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ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 1000-H
UNIQUE ID NUMBER: 12RR060
ENGINE TYPE: (TF)

BYPASS RATIO: 9.62
PRESSURE RATIO (π_{oo}): 38.33
RATED OUTPUT (F_{oo}) (kN): 287.1

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	0.1	13.8	52.1	6.5
AS % OF ORIGINAL LIMIT	0.5 %	11.7 %	44.7 %	36.6 %
AS % OF CAEP/2 LIMIT (NOx)			55.9 %	
AS % OF CAEP/4 LIMIT (NOx)			62.3 %	
AS % OF CAEP/6 LIMIT (NOx)			69.0 %	
AS % OF CAEP/8 LIMIT (NOx)			78.1 %	

DATA STATUS

- \- PRE-REGULATION
- x CERTIFICATION
- x 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 ($\%F_{oo}$)	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg) HC	CO	NOx	SMOKE NUMBER
TAKE-OFF	100	0.7	2.070	0	0.49	40.54	3.8
CLIMB OUT	85	2.2	1.710	0	0.43	31.54	4.8
APPROACH	30	4.0	0.583	0	0.87	12.62	3.3
IDLE	7	26.0	0.226	0.07	9.8	5.21	0.5
LTO TOTAL FUEL (kg) or EMISSIONS (g)			805	24	3714	14247	-
NUMBER OF ENGINES				4	4	4	4
NUMBER OF TESTS				8	8	8	8
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				0.08	12.94	49.62	5.98
SIGMA (D_p/F_{oo} in g/kN, or SN)				0.08	3.25	0.79	2.26
RANGE (D_p/F_{oo} in g/kN, or SN)				0 - 0.16	9.08 - 16.65	48.94 - 50.45	3 - 8.3

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 - 293.2
ABS HUMIDITY (kg/kg)	0.00432 - 0.00968

FUEL

SPEC	-
H/C	1.9
AROM (%)	17.4

MANUFACTURER: Rolls-Royce
TEST ORGANIZATION: Rolls-Royce
TEST LOCATION: Derby
TEST DATES: FROM 24 Sep 09 TO 03 Aug 12

REMARKS

1. Representative of Package B engines
2. DNS170301
3. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
4. 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)