



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 768  
UNIQUE ID NUMBER: 3RR029  
COMBUSTOR: Improved traverse  
ENGINE TYPE: MTF

BYPASS RATIO: 5.2  
PRESSURE RATIO ( $\pi_{00}$ ): 34.0  
RATED THRUST ( $F_{00}$ ) (kN): 300.3

### REGULATORY DATA

| CHARACTERISTIC VALUE:                        | HC   | CO   | NO <sub>x</sub> | SMOKE NUMBER |
|--|------|------|-----------------|--------------|
| D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN | 4.2  | 36.5 | 60.5            | 2.6          |
| AS % OF ORIGINAL LIMIT                       | 21.4 | 30.9 | 56.0            | 14.8         |
| AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )      |      |      | 70.0            |              |
| AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )      |      |      | 80.7            |              |
| AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )      |      |      | 90.4            |              |
| AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )      |      |      | 104.1           |              |

### 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)  
x OUT OF PRODUCTION (DATE: - )  
- OUT OF SERVICE (DATE: - )

### MEASURED DATA

| MODE   | POWER SETTING (%F <sub>00</sub> ) | TIME (minutes) | FUEL FLOW (kg/s) | HC        | CO        | NO <sub>x</sub> | SMOKE NUMBER |
|--|-----------------------------------|----------------|------------------|-----------|-----------|-----------------|--------------|
| TAKE-OFF   | 100                               | 0.7            | 2.970            | 0.00      | 0.18      | 31.25           | 1.9          |
| CLIMB OUT  | 85                                | 2.2            | 2.430            | 0.01      | 0.15      | 24.66           | 2.0          |
| APPROACH   | 30                                | 4.0            | 0.810            | 0.01      | 1.02      | 10.01           | 0.7          |
| IDLE   | 7                                 | 26.0           | 0.270            | 1.89      | 20.22     | 4.52            | 0.2          |
| LTO TOTAL FUEL (kg) or EMISSIONS (g)                               |                                   |                | 1061             | 801       | 8786      | 15658           | -            |
| NUMBER OF ENGINES  |                                   |                |                  | 1         | 1         | 1               | 1            |
| NUMBER OF TESTS  |                                   |                |                  | 3         | 3         | 3               | 3            |
| AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX) |                                   |                |                  | 2.7       | 29.7      | 52.2            | 2.0          |
| SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)             |                                   |                |                  |           |           |                 |              |
| RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)             |                                   |                |                  | 2.29-3.13 | 27.6-31.4 | 51-53.1         | 1.6-2.5      |

### ACCESSORY LOADS

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

AT - POWER SETTINGS  
AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

|                      |               |
|----------------------|---------------|
| BAROMETER (kPa)      | 100.2         |
| TEMPERATURE (K)      | 287           |
| ABS HUMIDITY (kg/kg) | 0.0053-0.0089 |

### FUEL

|          |       |
|----------|-------|
| SPEC     | AVTUR |
| H/C      | 1.95  |
| AROM (%) | 16    |

MANUFACTURER: Rolls-Royce plc  
TEST ORGANIZATION: Rolls-Royce plc  
TEST LOCATION: SINFIN-Derby  
TEST DATES: 01/09/1994

### NO<sub>x</sub> REGULATION PARAGRAPH

|   |                   |
|---|-------------------|
|   | 2.3.2 c) (CAEP/4) |
| x | 2.3.2 d) (CAEP/6) |
|   | 2.3.2 e) (CAEP/8) |

### REMARKS

1. Data from certification report DNS 19234.
2. Improved traverse combustor.

Compliance with Fuel Venting requirements:

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