ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION:	M45H-01	BYPASS RATIO:	3
UNIQUE ID NUMBER:	1RR001	PRESSURE RATIO (π_{oo}):	16.5
ENGINE TYPE:	TF	RATED OUTPUT (F_{oo}) (kN):	32.4

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	182.6	558.6	32.6	49.8
AS % OF ORIGINAL LIMIT	931.6 %	473.4 %	44.7 %	154.5 %
AS % OF CAEP/2 LIMIT (NOx)			55.8 %	
AS % OF CAEP/4 LIMIT (NOx)			57.0 %	
AS % OF CAEP/6 LIMIT (NOx)			57.5 %	
AS % OF CAEP/8 LIMIT (NOx)			61.2 %	

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	0.498	*	6.2	11.5	46.3
CLIMB OUT	85	2.2	0.416	0.74	7.9	9.3	38.4
APPROACH	30	4.0	0.146	7.4	51	3.6	10.9
IDLE	7	26.0	0.053	59.5	178.4	1.5	2.7
LTO TOTAL FUEL (kg) or EMISSIONS (g)			194	0	17101	1001	–
NUMBER OF ENGINES				5	5	5	5
NUMBER OF TESTS				5	5	5	5
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				162.4	526	31.2	46.3
SIGMA (D_p/F_{oo} in g/kN, or SN)				87.5	99.5	3.8	3.87
RANGE (D_p/F_{oo} in g/kN, or SN)				81.0-293.4	374.3-633.8	26.4-35.9	42-54.5

ACCESSORY LOADS

POWER EXTRACTION	0	(kW)	AT	–	POWER SETTINGS
STAGE BLEED	6	% CORE FLOW	AT	0.07	POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.6-102.1
TEMPERATURE (K)	281 – 293
ABS HUMIDITY (kg/kg)	0.00456-0.00749

FUEL

SPEC	DERD 2494
H/C	1.94
AROM (%)	19

MANUFACTURER:	Rolls Royce Ltd
TEST ORGANIZATION:	Rolls Royce Ltd
TEST LOCATION:	Bristol
TEST DATES:	FROM 24 May 05 TO 30 May 05

REMARKS

Stage bleed on 2 engines

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