

# Australian innovation is alive and flying

WITH INDUSTRY UNDER PRESSURE IN AUSTRALIA, WE SOMETIMES FORGET THE SUCCESSES OF AUSTRALIAN COMPANIES BOTH HERE AND ON THE WORLD STAGE. AVIATION BUSINESS FOUND 20 AUSTRALIAN COMPANIES THAT ARE PRODUCING INNOVATIVE PRODUCTS AND FINDING CUSTOMERS.

**PHILIP SMART**



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## 1 AIRSPEED

Adelaide based Airspeed builds composite pods for a multitude of uses under the wings and fuselage of military aircraft. Airspeed pods have flown on the F/A-18, F-111 and BAE Hawk aircraft.

Cargo pods carry pilot personal equipment and aircraft deployment items, while the Low Drag Electronics Pod is a fully certified housing for transforming an avionics system into an operational payload on a military fast jet. Airspeed also supplies supersonic camera pod variants for stores clearance and reconnaissance applications as well as cargo pods for fast jets.

[www.airspeed.com.au](http://www.airspeed.com.au)

## 2 VEDALEON TECHNOLOGIES

From its premises in the heart of Melbourne's CBD, Vedaleon

Technologies provides eCommerce and Passenger Management Solutions for some of the largest air carriers and airports in the Asia Pacific, processing more than 300 million transactions for 30 million passengers each year.

Vedaleon counts Tiger Airways, Jetstar, Regional Express, Perth Airport, Cobham, Sharp Airlines and Lion Air among its customers, and partners with the likes of SITA, Allianz and ICM Technics.

[www.vedaleon.com.au](http://www.vedaleon.com.au)

## 3 MOORABBIN FLYING SERVICES

Moorabbin Flying Services was established in 1993 and has provided pilots for major regional, national and international airlines, with a growing alumni program creating a global network of pilots.

The school's flight and aviation theory instructors and flight testing officers together have more than



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120,000 flying hours of experience. In April this year Moorabbin Flying Services won the Outstanding Leadership In Training award at the 2016 Aviation/ Aerospace Australia industry awards.

[www.mfs.com.au](http://www.mfs.com.au)

## 4 ARCHITECTUS

Architectus is an architectural design studio with offices in Sydney, Melbourne, Brisbane, Adelaide, Auckland and Christchurch, bringing together the experience of more than 250 architects, interior architects, urban designers and urban planners.

In the aviation field Architectus is best known for designing Melbourne Airport's \$330 million international terminal expansion, completed in 2011, and for transforming Qantas's 1980s Mascot Airport headquarters. The Mascot project united three existing office buildings, with use of technology and materials also improving the building's NABERS energy efficiency rating from 1.5 to 5 stars.

[www.architectus.com.au](http://www.architectus.com.au)

## 5 LOVITT TECHNOLOGIES AUSTRALIA

Lovitt Technologies Australia provides precision machined tools, components, parts and assemblies to customer design and specification particularly within the aerospace and defence industries. Based in Melbourne's north east, Lovitt has produced high-precision components for Boeing's F/A-18 Super Hornet, F-15 Eagle, V-22 Osprey tiltrotor, CH-47 Chinook helicopter and P-8 Poseidon anti-submarine aircraft.

In 2012 Lovitt manufactured the first Australian-made component, a titanium keel piece, for the Lockheed Martin F-35 Lightning II.

[www.lovitech.com.au](http://www.lovitech.com.au)

## 6 CABLEX

Established in 1985, Calex is a full service provider of electrical enclosures, avionics bays and wire harnesses to the defence, aerospace, transport and electronics industries.

Calex has provided wiring harnesses and avionics bays for the Airbus Helicopters NH90 and Tiger in Australian service, electrical harnesses for the Airbus A330 MRTT Multi Role Tanker Transport program, MESA radar harnesses for



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the Northrop Grumman Airborne Early Warning and Control platform, Boeing 737 Wedgetail tail cone assemblies, plus components for the Wedgetail and F-35 Lightning II programs and auxiliary power unit harnesses for helicopters.

[www.calex.com.au](http://www.calex.com.au)

## 7 SEEING MACHINES

Canberra's Seeing Machines was a spin off from the Australian National University, started by four academics researching the use of optical driver monitoring and eye tracking systems to detect fatigue.

With commercial pilots performing under pressure, dealing with fatigue and high mental workload while accomplishing complex, safety-critical tasks, Seeing Machines provides insights into pilot performance, from simulation-based training and assessment, to understanding the pilot during critical stages of flight.

[www.seeingmachines.com](http://www.seeingmachines.com)

## 8 REFUEL INTERNATIONAL

Refuel International is a refuelling systems integrator with its own range of Australian made bulk fuel handling equipment such as hydrant dispensers and carts, made to relevant commercial, military and JIG standards, and the "drop and go" containerised fuelling module.

The company was recently awarded a \$47 million contract to build the Australian Defence Force's new aviation fuel tankers under JP 157 Phase 1.

[www.refuelin.com](http://www.refuelin.com)



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## 9 MAHINDRA AEROSPACE (FORMERLY GIPPSAERO)

With more than 200 single-engine Airvan 8s in service around the world, the Victorian-built utility aircraft is now the most manufactured commercial aircraft in Australian history. The Airvan is designed to be rugged, versatile and easily maintained, seating eight people or configured for missions such as aeromedical, law enforcement, aerial surveillance and air freight. The Airvan 8 will soon be joined by a 10-seat turboprop derivative, the Airvan 10.

[www.mahindraaerospace.com](http://www.mahindraaerospace.com)

## 10 SENTIENT VISION SYSTEMS

Melbourne's Sentient Vision Systems has now provided its Kestrel airborne visual detection system on more than 1000 platforms including 20 types of manned military and civil aircraft, ground systems and remote terminals.

Kestrel interrogates the feed from surveillance sensors such as electro-

### OPPOSITE

Marand Engineering builds the F-35's engine removal and transport trailers.

**TOP** Calex is an acknowledged electrical systems expert.

**ABOVE** Cirrus trains military air warfare officers.



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## 14 SYNFLYT PILOT TRAINING SIMULATOR

Sydney based company SynFlyt has built its own three-degrees-of-freedom flight simulator for light aircraft and single-engine jets, using 3D printing to lower the cost of some parts by as much as 90 per cent.

The simulator offers three degrees of motion freedom and an industry-standard glass cockpit with a 210-degree seamless wraparound screen, in a weatherproof design that can be located outdoors.



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## 12 AVIATION AUSTRALIA

Aviation Australia was established by the Queensland State Government in 2001, providing cabin crew, engineering and pilot training. Aviation Australia is now a partner to over 60 airlines and aerospace companies, governments, defence forces and regulatory authorities, with over 1000 graduates working worldwide.

The company has recently opened a new \$10 million Brisbane Campus, teamed with Hawker Pacific to offer aerospace training packages to Middle East nations and launched a purpose built air traffic control training centre for international students, in conjunction with Airways New Zealand.

[www.aviationaustralia.aero](http://www.aviationaustralia.aero)

## 13 THOMAS GLOBAL SYSTEMS

A long-time provider of aircraft cockpit avionics systems to more than 70 airlines worldwide, Thomas Global has developed pioneering plug-and-play, Active Matrix Liquid Crystal Display (AMLCD) replacement units for legacy cathode ray tube (CRT) displays. The AMLCD provides improved reliability and reduced costs compared with legacy CRT displays, with lower weight, less heat and reduced power consumption, retaining use of all existing cockpit systems and requiring no aircrew training.

It offers a reliable, low cost alternative for upgrading cockpit avionics.

[www.thomas-global.com](http://www.thomas-global.com)

optic and infrared cameras to detect small moving objects such as people, boats and vehicles that may otherwise be invisible to the naked eye.

The company's new ViDAR system includes a high definition camera that scans the ocean in a 180-degree arc in front of the air vehicle, autonomously detecting any object on the surface of the ocean and, providing the ground control station with an image and location coordinate of each object detected in real time.

[www.sentientvision.com](http://www.sentientvision.com)

## 11 ONE ATMOSPHERE

In collaboration with Airbus Group Australia Pacific, Tasmanian company One Atmosphere has developed the Pegasus post-crash emergency buoyancy system for helicopters. The system automatically arrests the descent of a sinking helicopter, allowing occupants to safely escape at the surface.

The Australian Government has invested nearly \$8 million in the Pegasus system for potential use on the Australian Defence Force's Tiger armed reconnaissance helicopter.

[www.oneatmosphere.com.au](http://www.oneatmosphere.com.au)

**TOP** The Trakka searchlight is in use with emergency services around the world.

**ABOVE** One Atmosphere's proof of concept emergency buoyancy system has been tested for use on Australian military helicopters.

## 15 ORBITAL CORPORATION

Western Australia's Orbital Corporation has developed the orbital engine system originally pioneered by Ralph Sarich in to a small engine now being used on the ScanEagle UAV made by Boeing subsidiary Insitu.

Orbital delivered the first shipment of engines under the \$12 million contract in May. Orbital's UAV engine was developed with Insitu and is designed to minimise noise and heat signatures, and be easy to service in the field.

[www.orbitalcorp.com.au](http://www.orbitalcorp.com.au)

## 16 MARAND PRECISION ENGINEERING

Victorian company Marand builds Lockheed Martin F-35 tail units, but is also building the specialised engine removal and transport trailers the F-35 will use worldwide. The trailer comprises 12,000 complex parts to provide a stable platform for the safe alignment, installation, removal and maintenance of the multi-million dollar F-35 engines. Marand is the only company in the world producing this essential piece of support equipment.

[www.marand.com.au](http://www.marand.com.au)

## 17 ELMTEK

Adelaide company elmTEK is partnering with Canberra University to develop a system that will give pilots critical cues through a torso belt or pilot's seat fitted with vibrating "vibromechanical" devices linked to the aircraft's systems.

Researchers found that a vest fitted with vibro-tactile devices could convey position and attitude information, for example by vibrating on the right side if the helicopter is drifting to the right, or in the centre when a preset altitude has been reached.

<https://elmttek.com.au>

## 18 CIRRUS REAL TIME PROCESSING SYSTEMS

Cirrus Real Time Processing Systems provides emulation systems that immerse future RAAF Air Combat Officers and RAN Aviation Warfare Officers in a simulated battlespace in a real aircraft.

Trainee officers seated in the cockpit or at consoles in the cabin learn and practise with systems and procedures representative of those they might one day put to use in an EA-18G Growler, P8 Poseidon or MH60R Romeo helicopter.

[www.cirrusrtps.com.au](http://www.cirrusrtps.com.au)

## 19 AVSOFT

In 2015 Aviation software developer AvSoft Australia took out Australia's top prize for civil aviation innovation, with its Electronic Flight Bag (EFB) application, which also won a major contract with the Australian Army in the same year.

The company developed its AvPlan EFB for the iPhone, allowing pilots to view maps, charts and other information for which they would normally need to carry heavy books.

AvSoft won a major contract with the Australian Army which would see around 200 Army helicopters equipped with iPads using the AvPlan EFB.

[www.avplan-efb.com](http://www.avplan-efb.com)

## 20 TRAKKACORP

Melbourne based Trakkacorp has sold more than 600 searchlights to the world's helicopter industry, with customers such as US law enforcement agencies, manufacturer

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IN 2015 AVIATION SOFTWARE DEVELOPER AVSOFT AUSTRALIA TOOK OUT AUSTRALIA'S TOP PRIZE FOR CIVIL AVIATION INNOVATION.

Leonardo helicopters (formerly AgustaWestland) and operators such as Bristow Helicopters, which selected the Trakka searchlight for all 22 of its new United Kingdom search and rescue helicopters.

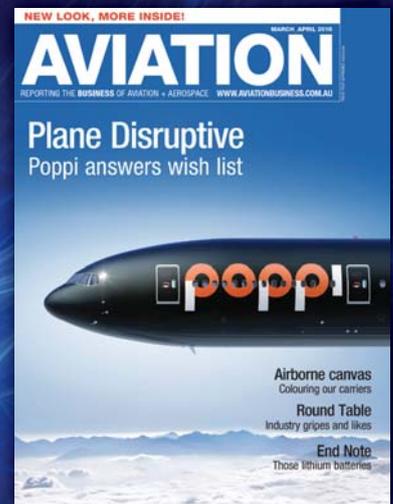
The Trakka incorporates modern optics for low power use in a compact system and can be compatible with night vision goggle systems. Its uniform beam has no central "black spot", and the gimbal units can be slaved to automatically follow other sensors to illuminate objects of interest.

[www.trakkasystems.com](http://www.trakkasystems.com)

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