



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: BR700-710D5-21
 UNIQUE ID NUMBER: 20BR012
 ENGINE TYPE: MTF

BYPASS RATIO: 4.6
 PRESSURE RATIO (π_{oo}): 33.1
 RATED OUTPUT (F_{oo}) (kN): 68.4

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	4.5	71.6	47.7	4.3
AS % OF ORIGINAL LIMIT	23.1 %	60.7 %	44.9 %	16.5 %
AS % OF CAEP/2 LIMIT (NOx)			56.1 %	
AS % OF CAEP/4 LIMIT (NOx)			61.8 %	
AS % OF CAEP/6 LIMIT (NOx)			66.5 %	
AS % OF CAEP/8 LIMIT (NOx)			73.9 %	

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	0.682	0.02	0.32	26.63	2.85
CLIMB OUT	85	2.2	0.564	0	0.63	20.2	3.54
APPROACH	30	4.0	0.197	0.01	2.84	9.11	1.92
IDLE	7	26.0	0.080	2.13	34.97	3.07	1.7
LTO TOTAL FUEL (kg) or EMISSIONS (g)			275	265	4533	3082	-
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)				3.87	66.23	45.04	3.94
SIGMA (D _p /F _{oo} in g/kN, or SN)				2.42	11.76	0.61	1.39
RANGE (D _p /F _{oo} in g/kN, or SN)				1.8 - 6.5	54.9 - 78.4	44.4 - 45.6	2.4 - 5

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.4 - 102
TEMPERATURE (K)	279.9 - 287.8
AHS HUMIDITY (kg/kg)	0.00539 - 0.00777

FUEL

SPEC	-
H/C	1.938
AROM (%)	15.36

MANUFACTURER: Rolls-Royce
 TEST ORGANIZATION: Rolls-Royce
 TEST LOCATION: Dahlewitz
 TEST DATES: FROM 29 Mar 17 TO 08 Nov 18

REMARKS

1. Data from Certification Report EDNS 01000729874
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' if complies, PR if pre-regulation)