



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: ALF 502L-2
UNIQUE ID NUMBER: 1TL001
ENGINE TYPE: TF

BYPASS RATIO: 5.1
PRESSURE RATIO (π_{oo}): 13.15
RATED OUTPUT (F_{oo}) (kN): 33.4

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	17.8	116.1	37.2	12.5
AS % OF ORIGINAL LIMIT	90.8 %	98.4 %	56.1 %	39.1 %
AS % OF CAEP/2 LIMIT (NOx)			70.1 %	
AS % OF CAEP/4 LIMIT (NOx)			72.0 %	
AS % OF CAEP/6 LIMIT (NOx)			72.8 %	
AS % OF CAEP/8 LIMIT (NOx)			77.8 %	

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)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	0.400	0.02	0.4	13.43	8.3
CLIMB OUT	85	2.2	0.324	0.023	0.3	12.03	12.7
APPROACH	30	4.0	0.117	0.183	3.97	6.47	8.7
IDLE	7	26.0	0.048	6.65	45.63	3.38	2.9
LTO TOTAL FUEL (kg) or EMISSIONS (g)			162	501	3527	1173	-
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)				15.3	107.3	35.2	11.4
SIGMA (D_p/F_{oo} in g/kN, or SN)				2.59	6.47	3.5	2.91
RANGE (D_p/F_{oo} in g/kN, or SN)				13.2-18.2	101.5-114.3	32.7-39.2	8.1-13.5

ACCESSORY LOADS

POWER EXTRACTION 0 (kW)
STAGE BLEED 20 % CORE FLOW

AT - POWER SETTINGS
AT 9.49kN POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.7
TEMPERATURE (K)	290 - 300
AHS HUMIDITY (kg/kg)	0.0094-0.0184

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

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

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