

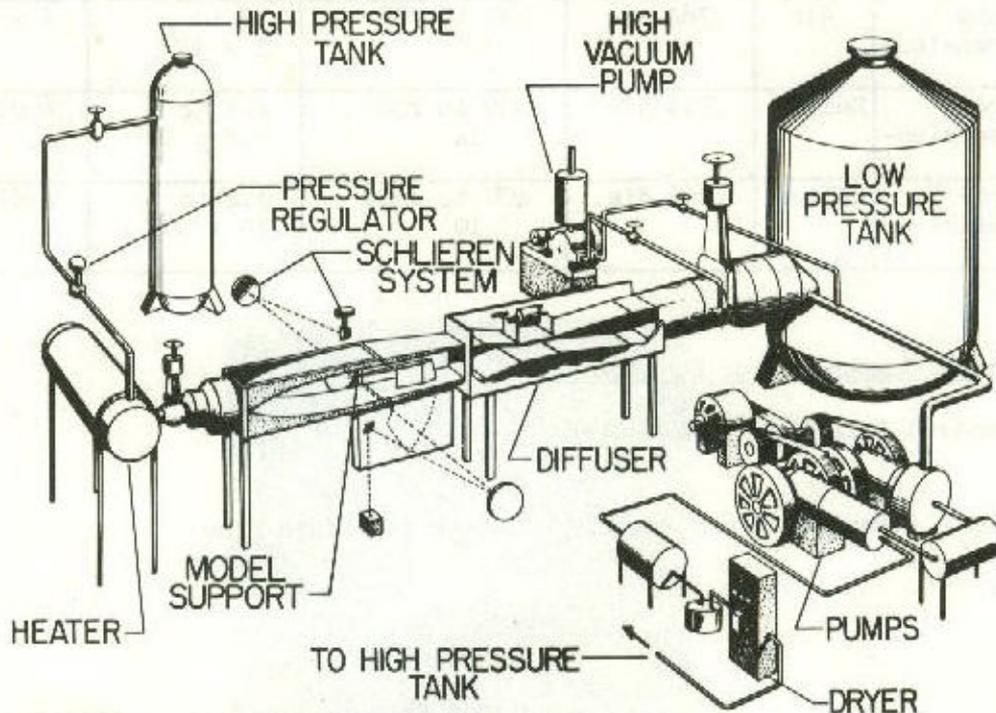
TECHNICAL FACILITIES RESUME

DATE OF RESUME: July 1, 1966

FACILITY NO: 04-00-51-00

1. REPORTING INSTALLATION: Langley Research Center
Hampton, Virginia
2. FACILITY NAME: 11-Inch Hypersonic Tunnel
3. LOCATION (if other than in 1. above): Same as 1.

Trans
TO VPI



4. FUNCTIONAL NAME: Wind Tunnel, Hypersonic 11-inch

5. TECHNOLOGICAL AREAS SUPPORTED: Pressure investigation; heat transfer studies, and force testing with air and helium as the test media.

6. NARRATIVE DESCRIPTION OF FACILITY CAPABILITIES & FUNCTIONS:

In this facility, model mounting consists of sting and wall mount. Angle of attack, 0° to 90° , True yaw angle, $+10^\circ$ - -10° . Air runs are heated by electrical resistance heater. There are four interchangeable contoured nozzles: Two air and two helium. Mach number 6.8 nozzle is two dimensional, and Mach numbers 9.6, 10.5, and 18.0 nozzles are three dimensional.

6. NARRATIVE DESCRIPTION

OPERATING CONDITIONS FOR FOUR NOZZLES

Nominal Mach Number	Nozzle Type	Test Medium	Throat Size, Inches	Stagnation Pressure, PSI & Run Time, Seconds	Reynolds Number, per Foot	Core of Uniform Flow, Inches (Average)
6.8	Two Dimensional	Air	.093 x 11	70 to 550 70 to 100	.5 to 4×10^6	5 x 5
9.6	Three Dimensional	Air	.384 sq.	200 to 700 100	.3 to 1×10^6	4 x 4
10.5	Three Dimensional	Helium	.913 dia.	200 to 800 14	2.7 to 9.8×10^6	6 dia.
18.0	Three Dimensional	Helium	.368 dia.	400 to 1600 10	1.2 to 10×10^6	4 dia.

Major Support Components or Equipment:

Langley Central Data Reduction Center.

Application - Aeronautics and Space

Category - Fluid Flow

7. POTENTIAL:

8. PLANS:

9. BLDG. NO. 1229 10. YR. BUILT: 1949 ** 11. FAC. CAT. CODE: 310-10
 12. INITIAL COST: \$ 168 ** K 13. NASA B.O.D. 1949 14. STATUS CODE: Active
 15. ACCUM. COST: \$ 298 ** K 16. LIFE EXPECT. Indef. 17. OWNER CODE: NASA
 18. OPER. CODE: NASA 19. CONTRACTOR NAME (if contr. oper.):

** This apparatus only

20. OTHER SOURCES OF INFO: "Investigation of a Two-Step Nozzle in the Langley Hypersonic Tunnel," NACA TN 2171, September 1950, "Boundary Layer Displacement Effects in Air at Mach Numbers of 6.8 and 9.6," NASA TR R-22, 1959.
 21. COGNIZANT ORGANIZATIONAL COMPONENT: Aero-Physics Division

22. LOCAL OFFICE TO CONTACT FOR FURTHER INFO:

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