



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION:

Trent 970-84

UNIQUE ID NUMBER:

18RR081

ENGINE TYPE:

(TF)

BYPASS RATIO:

8.5

PRESSURE RATIO (π_{oo}):

38.0

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

338.7

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	0.2	18.0	52.6	8.3
AS % OF ORIGINAL LIMIT	1.1 %	15.3 %	45.4 %	49.1 %
AS % OF CAEP/2 LIMIT (NOx)			56.7 %	
AS % OF CAEP/4 LIMIT (NOx)			63.4 %	
AS % OF CAEP/6 LIMIT (NOx)			70.2 %	
AS % OF CAEP/8 LIMIT (NOx)			79.6 %	

DATA STATUS

-PRE-REGULATION

xCERTIFICATION

-REVISED (SEE REMARKS)

TEST ENGINE STATUS

-NEWLY MANUFACTURED ENGINES

xDEDICATED ENGINES TO PRODUCTION STANDARD

-OTHER (SEE REMARKS)

EMISSIONS STATUS

xDATA 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	2.605	0.02	0.32	38.29	6.1
CLIMB OUT	85	2.2	2.157	0.12	0.31	29.42	6.4
APPROACH	30	4.0	0.720	0.08	1.16	12.09	3
IDLE	7	26.0	0.255	0.04	13.38	5.44	0.6
LTO TOTAL FUEL (kg) or EMISSIONS (g)			965	65	5650	16826	-
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)				0.19	16.68	49.67	7.1
SIGMA (D_p/F_{oo} in g/kN, or SN)				0.06	1.76	1.89	2.7
RANGE (D_p/F_{oo} in g/kN, or SN)				0.13 - 0.26	15.2 - 18.62	47.9 - 51.66	5.2 - 9

ACCESSORY LOADS

POWER EXTRACTION

0

(kW)

AT

-

POWER SETTINGS

STAGE BLEED

0

% CORE FLOW

AT

-

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:

FROM 17 Oct 03

TO 26 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)