



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 1000-G3

UNIQUE ID NUMBER: 19RR088

ENGINE TYPE: TF

BYPASS RATIO: 9.1

PRESSURE RATIO ( $\pi_{oo}$ ): 44.5

RATED OUTPUT ( $F_{oo}$ ) (kN): 323.7

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D <sub>p</sub> /F <sub>oo</sub> (g/kN) or SN	0.0	9.1	62.3	16.4
AS % OF ORIGINAL LIMIT	0.0 %	7.7 %	48.3 %	95.5 %
AS % OF CAEP/2 LIMIT (NOx)			60.4 %	
AS % OF CAEP/4 LIMIT (NOx)			64.9 %	
AS % OF CAEP/6 LIMIT (NOx)			70.8 %	
AS % OF CAEP/8 LIMIT (NOx)			78.7 %	

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 <sub>oo</sub> )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	2.395	0	0.42	49.25	9
CLIMB OUT	85	2.2	1.966	0	0.45	38.14	12.3
APPROACH	30	4.0	0.647	0	0.7	13.81	8.2
IDLE	7	26.0	0.245	0	6.54	6.04	1.9
LTO TOTAL FUEL (kg) or EMISSIONS (g)			897	0	2761	19303	-
NUMBER OF ENGINES				5	5	5	6
NUMBER OF TESTS				11	11	11	8
AVERAGE D <sub>p</sub> /F <sub>oo</sub> (g/kN) or AVERAGE SN (MAX)				0	8.53	59.63	15.3
SIGMA (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)				0	2.03	0.88	1.7
RANGE (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)				0 - 0	5.56 - 10.72	58.59 - 60.48	12.1 - 16.8

ACCESSORY LOADS

POWER EXTRACTION0(kW)AT-POWER SETTINGS

STAGE BLEED0% CORE FLOWAT-POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.9 - 102.1
TEMPERATURE (K)	275.0 - 304.6
ABS HUMIDITY (kg/kg)	0.00308 - 0.01935

FUEL

SPEC	-
H/C	1.91
AROM (%)	17.2

MANUFACTURER: Rolls-Royce

TEST ORGANIZATION: Rolls-Royce

TEST LOCATION: Derby

TEST DATES: FROM 24 Sep 09 TO 30 Nov 17

REMARKS

1. Data from Certification Report EDNS01000615769
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)