



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 972E-84

UNIQUE ID NUMBER: 18RR084

ENGINE TYPE: (TF)

BYPASS RATIO: 8.4

PRESSURE RATIO (π_{oo}): 38.7

RATED OUTPUT (F_{oo}) (kN): 345.9

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	0.2	17.4	54.2	8.3
AS % OF ORIGINAL LIMIT	1.0 %	14.7 %	46.2 %	49.4 %
AS % OF CAEP/2 LIMIT (NOx)			57.7 %	
AS % OF CAEP/4 LIMIT (NOx)			64.2 %	
AS % OF CAEP/6 LIMIT (NOx)			71.0 %	
AS % OF CAEP/8 LIMIT (NOx)			80.3 %	

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_{oo})	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	2.672	0.01	0.32	39.78	6.1
CLIMB OUT	85	2.2	2.210	0.11	0.31	30.36	6.4
APPROACH	30	4.0	0.735	0.07	1.1	12.23	3.2
IDLE	7	26.0	0.258	0.04	13	5.51	0.6
LTO TOTAL FUEL (kg) or EMISSIONS (g)			983	60	5557	17699	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				6	6	6	6
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				0.17	16.06	51.16	7.1
SIGMA (D_p/F_{oo} in g/kN, or SN)				0.05	1.69	1.92	2.7
RANGE (D_p/F_{oo} in g/kN, or SN)				0.13 - 0.24	14.64 - 17.93	49.39 - 53.2	5.2 - 9

ACCESSORY LOADS

POWER EXTRACTION0(kW)AT-POWER SETTINGS

STAGE BLEED0% CORE FLOWAT-POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	99.7 - 101.9
TEMPERATURE (K)	276.6 - 286.7
ABS HUMIDITY (kg/kg)	0.00243 - 0.01133

FUEL

SPEC	-
H/C	1.88
AROM (%)	18.2

MANUFACTURER:Rolls-Royce

TEST ORGANIZATION:Rolls-Royce

TEST LOCATION:Derby

TEST DATES:FROM17 Oct 03TO26 Apr 16

REMARKS

1. Data from Certification Report EDNS01000588914 Iss 1
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)