



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent XWB-79
 UNIQUE ID NUMBER: 14RR073
 ENGINE TYPE: (TF)

BYPASS RATIO: 9.2
 PRESSURE RATIO (π_{00}): 38.8
 RATED OUTPUT (F_{00}) (kN): 355.2

REGULATORY DATA

| CHARACTERISTIC VALUE: | HC | CO | NOx | SMOKE NUMBER |
|----------------------------|-------|--------|--------|--------------|
| D_p/F_{00} (g/kN) or SN | 1.8 | 32.8 | 53.1 | 11.6 |
| AS % OF ORIGINAL LIMIT | 9.1 % | 27.8 % | 45.2 % | 69.6 % |
| AS % OF CAEP/2 LIMIT (NOx) | | | 56.4 % | |
| AS % OF CAEP/4 LIMIT (NOx) | | | 62.8 % | |
| AS % OF CAEP/6 LIMIT (NOx) | | | 69.4 % | |
| AS % OF CAEP/8 LIMIT (NOx) | | | 78.4 % | |

DATA STATUS

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

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
 x 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)
 - OUT OF PRODUCTION
 - 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 | 2.601 | 0 | 0.37 | 40.55 | 6 |
| CLIMB OUT | 85 | 2.2 | 2.129 | 0 | 0.42 | 31.15 | 6.9 |
| APPROACH | 30 | 4.0 | 0.755 | 0 | 1.36 | 10.95 | 6.1 |
| IDLE | 7 | 26.0 | 0.280 | 1.11 | 22.51 | 4.55 | 1.3 |
| LTO TOTAL FUEL (kg) or EMISSIONS (g) | | | 1008 | 486 | 10227 | 17154 | - |
| NUMBER OF ENGINES | | | | 2 | 2 | 2 | 2 |
| NUMBER OF TESTS | | | | 4 | 4 | 4 | 4 |
| AVERAGE D _p /F _{oo} (g/kN) or AVERAGE SN (MAX) | | | | 1.37 | 28.8 | 48.3 | 9.93 |
| SIGMA (D _p /F _{oo} in g/kN, or SN) | | | | 0.04 | 2.37 | 0.7 | 3.004 |
| RANGE (D _p /F _{oo} in g/kN, or SN) | | | | 1.34 - 1.4 | 27.12 - 30.48 | 47.8 - 48.8 | 7.8 - 12.1 |

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

| | |
|----------------------|-------------------|
| BAROMETER (kPa) | 98.5 - 101.3 |
| TEMPERATURE (K) | 280 - 295 |
| AHS HUMIDITY (kg/kg) | 0.00248 - 0.00964 |

FUEL

| | |
|----------|------|
| SPEC | - |
| H/C | 1.86 |
| AROM (%) | 17.3 |

MANUFACTURER: Rolls-Royce
 TEST ORGANIZATION: Rolls-Royce
 TEST LOCATION: Derby
 TEST DATES: FROM Apr 12 TO Jul 14

REMARKS

1. Data from Certification Report DNS197360 Iss 2
2. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
3. NOx levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

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

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