ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION:	ALF 502R-5	BYPASS RATIO:	5.6
UNIQUE ID NUMBER:	1TL003	PRESSURE RATIO (π_{oo}):	12
ENGINE TYPE:	TF	RATED OUTPUT (F_{oo}) (kN):	31

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	13.6	97.8	34.8	16.9
AS % OF ORIGINAL LIMIT	69.4 %	82.9 %	54.4 %	51.8 %
AS % OF CAEP/2 LIMIT (NOx)			68.0 %	
AS % OF CAEP/4 LIMIT (NOx)			69.1 %	
AS % OF CAEP/6 LIMIT (NOx)			69.6 %	
AS % OF CAEP/8 LIMIT (NOx)			74.1 %	

DATA STATUS

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

TEST ENGINE STATUS

- x NEWLY MANUFACTURED ENGINES
- \- 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	0.358	0.06	0.3	13.35	13.5
CLIMB OUT	85	2.2	0.296	0.053	0.25	10.56	12.7
APPROACH	30	4.0	0.103	0.217	7.1	6.6	5.7
IDLE	7	26.0	0.041	5.39	40.93	3.78	2.3
LTO TOTAL FUEL (kg) or EMISSIONS (g)			143	351	2796	1017	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				3	3	3	3
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				11.7	90.4	32.9	15.4
SIGMA (D_p/F_{oo} in g/kN, or SN)				-	-	-	-
RANGE (D_p/F_{oo} in g/kN, or SN)				-	-	-	-

ACCESSORY LOADS

POWER EXTRACTION	0	(kW)	AT	-	POWER SETTINGS
STAGE BLEED	20	% CORE FLOW	AT	8.81kN	POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.3-102.4
TEMPERATURE (K)	288 - 293
ABS HUMIDITY (kg/kg)	0.0088-0.0108

FUEL

SPEC	0.81
H/C	1.925
AROM (%)	19.7

MANUFACTURER: Textron Lycoming
TEST ORGANIZATION: Textron Lycoming
TEST LOCATION: Stratford, CT
TEST DATES: FROM 26 Jul 82 TO 21 Sep 82

REMARKS

Calculated using L-2 and R-3 data + L5 performance

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