



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: JT9D-59A  
UNIQUE ID NUMBER: 1PW033  
ENGINE TYPE: TF

BYPASS RATIO: 4.9  
PRESSURE RATIO ( $\pi_{oo}$ ): 24.5  
RATED OUTPUT ( $F_{oo}$ ) (kN): 235.8

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{oo}$ (g/kN) or SN	26.0	107.6	63.1	10.3
AS % OF ORIGINAL LIMIT	132.8 %	91.2 %	70.9 %	55.0 %
AS % OF CAEP/2 LIMIT (NOx)			88.6 %	
AS % OF CAEP/4 LIMIT (NOx)			108.3 %	
AS % OF CAEP/6 LIMIT (NOx)			123.1 %	
AS % OF CAEP/8 LIMIT (NOx)			148.9 %	

### DATA STATUS

x PRE-REGULATION  
- CERTIFICATION  
- REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
- DEDICATED ENGINES TO PRODUCTION STANDARD  
- OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
(ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
x OUT OF PRODUCTION (DATE: - )  
- OUT OF SERVICE

### MEASURED DATA

MODE	POWER SETTING (% $F_{oo}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	2.442	0.2	0.2	31.6	-
CLIMB OUT	85	2.2	2.000	0.2	0.2	25.6	-
APPROACH	30	4.0	0.680	0.3	1.7	7.8	-
IDLE	7	26.0	0.237	12	53	3	-
LTO TOTAL FUEL (kg) or EMISSIONS (g)			900	4559	19946	12381	-
NUMBER OF ENGINES				2	-	-	-
NUMBER OF TESTS				2	-	-	-
AVERAGE $D_p/F_{oo}$ (g/kN) or AVERAGE SN (MAX)				20	87.7	54.4	8
SIGMA ( $D_p/F_{oo}$ in g/kN, or SN)				2.4	5.9	3	1
RANGE ( $D_p/F_{oo}$ in g/kN, or SN)				-	-	-	-

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
STAGE BLEED 0 % CORE FLOW AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97-100
TEMPERATURE (K)	280 - 285
AHS HUMIDITY (kg/kg)	0.0029-0.0050

### FUEL

SPEC	Jet A
H/C	1.89
AROM (%)	-

MANUFACTURER: Pratt & Whitney  
TEST ORGANIZATION: P&WA  
TEST LOCATION: E Hartford, CT, USA  
TEST DATES: FROM Apr 76 TO Apr 76

### REMARKS

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If REVISED, this data supersedes databank UID  
Compliance with fuel venting requirements:

0 ('x' if complies, PR if pre-regulation)