



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 972-84
UNIQUE ID NUMBER: 9RR047
ENGINE TYPE: TF

BYPASS RATIO: 7.5
PRESSURE RATIO (π_{00}): 38.64
RATED OUTPUT (F_{00}) (kN): 345.9

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{00} (g/kN) or SN	0.5	25.2	58.1	6.8
AS % OF ORIGINAL LIMIT	2.3 %	21.3 %	49.5 %	40.5 %
AS % OF CAEP/2 LIMIT (NOx)			61.9 %	
AS % OF CAEP/4 LIMIT (NOx)			68.9 %	
AS % OF CAEP/6 LIMIT (NOx)			76.2 %	
AS % OF CAEP/8 LIMIT (NOx)			86.2 %	

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_{00})	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
TAKE-OFF	100	0.7	2.690	0	0.4	38.8	4.1
CLIMB OUT	85	2.2	2.230	0	0.3	29.6	4.8
APPROACH	30	4.0	0.750	0	1.4	11.8	2.6
IDLE	7	26.0	0.270	0.24	15.94	5	0.8
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1009	101	7099	17327	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D_p/F_{00} (g/kN) or AVERAGE SN (MAX)				0.3	20.5	50.1	5.3
SIGMA (D_p/F_{00} in g/kN, or SN)				0.084	0.116	0.802	1.095
RANGE (D_p/F_{00} in g/kN, or SN)				0.2 - 0.4	20.4-20.6	49.5-51.0	4.2 - 6.4

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.4 - 100.4
TEMPERATURE (K)	291 - 291.6
ABS HUMIDITY (kg/kg)	0.00517 - 0.00578

FUEL

SPEC	-
H/C	1.86
AROM (%)	18.6

MANUFACTURER: Rolls-Royce
TEST ORGANIZATION: Rolls-Royce
TEST LOCATION: Derby
TEST DATES: FROM 18 Mar 06 TO 18 Mar 06

REMARKS

1. Data from report DNS 97212 Issue 3
2. Certification in accordance with Part III, Chapter 2, of Amendment 6 of ICAO Annex 16 Vol. II.
3. NOx levels in accordance with Part III, Chapter 2, 2.3.2 d) (CAEP/6)

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

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