

## AIRCRAFT ENGINE CHARACTERISTICS SUMMARY

## MFG. DESIGNATION

7E-J79-8, -8A, -8B,  
-8C

## TURBOJET

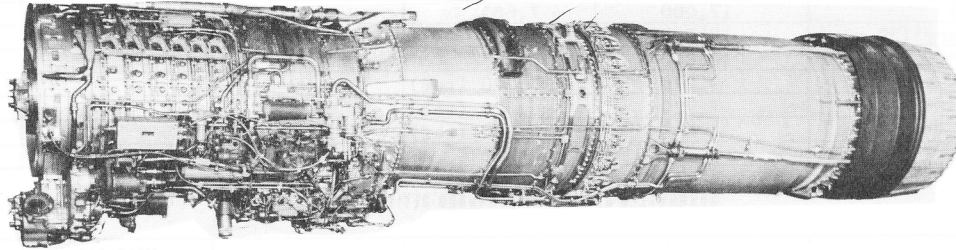
J79-GE-8, -8A, -8B, -8C

General Electric Co.

Cincinnati, Ohio

Spec E-763-C (Approved)

Dated 1 April 1966



### GENERAL DESCRIPTION

The J79-GE-8, -8A, -8B and -8C engines are gas turbine engines featuring a high pressure ratio, single rotor compressor with variable inlet guide vanes and six stages of variable stator vanes, a can annular combustor, a high inlet temperature three stage turbine, a third stage turbine blade guard in the upper half of the turbine casing, and a high augmentation ratio afterburner with a variable area convergent-divergent ejector nozzle.

### AVAILABILITY

Engine Mock-up Inspection . . . . . November 1959  
 Experimental Engine . . . . . December 1959  
 Mock-up for Aircraft. . . . . March 1960  
 Installation Engine . . . . . October 1960  
 50 Hr. Preliminary Flight Rating Test .Not Applicable  
 150 Hr. Endurance Test (JP-5) . . . . . May 1960  
 150 Hr. Endurance Test (JP-4) . . . . . July 1960

### PROCUREMENT

Final Price (CY 66) - \$147,782

### STATUS

Production completed.

### SPECIFIC FEATURES

<p>Compressor---Axial flow, single spool, 17 stage; inlet guide vanes and first 6 stages of stator vanes are variable          Maximum Design Pressure Ratio (SLS)---13.0:1          Maximum Allowable Air Bleed---9.5%          Maximum Airflow (SLS)---169 lb/sec          Combustion Chamber---10 unit, can-annular, through flow type          Turbine---Axial flow, three stage, with integrated turbine impingement starting manifold at second stage          Turbine Cooling---First two stages of stator vanes air cooled          Afterburner---Core-annulus type</p>	<p>Exhaust Nozzle---Convergent-divergent, variable area          Maximum Allowable Exhaust Temperature---1175°F at maximum and intermediate thrust          Ignition---Capacitor discharge type, high energy main - low energy A/B          Power Control---Hydromechanical; integrated main fuel, afterburner fuel and nozzle area control system          Fuel---MIL-T-5624, Grade JP-5, (Alternate) JP-4          Oil---MIL-L-23699, MIL-L-7808 (below -40°F)          Accessory Drive Provisions---Seven          Thrust to Weight Ratio---4.6:1</p>
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### SIZE & WEIGHT

Length---208.5 inches  
 Maximum Diameter---35.2 inches (engine), 38.2 inches (afterburner)  
 Dry Weight---3665 lbs. (-8, -8A); 3672 lbs. (-8B, -8C)

### UTILIZATION

F-4A, F-4B, F-4J Fighter Aircraft (two GE-8 engines each); A-5A Attack, F-4A, F-4B, F-4G, F-4J Fighter, RA-5C, RF-4B Reconnaissance, NF-4J Special Test Aircraft (two GE -8A or -8B engines each); RA-5C Reconnaissance Aircraft (two GE-8C engines)

**PERFORMANCE**

**GUARANTEED RATINGS AT STANDARD SEA LEVEL STATIC CONDITIONS**

RATING	THRUST (lb)	RPM	SFC (lb/hr/lb)	MEAS. GAS TEMP. (°F)	AIRFLOW (lb/sec)
MAXIMUM (30 min)	17,000	7,685	1.93	1160	169
INTERMEDIATE (Military) (30 min)	10,900	7,685	0.86	1160	169
MAXIMUM CONTINUOUS (Normal)	10,300	7,385	0.83	---	165
90% MAX. CONTINUOUS	9,270	7,220 (ref)	0.80		
75% MAX. CONTINUOUS	7,720	6,820 (ref)	0.78		
IDLE	410	5,000 (ref)	3.95		

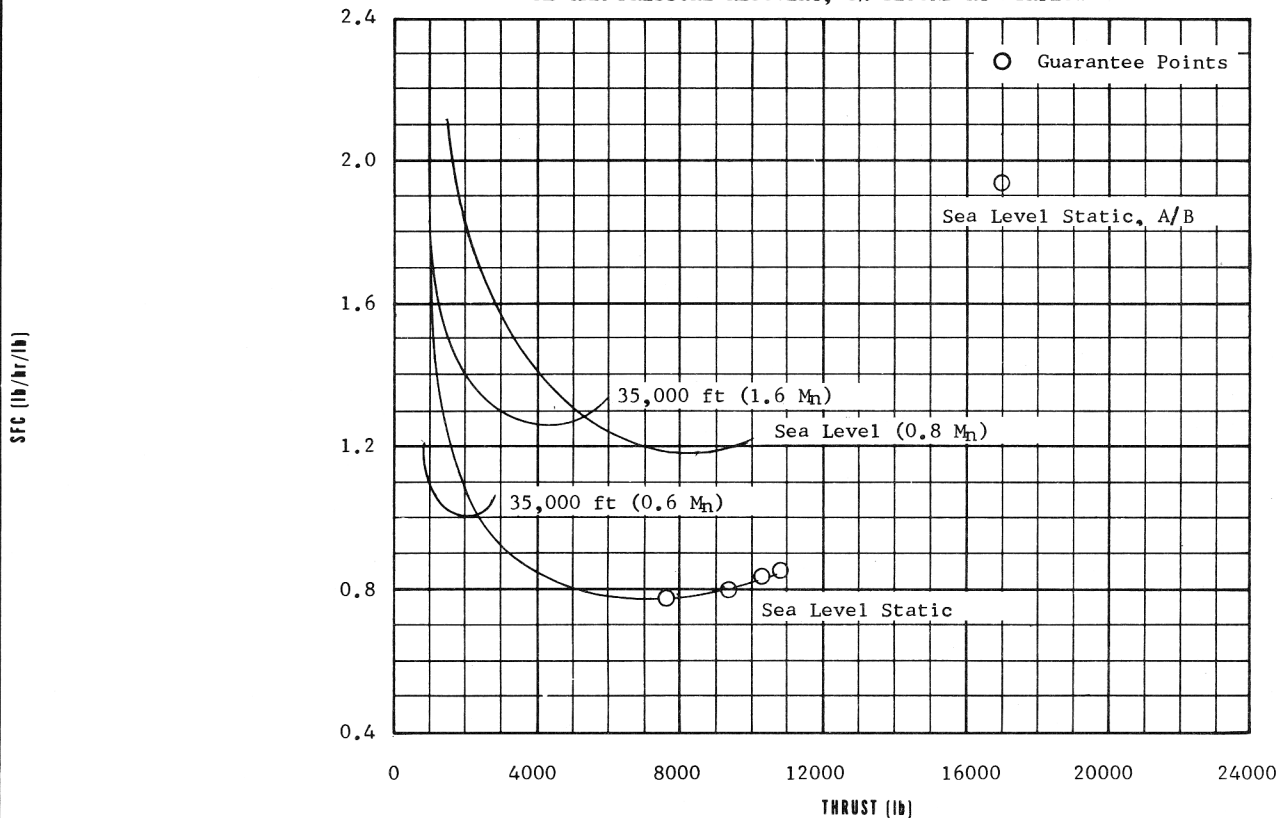
**GUARANTEED RATINGS AT STANDARD ALTITUDE CONDITIONS**

RATING	ALTITUDE (ft)	KTAS	THRUST (lb)	SFC (lb/hr/lb)	MEAS. GAS TEMP. (°F)	AIRFLOW (lb/sec)
MAXIMUM (2 hrs)	35,000	1,150	16,700	2.09	1160	188
INTERMEDIATE (Military) (2 hrs)	35,000	690	4,550	1.17	1160	96
MAXIMUM CONTINUOUS (Normal)	35,000	518	2,600	1.05	---	65

**GUARANTEED OPERATING LIMITS**

ABSOLUTE ALTITUDE (FEET)	75,000 at 2.46 ram pressure ratio	MAXIMUM STARTING ALTITUDE JP-4	48,500 ft
LIMITING MACH NO. AT SEA LEVEL STD. CONDITIONS	1.13	MAXIMUM STARTING ALTITUDE JP-5	40,000 ft
Absolute Altitude of A/B	75,000 ft at 4.68 ram pressure ratio		

ARDC MODEL ATMOSPHERE 1956  
MS RAM PRESSURE RECOVERY, 8% SECONDARY AIRFLOW



**NOTES**

The J79-GE-8, -8A, -8B, -8C engines are the same in configuration and performance except that the J79-GE-8A, -8B, -8C engines incorporate provisions for anti-icing of the airframe supplied inlet bullet nose. The J79-GE-8B and -8C include an Approach Power Compensation System power lever control to provide the desired power lever position from either manual or automatic inputs. The J79-GE-8C includes a Speed Modulated Afterburner Thrust System (SMATS) and has some small changes in performance.