ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: SPEY Mk511
UNIQUE ID NUMBER: 8RR043
ENGINE TYPE: MTF

BYPASS RATIO: 0.64
PRESSURE RATIO (π_{oo}): 19.9
RATED OUTPUT (F_{oo}) (kN): 50.7

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	232.4	395.8	71.0	69.7
AS % OF ORIGINAL LIMIT	1,185.5 %	335.4 %	89.0 %	189.2 %
AS % OF CAEP/2 LIMIT (NOx)			111.2 %	
AS % OF CAEP/4 LIMIT (NOx)			120.6 %	
AS % OF CAEP/6 LIMIT (NOx)			125.7 %	
AS % OF CAEP/8 LIMIT (NOx)			138.9 %	

DATA STATUS

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

TEST ENGINE STATUS

x 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	0.889	0.98	1.81	23.27	66.2
CLIMB OUT	85	2.2	0.726	1.32	2.06	19.18	-
APPROACH	30	4.0	0.279	7.23	20.3	7.94	-
IDLE	7	26.0	0.119	56.73	97.96	1.48	-
LTO TOTAL FUEL (kg) or EMISSIONS (g)			386	11179	19810	3513	-
NUMBER OF ENGINES				14	14	13	10
NUMBER OF TESTS				15	15	14	10
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				217	382	69.1	66.2
SIGMA (D_p/F_{oo} in g/kN, or SN)				82.8	66.5	7.39	7.2
RANGE (D_p/F_{oo} in g/kN, or SN)				109-360	233-522	52.5-81.4	50.4-71.3

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	-
TEMPERATURE (K)	-
ABS HUMIDITY (kg/kg)	0.0035-0.0126

FUEL

SPEC	DERD 2494
H/C	1.94
AROM (%)	20

MANUFACTURER: Rolls Royce Ltd
TEST ORGANIZATION: Rolls Royce Ltd
TEST LOCATION: Derby
TEST DATES: FROM 23 May 05 TO 28 May 05

REMARKS

1. SN (char) wrongly calculated originally as 77.9 [1RR015].
2. Corrected in Version 15 to 69.7 and % of standard recalculated.
3. Estimate SN mode data by use of Calvert method

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