LANGLEY RESEARCH CENTER

FACILITY LOCATION	Hampton, Virginia 23665
FACILITY NUMBER	1265
FACILITY NAME	8-Foot High-Temperature Structures Tunnel
FUNCTIONAL NAME	Wind Tunnel, Hypersonic, 8-Ft
TECHNOLOGICAL AREAS	Studies of structures and thermal-protection systems for hypersonic flight vehicles

INITIAL COST	$ 10,537 K	YR. BUILT	1964	STATUS CODE	Active
ACCUM. COST	$ 11,861 K	NASA B.O.D.	1964	OWNER CODE	NASA
LIFE EXPECT.	Indef.			OPER. CODE	NASA

CONTRACTOR NAME
(if contr. oper.)

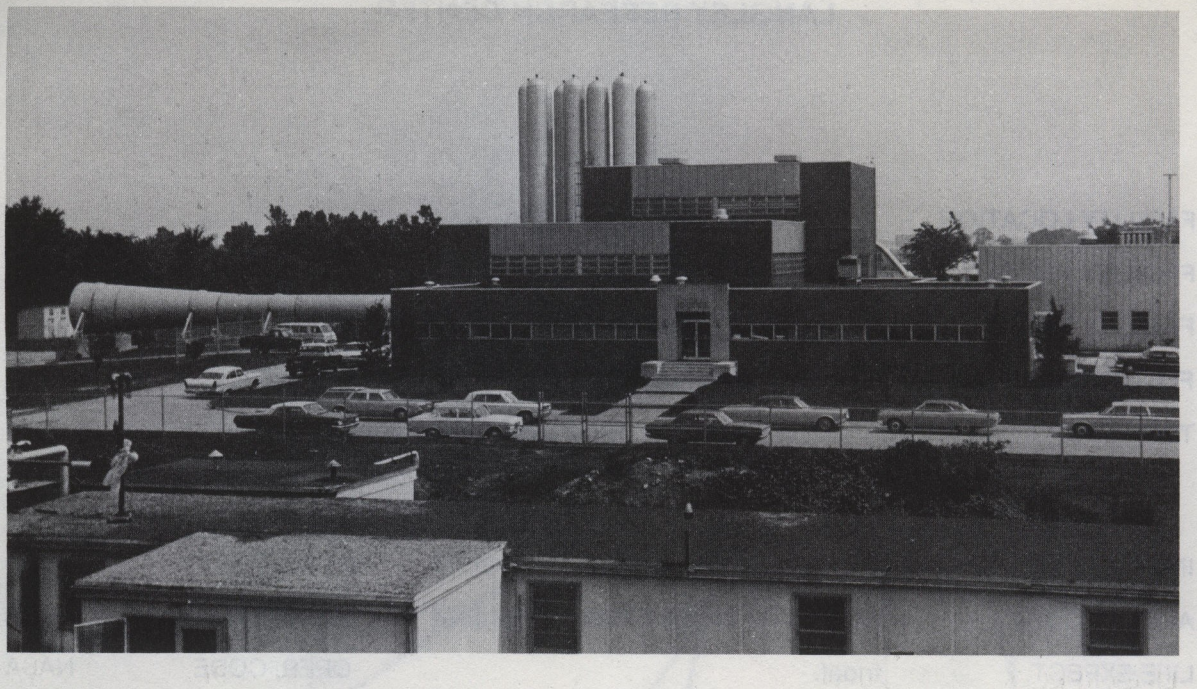
POTENTIAL

PLANS

OTHER INFO SOURCES

COGNIZANT ORG. COMPONENT	Structures and Dynamics Division
LOCAL CONTACT FOR FURTHER INFO	Chief, Research Facilities Engineering Division, Code 56.000; (804) 827-3171

January 1974



DESCRIPTION

This is a blowdown-type facility which achieves the required energy level for flight simulation by burning methane in air under pressure and using the resulting combustion products as the test medium. The nozzle is a conical-contoured, axisymmetrical design with an exit diameter of 8 ft. Model mounting is semispan or sting with insertion after the tunnel is started. A single-stage air ejector is used as a downstream pump to permit low-pressure or high-altitude simulation.

CHARACTERISTICS

Combustor Stagnation Pressure, psia: 500 to 3500

Stagnation Temperature, °R: 2400 to 3800

Mach Number: 5.8 to 7.5

Static Pressure, psia: .05 to .40

Static Temperature, °R: 300 to 500

Dynamic Pressure, lb/ft^2: 160 to 2000

Reynolds Number, per ft: 0.30×10^6 to 3.0×10^6

Testing Time, sec: 15 to 140

Maximum Model Diameter, in.
Hemispherical Body: 24
Streamlined Body: 40

The maximum testing time of 140 sec is obtainable at a stagnation pressure of 2200 psia.