



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 1000-G
UNIQUE ID NUMBER: 11RR053
ENGINE TYPE: TF

BYPASS RATIO: 9.4
PRESSURE RATIO (π_{oo}): 42.5
RATED OUTPUT (F_{oo}) (kN): 323.7

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	0.1	11.2	62.8	5.8
AS % OF ORIGINAL LIMIT	0.3 %	9.5 %	50.2 %	33.5 %
AS % OF CAEP/2 LIMIT (NOx)			62.8 %	
AS % OF CAEP/4 LIMIT (NOx)			68.2 %	
AS % OF CAEP/6 LIMIT (NOx)			74.8 %	
AS % OF CAEP/8 LIMIT (NOx)			83.6 %	

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_{oo})	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	2.403	0	0.53	50.27	3.1
CLIMB OUT	85	2.2	1.968	0	0.47	38.18	3.9
APPROACH	30	4.0	0.649	0	0.72	13.6	3
IDLE	7	26.0	0.242	0.05	8.14	5.54	0.6
LTO TOTAL FUEL (kg) or EMISSIONS (g)			75	17	3358	19198	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				5	5	5	5
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				0.05	10.37	59.31	5.2
SIGMA (D_p/F_{oo} in g/kN, or SN)				0.045	3	0.92	1.99
RANGE (D_p/F_{oo} in g/kN, or SN)				0 - 0.1	6.3 - 13	58.4 - 60.5	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)