ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: RB211-524D4
UNIQUE ID NUMBER: 1RR007
ENGINE TYPE: TF

BYPASS RATIO: 4.3
PRESSURE RATIO (π_{oo}): 29.7
RATED OUTPUT (F_{oo}) (kN): 231.3

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	114.1	176.7	93.8	13.4
AS % OF ORIGINAL LIMIT	582.1 %	149.7 %	94.4 %	71.2 %
AS % OF CAEP/2 LIMIT (NOx)			118.0 %	
AS % OF CAEP/4 LIMIT (NOx)			141.0 %	
AS % OF CAEP/6 LIMIT (NOx)			160.2 %	
AS % OF CAEP/8 LIMIT (NOx)			188.7 %	

DATA STATUS

x PRE-REGULATION
- 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) HC	CO	NOx	SMOKE NUMBER
TAKE-OFF	100	0.7	2.510	0	0.51	56.9	12.2
CLIMB OUT	85	2.2	2.010	0.42	1.18	41	9.2
APPROACH	30	4.0	0.740	4.8	16.9	9.65	1.8
IDLE	7	26.0	0.300	46.46	73.8	4.11	0.6
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1016	22707	37907	20514	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				3	3	3	3
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				97.8	163.4	88.6	12.2
SIGMA (D_p/F_{oo} in g/kN, or SN)				-	-	-	-
RANGE (D_p/F_{oo} in g/kN, or SN)				-	-	-	-

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101
TEMPERATURE (K)	277
ABS HUMIDITY (kg/kg)	0.006

FUEL

SPEC	AVTUR
H/C	1.91
AROM (%)	20

MANUFACTURER: Rolls Royce Ltd
TEST ORGANIZATION: Rolls Royce Ltd
TEST LOCATION: SINFIN-Derby
TEST DATES: FROM Nov 82 TO -

REMARKS

1. Package 1 combustor
2. SN mode data scaled from 1RR004

If REVISED, this data supersedes databank UID
Compliance with fuel venting requirements: 0 ('x' if complies, PR if pre-regulation)