	CO FU	FI	NREC LB/KLB	HC	EI FU	NRE LB/KLB	CNO FU	FI	NR LB/KLB	CNOX FU	EI FU	SMK CORRECTED	NUMBER
1		.37			.62		26.55				30.01		14.45	
2		.43			.20		25.97				29.37		12.88	
6		.67			.48		29.43				29.93		12.43	
7		.69			.20		26.93				27.55		14.50	
9		.37			.36		32.08				33.17		14.66	
11		.48			.98		31.84				31.84		17.50	
12		.55			.13		28.00				28.00		14.28	
13		.60			1.55		31.42				31.42		8.78	
16		.48			.52		26.78				27.58		10.59	
20		.43			.57		26.67				27.27		14.50	
22		.37			.19		28.33				28.33		14.99	
23		.70			.52		24.98				25.42		14.58	
24		.55			.30		32.97				33.95		-4.64	
25		.71			.30		32.69				33.13		5.26	

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JY90-3A \* 1200 HOUR TEST SERIES \*

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MODE 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	84.00	91.50	84.82	92.39
2	84.00	92.00	84.33	92.36
6	82.60	92.30	83.24	93.02
7	84.00	91.50	84.66	92.21
9	83.00	91.00	84.35	92.48
11	84.00	91.00	84.61	91.67
12	83.50	93.00	83.42	92.91
13	83.50	92.50	83.95	92.99
16	84.50	92.50	84.50	92.50
20	83.50	93.60	83.82	93.96
22	83.50	91.00	83.95	91.49
23	84.50	92.50	83.94	91.88
24	84.50	92.80	84.02	92.27
25	85.00	91.90	84.63	91.50

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 4

UNIT	FUEL FLOW LRM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
1	12700.	1.6560	1.6880	1741.	1.310	34134.
2	12850.	1.7010	1.7210	1766.	1.310	34134.
6	12750.	1.6040	1.6870	1719.	1.310	34179.
7	12900.	1.6950	1.7170	1739.	1.310	34179.
9	12600.	1.6530	1.7030	1730.	1.305	34128.
11	12800.	1.6290	1.7190	1750.	1.310	34373.
12	12850.	1.5720	1.7130	1737.	1.310	34247.
13	12400.	1.6510	1.6830	1761.	1.300	-33332.
16	13300.	1.6600	1.7660	1775.	1.315	34387.
20	12800.	1.6440	1.7240	1763.	1.310	34350.
22	12800.	1.6120	1.7100	1723.	1.310	34476.
23	13000.	1.6920	1.7420	1750.	1.310	34293.
24	12800.	1.6690	1.7230	1766.	1.310	34299.
25	12500.	1.6350	1.6850	1773.	1.310	34293.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1200 HOUR TEST SERIES •

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MODE 4

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
1	12695.	1.6880	1.7220	1775.	34453.
2	12920.	1.7140	1.7350	1780.	34453.
6	12753.	1.6300	1.7130	1746.	34453.
7	12903.	1.7230	1.7440	1766.	34453.
9	12373.	1.7070	1.7580	1787.	34060.
11	12737.	1.6530	1.7440	1776.	34453.
12	12940.	1.5690	1.7090	1734.	34453.
13	12458.	1.6690	1.7010	1780.	33667.
16	13478.	1.6600	1.7660	1775.	34847.
20	12789.	1.6570	1.7370	1776.	34453.
22	12723.	1.6290	1.7290	1741.	34453.
23	13149.	1.5700	1.7190	-1727.	34453.
24	12932.	1.6500	1.7030	1746.	34453.
25	12613.	1.6210	1.6710	1758.	34453.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1200 HOUR TEST SERIES •

MODE 4

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	3.495	10.3	3.2	164.4	179.9
2	3.593	9.9	1.3	173.4	193.5
6	3.393	16.1	4.0	168.8	171.0
7	3.590	17.5	2.5	163.5	167.9
9	3.496	11.6	3.6	170.4	173.3
11	3.437	11.3	12.9	-75.5	-75.1
12	3.313	10.0	1.2	174.5	174.8
13	3.478	14.5	-22.2	189.6	188.9
16	3.507	9.9	4.1	191.2	189.6
20	3.471	10.0	7.1	173.0	172.5
22	3.408	8.0	1.5	177.0	173.1
23	3.572	10.8	3.1	190.8	200.3
24	3.523	9.0	1.6	239.4	-250.0
25	3.449	12.1	2.7	236.6	239.7

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 4

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3152.	.59	.32	15.49	16.95	15.10
2	3152.	.55	.13	15.90	17.75	13.77
6	3149.	.75	.41	16.43	16.64	11.84
7	3149.	.98	.24	15.04	15.44	17.49
9	3158.	.67	.36	16.10	16.37	11.37
11	3151.	.66	1.70	-7.23	-7.23	18.28
12	3148.	.60	.13	17.34	17.36	13.39
13	-3146.	1.07	-2.19	17.92	17.92	7.22
16	3154.	.57	.40	17.97	17.97	10.75
20	3153.	.58	.70	16.43	16.43	12.03
22	3159.	.47	.15	17.15	17.15	14.71
23	3150.	.61	.30	17.59	18.47	13.73
24	3150.	.51	.16	22.37	23.37	4.56
25	3149.	.70	.27	22.59	22.88	-2.76

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

MODE 4

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	32.4940	47.3170	52.2610	39.3510	52.2020	65.5780
2	38.5910	50.2280	54.8920	41.6450	51.7160	65.1910
6	32.9050	56.1440	58.5690	38.1600	60.7420	72.2100
7	35.4940	46.2440	51.8130	41.5470	49.9500	63.7940
9	30.1000	43.9380	49.9980	41.8800	53.3360	66.4750
11	28.0970	41.4390	49.1780	32.3880	44.9360	59.5790
12	33.2550	60.5030	61.8780	32.5730	59.1630	71.0050
13	37.6360	57.6530	59.0160	41.7150	60.3680	71.9250
16	37.7580	54.8550	61.4850	37.4700	53.5590	66.6520
20	44.2940	72.7940	70.2770	47.9500	-75.9140	-83.3780
22	26.9040	40.7260	48.9650	29.8680	43.3970	58.2650
23	39.9040	51.1850	55.9040	34.7570	46.8670	61.2100
24	39.4810	54.6410	57.8430	35.1130	50.5990	64.2990
25	32.0300	46.2010	50.6890	29.4140	43.5460	58.3930

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 4

UNIT	NREC CO LB/KLB FU	EI	NREC HC LB/KLB FU	EI	NRE CNO LB/KLB FU	EI	NR CNOX LB/KLB FU	EI	SMK NUMBER CORRECTED
1		.49		.29	19.44		21.27		12.27
2		.51		.12	20.41		22.78		11.10
6		.82		.38	20.26		20.51		9.95
7		.83		.22	18.51		19.00		14.66
9		.48		.29	21.41		21.76		10.74
11		.57		1.20	-9.41		-9.41		-16.54
12		.62		.13	21.50		21.53		13.36
13		.96		-2.09	21.84		21.84		6.87
16		.57		.41	19.48		19.48		9.27
20		.53		.67	19.49		19.49		11.77
22		.42		.14	22.06		22.06		12.79
23		.70		.33	19.26		20.22		12.21
24		.58		.17	24.87		25.97		4.56
25		.77		.28	26.02		26.36		-2.76

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1200 HOUR TEST SERIES •

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MODE 5

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	73.50	-87.20	74.22	-88.05
2	74.00	88.50	74.29	88.94
6	73.60	89.50	74.17	90.20
7	74.50	88.20	75.08	88.89
9	75.00	88.80	76.22	90.25
11	75.00	-87.50	75.55	-88.14
12	76.50	90.50	76.43	90.41
13	74.00	89.00	74.40	89.48
16	77.00	90.50	77.00	90.50
20	74.50	88.50	74.79	88.84
22	75.50	90.00	75.90	90.48
23	-77.50	89.70	76.98	89.10
24	77.00	90.00	76.56	89.48
25	76.50	89.20	76.17	88.82

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 5

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
1	8900.	1.4060	1.4430	1565.	1.190	24491.
2	9000.	1.4240	1.4730	1593.	1.190	24491.
6	9300.	1.3720	1.4700	1572.	1.200	25595.
7	9450.	1.4530	1.5040	1592.	1.200	25595.
9	9500.	1.4490	1.5150	1602.	1.205	26246.
11	9300.	1.3840	1.5320	1590.	1.190	24662.
12	10000.	1.4120	1.5600	1626.	1.215	26819.
13	8900.	1.4030	1.4550	1592.	1.190	24475.
16	-10500.	1.4720	-1.6240	1655.	1.220	27012.
20	9300.	1.4020	1.4940	1606.	1.200	25723.
22	10000.	1.4180	1.5390	1597.	1.220	27392.
23	9900.	1.4970	1.5300	1628.	1.220	27246.
24	9850.	1.4480	1.5270	1637.	1.220	27250.
25	9400.	1.4290	1.4840	1628.	1.210	26463.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODF 5

UNIT	CORR FII FL LAM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG P	COR THRUST LBF
1	8896.	1.4330	1.4710	1595.	24720.
2	9049.	1.4350	1.4840	1606.	24720.
6	9302.	1.3940	1.4930	1596.	25800.
7	9452.	1.4750	1.5270	1616.	25800.
9	9329.	1.4970	1.5650	1655.	26193.
11	9254.	1.4040	1.5540	1613.	24720.
12	10070.	1.4100	1.5570	1623.	26980.
13	8941.	1.4180	1.4700	1609.	24720.
16	-10640.	1.4720	-1.6240	1655.	27373.
20	9292.	1.4130	1.5050	1618.	25800.
22	9940.	1.4330	1.5560	1614.	27373.
23	10013.	1.4770	1.5100	1606.	27373.
24	9952.	1.4310	1.5090	1618.	27373.
25	9485.	1.4160	1.4710	1614.	26587.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

MODE 5

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	2.959	21.5	1.5	87.1	97.5
2	2.998	20.8	.8	88.7	100.7
6	2.886	24.8	3.4	95.3	99.6
7	3.057	24.0	2.6	92.2	98.2
9	3.058	18.8	2.8	101.4	104.7
11	2.912	16.0	10.8	-40.6	-41.2
12	2.971	12.3	1.0	107.8	111.6
13	2.947	21.5	-19.4	100.0	100.8
16	3.103	15.0	2.8	120.7	120.1
20	2.952	17.5	5.8	97.4	98.6
22	2.993	11.8	1.0	110.6	109.2
23	3.152	13.6	2.0	117.3	126.7
24	3.048	11.4	1.4	-141.8	-153.5
25	3.006	16.2	2.5	-136.4	-140.8

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

MODE 5

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC FI LB/KLB FII	NO FI LB/KLB FII	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
1	3151.	1.46	.17	9.69	10.85	7.60
2	3151.	1.39	.10	9.74	11.06	9.64
6	3148.	1.72	.40	10.86	11.36	7.55
7	3148.	1.57	.29	9.92	10.57	-15.67
9	3158.	1.23	.32	10.95	11.30	5.56
11	3151.	1.10	1.27	-4.59	-4.66	11.63
12	3147.	.83	.12	11.94	12.36	8.55
13	-3145.	1.46	-2.26	11.15	11.25	4.94
16	3154.	.97	.31	12.82	12.82	8.03
20	3152.	1.19	.68	10.87	11.01	8.38
22	3159.	.79	.12	12.20	12.20	9.03
23	3149.	.86	.21	12.26	13.23	10.00
24	3150.	.75	.16	-15.31	-16.58	3.52
25	3149.	1.08	.29	-14.94	-15.42	2.22

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 5

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	10.7100	-19.9400	-30.4830	12.3790	-21.8290	-37.9360
2	13.2430	25.4440	35.7700	14.0050	26.1340	42.3710
6	13.6810	31.1840	40.3730	15.3760	33.5940	49.5480
7	13.3040	24.0360	34.3560	15.0240	25.8460	42.0820
9	14.4030	28.1390	37.7690	-18.8800	33.9260	49.8550
11	10.6370	-20.5860	-31.8230	11.8790	22.2190	-38.3480
12	16.6060	35.8580	44.3460	16.3020	35.0800	50.9130
13	13.4750	27.8300	37.2620	14.5690	29.0350	45.2370
16	-18.7440	-36.5630	-47.4860	-18.6120	35.6990	51.4760
20	12.4950	24.6590	35.4210	13.2620	25.6150	41.8490
22	15.7580	33.4090	43.2020	17.2150	35.5630	51.3530
23	17.3720	29.3460	39.3100	15.4980	26.9640	43.2000
24	16.4550	31.3110	40.6070	14.9580	29.0820	45.2330
25	14.2750	26.9730	36.1220	13.3030	25.4740	41.7060

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 1200 HOUR TEST SERIES \*

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MODE 5

UNIT	NREC CO FI LB/KLB FU	NREC HC FI LB/KLB FU	NRE CNO FI LB/KLB FU	NR CNOX EI LA/KLB FU	SMK NUMBER CORRECTED
1	1.26	.16	12.06	13.50	7.60
2	1.31	.09	-11.54	13.10	9.21
6	1.53	.37	13.33	13.94	7.55
7	1.39	.27	12.15	12.94	-12.05
9	.94	.26	14.45	14.92	5.56
11	.98	1.18	-5.94	-6.02	11.03
12	.84	.12	13.71	14.19	8.46
13	1.35	-2.16	13.54	13.66	4.94
16	.98	.32	13.90	13.90	7.86
20	1.12	.66	12.85	13.01	8.07
22	.72	.11	15.68	15.68	7.70
23	.97	.23	13.47	14.54	8.89
24	.83	.17	-17.07	-18.49	2.93
25	1.16	.30	-17.25	-17.81	1.85

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	56.00	82.00	56.55	82.80
2	56.00	83.20	56.22	83.52
6	57.00	84.50	57.44	85.16
7	56.50	83.50	56.94	84.15
9	57.00	83.30	57.93	84.66
11	58.00	82.00	58.42	82.60
12	58.00	85.50	57.94	85.42
13	56.50	84.00	56.80	84.45
16	57.00	84.00	57.00	84.00
20	56.50	83.30	56.72	83.62
22	-53.00	82.00	-53.26	82.44
23	55.50	83.40	55.13	82.84
24	56.00	83.40	55.68	82.92
25	56.00	83.00	55.76	82.64

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1200 HOUR TEST SERIES •

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MODE 6

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TTA DEG R	FPR	THRUST LBF
1	5050.	1.1630	1.1470	1361.	1.086	-1290.
2	5200.	1.1730	1.2440	1388.	1.080	12127.
6	5400.	1.1400	1.2060	1381.	-1.090	-13512.
7	5400.	1.1930	1.2980	1395.	1.080	12143.
9	5400.	1.1530	1.2310	1392.	-1.089	-13509.
11	5300.	1.1250	1.2660	1365.	1.080	12211.
12	5700.	1.1770	1.2980	1430.	-1.090	-13539.
13	5200.	1.1700	1.2470	1395.	1.080	12118.
16	5500.	1.1630	1.2740	1404.	1.085	12754.
20	5300.	1.1790	1.2390	1401.	1.085	12891.
22	4900.	1.0990	1.1660	1349.	1.080	12248.
23	4900.	1.1470	1.2150	1377.	-1.075	-11496.
24	5700.	1.0980	1.1960	1376.	1.080	12185.
25	4900.	1.1120	1.1580	1401.	1.080	12183.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1200 HOUR TEST SERIES •

MODE 6

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	COR TT6 DEG R	COR THRUST LBF
1	5048.	1.1860	1.1700	1388.	13068.
2	5228.	1.1820	1.2540	1399.	12240.
6	5401.	1.1580	1.2240	1403.	-13620.
7	5401.	1.2120	1.3180	1417.	12240.
9	5303.	1.1970	1.2710	1437.	-13482.
11	5274.	1.1410	1.2850	1385.	12240.
12	-5740.	1.1750	1.2960	1427.	-13620.
13	5224.	1.1830	1.2600	1410.	12240.
16	5574.	1.1630	1.2740	1404.	12930.
20	5295.	1.1880	1.2480	1412.	12930.
22	4871.	1.1010	1.1790	1363.	12240.
23	4956.	1.1310	1.1990	1359.	-11550.
24	5052.	1.0860	1.1820	1360.	12240.
25	4843.	1.1020	1.1480	1389.	12240.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1200 HOUR TEST SERIES •

MODE 6

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	2.433	99.2	3.9	38.8	48.8
2	2.453	109.3	3.7	36.8	49.2
6	2.392	101.1	5.9	41.0	51.5
7	2.496	94.1	4.2	38.0	49.2
9	2.429	97.7	5.6	41.4	50.0
11	2.355	70.5	8.6	41.4	49.1
12	2.467	-43.2	1.6	49.2	55.9
13	2.445	92.1	-16.6	42.2	50.2
16	2.433	104.8	5.5	42.7	52.1
20	2.468	99.5	7.2	40.9	50.4
22	2.281	110.9	4.1	36.6	44.4
23	2.397	96.5	5.4	37.4	48.0
24	2.298	56.4	3.5	49.1	57.8
25	2.327	57.3	4.5	-52.3	56.3

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

MODE 6

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBR FRONT SIDE
1	3139.	8.15	.54	5.23	6.58	3.67
2	3139.	8.90	.51	4.92	6.57	3.25
6	3136.	8.47	.96	5.64	7.08	3.99
7	3138.	7.53	.58	4.99	6.47	5.88
9	3146.	8.06	.79	5.61	6.77	1.85
11	3143.	5.99	1.26	5.78	6.86	5.92
12	3143.	-3.50	.22	6.56	7.45	-7.30
13	3135.	7.51	-2.33	5.65	6.73	2.48
16	3140.	8.61	.77	5.77	7.03	4.71
20	3142.	7.25	1.00	5.44	6.71	4.04
22	3143.	9.73	.62	5.28	6.39	2.99
23	3136.	8.04	.81	5.15	6.56	1.97
24	3142.	4.91	.53	7.02	8.26	2.22
25	3142.	4.93	.66	-7.38	7.94	.39

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 1200 HOUR TEST SERIES \*

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MODE 6

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	3.7760	7.0810	16.3100	4.2170	7.6840	20.1090
2	4.4050	8.6820	18.5660	4.5900	8.8840	21.9060
6	4.9690	11.4820	21.8580	5.4380	12.2830	26.0290
7	4.7230	9.4120	19.3900	5.1780	10.0560	23.5880
9	4.4140	9.3570	19.7230	5.3970	11.1040	25.0410
11	3.5560	6.8770	16.4090	3.8670	7.3720	19.6270
12	-5.8480	-13.2060	-23.9150	5.7570	12.9310	27.4810
13	4.8540	10.2600	20.2180	5.1500	10.6540	24.4220
16	4.7810	9.9990	21.3760	4.7390	9.7620	23.1730
20	4.4760	8.7560	18.8330	4.4870	9.0630	22.1680
22	3.3790	6.7490	16.3250	3.5940	7.1310	19.2510
23	4.2710	8.3710	18.2440	3.9340	7.7480	20.2070
24	4.0060	8.4210	18.1640	3.7390	7.8740	20.3990
25	3.8900	7.8380	17.0020	3.6910	7.4370	19.7290

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 6

UNIT	NREC LB/KLB	CO FU	EI	NREC LB/KLB	HC FU	EI	NRE LB/KLB	CNO FU	EI	NR LB/KLB	CNOX FU	EI	SMK CORRECTED	NUMBER
1		7.30			.50			6.93			8.71		3.67	
2		8.54			.50			6.24			8.33		3.20	
6		7.74			.80			7.37			9.26		3.99	
7		6.87			.55			6.53			8.45		5.46	
9		6.59			.67			7.82			9.44		1.85	
11		5.51			1.18			7.42			8.81		-5.92	
12		3.56			.22			8.10			9.19		-7.07	
13		7.08			-2.24			7.33			8.72		2.02	
16		8.68			.79			6.72			8.19		4.35	
20		6.92			.97			6.87			8.49		4.04	
22		9.14			.59			5.69			8.10		2.99	
23		8.73			.87			-5.70			7.27		1.73	
24		5.25			.56			7.88			9.28		2.22	
25		5.19			.70			8.56			9.22		.39	

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	32.20	69.00	32.51	69.67
2	32.00	69.50	32.12	69.77
6	30.50	69.40	30.74	69.94
7	32.00	68.60	32.25	69.14
9	32.50	69.10	33.03	70.23
11	-35.00	69.50	-35.26	70.01
12	28.50	69.50	28.47	69.43
13	32.50	69.50	32.67	69.87
16	32.00	69.00	32.00	69.00
20	32.50	68.50	32.63	68.77
22	30.50	69.00	30.66	69.37
23	30.00	68.40	29.80	67.94
24	32.00	69.80	31.82	69.40
25	33.00	69.30	32.86	69.00

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1200 HOUR TEST SERIES •

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MODE 7

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	T16 DEG R	EPR	THRUST LRF
1	2250.	.9410	.7680	1178.	1.025	4940.
2	2150.	.9170	.7300	1185.	1.025	4973.
6	2100.	.9090	.7100	1169.	1.025	5039.
7	2200.	.9230	.7630	1196.	-1.035	4759.
9	2150.	.8740	.7350	1158.	1.025	5192.
11	2350.	.8460	.7880	1140.	1.025	5091.
12	2100.	-.9730	.7410	-1273.	1.020	4872.
13	2150.	.9150	.7310	1192.	1.025	5005.
16	2350.	.8830	.7990	1178.	1.023	4687.
20	2200.	.8970	.7560	1156.	1.020	4654.
22	2200.	.8610	.7600	1181.	-1.030	4882.
23	2000.	.9060	.7070	1224.	1.020	4360.
24	2100.	.8260	.7140	1192.	1.025	4868.
25	2000.	.8470	.6900	1206.	1.025	4728.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 7

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TIG DEG R	COR THRUST LBF
1	2249.	.9600	.7830	1201.	4986.
2	2162.	.9240	.7350	1194.	5019.
6	2100.	.9230	.7210	1187.	5080.
7	2200.	.9370	.7750	1214.	4797.
9	2111.	.9020	.7590	1196.	5181.
11	2338.	.8590	.8000	1156.	5103.
12	2115.	.9710	.7490	-1270.	4902.
13	2160.	.9240	.7390	1205.	5055.
16	-2381.	.8830	.7990	1178.	4750.
20	2198.	.9040	.7610	1165.	4668.
22	2187.	.8700	.7690	1194.	4879.
23	2023.	.8940	.6970	1208.	4380.
24	2122.	.8170	.7060	1178.	4890.
25	2018.	.8400	.6840	1196.	4750.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.887	616.9	78.2	10.6	22.2
2	1.828	662.6	89.6	7.0	21.0
6	1.790	674.7	150.2	7.1	18.0
7	1.840	682.6	79.1	8.7	18.3
9	1.717	690.9	154.0	8.6	18.4
11	1.706	475.9	66.2	9.0	19.7
12	-1.981	442.8	43.1	13.5	20.8
13	1.826	574.3	109.1	10.7	19.0
16	1.739	677.5	142.6	11.4	19.1
20	1.786	629.0	101.9	9.0	18.1
22	1.711	683.7	88.7	13.3	17.7
23	1.778	700.1	161.7	8.7	17.5
24	1.677	-359.5	50.5	14.4	22.0
25	1.729	-300.8	47.5	-16.8	20.9

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 7

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMRER FRONT SIDE
1	3017.	62.77	13.67	1.78	3.72	-3.77
2	3001.	69.24	16.08	1.20	3.60	.26
6	2965.	71.14	27.21	1.27	3.12	1.85
7	3001.	70.85	14.11	1.49	3.12	1.18
9	2962.	75.83	29.04	1.55	3.32	-3.95
11	3036.	53.88	12.89	1.68	3.66	1.31
12	3061.	-43.54	7.29	2.19	3.35	1.17
13	3005.	60.16	19.63	1.83	3.27	1.43
16	2967.	73.56	26.61	2.03	3.42	2.09
20	2997.	67.22	18.70	1.58	3.18	2.47
22	2494.	76.16	16.98	2.43	3.23	1.30
23	2954.	74.02	29.38	1.51	3.04	0.00
24	3059.	-41.72	10.07	2.75	4.19	1.31
25	-3077.	-34.03	9.23	-3.12	3.89	.13

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

MODE 7

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	.6120	.4740	3.7690	.6600	.5050	4.5550
2	.6280	.5060	3.9280	.6440	.5140	4.5960
6	.6170	.5040	3.9060	.6540	.5290	4.6700
7	.5770	.4380	3.6270	.6120	.4600	4.3320
9	.5780	.4850	3.8330	.6600	.5560	4.7950
11	.5870	.5060	3.9850	.6210	.5350	4.6990
12	-.6590	.4940	3.8660	.6510	.4840	4.4530
13	.6270	.5090	3.8880	.6510	.5230	4.6390
16	.5820	.4610	3.9550	.5760	.4510	4.2870
20	.5590	.4230	3.6090	.5750	.4350	4.2090
22	.5640	.4580	3.7940	.5890	.4790	4.4260
23	.5630	.4070	3.5080	.5320	.3820	3.9450
24	.5920	.5090	3.9050	.5640	.4820	4.4390
25	.5760	.4710	3.6610	.5550	.4510	4.2880

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

AD-A070 578

NORTHERN RESEARCH AND ENGINEERING CORP CAMBRIDGE MASS  
TIME DEGRADATION FACTORS FOR TURBINE ENGINE EXHAUST EMISSIONS, --ETC(U)  
MAY 78

F/G 13/2  
DOT-FA74NA-1100

UNCLASSIFIED

NREC-1238-11

FAA-RD-78-56-6

NL

3 OF 4  
AD  
A070578



JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 7

UNIT	NREC CO FI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
1	58.20	12.83	2.31	4.82	-3.47
2	67.48	15.83	1.51	4.52	.26
6	67.06	25.89	1.57	4.01	1.33
7	66.80	13.43	1.91	4.00	1.18
9	66.33	25.34	2.09	4.46	1.99
11	50.89	12.18	2.12	4.63	1.31
12	44.08	7.42	2.71	4.15	1.17
13	57.95	19.13	2.35	4.19	1.43
16	74.26	27.25	2.36	3.98	2.09
20	65.25	18.22	1.98	3.98	2.00
22	72.90	16.23	3.04	4.05	.66
23	78.40	-31.29	1.70	3.42	0.00
24	43.79	10.65	3.12	4.77	.92
25	-35.33	9.64	-3.65	4.55	.13

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1200 HOUR TEST SERIES \*

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MODE 8

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
1	28.40	65.40	28.68	66.04
2	28.00	65.80	28.11	66.06
6	25.50	64.30	25.70	64.80
7	28.50	65.00	28.72	65.51
9	27.00	63.60	27.44	64.64
11	29.00	64.50	29.21	64.97
12	-22.50	64.50	-22.48	64.44
13	27.00	64.50	27.14	64.84
16	27.50	65.00	27.50	65.00
20	28.50	64.80	28.61	65.05
22	27.50	65.00	27.65	65.35
23	26.50	65.00	26.32	64.57
24	26.50	-63.50	26.35	-63.14
25	28.50	65.00	28.38	64.72

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE B

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT4 DEG R	EPR	THRUST LBF
1	2000.	.9550	.9770	1165.	1.020	7703.
2	1900.	.9300	.8040	1169.	1.020	7708.
6	1800.	.9040	.8690	1154.	1.020	7314.
7	1950.	.9080	.8960	1187.	1.020	7536.
9	1800.	.8860	.9310	1178.	1.015	7298.
11	1900.	.8180	.8970	1120.	1.020	7384.
12	1700.	-1.1030	.8650	-1323.	1.015	7212.
13	1740.	.9270	.8300	1174.	1.015	7320.
16	2000.	.8910	.9050	1160.	1.020	7355.
20	1900.	.9040	.8800	1151.	1.015	7406.
22	1900.	.8730	.8780	1174.	1.020	7515.
23	1800.	.9290	.8440	1226.	1.015	7255.
24	1700.	.8230	.8970	1167.	1.015	-7828.
25	1700.	.8410	.7840	1185.	1.020	7301.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE 8

UNIT	CORR FU FL LBM/HR	COR CH F/A X100	COR PE F/A X100	COR TT6 DEG R	COR THRUST LBF
1	1909.	.9740	.8940	1188.	3738.
2	1910.	.9380	.9100	1178.	3743.
6	1900.	.9190	.8870	1172.	3740.
7	1950.	.9230	.9100	1201.	3565.
9	1768.	.9150	-.9620	1175.	3291.
11	1891.	.8300	.9060	1136.	3391.
12	1712.	-1.1010	.8630	-1321.	3231.
13	1748.	.9370	.8390	1186.	3353.
16	2027.	.8910	.9050	1160.	3400.
20	1898.	.9110	.8870	1159.	3617.
22	1889.	.8830	.8870	1188.	3513.
23	1821.	.9170	.8330	1210.	3270.
24	1718.	.8130	.8870	1153.	-2841.
25	1715.	.8340	.7770	1175.	3316.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

MODE 8

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
1	1.867	776.4	186.7	9.3	20.4
2	1.807	836.0	192.9	5.6	18.9
6	1.722	905.7	-264.4	5.9	14.6
7	1.761	835.5	187.3	7.8	15.8
9	1.689	905.4	-263.4	7.6	14.8
11	1.584	731.5	185.6	7.7	15.4
12	-2.213	715.1	93.3	13.8	18.5
13	1.797	771.3	222.1	9.1	15.1
16	1.714	860.9	222.9	10.3	15.7
20	1.753	784.0	205.2	8.0	15.2
22	1.690	828.1	197.9	12.1	15.4
23	1.796	817.8	224.9	7.0	15.2
24	1.633	-509.0	122.7	10.7	18.1
25	1.697	-398.6	-75.9	13.1	17.4

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TEST SERIES •

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MODE A

UNIT	CO2 FI LB/KLB FU	CO FI LB/KLB FU	HC FI LB/KLB FU	NO FI LB/KLB FU	NOX FI LB/KLB FU	SMK NUMBER FRONT SIDE
1	2947.	77.90	32.18	1.53	3.37	2.10
2	2925.	86.11	34.14	-0.95	3.21	.91
6	2868.	96.03	49.15	1.03	2.54	3.27
7	2920.	88.15	33.95	1.36	2.74	2.12
9	2872.	98.00	-48.98	1.36	2.63	-4.71
11	2919.	85.76	37.38	1.48	2.96	2.49
12	-3014.	-61.96	-13.89	1.96	2.64	2.63
13	2920.	79.76	39.46	1.54	2.56	1.95
16	2897.	92.61	41.19	1.82	2.78	1.69
20	2923.	83.18	37.40	1.40	2.66	2.85
22	2915.	90.93	37.34	2.18	2.78	1.30
23	2910.	84.34	39.84	1.19	2.57	-3.52
24	2921.	-59.32	24.57	2.04	3.47	.66
25	-3039.	-45.43	-14.86	2.44	3.26	0.00

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1200 HOUR TFST SERIES •

MODE 8

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
1	.4550	.2720	2.8440	.4890	.2890	3.4250
2	.4620	.2850	2.9340	.4740	.2890	3.4280
6	.4080	.2410	2.6730	.4310	.2530	3.1840
7	.4280	.2610	2.7860	.4520	.2730	3.3190
9	.3750	-.2180	2.5420	.4250	.2480	3.1520
11	.3840	.2440	2.7370	.4040	.2580	3.2160
12	-.5040	.2470	2.7030	-.4980	.2430	3.1150
13	.4240	.2480	2.6820	.4390	.2540	3.1920
16	.4300	.2650	2.9720	.4260	.2580	3.2210
20	.4230	.2530	2.7730	.4350	.2600	3.2310
22	.4150	.2570	2.8240	.4320	.2680	3.2880
23	.4490	.2620	2.7860	.4240	.2460	3.1390
24	.3820	.2340	2.5740	.3650	.2220	2.9360
25	.4140	.2610	2.7010	.3890	.2510	3.1680

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1200 HOUR TEST SERIES •

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MODE 8

UNIT	NREC CO FI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO FI LB/KLB FU	NR CNOX FI LB/KLB FU	SMK NUMPR CORRECTED
1	72.43	70.31	1.98	4.35	2.10
2	84.01	33.67	1.19	4.02	.80
6	90.87	45.99	1.31	3.24	2.65
7	83.37	32.41	1.74	3.51	2.12
9	86.36	43.09	1.81	3.51	1.99
11	81.33	35.47	1.87	3.73	2.49
12	62.73	-14.14	2.63	3.27	2.63
13	77.00	38.54	1.97	3.27	1.95
16	93.49	42.14	2.12	3.24	1.69
20	80.84	36.49	1.75	3.32	2.66
22	87.18	35.77	2.72	3.47	1.30
23	89.23	42.35	1.34	2.90	-3.52
24	62.08	25.90	2.33	3.95	.66
25	-47.09	-15.50	2.87	3.82	0.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1500 HOUR TEST SERIES •

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UNIT	TSO HR	TSR HR	AMB TEMP DEG R	AMB PRESS IN HG	AMB HUMID LR H2O/AIR
9	15294.	1609.	513.2	30.02	.005310
11	15602.	1544.	520.7	29.90	.007270
12	15049.	1524.	518.7	29.97	.007700
13	13624.	1499.	508.7	30.10	.006310
16	14063.	1526.	519.7	29.96	.006390
20	9713.	1490.	511.7	29.94	.006660
21	16891.	1624.	524.2	30.03	.009850

J19D-3A • 1500 HOUR TEST SERIES •

MODE 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
9	27.50	63.90	27.65	64.24
11	29.70	66.10	29.64	65.97
12	28.30	64.50	28.30	64.50
13	28.50	65.50	28.78	66.14
16	28.70	64.50	28.67	64.44
20	29.50	65.00	29.70	65.44
21	26.50	-63.50	26.36	-63.17

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 1

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LBF
9	1830.	.9000	.9190	1149.	1.016	3162.
11	2000.	.8430	.8260	1151.	1.020	3719.
12	1840.	.9370	.8940	1196.	1.020	3245.
13	1900.	.8690	.8260	1161.	1.020	3748.
16	2000.	.9370	.9580	1161.	1.020	3227.
20	-2300.	.9320	-1.0450	1136.	1.015	3542.
21	1800.	.8860	.9480	1170.	1.015	-2839.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 1

UNIT	CORR FID FL LBM/HR	COR CH F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
9	1826.	.9100	.9290	1161.	3172.
11	2003.	.8400	.8230	1146.	3716.
12	1843.	.9370	.8940	1196.	3250.
13	1493.	.8860	.8430	1184.	3771.
16	2005.	.9350	.9560	1159.	3231.
20	-2286.	.9450	-1.0590	1152.	3544.
21	1816.	.8770	.9390	1158.	-2850.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 1

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
9	1.734	866.3	217.9	10.8	15.7
11	1.679	619.2	-82.6	9.9	16.6
12	1.871	671.5	85.0	9.9	15.8
13	1.682	739.3	217.7	14.6	16.3
16	1.806	899.5	232.9	7.0	15.5
20	1.803	813.8	224.8	10.2	16.1
21	1.774	-524.9	95.9	15.8	18.3

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 1500 HOUR TEST SERIES \*

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MODE 1

UNIT	CO <sub>2</sub> FI LB/KLB FU	CO FI LB/KLB FU	HC FI LB/KLB FU	NO FI LB/KLB FU	NOX FI LB/KLB FU	SMK NUMBER FRONT SIDE
9	2904.	92.30	39.89	1.88	2.74	1.97
11	2999.	70.40	-16.13	1.84	3.10	1.31
12	3007.	68.67	-14.93	1.67	2.66	.79
13	2919.	81.64	41.30	2.66	2.96	2.09
16	2903.	92.06	40.94	1.18	2.60	2.76
20	2913.	83.67	39.71	1.72	2.72	-4.58
21	-3013.	-56.74	-17.81	2.81	3.24	1.46

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODE 1

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
9	.3970	.2300	2.6830	.4130	.2300	3.0790
11	.4400	.2910	3.0130	.4340	.2870	3.4120
12	.4300	.2450	2.7030	.4300	.2450	3.1270
13	.4240	.2730	2.8540	.4550	.2920	3.4450
16	.4310	.2450	2.7800	.4270	.2430	3.1150
20	.4350	.2570	2.7740	.4590	.2710	3.3070
21	.4010	.2340	2.5850	.3840	.2230	2.9390

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 1

UNIT	NREC CO FI LB/KLR FU	NREC HC EI LB/KLR FU	NRE CNO FI LB/KLR FU	NR CNOX FI LB/KLR FU	SMK NUMBER CORRECTED
9	88.75	38.51	2.32	3.38	1.74
11	71.38	-16.36	2.24	3.77	1.31
12	68.72	-14.97	2.07	3.30	.79
13	76.01	38.67	3.44	3.84	2.09
16	92.82	41.35	1.42	3.13	2.76
20	79.25	37.70	2.20	3.48	-4.02
21	59.21	18.68	3.20	3.69	1.46

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
9	33.60	69.80	33.78	70.17
11	33.80	69.40	33.74	69.27
12	33.50	69.50	33.50	69.50
13	32.50	69.00	32.82	69.67
16	33.60	69.20	33.57	69.13
20	34.70	69.80	34.94	70.28
21	32.40	69.40	32.23	69.03

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1500 HOUR TEST SERIES \*

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MODE 2

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LBF
9	2300.	.9110	.7780	1176.	1.025	5145.
11	2250.	.8650	.7650	1161.	1.023	4847.
12	2260.	.9400	.7820	1212.	1.026	4917.
13	2200.	.8830	.7550	1181.	-1.050	4956.
16	2350.	.9300	.8070	1179.	1.025	4790.
20	2450.	.9470	.8260	1160.	1.022	5195.
21	2100.	.9010	.7190	1188.	1.020	4745.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 2

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
9	2295.	.9210	.7870	1188.	5162.
11	2253.	.8610	.7620	1157.	4843.
12	2264.	.9400	.7820	1212.	4925.
13	2192.	.9000	.7690	1204.	4986.
16	2355.	.9280	.8050	1177.	4797.
20	2435.	.9600	.8370	1175.	5199.
21	2119.	.8910	.7110	1176.	4762.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
9	1.825	625.9	82.4	11.4	20.4
11	1.745	500.5	54.3	10.5	19.5
12	1.912	465.9	45.1	11.4	19.4
13	1.752	586.4	137.5	16.8	19.2
16	1.842	491.7	136.7	7.5	19.0
20	1.889	585.2	122.2	12.3	20.4
21	1.879	-347.8	41.3	19.1	22.3

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TFST SERIES •

MODF 2

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMER FRONT SIDE
9	3014.	65.81	14.89	1.97	3.53	.66
11	3038.	55.47	10.34	1.92	3.55	1.56
12	3060.	47.45	7.88	1.91	3.25	1.95
13	2990.	63.68	25.65	3.00	3.43	1.45
16	2982.	71.28	24.19	1.27	3.21	3.27
20	3002.	59.18	21.24	2.04	3.39	1.70
21	3073.	-36.98	7.54	3.34	3.89	1.58

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1500 HOUR TEST SERIES •

MODE 2

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
9	.6600	.5300	4.1450	.6680	.5510	4.7710
11	.5880	.4770	3.8740	.5790	.4700	4.3840
12	.6370	.4920	3.8740	.6360	.4900	4.4810
13	.5790	.4720	3.7610	.6240	.5050	4.5550
16	.4120	.4650	3.8680	.6070	.4600	4.3320
20	.6610	.5300	4.0270	.7000	.5600	4.8170
21	.6090	.4760	3.7910	.5820	.4530	4.2990

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODE 2

UNIT	NREC CO EI LB/KLB FU	NREC MC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
9	63.07	14.33	2.43	4.36	.66
11	56.78	10.49	2.33	4.31	1.45
12	47.48	7.91	2.38	4.04	1.95
13	59.06	23.94	3.91	4.47	1.45
16	71.89	24.44	-1.53	3.86	-3.27
20	55.44	20.10	2.61	4.36	1.70
21	38.71	7.93	3.78	4.41	1.58

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
9	90.00	94.00	90.48	94.50
11	89.70	95.00	89.53	94.82
12	90.50	93.70	90.50	93.70
13	-87.40	94.30	88.25	95.22
16	89.50	94.40	89.41	94.31
20	88.50	93.80	89.10	94.44
21	90.00	94.00	89.53	93.51

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODE 3

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
9	15900.	1.8950	1.9240	1862.	1.400	40764.
11	15700.	1.8620	1.9160	1880.	1.400	40927.
12	15300.	1.8620	1.8560	1867.	1.400	40832.
13	-14600.	-1.7480	-1.7480	1840.	1.400	40655.
16	16000.	1.8510	1.9590	1898.	1.400	40845.
20	15500.	1.8570	1.8830	1869.	1.400	40873.
21	15800.	1.9100	1.9110	1862.	1.400	40750.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 3

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
9	15868.	1.9160	1.9440	1881.	40900.
11	15720.	1.8550	1.9090	1872.	40900.
12	15326.	1.8620	1.8560	1867.	40900.
13	-14566.	1.7820	-1.7830	1876.	40900.
16	16037.	1.8480	1.9550	1894.	40900.
20	15405.	1.8830	1.9090	1894.	40900.
21	15942.	1.8900	1.8910	1842.	40900.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1500 HOUR TEST SERIES •

MODE 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
9	4.017	8.9	1.3	289.3	279.6
11	3.941	8.6	1.4	293.3	290.8
12	3.943	8.1	1.2	241.8	248.4
13	-3.701	8.1	3.9	273.0	268.7
16	3.925	9.5	1.9	282.7	270.9
20	3.929	8.6	5.9	249.7	256.0
21	4.041	10.7	3.4	-363.0	347.3

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 3

UNIT	CO <sub>2</sub> EI LB/KLB FU	CO EI LB/KLB FU	HC FI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
9	3157.	.44	.11	23.77	23.77	17.72
11	3153.	.44	.12	24.52	24.52	21.18
12	3155.	.41	.10	20.23	20.79	18.61
13	3159.	.44	.37	24.36	24.36	8.05
16	3159.	.49	.16	23.79	23.79	13.82
20	3151.	.44	.52	20.94	21.47	17.63
21	3150.	.53	.29	29.58	29.58	7.24

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1500 HOUR TEST SERIES \*

MODE 3

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
9	94.6380	81.0110	76.8080	108.6970	86.0010	90.4600
11	100.0160	94.5570	84.5570	95.6640	92.4220	94.8490
12	79.4790	71.5970	69.2650	79.6310	71.3820	80.1140
13	66.5570	90.7030	79.6200	83.1230	101.2940	100.7810
16	87.1730	83.4460	78.7800	85.3160	82.2600	87.8610
20	81.6420	78.0590	72.7770	96.9700	84.7660	89.6060
21	95.3980	73.2120	70.1490	83.4660	68.1850	77.7760

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1500 HOUR TEST SERIES •

MODE 3

UNIT	NREC LB/KLR	CO FU	EI	NREC LB/KLR	MC FU	EI	NRE LB/KLR	CNO FU	EI	NR LB/KLR	CNOX FU	EI	SMK CORRECTED	NUMBR
9		.39			.11			27.99			27.99		15.83	
11		.46			.12			29.73			29.73		17.06	
12		.41			.10			25.28			25.97		14.92	
13		.75			.33			33.33			33.33		7.53	
16		.50			.17			26.53			26.53		11.03	
20		.37			.48			27.87			28.56		13.50	
21		.61			.31			32.80			32.80		6.78	

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
9	84.00	91.70	84.45	92.19
11	84.90	92.40	84.74	92.22
12	85.10	91.80	85.10	91.80
13	-81.50	91.70	-82.30	92.60
16	84.00	92.40	83.92	92.31
20	84.00	92.20	84.57	92.83
21	85.00	92.50	84.55	92.01

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1500 HOUR TEST SERIES \*

MODE 4

UNIT	FUFL FLOW LRM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LRF
9	13100.	-1.7380	1.7660	1766.	1.310	34339.
11	13000.	1.6760	1.7670	1781.	1.310	34476.
12	12600.	1.6810	1.7100	1759.	1.305	34003.
13	-11800.	1.5660	-1.5630	1721.	1.310	34247.
16	13000.	1.6740	1.7650	1784.	1.310	34407.
20	12950.	1.6900	1.7550	1775.	1.310	34430.
21	13000.	1.6620	1.7450	1754.	1.310	34327.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 4

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
9	13074.	-1.7570	1.7850	1785.	34453.
11	13016.	1.6690	1.7600	1774.	34453.
12	12621.	1.6810	1.7100	1759.	34060.
13	-11756.	1.5970	-1.5940	1755.	34453.
16	13030.	1.6710	1.7620	1781.	34453.
20	12871.	1.7130	1.7790	1799.	34453.
21	13117.	1.6440	1.7270	1735.	34453.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 4

UNIT	CO <sub>2</sub> CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
9	-3.679	9.3	1.0	200.5	193.3
11	3.540	8.8	1.2	204.0	199.3
12	3.554	8.2	1.0	167.8	172.3
13	3.310	9.2	1.8	175.1	166.3
16	3.542	10.1	1.3	192.4	185.0
20	3.549	8.8	3.7	176.7	177.4
21	3.507	9.1	1.8	-245.4	238.3

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODE 4

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NIMBER FRONT SIDE
9	3157.	.51	.10	17.99	17.99	13.19
11	3152.	.50	.12	18.99	18.99	17.28
12	3155.	.46	.09	15.57	16.00	14.29
13	3159.	.56	.19	17.47	17.47	5.81
16	3159.	.57	.12	17.94	17.94	12.19
20	3152.	.50	.36	16.31	16.38	13.43
21	3150.	.52	.18	23.05	23.05	4.38

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 4

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
9	40.2700	46.9780	54.1590	45.1540	49.7330	63.5960
11	37.8020	51.1400	56.8540	36.4560	50.0420	63.8520
12	35.2900	46.2670	52.3830	35.3180	46.1280	60.5880
13	27.4240	49.3900	53.7810	32.8560	54.8390	67.6570
16	37.8380	51.8530	58.0130	37.1540	51.1380	64.7310
20	39.1710	53.5470	57.0980	45.2300	58.0050	70.1150
21	37.0850	51.5250	56.0120	33.3580	48.0710	62.2180

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODE 4

UNIT	NREC LB/KLB	CO FU	FI	NREC LB/KLB	HC FU	EI	NRE LB/KLB	CNO FU	EI	NR LB/KLB	CNOX FU	EI	SMK NUMBER CORRECTED
9		.45			.09			21.12			21.12		10.75
11		.52			.12			21.33			21.33		13.97
12		.46			.09			18.01			18.50		13.16
13		.47			.17			21.98			21.98		5.39
16		.58			.12			21.64			21.64		10.60
20		.43			.33			20.03			20.11		11.96
21		.58			.19			-27.66			27.66		4.38

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 5

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
9	76.00	89.00	76.41	89.48
11	76.30	88.50	76.15	-88.33
12	77.00	90.00	77.00	90.00
13	74.00	89.20	74.72	90.07
16	77.00	89.80	76.93	89.71
20	75.00	89.80	75.51	89.41
21	74.50	89.50	74.11	89.03

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODE 5

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
9	9700.	-1.5140	1.5340	1628.	1.210	26498.
11	9650.	1.4310	1.5660	1626.	1.200	25817.
12	9900.	-1.5040	1.5550	1649.	1.217	27092.
13	9000.	1.3670	-1.3840	1586.	1.215	26819.
16	10000.	1.4680	1.5970	1651.	1.210	26551.
20	9600.	1.4590	1.5390	1628.	1.205	26176.
21	9000.	1.3540	1.4770	1584.	1.190	24629.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 5

UNIT	CORR FU FL LRM/HR	COR CB F/A X100	COR PF F/A X100	COR TT6 DEG R	COR THRUST LBF
9	9681.	-1.5300	1.5510	1645.	26597.
11	9662.	1.4250	1.5600	1619.	25800.
12	9917.	1.5040	1.5550	1649.	27137.
13	8966.	1.3940	-1.4120	1617.	26980.
16	10023.	1.4660	1.5940	1648.	26597.
20	9541.	1.4790	1.5610	1650.	26193.
21	9081.	1.3390	1.4620	-1568.	24720.

NOTE - MINUS SIGNS DENOTE OUILYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 5

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
9	-3.197	14.3	.9	115.7	112.9
11	3.014	11.7	1.0	112.8	111.5
12	-3.174	10.1	.8	109.1	112.5
13	2.884	16.1	1.3	104.8	97.8
16	3.100	15.7	1.2	113.9	112.1
20	3.075	14.8	2.3	102.6	105.1
21	2.847	12.6	1.5	121.6	119.5

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 5

UNIT	CO <sub>2</sub> EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NO <sub>x</sub> EI LB/KLB FU	SMK NUMBER FRONT SIDE
9	3156.	.90	.10	11.94	11.94	8.16
11	3152.	.78	.12	12.33	12.33	11.84
12	3155.	.64	.08	11.34	11.69	8.29
13	3158.	1.12	.15	11.99	11.99	5.06
16	3158.	1.02	.13	12.13	12.13	8.55
20	3151.	.96	.25	10.99	11.26	8.50
21	3149.	.88	.18	14.06	14.06	3.03

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1500 HOUR TEST SERIES \*

MODE 5

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
9	16.5840	27.4990	38.6330	18.1570	29.0350	45.2370
11	13.0280	23.5720	34.9140	12.6640	23.0970	39.2680
12	-18.5090	32.3660	41.7740	-18.5180	32.2690	48.3170
13	13.0440	29.6320	38.9560	15.1250	32.7480	48.7640
16	16.7340	30.8450	41.7310	16.4800	30.4340	46.5860
20	14.5070	26.5530	36.6950	16.2370	28.6360	44.8480
21	12.9300	28.4100	38.4300	11.9240	26.5830	42.8210

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1500 HOUR TEST SERIES •

MODE 5

UNIT	NREC CO FT LB/KLB FU	NREC HC FT LB/KLB FU	NRE CNO FT LB/KLB FU	NR CNOX FT LB/KLB FU	SMK NUMBER CORRECTED
9	.82	.09	13.98	13.98	7.80
11	.80	.12	13.87	13.87	9.88
12	.64	.08	13.12	13.52	8.29
13	.97	.14	15.01	15.01	5.01
16	1.04	.13	14.63	14.63	8.18
20	.86	.24	13.44	13.76	7.67
21	.96	.19	16.93	16.93	3.03

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1500 HOUR TEST SERIES •

MODE 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
9	55.50	82.70	55.80	83.14
11	55.60	81.80	55.49	-81.64
12	57.30	83.80	57.30	83.80
13	-45.50	-78.50	-45.95	-79.27
16	56.00	84.00	55.95	83.92
20	57.00	83.30	57.39	83.87
21	-53.00	84.10	-52.72	83.66

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1500 HOUR TEST SERIES •

MODE 6

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DFG R	EPR	THRUST LAF
9	5100.	1.1780	1.2280	1390.	1.080	12199.
11	5000.	1.1090	1.1980	1365.	1.080	12248.
12	5300.	1.1970	1.2430	1426.	1.086	-13066.
13	-3700.	-.9780	-.8780	-1273.	-1.075	-11481.
16	5250.	1.1660	1.2750	1406.	1.080	12224.
20	5400.	1.2080	1.2660	1403.	1.085	12921.
21	5000.	1.0920	1.2010	1385.	1.080	12195.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODF 6

UNIT	CORR FU FL LRM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
9	5090.	1.1910	1.2410	1405.	12240.
11	5006.	1.1040	1.1930	1359.	12240.
12	5309.	1.1970	1.2430	1426.	13068.
13	-3686.	-.9980	-.8950	-1298.	-11550.
16	5262.	1.1640	1.2720	1403.	12240.
20	5367.	1.2240	1.2830	1422.	12930.
21	5045.	1.0810	1.1880	1370.	12240.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 6

UNIT	CO2 CONC PER CFNT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
9	2.469	97.8	3.8	40.5	49.0
11	2.421	71.0	2.6	40.8	46.9
12	2.514	47.4	1.6	44.4	51.2
13	-2.031	-211.6	-14.8	-27.8	-31.6
16	2.443	110.3	5.3	37.9	49.6
20	2.530	86.7	4.7	42.5	51.7
21	2.298	-42.2	2.7	-52.5	58.2

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 6

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SMK NIIMRER FRONT SIDE
9	3144.	7.93	.53	5.40	6.53	2.89
11	3143.	6.12	.38	5.78	6.64	4.07
12	3149.	3.78	.22	5.81	6.71	4.18
13	-3121.	-20.70	-2.49	-4.46	-5.07	1.32
16	3144.	9.04	.74	5.11	6.68	4.08
20	3141.	6.85	.58	5.51	6.71	4.94
21	3145.	3.69	.35	-7.54	8.36	1.99

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 6

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
9	4.1600	7.8430	17.9960	4.4320	8.2320	20.9400
11	3.3380	6.1710	15.5390	3.2700	-6.0610	-17.5190
12	4.8590	9.4140	19.5690	4.8570	9.3860	22.6740
13	-1.9450	-3.3940	-10.7630	-2.1370	-3.6850	-13.2200
16	4.7540	9.7290	20.5400	4.6980	9.6090	22.9540
20	4.6740	8.8790	18.7990	5.0920	9.5120	22.8160
21	4.3730	9.7040	19.8700	4.0680	9.1260	22.2580

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1500 HOUR TEST SERIES \*

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MODE 6

UNIT	NREC LB/KLB	CO FU	EI	NREC LB/KLB	HC FU	EI	NRE LB/KLB	CNO FU	EI	NR LB/KLB	CNOX FU	EI	SMK CORRECTED	NUMBER
9		7.44			.51			6.74			8.16		2.67	
11		6.25			.39			7.00			8.04		4.07	
12		3.78			.22			7.22			8.74		4.18	
13		-18.84			-2.29			5.88			-6.69		1.32	
16		9.15			.75			6.13			8.01		4.08	
20		6.29			.54			7.19			8.75		4.29	
21		3.93			.37			8.44			9.36		1.75	

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
9	32.80	69.60	32.98	69.97
11	32.40	68.70	32.34	68.17
12	30.50	68.50	30.50	68.50
13	31.00	69.50	31.30	70.18
16	32.00	69.40	31.97	69.33
20	32.50	68.90	32.72	69.37
21	30.70	69.00	29.84	68.64

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 7

UNIT	FUEL FLOW LRM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LRF
9	2200.	.8980	.7480	1179.	1.025	5073.
11	2280.	.8540	.7920	1160.	1.020	4462.
12	2200.	.9310	.7790	1224.	1.021	4567.
13	2100.	.9000	.7200	1201.	-1.050	5134.
16	2200.	.8940	.7550	1187.	1.025	4860.
20	2250.	.9070	.7700	1160.	1.020	4876.
21	2000.	.8710	.6940	1205.	1.020	4606.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1500 HOUR TEST SERIES •

MODE 7

UNIT	CORR FL LRM/HR	COR CH F/A X100	COR PF F/A X100	COR TT6 DEG R	COR THRUST LBF
9	2196.	.9080	.7560	1192.	5090.
11	2283.	.8510	.7890	1155.	4459.
12	2204.	.9310	.7790	1224.	4575.
13	2092.	.9180	.7340	1225.	5165.
16	2205.	.8920	.7530	1184.	4867.
20	2236.	.9200	.7810	1175.	4879.
21	2018.	.8610	.6970	1192.	4623.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1500 HOUR TEST SERIES •

MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
9	1.788	631.3	110.2	11.0	19.5
11	1.722	492.1	57.6	11.8	18.7
12	1.888	501.5	49.7	10.5	17.9
13	1.799	574.8	111.2	16.0	18.5
16	1.765	690.8	139.6	7.9	18.6
20	1.800	610.9	129.6	10.0	18.9
21	1.775	-338.2	45.5	-18.0	20.8

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 1500 HOUR TEST SERIES \*

MODE 7

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
9	2997.	67.37	20.19	1.92	3.43	1.33
11	3036.	55.22	11.10	2.18	3.44	1.32
12	3051.	51.56	8.78	1.78	3.03	2.58
13	3009.	61.17	20.33	2.80	3.24	1.82
16	2977.	74.08	25.73	1.40	3.28	-4.61
20	2988.	64.52	23.52	1.73	3.28	1.04
21	-3069.	-37.22	8.59	-3.25	3.76	.66

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 1500 HOUR TEST SERIES \*

MODE 7

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
9	.6210	.5120	4.0690	.6470	.5320	4.6930
11	.5290	.4020	3.5480	.5220	.3960	4.0160
12	.5770	.4180	3.5640	.5770	.4170	4.1220
13	.6140	.5140	3.9390	.6670	.5510	4.7740
16	.6040	.4810	3.9390	.5990	.4760	4.4120
20	.5830	.4540	3.7040	.6160	.4790	4.4270
21	.5730	.4480	3.6740	.5480	.4260	4.1670

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODE 7

UNIT	NREC LA/KLR	CO FU	FI	NREC LA/KLR	HC FU	EI	NRE LA/KLR	CNO FU	EI	NR LA/KLR	CNOA FU	EI	SMK CORRECTED	NUMFR
9		64.59			19.44			2.38			4.23		1.20	
11		56.07			11.26			2.65			4.18		1.32	
12		51.60			8.81			2.21			3.76		1.47	
13		54.65			18.96			-3.64			4.22		1.61	
15		74.71			25.99			1.68			3.94		-4.18	
20		61.01			22.27			2.22			4.21		1.04	
21		-38.92			9.03			-3.68			4.27		.65	

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE 8

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
9	26.50	63.70	26.64	64.04
11	29.10	65.90	29.04	65.77
12	26.50	64.50	26.50	64.50
13	27.00	64.99	27.26	65.53
16	27.50	64.80	27.47	64.74
20	29.40	65.80	29.60	66.25
21	25.00	-63.50	24.87	-63.17

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

MODE B

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LBF
9	1800.	.8900	.9270	1161.	1.020	3102.
11	2000.	.8520	.8400	1149.	1.020	3654.
12	1700.	.9370	.8330	1219.	1.016	3245.
13	1750.	.9050	.8140	1188.	-1.040	3552.
16	1900.	.9000	.8890	1170.	1.020	3317.
20	2000.	.9060	.8460	1147.	1.015	3803.
21	-1600.	.8710	.8560	1208.	-1.010	-2839.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODE 8

UNIT	CORR FU FL LRM/HR	COR CB X100	F/A COR PF X100	F/A CORR TT6 DEG R	COR THRUST LBF
9	1796.	.9000	-.9370	1174.	3112.
11	2003.	.8480	.8370	1144.	3651.
12	1703.	.9370	.8330	1219.	3250.
13	1743.	.9230	.8300	1212.	3574.
16	1904.	.8980	.8880	1168.	3321.
20	1988.	.9190	.8570	1163.	3806.
21	-1614.	.8620	.8470	1195.	-2850.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1500 HOUR TEST SERIES \*

MODE 8

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
9	1.714	872.1	216.4	9.6	15.3
11	1.677	644.7	133.9	9.8	16.1
12	1.874	651.9	-84.2	9.2	15.5
13	1.771	736.8	182.2	13.4	15.8
16	1.729	890.5	232.9	6.8	15.2
20	1.766	752.1	189.7	8.7	16.1
21	1.743	-521.0	93.2	-15.2	17.9

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MOOF 8

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMER FRONT SIDE
9	2901.	93.91	40.03	1.71	2.71	2.01
11	2966.	72.58	26.87	1.81	2.97	1.96
12	-3011.	66.66	-14.79	1.54	2.61	2.21
13	2947.	78.05	33.16	2.34	2.75	2.08
16	2894.	94.86	42.62	1.19	2.67	1.96
20	2934.	79.54	34.46	1.51	2.81	-3.85
21	-3013.	-57.32	17.61	-2.74	3.23	.13

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1500 HOUR TEST SERIES •

MODE 8

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
9	.3890	.2250	2.6520	.4040	.2330	3.0420
11	.4370	.2850	2.9780	.4310	.2810	3.3720
12	.4300	.2450	2.7030	.4300	.2450	3.1270
13	.4210	.2560	2.7560	.4530	.2740	3.3250
16	.4250	.2540	2.8300	.4220	.2510	3.1710
20	.4470	.2800	2.9070	.4720	.2950	3.4470
21	.3960	.2340	2.5850	.3800	.2230	2.9390

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1500 HOUR TEST SERIES •

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MODE 8

UNIT	NREC CO EI LB/KLR FU	NREC HC EI LB/KLB FU	NRE CNO FI LB/KLB FU	NR CNOX EI LB/KLR FU	SMK NUMBER CORRECTED
9	90.22	38.65	2.10	3.34	2.01
11	73.59	27.25	2.20	3.62	1.72
12	66.71	-14.84	1.92	3.24	2.21
13	72.58	31.06	3.03	3.57	1.61
16	95.63	43.05	1.43	3.21	1.32
20	75.36	32.70	1.93	3.59	-2.93
21	-59.81	18.47	-3.12	3.67	.13

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

UNIT	T50 HR	T58 HR	AMB TEMP DEG R	AMB PRESS IN HG	AMB HUMID LB H2O/AIR
6	16031.	1791.	517.5	29.91	.006920
7	14185.	1791.	517.7	29.91	.007400
9	15506.	1821.	517.2	29.96	.007070
11	15874.	1816.	511.7	29.95	.006270
13	13958.	1833.	535.2	29.99	.008730
16	14451.	1914.	520.2	29.92	.008510
24	14540.	1737.	513.7	30.10	.007720

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6	27.50	64.00	27.53	64.08
7	28.50	65.00	28.53	65.06
9	-31.00	-66.50	-31.04	66.60
11	29.50	65.00	29.70	65.44
13	27.00	65.50	26.58	64.48
16	28.50	64.00	28.46	63.91
24	-25.30	-62.20	-25.42	-62.50

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 1

UNIT	FUFL FLOW LPM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LAF
6	1900.	.9300	.9530	1158.	1.020	3124.
7	1950.	.9540	.9120	1205.	1.020	3422.
9	-2100.	.9190	.8390	1160.	1.020	-3914.
11	2000.	.8910	.9090	1142.	1.015	3540.
13	1900.	.9500	.8060	-1223.	1.020	3237.
16	1950.	.9120	.9800	1163.	1.018	3072.
24	-1600.	.8530	.9680	1133.	1.015	-2635.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 1

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LRF
6	1897.	.9320	.9550	1161.	3123.
7	1947.	.9560	.9140	1207.	3420.
9	-2100.	.9220	.8420	1163.	-3919.
11	1988.	.9030	.9220	1157.	3544.
13	1833.	.9210	-.7810	1185.	3245.
16	1953.	.8100	.9780	1160.	3072.
24	-1602.	.8620	.9570	1144.	-2651.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 1

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6	1.796	866.5	223.0	13.8	15.5
7	1.845	823.5	177.1	10.9	16.7
9	1.793	808.7	179.2	7.8	15.8
11	1.740	722.2	183.1	9.5	16.5
13	1.882	672.8	148.1	8.9	16.6
16	1.550	834.4	222.3	8.4	-11.2
24	1.673	591.6	185.6	11.2	17.0

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

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MODE 1

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
6	2909.	89.35	39.50	2.35	2.63	2.65
7	2944.	82.73	30.56	1.79	2.76	1.96
9	2938.	84.34	32.11	1.33	2.71	2.60
11	2943.	77.74	33.86	1.67	2.91	1.84
13	2981.	67.81	25.65	1.47	2.74	2.49
16	2877.	98.57	45.12	1.63	-2.18	2.63
24	2953.	66.48	35.82	2.07	3.13	1.58

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1800 HOUR TEST SERIES •

MODE 1

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6	.4120	.2310	2.6500	.4160	.2340	3.0490
7	.4490	.2580	2.7990	.4530	.2600	3.2130
9	.4790	-.3040	-2.0620	.4830	-.3040	-2.5380
11	.4200	.2570	2.7950	.4430	.2710	3.3070
13	-.4810	.2780	2.9730	.4230	.2440	3.1240
16	.3780	.2340	2.6020	.3740	.2310	3.0270
24	.3590	-.2100	-2.3970	.3710	.2150	-2.8640

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1800 HOUR TEST SERIES •

MODE 1

UNIT	NREC LB/KLB FU	CO EI	NREC LB/KLB FU	MC EI	NRE LB/KLB FU	CNO EI	NR LB/KLB FU	CNOX EI	SMK CORRECTED
6		88.44		39.11		2.70		3.03	2.12
7		82.03		30.31		2.08		3.20	1.96
9		83.41		31.82		1.65		3.36	2.60
11		73.75		32.16		2.13		3.70	1.32
13		77.03		29.16		1.66		3.09	2.49
16		99.59		45.63		1.49		-2.54	2.01
24		64.38		34.90		2.47		3.74	1.58

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 1800 HOUR TEST SERIES \*

MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6	32.00	69.00	32.04	69.08
7	32.00	69.00	32.03	69.07
9	36.00	-70.50	36.05	-70.60
11	34.00	69.00	34.23	69.47
13	-30.50	69.30	-30.03	-68.22
16	33.50	69.40	33.45	69.30
24	32.50	69.20	32.66	69.54

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

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MODE 2

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LAF
6	2250.	.9660	.7730	1170.	1.030	4781.
7	2300.	.9640	.8050	1212.	1.025	4775.
9	2500.	.9190	.8340	1179.	-1.035	-5310.
11	2400.	.8910	.8160	1149.	1.020	4910.
13	2050.	.9400	.7180	-1235.	1.030	-4468.
16	2320.	.8230	.7950	1179.	1.025	4855.
24	2100.	.8810	.7140	1169.	1.025	4908.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 2

UNIT	CORR FU FL LRM/HR	COR C9 F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LRF
6	2247.	.9680	.7750	1173.	4779.
7	2297.	.9660	.9060	1214.	4773.
9	2500.	.9220	.9370	1183.	-5317.
11	2386.	.9040	.8280	1164.	4915.
13	2087.	.9110	-.6960	1197.	-4478.
16	2323.	.8210	.7920	1176.	4855.
24	2102.	.8900	.7210	1180.	4938.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6	1.923	658.2	125.0	16.8	19.1
7	1.921	647.9	116.0	12.7	19.7
9	1.844	604.4	80.8	8.8	19.6
11	1.784	565.3	97.5	10.6	19.4
13	1.896	545.9	71.9	10.9	19.3
16	1.634	638.7	88.8	9.6	-14.6
24	1.786	400.7	68.8	12.6	22.0

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1800 HOUR TEST SERIES •

MODE 2

UNIT	CO <sub>2</sub> EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
6	2997.	65.28	21.30	2.74	3.11	1.06
7	3000.	65.36	19.80	2.07	3.21	2.09
9	3020.	62.99	14.47	1.50	3.36	2.58
11	3013.	60.77	18.01	1.87	3.43	1.57
13	3036.	55.63	12.59	1.83	3.24	2.34
16	2990.	74.40	17.77	1.83	-2.80	2.89
24	3052.	43.58	12.85	2.26	3.93	1.70

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1800 HOUR TEST SERIES •

MODE 2

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6	.6200	.4520	3.7480	.6270	.4560	4.3150
7	.6190	.4510	3.7160	.6250	.4550	4.3090
9	-.6890	-.5870	-4.2930	.6970	-.5920	-4.9640
11	.5810	.4620	3.7670	.6140	.4880	4.4690
13	.6310	.4560	3.8600	.5530	.3990	4.0330
16	.5670	.4790	3.7830	.5610	.4730	4.3980
24	.5890	.4790	3.7520	.6100	.4930	4.4960

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1800 HOUR TEST SERIES •

MODE 2

UNIT	NREC CO FI LB/KLB FU	NREC HC EI LB/KLB FU	NRF CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
6	64.56	21.08	3.15	3.58	.92
7	65.77	19.64	2.39	3.72	1.99
9	62.25	14.33	1.86	4.17	2.51
11	57.50	17.07	2.39	4.36	1.57
13	63.47	14.38	2.05	3.63	2.25
16	75.22	17.99	2.13	-3.25	1.33
24	42.06	12.48	2.71	4.71	1.46

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6	89.00	94.50	89.11	94.61
7	89.00	94.00	89.09	94.09
9	89.70	94.00	89.83	94.14
11	89.50	94.40	90.11	95.04
13	90.50	-97.00	89.09	95.49
16	90.50	94.60	90.37	94.46
24	-87.50	93.50	-87.92	93.95

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 3

UNIT	FUFL FLOW LRM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LAF
6	15600.	1.9200	1.8920	1858.	1.400	40914.
7	15700.	1.9390	1.9110	1871.	1.400	40914.
9	16000.	1.8460	1.9490	1878.	1.400	40845.
11	15800.	1.8590	1.9210	1871.	1.400	40859.
13	15750.	1.9130	1.9500	-1944.	1.400	40805.
16	16150.	1.9440	1.9870	1910.	1.400	40900.
24	-14800.	1.8340	-1.7680	1831.	1.400	40655.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

MODE 3

UNIT	CORR FU FL LBM/HR	COR CB F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
6	15576.	1.9240	1.8960	1862.	40900.
7	15680.	1.9430	1.9140	1874.	40900.
9	15998.	1.8510	1.9540	1883.	40900.
11	15709.	1.8840	1.9470	1896.	40900.
13	16036.	1.8540	1.8900	1884.	40900.
16	16173.	1.9390	1.9810	1905.	40900.
24	-14817.	1.8520	-1.7860	1849.	40900.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1800 HOUR TEST SERIES •

MONF 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6	4.069	9.8	3.5	271.6	275.3
7	4.110	11.9	4.1	265.9	281.5
9	3.911	8.7	2.2	286.5	276.9
11	3.978	8.7	3.4	289.9	314.9
13	4.055	9.7	2.8	-281.6	-370.8
16	4.119	12.9	5.3	283.1	272.6
24	3.883	12.1	2.2	313.2	321.6

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1. HOUR TEST SERIES \*

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MODE 3

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
6	3157.	.49	.30	22.03	22.33	19.33
7	3156.	.58	.34	21.34	22.60	24.34
9	3157.	.45	.20	24.18	24.18	19.35
11	3157.	.45	.30	24.29	26.39	22.22
13	3157.	.48	.24	-31.06	-31.06	12.32
16	3154.	.63	.44	22.66	22.66	15.58
24	3154.	.63	.19	26.60	27.31	5.26

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

MODE 3

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6	110.0550	86.4680	79.4780	114.0420	88.2320	91.9940
7	106.4740	77.2350	72.9950	109.6590	79.2040	85.0080
9	80.5060	77.8250	73.5870	83.5840	79.0330	85.5950
11	91.5030	89.5590	80.2190	108.9060	97.2870	98.1190
13	-162.1930	-132.1020	-108.3700	107.6080	107.6360	104.9360
14	120.2780	86.7780	77.8610	114.1260	85.2370	89.9320
24	72.1840	72.1740	69.0650	81.0290	75.7530	83.2640

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 3

UNIT	NREC LB/KLB	CO FU	EI	NREC LB/KLB	HC FU	EI	NRE LB/KLB	CNO FU	EI	NR LB/KLB	CNOX FU	EI	SMK CORRECTED	NUMBR
6		.47			.29			25.50			25.84		15.83	
7		.56			.34			24.86			26.32		17.74	
9		.43			.29			28.13			28.13		14.39	
11		.37			.27			29.71			32.28		18.68	
13		.73			.29			30.07			30.07		11.29	
16		.65			.45			26.18			26.18		11.42	
24		.56			.18			32.54			33.41		5.26	

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1000 HOUR TEST SERIES •

MODE 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6	83.00	92.50	83.10	92.61
7	84.00	92.00	84.08	92.09
9	85.00	91.50	85.12	91.63
11	84.00	91.50	84.57	92.12
13	84.00	-94.50	82.70	93.03
16	85.00	92.60	84.88	92.47
24	83.70	92.20	84.11	92.65

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 4

UNIT	FUEL FLOW LBM/HR	CB F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LBF
6	12750.	1.6880	1.7160	1748.	1.310	34465.
7	12800.	-1.7390	1.7340	1772.	1.310	34465.
9	12900.	1.6810	1.7460	1773.	1.310	34407.
11	12800.	1.6740	1.7280	1764.	1.310	34419.
13	12600.	1.6860	1.7270	-1824.	1.310	34373.
16	13200.	1.6820	1.8020	1799.	1.310	34453.
24	12350.	1.6290	1.6560	1734.	1.305	33856.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1800 HOUR TEST SERIES •

MODE 4

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
6	12730.	1.6920	1.7200	1752.	34453.
7	12783.	1.7420	1.7370	1775.	34453.
9	12899.	1.6860	1.7510	1778.	34453.
11	12726.	1.6970	1.7520	1788.	34453.
13	12829.	1.6340	1.6740	1767.	34453.
16	13219.	1.6770	1.7970	1793.	34453.
24	12364.	1.6450	1.6730	1751.	34060.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 1800 HOUR TEST SERIES \*

MODE 4

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6	3.571	10.1	1.7	175.6	169.9
7	-3.679	12.1	2.7	176.0	183.4
9	3.555	9.2	1.6	191.8	183.3
11	3.540	9.1	2.0	192.8	187.8
13	3.545	9.4	2.9	237.2	228.7
16	3.553	14.5	4.7	180.2	181.7
24	3.440	11.9	1.5	214.4	224.2

NOTE-- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

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MODE 4

UNIT	CO2 FI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
6	3157.	.57	.17	16.23	16.23	13.91
7	3156.	.66	.25	15.78	16.45	-21.05
9	3157.	.52	.15	17.90	17.80	14.29
11	3157.	.51	.19	17.98	17.98	18.17
13	3157.	.53	.28	21.96	21.96	7.63
16	3153.	.82	.46	16.72	16.86	13.07
24	3154.	.69	.15	20.55	21.49	4.94

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1900 HOUR TEST SERIES •

MODE 4

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6	40.2020	54.2150	58.6190	41.3290	55.0360	67.8110
7	41.8660	48.1910	53.9530	42.8590	48.7740	62.8030
9	33.8320	44.0040	51.0570	34.8840	44.6530	59.3180
11	33.4170	45.4050	51.8130	38.4270	49.1030	63.0750
13	-53.3470	-74.0960	-74.0020	38.6030	60.9140	72.3410
16	39.8560	54.0470	57.3660	38.7840	53.1220	66.3060
24	33.7340	52.9720	55.8270	37.0390	55.5190	69.1480

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1800 HOUR TEST SERIES •

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MODE 4

UNIT	NREC LB/KLR	CO FU	FI	NREC LA/KLR	HC FU	EI	NRE LA/KLR	CNO FU	FI	NR LB/KLR	CNOX FU	EI	SMK CORRECTED	NUMBER
6			.55			.17			18.78			18.78		12.94
7			.64			.25			18.37			19.15		-17.97
9			.51			.15			22.36			22.36		13.64
11			.45			.18			21.89			21.89		15.83
13			.73			.34			21.47			21.47		7.63
16			.84			.47			20.89			21.06		10.82
24			.63			.15			25.10			26.25		4.94

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

MODE 5

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6	76.00	-91.00	76.09	-91.11
7	77.00	89.00	77.07	89.09
9	77.00	89.00	77.11	89.13
11	77.00	88.70	-77.52	89.30
13	74.00	90.30	-72.85	88.90
16	76.40	-91.50	76.29	-91.37
24	75.50	89.50	75.87	89.93

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 5

UNIT	FUEL FLOW LRM/HR	CR F/A X100	PERF F/A X100	TY6 DEG R	EPR	THRUST LRF
6	9900.	1.4890	1.5360	1624.	1.220	27382.
7	10100.	-1.5310	1.5910	1651.	1.220	27382.
9	9700.	1.4570	1.5390	1631.	1.210	26551.
11	10000.	1.4720	1.5900	1635.	1.210	26560.
13	8950.	1.4270	1.4960	1638.	1.190	24662.
15	-10600.	-1.5240	-1.7310	-1716.	1.210	26587.
24	9400.	1.3970	1.4640	1602.	1.212	26584.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES



JT9D-3A • 1800 HOUR TEST SERIES •

MODE 5

UNIT	CORR FU FL LBM/HR	COR CB X100	F/A COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
6	9885.	1.4930	1.5400	1628.	27373.
7	10087.	-1.5340	1.5840	1654.	27373.
9	9699.	1.4610	1.5440	1636.	26587.
11	9942.	1.4920	1.6120	-1657.	26587.
13	9113.	1.3830	1.4500	1588.	24720.
16	-10615.	-1.5190	-1.7260	-1711.	26587.
24	9411.	1.4100	1.4780	1618.	26744.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 5

UNIT	CO <sub>2</sub> CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NO <sub>x</sub> CONC PPM
6	3.143	13.8	1.2	114.2	104.0
7	-3.213	14.3	1.9	112.0	114.9
9	3.073	14.1	1.3	111.1	107.5
11	3.107	11.9	1.6	117.4	115.7
13	3.008	14.9	2.9	117.0	114.1
16	-3.213	17.5	4.3	126.3	128.4
24	2.942	16.5	1.2	125.8	132.6

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

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MODE 5

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMRER FRONT SIDE
6	3156.	.88	.13	11.99	11.99	8.27
7	3156.	.89	.20	11.43	11.72	-16.47
9	3156.	.92	.14	11.93	11.93	8.65
11	3156.	.77	.17	12.47	12.47	11.84
13	3156.	.99	.34	12.83	12.83	6.15
16	3153.	1.09	.46	12.96	13.17	11.84
24	3154.	1.12	.14	14.09	14.86	2.88

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 1800 HOUR TEST SERIES •

MODE 5

UNIT	FCO X100	FMC X100	FMO X100	STD FCO X100	STD FMC X100	STD FMO X100
6	-20.6310	-39.7180	-49.0670	-21.1070	-40.3050	-55.5930
7	17.0270	26.5770	17.0660	17.1440	26.0940	43.1210
9	14.7270	26.7390	37.3270	15.0980	27.1150	43.3510
11	14.6740	26.0510	36.5260	16.4350	20.0740	44.2970
13	16.2170	31.0990	42.5190	12.6470	25.8920	42.1290
16	-23.6540	-43.1280	-49.6570	-23.0970	-42.4070	-57.4090
24	14.2010	30.6570	39.3350	15.2850	31.0410	47.9160

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

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MODE 5

UNIT	NREC CO FI LA/KLA FI	NREC HC EI LA/KLA FI	NRF CNO FI LA/KLA FI	NR CNOX FI LA/KLA FI	SMK NUMBER CORRECTED
6	.86	.13	13.86	13.86	8.27
7	.87	.20	13.29	13.64	-13.75
9	.90	.14	14.97	14.97	8.65
11	.69	.15	15.12	15.12	10.64
13	1.27	.41	12.71	12.71	6.15
16	1.12	.47	16.19	16.46	11.58
24	1.04	.13	-17.17	-18.10	2.88

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6	56.00	85.00	56.07	85.10
7	56.50	84.00	56.55	84.08
9	56.00	82.50	56.08	82.62
11	57.00	82.20	57.39	82.76
13	54.50	84.60	53.65	83.29
16	56.50	84.30	56.42	84.18
24	54.70	83.10	54.97	83.50

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

MODE 6

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LBF
6	5200.	1.1630	1.2530	1381.	1.080	12266.
7	5300.	-1.2190	1.2980	1426.	1.080	12244.
9	5100.	1.1400	1.2300	1388.	1.080	12224.
11	5300.	1.1610	1.2740	1377.	1.080	12228.
13	4900.	1.1540	1.1970	1428.	1.080	12211.
16	5280.	1.0790	1.2860	1410.	1.080	12260.
24	4800.	1.0730	1.1230	1358.	1.082	12441.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

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MODE 6

UNIT	CORR FU FL LAM/HR	COR CR F/A X100	COR PF F/A X100	COR TT6 DEG R	COR THRUST LBF
6	5192.	1.1660	1.2560	1384.	12240.
7	5293.	1.2210	1.3010	1429.	12240.
9	5099.	1.1430	1.2330	1392.	12240.
11	5269.	1.1770	1.2920	1396.	12240.
13	4989.	1.1190	1.1600	1384.	12240.
16	5288.	1.0760	1.2820	1406.	12240.
24	4806.	1.0840	1.1330	1371.	12516.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT40-3A • 1800 HOUR TEST SERIES •

MODE 6

UNIT	CO <sub>2</sub> CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NO <sub>x</sub> CONC PPM
6	2.477	94.3	3.5	42.5	47.9
7	-2.559	77.5	2.6	40.9	46.9
9	2.387	99.8	4.6	37.6	45.5
11	2.475	67.1	3.3	42.1	49.2
13	2.419	84.5	5.5	42.9	50.6
16	2.254	104.6	6.9	35.6	-42.6
24	2.246	74.9	4.2	46.0	53.2

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

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MODE 6

UNIT	CO2 EI LB/KLB FU	CO E LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
6	3145.	7.74	.49	5.73	6.45	4.20
7	3148.	6.07	.34	5.26	6.03	-7.48
9	3147.	8.36	.67	5.17	6.27	2.20
11	3148.	5.52	.47	5.69	6.65	5.13
13	3145.	6.99	.78	5.83	6.88	1.83
16	3138.	9.27	1.05	5.19	6.21	2.63
24	3144.	6.67	.64	6.73	7.78	1.32

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1000 HOUR TEST SERIES \*

MODE 6

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6	5.3720	11.9840	22.9010	5.4600	12.1450	26.4450
7	5.1370	9.8130	20.1270	5.2070	9.9190	23.3940
9	3.4210	7.3120	16.9710	3.8860	7.4020	19.6750
11	3.8180	7.1250	16.6340	4.1420	7.6190	20.0090
13	4.9380	10.0200	21.1440	4.0860	8.4740	21.3010
14	4.3700	10.2620	20.4250	4.3000	10.1090	23.6620
24	3.8040	8.5120	18.0470	4.0060	8.8500	21.8570

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

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MODE 6

UNIT	NREC CO FI LB/KLB FU	NREC KC EI LB/KLB FU	NRE CNO EI LB/KLA FU	NR CNOX EI LB/KLA FU	SMK NUMBER CORRECTED
6	7.62	.49	6.62	7.44	4.20
7	5.99	.34	6.11	-7.00	-6.66
9	8.22	.66	6.44	7.80	2.20
11	5.09	.44	7.35	8.59	4.21
13	8.45	.92	6.31	7.45	1.59
16	9.42	1.07	6.01	7.19	2.63
24	6.34	.62	8.16	9.42	1.32

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6	31.00	70.00	31.04	70.09
7	31.00	69.00	31.03	69.07
9	-35.00	-70.50	-35.05	-70.60
11	32.50	69.00	32.72	69.47
13	29.00	68.90	28.55	-67.73
16	31.00	68.50	30.96	68.40
24	32.50	-70.30	32.76	-70.64

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

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MODE 7

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LBF
6	2200.	.9170	.7470	1185.	-1.030	5132.
7	2100.	.9370	.7370	1221.	1.020	4775.
9	2350.	.8860	.7860	1187.	1.025	-5310.
11	2200.	.8580	.7500	1154.	1.020	4910.
13	2000.	.9460	.7140	-1260.	1.020	-4296.
16	2100.	.8100	.7330	1187.	1.020	4540.
24	2050.	.8430	.6830	1176.	1.025	-5299.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

MODE 7

UNIT	CORR FUEL LBM/HR	COR CR F/A X100	COR PE F/A X100	COR TT6 DEG R	COR THRUST LBF
6	2197.	.9190	.7490	1189.	5130.
7	2097.	.9340	.7380	1223.	4773.
9	-2350.	.8880	.7890	1190.	-5317.
11	2187.	.8700	.7600	1170.	4915.
13	2036.	.9170	.6920	1221.	-4306.
16	2103.	.8080	.7310	1183.	4540.
24	2052.	.8520	.6890	1187.	-5331.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 1800 HOUR TEST SERIES \*

MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6	1.838	618.9	79.7	15.2	19.3
7	1.863	688.0	114.3	10.4	-16.1
9	1.774	589.1	84.6	9.7	19.4
11	1.711	574.7	103.7	10.7	17.7
13	1.908	552.6	77.7	10.3	18.7
16	1.585	578.3	144.0	9.0	-13.8
24	1.712	-360.7	64.9	13.3	20.2

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

MODE 7

UNIT	CO <sub>2</sub> EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NO <sub>x</sub> EI LB/KLB FU	SMK NUMBER FRONT SIDE
6	3017.	64.67	14.30	2.60	3.31	1.96
7	2993.	70.34	20.07	1.75	-2.71	1.31
9	3015.	63.72	15.73	1.72	3.44	-2.97
11	3003.	64.14	19.90	1.96	2.25	1.97
13	3033.	55.93	13.50	1.71	3.11	2.85
16	2940.	40.34	29.29	1.75	-2.69	.65
24	3057.	-40.99	12.66	2.48	3.77	1.18

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 7

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6	-.6540	.5370	4.1100	.6610	.5420	4.7320
7	.6040	.4510	3.7160	.6100	.4550	4.3090
9	-.6680	-.5870	-4.2930	.6760	-.5920	-4.9640
11	.5640	.4620	3.7670	.5950	.4880	4.4690
13	.6070	.4210	3.7080	.5330	.3607	3.8780
16	.5190	.4150	3.5180	.5130	.4110	4.0900
24	.6340	-.5790	-4.1540	.6560	-.5960	-4.9820

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 7

UNIT	NREC CO FI LB/KLR FU	NREC MC FI LB/KLR FU	NRE CNO FI LB/KLR FU	NR CNOY FI LB/KLR FU	SMK NUMBER CORRECTED
6	67.97	14.15	3.00	3.81	1.96
7	69.72	19.90	2.03	-3.14	1.31
9	62.99	15.58	2.13	4.28	2.24
11	60.79	18.85	2.50	4.14	1.74
13	63.80	15.42	1.92	3.49	-2.65
16	81.21	29.64	2.04	-3.13	.65
24	-39.57	12.29	2.97	4.52	1.18

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE 8

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6	26.00	65.00	26.03	65.08
7	27.50	65.00	27.53	65.06
9	-30.00	-67.00	30.04	-67.10
11	29.00	65.40	29.20	65.85
13	26.50	65.50	26.09	64.48
16	27.40	64.30	27.36	64.21
24	27.60	65.40	27.73	65.72

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1800 HOUR TEST SERIES •

MODE B

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LBF
6	1800.	.9280	.9280	1149.	1.020	7427.
7	1850.	.9350	.9660	1208.	1.020	7422.
9	2000.	.9930	.7710	1172.	1.020	-4079.
11	2000.	.8700	.8780	1149.	-1.010	7671.
13	1800.	.9540	.8170	-1255.	1.020	7237.
16	1820.	.8090	.8910	1149.	1.015	7162.
26	1680.	.8230	-.6760	-978.	1.020	7611.

NOTE - MINUS SIGNS DENOTE OULYING VALUES

JT9D-3A • 1890 HOUR TEST SERIES •

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MODE A

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
6	1797.	.9300	.9300	1171.	3426.
7	1848.	.9360	.9680	1210.	3420.
9	2000.	.8850	.7730	1176.	-4084.
11	1988.	.8820	.8900	1164.	3675.
13	1833.	.9250	.7910	1216.	3245.
16	1827.	.8070	.8890	1165.	3162.
24	1682.	.8310	-.6820	-987.	3633.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 1900 HOUR TEST SERIES •

MODE 8

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6	1.797	846.5	213.7	12.1	15.3
7	1.822	853.8	175.5	9.3	14.6
9	1.726	761.0	163.6	8.2	15.9
11	1.704	695.4	167.3	9.4	15.9
13	1.896	659.0	144.3	9.5	16.3
16	1.547	829.7	212.8	7.7	-11.6
24	1.630	-526.0	139.0	10.4	16.3

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

MODE 8

UNIT	CO <sub>2</sub> EI LB/KLB FU	CO FI LB/KLB FU	HC FI LB/KLB FU	NO EI LB/KLB FU	NO <sub>x</sub> EI LB/KLB FU	SMK NUMBER FRONT SIDE
6	2917.	87.43	37.92	2.06	2.60	1.70
7	2936.	87.55	30.92	1.57	2.47	2.09
9	2945.	82.64	30.52	1.47	2.84	2.22
11	2951.	76.63	31.67	1.69	2.88	1.57
13	2986.	66.14	24.87	1.57	2.69	2.09
16	2982.	98.41	43.35	1.51	-2.26	1.96
24	2983.	-61.27	27.82	1.98	3.12	1.58

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

MODE A

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6	.4390	.2580	2.8120	.4430	.2610	3.2760
7	.4410	.2580	2.7890	.4450	.2600	3.2730
9	-.4840	-.3330	-3.1890	-.4900	-.3330	-3.6850
11	.4270	.2690	2.8620	.4460	.2870	3.3860
13	-.4870	.2730	2.9770	.4250	.2440	3.1240
16	.3820	.2400	2.6410	.3780	.2370	3.0730
24	.4100	.2720	2.8100	.4240	.2790	3.3410

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 1800 HOUR TEST SERIES \*

MODE 8

UNIT	NREC CO FI LB/KLB FU	NREC MC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
6	86.53	37.54	2.37	2.99	1.70
7	86.81	30.67	1.82	2.86	2.09
9	81.75	30.24	1.82	3.52	2.22
11	72.72	30.08	2.15	3.65	1.20
13	75.15	28.27	1.78	3.03	1.99
16	99.43	43.84	1.75	-2.43	1.96
24	-59.71	27.07	2.37	3.73	1.58

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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UNIT	TSD HR	TSR HR	AMB TEMP DEG R	AMB PRESS IN HG	AMB HUMID LR H2O/AIR
6-5	16402.	2162.	514.7	30.00	.006580
6-6	16616.	2376.	536.2	29.92	.007370
11-6	16133.	2075.	519.7	29.80	.008660
13-6	14196.	2071.	517.7	29.93	.006320
6-7	16901.	2661.	520.7	29.93	.009090
13-7	14867.	2722.	529.2	30.04	.010200

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 1

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6-5	29.10	65.30	29.21	65.55
6-6	27.50	64.30	27.05	-63.24
11-6	28.50	64.20	28.47	64.14
13-6	29.00	66.00	29.14	66.32
6-7	28.00	-63.00	27.95	-62.88
13-7	27.00	64.80	26.73	64.15

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 1

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LBF
6-5	2050.	.9240	.9050	1143.	1.024	3570.
6-6	1850.	.8750	.9100	1179.	-1.025	-2873.
11-6	1850.	.9210	.9180	1167.	1.015	3154.
13-6	1950.	.8950	.8250	1188.	1.020	3828.
6-7	1940.	.8970	-1.0710	1151.	1.020	-2763.
13-7	1800.	.9690	-.7770	-1003.	1.020	3134.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 1

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TTS DEG R	COR THRUST LBF
6-5	2048.	.9310	.9120	1152.	3580.
6-6	1881.	.8470	.8810	1141.	-2873.
11-6	1844.	.9190	.9160	1164.	3141.
13-6	1941.	.9040	.8330	1200.	3829.
6-7	1944.	.8930	-1.0660	1146.	-2764.
13-7	1825.	.9500	-.7620	-983.	3146.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

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MODE 1

UNIT	CO <sub>2</sub> CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NO <sub>x</sub> CONC PPM
6-5	1.725	823.2	225.6	6.8	15.3
6-6	1.693	778.4	198.9	13.3	15.1
11-6	1.793	778.5	198.6	16.2	15.7
13-6	1.757	676.3	170.4	-17.9	16.5
6-7	1.717	882.7	244.6	13.3	14.2
13-7	1.898	743.6	195.6	9.0	14.6

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 1

UNIT	CO <sub>2</sub> EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
6-5	2911.	85.49	40.23	1.16	2.60	3.52
6-6	2915.	85.27	37.42	2.38	2.72	1.69
11-6	2931.	81.00	35.50	2.77	2.77	2.97
13-6	2956.	72.43	31.36	3.15	3.15	-5.13
6-7	2886.	94.38	44.93	2.33	2.49	2.23
13-7	2949.	73.53	33.20	1.46	2.37	4.17

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 2100 HOUR AND ABOVE TESTS \*

MODE 1

UNIT	FCO X100	FMC X100	FNO X100	STD FCO X100	STD FMC X100	STD FNO X100
6-5	.4470	.2670	2.8590	.4570	.2740	3.3280
6-6	.4270	.2550	2.8920	.3760	.2240	2.9480
11-6	.4150	.2350	2.6090	.4140	.2350	3.0600
13-6	.4500	.2970	2.9800	.4680	.2980	3.4820
6-7	.3910	.2230	-2.4800	.3860	.2200	-2.9860
13-7	.4620	.2570	2.7200	.4250	.2350	3.0630

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

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MODE 1

UNIT	NREC CO EI LB/KLA FU	NREC HC EI LB/KLA FU	NRE CND EI LA/KLA FU	NR CNDX EI LA/KLA FU	SMK NUMBER CORRECTED
6-5	83.02	39.21	1.45	3.25	-3.31
6-6	96.77	42.62	2.41	2.98	1.31
11-6	81.74	35.51	3.25	3.25	1.45
13-6	69.49	30.19	3.95	3.95	1.32
6-7	95.77	45.63	2.73	2.91	2.23
13-7	79.95	36.17	1.65	-2.67	2.00

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-14 • 2100 HOUR AND ABOVE TESTS •

MODE 2

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6-5	33.50	69.50	33.63	69.77
6-6	32.00	68.60	31.47	-67.47
11-6	34.50	69.70	34.47	69.23
13-6	32.50	69.70	32.66	69.64
6-7	34.30	69.00	34.23	68.87
13-7	31.00	69.70	30.69	68.31

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 2

UNIT	FUEL FLOW LRM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LBF
6-5	2400.	.9300	.8120	1161.	1.030	5006.
6-6	2100.	.8880	.7310	1185.	1.025	-4215.
11-6	2300.	.9150	.7920	1178.	1.023	4851.
13-6	2200.	.8860	.7600	1196.	1.020	4971.
6-7	2400.	.9090	.8270	1178.	1.030	4702.
13-7	2100.	.9690	.7360	-1228.	1.023	4491.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

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MODE 2

UNIT	CORR FUEL LBS/HR	COR CR F/A X100	COR PE F/A X100	COR TTS DEG R	COR THRUST LBF
6-5	2397.	.9380	.8190	1170.	5019.
6-6	2135.	.8590	.7070	1144.	-4215.
11-6	2293.	.9140	.7900	1175.	4832.
13-6	2190.	.8940	.7670	1207.	4973.
6-7	2405.	.9050	.8240	1173.	4704.
13-7	2130.	.9500	.7210	1204.	4509.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 2

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6-5	1.845	641.8	139.2	7.7	18.5
6-6	1.765	606.3	107.2	16.4	18.8
11-6	1.876	607.7	76.6	-20.0	19.8
13-6	1.776	560.8	82.8	-19.5	18.8
6-7	1.818	610.7	86.3	18.3	19.2
13-7	1.975	591.7	126.3	11.7	18.5

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 2

UNIT	CO <sub>2</sub> FT LB/KLB FU	CO FT LB/KLB FU	HC FT LB/KLB FU	NO FT LB/KLB FU	NOX ET LB/KLB FU	SMK NUMBER FRONT SIDE
6-5	2995.	66.08	24.45	1.30	3.13	3.26
6-6	2994.	65.46	19.89	2.90	3.33	.65
11-6	3018.	63.59	13.77	3.44	3.44	1.18
13-6	3018.	60.67	15.38	3.47	3.47	2.23
6-7	3012.	64.38	15.63	3.17	3.32	1.30
13-7	3005.	58.49	21.45	1.90	3.00	1.68

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

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MODE 2

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6-5	.6320	.5000	3.9410	.6520	.5140	4.5960
6-6	.5650	.4050	3.7480	-.4940	-.3540	-3.7980
11-6	.6070	.4680	3.7270	.6050	.4680	4.3700
13-6	.5940	.4830	3.8780	.6190	.5020	4.5390
6-7	.5900	.4490	3.6240	.5310	.4410	4.2430
13-7	.6300	.4430	3.6210	.5770	.4050	4.0620

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 2

UNIT	NREC CO FT LR/KLR FU	NREC HC FT LR/KLR FU	NRE CND FT LR/KLR FU	NR CNDX FT LR/KLR FU	SMK NUMBER CORRECTED
6-5	64.06	23.79	1.63	3.92	-2.66
6-6	74.76	22.78	3.16	3.62	.39
11-6	63.87	13.78	4.03	4.03	1.19
13-6	58.30	14.79	-4.76	4.76	1.32
6-7	65.79	15.89	3.71	3.89	.92
13-7	63.83	23.45	2.13	-3.37	1.32

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 3

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6-5	88.50	93.30	88.84	93.66
6-6	91.00	95.40	89.50	93.83
11-6	90.50	94.80	90.41	94.71
13-6	88.50	94.80	88.93	95.26
6-7	89.60	95.00	89.43	94.82
13-7	90.00	-96.30	89.10	95.34

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

MODE 3

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LBF
6-5	15600.	1.8500	1.8740	1835.	1.400	40791.
6-6	15850.	1.9060	1.9470	1905.	1.400	40900.
11-6	15850.	1.8360	1.9520	1899.	1.400	41065.
13-6	15500.	1.8080	1.8880	1878.	1.400	40886.
6-7	16200.	1.8440	1.9510	1865.	-1.409	-41480.
13-7	15800.	1.9280	1.9450	-1930.	1.400	40737.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

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MODE 3

UNIT	CORR FU FL LAM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
6-5	15581.	1.8640	1.8890	1849.	40900.
6-6	16115.	1.8440	1.8830	1843.	40900.
11-6	15802.	1.8320	1.9480	1896.	40900.
13-6	15430.	1.8250	1.9070	1896.	40900.
6-7	16237.	1.8370	1.9430	1858.	-41494.
13-7	16023.	1.8900	1.9070	1892.	40900.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 2100 HOUR AND ABOVE TESTS •

MODE 3

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6-5	3.917	8.3	3.0	251.3	243.9
6-6	4.032	8.6	4.3	330.2	321.1
11-6	3.886	8.7	3.1	291.9	277.7
13-6	3.825	7.7	3.0	297.8	290.3
6-7	3.903	9.3	3.4	262.7	261.8
13-7	4.084	16.9	6.1	-360.9	355.3

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

MODE 3

UNIT	CO2 FI LB/KLR FU	CO EI LR/KLR FU	HC FI LR/KLR FU	NO FI LR/KLR FU	NOX EI LR/KLR FU	SMK NUMBER FRONT SIDE
6-5	3154.	.42	.27	21.16	21.16	21.57
6-6	3150.	.43	.37	26.96	26.96	20.78
11-6	3154.	.45	.27	24.78	24.78	19.29
13-6	3155.	.41	.27	25.67	25.67	22.80
6-7	3154.	.48	.30	22.20	22.20	23.45
13-7	3153.	.83	.52	29.13	29.13	14.58

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 2100 HOUR AND ABOVE TESTS \*

MODE 3

UNIT	FCO x100	FHC x100	FNO x100	STD FCO x100	STD FHC x100	STD FNO x100
6-5	72.3540	67.8150	67.2110	79.5930	70.7440	79.6500
6-6	117.3320	90.4650	86.9460	77.3440	73.5970	81.7160
11-6	89.1620	90.5920	79.9280	87.6230	90.1620	93.3130
13-6	84.0020	96.2090	84.7140	94.7050	102.1610	101.3530
6-7	94.6250	94.7290	81.7170	90.5030	92.4220	94.8490
13-7	-152.8520	-118.9870	-95.9270	117.0170	104.0050	102.5650

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 3

UNIT	NREC CO FI LR/KLR FU	NREC HC EI LR/KLR FU	NRE CNO FI LR/KLR FU	NR CNOX EI LR/KLR FU	SMK NUMBER CORRECTED
6-5	.39	.26	25.07	25.07	16.68
5-6	.65	.46	25.34	25.34	17.45
11-6	.46	.27	28.93	28.93	17.44
13-6	.36	.25	30.72	30.72	9.31
6-7	.50	.31	25.76	25.76	10.72
13-7	-1.09	.59	31.15	31.15	14.58

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 4

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6-5	-82.30	92.50	-82.62	92.86
6-6	84.50	93.30	83.11	91.76
11-6	85.50	92.30	85.42	92.21
13-6	83.30	93.30	83.70	93.75
6-7	82.80	91.00	-82.64	-90.83
13-7	84.50	94.00	83.66	93.06

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 4

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT4 DEG R	FPR	THRUST LBF
6-5	12450.	1.6460	1.6840	1727.	1.300	33577.
6-6	12900.	1.6930	1.7790	-1835.	1.310	34453.
11-6	13200.	1.6530	1.8110	1800.	1.310	34592.
13-6	12800.	1.6410	1.7280	1761.	1.310	34442.
6-7	12500.	1.5850	1.7230	1730.	-1.293	-33105.
13-7	13200.	1.7160	1.8030	-1815.	1.310	34316.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 4

UNIT	CORR FUE FL LBM/HR	COR CR F/A X100	COR DE F/A X100	COR IT6 DEG P	COR THRUST LBF
6-5	12435.	1.6590	1.6970	1736.	33667.
6-6	13116.	1.6380	1.7210	1775.	34453.
11-6	13160.	1.6500	1.9070	1797.	34453.
13-6	12742.	1.6570	1.7440	1779.	34453.
6-7	12528.	1.5790	1.7160	-1723.	-33116.
13-7	13396.	1.6820	1.7680	1779.	34453.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 4

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6-5	3.477	9.0	2.1	163.4	159.3
6-6	3.573	8.2	4.5	225.2	215.9
11-6	3.493	8.2	2.5	208.6	196.3
13-6	3.465	9.5	6.8	205.4	196.5
6-7	3.345	11.1	3.0	159.3	157.3
13-7	3.626	16.2	5.3	236.0	233.7

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 4

UNIT	CO <sub>2</sub> FT LB/KLB FU	CO FT LB/KLB FU	HC FT LB/KLB FU	NO FT LB/KLB FU	NOX FT LB/KLB FU	SMK NUMBER FRONT SIDE
6-5	3155.	.52	.21	15.49	15.49	15.84
6-6	3149.	.46	.43	20.75	20.75	15.71
11-6	3154.	.47	.24	19.70	19.70	16.14
13-6	3153.	.55	.68	19.54	19.54	7.19
6-7	3154.	.67	.31	15.70	15.70	17.03
13-7	3151.	.89	.51	21.45	21.45	8.97

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

MODE 4

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6-5	36.7640	56.0490	59.4860	39.7540	58.4300	70.4420
6-6	44.3150	55.8890	63.6660	31.7040	45.8150	60.3240
11-6	35.2570	50.1450	54.5840	34.7690	49.9340	63.7630
13-6	41.8300	68.1770	67.6230	46.2700	72.2750	80.7620
6-7	-25.1470	38.9810	46.1250	-24.3110	-38.0940	-53.6300
13-7	-53.9860	69.8390	67.6010	43.6010	61.3670	72.6840

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 4

UNIT	NREC LB/KLR	CO FU	FI	NREC LB/KLR	HC FU	EI	NRE LB/KLR	CNO FU	FI	NR LB/KLR	CNOX FU	FI	SMK CORRECTED	NUMBER
6-5		.48			.20			19.93			19.93		14.74	
6-6		.64			.52			19.66			19.66		14.63	
11-6		.48			.24			23.01			23.01		15.75	
13-6		.50			.64			23.34			23.34		6.18	
6-7		.69			.32			18.25			18.25		8.56	
13-7		-1.11			.58			23.07			23.07		8.97	

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

J79D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 5

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6-5	75.40	89.70	75.69	90.05
6-6	76.00	-91.10	74.75	89.60
11-6	77.20	89.70	77.13	89.61
13-6	74.70	89.90	75.06	90.24
6-7	75.00	89.50	74.86	89.33
13-7	75.50	90.50	74.75	89.60

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 5

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LRF
6-5	9800.	1.4650	1.5240	1606.	1.215	26908.
6-6	9600.	1.4500	1.5710	1655.	1.200	25800.
11-6	9900.	1.4390	1.5910	1653.	1.210	26694.
13-6	9400.	1.4070	1.4990	1610.	1.205	26185.
6-7	9500.	1.3670	1.5110	1601.	1.205	26185.
13-7	9400.	1.4500	1.5280	1647.	1.200	25617.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 5

UNIT	CORR FU FL LRM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
6-5	9788.	1.4770	1.5360	1618.	26980.
6-6	9761.	1.4030	1.5200	1601.	25800.
11-6	9870.	1.4360	1.5880	1650.	26587.
13-6	9358.	1.4200	1.5140	1625.	26193.
6-7	9521.	1.3620	1.5050	1594.	26193.
13-7	9533.	1.4220	1.4980	1615.	25800.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

MODE 5

UNIT	CO <sub>2</sub> CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NO <sub>x</sub> CONC PPM
6-5	3.089	13.8	1.6	-42.4	-43.8
6-6	3.053	12.2	4.0	129.8	124.4
11-6	3.033	12.3	2.1	119.0	111.2
13-6	2.963	14.6	4.4	110.6	108.2
6-7	2.880	17.3	2.7	97.3	98.3
13-7	3.056	19.7	4.8	119.4	120.8

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 5

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
6-5	3154.	.90	.18	-4.52	-4.68	10.13
6-6	3149.	.80	.46	13.99	13.99	7.84
11-6	3154.	.81	.24	12.94	12.94	10.21
13-6	3153.	.99	.51	12.30	12.30	4.82
6-7	3153.	1.21	.32	11.13	11.26	11.43
13-7	3152.	1.10	.55	12.88	13.03	4.15

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

MODE 5

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6-5	16.5440	31.3240	41.1430	17.6400	32.5850	48.6120
6-6	-18.9600	36.0550	-48.1350	14.4100	29.7570	45.9370
11-6	13.5820	24.5540	34.8020	13.4360	24.4660	40.6820
13-6	15.0110	32.0420	41.8400	16.2420	33.8510	49.7950
6-7	13.2790	28.8640	38.1860	12.9080	28.2030	44.4240
13-7	17.5890	33.6110	42.3960	14.9130	29.7380	45.9180

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 5

UNIT	NREC CO FI LB/KLA FU	NREC MC EI LB/KLA FU	NRE CNO FI LB/KLA FU	NP CNOX EI LB/KLA FU	SMK NUMBER CORRECTED
6-5	.84	.19	-5.74	-5.93	9.85
6-6	1.05	.55	13.35	13.35	7.84
11-6	.82	.24	15.13	15.13	9.21
13-6	.91	.49	14.64	14.64	4.68
6-7	1.24	.33	12.95	13.10	4.22
13-7	1.53	.62	13.95	14.11	4.15

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 2100 HOUR AND ABOVE TESTS •

MODE 6

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
4-5	55.50	84.50	55.72	84.83
6-6	55.00	85.00	54.10	83.60
11-6	58.50	87.00	58.44	82.92
13-6	55.00	87.40	55.27	83.80
4-7	55.50	84.50	55.30	84.74
13-7	55.00	83.50	54.45	82.67

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 2100 HOUR AND ABOVE TESTS •

MODE 6

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT4 DEG R	EPR	THRUST LBF
6-5	5250.	1.1680	1.2160	1376.	1.085	12896.
6-6	4800.	1.1250	1.1630	1399.	1.080	12240.
11-6	5400.	1.1520	1.1200	1408.	1.080	12289.
13-6	4950.	1.0890	1.1910	1381.	1.080	12236.
6-7	5070.	1.1040	1.2190	1377.	1.080	12236.
13-7	4850.	1.1100	1.1720	1403.	1.080	12191.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

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MODE 6

UNIT	CORR FUEL LBS/HR	COR CR F/A X100	COR PF F/A X100	COR TTB DEG R	COR THRUST LBF
6-5	5244.	1.1770	1.2250	1386.	12930.
6-6	4880.	1.0890	1.1250	1353.	12240.
11-6	5386.	1.1500	1.3170	1405.	12240.
13-6	4928.	1.0990	1.2030	1394.	12240.
6-7	5091.	1.1000	1.2140	1372.	12240.
13-7	4918.	1.0980	1.1490	1375.	12240.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 2100 HOUR AND ABOVE TESTS •

MODE 6

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6-5	2.445	98.8	5.8	38.3	47.7
6-6	2.352	87.1	7.2	45.7	50.0
11-6	2.413	97.7	2.6	49.7	50.0
13-6	2.276	94.4	9.7	40.6	45.1
6-7	2.309	101.8	4.9	39.1	44.8
13-7	2.320	108.2	9.7	40.5	47.5

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

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MODE 6

UNIT	CO <sub>2</sub> FI LB/KLB FU	CO EI LB/KLB FU	HC FI LB/KLB FU	NO FI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
6-5	3141.	8.08	.81	5.15	6.41	4.68
6-6	3137.	7.40	1.05	6.37	6.97	2.61
11-6	3143.	7.27	.37	6.77	6.81	4.94
13-6	3139.	8.28	1.31	5.85	6.50	2.08
6-7	3140.	8.81	.73	5.55	6.37	4.88
13-7	3137.	9.31	1.44	5.72	6.72	.78

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 2100 HOUR AND ABOVE TESTS \*

MODE 6

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6-5	5.1110	11.0880	21.7250	5.3570	11.4930	25.5700
6-6	4.9670	10.7420	22.7340	4.0810	9.0240	22.1110
11-6	4.1020	7.8920	17.4290	4.0720	7.8710	20.3950
13-6	4.0080	8.9420	19.1440	4.2420	9.3950	22.6480
6-7	4.6290	10.6450	20.6940	4.5280	10.4260	24.1060
13-7	4.0910	8.3470	18.0340	3.6350	7.4760	19.7880

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A • 2100 HOUR AND ABOVE TESTS •

MODE 6

UNIT	NREC CO FT LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO FT LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
6-5	7.71	.78	6.51	8.10	4.68
6-6	9.00	1.25	6.65	7.28	2.26
11-6	7.33	.38	7.33	7.97	4.70
13-6	7.83	1.24	7.43	8.26	1.98
6-7	9.00	.75	6.47	7.42	1.31
13-7	-10.48	1.61	6.28	7.37	.78

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 7

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6-5	30.50	69.00	30.62	69.27
6-6	31.00	68.40	30.49	-67.27
11-6	32.00	69.00	31.97	67.93
13-6	30.50	68.80	30.65	69.13
6-7	33.30	69.50	33.24	69.37
13-7	31.00	69.50	30.69	68.81

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 7

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	FPR	THRUST LBF
6-5	2100.	.9370	.7160	1161.	1.025	4831.
6-6	2000.	.8840	.7050	1206.	1.025	-4146.
11-6	2050.	.8530	.7350	1174.	1.020	4395.
13-6	2050.	.8890	.7200	1217.	1.020	4795.
6-7	2300.	.8630	.7900	1190.	-1.030	4877.
13-7	2000.	.9530	.7010	-1251.	1.025	4664.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 7

UNIT	CORR FU FL LBM/HR	COR CR F/A X100	COR PF F/A X100	CORR TT6 DEG R	COR THRUST LBF
6-5	2097.	.9440	.7220	1170.	4844.
6-6	2033.	.8560	.6820	1167.	-4146.
11-6	2044.	.8520	.7330	1172.	4377.
13-6	2041.	.8980	.7270	1229.	4797.
6-7	2305.	.8590	.7870	1186.	4878.
13-7	2028.	.9340	.6870	1226.	4682.

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

MODE 7

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6-5	1.839	713.1	-177.4	7.8	16.3
6-6	1.751	624.0	126.5	-16.7	18.3
11-6	1.701	624.8	83.3	-17.7	17.4
13-6	1.779	598.2	83.7	15.9	17.4
6-7	1.717	571.8	112.4	-16.9	18.8
13-7	1.911	554.7	108.0	12.0	18.8

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-34 \* 2100 HOUR AND ABOVE TFSTS \*

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MODE 7

UNIT	CO2 EI LB/KLB FU	CO EI LB/KLB FU	HC EI LB/KLB FU	NO EI LB/KLB FU	NOX EI LB/KLB FU	SMK NUMBER FRONT SIDE
6-5	2956.	72.96	-31.18	1.31	-2.75	2.60
6-6	2980.	67.61	23.55	-2.98	3.25	1.96
11-6	3002.	70.19	15.88	-3.27	3.27	1.95
13-6	3012.	64.45	15.50	-2.82	3.08	.78
6-7	2997.	63.53	21.45	-3.08	3.43	1.03
13-7	3017.	56.13	18.63	1.98	3.10	1.69

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

MODE 7

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6-5	.6050	.4580	3.7510	.6240	.4710	4.3840
6-6	.5530	.3920	3.6980	.4850	-.3430	-3.7390
11-6	.5140	.3820	-3.3610	.5120	.3810	3.9420
13-6	.5680	.4420	3.7030	.5910	.4600	4.3320
6-7	.5930	.4870	3.7430	.5840	.4790	4.4250
13-7	.6480	.4790	3.7660	.5940	.4370	4.2230

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

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MODE 7

UNIT	NREC CO FI LB/KLB FU	NREC WC EI LB/KLB FU	NRE CNO FI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBR CORRECTED
6-5	70.74	-30.35	1.64	3.44	2.25
6-6	77.18	26.96	3.24	3.54	1.45
11-6	70.48	15.88	-3.83	3.83	1.59
13-6	61.95	14.91	-3.55	3.87	.66
6-7	64.52	21.80	-3.61	4.02	1.03
13-7	61.24	20.38	2.27	3.48	1.69

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-7A • 2100 HOUR AND ABOVE TESTS •

MODE A

UNIT	N1 SPEED PER CENT	N2 SPEED PER CENT	CORR N1 PER CENT	CORR N2 PER CENT
6-5	28.40	-67.00	28.51	-67.26
6-6	27.50	65.60	27.05	64.52
11-6	27.50	64.20	27.47	64.16
13-6	27.50	65.80	27.63	66.12
6-7	27.60	65.50	27.55	65.37
13-7	26.00	64.50	25.74	63.86

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

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MODE 8

UNIT	FUEL FLOW LBM/HR	CR F/A X100	PERF F/A X100	TT6 DEG R	EPR	THRUST LBF
6-5	1950.	.9140	.7440	1152.	-1.025	-4130.
6-6	1750.	.8900	.7670	1188.	1.020	3256.
11-6	1750.	.8630	.8690	1170.	1.015	3154.
13-6	1850.	.9090	.8040	1212.	1.020	3763.
6-7	1850.	.8560	.8100	1163.	1.020	3520.
13-7	1800.	.9540	.7570	-904.	1.020	3045.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

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MODE 8

UNIT	CORR FI LRM/HR	FL	COR CR X100	F/A	COR PF X100	F/A	COR IT6 DEG R	COR THRUST LBF
6-5	1968.		.9210		.7500		1161.	-4141.
6-6	1779.		.8520		.7420		1150.	3256.
11-6	1745.		.8610		.8670		1168.	3141.
13-6	1842.		.9180		.8120		1223.	3764.
6-7	1854.		.8520		.8070		1159.	3522.
13-7	1825.		.9350		.7420		-886.	3057.

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A • 2100 HOUR AND ABOVE TESTS •

MODE 8

UNIT	CO2 CONC PER CENT	CO CONC PPM	HC CONC PPM	NO CONC PPM	NOX CONC PPM
6-5	1.763	813.5	233.7	6.9	15.0
6-6	1.705	781.7	195.6	13.7	15.5
11-6	1.678	782.5	171.3	-14.5	14.7
13-6	1.783	703.8	171.2	-14.3	15.7
6-7	1.638	839.6	231.4	13.0	14.5
13-7	1.872	728.9	183.6	9.4	15.3

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 8

UNIT	CO <sub>2</sub> FI LB/KLB FU	CO FI LB/KLB FU	HC FI LB/KLB FU	NO FI LB/KLB FU	NO <sub>X</sub> FI LB/KLB FU	SMK NUMBER FRONT SIDE
6-5	2906.	85.34	42.13	1.19	2.59	2.22
6-6	2917.	85.12	36.59	2.45	2.78	1.82
11-6	2930.	86.95	32.70	-2.65	2.68	1.05
13-6	2954.	74.21	31.02	2.47	2.72	1.43
6-7	2886.	94.02	44.56	2.40	2.66	1.82
13-7	2954.	73.22	31.68	1.54	2.53	1.68

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT90-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE 8

UNIT	FCO X100	FHC X100	FNO X100	STD FCO X100	STD FHC X100	STD FNO X100
6-5	-.4970	-.3330	-3.2050	-.5120	-.3420	-3.7340
6-6	.4550	.2800	-3.0760	.4000	.2450	3.1310
11-6	.3950	.2350	2.6090	.3940	.2350	3.0600
13-6	.4500	.2810	2.9450	.4680	.2910	3.4410
6-7	.4280	.2730	2.8110	.4220	.2690	3.2930
13-7	.4500	.2510	2.6820	.4140	.2300	3.0210

NOTE- MINUS SIGNS DENOTE OUTLYING VALUES

JT9D-3A \* 2100 HOUR AND ABOVE TESTS \*

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MODE A

UNIT	NREC CO FI LB/KLB FU	NREC HC EI LB/KLB FU	NRE CNO EI LB/KLB FU	NR CNOX EI LB/KLB FU	SMK NUMBER CORRECTED
6-5	82.85	41.04	1.49	3.24	1.99
6-6	96.78	41.73	2.68	3.03	1.82
11-6	87.29	32.71	-3.11	3.14	1.05
13-6	71.39	29.87	-3.10	3.41	1.43
6-7	95.60	45.27	2.82	3.12	1.82
13-7	79.54	34.51	1.74	2.85	1.68

NOTE - MINUS SIGNS DENOTE OUTLYING VALUES

5. FUEL ANALYSIS DATA

Unit No.	Test Series	deg API	H/C Ratio	FIA percent		
				Paraffin	Refin	Aromatic
1	Baseline	42.6	1.92	84	2	14
	600-Hour	43.2	1.92	84	2	14
	1200-Hour	43.6	1.93	87	1	12
2	Baseline	42.6	1.92	84	2	14
	600-Hour	43.2	1.92	84	2	14
	1200-Hour	43.6	1.93	87	1	12
3	Baseline	42.6	1.92	84	2	14
	600-Hour	43.2	1.92	84	2	14
4	Baseline	41.3	1.89	84	3	13
	600-Hour	41.9	1.90	84	1	15
5	Baseline	41.3	1.89	84	3	13
6	Baseline	41.3	1.89	84	3	13
	600-Hour	41.9	1.90	84	1	15
	1200-Hour	43.4	1.94	86	2	12
	1500-Hour	43.8	1.91	86	1	13
	2100-Hour *					
	2400-Hour	43.4	1.94	83	2	15
2700-Hour	43.6	1.92	85	1	14	
7	Baseline	41.3	1.89	84	3	13
	600-Hour	41.9	1.90	84	1	15
	1200-Hour	43.4	1.94	86	2	12
	1500-Hour	43.8	1.91	86	1	13
8	Baseline	42.8	1.94	85	2	13
9	Baseline	42.8	1.94	85	2	13
	600-Hour	44.7	1.94	86	1	13
	1200-Hour	42.2	1.90	84	2	14
	1500-Hour	43.6	1.91	83	1	16
	1800-Hour	44.7	1.91	83	1	16

\* Fuel analysis data not available

Unit No.	Test Series	deg API	H/C Ratio	FIA, percent		
				Paraffin	Olefin	Aromatic
10	Baseline	42.1	1.92	84	2	14
	600-Hour	44.1	1.91	84	2	14
11	Baseline	41.7	1.90	83	2	15
	600-Hour *					
	1200-Hour *					
	1500-Hour	43.8	1.93	84	1	15
	1800-Hour	42.3	1.91	84	1	15
2100-Hour	43.4	1.92	84	2	14	
12	Baseline	42.1	1.92	84	2	14
	600-Hour	44.1	1.91	84	2	14
	1200-Hour	43.8	1.95	85	2	13
	1500-Hour	43.6	1.92	84	1	15
13	Baseline	42.1	1.94	85	2	13
	600-Hour	43.4	1.92	84	2	14
	1200-Hour	43.4	1.93	86	2	12
	1500-Hour	44.3	1.90	84	2	14
	1800-Hour	42.8	1.91	84	2	14
	2100-Hour	42.8	1.92	84	2	14
	2700-Hour *					
14	Baseline	42.1	1.94	85	2	13
15	Baseline	39.0	1.90	83	2	15
16	Baseline	39.0	1.90	83	2	15
	600-Hour	43.0	1.90	84	2	14
	1200-Hour	44.5	1.92	86	1	13
	1500-Hour	42.3	1.90	83	2	15
	1800-Hour	42.6	1.92	84	2	14
17	Baseline	39.0	1.90	83	2	15
	600-Hour	43.0	1.90	84	2	14
18	Baseline	39.0	1.89	83	2	15
19	Baseline	39.0	1.89	83	2	15

\* Fuel analysis data not available

Unit No.	Test Series	deg API	H/C Ratio	FIA, percent		
				Paraffin	Olefin	Aromatic
20	Baseline	42.3	1.92	85	2	13
	600-Hour	41.9	1.91	84	2	14
	1200-Hour	43.2	1.92	85	1	14
	1500-Hour	44.1	1.93	86	2	12
21	Baseline	44.1	1.90	86	1	13
	1500-Hour	45.4	1.94	81	2	17
22	Baseline	41.9	1.90	84	1	15
	600-Hour	44.1	1.92	87	2	11
	1200-Hour	44.1	1.90	86	1	13
23	Baseline	44.1	1.93	86	2	12
	600-Hour *	44.5	1.91	84	1	15
	1200-Hour	44.5	1.91	82	1	17
24	Baseline	44.3	1.90	84	2	14
	600-Hour	42.6	1.92	84	2	14
	1200-Hour *					
	1500-Hour *					
25	Baseline	43.8	1.94	85	1	14
	1200-Hour *					

\* Fuel analysis data not available

## 6. REFERENCES

1. Adams, H. T., Elements of Internal Combustion Turbine Theory, Cambridge University Press, 1949.
2. "T53 and T55 Gas Turbine Combustor and Engine Exhaust Emission Measurements", USAAMRD Technical Report 73-47, December 1973.
3. "Control of Air Pollution from Aircraft and Aircraft Engines, Emissions Standards and Test Procedures for Aircraft", Federal Register, vol. 38, no. 136, Part II, July 17, 1973.

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