TECHNICAL FACILITIES RESUME

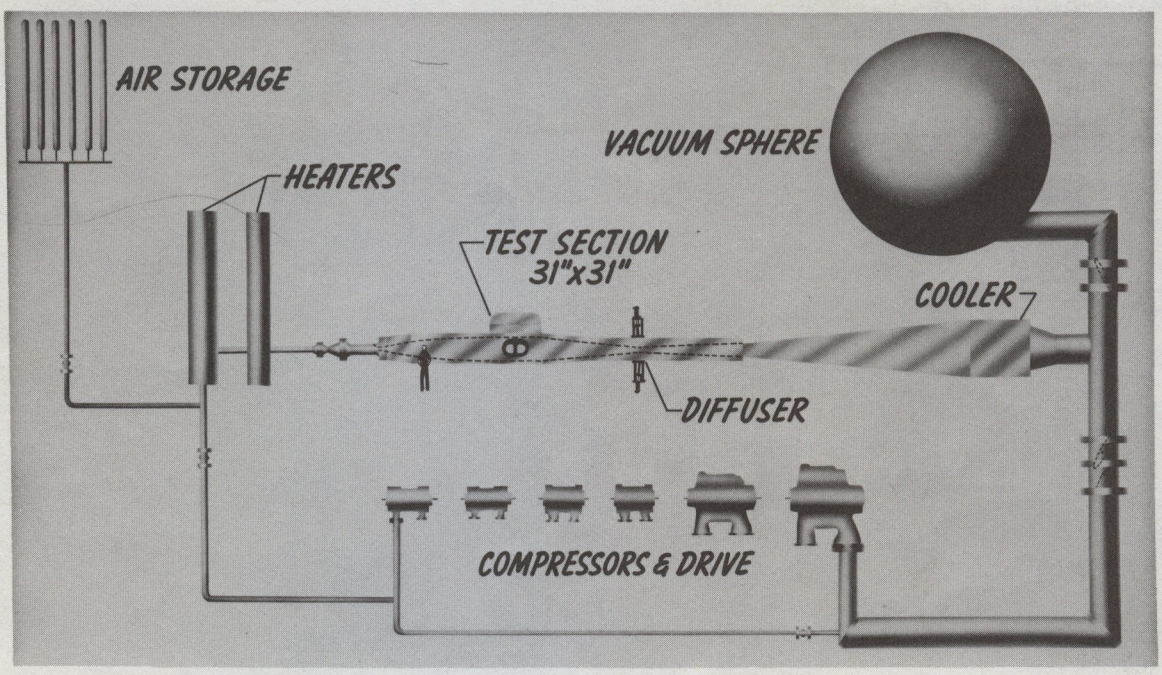
DATE OF RESUME: July 1, 1966
FACILITY NO: 04-00-63-00

1251-A

1. **REPORTING INSTALLATION:** Langley Research Center
Hampton, Virginia

2. **FACILITY NAME:** Continuous-Flow Hypersonic Tunnel

3. **LOCATION** *(if other than in 1. above):* Same as 1.



4. **FUNCTIONAL NAME:** Wind Tunnel, Hypersonic Continuous Flow

5. **TECHNOLOGICAL AREAS SUPPORTED:** Heat transfer, aerodynamic tests at Mach 10 and Mach 12

6. **NARRATIVE DESCRIPTION OF FACILITY CAPABILITIES & FUNCTIONS:**

The test medium is air, heated by electrical resistance heaters. Model mounting allows for variable angles of attack and yaw on models up to 17 inches in span and 5 feet in length. There are two 31-inch-square interchangeable test sections for Mach 10 and Mach 12. The tunnel is closed circuit with vacuum tank for starting. Examples of operating conditions are as follows:

Mach 10 nozzle has been run over a pressure range from 15 to 150 atm

(For value see 74 resume, below (This is original 66 version)

6. NARRATIVE DESCRIPTION

at 1400°F and Reynolds numbers per foot from .4 to 2.5 x 10^6. At 26 atm pressure, the calibrated Mach number was 10.25, with a test core 14 inches square. The Mach 12 nozzle has only been run blowdown (20-second run). At 60 atm and 1900°F., the calibrated Mach number was 11.9 with a test core of 9 inches.

Application - Aeronautics and Space Category - Fluid Flow

Major Support Components or Equipment

Langley Central Data Reduction Center and tie-ins.

7. POTENTIAL:

8. PLANS:

9. BLDG. NO.	1251	10. YR. BUILT:	1963**	11. FAC. CAT. CODE:	330-20
12. INITIAL COST: $	6,396** K	13. NASA B.O.D.	1963	14. STATUS CODE:	Active
15. ACCUM. COST: $	6,396** 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: "Heat Transfer Distribution on 70° Swept Slab Delta Wings at a Mach Number of 9.86 and Angles of Attack Up to 90°", October 1964 NASA Technical Note D-2302.

21. COGNIZANT ORGANIZATIONAL COMPONENT: Aero-Physics Division

22. LOCAL OFFICE TO CONTACT FOR FURTHER INFO:
Chief, Research Models and Facilities Division (Code 56.000)
Phone: (Area Code 703) 722-7961, extension 4745