

*Deleted
prior to 2nd Ed, Add 1/13;
15 APR 53*

Unclassified
CONFIDENTIAL
*DL
Wright Aero.
XRJ51-W-1*

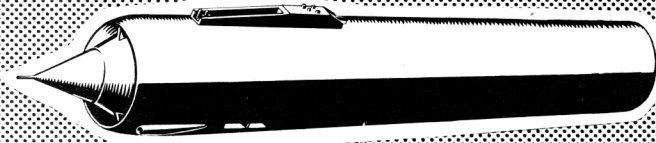
Aircraft Engine Characteristics Summary

RAM-JET

XRJ51-W-1

(None)

Wright Aero.
Spec. No: None



FEATURES

Supersonic fixed geometry Ram-jet with turbine-driven fuel pump, power controls, and ignition system located in the diffuser centerbody.

AVAILABILITY

Experimental Engine.....Dec 1949*

Installation Engine.....Apr 1952

* Burner only

PROCUREMENT

NUMBER TO BE DELIVERED DURING FISCAL YEAR

CONTRACTUAL

CONTRACT	FUNDS	FY
AC-20179	\$ 800,000	1948
AC-20179	\$2,256,398	1949
AF-9000	\$3,349,143	1950
Supp. 1	\$ 99,731	1950

Prototype unit cost: Unknown

STATUS

Engine under design.
Components under development.

GENERAL

Diffuser Type: .. Centerbody type with single external oblique shock

Area Variable: No

Design Point Total Pressure Recovery: .. 62%

Combustion Chamber Type: Piloted swirl shroud

Inside Diameter at Combustion Chamber Entrance: 38 in.

Ignition Limits: Unknown

Design Point Combustion Efficiency: . Unknown

Exhaust Nozzle Type: Fixed, throat area 6.07 sq ft

Design Point Nozzle Efficiency: Unknown

Type Ignition: Electric spark

Type Fuel Injection: Variable area nozzles

Type Thrust Control: Variable F/A

Fuel Spec: MIL-F-5572 (Grade 100/130)

Accessory Drive Provisions: Fuel pump

SIZE & WEIGHT

Length (overall): 220.3 in.
Diameter (outside): 45.0 in.
Weight (with accessories): 1300 lb

UTILIZATION

Two XRJ51-W-1 Ram-jets used to power the MX-770 missile.

Classification cancelled or changed to *Unclassified*

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Signature and Grade: *8 Aug 67*

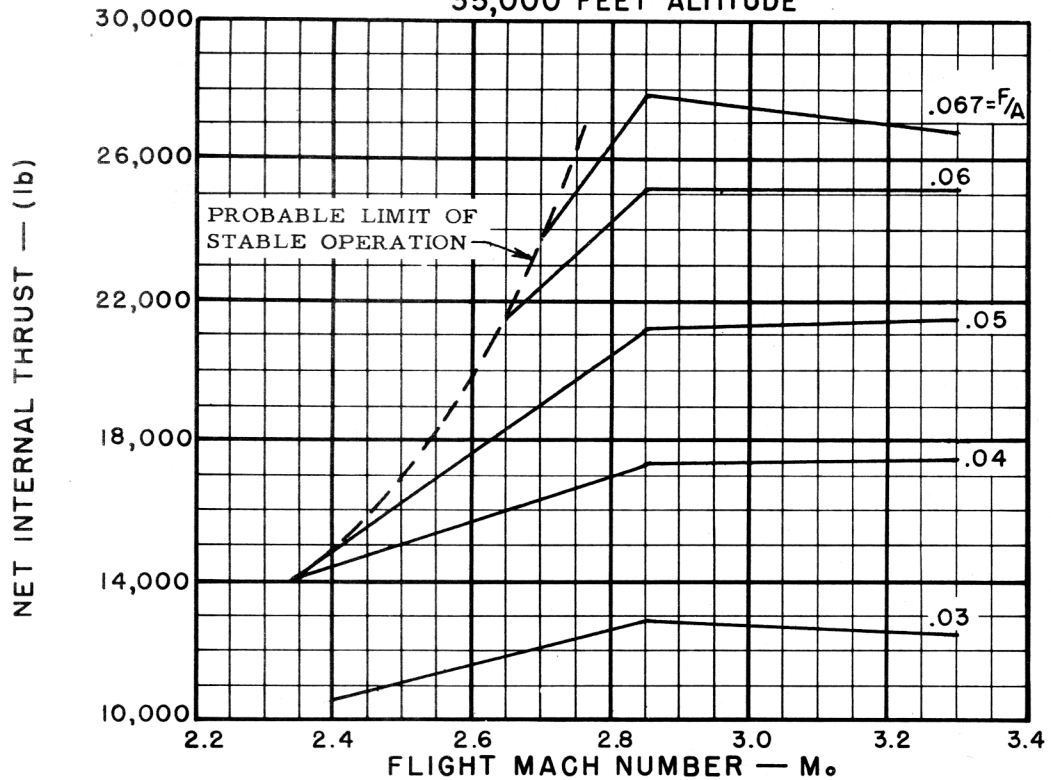
Performance

ESTIMATED DESIGN POINT PERFORMANCE

Mach number 2.85
 Altitude 72,000 ft.
 Net internal thrust 4300 lb.
 Specific fuel consumption 3.2 lb/lb/hr.

(SEE NOTES)

NACA STANDARD TEMPERATURE & PRESSURE 35,000 FEET ALTITUDE



NOTES

Performance data plotted for 83% combustion efficiency, based on temperature rise and supercritical diffuser operation. Critical diffuser operation shown by line marked "probable limit of stable operation".