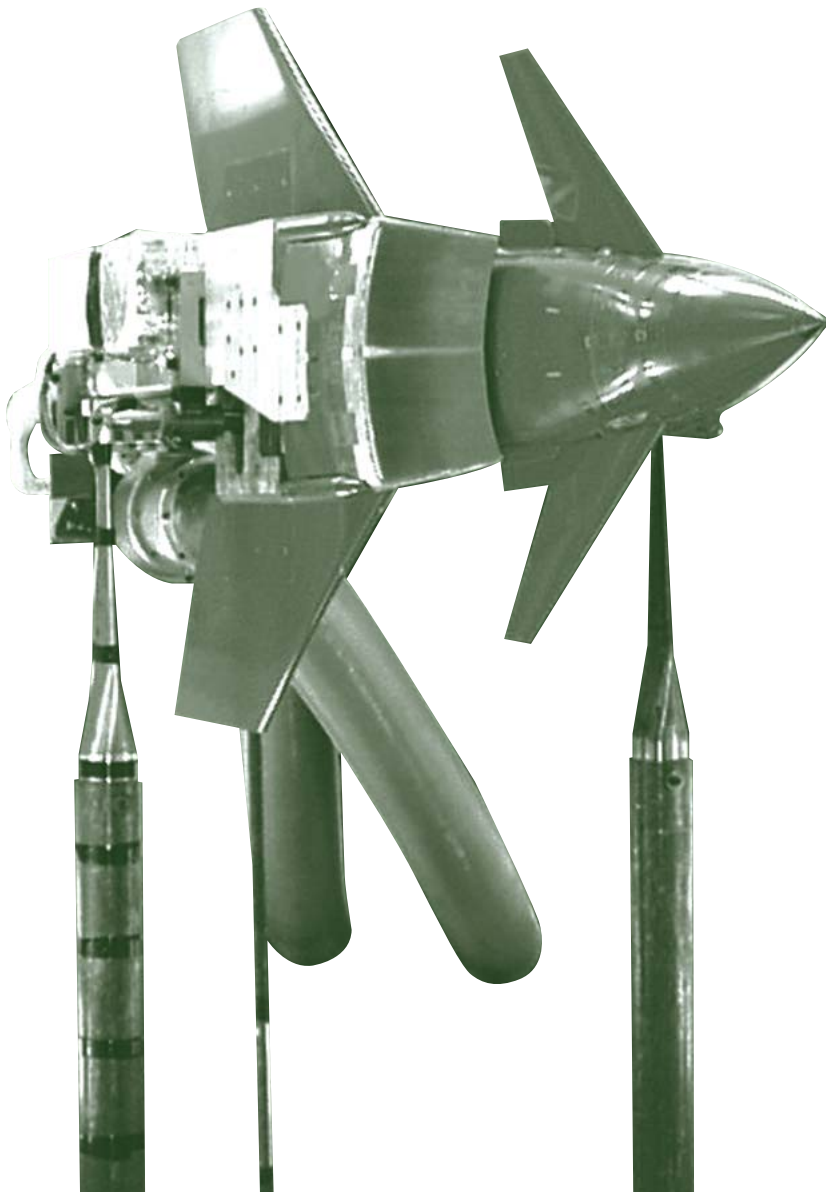


# Aerodynamic Test 4.0m Low Speed Wind Tunnel



## Introduction

The 4.0m Low Speed Wind Tunnel (LSWT) is a closed return tunnel with a maximum test speed of 105 m/s. The working section is nominally 4m wide x 2.7m high x 7.3m long. Flow conditioning and a large 10.6 : 1 contraction ratio combine to give excellent flow quality. Models can be either sting mounted on an internal strain gauge balance or strut mounted on the under floor virtual centre mechanical balance.

Comprehensive development of both control and data acquisition systems has resulted in a highly automated, high productivity facility.

The tunnel has been extensively used on a diverse range of both civil and military projects.



# Aerodynamic Test

## 4.0m Low Speed Wind Tunnel

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#### Prime Test Types

Stability & Control Measurements  
Powered Lift & Inlet Effects Investigations  
Intake Models

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#### Performance

Speed range 5 to 105 m/s  
Closed return, closed working section, continuous running.  
Ambient temperature & stagnation pressure.

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#### Working Section

4.0m wide x 2.7m high x 7.3m long, with 0.8m fillets  
Sting or Strut mounting systems  
2 floor mounted and 1 roof mounted turntables  
Ground board

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#### Sting Support Mechanism

Standard Incidence Range -25 to +25°  
Incidence Range with offset crank -12 to +38°  
Sting carriage height variable +/- 850mm about mid tunnel  
Sideslip range +/- 18°

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#### Mechanical Balance

Underfloor, virtual-centre, weigh beam  
Single or multiple struts, variable separation  
Incidence Range -10 to +55°  
Balance rotation +/- 180°

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#### Circuit

10.6:1 contraction ratio  
1.3MW AC motor, 7 blade fan drive system

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#### High Pressure Air Supply

Supply pressure 4,200 kPa max  
Four independently regulated, high pressure air supplies  
Mass flow 4kg/s continuous or 8kg/s max.

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#### Test Support

In house wind tunnel design and manufacture capability.

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#### Data Acquisition

The facility contains a flexible data acquisition system that can accommodate a wide variety of sensors.  
Compact pressure scanning hardware is also available that can provide over 1000 pressure measurements.

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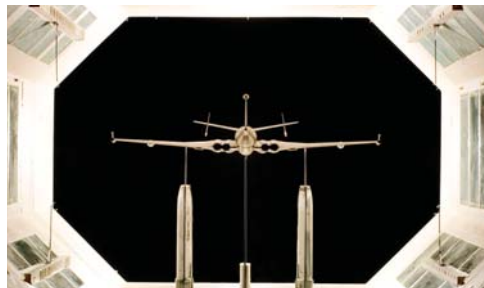
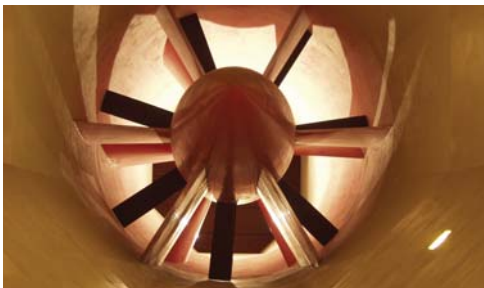
#### Data Processing

In house software support.

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#### Outputs

Data	User friendly plotting software.
Flow visualisation	Various techniques.



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