ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION:	SaM146-1S17	BYPASS RATIO:	4.44
UNIQUE ID NUMBER:	11PJ001	PRESSURE RATIO (π_{oo}):	21.85
ENGINE TYPE:	MTF	RATED OUTPUT (F_{oo}) (kN):	69.21

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	3.1	78.6	42.8	14.8
AS % OF ORIGINAL LIMIT	15.8 %	66.6 %	51.1 %	56.5 %
AS % OF CAEP/2 LIMIT (NOx)			63.9 %	
AS % OF CAEP/4 LIMIT (NOx)			73.7 %	
AS % OF CAEP/6 LIMIT (NOx)			79.7 %	
AS % OF CAEP/8 LIMIT (NOx)			91.9 %	

DATA STATUS

- \- PRE-REGULATION
- x 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)

- \- OUT OF PRODUCTION
- \- 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	0.791	0.03	0.26	16.37	12.6
CLIMB OUT	85	2.2	0.653	0.04	0.36	13.89	11.7
APPROACH	30	4.0	0.228	0.06	5.07	7.1	0.1
IDLE	7	26.0	0.097	1.05	29.36	3.73	0.1
LTO TOTAL FUEL (kg) or EMISSIONS (g)			326	167	4776	2695	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				5	5	5	5
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				2.4	69	38.9	12.6
SIGMA (D_p/F_{oo} in g/kN, or SN)				-	-	-	-
RANGE (D_p/F_{oo} in g/kN, or SN)				-	-	-	-

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.43 -101.26
TEMPERATURE (K)	289.2 - 302.5
ABS HUMIDITY (kg/kg)	0.00619 - 0.01331

FUEL

SPEC	JET-A1
H/C	1.924
AROM (%)	16.7 - 17.5

MANUFACTURER: PowerJet S.A.
TEST ORGANIZATION: PowerJet S.A.
TEST LOCATION: Test facilities Snecma in Villaroche, France and NPO-Saturn in Rybinsk, Russia
TEST DATES: FROM Jul 09 TO May 11

REMARKS

1. Test engine 146-006/1A and test engine 146-101/3
2. Certification report CR-037 Rev.1 and CR-037 S1
3. Certification in accordance with Part III, Chapter 2, of Amendment 6 of ICAO Annex 16 Vol. II.
4. NOx levels in accordance with Part III, Chapter 2, 2.3.2 d) (CAEP/6)

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