



## ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: JT9D-20  
UNIQUE ID NUMBER: 1PW031  
COMBUSTOR:  
ENGINE TYPE: TF

BYPASS RATIO:  
PRESSURE RATIO ( $\pi_{oo}$ ): 20.3  
RATED THRUST ( $F_{oo}$ ) (kN): 205.3

## REGULATORY DATA

\*\* DATA SUPERSEDED \*\*

SEE FOLLOWING UID FOR REVISED DATA:

8PW088

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>oo</sub> (g/kN) or SN	64.0	145.6	61.8	14.5
AS % OF ORIGINAL LIMIT	326.6	123.4	76.7	74.4
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			95.8	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			120.0	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			136.4	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			169.5	

## DATA STATUS

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

## TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
- DEDICATED ENGINES TO PRODUCTION STANDARD  
x 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 (DATE: - )

## MEASURED DATA

MODE	POWER SETTING (%F <sub>oo</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
TAKE-OFF	100	0.7	2.099		0.10	0.00	38.70	12.3
CLIMB OUT	85	2.2	1.789		0.10	0.00	28.50	9.5
APPROACH	30	4.0	0.619		1.30	7.60	7.60	2.5
IDLE	7	26.0	0.211		36.10	83.60	3.10	0.7
LTO TOTAL FUEL (kg) or EMISSIONS (g)			802		12108	28647	12291	-
NUMBER OF ENGINES					10	10	10	10
NUMBER OF TESTS					10	10	10	10
AVERAGE D <sub>p</sub> /F <sub>oo</sub> (g/kN) or AVERAGE SN (MAX)					59.0	139.6	59.9	12.3
SIGMA (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)								
RANGE (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)								

## ACCESSORY LOADS

POWER EXTRACTION 0 (kW)  
STAGE BLEED 0 (% CORE FLOW)

AT - POWER SETTINGS  
AT - POWER SETTINGS

## ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.9-101.7
TEMPERATURE (K)	276-300
ABS HUMIDITY (kg/kg)	0.003-0.0149

## FUEL

SPEC	DERD 2494
H/C	
AROM (%)	

MANUFACTURER: Pratt & Whitney  
TEST ORGANIZATION: NGTE, Pyestock, UK  
TEST LOCATION: British Airways Engine Overhaul Ltd, Wales  
TEST DATES: 01/03/1976-01/07/1977

## REMARKS

1. Emissions estimated from JT9D-7 engines using JT9D-7A performance data.
2. Tests performed on in-service engine(s), after overhaul.

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation,  
-' if information is not available)