



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: RB211-535C
UNIQUE ID NUMBER: 1RR012
ENGINE TYPE: TF

BYPASS RATIO: 4.5
PRESSURE RATIO (π_{oo}): 21.5
RATED OUTPUT (F_{oo}) (kN): 163.3

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	4.0	40.3	60.4	8.8
AS % OF ORIGINAL LIMIT	20.2 %	34.2 %	72.7 %	42.5 %
AS % OF CAEP/2 LIMIT (NOx)			90.9 %	
AS % OF CAEP/4 LIMIT (NOx)			113.1 %	
AS % OF CAEP/6 LIMIT (NOx)			128.5 %	
AS % OF CAEP/8 LIMIT (NOx)			158.3 %	

DATA STATUS

- PRE-REGULATION
x CERTIFICATION
- REVISED (SEE REMARKS)

TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES
- 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)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	1.800	0.25	0.7	33.71	8
CLIMB OUT	85	2.2	1.470	0.14	0.27	24.89	7
APPROACH	30	4.0	0.540	0.44	0.48	6.37	4.4
IDLE	7	26.0	0.200	1.44	18.79	3.44	2
LTO TOTAL FUEL (kg) or EMISSIONS (g)			711	552	6030	9277	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				3	3	3	-
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				3.4	37.3	57	8
SIGMA (D_p/F_{oo} in g/kN, or SN)				0.4	2.6	2	3
RANGE (D_p/F_{oo} in g/kN, or SN)				3.0-3.8	35.5-40.3	54.1-58.7	4.6-10.1

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	-
TEMPERATURE (K)	281 - 287
ABS HUMIDITY (kg/kg)	0.004-0.005

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 Apr 84 TO May 84

REMARKS

Data from certification report CRR58085

If REVISED, this data supersedes databank UID
Compliance with fuel venting requirements:

0 ('x' if complies, PR if pre-regulation)