



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: JT9D-20
UNIQUE ID NUMBER: 8PW088
COMBUSTOR:
ENGINE TYPE: TF

BYPASS RATIO:
PRESSURE RATIO (π_{oo}): 20.3
RATED THRUST (F_{oo}) (kN): 205.3

REGULATORY DATA

| CHARACTERISTIC VALUE: | HC | CO | NO _x | SMOKE NUMBER |
|--|-------|-------|-----------------|--------------|
| D _p /F _{oo} (g/kN) or SN | 64.0 | 145.6 | 61.8 | 12.9 |
| AS % OF ORIGINAL LIMIT | 326.6 | 123.4 | 76.7 | 74.4 |
| AS % OF CAEP/2 LIMIT (NO _x) | | | 95.8 | |
| AS % OF CAEP/4 LIMIT (NO _x) | | | 120.0 | |
| AS % OF CAEP/6 LIMIT (NO _x) | | | 136.4 | |
| AS % OF CAEP/8 LIMIT (NO _x) | | | 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 _{oo}) | TIME (minutes) | FUEL FLOW (kg/s) | HC | CO | NO _x | 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 _p /F _{oo} (g/kN) or AVERAGE SN (MAX) | | | | 59.0 | 139.6 | 59.9 | 12.3 |
| SIGMA (D _p /F _{oo} in g/kN, or SN) | | | | | | | |
| RANGE (D _p /F _{oo} 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.
3. SN (char) wrongly calculated originally [1PW031].
4. Corrected to 12.9 SN in version 15 and % of standard recalculated

Compliance with Fuel Venting requirements:

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