ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

```
ENGINE IDENTIFICATION:   RB211-524H-T        BYPASS RATIO:              4.2
UNIQUE ID NUMBER:        4RR037              PRESSURE RATIO (π₀₀):       34
ENGINE TYPE:             MTF                 RATED OUTPUT (F₀₀) (kN):    264
```

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	8.0	51.2	61.5	6.9
AS % OF ORIGINAL LIMIT	40.6 %	43.3 %	57.0 %	37.9 %
AS % OF CAEP/2 LIMIT (NOx)			71.2 %	
AS % OF CAEP/4 LIMIT (NOx)			82.1 %	
AS % OF CAEP/6 LIMIT (NOx)			91.9 %	
AS % OF CAEP/8 LIMIT (NOx)			105.8 %	

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 (%F₀₀)	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg) HC	CO	NOx	SMOKE NUMBER
TAKE-OFF	100	0.7	2.810	0	0.18	31.19	5.2
CLIMB OUT	85	2.2	2.220	0.02	0.14	23.19	5.27
APPROACH	30	4.0	0.770	0	1.05	9.91	1.83
IDLE	7	26.0	0.260	3.31	26.17	4.16	0.53
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1001	1348	10871	13995	–
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)				5.17	41.67	53.09	5.34
SIGMA (D_p/F_{oo} in g/kN, or SN)				–	–	–	–
RANGE (D_p/F_{oo} in g/kN, or SN)				4.39-5.89	39.21-45.02	51.6-54.1	4.7-6.0

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.2
TEMPERATURE (K)	287
ABS HUMIDITY (kg/kg)	.0053-.0089

FUEL

SPEC	AVTUR
H/C	1.95
AROM (%)	16

```
MANUFACTURER:           Rolls-Royce plc
TEST ORGANIZATION:      Rolls-Royce plc
TEST LOCATION:          SINFIN, Derby
TEST DATES:        FROM    Sep 94            TO     -
```

REMARKS

Data from Certification Report DNS38044

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