

LANGLEY RESEARCH CENTER

FACILITY LOCATION Hampton, Virginia 23665
FACILITY NUMBER 1212-C
FACILITY NAME V/STOL Tunnel
FUNCTIONAL NAME V/STOL Wind Tunnel
TECHNOLOGICAL AREAS Force, moment, and pressure studies of full-span and semi-span powered and unpowered V/STOL aircraft, conventional aircraft, and ground transport models

INITIAL COST	\$ 5,518 K	YR. BUILT	1969	STATUS CODE	Active
ACCUM. COST	\$ 6,709 K	NASA B.O.D.	1970	OWNER CODE	NASA
LIFE EXPECT.	Indef.			OPER. CODE	NASA

CONTRACTOR NAME
(if contr. oper.)

POTENTIAL The capabilities of this facility could be extended to acoustical testing within the wind tunnel by extensive acoustical treatment to the test chamber surrounding the actual test section and to that portion of the tunnel circuit downstream of the fan. Estimated cost of these modifications is \$3,000,000, based on 1973 costs.

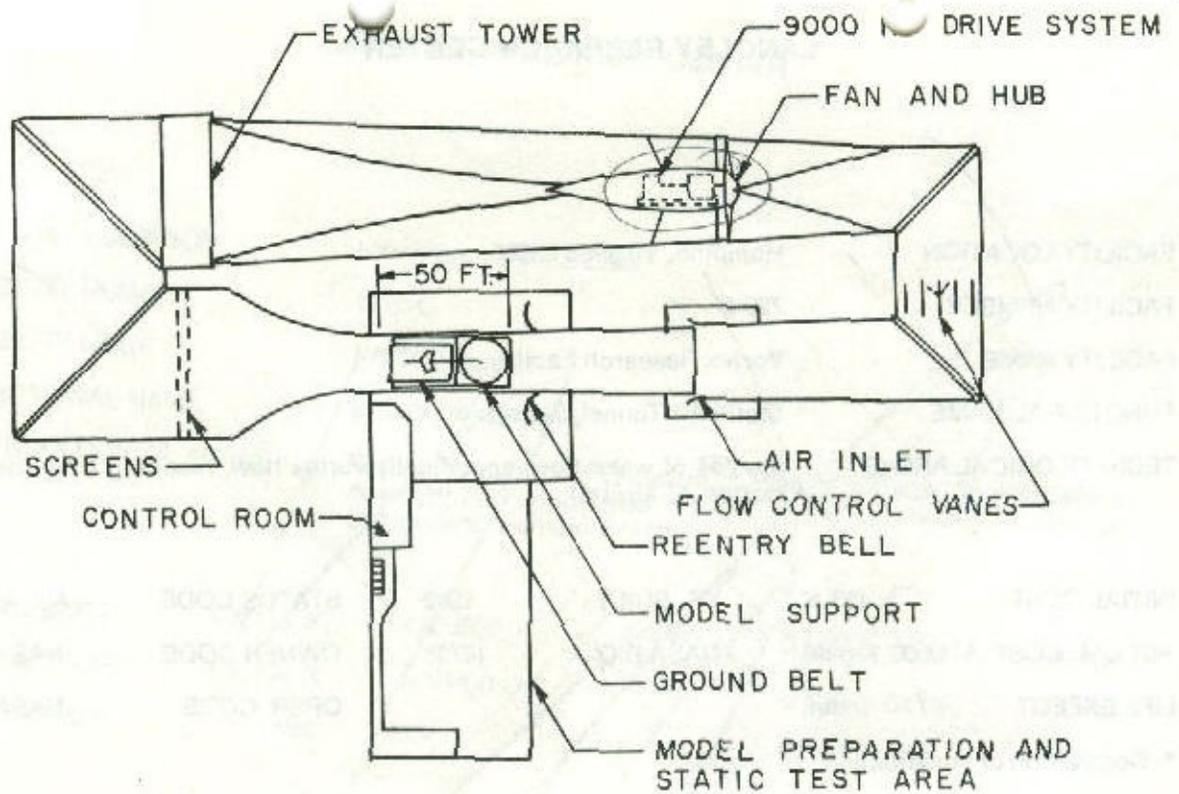
PLANS A contractual study to determine the extent of the acoustical treatment required for such testing is being initiated. Acoustic treatment for the V/STOL tunnel is currently on Langley's Preliminary Major CofF 5-Year Plan for Facilities for funding in FY 1978.

OTHER INFO SOURCES

COGNIZANT ORG. Low-Speed Aircraft Division
COMPONENT

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

January 1974



DESCRIPTION

Tunnel speed is variable from 0 to 200 knots. The test section is 14-1/2 ft high x 21-3/4 ft wide x approximately 50 ft long and can be operated as a closed tunnel with slotted walls, or as one or more open configurations by removing the side walls and ceiling. The stagnation pressure and temperature are atmospheric. The Reynolds number per ft ranges from 0 to 2.1×10^6 .

A moving-belt ground board with boundary-layer suction and variable-speed capabilities for operation at test-section flow velocities can be installed for ground-effect tests. A universal model support system utilizes a 3-joint rotary sting with $\pm 32^\circ$ of pitch, $\pm 32^\circ$ of yaw, and 6 ft of vertical traverse. This system is mounted on a horizontal turntable. For semispan tests or tests on some sting arrangements, this turntable can be rotated up to $\pm 65^\circ$.

Models can be powered with either high-pressure air or variable-frequency electric systems.