



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 1000-H
UNIQUE ID NUMBER: 11RR054
ENGINE TYPE: TF

BYPASS RATIO: 9.6
PRESSURE RATIO (π_{00}): 38.3
RATED OUTPUT (F_{00}) (kN): 286.7

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{00} (g/kN) or SN	0.1	14.4	52.9	5.8
AS % OF ORIGINAL LIMIT	0.6 %	12.2 %	45.3 %	32.4 %
AS % OF CAEP/2 LIMIT (NOx)			56.7 %	
AS % OF CAEP/4 LIMIT (NOx)			63.2 %	
AS % OF CAEP/6 LIMIT (NOx)			69.9 %	
AS % OF CAEP/8 LIMIT (NOx)			79.2 %	

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

MEASURED DATA

MODE	POWER SETTING (% F_{00})	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	2.070	0	0.49	40.89	3.7
CLIMB OUT	85	2.2	1.710	0	0.43	31.75	4.4
APPROACH	30	4.0	0.583	0	0.88	12.72	2.6
IDLE	7	26.0	0.226	0.08	10.11	5.14	0.6
LTO TOTAL FUEL (kg) or EMISSIONS (g)			73	29	3826	14312	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				5	5	5	5
AVERAGE D_p/F_{00} (g/kN) or AVERAGE SN (MAX)				0.1	13.34	49.92	5.23
SIGMA (D_p/F_{00} in g/kN, or SN)				0.084	3.6	0.86	1.99
RANGE (D_p/F_{00} in g/kN, or SN)				0 - 0.2	8.5 - 16.7	49 - 51	3 - 8.2

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.9 - 102.1
TEMPERATURE (K)	284.1 - 290.3
ABS HUMIDITY (kg/kg)	0.00432 - 0.00721

FUEL

SPEC	-
H/C	1.89
AROM (%)	16.7

MANUFACTURER: Rolls-Royce
TEST ORGANIZATION: Rolls-Royce
TEST LOCATION: Derby
TEST DATES: FROM 24 Sep 09 TO 09 Jun 11

REMARKS

1. Representative of Package B engines

If REVISED, this data supersedes databank UID
Compliance with fuel venting requirements: - ('x' if complies, PR if pre-regulation)