ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: RB211-535E4
UNIQUE ID NUMBER: 3RR028
ENGINE TYPE: MTF

BYPASS RATIO: 4.1
PRESSURE RATIO (π_{oo}): 25.8
RATED OUTPUT (F_{oo}) (kN): 178.4

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	0.9	27.4	76.0	2.3
AS % OF ORIGINAL LIMIT	4.6 %	23.2 %	83.0 %	11.4 %
AS % OF CAEP/2 LIMIT (NOx)			103.7 %	
AS % OF CAEP/4 LIMIT (NOx)			126.1 %	
AS % OF CAEP/6 LIMIT (NOx)			143.3 %	
AS % OF CAEP/8 LIMIT (NOx)			171.9 %	

DATA STATUS

- \- PRE-REGULATION
- \- 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)

- 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	1.860	0	0.77	44.88	1.73
CLIMB OUT	85	2.2	1.510	0.01	0.5	32.06	1.84
APPROACH	30	4.0	0.520	0.04	1.14	6.78	0.96
IDLE	7	26.0	0.180	0.37	13.31	3.46	0.5
LTO TOTAL FUEL (kg) or EMISSIONS (g)			683	111	4040	11714	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				0.6	22.3	65.6	1.8
SIGMA (D_p/F_{oo} in g/kN, or SN)				-	-	-	-
RANGE (D_p/F_{oo} in g/kN, or SN)				0.57-0.66	22.0-22.6	64.4-66.9	1.5-2.2

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.8
TEMPERATURE (K)	282
ABS HUMIDITY (kg/kg)	0.0037

FUEL

SPEC	AVTUR
H/C	1.9
AROM (%)	18.2

MANUFACTURER: Rolls Royce plc
TEST ORGANIZATION: Rolls Royce plc
TEST LOCATION: SINFIN, Derby
TEST DATES: FROM Apr 91 TO -

REMARKS

Data from Certification Report DNS21233

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