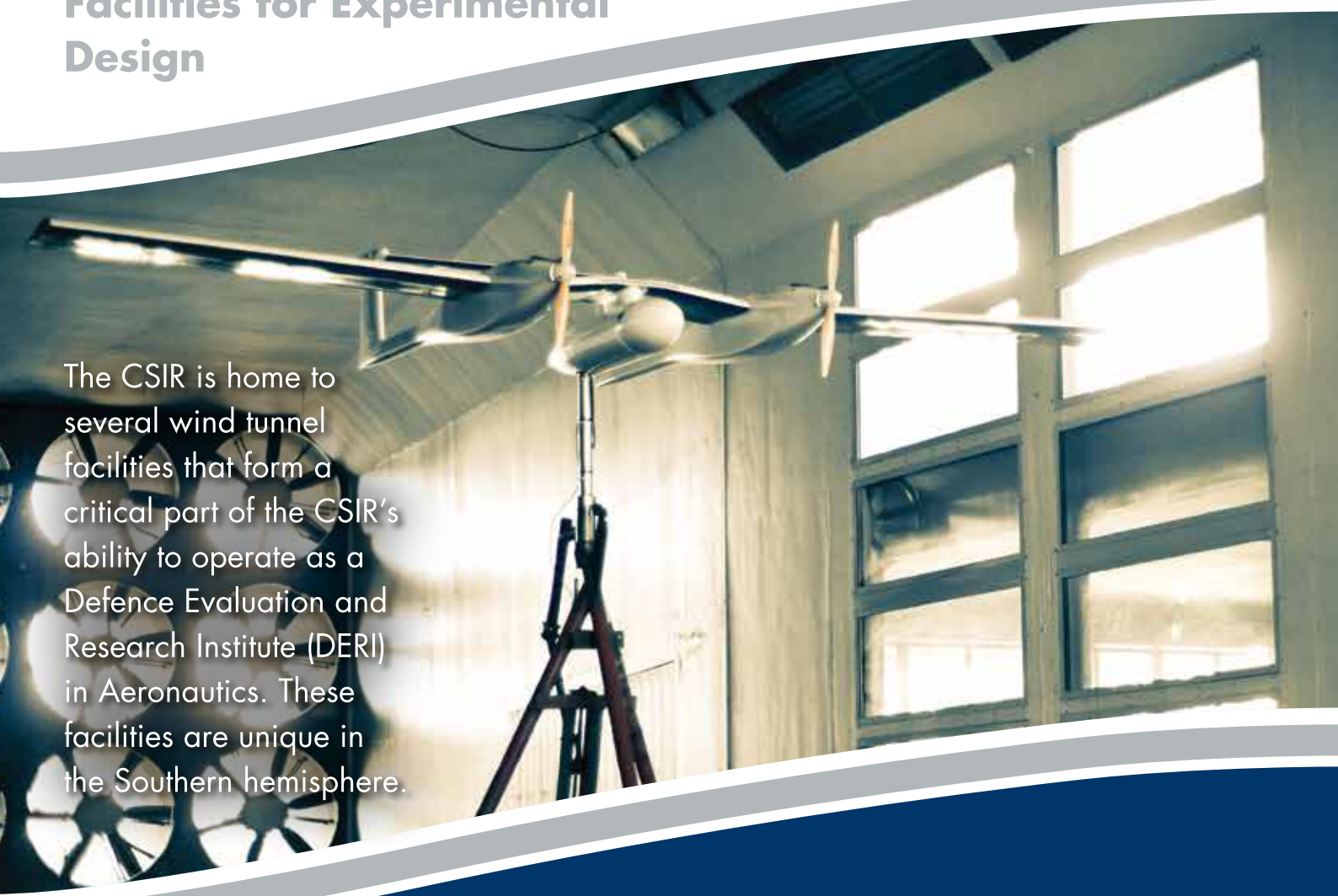
Focus on CSIR

Expertise in Aeronautic Facilities for Experimental Design



The CSIR is home to several wind tunnel facilities that form a critical part of the CSIR's ability to operate as a Defence Evaluation and Research Institute (DERI) in Aeronautics. These facilities are unique in the Southern hemisphere.

Subsonic wind tunnel capability

Low speed wind tunnel

Specifications

- Mach no. range: M0 to M0.33 (0 to 120m/s)
- Test section: 2,14m x 1,53m x 5,2m
- Continuous, atmospheric tunnel
- Reynolds number: 6,6 x 106/m

Test Capabilities

- Force measurement
- Pressure Measurement
- Flow Visualisation (oil flow, mini tufts)
- Overhead/external balance
- Internal balance support system
- Free drop tests

Seven metre wind tunnel

Specifications

- Speed: 2 to 32m/s
- Test section: 7,5m x 6,5m x 13m
- Continuous, Eiffel

Test capabilities

- Force and pressure measurement/ Flow field mapping
- Rotor test rig (scaled rotor tests)
- Car balance
- Wake measurements
- UAV test rig
- Propeller test rig

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Supersonic capabilities

Medium speed wind tunnel

Specifications

- Mach no. range: M0,2 to M1,3
- Test section: 1,5m x 1,5m, 4,5m
- Reynolds number: 31x106/m (M0,8)
- Closed circuit, variable pressure, continuous wind tunnel
- Stagnation pressure: 20 to 250kPa

Test capabilities

- Captive trajectory (store separation) tests
- High angle of attack tests
- Force and pressure measurement
- Flow visualisation
- Flutter testing
- Dynamic testing capability
- Aerodynamic damping tests

High speed wind tunnel

Specifications

- Mach no. range: M0,6 to M4,3
- Test section: 0,45m x 0,45m
- Run time: 10 to 30 seconds
- Reynolds number: 185 to 30 seconds
- Stagnation pressure range: 70 to 1200kPa
- Blow down wind tunnel

Test capabilities

- Force measurement
- Pressure measurement
- Inlet flow measurement
- Flow visualisation (colour schlieren)

Inlet tests

- Characterisation of inlet performance – isolated
- Characterisation of installed inlet performance
- Characterisation of airframe performance

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