



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: GE90-113B BYPASS RATIO: 7.2
UNIQUE ID NUMBER: 21GE183 PRESSURE RATIO (π_{00}): 41.8
ENGINE TYPE: TF RATED OUTPUT (F_{00}) (kN): 504.9

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{00} (g/kN) or SN	5.1	43.2	70.2	3.8
AS % OF ORIGINAL LIMIT	26.2 %	36.6 %	56.8 %	24.7 %
AS % OF CAEP/2 LIMIT (NOx)			71.0 %	
AS % OF CAEP/4 LIMIT (NOx)			77.5 %	
AS % OF CAEP/6 LIMIT (NOx)			85.0 %	
AS % OF CAEP/8 LIMIT (NOx)			95.2 %	

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)
- OUT OF PRODUCTION
- OUT OF SERVICE

MEASURED DATA

MODE	POWER SETTING (% F_{00})	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	4.430	0.03	0.13	48.35	3.2
CLIMB OUT	85	2.2	3.484	0.02	0.14	35.53	2.2
APPROACH	30	4.0	1.054	0.05	2.295	15.9	1.58
IDLE	7	26.0	0.338	3.73	35.04	5.475	1.36
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1426	1994	19142	32245	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				6	6	6	6
AVERAGE D_p/F_{00} (g/kN) or AVERAGE SN (MAX)				3.95	37.92	63.86	3.2
SIGMA (D_p/F_{00} in g/kN, or SN)				0.26	1.34	1.12	1.44
RANGE (D_p/F_{00} in g/kN, or SN)				3.62 - 4.23	36.18 - 39.43	62.03 - 65.3	0.70 - 4.22

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.06 - 98.32
TEMPERATURE (K)	290.7 - 298.7
ABS HUMIDITY (kg/kg)	0.0051 - 0.0094

FUEL

SPEC	Jet A
H/C	1.90 - 1.96
AROM (%)	11.9 - 16.4

MANUFACTURER: GE Aircraft Engines
TEST ORGANIZATION: GE Aviation
TEST LOCATION: PTO, Ohio
TEST DATES: FROM 23 May 03 TO 26 May 16

REMARKS

- Engine S/N 906-107/01 and ESN 901-007/01, GE Report R2019EA459.
- Engine S/N 906-107/01 smoke numbers corrected for fuel aromatics volume, GE Report R2003AE462.
- Smoke Number for each LTO mode is average of max SN for test points around that power setting.
- Average SN (MAX) is the average of the maximum smoke number point from each run.
- Certification in accordance with Part III, Chapter 2, of Amendment 9 of ICAO Annex 16 Vol. II.

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