



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: Spey 555  
UNIQUE ID NUMBER: 4RR035  
ENGINE TYPE: MTF

BYPASS RATIO: 1  
PRESSURE RATIO ( $\pi_{00}$ ): 15.9  
RATED OUTPUT ( $F_{00}$ ) (kN): 44

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{00}$ (g/kN) or SN	19.3	144.9	56.8	36.0
AS % OF ORIGINAL LIMIT	98.5 %	122.8 %	79.1 %	121.5 %
AS % OF CAEP/2 LIMIT (NOx)			98.9 %	
AS % OF CAEP/4 LIMIT (NOx)			105.5 %	
AS % OF CAEP/6 LIMIT (NOx)			108.5 %	
AS % OF CAEP/8 LIMIT (NOx)			118.8 %	

### DATA STATUS

- PRE-REGULATION  
x 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 (% $F_{00}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
TAKE-OFF	100	0.7	0.735	0.15	1.54	17.33	27.97
CLIMB OUT	85	2.2	0.593	0.22	2.08	13.06	26.4
APPROACH	30	4.0	0.221	0.33	5.78	5.05	24.39
IDLE	7	26.0	0.096	3.41	31.16	2.23	8.09
LTO TOTAL FUEL (kg) or EMISSIONS (g)			313	552	5203	2160	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE $D_p/F_{00}$ (g/kN) or AVERAGE SN (MAX)				12.54	118.08	49.02	27.97
SIGMA ( $D_p/F_{00}$ in g/kN, or SN)				-	-	-	-
RANGE ( $D_p/F_{00}$ in g/kN, or SN)				10.4-15.9	116.5-120.0	46.7-52.8	26.9-28.8

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW)  
STAGE BLEED 0 % CORE FLOW

AT - POWER SETTINGS  
AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.2
TEMPERATURE (K)	287
ABS HUMIDITY (kg/kg)	.0068-.0088

### FUEL

SPEC	AVTUR
H/C	1.87-1.95
AROM (%)	15-20

MANUFACTURER: Rolls-Royce plc  
TEST ORGANIZATION: Rolls-Royce plc  
TEST LOCATION: SINFIN, Derby  
TEST DATES: FROM 09 Jun 05 TO -

### REMARKS

1. Ref RR report CRR10165
2. Transply IIF combustors with standard fuel pump

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

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