



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: GE90-90B  
UNIQUE ID NUMBER: 9GE123  
ENGINE TYPE: TF

BYPASS RATIO: 8.36  
PRESSURE RATIO ( $\pi_{00}$ ): 40.32  
RATED OUTPUT ( $F_{00}$ ) (kN): 410.82

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{00}$ (g/kN) or SN	4.9	44.1	82.2	3.1
AS % OF ORIGINAL LIMIT	24.8 %	37.4 %	68.1 %	19.0 %
AS % OF CAEP/2 LIMIT (NOx)			85.2 %	
AS % OF CAEP/4 LIMIT (NOx)			93.8 %	
AS % OF CAEP/6 LIMIT (NOx)			103.3 %	
AS % OF CAEP/8 LIMIT (NOx)			116.2 %	

### DATA STATUS

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

### TEST ENGINE STATUS

- 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)  
x OUT OF PRODUCTION (DATE: - )  
- OUT OF SERVICE

### MEASURED DATA

MODE	POWER SETTING (% $F_{00}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
TAKE-OFF	100	0.7	3.436	0.05	0.33	53.58	2.38
CLIMB OUT	85	2.2	2.784	0.04	0.32	41.82	0.81
APPROACH	30	4.0	0.899	0.05	1.54	16.24	1.01
IDLE	7	26.0	0.300	2.71	30.5	5.41	0.96
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1195	1298	14766	29136	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE $D_p/F_{00}$ (g/kN) or AVERAGE SN (MAX)				3.16	35.94	70.92	2.38
SIGMA ( $D_p/F_{00}$ in g/kN, or SN)				0.29	1.13	0.54	0.81
RANGE ( $D_p/F_{00}$ in g/kN, or SN)				2.96-3.50	35.10-37.22	70.41-71.49	1.54-3.17

### ACCESSORY LOADS

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

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.41 - 98.66
TEMPERATURE (K)	277.2 - 281.3
AHS HUMIDITY (kg/kg)	0.0015 - 0.0043

### FUEL

SPEC	Jet A1
H/C	-
AROM (%)	15.0 - 16.0

MANUFACTURER: GE  
TEST ORGANIZATION: General Electric Peebles Test Operation  
TEST LOCATION: Site 6A  
TEST DATES: FROM 30 Nov 07 TO 08 Dec 07

### REMARKS

1. GE Aviation Report R2007AE851
2. Engine serial number 900-505/1
3. Turbomachinery incorporating 2D aero
4. Performance Enhanced Combustor (PEC)

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

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