



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

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

BYPASS RATIO: -
PRESSURE RATIO (π_{00}): 20.3
RATED OUTPUT (F_{00}) (kN): 205.3

REGULATORY DATA

| CHARACTERISTIC VALUE: | HC | CO | NOx | SMOKE NUMBER |
|----------------------------|---------|---------|---------|--------------|
| D_p/F_{00} (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 (NOx) | | | 95.8 % | |
| AS % OF CAEP/4 LIMIT (NOx) | | | 120.0 % | |
| AS % OF CAEP/6 LIMIT (NOx) | | | 136.4 % | |
| AS % OF CAEP/8 LIMIT (NOx) | | | 169.5 % | |

DATA STATUS

x PRE-REGULATION
- CERTIFICATION
- 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

MEASURED DATA

| MODE | POWER SETTING (% F_{00}) | TIME minutes | FUEL FLOW kg/s | EMISSIONS INDICES (g/kg) | | | SMOKE NUMBER |
|---|-----------------------------|--------------|----------------|--------------------------|-------|-------|--------------|
| | | | | HC | CO | NOx | |
| TAKE-OFF | 100 | 0.7 | 2.099 | 0.1 | 0 | 38.7 | 12.3 |
| CLIMB OUT | 85 | 2.2 | 1.789 | 0.1 | 0 | 28.5 | 9.5 |
| APPROACH | 30 | 4.0 | 0.619 | 1.3 | 7.6 | 7.6 | 2.5 |
| IDLE | 7 | 26.0 | 0.211 | 36.1 | 83.6 | 3.1 | 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_{00} (g/kN) or AVERAGE SN (MAX) | | | | 59 | 139.6 | 59.9 | 12.3 |
| SIGMA (D_p/F_{00} in g/kN, or SN) | | | | - | - | - | - |
| RANGE (D_p/F_{00} 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) | 97.9-101.7 |
| TEMPERATURE (K) | 276 - 300 |
| AWS HUMIDITY (kg/kg) | 0.0030-0.0149 |

FUEL

| | |
|----------|----------|
| SPEC | DERD2494 |
| H/C | - |
| AROM (%) | - |

MANUFACTURER: Pratt & Whitney
TEST ORGANIZATION: NGTE, Pyestock, UK
TEST LOCATION: British Airways Engine Overhaul Ltd, Wales
TEST DATES: FROM Mar 76 TO Jul 77

REMARKS

- Emissions estimated from JT9D-7 engines using JT9D-7A performance data.
- Tests performed on in-service engine(s), after overhaul.
- SN (char) wrongly calculated originally [1PW031].
- Corrected to 12.9 SN in version 15 and % of standard recalculated

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

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