



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: GE90-77B
UNIQUE ID NUMBER: 3GE063
ENGINE TYPE: TF

BYPASS RATIO: 8.58
PRESSURE RATIO (π_{oo}): 35.3
RATED OUTPUT (F_{oo}) (kN): 363.42

REGULATORY DATA

| CHARACTERISTIC VALUE: | HC | CO | NOx | SMOKE NUMBER |
|----------------------------|-------|--------|--------|--------------|
| D_p/F_{oo} (g/kN) or SN | 0.9 | 20.9 | 58.3 | 0.6 |
| AS % OF ORIGINAL LIMIT | 4.6 % | 17.7 % | 52.7 % | 3.6 % |
| AS % OF CAEP/2 LIMIT (NOx) | | | 65.9 % | |
| AS % OF CAEP/4 LIMIT (NOx) | | | 75.1 % | |
| AS % OF CAEP/6 LIMIT (NOx) | | | 83.8 % | |
| AS % OF CAEP/8 LIMIT (NOx) | | | 96.0 % | |

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 | 2.832 | 0.04 | 0.15 | 40.65 | 1.9 |
| CLIMB OUT | 85 | 2.2 | 2.332 | 0.04 | 0.17 | 31.89 | 1.8 |
| APPROACH | 30 | 4.0 | 0.787 | 0.07 | 1.3 | 15.64 | 1.8 |
| IDLE | 7 | 26.0 | 0.281 | 0.56 | 15.26 | 5.45 | 1.8 |
| LTO TOTAL FUEL (kg) or EMISSIONS (g) | | | 1054 | 276 | 7005 | 19995 | - |
| NUMBER OF ENGINES | | | | 3 | 3 | 3 | 3 |
| NUMBER OF TESTS | | | | 5 | 5 | 5 | 5 |
| AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX) | | | | 0.75 | 19.28 | 55.03 | 0 |
| SIGMA (D_p/F_{oo} in g/kN, or SN) | | | | - | - | - | - |
| RANGE (D_p/F_{oo} in g/kN, or SN) | | | | 0.44-1.07 | 16.9-21.3 | 51.0-57.9 | 0.0-1.92 |

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

| | |
|----------------------|-------------|
| BAROMETER (kPa) | 97.52-98.62 |
| TEMPERATURE (K) | 283-301 |
| ABS HUMIDITY (kg/kg) | .0036-.0151 |

FUEL

| | |
|----------|-----------|
| SPEC | Jet A |
| H/C | 1.91-1.94 |
| AROM (%) | 18.1-19.3 |

MANUFACTURER: GE
TEST ORGANIZATION: GE90 Eval Engineering
TEST LOCATION: Site IIID, PTO, Peebles, Ohio, USA
TEST DATES: FROM 24 Apr 97 TO 19 Jun 97

REMARKS

- GE Report R96AEB292.
- Engine S/S 900-173, 900-166 & 900-167
- DAC II combustor

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

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