



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION:

Trent XWB-84

UNIQUE ID NUMBER:

18RR079

ENGINE TYPE:

(TF)

BYPASS RATIO:

9.0

PRESSURE RATIO (π_{oo}):

41.1

RATED OUTPUT (F_{oo}) (kN):

379.0

REGULATORY DATA

| CHARACTERISTIC VALUE: | HC | CO | NOx | SMOKE NUMBER |
|----------------------------|-------|--------|--------|--------------|
| D_p/F_{oo} (g/kN) or SN | 1.4 | 28.9 | 55.6 | 11.3 |
| AS % OF ORIGINAL LIMIT | 7.4 % | 24.5 % | 45.5 % | 68.6 % |
| AS % OF CAEP/2 LIMIT (NOx) | | | 56.9 % | |
| AS % OF CAEP/4 LIMIT (NOx) | | | 62.4 % | |
| AS % OF CAEP/6 LIMIT (NOx) | | | 68.6 % | |
| AS % OF CAEP/8 LIMIT (NOx) | | | 76.9 % | |

DATA STATUS

-PRE-REGULATION

xCERTIFICATION

xREVISED (SEE REMARKS)

TEST ENGINE STATUS

-NEWLY MANUFACTURED ENGINES

xDEDICATED ENGINES TO PRODUCTION STANDARD

-OTHER (SEE REMARKS)

EMISSIONS STATUS

xDATA 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 | 2.819 | 0 | 0.39 | 45.24 | 5.5 |
| CLIMB OUT | 85 | 2.2 | 2.306 | 0 | 0.39 | 34.2 | 6.4 |
| APPROACH | 30 | 4.0 | 0.801 | 0.01 | 1.18 | 11.12 | 7.1 |
| IDLE | 7 | 26.0 | 0.291 | 1.03 | 21.46 | 4.41 | 1.6 |
| LTO TOTAL FUEL (kg) or EMISSIONS (g) | | | 1069 | 468 | 10122 | 19903 | - |
| NUMBER OF ENGINES | | | | 3 | 3 | 3 | 3 |
| NUMBER OF TESTS | | | | 6 | 6 | 6 | 6 |
| AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX) | | | | 1.24 | 26.7 | 52.51 | 10.3 |
| SIGMA (D_p/F_{oo} in g/kN, or SN) | | | | 0.2 | 2.34 | 1.57 | 2.2 |
| RANGE (D_p/F_{oo} in g/kN, or SN) | | | | 1.11 - 1.47 | 24.1 - 28.61 | 50.72 - 53.64 | 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 - 101.9 |
| TEMPERATURE (K) | 280 - 295 |
| ABS HUMIDITY (kg/kg) | 0.00062 - 0.00964 |

FUEL

| | |
|----------|-------|
| SPEC | - |
| H/C | 1.87 |
| AROM (%) | 17.25 |

MANUFACTURER:

Rolls-Royce

TEST ORGANIZATION:

Rolls-Royce

TEST LOCATION:

Derby

TEST DATES:

FROM

Apr 12

TO

Apr 16

REMARKS

1. Data from Certification Report EDNS01000588237 Iss 2
2. Certification in accordance with Part III, Chapter 2, of Amendment 8 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('x' if complies, PR if pre-regulation)