The Langley Mach 8 variable-density hypersonic tunnel is located in Building 1247D and is under the direction of the Aero-Physics Division. This tunnel is used for fundamental aerodynamic and fluid dynamic investigations over large Reynolds number ranges using pressure and heat-transfer measurements. The test medium is air and is heated by a combination of Dowtherm and electrical resistance. Model mounting consists of sting mount with injection mechanism. The tunnel has an axially symmetric contoured nozzle. The test-section diameter is 18 inches, and the test core size is $\frac{1}{4}$ inches to $\frac{1}{2}$ inches depending on pressure. It exhausts into a vacuum tank or atmosphere. Examples of operating conditions are as follows:

- Stagnation pressure, psia: 15 to 2930
- Stagnation temperature, °F: 1160 to 1510
- Mach number: 7.5 to 8.0
- Reynolds number per foot: $0.1 \times 10^6$ to $12.0 \times 10^6$
- Running time, sec, for:
  - Exhausting into vacuum tank: 90
  - Exhausting into atmosphere: 600