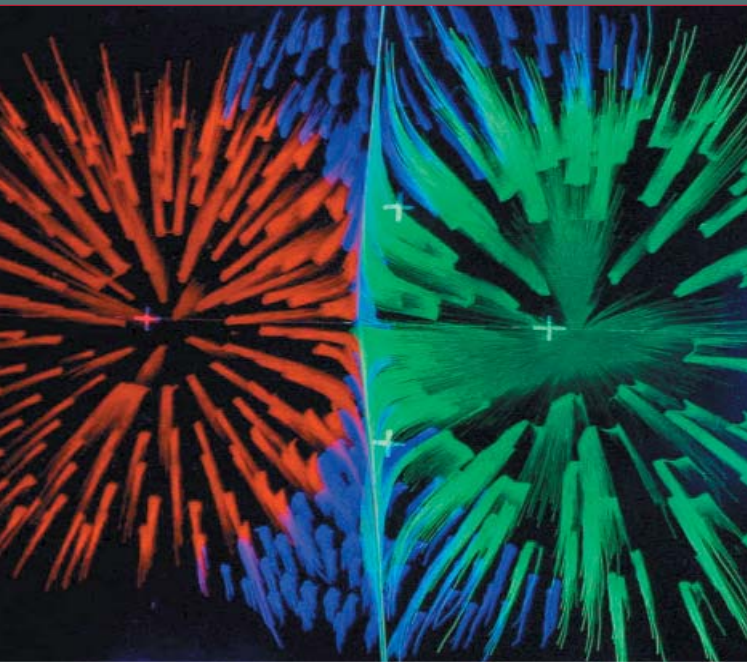


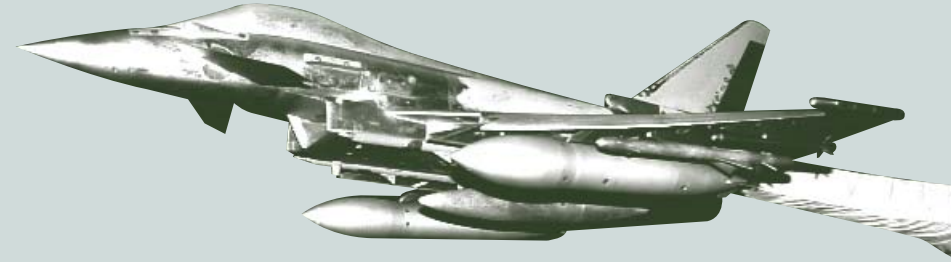
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Wind Tunnel Department



Wind Tunnel Department

Facts & Figures



Wind Tunnel department operates, maintains and develops the wind tunnel facilities to support the feasibility, definition and development phases of the airframe design process.

Ground based test data is provided for the purpose of airframe design verification.

The department comprises a comprehensive suite of specialist aerodynamic test facilities with supporting design, manufacture and calibration functions.

The test capability covers a wide range of air vehicle flight envelopes and encompasses such aspects as performance, stability and control, store carriage and release, propulsion integration and ground environment.

Specialist test activities

- Low Speed Wind Tunnel testing
- High Speed Wind Tunnel testing
- Ground Erosion studies
- Hot Gas Ingestion
- High temperature nozzle flow investigation

Major facilities

- 5.5m Low Speed Wind Tunnel
- 4.0m Low Speed Wind Tunnel Up to Mach 0.3
- 1.2m High Speed Wind Tunnel Mach 0.4 to 3.8
- 0.45m Guided Weapons Wind Tunnel. Mach 1.7 to 6.0 Inc. High Speed Blower Facility Up to Mach 1.8
- Hot Gas Laboratory, with large scale models at full scale pressures and temperatures, primarily for Ground Erosion studies but also for structural environmental and signature testing

- Ground Effects Rig, with Dynamic simulation and hotjet flows, for hot gas reingestion and jet induced effects
- Reaction Control System Development Cell, primarily for nozzle & valve performance testing

Design and Manufacture offer a wide range of facilities

- Computer aided design techniques are employed using CATIA
- A well equipped machine shop uses a wide range of traditional and advanced manufacture techniques. These include:
 - Low speed models from timber, plastic and light alloy
 - High speed models from light alloys and maraging steel
 - ASTOVL models from high temperature materials
 - Strain gauge balances from special steels
 - Stereolithographic model components and investment casting patterns

