

LANGLEY RESEARCH CENTER

FACILITY LOCATION Hampton, Virginia 23665
FACILITY NUMBER 648
FACILITY NAME Transonic Dynamics Tunnel
FUNCTIONAL NAME Wind Tunnel, Transonic Dynamics
TECHNOLOGICAL AREAS Flutter, buffeting, ground wind loads, gust loads, and other dynamic characteristics

INITIAL COST	\$ 1,100 K	YR. BUILT	1938	STATUS CODE	Active
ACCUM. COST	\$ 13,166 K	NASA B.O.D.	1959	OWNER CODE	NASA
LIFE EXPECT.	Indef.			OPER. CODE	NASA

CONTRACTOR NAME
(if contr. oper.)

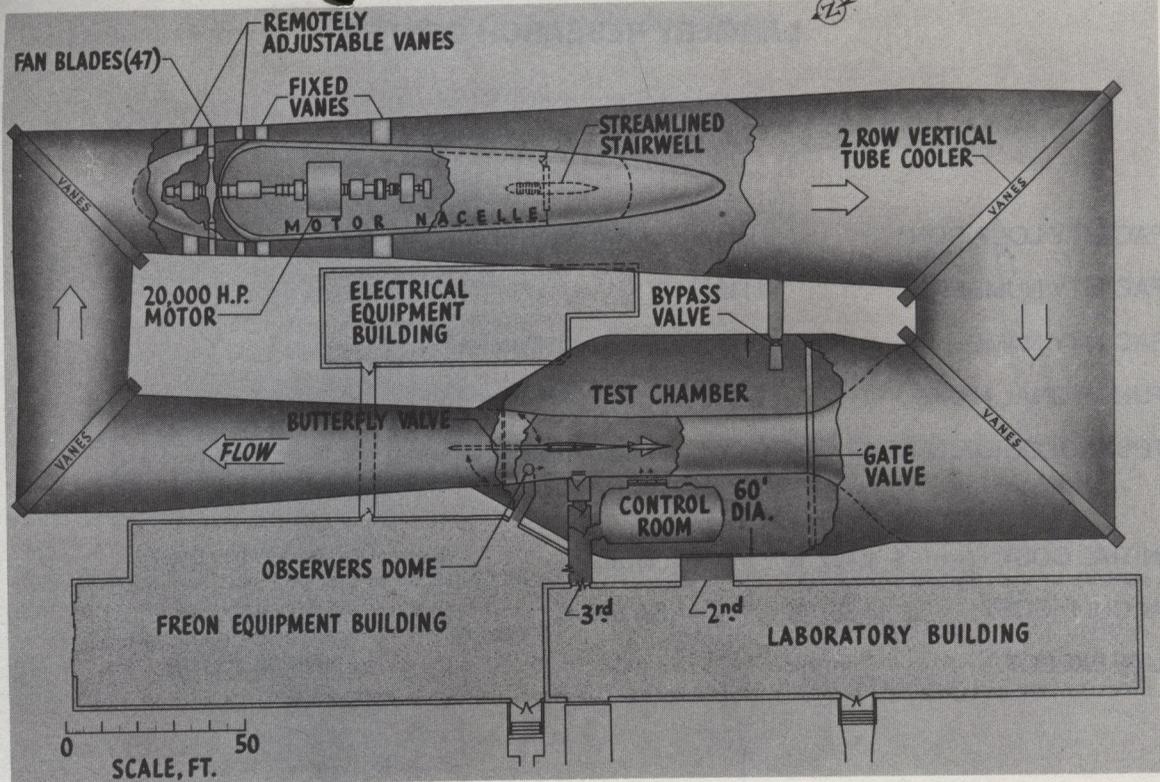
POTENTIAL

PLANS A computerized data acquisition system will become operational during 1974. Detailed plans for tunnel operational improvements will begin in 1976 with modifications scheduled to begin in 1977 and to be completed in 1979. Planned operational improvements include increasing the Mach number to 1.25, the maximum Reynolds number per ft to 20.6×10^6 for Freon-12 and 6.8×10^6 for air, and the maximum dynamic pressure to 850 lb/ft² for Freon-12 and 510 lb/ft² for air.

OTHER INFO SOURCES Measured and Calculated Subsonic and Transonic Flutter Characteristics of a 45° Sweptback Wing Planform in Air and in Freon-12 in the Langley Transonic Dynamics Tunnel, NASA TN D-1616, March, 1963

COGNIZANT ORG. Structures and Dynamics Division
COMPONENT

LOCAL CONTACT FOR FURTHER INFO Chief, Research Facilities Engineering Division, Code 56.000; (804) 827-3171



DESCRIPTION

The test medium is air or Freon-12. Model mounting consists of sting, floor, wall, and cable supports. The test section is 16 ft x 16 ft. There is a 30-ft uniform flow region at subsonic speeds and a 20- to 12-ft uniform flow region through the transonic range.

CHARACTERISTICS

Mach Number: 0 to 1.20

Stagnation Pressure, psia: 0.1 to 14.7

Stagnation Temperature, °R: Ambient to 600

Maximum Reynolds Number, per ft

Freon-12: 8.5×10^6

Air: 2.8×10^6

Maximum Dynamic Pressure, lb/ft²

Freon-12: 350

Air: 210