

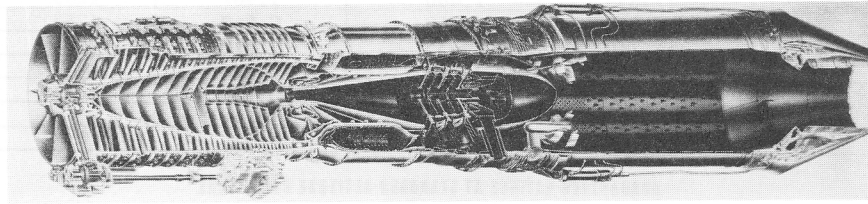
AIRCRAFT ENGINE CHARACTERISTICS SUMMARY

MFG. DESIGNATION
7E-J79-10

TURBOJET

J79-GE-10

General Electric Company
Cincinnati, Ohio
Spec E-2039-A (Approved)
Dated 1 March 1967



GENERAL DESCRIPTION

The J79-GE-10 is a turbojet engine 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 over the upper half of the turbine casing, and a high augmentation ratio afterburner with a variable area convergent-divergent jet exhaust nozzle. It is an advanced version of the J79-GE-8, providing increased thrust for improved take-off, climb and acceleration together with reduced fuel consumption for increased range.

AVAILABILITY

Engine Mock-up InspectionNot Applicable
Experimental EngineJune 1964
Mock-up for Aircraft.October 1964
Installation Engine
50 Hr. Preliminary Flight Rating Test .Not Applicable
150 Hr. Endurance Test (JP-5)January 1967
150 Hr. Endurance Test (JP-4)January 1967

PROCUREMENT

Final Price (CY 66)---\$185,173

STATUS

In production.

SPECIFIC FEATURES

<p>Compressor---Axial flow, single spool, 17 stages; inlet guide vanes and first 6 stages of stator vanes are variable Maximum Design Pressure Ratio (SLS)---13.5:1 Maximum Allowable Air Bleed---9.5% Maximum Airflow (SLS)---170 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 guided expansion nozzle Maximum Allowable Exhaust Temperature---1270°F at max, intermediate and max continuous thrust Ignition---Non-continuous capacitor discharge type, 14 joule main-2joule 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---208.7 inches
Maximum Diameter---35.2 inches (engine), 39.1 inches (afterburner)
Dry Weight---3855 lbs.

UTILIZATION

F-4J Fighter, RF-4J Reconnaissance, NF-4J Special Test Aircraft (two engines each)

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	17,859	7,460	1.967	1255	170
INTERMEDIATE (Military)	11,870	7,460	0.840	1255	170
MAXIMUM CONTINUOUS (Normal)	11,110	7,435	0.810	---	169
90% MAX. CONTINUOUS	10,000	7,140 (ref)	0.790		
75% MAX. CONTINUOUS	8,330	6,900 (ref)	0.760		
IDLE	350	5,000 (ref)	1.130 lb/hr		

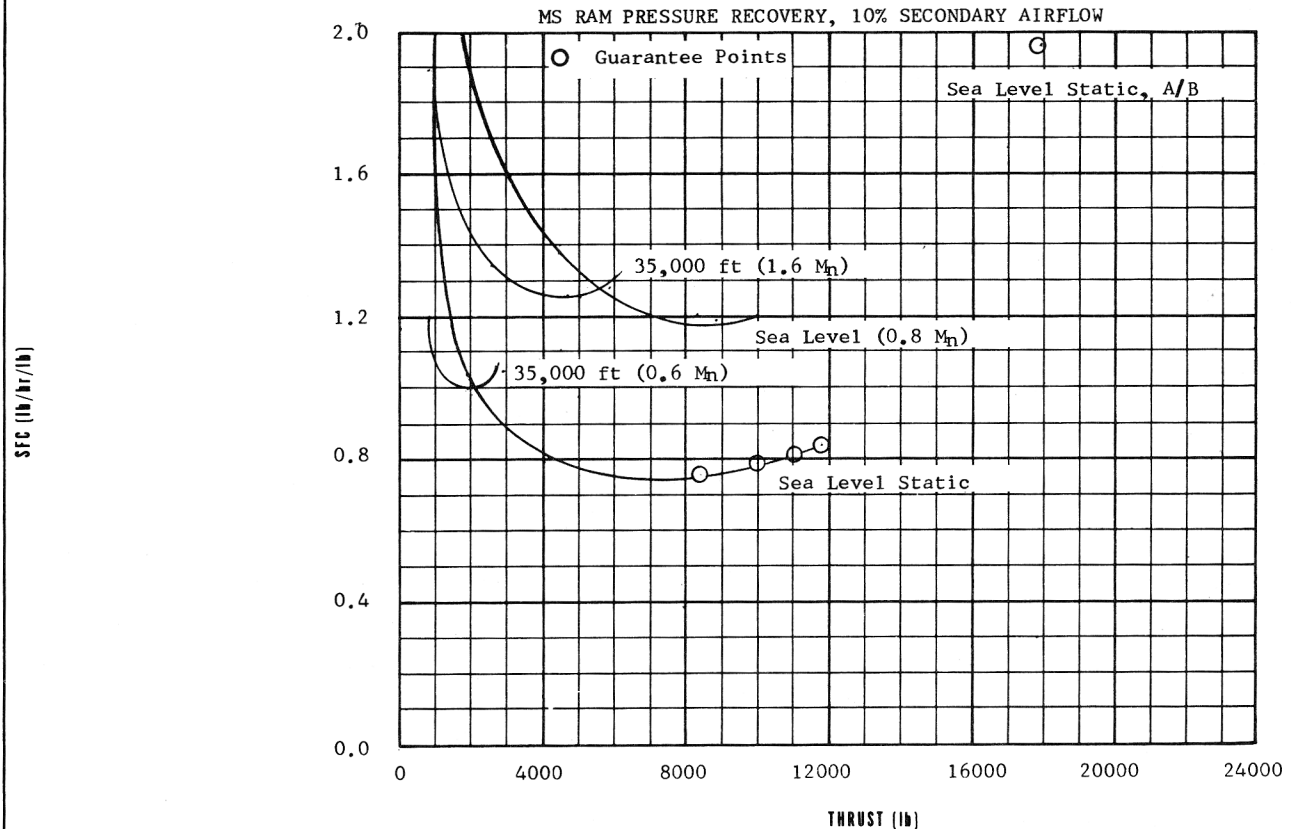
GUARANTEED RATINGS AT STANDARD ALTITUDE CONDITIONS

RATING	ALTITUDE (ft)	FLIGHT MACH NO.	THRUST (lb)	SFC (lb/hr/lb)	MEAS. GAS TEMP. (°F)	AIRFLOW (lb/sec)
MAXIMUM	35,000	2.0	18,690	2.05	1212	198
INTERMEDIATE (Military)	35,000	1.2	5,350	1.08	1255	97
CRUISE	35,000	0.9	2,600	0.95	---	65

GUARANTEED OPERATING LIMITS

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

ARDC MODEL ATMOSPHERE 1959



NOTES