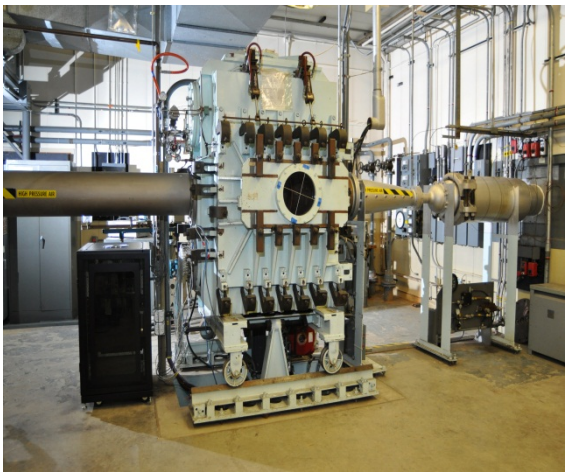
Facility Factsheet

Mach 6 High Reynolds Number Facility

Description: The Mach 6 High Reynolds Number Facility is an intermittent, blow-down hypersonic wind tunnel with an axisymmetric 12 inch exit diameter nozzle producing a uniform Mach 6 flow in an open jet test section. The open jet has a core flow diameter of 10 inches and the length can be varied from 17 inches to 28 inches. The reservoir pressure can be varied to simulate flight at Mach 6 over an altitude range from 30,000 ft. to 60,000 ft. Primary customers are military science and technology development programs.



Capabilities:

Test Conditions:

Mach Number: 5.85
Reynolds Number Range: (10 to 30 million/ft)
Stagnation Temp. Range: 900 – 1100 ^{o}R
Test Section: 10 in. diameter core flow x 28 in. Long

Test Capabilities:

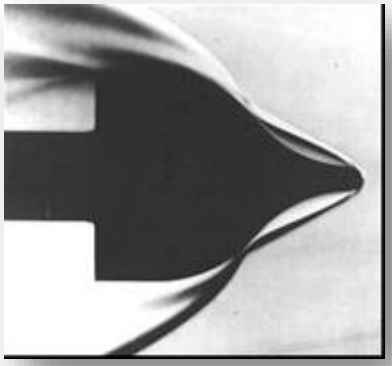
Run times: 2 to 4 minutes
Retractable Pitch Sector, Fixed Strut; Internal Balances
Angle-of-Attack Range ($-20^{o} < \alpha < 20^{o}$)
Data Acquisition: 128 Pressure channels, 64 Thermocouple channels, 144 analog channels

Flow Diagnostics: Schlieren, Oil Flow, Probe Drive System, TSP, IR thermography

Examples of Current/Past Programs: Facility was returned to operation in 2014 and current programs include measurements of heat transfer, boundary layer transition, configuration performance/stability/control, and advanced diagnostic methods. Past programs included Re-entry Vehicle Research, Space Access, Space Shuttle, NASP, and BMO.

Cost/Scheduling Information: To be determined on case by case basis.

Contacts: Primarily in-house and related DoD contractor research. Other U.S. Government agency, DoD contractor and commercial customer programs upon request. Contact: 937-713-6678



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