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The choices were  
faint, freeze or fry



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NOVEMBER-DECEMBER 2017

**PHENOM® 100**  
BY EMBRAER



A six-time winner of Robb Report's Best of the Best award in the entry-level segment, the Phenom 100 comfortably carries up to 8 occupants. Its avionics suite - the Prodigy® Touch, based on the Garmin G3000 - features the first-ever touchscreen glass flight deck designed for light turbine aircraft. With its exclusive OvalLite® cabin, the Phenom 100 delivers the roomiest-in-class cabin, a modern, sophisticated design with abundant leg and head room, plus the largest windows and baggage capacity in its class. The aircraft's private lavatory is the only one in its category with windows, for plenty of natural light. Showcasing an enviable ramp presence, the signature air stair leads to the largest entrance door in its class. Delivering exceptional jet performance with operating costs similar to a turboprop, the Phenom 100 truly stands out among entry-level business jets.



## PHENOM 100: REMARKABLE

"The Phenom 100 has been remarkable in almost every respect — the cabin, the size of the airplane, the ramp presence is second to none in this category of airplane. Embraer has done a brilliant job of simplifying the operation of the aircraft, and as such, I feel extremely confident as a single pilot flying with my family in the airplane. The Prodigy Touch system in the front of the airplane, the office as they say, is so intuitive.

The airplane's ability to deal with weather, bumps, things of that sort, things that my wife does not like, is just really remarkable. I feel incredibly safe in the airplane. It has been a stable platform, reliability has been fantastic. I use the airplane for business now, primarily going to our real-estate development sites in New Jersey, which is a short hop. I can deal with multiple projects very efficiently and be home more than I would be if I was traveling commercially and staying in hotels.

The value proposition of a Phenom 100 is significant. In my humble opinion, there isn't really much of a decision to make. You can't get that cabin comfort in other entry-level aircraft. Embraer stands alone as an aircraft manufacturer that takes that reliability, the technology, the experience down to the entry-level jet, and there's nobody else that compares."



- Bill Midon, Owner, Intervest International Ltd.  
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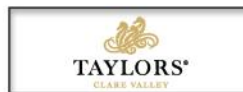


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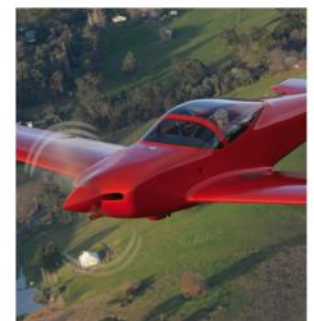
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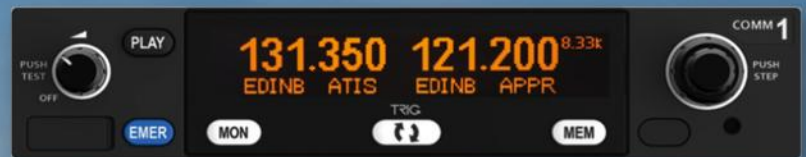
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*Bankstown operators need to know how Western Sydney Airport will affect their ability to carry on a business after 2026.*

## Bankstown – we need answers now

**I**t's an honour to be in the editor's seat for this issue of *Australian Flying* while Steve Hitchen takes a sabbatical. I grew up reading this magazine and have written for *Australian Flying* for a number of years. Steve will be back, refreshed and ready for the next issue.

This issue of *Australian Flying* touches on the effects the new Western Sydney Airport at Badgerys Creek may have on the Bankstown and Camden based training industry.

As would be expected, views on this subject range from "business as usual" to those who believe Western Sydney Airport's commissioning will sound the death knell of both secondary airports.

But a few things are clear. Those who hold out hope of Badgerys being cancelled are dreaming. The government juggernaut has shifted up a gear and belief that Western Sydney Airport will be built is the new norm. That doesn't guarantee it will be built on time or to budget, but it will be built.

Those who are still pinning their hopes on RAAF Base Richmond as an alternative will also be disappointed. It looks like economic common sense to begin operating out of an airport with existing infrastructure.

But the Federal Government department responsible for

building Badgerys is not going to ignore its own 2013 report that said Richmond would run out of capacity in the 2040s.

Industry experts such as Airbus sales supremo John Leahy regularly point to figures showing world airliner passenger numbers doubling every 15 years. Richmond would delay, but not negate, the need for Badgerys.

And Western Sydney Airport will affect Bankstown and Camden. Operators interviewed for our feature article in this issue of *Australian Flying* pointed out

Government responses to Australian Flying's enquiries met with the now standard "we'll sort this out by 2026" response. But industry needs to know now. Flying schools investing millions of dollars in fleet, facilities and personnel need to be able to plan at least 10 years ahead.

If the airport plan is in place, runway alignments decided and total area known, there's no reason why airspace requirements couldn't be fleshed out now.

And industry must start asking questions now, and keep asking

« **Those who hold out hope of Badgerys Creek being cancelled are dreaming.** »

that future development has the potential to affect IFR operations at Bankstown.

Badgerys also sits astride the current training area. Initial suggestions for alternative training areas would put new students over tiger country, dramatically increasing the risk of injury and fatalities in a forced landing.

There are alternatives, but they will require concessions from government, and the Australian Defence Force around Richmond.

But if the Federal Government is set on building Western Sydney Airport, it has a responsibility to help the Bankstown and Camden communities find an alternative training area, concessions or no.

until it receives a response that allows effective planning.

General aviation is just one of many stakeholders in Western Sydney Airport, the vast majority of which have a vested interest in its success. The industry's voice must be heard in the decision making stages, to avoid restrictions becoming a fait accompli.

Philip Smart – Acting Editor

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Most editorial queries should be answered within a month; if not contact the editor.

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# AirMail



Got something to get off your chest? Australian Flying welcomes your input. Send your AirMail, with your name and contacts (which can be withheld from publishing upon request) to: [stevehitchen@yaffa.com.au](mailto:stevehitchen@yaffa.com.au) or write to: Australian Flying, GPO Box 606 Sydney NSW 2001.

## Editor's Pick

The Civil Aviation Safety Authority's discussion paper on the use of Automatic Dependent Surveillance – Broadcast (ADS-B) for VFR flight is causing waves, as would be expected.

ADS-B has been mandated in commercial instrument flight since February and will become so for private IFR flights from 2020, but so far VFR flight has been left alone.

But the Australian Strategic Air Traffic Management Group (ASTRA) has suggested ADS-B would increase safety for VFR flight too, making aircraft visible to ATC, to traffic collision avoidance systems (TCAS) and to other aircraft fitted with ADS-B in. ASTRA has encouraged CASA to allow VFR aircraft to use uncertified ADS-B units that comply with Technical Service Order (TSO) 199. But many believe ADS-B for VFR would be an unnecessary expense.

Dear Steve,

ADS-B for VFR is just another needless expense. Any aircraft with a Mode C transponder is already visible to TCAS, even outside radar coverage.

If someone would knock heads together at Oz Runways and Avplan users of both would be able to see each other on the screen. Mobile data system coverage is pretty good when flying and where it isn't, the air traffic is sparse.

For actual VFR collision avoidance a super FLARM with open protocol running on a better frequency (one that actually works reliably) is all that is needed. I'm pretty sure it is possible to build a comms radio which uses one frequency for the minimal amount of data involved here and still works perfectly as a voice comms radio, not that you'd need to use it much or even at all. Alternatively use the 978 Mhz ADSB as in the US for this. GNSS receiver chips that work on multiple constellations are dirt cheap when you remove the nonsense certification requirement.



180 watt transmitters on 1090 MHz aren't required. Then there is no need for Air Traffic Control.

Nobody wants ATC, they actually want to avoid mid air collisions and ATC is a poor solution developed during a time of primitive technology.

Mike Borgelt

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## Australia's most unfriendly outback airport?

To: Economic Development Officer and Councillors of Longreach Local Government.

Dear Sir,

Pleased to meet you at the Jumbuck Motel and I'm hoping that our discussions will help to build a better reputation of Longreach to GA visitors. I have 10,000 hours GA flying, aircraft owner operator of my own flying business (retired), charter, training and scheduled services; over 50 years of flying experience.

At present a GA visitor to Longreach might leave with a question "is this Australia's most unfriendly outback airport?"

This is the background:

The Commonwealth requires pilots who visit security designated airports, mainly those with scheduled air services, to carry a special identity card on top of one's license and irrespective of previous GA history, age or other Civil Aviation Safety Authority (CASA) flying qualifications like Chief Flying Instructor.

There are two such cards;

1. The Aviation Security Identification Card (ASIC) requiring biennial renewal at a cost of \$283 and the applicant must present

their original papers in person (some AusPost shops are authorised).

2. An Aviation Identity Card (AVID), 5 years and \$153 but this one is not encouraged, a grey area of usefulness.

To exit the GA parking area at LRE one must pass through a gate with a coded lock which has warning signs that require the pilot to have an ASIC card in order to regain access to his or her aircraft and the pilot must ring the LRE airport official to get the code.

I have never struck this requirement to ring for a code, it is normally given on the airside of the gate.

One could speculate about how many aircraft have landed and read this and simply flew away. Or having read the negative comments ("most unfriendly airport visited in 30 years flying throughout Australia") attached to the Longreach airport details, in a very popular GPS navigation program, just thought.... "give it a miss".

Once through the gate facilities for GA visitors are thus:

There is one tiny (just tolerable) toilet hidden behind a door plastered with warnings and instruction signs aimed at us GA undesirables. There's an open door along side that my wife and I both went into.

The only seat for the visiting aviators is an

Longreach Airport. Sandy Reith asks a question.



unshaded narrow steel bench against a wall outside. An empty room which could be a pilot and visitors lounge is locked. This completes the facilities for General Aviation visitors.

Contrast Broken Hill (population 18,000) where the code is given on the airside as the "CTAF" which happens to be a number well known to any visiting pilot. Therefore no hassles and one is unlikely to be asked for any ID in any case. In addition the other facilities are acceptable along with a friendly aero club.

Obviously we are saddled with many over the top security regulations all born out of 911. In the US no such useless cards are required for their aviators. To make the best of the security requirements

in LRE requires some common sense.

As regard to the toilet and lack of a lounge or shade area, no doubt that is easily rectified.

More broadly your council should be aware that GA has been shrinking for many years due to an independent Commonwealth corporation (CASA)

is rife for unnecessary permissions against a never to be finished rule set that's promulgated some thousands of pages of strict liability criminal offences for the

instructors no such licence required.

Your Longreach aircraft maintenance facilities have shrunk along with the lack of training and all the benefits that accrue to your wider community from healthy GA activities and businesses. No more important than to outback communities, enabling them to overcome the great distances between people and services, many such services as found in Longreach.

May I suggest that your Council and district leaders keep this in mind when dealing with government at all levels, but especially your Federal

MPs because healthy GA businesses create jobs with ripple effect benefits. Even better would be a Council committee taking positive steps to promote GA reforms to governments. Kind regards, Sandy Reith

*Editor's Note: Longreach Council has been in contact with Sandy to discuss his issues. He said some of the issues have already been corrected, with council intending to address others. Other airport operators may wish to take note : some of the things that annoy visiting pilots most can sometimes be corrected with little effort. 🇦🇺*

« **...no doubt that is easily rectified** »

whose only political control is an occasional Statement of Expectations from the various Ministers this last 30 years. This broken model of governance is why your skies are relatively quiet these days. CASA fee gouging

most trivial or formerly unknown misdemeanours. Fee gouging for example such as an upfront fee of \$8000 to apply for a flying school licence, one known to me 15 months and still no permit. In the States where most pilots are taught by independent



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# News

*GippsAero's turbine Airvan becomes second Australian certified turboprop*

In August Mahindra Aerospace's (GippsAero) Airvan 10 became the second turboprop aircraft ever certified in Australia, when it received its Civil Aviation Safety Authority (CASA) type certificate at a special ceremony at the subsidiary GippsAero facility in Victoria's Latrobe Valley.

Deputising for CASA Director of Aviation Safety Shane Carmody, Stakeholder Engagement Manager Rob Walker passed the certificate to GippsAero CEO Keith Douglas, marking the entry of the 10-seat single-engine utility aircraft in to service, and the end of a six-year development program.

"This is hugely special," Douglas said. "It is only the second turboprop aircraft certified in Australia. So for the people here,

## CASA certifies Airvan 10

the community [at GippsAero] this is hugely significant."

The only other turbine certified in Australia was the twin-engine Government Aircraft Factories (GAF) Nomad in the 1970s, for which GippsAero also now owns the type certificate.

During the acceptance speeches, Douglas, GippsAero founder and Director of Development George Morgan and Chief Test Pilot David Wheatland paid tribute to the hard work and dedication shown by the small staff at the Latrobe Valley factory, and thanked partners Rolls Royce, Garmin, Bilyara and others who contributed to the Airvan 10 program.

GippsAero's piston-engine Airvan 8, first delivered in 2000, has become the most manufactured commercial aircraft in Australian history with more than 240 aircraft in service on six continents. 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.

Certification of the slightly longer turboprop Airvan 10 opens up a wide range of market opportunities for both GippsAero and parent company Mahindra Aerospace.

"It opens us up into a much bigger market, the turboprop market," Douglas said. "The piston-engine market is maybe 50-60 aircraft a year; the turboprop market is 150 per year. Cessna sells about 90 Caravans, the 750 XL maybe 30 of them. "We're going to enter into this space, but we're not going to compete with them; we're actually going to provide the operators with another option that's not been there in the past. "We're very, very excited about this."

STEVE HITCHEN



CASA Stakeholder Engagement Manager Rob Walker (left) hands the Airvan 10 type certificate to GippsAero CEO Keith Douglas.

The Airvan 10 is powered by a 450-hp Rolls Royce M250 turbine engine, has a maximum take-off weight of 2166 kg and carries 1000 kg of payload. It was designed to be as similar to the piston Airvan 8 as possible, but carries the added advantage of burning turbine fuel, which is often cheaper and more readily available than avgas in some world markets.

For GippsAero, the challenge now is to move the Airvan 10 smoothly from development into production.

"We will set-up capability here [Latrobe Regional Airport] to produce around 20 aircraft per year," Douglas said. "We're busy converting the plant to final assembly, but we will build capacity around what the market tells us, and not what we think we can build. And that will take two to three years before we know the level of acceptance of the aircraft."

Douglas and the GippsAero team also plan

to introduce the aeroplane in an unconventional way, shunning the tradition method of selecting a launch customer in favour of marketing by demonstration.

"We've decided to adopt a strategy that is very similar to the Airvan 8, which is to take the aircraft and demonstrate it, work with two or three key partners, who can then say 'fine tune this, tidy that up', and give us a lot of feedback.

"We're pretty clear where we'll go: New Zealand, Australia, the USA. One of our dealers in Alaska runs a small airline with 26 aircraft and he wants to increase that to 37, and he wants ten Airvan 10s."

GippsAero's development team will now focus on smaller projects for the Airvan 10 such as floats, autopilot and airconditioning whilst the company completes a feasibility study into putting the twin turboprop Nomad back into production as the Airvan 18. 



The Rolls Royce M250 powered Airvan 10 has a larger market than its piston-powered sibling.

**AIRVAN**  
10  
PG 14

**HALL OF FAME**  
P16

**US GA REGS**  
P18

# AOPA launches mobile simulator

*Coach aims to attract new young flyers.*

The Aircraft Owners and Pilots Association of Australia (AOPA Australia) has launched a Tour Coach and Mobile Simulator Centre to boost its presence at air shows and fly-ins around Australia.

The front section of the coach will be configured as a 30-seat transporter, with the back half dedicated to a digital flight studio containing X-Plane flight simulators. The studio will also double as an aviation education and multimedia centre.

According to AOPA Australia CEO Ben Morgan, the new coach is part of a plan to bring the thrill of flight to young aspiring aviators.

"I think all aircraft owners and pilots would agree that more needs to be done to encourage youth involvement in general aviation, if we are to see our industry revitalised," he told Australian Flying.

"Everywhere I have traveled in the past year, members and industry supporters have all called on AOPA Australia to take a lead role in meeting the above challenge, to which our board agrees.

"The addition of the coach will also enable the association to reach out into the broader aviation community, traveling to locations that we would otherwise be unable to get to."

The luggage space underneath will be used to carry AOPA's exhibition equipment, including merchandise, tables, chairs, pop-up marquees, cafe modules, BBQ, catering equipment and food/beverage stores. This will enable exhibition staff and all the stand fittings and furniture to be transported together more easily.

AOPA's tour bus is a result of a \$30,000 donation and challenge last year from aviation identity Dick Smith to develop a powerful initiative to encourage young people to get involved in aviation.


"Our response to this challenge has been the development of our Mobile Simulator Centre and Junior Pilots Cessna 152s," Morgan explained.

"Both assets will work in partnership with aero clubs, flying schools and aviation businesses to create signature AOPA Australia events that give youth their first flight experience, whilst encouraging them to start their flying training."

Morgan is very aware of the enormity of the challenge they are taking on, and won't be backward when it comes to asking the aviation community to pitch in and help.

"Whilst the initiative at this stage has been an AOPA Australia effort, we will be calling on industry businesses and supporters to get behind the program through various sponsorship opportunities," he said.

"Already we have been fortunate to receive support from the Sport Aircraft Association of Australia, who have come on board to help promote and drive the initiative. We're also in talks with a number of aircraft manufacturers and industry businesses.

"Of course, I would encourage industry supporters who would like to help our association to reach out and make contact with us. Our view is that we are stronger working together." 



AOPA's new tour coach will take aviation to the broader community.

## BREAKING NEWS FEATURED ON WWW.AUSTRALIANFLYING.COM.AU RECENTLY

- 1 Autorotation decision led to safe forced landing: ATSB
- 2 Key industry figures to speak at RAAA Convention
- 3 VFR ADS-B Discussion Paper under preparation
- 4 Final round of Remote Airstrip Funding opens for Submissions
- 5 Departmental Secretary departs Infrastructure
- 6 Revolutionary multi-surface LSA set for deliveries
- 7 Airbus glider sets new altitude record
- 8 FAA updates GA design regulations
- 9 Airservices forecasts \$59 million profit
- 10 BITRE GA Study Report not yet ready

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## Airbus Perlan glider soars to 52,000 feet

*New world record part of exploring stratosphere*

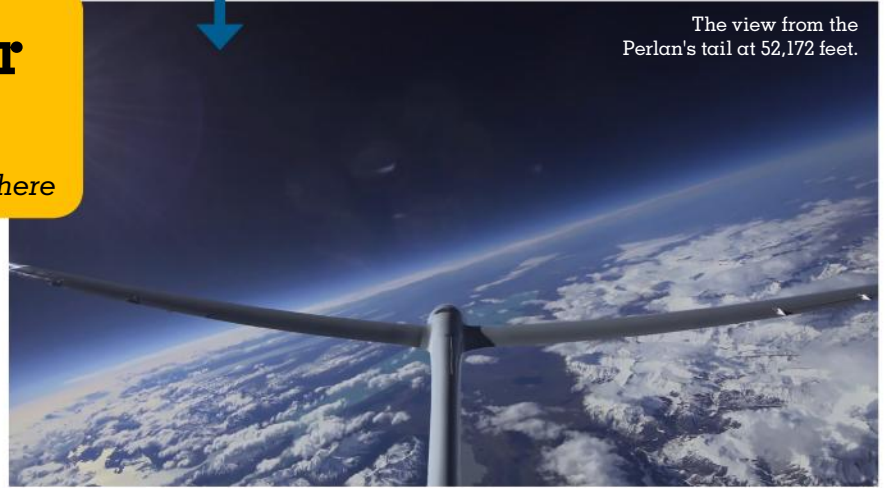
Airbus's Perlan 2, the world's first attempt to send an engineless aircraft to the edge of space, made history on September 3 by soaring to over 52,000 feet in the Patagonia region of Argentina, setting a new world altitude record for gliding.

Chief pilot Jim Payne and co-pilot Morgan Sandercock conducted the flight from Comandante Armando Tola International Airport in El Calafate, surpassing

the previous 50,727-foot world record set in the unpressurised Perlan I in 2006.

The Airbus Perlan 2 is a pressurised glider designed to fly to altitudes of up to 100,000 feet, where the air density is less than 2% that of sea level.

The aircraft has a gross weight of 818 kg and a wing span of 25.6 metres. The cabin is pressurised to 8.5 psi (14,500 feet), with its two crew wearing pressure suits and breathing pure oxygen.



The view from the Perlan's tail at 52,172 feet.

El Calafate is one of few places on earth where a combination of mountain winds and the polar vortex create the world's highest "stratospheric mountain waves", rising air currents that Perlan pilots believe can eventually carry their

experimental aircraft to the edge of space.

The Perlan team is hoping to fly to 90,000 feet, higher than the altitudes reached by the SR-71 and U-2 spy aircraft, where its true flight speed will be

350 knots (647 kmh). Researchers say the glider can explore the science of giant mountain waves that help create the ozone hole and change global climate models, without engine exhaust contaminating air samples. [↑](#)

## Five new inductees for Hall of Fame

*Pioneers, designers, educators honoured*

The Australian Aviation Hall of Fame (AAHOF) has announced that five new members will be inducted this year, and that Trans Australia Airlines (TAA) is to be recognised with the 2017 Southern Cross Award for organisations.

The five new members are:

- ♦ Edward Connellan AO, CBE: highly respected NT aviator and businessman. Established the successful Connellan Airways in 1943.
- ♦ John Corby:

distinguished aviation engineer and designer of the Corby Starlet.

- ♦ James Strong AO: highly-regarded CEO and board member of Qantas. Oversaw the successful merger of Australian Airlines (previously TAA) and Qantas.

- ♦ Bob Tait: renowned aviation educator, pilot and publisher.

- ♦ Nancy-Bird Walton AO, OBE: in 1934 the youngest woman to obtain a commercial licence in the British Empire and founder of the Australian Women Pilots' Association.

"These five outstanding individuals and TAA join 37 other individuals and six organisations in the Hall of Fame," said AAHOF Chairman Steve Padgett. "All have made quite magnificent contributions in their respective fields for the major benefit of Australia, particularly regional and remote Australia."

Southern Cross Award

winner TAA was formed in 1946 and took over Queensland domestic routes from Qantas. It became part of the "two-airline" policy of the Australian government with Ansett. In 1986 TAA was rebranded as Australian Airlines and in 1996 was merged with Qantas, which gave Qantas access to Australian domestic air routes again.

The AAHOF induction is scheduled for 25 November at the Historical Aircraft Restoration Society (HARS) facility at Illawarra Regional Airport, where AAHOF will establish a permanent display. [↑](#)



Corby Starlet designer John Corby is among five new additions to the Hall of Fame.



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## Piaggio appoints Airflite

*Avanti maker is stepping up its Asia Pacific sales campaign*

Italian aircraft manufacturer Piaggio Aerospace, maker of the P.180 Avanti EVO turboprop pusher twin, has appointed Perth's Airflite as its exclusive sales representative for Australia and New Zealand.

Piaggio sees the Avanti EVO as the ideal aircraft for a wide range of missions in the region, offering the speed and comfort of a mid-sized jet (including a stand-up cabin), with the operating costs and

airfield capability of a twin turboprop.

"Its versatility is a significant attraction for the market, as Avanti EVO can be utilised for corporate or special mission applications including specialised aeromedical operations," said Airflite general manager Kristian Constantinides.

Renato Vaghi, chief executive officer of Piaggio Aerospace, said: "The Avanti EVO aircraft corresponds perfectly with Australian and

New Zealand market requirements of efficiency and speed, as well as the specific ability to land on short or even semi-prepared runways, allowing access to peripheral airports.

"With its expert team and extended network, Airflite represents an ideal partner with which to promote excellence in business aviation, and the new agreement will significantly boost regional awareness of our state-of-the-art Avanti EVO."

The P.180 Avanti EVO's two 850 shp Pratt



Piaggio has chosen Airflite as Australia and New Zealand representative for its Avanti turboprop.

and Whitney PT6A-66B engines drive five-blade Hartzell low-noise propellers, pushing the aircraft to a 402-knot maximum cruise speed at 31,000 feet. Its nose mounted smaller wing allows the main wing to be pushed aft, freeing up cabin space, while the

pusher engine design reduces noise and allows the metal propeller blades to be heated by engine exhaust, removing the need for an anti-ice system.

Airflite has served as the Piaggio Aerospace maintenance centre for the Asia Pacific region for several years. [▶](#)

## FAA updates GA design regulations

*Changes aimed at encouraging new designs and methods*

The US Federal Aviation Administration (FAA) has updated the design rules for light aircraft, which it believes will have a positive impact on encouraging manufacturers to adopt new designs, materials and construction methods.

Federal Aviation Regulation (FAR) Part 23 governs the design of Normal, Utility, Aerobatic and Commuter aircraft and stems from the original Civil Aviation Regulation (CAR) 3, which was formulated in 1966.

Consequently, FAR 23 has been deemed over prescriptive and outdated, making it more expensive for manufacturers to adopt new designs and



Updates FARs may lower the cost of developing new aircraft.

technologies that could increase the safety of light aircraft. Aeroplanes such as the Cessna 172 series and the Piper Cherokee were all originally CAR 3 aircraft.

The new FAR 23, which came into force in September, will free-

up aircraft designers to make greater use of composites and delete a lot of the detail on how to achieve certain regulatory standards.

"This regulatory approach recognises there is more than one

way to deliver on safety," the FAA said. "It offers a way for industry and the FAA to collaborate on new technologies and to keep pace with evolving aviation designs and concepts."

It is also expected to significantly lower the cost of certifying new aeroplanes. In 2015, the General Aviation Manufacturers Association (GAMA) estimated that \$US200,000 of the selling price of a new-design aeroplane was simply to recoup development costs. This is believed to have contributed to older designs being kept and continuously updated rather than new ones certified.

FAR 23 also addresses recommendations from the FAA's 2013 Part 23 Reorganization Aviation Rulemaking Committee, which suggested a more streamlined approval process for safety equipment on conforming aeroplanes.

Australia's Civil Aviation Safety Regulations have an equivalent regulation, CASR Part 23, which is likely to be updated to the new standard, given that FAR 23 was based on the European EASA CS 23 standard, and to not update CASR 23 would leave Australia with an unharmonised regulation. [▶](#)



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# Top End Touring

High end destinations booked-ended with budget gems: **Shelley Ross** is reminded why flying northern Australia in winter is worth every ounce of effort.

look disdainfully at the metre-long esky on the deck, empty but for a couple of hessian sacks, and comment that there's no way my massive catch is going to fit in THAT. This is, naturally, met with peals of laughter. Until about three minutes later.

## We're gunna need a bigger boat

I'm going to try really hard to make this story about flying. But seriously, it won't be easy. The safari route we took through Arnhem Land, Kakadu and the Kimberley in June this year was heavily laced with water encounters and any astute fisherman knows the tropical waters up here are full of, let's say, promise.

We're at Kimberley Coastal Camp (KCC) on the eastern edge of Admiralty Gulf. As the crow flies, it's about half way between Darwin and Broome. There are no roads in; so guests arrive by

seaplane, boat or, in our case, a ten-minute chopper ride from Mitchell Plateau in the north Kimberley region of WA, where we've left our four aircraft.

Thrown onto the boat an hour after we'd arrived, and tasked with catching our own dinner, we're on a dedicated mission. At the helm is Tub, head honcho and minister of mischief at KCC. I'd asked Tub for a handline as that's the way Mum taught me to fish; I have no intention of getting endorsed on one of those ludicrously unwieldy rod things.

Anyhow, my sinker had no sooner hit the bottom when the action started. Even though I want to, I won't drag you through the next seven minutes of angling chaos, involving an ancient plastic reel, a hundred skin-burning metres of line and some spirited commentary, but it did end with six blokes staring disbelievingly at my beautiful 17kg black jewfish now sharing the deck with us.

Look, it's hard to be humble, OK? I've never hooked a fish that big. The fact I needed Tub and fishing guru Jonas to help me encourage it onboard is, in my mind, superfluous detail. I knew I was being particularly helpful jumping up and down on the spot shrieking with excitement. As the

week wore on, everyone in our group of ten had plenty of glory moments, as we caught (and often released) an incredible haul of one-metre-plus Spanish mackerel, fingermark, GT, stripey perch and mangrove jack.

KCC can accommodate 16 guests in well-spaced huts and is Tub's and his partner Jules' home. They live here all year round, including the roaring wet season. Gathered at mealtime in the open-air 'big house', where Jules works her daily magic with various seafood dishes, they share stories about life in this very remote location and offer an insight into the surrounding Yalrundair country and the traditional owners, the Wunambal Gaambera people.

A half-day walk into the bush with Tub is a fascinating journey into the Dreamtime stories behind the incredibly preserved rock art he leads us to. At several points having to lie down on the dirt floor of a cave to see the roof, or squeeze through a narrow opening, we feel privileged to be viewing such a palpable record of indigenous history. We see typically Wandjina art, with a couple of small walls of Gwion Gwion (Bradshaw) paintings. It makes the hot and dusty walk worth every step.



## Safari launch

To put things into perspective, let's back up a little and have a look at the whole safari. From the map, you'll see the route we took, a trip of 4400nm. Bluebird days for the whole three weeks once again confirmed mid-winter as a consistently reliable time for sensational flying conditions in our northern tropics.

With aircraft launching from Camden, Bankstown, Merimbula and Tyabb in Victoria, we met up on day one at Bourke. Our first night together is always one



**LEFT:** Always stunning viewing – the trademark river systems of the Gulf of Carpentaria.

**BELOW:** Bamurru Plains offers a unique bush experience on the edge of the vast Mary River wetlands.

of huge excitement and is filled with the usual uproar of everyone trying to talk at once, convinced it's their turn. We stay at the Bourke Riverside Motel – always brilliant.

From here, we strapped ourselves in for a fairly lengthy cruise north to the central Queensland town of Winton. These next couple of legs of the trip were all about getting us to the northern most point of our route in north-eastern Arnhem Land as directly and comfortably as we could. Rossy and I had hired BXO, one of my favourite C182s

from Curtis Aviation at Camden, in which I actually had to put the foot down this time, flying in the very slippery company of a pressurized C210T, a Cirrus and an even slipperier Falco. Fire engine red, obviously.

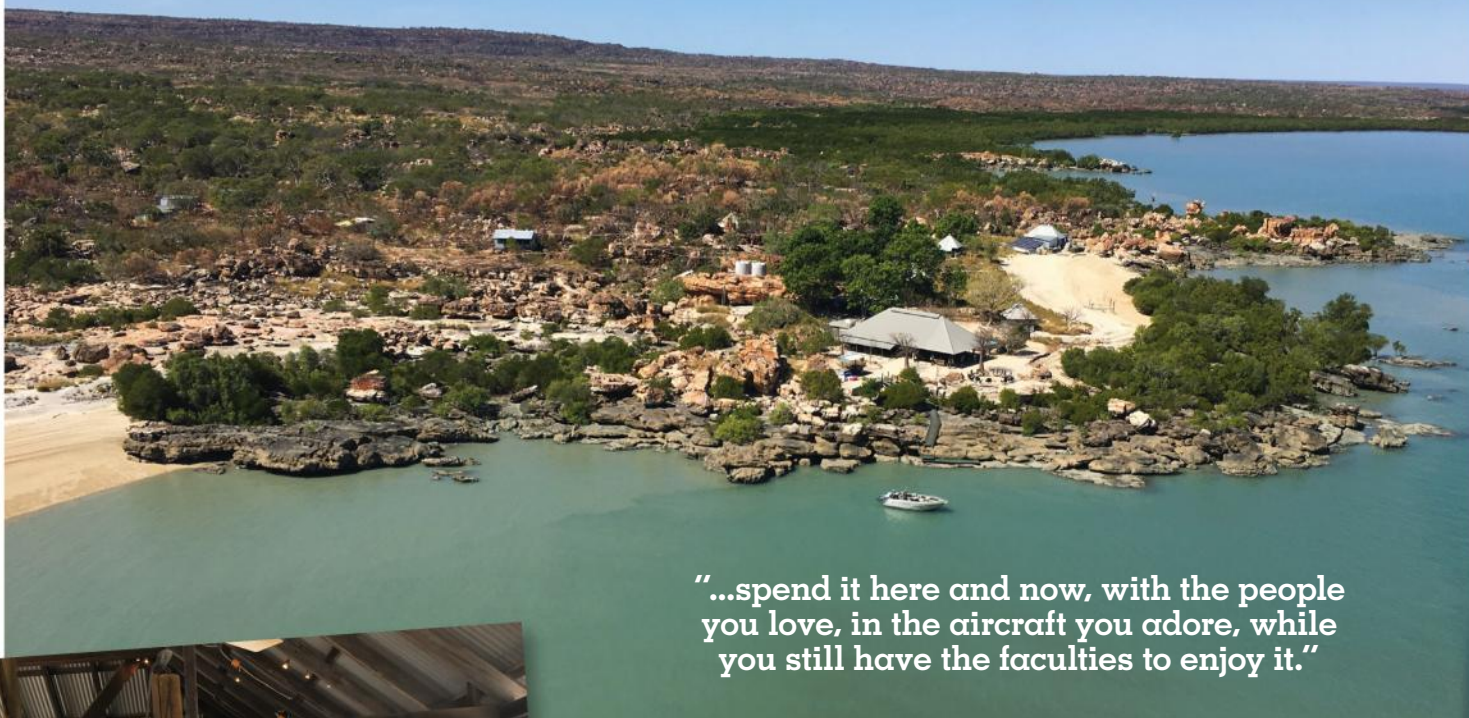
### Channel Country

Winton is a fantastic little outback town for a stopover. Resident council staff at the airport organise your fuel; there's plenty of tie-down cable, and it's a short drive into town. We love staying at the humble but ultra-friendly



BAMURRU PLAINS

A minimal footprint belies the experiences on offer at the remote Kimberley Coastal Camp.



“...spend it here and now, with the people you love, in the aircraft you adore, while you still have the faculties to enjoy it.”



**LEFT:** We reek of fish but we're all smiles after a week of memories at Kimberley Coastal Camp.

**BELOW:** Signature Arnhem Land beauty at Banubanu.



Waltzing Matilda Motel, where Neville and Caroline go out of their way to help pilots. There's an outback film festival on so the place is hopping; the pubs are full (so someone told me) and the whole atmosphere is vibrant. If you haven't placed a bet on the chook race at the famous North Gregory pub or had a steak at Tattersalls listening to Sax & the Single Girl, you need to.

Heading north-west from Winton, we overfly the show-pony of the northern Channel Country – that massively big sweeping arc of the Diamantina, with its dozens of tributaries and creeks, some flowing, most of them dry but still hanging onto the darker green vegetation that nods to a drink somewhere in the not too distant past.

Well past Julia Creek, we get the first inkling we are nearing the gulf with the trademark snaking tidal rivers of the region coming into view. Today is a 2.7 hour leg from Winton to Burketown, with a tiny tailwind

on our side. I'd only ever stayed at the old Burketown pub here, but since that burned down, the gliding boys at Caboolture have always told me we should stay at Savannah Lodge when we call into Burketown. I figured they should have a good handle on this, since they regularly fill in days and days up here waiting for their magical Morning Glory to turn up. Two words: book it. Amanda at Savannah Lodge is across everything we pilots want and need (she's married to one, and they run Savannah Aviation). The accommodation and surrounding gardens are like a tropical oasis on this steamy north Queensland afternoon. Nice find.

## Carpentaria cruising

We have a big flight ahead of us on day four of our journey, and we're all looking forward to hanging up our headsets tonight for three days on Bremer Island, just off Gove. But not before a bucket-list day of



scenic viewing out the windscreen. I find it difficult to put into words that low level flight along the beach of the Gulf of Carpentaria. Countless creeks and big old rivers like the Leichhardt and the Nicholson that drain into the gulf do so with the utmost theatre, twisting and winding themselves into natural works of the most stunning art.

We leave our aircraft at Gove, due to insufficient parking room for our four aircraft at the little airstrip on Bremer Island. The need for a short charter hop is annoying, but seemingly necessary, according to local charter operator, Laynhapuy Aviation. Once on the island, we're transferred to our accommodation at Banubanu Beach Retreat, where hosts Trevor and Helen have spent the last 12 years developing the retreat into what it is today.

We spend our days swimming off the pristine beach in front of our tents, walking the various bush and beach tracks, and generally watching our blood pressure ease off. One evening, Helen (by now everyone's favourite hostess of the trip) turns on an impromptu cooking class in her rustic, open plan kitchen, keen to share a few of her personal recipes. Spending time with Helen becomes one of my more memorable experiences on this trip. A relatively fledgling tourist operation with a few crinkles to iron out, there is still a lot to love about Banubanu.

## Arnhem Land & Kakadu

Clear skies and a tailwind make for an easy onward flight across Arnhem Land. At this height we remain outside Darwin's airspace step, and have missed Tindal's latest war games by a day, but there is plenty of traffic around Jabiru where we call in for fuel. It's hot today, so we linger in the terminal's aircon before setting off for the airstrip at Swim Creek Station, half an hour to the north-west, and the gateway to our next three-day stopover at Bamurru Plains.

Situated just west of the Kakadu border, on the Mary River floodplains, Bamurru is an extraordinary bush experience. Watching herds of huge Asian buffalo strolling a few feet from your tent each morning and evening, you'd be forgiven for thinking you'd strayed to the game parks of Africa.

This system is home to one of the largest crocodile densities in the world. On a river cruise along the Sampan Creek one night, we stop counting at 15 big salties lazing metres away on the muddy banks. It's a nature lover's paradise, with wallabies, magpie geese and endless other varieties of creatures. Hot tip – get amongst it all on a guided airboat tour, a la Miami Vice.

Yes, you'll pay top dollar but sometimes you just have to – the professional staff and gourmet catering at Bamurru are second to none. Sorry, but I'm not here to bolster your Super balance, you should know me better than that by now. I'm the one who wants to rip it out of your wallet and make you spend it here and now, with the people you love, in the aircraft you adore, while you still have the faculties to enjoy it. Trust me, I

wouldn't recommend a dud.

After three nights at Bamurru, someone mentions dirty washing. Now there's a grounding concept, and one of the reasons it makes a lot of sense to inject a night at Kununurra in here. Tomorrow we're heading remote again.

## Charter central

Flying up the Ord River north of Kununurra, past Wyndham and out to the coast of the Joseph Bonaparte Gulf is one spectacular

**ABOVE:** 4400 nautical miles of winter touring through the outback and tropics.

**BELOW:** Fly-in sanctuary in stylish ex-shearers' quarters on the shore of the beautiful Lake Paika ([lakepaikaaccommodation.com.au](http://lakepaikaaccommodation.com.au))





**BELOW:** Kimberley Coastal Camp cabin.

**LEFT:** A low between the two highs – Neil Bourke's hot rod Falco coozies up with our Cessnas at the bustling Mitchell Plateau airstrip.

**BELOW LEFT:** Parachilna, on the western edge of the Flinders Ranges, is the next place that needs to be on your fly-away radar.



Kimberley experience, but today we're on a deadline so must high-tail it direct to the north-west. For a couple of intersecting dirt strips in the middle of nowhere, Mitchell Plateau is one busy aerodrome. With our four aircraft, there are nine fixed wings and four choppers operating in and out of here this morning, so there's no daylight between any of the radio calls keeping the frequency buzzing from the moment we leave Kununurra.

One of the local young pilots who'd just landed came over to BXO to say hello. Liam O'Donnell is a past student from Curtis Aviation, now living a long way from home and happily working charter for King Leopold Air. He's keen to catch up on all the Camden goss. I've found this is not an unusual occurrence; the callsigns of BMX and BXO seem to be widely recognised in the most remote corners of the outback.

Sometimes it's hard to sneak in.

I've already filled you in on the sensational experience that's on offer at Kimberley Coastal Camp, where we are dropped on to the beach ten minutes later. In a nutshell, if you like water, sand, seafood, good music and great company, you're never going to want to leave KCC.

Heading out of Mitchell Plateau, we spend some time cruising the knockout coastal scenery of the Bonaparte Archipelago before setting track for Halls Creek, where we refuel, grab a bed and turn our heads for home. There's a lot of country to cover, however, and by some divine intervention, the tailwinds we've had all throughout our trip now turn on their heel and we again have tailwinds to cross the Tanami Desert. Happy days. A headwind today would have meant a possible diversion via Tennant Creek, Yuendumu or Tilmouth Well for a top up.

An Alice Springs stopover for two nights was great fun, as was throwing ourselves into the first controlled airspace of the trip. ATC certainly had their dance cards full the afternoon we arrived. RPT, choppers, light charter, medivac ops; everyone was out playing this day. With a filed flight plan, however, it made for minimal delays and the Alice controller was more than helpful. Having brushed up on procedures on CASA's OnTrack program the night before was also time well spent.

## Two final favourites

Our flight across the Simpson Desert southbound out of Alice is probably my favourite day of scenic viewing. We cross Lake Eyre and are blinded by the salt glare. Not much water in the old girl but her canvas of various coloured sandbanks, saltpans and tiny pockets of blue is still one of Australia's iconic images.

It's been ages since we'd called into the Prairie pub at Parachilna, one of my all-time favourite outback pubs, so I thought it was time, plus none of the others had been there. We refuelled at Leigh Creek, 30nm up the road. Since the airstrip at Parachilna is still not serviceable, (Jane Fargher at the Prairie continues to work tirelessly on this – who can

help her?) we land at Blinman, in the Flinders Ranges, and are transferred by Caroline from Angorichina Village. It's about a 40 minute drive through the geological showpiece of the Parachilna Gorge. Standing around the fire outside that very memorable pub on the main street after dinner, I detected eight new converts lured by the charms of Parachilna.

For our final night together before our home-bound legs took us in different directions, we chose Lake Paika. Rossy and I had discovered this beautiful, under-the-radar lakeside destination last Easter, and could not wait to share it with other pilots. Your hosts, Diane and Ian, are totally across pilot needs, providing full catering and transfers for the 10 minute drive from Balranald (where you've just left your aircraft, just east of Mildura). Five cozy bedrooms in the renovated shearers' quarters will fit your group of ten, with a country kitchen and dining room you're going to want to see for yourself. Dead set, this country of ours never ceases to inspire me.

That's it from me – now it's your turn. It's time to start planning for next winter. See you next issue.

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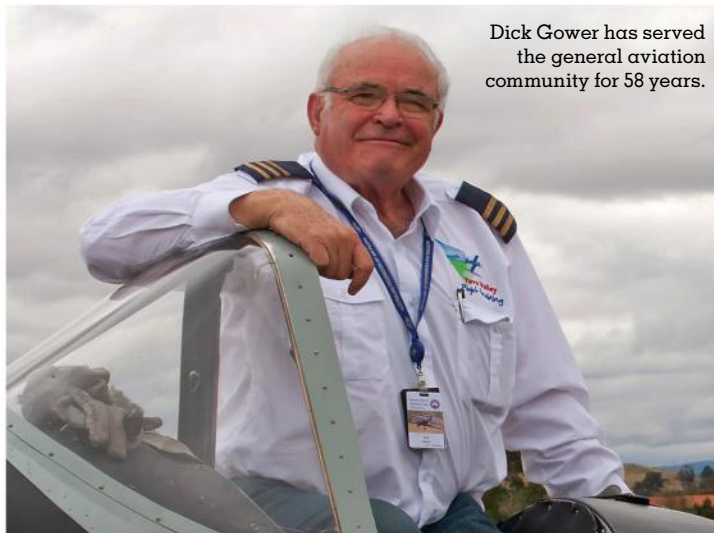


# Dedication honoured

The 2017 Wings Awards have honoured the people and organisations that work to maintain a vibrant, dynamic general aviation industry, and pass on a love of all things flying to the next generation. Without them, the industry and pastime we love could not survive. The Australian Division of the Royal Aeronautical Society and *Australian Flying* are proud to honour them.



**Australian Flying**



Dick Gower has served the general aviation community for 58 years.

## The Col Pay Award for a Lifetime of Service to General Aviation

**Richard "Dick" Gower**  
Dick Gower has served the general aviation industry for 58 years in engineering, flight instruction and education, passing on his knowledge through one-on-one instruction for students, conducting safety workshops, writing for aviation magazines and as a long-serving member of the Victorian Regional Airspace and Procedures Advisory Committee (RAPAC).

Gaining aircraft design approval delegation in mechanical, electrical, instruments, radio and associated structures, from 1993 he was the design signatory for Ansett Airlines and Ansett Engineering Services.

He established the Royal

Victorian Aero Club satellite flying school at Coldstream Aerodrome in 1996 and served as Chief Flying Instructor.

Dick Gower has a reputation for great dedication in disseminating knowledge to those who need it.

"Rarely a day passes without Dick replying to several e-mails or phone calls from within Australia or overseas, requesting help with engineering drawings for instruments, wiring, safety requirements, discussions on regulations, general help required by students on flight training or advice needed by young, new instructors," said his nominator. "All these requests are treated seriously with respect and given the time needed to be of use."



## Aero Club of the Year

### Kyneton Aero Club

For 50 years the Kyneton Aero Club has been a haven for a dedicated group of aviators and supporters in Victoria's historic goldfields region.

The club has an active history in flight training, from ab-initio through to advanced ratings, flight reviews, recreational ratings, conversions and more.

Being close to Melbourne but with the huge benefits of being outside controlled airspace with room to fly, freedom from





Moorabbin Flying Services has a 98% employment rate for graduates.

## Flying Training Organisation of the Year

### Moorabbin Flying Services

Since Moorabbin Flying Services (formerly Moorabbin Flying School) was established in 1993 at Moorabbin Airport in Victoria, its instructors and flight testing officers have amassed more than 120,000 logged flight hours between them, with a 100% safety record.

Moorabbin offers flight training and specialist instruction to domestic and international students, training in simulated “real life” private, commercial and instrument flight studies that allow them to experience as much as possible the challenges they may face in the aviation industry.

The school’s instructors adjust their teaching methods for different learning styles.

Students can attend theoretical classes and practical

flight training during weekdays and flying is available seven days a week.

Moorabbin Flying Services has created partnerships with Australian regional airlines Sharp and Skippers and international operation Vietnam Airlines, offering cadetships in to these airlines with guaranteed employment on completion of training.

Industry links and continuous improvement of training systems have resulted in a 98% industry employment rate for Moorabbin’s 1600 graduates, who have gained careers flying for airlines such as Qantas and QantasLink, Sharp, Skippers, Virgin, Jetstar, Tiger, Susi Air, Cathay Pacific, Emirates, Singapore, Qatar, Ryanair, Air North and Hardy’s.

air traffic congestion and no landing fees, has made Kyneton an excellent place for students and learner pilots to hone the vital skills of control, balance, discipline and proficiency without the in-flight task multipliers of competing traffic, busy radio transmissions or ATC control.

With around 170 financial members and 60 aircraft on the field, the club has trained hundreds of pilots with its Cessna 172s, including old stalwart VH-ABW and newcomer VH-LGP.

Kyneton Aero Club has also worked to establish aviation as an active, positive force in the community. The club has run various special events, including flights and activities for Scout Groups, local emergency services volunteers, Air Force Cadets and disadvantaged children and their families. It has held fundraiser “Gourmet Hot Dog” fly-ins for the Neuroscience Foundation and flown commemorative warbird formation fly-pasts at Anzac Day events.



Kyneton Aero Club promotes aviation in the local community.



RACWA CFI John Douglas (left) congratulates Mike Thomas on his Instructor of the Year award.

## Flying Instructor of the Year

### Michael Thomas (Royal Aero Club of Western Australia)

Michael Thomas began his flying career in 1971, flying solo after just eight hours of instruction. After a work-related break from flying he gained a CPL Commercial Rating in 1992 and an instructor rating in 1994.

Michael is now one of the longest serving flight instructors at the Royal Aero Club of Western Australia, having graduated many students in recreational, private and commercial pilot licences, night

VFR, formation flying and aerobatics.

His instructor skills include being “a whiz on the whiteboard”, breaking down concepts in to easily assimilated components, being adept at briefings and having a knack of “reading” and nurturing each and every student in order to correct weaknesses.

He has been instrumental in maintaining the club’s Formation Fridays, designed to maintain skills in formation flying, with up to 13 aircraft participating on special occasions.

# Flying the Russian Bear

You're going to Russia to test fly a plane? Really, is it safe? SeaRey circumnavigation veteran **Michael Smith** found the answer.

hey could have meant the plane, or just visiting the country generally. But there was a high level of concern amongst the few with whom I'd discussed my impending research trip, I suspect fuelled by the niggling tales of negativity on the evening news. We seem to only hear the bad news on Russia.

But I'd experienced this before and found that regardless of what we may conceive about other countries and what arguments may exist between our governments, the real people in the towns, especially away from the big cities, just want to get on with their lives, look after their families, educate their kids and invariably are willing to reach out and help their fellow man. The remote regions of Russia I visited in May of 2017 would prove no different.

One thing I've worked out along life's journey is that trepidation generated through preconceived ideas can shepherd you away from great opportunity. It's partly why I never told anyone I was heading off to London, let alone around the world, in my little SeaRey. I

was worried I'd be told I was a fool and in turn psyched out of going.

## A bigger boat

After the circumnavigation in Southern Sun, as much as I love her having provided a wondrous adventure and she saved my life, I knew that future missions would need a bigger, more suitable aircraft. If being honest, I was in fact lucky to have made it home. I knew I wanted to stick with a flying boat and towards the end of my journey I'd made a wish list of the key attributes required for the next Southern Sun: two diesel engines with constant speed props, minimum 120-knot cruise speed, four to six seats, built-in long-range tanks, all composite construction and marinised for salt water operations.

I had already looked all across the world and believed that such an aircraft didn't exist, that I'd need to have it built as a one-off, frankly a scary exercise fraught with danger. My concern wasn't just knowing what an enormous project that would be, but as Donald Rumsfeld had said, and

much like many parts of my round the world flight, the biggest issue would be the "unknown unknowns", the things I didn't even know I didn't know.

I travelled to Oshkosh to conduct research. There was some hope on the diesel front with Superior working hard on the Gemini engine, but it still seems to be years away. I spoke to some aircraft engineers who pretty much scoffed at the idea of the plane I sought. I stumbled across a very rugged looking three-seat amphibian from Russia on display, looking like a more agricultural version of a Searey. Talking to the builder with a mixture of English, Russian and gesticulation and looking at a brochure, it seemed they also had a twin aircraft. They seemed to take salt water operational issues seriously and while pretty rugged and simple, maybe it would be a step.

On returning to Australia I searched for any information I could find. The aircraft I had seen at Oshkosh were being built in the city of Samara, east of Moscow on the Volga River. It seemed





**MAIN IMAGE:** A brace of Antonov AN-2s in Irkutsk, Siberia.

**BELOW:** The mighty Volga River at Samara.

**BOTTOM:** AeroVolga LA-8, certified 8-seat amphibian: US\$1.3m!



to be a hub for water flying and specifically flying boats. Following ever expanding YouTube links I found three different companies building all-composite amphibious planes in the one town. I was intrigued, and was keen to visit to discover them first hand.

Upon receiving an invitation from the Royal Aero Club to an awards night in London, I knew I had the perfect opportunity; return home from London via Russia. Emails were exchanged and one of the manufacturers, Dmitry, would collect me from the airport. They had arranged for me to stay at the hotel right on the airfield where the planes were built. This was sounding both interesting and pretty serious.

## Russian welcome

I was met at the airport by Dmitry and Valentine. One of the factory owners, Dmitry spoke limited English, but far more than I speak Russian. Valentine spoke very good English and was an aeronautical engineer. On the way to the field he explained that Samara was the “home of flying



boat design in all of Russia” before proudly adding “also is home of Russian rocketry, we built the rocket that took Yuri Gagarin into space.” Then bizarrely, “We think is very good you start your circumnavigation and launch your film on April 12th, Yuri Gagarin National Holiday in Russia.” Okay... I couldn’t bring myself to explain it was a coincidence.

As the explanations slowly unfolded, it was explained that

Samara University has a very strong aeronautical division and that many graduates work for the Chaika Design Bureau, the source of all these flying boats. Valentine proudly advised that his father had attended there and designed aircraft, while his daughter is now enrolled to continue the family tradition. Surely nowhere else in the world is a whole town so dedicated to such an obtuse and frankly old fashioned form of

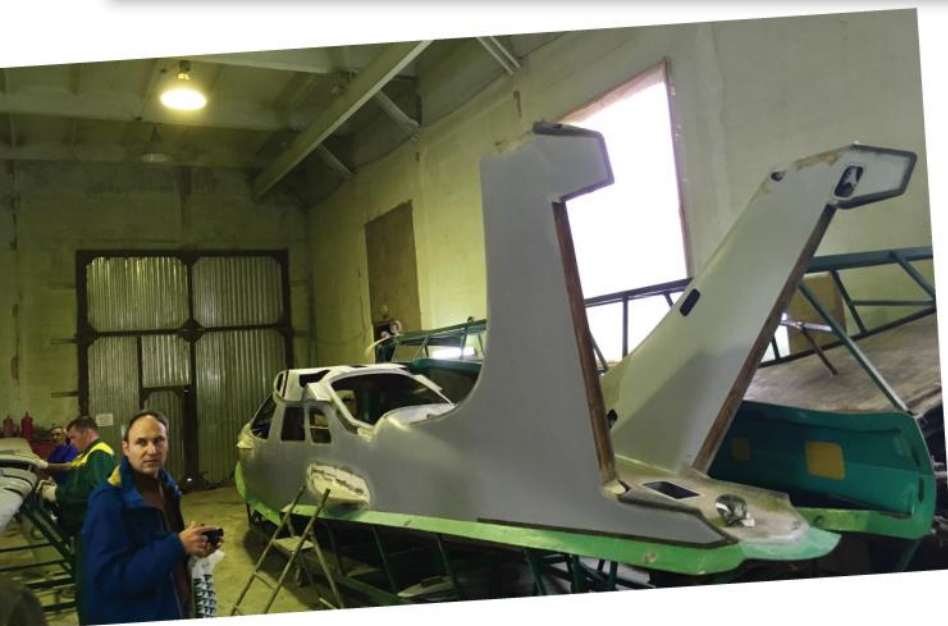
flying. Given my historical passion for the glory days of travel and the Ships that Flew, I was feeling like I’d arrived in Shangri La rather than the middle of Russia.

After a good night’s sleep and lovingly prepared if somewhat unique food (I still don’t know what it was, but think stodgy salty sweet milky porridge, for dinner!), I was given guided tours of the planes around the airfield, with a 450-metre tarmac runway and



**ABOVE:** Cold War relics abound on Russian airfields.

**LEFT:** L44 hull under construction with healthy use of carbon fibre in key areas.



**“The aeroplane building there was of the highest quality and ingenuity.”**

lots of surrounding grass. We then visited various factories and found composite construction quality I'd usually associate with building high tech racing yachts.

The quality of finishes was very high, the structure rock solid with a mixture of glass and carbon layups. The floor structures were incredibly rigid and seemed carefully engineered, multiple light members yet a very strong grid structure. Inside the cockpits were all very generous in space, because by their own admission, “Russian

men like bears, they are big and strong and need room to move!”.

### Flying the bear

The next day we test flew the L44, from SeaBear Aircraft. Start up was interesting, as all switches were labelled in Russian with Cyrillic symbols, so with Dmitry the builder it was a two-man operation. What I discovered was a magnificent aircraft; it flies beautifully, smooth, well balanced and surprisingly quiet. I was shocked just how quickly

it took off, I swear it must have been under 200m, and climbed like a champion. I was soon given the controls and got a feel for the aircraft. After the Searey it felt huge, heavy, high off the ground, much more slippery and with a lot of momentum.

We did a few circuits. Okay, there were a few bounces on the first try, but on the second I decided not to be intimidated. I relaxed and thought, it might be a tail dragger, but it's just a big Searey. The second landing felt

much better, with the third even instilling some confidence, which meant it was time to get wet.

On the way there Dmitry asked me to put the plane in a climb, then gently pulled one engine back to idle. We kept climbing comfortably at a few hundred feet per minute and there was plenty of control authority on hand. Now I don't have a twin endorsement, so that was enough of that for now... but I suspect it will be on my to-do list soon. Once beyond the airfield he kept indicating thumb down, and it was clear we were to remain below 1200 feet above the ground. There was a noticeable lack of radio calls so I'm assuming we were staying in the Russian equivalent of Class G airspace, and I noted there wasn't a transponder fitted.

We headed 15 minutes cross country to the Volga river for some all important Splash'n'Go's. The Volga is the longest river in Europe and considered the National River of Russia, working its way through Central Russia for 3350km before passing out to the Caspian Sea. Along the river banks were multitudes of small cabins and campsites. Dmitry explained that “winter is so cold, -15 degrees, is horrible, when summer comes and is 35

degrees we make most of it and move family from house to the river for three months”. Sounds delightful.

The L44 specifications claim operations in half-metre seas which we would not see on the river, instead finding rather short-period waves of 10 to 15 centimetres. We conducted around 20 water landings where I found the plane was more pitch sensitive than the highly forgiving Searey, but I got the hang of it soon. Alighting with the twin turbo engines and the Airmaster



constant speed propellers was truly impressive; she quickly climbed on to the step and would be airborne within seconds.

The L44 ticked six of the seven attributes I was seeking, albeit using Rotax 914s rather than the diesel I had hoped for. But I accept small diesel engines have a way to go, and having flown 480 hours around the world beneath one of those Rotaxes, I was very comfortable with the whole package.

At the airport I not only discovered SeaBear Aircraft, but also Aero Volga, whose eight-seat twin-engine LA-8 has been available for some time, but priced at over USD1m it is a serious piece of equipment beyond my reach. They also have a nice little two-seater coming soon, the Borey. I was able to see the final prototype being assembled. Strong but not overbuilt, with good volume inside the cabin, clean lines and a forward facing engine, I thought this may nicely fill the gap between the older style of the Searey, and the high concept Icon that has become very expensive, if you can get one.

It was amusing to see years of prototypes of various flying watercraft littered around in the back blocks, with new shining examples lining the runway edge. These guys have been at this for a long time; what surprised me the most was that in 10 years of trying to find the ideal amphibian for my round the world trip, I'd never come across any of this.

In isolation they have developed



a unique and robust solution to the problem faced by Australian seaplane pilots, that most currently available craft are designed and built by Americans and Canadians operating from fresh water. The aeroplane building there was of the highest quality and ingenuity, with practicality, such as the top hatch for entry and tail come gang plank feature for boarding in your good shoes!

We spent four days test flying these seaplanes on the Volga and across into Siberia to land on Lake Baikal, which is so ginormous it holds 20 percent of our planet's. We discovered gorgeous countryside, waterways and big hearted people. One of the great discoveries of my solo circumnavigation was the generosity of strangers, and my

**ABOVE:** Sleek, modern all composite twin Rotax engine flying boat, in the heart of Russia.

**RIGHT:** The built-in gangplank, walking through twin rudders which gave great authority.



new Russian friends did not disappoint.

In Siberia the owner of an L42 plane, an earlier model of the 30 SeaBear aircraft now built, asked his young neighbour to come along and help with translating. Translator Victor not only spoke perfect English, but had just returned from 10 years in Melbourne, having finished his PhD studying a medicinal

use of jellyfish venom at Monash University and winning two karate world championships. Quite an amazing and very focused young man. After we landed on Lake Baikal, with the water a near icy three degrees, he jumped from the aft deck of the SeaBear for a swim before climbing back on board via the transom; is there another seaplane from which you'd so easily do that?

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**LEFT:** Pristine Lake Baikal. This is what amphibians are for.

The flying we did around Irkutsk, self proclaimed as the Paris of Siberia, was not only interesting for its stunning scenery and city, but also intriguing for the heavy metal still active, being raided for parts or simply dormant at the Oek airport from which we operated. There was a very active scene with dozens of aircraft including MiGs, Yaks and Antonovs with

a dozen or so engineers running around working on them. The sight of the Antonov AN-2 firing up for a day's work is an impressive if smoky affair!

Everyone I met was very proud of their aeronautical industry and countryside. They live through awful winters of snow, ice and subzero temperatures, so in return make the most of their summers. Many have cabins or campsites

to which they relocate their whole families for three months over summer. That, and having so many aeronautical engineer graduates perfecting unusual ideas in design bureaus, seem to have contributed to a desire for interesting watercraft.

## Mission accomplished

If I'd listened to the nay-sayers, I would never have ventured into the middle of Russia and would have missed out on what may turn out to be a life-changing opportunity. It highlights the importance of mental framing and what I like to call Organised Spontaneity, careful planning accompanied with flexibility to react to the situation at hand. Crucially, the way we approach a problem has a dramatic effect on the end result. Without knowing exactly how this would turn out, I went in with an open mind

and was rewarded with great discoveries.

It's rare to find a vehicle of any sort, whether car, boat or plane, that comes so close to perfectly satisfying the required missions at hand. There are so many other adventures I have imagined that my beloved Searey just isn't up to, due to speed and carrying capacity. Simply, I'd like to take some people along. With the SeaBear L44 I think I've found a great vessel.

So what's next? Well, my circumnavigation started with an Excel spreadsheet nine years before the actual trip, and if planning is the first step of a successful journey... to the keyboard. To be continued! 📌

*Michael Smith was named Australian Geographic 2016 Adventurer of the Year for his record breaking solo circumnavigation in his SeaRey amphibian, Southern Sun. More details, including the film and book available at [www.southern.sun.voyage](http://www.southern.sun.voyage).*

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# Can Badgerys and Bankstown co-exist?

With the new Western Sydney Airport expected to take its first flights in 2026, **Philip Smart** went to find out whether Bankstown and Camden can continue to function.

A white Cessna 441 twin-engine propeller aircraft is shown on a grassy airfield. The aircraft is viewed from a low angle, highlighting its high-wing configuration and dual propellers. The background features a line of trees and a building under a clear sky.

Bankstown flying training schools will need to find another training area.

While the Federal Government celebrates finally gaining some traction on building Western Sydney Airport, operators at Bankstown and Camden are trying to discern the effects Badgerys Creek will have on flight training and instrument arrivals and departures at the secondary airports.

Badgerys will effectively sit in the current Bankstown training area. And of the three models used for a Stage 2 assessment of the airport's future airspace architecture requirements in the Western Sydney Airport Environmental Impact Statement, two include removal of instrument approaches and departures from Bankstown. The third applies to avoiding airspace conflicts between the three airports in Western Sydney Airport's

initial operations, although the Department of Infrastructure and Regional Development has stated that initial operations will not affect Bankstown. But not everyone is convinced.

"The worst case scenario is that IFR operations in and out of Bankstown will cease," said Australian Business Aviation Association Chief Executive Officer David Bell. "The area for training flights will cease because it's right on the path of the main runway there at Western Sydney Airport. It would slice right through the training area. And it would adversely affect Camden, which is very close to the new airport as well."

Bankstown instrument arrivals use runway 11, approaching from the west. The options are limited, as northern approaches don't align

with the designated runway, while approaches from the east and south would conflict with Sydney Airport's control zone.

Phil Reiss is a retired 20,000-hour corporate pilot, former Australian Aircraft Owners and Pilots Association (AOPA) President and current Vice President of the International Aircraft Owners and Pilots Association for the Pacific Region. He has flown everything from Lear Jets to Boeing 727s and still flies his private IFR twin from Bankstown. He believes the days of instrument flight from the airport are numbered.

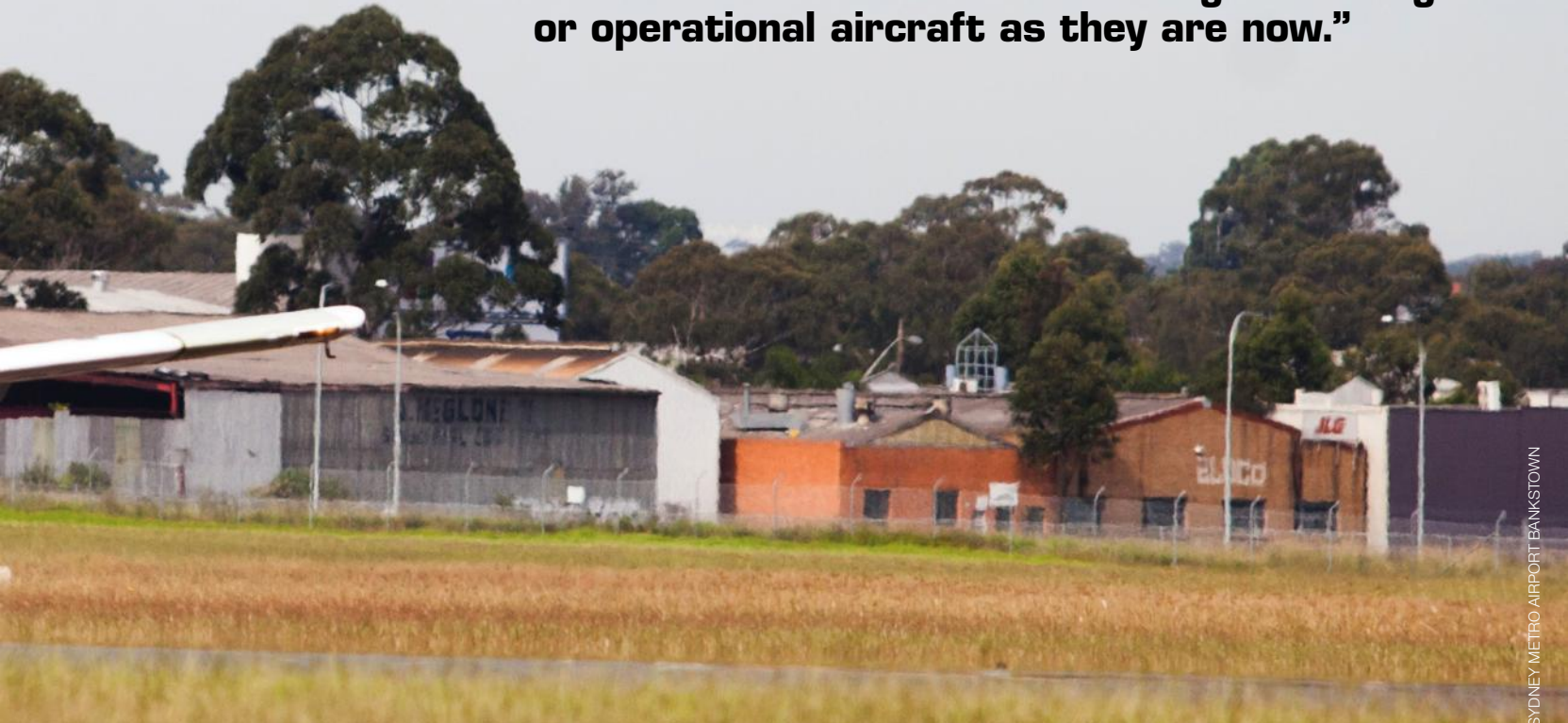
"I located the position of Badgerys Creek on a visual terminal chart," Reiss told Australian Flying. "I plotted the 05/23 proposed runway. If you run the extended centreline

as I did on my VTC chart, the extended centreline comes out just slightly to the north of Prospect Reservoir, probably about half a mile or a mile at most. That's where the lane of entry starts going in to Bankstown.

"Okay, we could make a left turn five and a half miles from the 05 take-off point. That would put you slap bang over the top of Penrith. Now I don't think the people of Penrith would be too excited by having aircraft turning and going straight over the top of their city. So there's going to be a general objection to that turning point. In which case, that means the extended centreline going out past Prospect before there's any turns or any departure from that particular track.

"Now you could well say well that's about nine and a half, 10

**"I don't believe that Bankstown and Camden can continue to be as active in flight training or operational aircraft as they are now."**





SYDNEY METRO AIRPORT BANKSTOWN.

**ABOVE:** Bankstown is also home to business aviation.

**BELOW:** Airports and aerodromes in the Sydney region.

miles, so it may not affect the VFR entry point to Bankstown: the aeroplanes will be at such a height that the lane of entry could still exist. However, it will effectively block off all IFR arrivals from the north and the west in Bankstown.”

Potential results include operational restrictions on Bankstown IFR arrivals and departures to avoid conflict with

Western Sydney Airport, or making Bankstown a VFR-only airport, effectively ending much of its freight, charter, business aviation and training operations and putting paid to any future plans to establish regional RPT operations.

“I don’t believe that Bankstown and Camden can continue to be as active in flight training or operational aircraft as they are now,” Reiss said. “I keep asking, what are you doing in terms of planning for the airspace architecture? What options can you put in place that will enable Bankstown and Camden to still function, albeit it at a probably reduced capacity, but at least be able to function?”

**“You’ve actually got to keep pushing; they won’t come round and tell you.”**

“And I keep getting the same answer: oh, it’s eight or 10 years before the airport’s operational. Well that’s fine and beaut, but flying schools and other organisations that are investing quite significant amounts of money in aircraft, their flying schools, all the things that they normally invest in, they need 20 or 30 years of planning for the future. You don’t buy a fleet of aircraft for seven or eight or 10 years. You buy it long term, at least a 20-year program.

“So my concern is that there’s a lot of talk about road, there’s talk

about jobs, there’s talk about the rail, there’s talk about all these other infrastructures. But nobody has put any real effort in to the airspace infrastructure and I think that that’s a critical thing and it needs to be addressed.”

## Training areas

Charles Thompson is Chief Flying Instructor for Bankstown based Basair Aviation College. As Australia’s largest flying

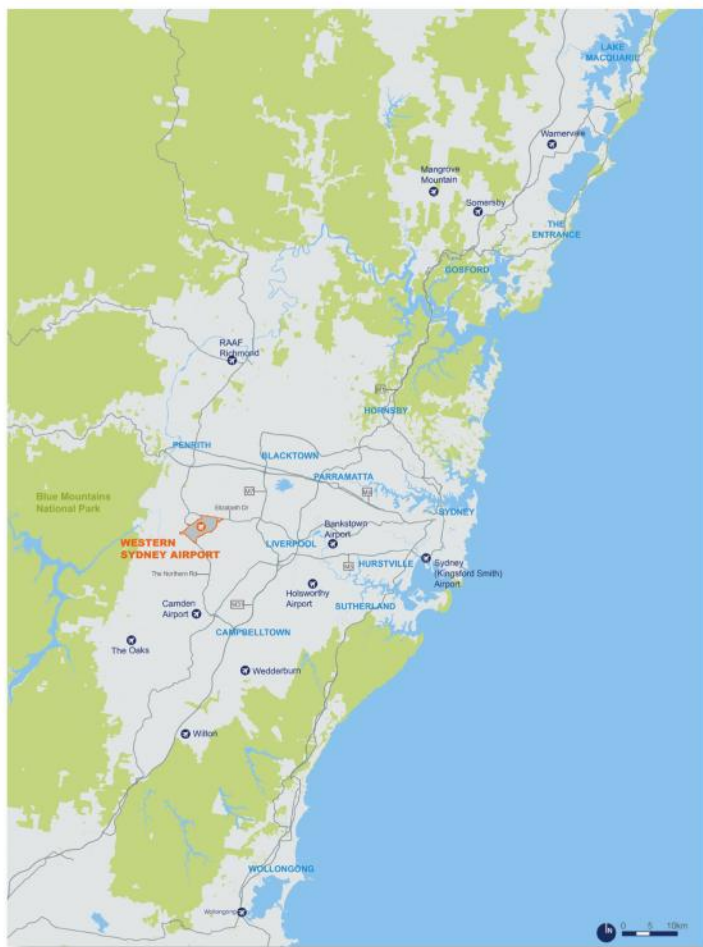
school, operating more than 70 aircraft, Basair has a vested interest in how Bankstown’s flying training area is affected and Thompson has already seen some early proposals.

“Amongst the options that were discussed were that they could extend our training area out to the west, up to Katoomba, which didn’t meet with too much enthusiasm from my instructors,” he said. “They don’t want to be practising forced landings over the scrub in a Cessna 152. So that wasn’t a practical proposition.

“They then looked at putting in a lane of entry down towards Wollongong, but there’s not really a suitable training area down there either; Wollongong has always been a bit restricted as far as friendly terrain goes.

“Over the years of Bankstown they’ve probably averaged a forced landing out there each year. Because we’ve basically been training over reasonably friendly terrain the pilots have usually managed to make forced landings and walk away with no injury and minimal aircraft damage. If we went over the escarpment, down around Wollongong, or over the Blue Mountains most of those would then convert to fatalities.

“So then they suggested that we could go up to Warnervale and along that way. But that’s a very busy air route up between Sydney



and Newcastle and once again, Warnervale doesn't have a large training area."

Thompson believes there is an alternative, but it will depend on the Australian Defence Force.

"The ideal training area as far as I can see, and a few people agree with me, would be the area from Richmond up towards Wisemans Ferry, the area up along the river which is currently Richmond's airspace. It's flood plain country, it's not likely to be built out, it's mainly market gardens and things up there past Pitt Town and up that way, Glossodia and through there.

"I had a chat with Mike Higgins from RAA [Regional Aviation Association of Australia] and we suggested that probably the solution would be a lane of entry up towards Westmead hospital. We could fit below the flight path, which we do now when we go up the lane of entry, with a ceiling of 2500 feet.

"That would give us about the same sized training area that we have now which is not likely to be built out. It's got enough flat country around there to be suitable for a training area. It would mean of course that the Air Force would need to give up that area or make Richmond a joint military general aviation airport.

"Now the Air Force does, I understand, have a plan to gradually phase out of Richmond. There's a lot less traffic there now, a lot less heavy equipment. Most of that's been moved up to Amberley. We've had meetings on this with [Federal Minister for Infrastructure and Transport] Darren Chester through the Federation of Aero Clubs. He's looking at it. We brought it up with [Airservices Australia board chair] Angus Houston."

Whatever the solution, Thompson is adamant that a positive outcome will only be achieved by operators and the industry actively getting involved.

"If you don't get involved you won't find out. You've actually got to keep pushing; they won't come round and tell you."

## What's at stake

Bankstown Airport's Master Plan, approved in 2015, quotes around 85 separate aviation-related businesses operating on the airport, supporting around 2000 jobs. Formerly the thriving centre of commercial general aviation operations for the Sydney Basin, the airport has seen a steady decline in movements from its historical high of 484,000 in 1989/90 to 220,000 in 2012/13. Passenger traffic has also declined, from 367,170 passengers in 2007/08 to 220,294 in 2012/13.

The Master Plan records 11 flying schools, flight training organisations and flying clubs, eight air charter operations and 62 sales, maintenance and repair organisations.

The vast majority of movements are piston singles (61.5%) and piston twins (18.8%), dwarfing helicopter operations (13.9%), turboprops (4.5%) and jets (1.3%).

Whereas property activities typically account for 30% to 50% of an airport's income, Bankstown Airport is different, with property accounting for 83% of revenue and aeronautical 11%.

But Bankstown airport operator Sydney Metro Airports, which

also operates Camden, is not banking on dwindling operations, with its Master Plan forecasting a resurgence to around 298,000 movements by 2033/34. Chief Executive Officer Lee de Winton is firm on the airport's future, and its ability to coexist with Western Sydney Airport.

"Bankstown Airport is one of Western Sydney's most valuable assets, not only in the immediate future but also as a long-term general aviation proposition, and Camden Airport is Australia's premier sport and recreation aviation airport," de Winton told Australian Flying. "Both airports have an important role to play in the Western Sydney community, both economically and culturally, now and in the future, as they provide an incubator for future commercial pilots headed for airline employment.

"Sydney Metro Airports continues to work with the Department of Infrastructure and Regional Development (DIRD) as the plans for the Western Sydney Airport are developed, this includes my participation at the Forum on Western Sydney Airport (FOWSA)."

## The Department

The Department of Infrastructure and Regional Development insists it will consult with industry, and believes initial operations from Badgerys Creek will not affect Bankstown.

"The airspace design for Western Sydney Airport will be finalised closer to operations commencing in 2026, however the Western Sydney Airport Environmental Impact Statement (EIS) found that airspace design could be implemented safely

**RIGHT:** Flight instructor at Bankstown Airport.

**BELOW:** Bankstown's movements have reduced steadily over time, but the master plan forecasts an increase.



SYDNEY METRO AIRPORT BANKSTOWN



and efficiently for the Stage 1 airport (single runway operations) without changing the current design and flight path structure for Sydney Airport or Bankstown Airport," said a department spokesperson.

"The Forum On Western Sydney Airport (FOWSA) is a consultative forum that has been established to enable the views of the community, industry, local government and other stakeholders to be heard and taken into account in the planning and development of Western Sydney Airport, including a particular focus on flight path design. Sydney Metro Airports, which operates Bankstown and Camden airports, is represented on FOWSA by its Chief Executive Officer. The Regional Aviation Association of Australia is also a member of FOWSA, representing the interests of its members in general aviation, including flight training operators.

"An aviation expert steering group, chaired by the Department and including representatives from Airservices Australia and the Civil Aviation Safety Authority (CASA), has also been established for the airspace design process for Western Sydney Airport. The expert steering group is currently undertaking preliminary planning to determine the detailed work and consultation for how the airspace design is delivered.

"As these design phases are implemented, the Department will consult directly with aerodrome operators and airspace users about their current and future airspace needs and the airspace requirements for Western Sydney Airport."

The department's timeline includes evaluation and consultation across a two-year period between 2019 and 2021.

### Final say

Australian Aircraft Owners and Pilots Association Chief Executive



Some fear Bankstown's days are numbered.

Officer Ben Morgan has called for government guarantees for Bankstown and Camden.

"Now we are in a situation where we have to fight to ensure that we are not going to lose airspace and that the flight training businesses and the general aviation companies that make their living from Bankstown and Camden still remain able to do so," he said.

"We need strong assurances from the government that under

no circumstances will these airports be closed. We need strong assurances from the government that no sweetheart deals will be done with these leasehold operators that are currently in charge of these facilities, that they somehow magically transfer title to these properties and to be permitted to sell them when the full impact of this new international airport comes in to effect." [↑](#)

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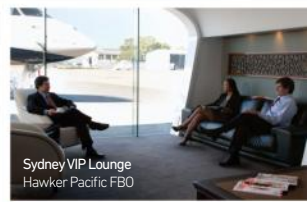
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# Show Stoppers

CASA has for years borne the brunt of blame for the lack of air shows in Australia, but could that be changing? **Steve Hitchen** did some investigating into what it takes to get an air show approval.



eneral aviation, perhaps more now than ever, could use an avenue for showing its exciting, enthralling face to the public at large. With participation rates down, costs going the other way and crashes on the TV news the only stories that seep out of GA, our passion needs some serious marketing.

Our main weapon should be air shows. They are colourful, action-packed and have an impact on people that leaves them wide-eyed, but the smattering of air shows that dot the country can't bear the load; we need more of them, but something seems to be holding them back, and that something is regulation.

CASA's rules have a dampening effect on air shows, either through active restrictions on display conditions, or simply by making the approval process so hard that potential organisers throw up their hands in despair.

And CASA doesn't apologise, pointing consistently to the lack of accidents at Australian air shows as vindication of their attitudes. That is lost on the paying public that are forced to squint their eyes to see black dots looping in the distance, and it is also lost on the pilots and the organisers who understand that good, vibrant, energetic air shows are not incompatible with safety.

It's a message they are having trouble getting across to the box-tickers from Aviation House, whose impact on an air show both before and during the event is often cited as the largest reason there aren't more public flying displays in Australia.

## The hoops

The primary deterrent is the constant frustration and heartache volunteer organisers would need to suffer under the relentless CASA demands for information



**MAIN IMAGE:** CASA's main concern is always that the crowd and the displays are kept well apart.

**LEFT:** If an ag pilot doesn't have the experience to fly low, fast and accurate, then who does?

**ABOVE:** Mark Bright believes that CASA needs to take into account the skills of display pilots, such as those needed to safely demonstrate high-powered warbirds.

and paperwork. It's a burden that no volunteer should be asked to carry, and is responsible for several air shows dissolving as those willing to leap through burning hoops can't be found.

It takes serious commitment to press ahead with doing what CASA wants, which brings us to the very question: just what do they want?

"It depends on the size and complexity of the event as to what

CASA will require in order to assess and approve an air display," CASA told Australian Flying.

"For example, we may require maps/diagrams clearly showing the display axis, display areas, aircraft parking, refuelling areas, joy flight embarkation points, spectator viewing areas, parachute drop zones, helipads, location of emergency services, location of any built up areas, major roads or houses in the display area, copy

of permission from the airfield owners, pilot display details sheets, a risk assessment, and an emergency management and response plan.

"This list is not exhaustive, but once again what is required depends on the size, complexity and location of the event."

That CASA considers this list "not exhaustive" speaks volumes about what event organisers are up against.

**“...eventually they realised that we were in this for the long haul and were determined to get this thing over the line.”**



Military displays are outside the reach of CASA, but have their own set of rules to ensure the public stays safe.

Mark and Kerry Bright plunged into the air show game in 2013, taking over the Wings over Illawarra (WOI) event when it seemed no-one else was prepared to take it on any more. The event was originally nothing more than a fly-in conducted by the Historical Aircraft Restoration Society (HARS), but the Brights brought a professional attitude to the show, and for them it is now a full-time job.

However, their first contact with CASA certainly was an eye-opener!

“We went to CASA and they said ‘what do you want to do?’ and we said ‘aerobatics’, and their first answer was ‘no!’ When we asked why, they said ‘because it’s just not going to happen.’ They came back with a long list of reasons, but primarily it was to do with the proximity of residential areas.

“So we looked at it and spoke to some people in the industry; came up with a few ideas and changed some things. We went back

to CASA, and eventually they realised that we were in this for the long haul and were determined to get this thing over the line. We stuck within the regulations and got our approval.”

The Brights now have a good relationship with the CASA people, and it’s based around professionalism and a belief that Wings over Illawarra is a serious air show determined to do the right thing by everyone.

“They know we’re not going to do anything untoward,” Bright says. “I think they now realise that we’re not cowboys and we are doing everything we can to make sure we stay within the rules.”

But it hasn’t been an easy road; most air show organisers have spent many bewildering hours trying to sort out what CASA wants and why, and despite the rapport they have built with CASA’s Sydney office, there are still head-shaking moments every now and then.

“Initially, with some things you do bang your head against the wall and think ‘Oh, for God’s sake, is it really that hard?’”, Bright recalls. “We understand there’s rules and regulations, and unfortunately there doesn’t seem to be much leniency; everything is by the book. Sometimes it comes down to interpretation, and we’ll have to argue a point.”

And even when you think all the ducks are marching in a straight line, CASA can ask for last-minute changes, and certainly want to know if you make any alterations to the show, the layout or the crowd provisions yourself.

Then you could be in the position where you have all the acts sorted out, the marshalling team put together, the fencing in place, the advertising done and even perhaps some pre-show ticket sales coming in, but you don’t have an air show because CASA hasn’t issued your approval. You have a heart-stopping wait for a piece of paper that may not be in your hand until the day before the show starts!

CASA really has your sanity in the palm of its hand.

Tyabb’s ever-popular air show will be on again in 2018, with Paul Bennet handling the paperwork.



## The Bennet way

Navigating the rules to secure the necessary approval for an air show is a complex and intensive task, requiring the ability to correctly interpret what CASA wants, and in some cases, even guessing what they will want before even they know. Experience is a weapon in these cases, and that's one thing Australian air show stalwart Paul Bennet has plenty of.

Knowing the issues facing organisers, Bennet set up his own air-show-in-a-box company that provides not only some very energetic aerobatic and warbird displays, but also takes care of the approvals and a lot of the organising. But even with his background, dealing with CASA is still akin to running a gauntlet.

"There are many local councils or aero clubs or similar organisations that might be wanting to hold an air show at a particular venue, and it's really made quite difficult for them by

CASA," Bennet says ruefully. "Debatably, it's almost too difficult for them to get an air show across the line."

Bennet and his team have done many shows across Australia, and have been on the ground floor of organising several of those including the recent Kyneton Air Show and next year's Tyabb Air Show. Part of the problem, as Bennet sees it, is the inconsistency across the various CASA offices that process approval applications.

"What we try to do is send all the paperwork through the Sport Office," Bennet says, "but that doesn't always work because some of the regional offices want to get involved. So when we deal with the Melbourne, Sydney or Adelaide offices, it's all totally inconsistent; they want different information.

"We've got a standard that we use for every air show, with modifications to risk assessments and so on, but basically the same.



Except, CASA wants different information depending on what office you deal with. If only we could put it all through one office, then it would make all of our lives a lot easier!"

And given that CASA actually produces a manual for air displays, you would think following that to the letter would guarantee a level of consistency. Not so.

**ABOVE:** Slower planes like this Fokker Triplane are now allowed much closer to the crowd than faster and more energetic aircraft.




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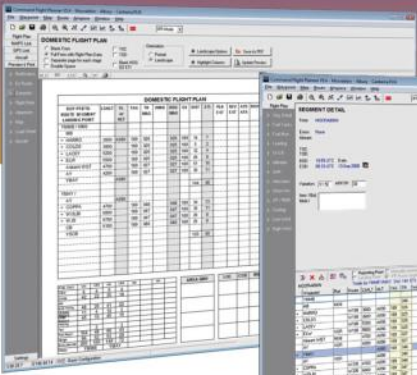


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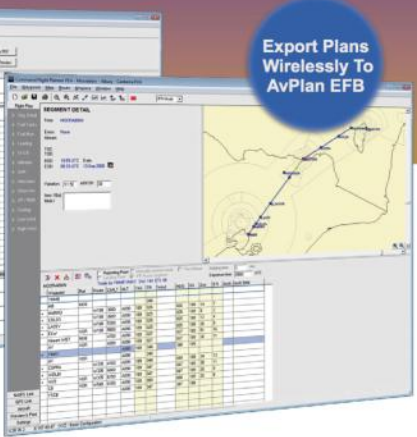


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**“CASA needs to make it so they’re not the police and they’re not the opposition.”**



Paul Bennet can display his Wolf Pitts best when it's low to the ground and close to the crowd.

## The book

CASA's manual *Air Displays: Safety and Administrative Arrangements* – simply known as the *Air Show Manual* – is one of those documents that is technically “guidance material only”, but if you want to get your approval, you'd better consider it more than “guidance”.

The current manual dates back to 2010, but there is a new version coming out that has been reviewed following the tragic crash of a Hawker Hunter at an air show at Shoreham in the UK. The proposed new *Air Display Administration and Procedure Manual*, still in draft form, has been written by subject-matter experts drawn from all of the CASA regional offices, with the aim not only of reviewing the old version, but also incorporating some new lessons.

At the time of writing, the draft manual is in the hands of some experienced air show campaigners, who will be taking to it with a red pencil before

handing the battered pages back to CASA. One of those campaigners is Paul Bennet.

“Among the reasons for the revised manual is the Hawker Hunter crash in the UK, and the Grumman Mallard in Perth,” he says. “That was a big disaster and they've really looked into that a lot. Reading between the lines, it seems to me there was a lot of problems with the way that application was assessed.”

In both those accidents, innocent people who were not directly involved with the operation of the aircraft were killed; the thing that CASA is most afraid of when it comes to approving a display. However, the revised manual appears not to be simply further turns of screws that are already tight, but a more collaborative document, and some in the industry are looking forward to it.

Mark Bright: “From what I've seen of the draft, it should give us a bit more scope. If nothing else

it should help the show run more smoothly.”

Hopefully, that smoothness will stem from consistency currently lacking in rulings and assessments from the CASA offices, which in itself is thought to be a result of a lack of understanding from the regulator.

## On the day

CASA's main focus on the day of an air show is separation of crowd and display. That is done by use of barriers and distance; fences and a buffer zone that will protect the paying public should a display pilot lose control. One surf through You Tube will give you any number of examples of what CASA is scared of, most famously the chilling tragedy at Reno in 2011 when a Mustang racer crashed into the crowd.

No-one ever wants to see a tragedy like that, Shoreham or Perth ever again, but are CASA's measures putting too much distance between the

entertainment and the audience? Currently, the air show manual indicates a distance of 200 metres between the crowd and the display line, and in some cases even further than that.

The result is too often a crowd who had come to be thrilled trying to spot black dots in the distance and asking “why don't they come closer?”. They can rest assured, that if organisers could get the aeroplanes closer, they would; often they are as frustrated as the crowd.

Mark Bright: “CASA is looking at it purely from a safety point of view as they always do, but sometimes I feel they don't take into account the calibre of the pilots that are flying, which is frustrating. It comes down to ‘that's what the regulation states, so that's what it's going to be.’”

But this is a tunnel that has some light at the end of it.

“We can get display lines closer now,” Bennet points out. “There's a precedent been set with Avalon, and I've started to push it with CASA. If the aircraft is something like a World War One aircraft that does only 80-90 knots, for example, they'll let that fly within 100 metres of the crowd.”

“But with a fast jet like a Sabre, they push it out to around 250 metres.”

It comes down, apparently, to the speed of the aircraft, and at Avalon this year, Bennet brought part of his display into 150 metres. However, the experience and standard of the pilot has a big impact on the safety of the display, and CASA's rulings often ignore the realities of what is and isn't safe, running too often for the comfort zone of over-prescriptive regulations.

Conversely, a pilot's inexperience or even moderate skill in a particular aeroplane needs to be taken into account, and though people like Bennet, Steve Death and Guy Bourke spend a lot of their lives flying displays, many pilots don't practice until the day before the show. In those cases, it is hard to condemn CASA's current approach.

## Solutions

It would appear that one of the main issues, inconsistency, may be on the cusp of correction. Rumour flitting around the air show community is that all display approvals will soon be handled by CASA's Sport Aviation office rather than the local office. That's a move that will please Paul Bennet no end.

"They [CASA] need a specific group of people to look after air shows," he reckons. "I think that would make a huge difference because, even though they'll still want to know a lot of stuff, at least it will still be consistent.

"We do the paperwork for a lot of the air shows, and if it all goes under one office then at least it will always be the same. There are some people in CASA that do really get it, and genuinely care about the future of air shows and wanting more of them.

"All the guys in the Sport office go out of their way to make sure

that it will work. But, they're also critical of new people that have never done a display before, which I totally agree with."

But regulation is one thing, not the only thing, that is holding back air shows. General aviation in Australia has always looked with envy towards Airventure at Oshkosh, wishing something like that, where anyone who can fly in does fly in, would manifest itself in this country. It's a case of pilots and enthusiasts feeling welcome; like this is an event for them.

In Australia, pilots are more wary of going to fly-ins because they fear the scrutiny of overlords. There are many examples of CASA officials that got over-official with nit-picking, completely ruining the atmosphere of camaraderie and further isolating CASA as a force to be avoided.

"When we have an air show or a fly-in, we want to have as many

aviators there as possible," Bennet says, "but at an air display there's a big group of CASA people going there to try to bust everyone who turned up; ramp-check them and find everything that's wrong.

"What that does is turn everyone away. They don't do that at Oshkosh; they encourage everyone who's got an aeroplane to come there, and they make it easy for them.

"But what we do is make it hard, then we police it, then we make it harder again. CASA needs to make it so they're not the police and they're not the opposition."


Bennet is right. Air shows should be an opportunity for CASA to show they are an integral part of the general aviation community, rather than overseers and spoilers of great fun. The current approach does discourage people from flying in, and a lack of aeroplanes in the parking area is not something any air show organiser wants to see.

## The final act

There are probably few airports around Australia that haven't at some time considered holding an air show. Most often they are charity events run by volunteers on the ground and in the air. Those volunteers are there because they know the value of an air show as a marketing tool for general aviation, and are prepared to put in time and effort.

The number of air shows that have never happened because the effort of getting an approval is a mountain too tall to climb can't be measured, but by anecdote alone, for every show that happens there is probably at least one that doesn't.

With a smarter, more efficient and accommodating approach from CASA, that ratio would probably improve, and subsequently so would general aviation's profile and reputation with the public.

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# Lessons from a logbook

JIM DAVIS



Jim Davis has a passion for instructing. He has been training civil and military pilots, in the air and on the ground for 50 years. His other passion is writing, which he studied at Curtin University in Perth. You can see, and buy, his two pilot text books PPL and Flight Tests at [www.jimdavis.com.au](http://www.jimdavis.com.au)

## Pass out, freeze or burn...

*Jim Davis recalls some high (and low) altitude antics with former employer Mr. Piet, who thought Met reports were for other people.*

**C**louds and turbulence were two things that really terrified old Piet. His efforts to avoid these hazards were sometimes so drastic they precipitated situations even more lethal than those we were trying to avoid.

Because of this perfectly justified fear of weather, one would think he would be keen to find out from Met what was expected – and then avoid it. I was once stupid enough to ask him if he had phoned for a Met report.

“And vor bloody good is zat going to do?”

I mumbled something about being better informed on what to expect.

“And you sink you can believe zose bastards?”

That pretty much put the lid on us ever discussing our future with the Met office.

In retrospect, the whole thing was highly hazardous, partly because he had no idea of what weather lay ahead, and partly because he was inconsistent in his methods of dealing with whatever the gods hurled at us.

On one occasion we were trying to get back to Wonderboom from Mozambique. Piet decided we would take our chances underneath a nasty looking lump

of weather. He took scud-running to a new level when we were forced lower and lower by the cloud base.

Finally, I remember being in the bottom of a valley with the cloud just above us, and massive drops of rain splattering against the windscreen so we could see almost nothing ahead. Part of the problem was that Piet had said, “Ve had better slow zis bloody sing down in case ve bump into somesing.” So we brought the twin back to about 90 knots with full flap. This meant that, with no prop ahead of us to blow the windscreen clean, we could only watch the rocky valley walls going past the side windows.

I was too inexperienced to be frightened, but Piet must have realised the seriousness of our

« **At 19,000 ft we were behaving like revellers returning from a rugby match.** »

situation. “OK Zim, you must help me now.”

He told me to put my hands and feet on the controls. I don’t know how this was meant to help. Then he commanded, “You votch zose clocks, and I’ll votch zese vuns.” This meant he kept an eye on the flying instruments, while I surveyed the engine gauges. Again, I have no idea why.

Oh, and just to make sure, he engaged the autopilot. This meant

that all his inputs were simply fighting the autopilot. Eventually we found Marble Hall and bunked down for the night.

Soon after this, my logbook tells me that on the 11th of April 1964, we were cruising down the coast, from Vilanculos to Lourenço Marques. Our steed was a Twin Comanche, N7339Y. This was totally illegal because neither of us had American licences.

A few fair-weather Cumulus

clouds started to form ahead of us.

Now, this would have been the day for staying underneath it and following the beach, but no, our previous flight in the valley had so affected my boss that he decided to climb over the clouds. Naturally there were more ahead, and they were larger and thicker, so we kept climbing.

Soon the cloud was solid and continuing to develop vertically. To hasten our ascent into the thin air we wound in the Rajay turbochargers. As we sailed through 15,000 ft I remembered that one’s finger nails should





*A pilot's logbook is far more than just a record of dates, times, places and flights; it is also a history of a pilot's flying career and a chronicle of the lessons learnt that makes them the aviator they are today. Jim Davis takes a look back through his own logbooks, and records the incidents that have shaped his approach to flying.*



BELOW: Do you really want to be kept warm by a temperamental machine that burns avgas in the nose of your aircraft?

turn blue – as a warning that the respiratory system was taking a hammering. This was indeed the case – we both had blue nails and maroon lips. At 18,000 ft I ventured to point out this colourful phenomenon.

“Who ze hell cares about zat ven ze whole world is full of colour?” he asked. We were flying a pink aircraft through a yellow sky. We giggled and marvelled at the splendour of it all. At 19,000 ft we were behaving like revellers returning from a rugby match.

Eventually a crack developed in our new found friendship. I

decided that, with an outside temperature of minus 20°C, it was time to do battle with the Janitrol heater. This is a malevolent device which lurks in the nose of the aircraft. It draws fuel from the right main tank and causes a young Guy Fawkes scene which is meant to transmit warmth and comfort to those in the cabin. Smoke it often causes; warmth sometimes. But there are few pilots who could claim to be comfortable with a petrol fire in the nose. Piet is not one of them. Knowing his distrust of the machine, I contrived to distract



his attention while attempting to ignite it.

Perhaps it is fortunate that he saw through my ploy. These heaters, although sometimes effective in skilled hands, can fill the cockpit with more smoke than heat if the light-up procedure is attempted by an inept operator – me, for example.

"Vot ze bloody hell are you doing viz zat sing?" he enquired. "Are you trying to kill us again?"

Leaning over to my side to switch off the offending heater, he neatly inverted us into the cloud tops.

I have to admit that I don't remember how we eventually emerged safely – but emerge we did. And having got it shiny side up, and pretty much under control, Piet initiated a now familiar monologue which touched on my education, the Neanderthals from whom I was descended, the size of my brain, which he compared unfavourably with that of a cockroach, and my future prospects at Placo should I ever again touch anything without first consulting him.

## Fire

Actually, N7339Y was this very same aeroplane that had been ferried from the USA only a few weeks earlier by the famous long-distance record-setter, Max Conrad.

It was the first Twin Comanche in the country and, as the Piper distributors for southern Africa, we were naturally excited about its arrival. We were clustered around Wonderboom's box-on-bricks control tower. Zingi, bow-tie spruced up, pacing around puffing on a stream of Lexingtons, kept demanding that the brow-beaten ATC, Schalk Barnard, try to contact the aircraft every couple of minutes.

Eventually, as we stared at the evening sky to the north-west, we all spotted it pretty much simultaneously. But there was something very wrong – the aircraft was streaming a smudge of black smoke behind it.

Zingi, quick as a flash, dived into the tower, grabbed the mike and shouted, "November 7339 Yankee, you are on fire!"

After a moment's silence we

hear a very bored accent drawing, "I yam naat on fiya."

Zingi: "39 Yankee, I say again you are on fire. You are trailing black smoke."

Max Conrad, now sounding seriously pissed off, said, "And I say again, I yam NAAAAT on fiya."

The poor man, then well into

trust me to do anything more exciting than hold straight and level, while cruising.

We stayed the night at Pat McClure's excellent establishment. Zingi was on top form in the pub, entertaining the locals as only Zingi could, with story after story mostly about

...by the time Hendrik stepped off the back of the wing, the Tiger was at about 15 feet.

his 70s, had flown all the way down Africa with everyone telling him he was on fire. Of course the trouble had been the misbehaving Janitrol heater. The very one that I was playing with at 19,000 feet.

Actually, I had another nonsense with Zingi and a fire.

We had landed a 235, ZS-DUE, on the golf course in front of the Leisure Isle Hotel at Knysna. When I say "We..." I mean Zingi landed. He didn't

how he had done something stupid in an aeroplane. He had the stage presence to carry it off, to the extent that his status was enhanced rather than diminished by each new story.

The stories got better as the night wore on, and Zingi's delivery was improved with each Castle Lager he put away.

Naturally, when it was time to head for East London in the morning, Zingi was little more

No Piet, it's not on fire...





than a cardboard cut-out of the man we had known the night before. He insisted that his headache was only tolerable if we brought the revs back to 1800. He also claimed it would improve with the intake of oxygen, so 500 feet was our ceiling for the flight.

As soon as he had the 235 set up he handed me the controls and told me not to wake him until I had East London in sight, or some desperate event took place.

As it turned out, both of these occurrences happened simultaneously. I spotted a large aircraft climbing out from East London, trailing an unbelievable mass of black smoke.

I was appalled. "Skipper, wake up – there's an aircraft on fire."

He was awake in an instant, like a snoozing cat that has had a glass of cold water chucked over it. Zingi grabbed the mike and shouted, "East London, Delta Uniform Echo, you have an aircraft on fire."

There was a slight pause and East London came back with, "No sir, that is one of the new Boeing Jet aircraft."

Zingi dropped the mike and stared at me, his eyebrows twitching, "Davis, you bastard..."

## Hendrik and the Tiger

In order to explain Hendrik's fate, it is necessary that I first introduce Dronkie Lombard.

Dronkie had been bunged out of the South African Air Force because of his devotion to the bottle. You had to be pretty dedicated for this to happen – drinking was a compulsory part of service life, so to be heaved out for over-compliance meant that you were very serious indeed about alcohol.

Dronkie had a round, sombre face, and freckles to go with his ginger moustache and centre-parted ginger hair. He dressed immaculately, always wore a tie, and always smelled of mint. He seldom smiled and had a habit of glancing nervously over his shoulder as if expecting to be accosted by bandits.

I later discovered that it was, in fact, the police who kept Dronkie in a continual state of nervous tension, but that's another story, which I will tell you later.

Perhaps desperadoes were also after him because, after a few days' unexplained absence from work, he turned up at the airfield with a split lip, the remains of a black-eye, and his jaws wired together. Fortunately the undisclosed reason for his condition also caused the dislodgement of two front teeth. I say fortunately because this permitted him to drink soup through a straw. It also enabled him to maintain his intake of alcohol.

I don't wish to steal the limelight, but soon after Dronkie's tooth incident, I saved his life.

Turning up at an Air Force bash at Swartkop one night, I was making my way through the gardens towards the lights and music, when I heard a sort of gurgling whistle coming from the bushes. I quickly located the source of this extraordinary noise – it was Dronkie. He was hanging

Even a turbocharged Twin Comanche can't outclimb this sort of nonsense.

on to a branch of a thorn-tree while trying to empty the contents of his stomach onto the grass, through the gap in his teeth. Every so often the outlet became blocked by a lump of carrot or something, and this put him on the brink of drowning.

Realising that he needed a means of unclogging the orifice I plucked a thorn from the tree and handed it to him, thus saving his life, a service for which he never thanked me.

But on with the story.

As the most junior member of staff, I was always delegated to do the crappiest flights. So, when a 900-mile trip across the desert to Windhoek, in a Tiger Moth, came up, I knew it was mine. I was therefore amazed to find Dronkie circling the Tiger in the back of the hangar, and casting a suspicious eye over it.

The grapevine soon confirmed that, as punishment for some alcohol-related indiscretion,

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he was to do the Windhoek trip. It was also revealed that he would be taking Hendrik, the hangar-boy, with him to help with prop-swinging and refuelling en-route.

Hendrik was a smiling black man of average stature. His most remarkable feature was a pair of gleaming size 14 boots that gave him the appearance of one of those toys that swing upright if you push them over. We all liked Hendrik for his gentle disposition. Unfortunately he was a little slow off the mark – a characteristic which led to his downfall. Literally.

The great day arrived. Hendrik was wearing his blue work-overalls from the bottom of which protruded his glistening toe-caps. Dronkie was attired in a charcoal suit and paisley tie. They donned their leather helmets, climbed aboard the tatty yellow Tiger, and were soon a wobbly speck heading for the western horizon.

A few days later Dronkie returned on the DC4 milk-run. But there was no sign of Hendrik. Here's what happened.

Apparently all went well on the first day of their trip. But

in the afternoon of the second, they picked up a ferocious wind which derailed their navigation, and caused them to divert to Mariental, for fuel.

When they got there they found it was blowing 40 knots slap across the sand runway. With no other options, Dronkie elected to land diagonally in the parking-area, in front of an open-shed hangar. This is not as stupid as it sounds because the aircraft would have a groundspeed of about five knots at touch-down.

On his first approach Dronkie managed to get the Tiger on the ground, but quickly realised that, with no one to hang on to a wing, it would be impossible to taxi to the hangar. He opened the throttle and was instantly airborne again.

During a turbulent circuit Dronkie explained to Hendrik, through the Gosport tube, that he, Hendrik, was to undo his seat belts, open the door and climb out on to the wing, while maintaining a firm grip on the centre-section struts. When the wheels touched, Hendrik was to leap off the back of the wing and grab the inter-plane strut, to prevent the aircraft from being blown over.

Hendrik didn't hesitate in this call to duty. As they turned final he was there, size 14s on the cat-walk and hands locked round the centre-section strut.

As they touched down two things went wrong simultaneously. Hendrik's automatic time-lag kicked in, causing an appreciable delay between Dronkie yelling "Jump" and Hendrik complying. The second problem was that the Tiger bounced. The result being that, by the time Hendrik stepped off the back of the wing, the Tiger was at about 15 feet.

A quick glance told Dronkie that his assistant would need a few moments to uncrumple himself before he could be relied upon for genuine assistance. So Dronkie did another circuit, landed close to the hangar where the hobbling Hendrik was able to grab the wing.

One would like to report that all's well that ends well, however that was not exactly the case.

The next morning, it seems that no amount of eloquence on Dronkie's part could persuade Hendrik to get back into the Tiger. Hendrik explained that his enthusiasm for aeronautics had diminished over night. He stated that he has lost his ambition to be in the aviation business. An absence from anything to do with aeroplanes, he announced, would be an extremely pleasant state. He also declared that Mariental had a certain charm. It suited his disposition. He intended to retire there forthwith, and live out the rest of his days peacefully on the side of town most distant from the airstrip.

So now, when the occasional pilot who strays into Mariental for fuel asks about Hendrik, they are greeted with a blank stare. But should they mention his gleaming, footwear, then a smile of recognition will creep over the dusty features of the old refuelling guy. ↕

ABOVE LEFT: Dronkie's over-compliance with the all-pilots-must-drink rule, got him bunged out of the SAAF.

LEFT: Dronkie Lombard and Hendrik, did their 900-mile Windhoek trip in a Tiger.



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# Pictures,

## Worth a Thousand Words

The time-honoured ARFOR is being replaced on 9 November 2017 with a graphical, state-based area forecast product. **Andrew Andersen** was part of the industry working group that helped make it happen.



The Australian aviation Area Forecast (ARFOR) has been around for as long as any of us can remember. While it can contain lots of information, everything has to be verbalised. That works well for phones and teletype machines, but it's not that easily read or applied, and modern forecast detail can make it rather long winded.

There's no one left who can tell us what flying was like in 1928, which was the year that the FAA's predecessor first used a teletype machine to transmit a weather report. When the Southern Cloud was lost in 1931, aviation forecasts were largely an educated guess. Conveyed with limited words and a national weather chart, they barely differed from what was printed in newspapers of the time.

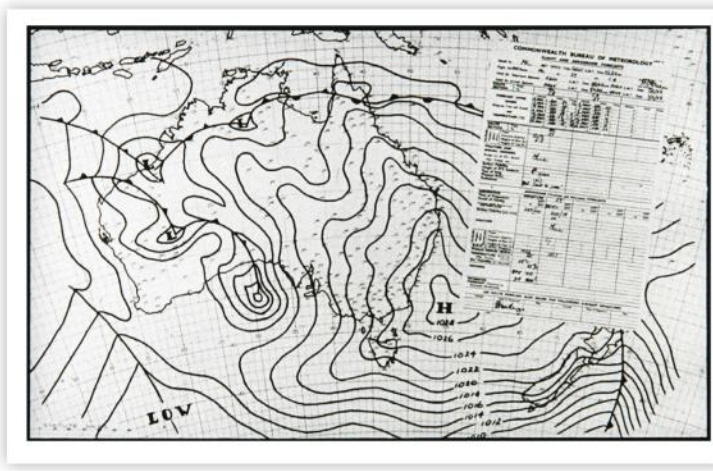
The computers of the 1970s made it possible for forecasters to work with huge volumes of weather data, and forecasts became more comprehensive. Extensive use of the telephone

allowed briefings to be provided to any pilot, even when far away from a briefing office.

One major constraint dogged the teletype, telephone, and early computer systems, and that was their inherent limitation to text. Only able to deal with written words and numbers, there was no way these systems could distribute pictures or images: everything in an aviation weather forecast needed to be said in words.

Over time, automated observations and advanced computer models have made it possible to forecast weather more accurately, further in future, and in more specific, smaller areas.

In aviation these improvements were reflected in detailed subdivisions within ARFORs, more and more often. But subdivisions make a forecast hard for humans to read, and unless a pilot is intimately familiar with the area, usually can't be interpreted without plotting the areas on a chart.



Aviation Weather Forecast Chart 1950s

COMMONWEALTH OF AUSTRALIA  
BUREAU OF METEOROLOGY  
**FLIGHT AND AERODROME FORECASTS**

Issued by: SY MET. OFFICE at 2300GMT Date: 9/10/66  
Valid for Departure Between: 2300GMT Date: 9/10  
Valid for Arrival Between: 2400GMT Date: 10/10

ROUTE SECTION: From SY to EN  
FLIGHT PLAN No. 2571  
DEPARTURE Pt. SY  
Destination: EN  
ETA (ESTD/GMT): 2300  
Altitude: 2500  
VAR: 200  
VAR USE LOC: RADAR

FLIGHT LEVEL	Wind	Temp	Flight Level	Wind	Temp
1500	28	30	1500	30	30
1000	28	30	1000	30	30
500	28	30	500	30	30
200	28	30	200	30	30
100	28	30	100	30	30
50	28	30	50	30	30

UPPER WINDS (Cross track and head)

TEMPERATURE (°C)

CLOUD (Amount and type)

HIGHER LAYER (Amount and type)

SURFACE VISIBILITY (km)

FL OF C ISOTHERM

TYPE OF ICING

LOWEST MSL PRESSURE

TURBULENCE

REMARKS: 4/8 cloud, 1000, DME 400, AIRREPS 307, 411 P.S.

AERODROME (Terminal and Alternate) FORECASTS

AERODROME	DEPARTURE	to	to	to	to
SY	2300	04	25	06	06
EN	2300	04	25	06	06

Time of Preparation: 2300  
Period of Validity: 2300-0400

MEAN DIRECTION (Cross track)

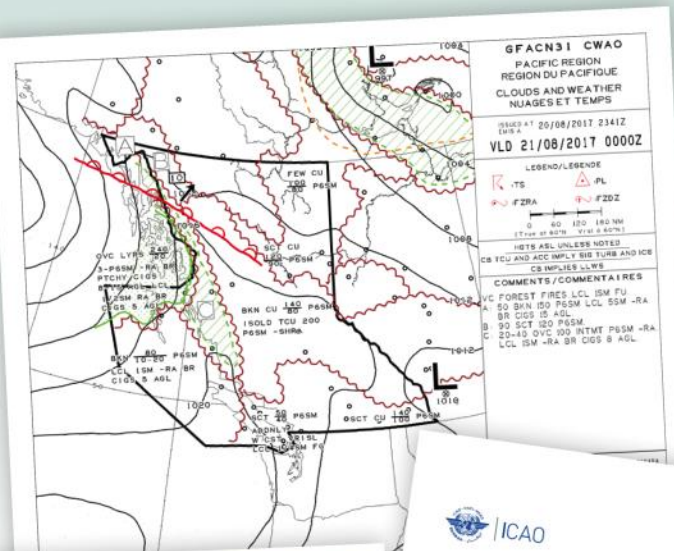
SURFACE WIND (Mean speed (knots))

SURFACE VISIBILITY (km)

WEATHER

CLOUD (Amount and type)

TEMPERATURE (°C) ETA



ABOVE: The Way We Were: Flight Forecast prepared for Ansett-ANA Lockheed Electra VH-RMC, Sydney to Melbourne 10 October, 1966) (credit: Capt Jason Hassard, via Barry Bell/CAHS Collection)

RIGHT: ICAO-compliant Graphical Area Forecasts available in Canada and UK (ICAO, NavCanada & UK Met Office)

**Forecast Weather below 10000 FT**

Valid 230800 to 231700 Z APR 07. Fronts/zones valid at 231200 Z

AREA	SURFACE VIS AND WX	CLOUD	DC
A	15 KM/MI - RA WDRPR 70MRA OCHL 3000 MRAZ ISOL 3000 M - HA UPSLOPES OCHL 200 MFG SEACOT A1 A (ISOL A W) OCHL HILL FG	BR/VCV SC AC AS W A 015 /XXX BR/VCV BOC SCT LEE HILLS ST - ...000-010/015 BOC BASE 000-000 - ...A1 (BASE 000 FG)	010 N 000 S
B	15 KM/MI WDRPR 70MRA OCHL WDRPR B1 3000 MRAZEA - ...COT (ENGLAND TL 10Z) OCHL 200 MFG SEACOT B1 - ...JAND LAN EL SEWHERETL 09Z WDRPR HILL FG	AREAS SCT/BRN SC A 015 /000 - ...N OF 52 N ISOL (AREAS B1) BR/VCV ST - ...000-000/015 (BASE 000 FG)	000
C	25 KM/MI ISOL 90M - SHRA FM 12 Z ISOL 70M HZTL 09Z	ISOL SCT CU SC W A - ...040/060 (000 - SHRA)	000

ISSUED BY MET OFFICE EXETER  
FORECASTER: DUBI FORECASTER  
CONTACT TELEPHONE: 0870 900 0100  
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BELOW RIGHT: Multiple ARFOR Sub-Divisions: A Comprehension Test?



That's time-consuming and error-prone, and no help to a GA pilot who is learning, having fun, or travelling serious distances.

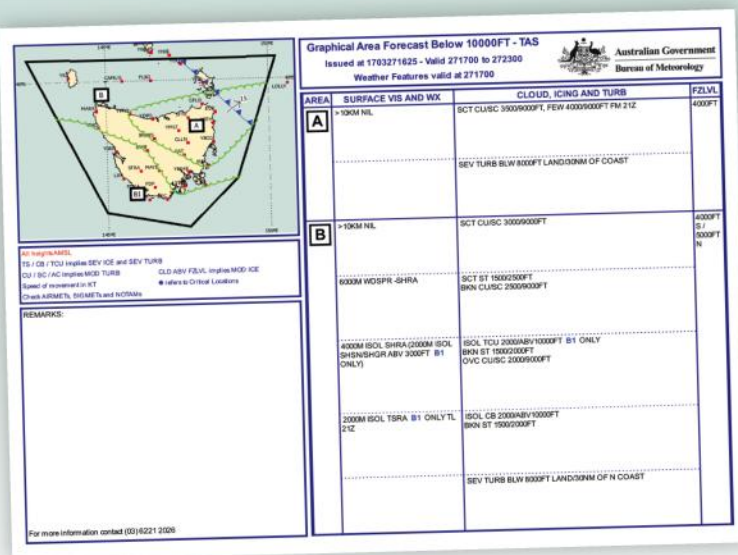
This problem isn't unique to Australia. Other comparable countries have recognised for years that wordy area forecast compositions aren't effective at getting the message across. Canada, Britain and the United States already produce low-level graphical aviation forecasts. Australia, so far, has not, and the ARFOR does not comply with ICAO. Although Australian SIGWX charts are available for

flight levels, up until now there have been no graphical forecasts for low level use.

Various elements of the Australian aviation industry have long sought improvements. In 2012, the Bureau of Meteorology raised the idea of a new, graphical, low-level area forecast during consultation activities. I joined the working group progressing the concept in 2013, and for the last four years we've been meeting with Bureau meteorologists to define the new forecast and agree how it should be implemented.

AREA FORECAST 180500 TO 181700  
AREA 43.  
OVERVIEW: AREAS OF SMOKE S OF YGTN/YHUG/YCMW BELOW 5000FT, LOCALLY THICK NEAR FIRES. SUBDIVISIONS:  
A: N OF YUDG/YHUG. B: S OF YUDG/YHUG.  
WIND:  
A: 2000 5000 7000 10000  
A: 130/35 130/20 160/15 200/15 PS08  
B: 160/30 190/15 220/25 240/25 PS05  
REMARKS: WINDS AT 2000 10 TO 15 KNOTS LIGHTER BEFORE 11Z.

AMEND AREA FORECAST 180320 TO 181700  
AREA 21.  
AMD OVERVIEW: SEVERE TURBULENCE BELOW 9000FT [REFER SIGMETS]. SEVERE ICING ABOVE 3000FT RANGES [REFER SIGMET]. ISOLATED THUNDERSTORMS/SHOWERS WITH SMALL HAIL SEA AND SW OF YCOM/YGLB/BUGA/YPKS, CONTRACTING TO SEA AFTER 15Z. SCATTERED SHOWERS AT SEA. SCATTERED GUSTY SHOWERS W OF MVI/YCOM TENDING ISOLATED AFTER 11Z. SHOWERS FALLING AS SNOW ABOVE 3000FT RANGES/SLOPES/LOWERING TO ABOVE 2500FT RANGES IN S. BROKEN LOW CLOUD RANGES/SLOPES W OF MVI/KIAN, EXTENDING TO W OF MVI/BWL/YCOM AFTER 13Z; BROKEN LOW CLOUD ALSO IN PRECIPITATION. ISOLATED FOG/MIST RANGES IN FAR SOUTH AFTER 11Z, THEN RANGES S OF AVBEG AFTER 14Z AND FOG TENDING FREEZING.  
AMD CLOUD:  
ISOL CB 4000/28000 SEA AND SW OF YCOM/YGLB/BUGA/YPKS, CONTRACTING TO SEA AFTER 15Z.  
BKN ST 3000/5500 W OF MVI/KIAN, EXTENDING TO W OF MVI/BWL/YCOM AFTER 13Z; ALSO IN PRECIPITATION.  
BKN CU/SC 4500/ABV10000FT W OF MVI/YBOM AND IN PRECIPITATION, SCT SEA AND FEW REMAINDER.



Sample TAS GAF for Tasmania

## Getting it Right

The Graphical Area Forecast (GAF) Working Group included representatives of just about everyone who has an interest in low-level aviation weather. The core group included people from Airservices Australia, CASA, the Australian Defence Force, Bureau of Meteorology, regional airlines, GA and airline pilot associations, sport and gliding organisations.

Meteorologists are a pretty bright bunch, and they love solving problems. However, like everyone they must work within tight resource constraints, so while we could ask for almost anything, it needed to be produced efficiently.

Big questions soon emerged including what the GAF would contain and how it might look, particularly in relation to symbology, abbreviations, formatting, distribution and updates.

## Okay... So, what's a GAF?

From 9 November 2017 (and probably by the time you read this), the 28 existing ARFORs are replaced by ten GAFs. These are broadly state-based, with separate east-west, or north-south divisions of the larger states, and each fits on a single page.

A GAF is identified by its state and division; for example, the GAF for the northern part of Western Australia will be known as WA-N, and for the eastern part of NSW, NSW-E. Each GAF's boundaries are shown on its chart by heavy boundary lines.

As the name implies, each GAF is a graphical chart of the area, divided into sub-areas by wiggly lines.

Because there is no need for a list of defining waypoints, there can be as many sub-areas as needed, each identified with a letter. The sub-areas themselves can also be split where there are variations in particular phenomena: for example, the TAS GAF might contain sub-areas A and B, with part of B, denoted as B1, containing a forecast thunderstorm. The chart shows tropical cyclones, cold fronts and troughs, "weather features", with their direction and speed. There's also a remarks box, which will include forecast weather for critical locations.

A table adjacent to the chart maps each sub-area to forecast surface visibility and weather; cloud, icing and turbulence; and freezing level. So that a pilot can quickly visualise how the sub-areas will affect their flight, various place names are shown, along with critical locations.

The title block contains the validity period and time applicable to the position of weather features. Like the ARFOR, all heights are given above sea level, and a legend reminds the reader of essential facts that link cloud types with thunderstorms, severe icing and turbulence.

If you've flown at flight levels you'd be aware of the SIGWX charts: the GAF is a similar concept, but the critical weather information is localised, more easily identifiable and tailored for low-level flight operations.

For a complete weather briefing it's critical that pilots also check SIGMETs and AIRMETs; the latter providing updates when conditions worse than forecast subsequently become expected. As before, pre-flight planning

should always include a check of applicable NOTAMs.

While the GAF provides much more weather information, in a more comprehensible format than the ARFOR, a GAF won't tell you the forecast enroute winds.

## Grid Point Enroute Winds

For a long time, forecast winds for high flight levels have been presented in boxes, across grid points on a chart, appropriately termed Grid Point Wind and Temperature charts, or GPWT.

To support transition to the GAF, in November last year the vertical extent of the ARFOR was reduced to 10,000 feet, and consequently, area winds at two altitudes above 10,000 feet were

**"A little time now, before you next fly, will save a lot of frustration later on."**

82505	GPWT FORECASTS LOW-LEVEL (AUS) 15Z	Image	19700102 1316	Lo-Res
82506	GPWT FORECASTS LOW-LEVEL (AUS) 18Z	Image	19700102 1316	Lo-Res
82507	GPWT FORECASTS LOW-LEVEL (AUS) 21Z	Image	19700102 1316	Lo-Res
82510	GPWT FORECASTS LOW-LEVEL (NSW) 00Z	Image	19700102 1316	Lo-Res
82511	GPWT FORECASTS LOW-LEVEL (NSW) 03Z	Image	19700102 1316	Lo-Res
82512	GPWT FORECASTS LOW-LEVEL (NSW) 06Z	Image	19700102 1316	Lo-Res
82513	GPWT FORECASTS LOW-LEVEL (NSW) 09Z	Image	19700102 1316	Lo-Res
82514	GPWT FORECASTS LOW-LEVEL (NSW) 12Z	Image	19700102 1316	Lo-Res
82515	GPWT FORECASTS LOW-LEVEL (NSW) 15Z	Image	19700102 1316	Lo-Res
82516	GPWT FORECASTS LOW-LEVEL (NSW) 18Z	Image	19700102 1316	Lo-Res
82517	GPWT FORECASTS LOW-LEVEL (NSW) 21Z	Image	19700102 1316	Lo-Res
82520	GPWT FORECASTS LOW-LEVEL (NT) 00Z	Image	19700102 1316	Lo-Res
82521	GPWT FORECASTS LOW-LEVEL (NT) 03Z	Image	19700102 1316	Lo-Res
82522	GPWT FORECASTS LOW-LEVEL (NT) 06Z	Image	19700102 1316	Lo-Res
82523	GPWT FORECASTS LOW-LEVEL (NT) 09Z	Image	19700102 1316	Lo-Res
82524	GPWT FORECASTS LOW-LEVEL (NT) 12Z	Image	19700102 1316	Lo-Res
82525	GPWT FORECASTS LOW-LEVEL (NT) 15Z	Image	19700102 1316	Lo-Res
82526	GPWT FORECASTS LOW-LEVEL (NT) 18Z	Image	19700102 1316	Lo-Res
82527	GPWT FORECASTS LOW-LEVEL (NT) 21Z	Image	19700102 1316	Lo-Res
82530	GPWT FORECASTS LOW-LEVEL (QLD-N) 00Z	Image	19700102 1316	Lo-Res
82531	GPWT FORECASTS LOW-LEVEL (QLD-N) 03Z	Image	19700102 1316	Lo-Res
82532	GPWT FORECASTS LOW-LEVEL (QLD-N) 06Z	Image	19700102 1316	Lo-Res
82533	GPWT FORECASTS LOW-LEVEL (QLD-N) 09Z	Image	19700102 1316	Lo-Res
82534	GPWT FORECASTS LOW-LEVEL (QLD-N) 12Z	Image	19700102 1316	Lo-Res
82535	GPWT FORECASTS LOW-LEVEL (QLD-N) 15Z	Image	19700102 1316	Lo-Res
82536	GPWT FORECASTS LOW-LEVEL (QLD-N) 18Z	Image	19700102 1316	Lo-Res

GPWT Forecasts broadly correspond with GAF boundaries and are available up to 21 hours in advance.



also removed. Pilots who fly at mid-levels will therefore already be familiar with the GPWT.

Besides showing the wind strength and direction, GPWT charts also show the temperature for each altitude. Because there are multiple grid points within a particular forecast area, it's now possible to calculate headings and groundspeeds more accurately than could be done with just one set of winds for an entire forecast area.

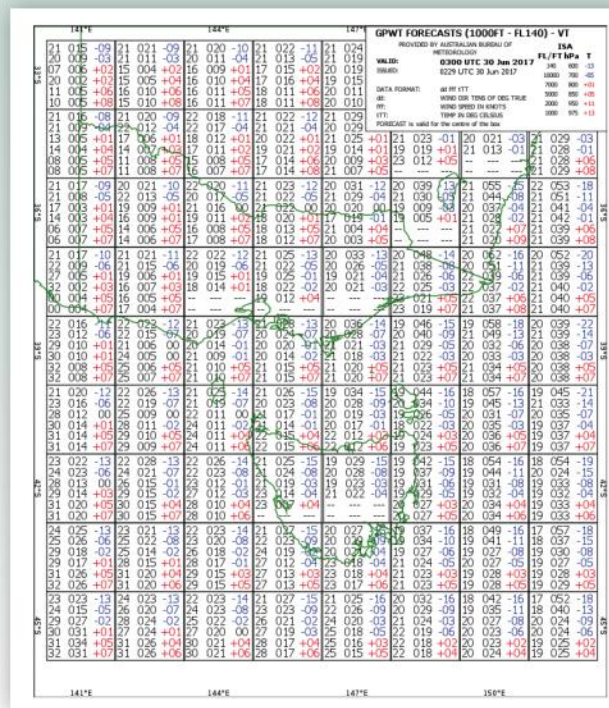
For many GA pilots getting used to GPWTs instead of the forecast wind section of the ARFOR will be the change that needs most attention. For convenience, the GPWT charts are available in five degree latitude-longitude grids for the whole country, or in 1.5 degree grids, broadly consistent with the GAF boundaries. Low-level

GPWTs are already available in NAIPS, 21 hours in advance, and can be used to advantage for long-distance flight planning.

To use a GPWT, you need to think about when and where the flight is going – from which you choose the correct chart and grid point(s); then interpret the grid box, remembering the wind direction is given in tens of degrees for 1000, 2000, 5000, 7000, 10000 and FL140, in order. There's a legend box to remind you, and colour coding and +/- signs to easily separate the temperatures from the other data.

It's important to realise that this change means that you need both a GAF and GPWT as the principal parts of an enroute weather briefing.

The major EFBs and flight planning apps will obtain GPWTs automatically.



Sample GPWT Forecast for Tasmania.

CPL Aerodynamics

CPL General Knowledge

CPL Performance

CPL Meteorology

CPL Navigation

CPL Air Law

HPL  
HUMAN PERFORMANCE & LIMITATIONS

Navigation Workbook

RPL/PPL Study Guide Volume 1

RPL/PPL Study Guide Volume 2

Recreational Aircraft BAK  
Basic Aeronautical Knowledge

RECREATIONAL AIRCRAFT  
CROSS COUNTRY ENDORSEMENT

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LEFT: ARFORs to be replaced by GAF and GPWT from 9 November 2017.

RIGHT: Features of the new GAF and GPWT, compared with previous ARFOR.

BELOW LEFT: EFB Products will be able to display GAFs, integrated with other flight-critical information



INDICATIVE SAMPLE, COURTESY AVPLAN EFB

## Briefings and Area QNH

Many pilots use the area briefing function of NAIPS to access a pre-defined set of briefing products. A NAIPS Area Briefing will currently return the forecast Area QNH, ARFOR, TAF for locations within that area, SIGMET, AIRMET, AIREP and NOTAM. The Specific Pre-Flight Information Bulletin (SPFIB), used extensively for route flying, provides similar (but not the same) information. These familiar Area Briefings will continue to be available,

with GAF and GPWT replacing the corresponding ARFORs. Forecast Area QNH, which historically has been mapped to the ARFOR boundaries, will also still be included. For clarity, these areas are being renamed Briefing/QNH Areas, and will be shown along with the new GAF boundaries, on PCA and ERSA charts.

## GAF Validity and Amendment

GAFs will be issued every six hours, but two at a time, with each valid for six hours. They will typically be available from about one hour, but no less than 30 minutes, before becoming effective. This means that even briefings obtained right before the cutover time will still contain a forecast valid for more than six hours. Because the GAF is in graphical form, it's not possible to reliably amend it in words. So, when a forecaster expects conditions to change, to worse than those forecast in the GAF, an AIRMET will be issued. An AIRMET is a statement of the expected change to the forecast conditions, and unlike a GAF, can be readily communicated in words, including over the radio if required.

When AIRMETs are issued ATC will broadcast their availability on relevant area frequencies and a pilot can request the details as necessary.

When conditions are expected to be better than forecast there is no immediate safety issue and a corrected GAF will be issued instead.

It's vital, as part of this changeover, that pilots understand that GAFs will not be amended like ARFORs, and that they

must obtain AIRMETs to ensure they have the current area forecast information. Although AIRMETs have been available for some time, some pilots don't seem to be using them.

## Distributing the GAF

Thanks to EFB technology the way pilots obtain and use weather forecasts and other briefing materials has changed markedly in the last five years.

Many GA pilots now use CASA-approved EFB tablet apps, which assimilate a pilot's flight plan with NAIPS briefing information, enroute and approach charts, navigation, live weather and traffic data. More than a few of us are now flying with no printed briefing materials, and a GAF that could only be printed on paper would be of limited practical use. The Working Group made contact with the major EFB and flight planning software developers, from which technical requirements were defined to ensure the new forecast could be used with those systems.

Nevertheless, it is also essential that flight briefing materials are accessible without an EFB. An additional complication is that forecasts for operational use must be distributed by Airservices Australia, and not the Bureau of Meteorology.

**YMMM AIRMET 02 VALID 190530/190930 YPRM – YMMM MELBOURNE FIR ISOL TS OBS AT 0525Z WI YCFH - MRE - YCBP - YALA TOP ABV 10000FT MOV S 05KT NC RMK: S/A**

Example of an AIRMET.

## COMPARISON OF GAF/GPWT &amp; ARFOR

ELEMENT	GAF	ARFOR
Number of forecast areas	10	28
Validity period	2 x 6 hour forecasts	1 x 12 hour forecast
Overview	✓ pictorial	✓
Wind & temperature	✓ high resolution GPWT forecasts	✓
Cloud	✓	✓
Weather and visibility	✓	✓
Turbulence and icing	✓	✓
Freezing level	✓	✓
Significant weather features	✓	✓
Critical location forecasts	✓	✓
Advise on significant changes to conditions	✓ via AIRMETs/SIGMETs	✓
Product format	PNG, PDF and XML	Text


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It can be hard pleasing everyone. A lot of work by a committed team from Airservices Australia and the Bureau led to a solution that will provide printable GAF and GPWT charts in the familiar PDF format and integrated into the existing NAIPS briefing interface. NAIPS will also supply the underlying information in machine

readable formats, to support integrating forecast weather with other EFB information. Developers from Avplan and OzRunways came along to meetings to iron out the details, and the resulting collaborative outcome will benefit GA for many years.

If you use an EFB or flight planning software, now is the

time to check out how it will handle the new GAF. If you're a NAIPS user, check out the new briefing format once it comes on line on 9 November. Either way, all pilots need to learn about the GAF – whether self-taught, or by attending a seminar. A little time now, before you next fly, will save a lot of frustration later on.

GAFs are much easier to read and interpret, and more comprehensive than ARFOR – a change that will improve safety and efficiency for all GA pilots. Check out the changes in the AIP, and go to the Bureau's website (<http://www.bom.gov.au/aviation/gaf/index.shtml>) for more detailed information. 



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



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**Stall 27 knots**  
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**Average under 20 litres an hour**  
**Believe it!**



Search for Aeroprakt A32

# The Apps that Make a Difference

Aviation has always been very quick to embrace new technology, and the rise of tablet platforms and applications is one of the best examples of that. **Steve Hitchen** scoured the app world to find out which systems are making their mark in GA.



ablet applications have revolutionised general aviation cockpits in the past 10 years or so. The versatility of the iPad and Android tablets and phones has brought new capability and enabled pilots to do critical calculations faster and with less finger work. Whiz wheels and protractors are quickly becoming museum equipment for private pilots as apps do the necessary flight plans and in-flight calculations in a fraction of the time.

But even so, these devices have their critics because pilots can become reliant on them to the detriment of their basic flying skills, and they can draw heads into the cockpit at times when they should be outside. It's a valid argument, but one that is perhaps generated from a lack of understanding and a deficiency in proper training.

And that's an important point when considering using a tablet app to guide your decisions in flight: do you know what you're looking at and do you know how to use the app properly? Although that can also be said of most in-flight equipment and avionics, it is perhaps more important with tablet apps that are developed outside the lines of regulations and standards. In short, anything goes, and you need a good

understanding of the tool you are using.

Once you are up to speed, the myriad of apps available to you stand to make your life much easier and your cockpit workload significantly less. Australian Flying has looked around the market at what's out there and here we present a selection of some of the best around. There are a lot more, and although you can almost guarantee all these will run on an iPad or iPhone, sadly, the same can't be said of Android devices. Use them wisely.

## Electronic Flight Bags

An Electronic Flight Bag (EFB) is the most powerful, versatile and valuable tool you will ever install on your tablet. EFBs combine the function of flight planning, weather, notams, chart updates, in-flight navigation, communication and so much more, all presented in a most professional and efficient way. EFBs perform most of the pre-flight calculations like heading, groundspeed and time intervals in a fraction of the time you will take to do them yourselves. A GPS inside the iPad enables the app to track where you are and show your planned route over the top

of genuine, up-to-date Airservices Australia charts.

In flight, the app will give you your track, heading calculated on forecast winds, ground speed, time intervals and ETA. You can even put in fixes and watch the BOM rain radars as you go. They are a complete system for navigating and assessing flight conditions to enable pilots to make decisions based on as much information as they need.

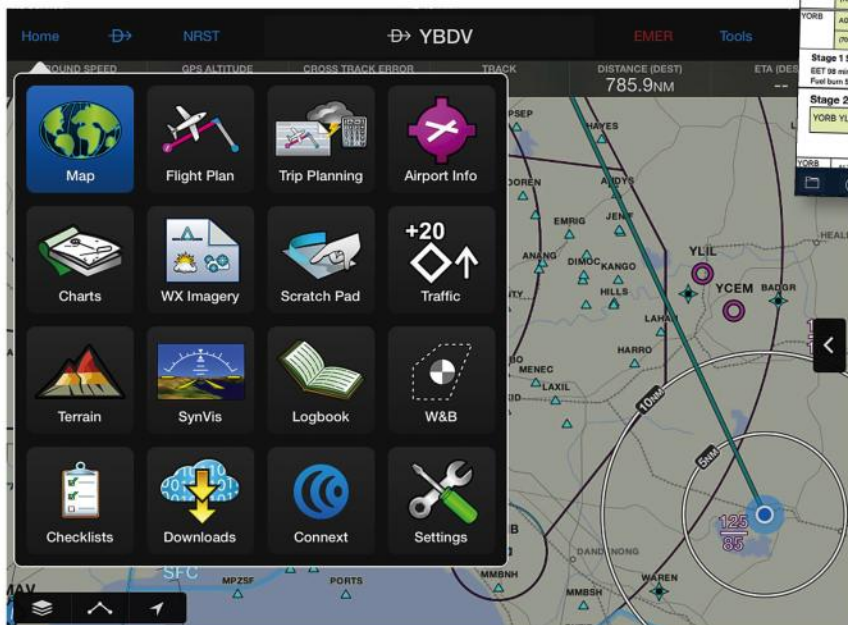
EFBs are provided via subscription, and are getting more powerful and versatile with every new version that comes out. They are good enough for even the military to use.

In Australia, the dual kings of EFBs are **AvPlan** and **OzRunways**. Each one is as good as the other, with only individual preference separating the two. They will soon be joined by **Garmin Pilot**, which, like all Garmin products, is professional and easy to use,

reflecting the touch-screen ethos of the company's range of certified navigators. Once Garmin negotiates for access to Airservices charts, Australia will have a third EFB to choose from. It's bound to keep the AvPlan/OzRunways duopoly on its toes. **Sentient AirNav** is another Australian product that is well worth checking out.

There are others around such as **Air Navigation Pro**, but this app doesn't use Airservices charts anymore, and they don't intend to do so in the future. Instead, they are using VFR charts from a third-party supplier. Although still a very good system, Air Navigation Pro can't be used as a primary source of charts, so you'll still need to carry hard copies in the cockpit with you.

A note: EFB operators always recommend either a second tablet as a back-up, or continue to carry hard-copy charts. Tablets are not infallible and if yours fails you'll



**MAIN:** Tablet apps have forced their way into general aviation cockpits thanks to their versatility and capability.

**LEFT:** Garmin is still working with Airservices Australia to get proper charts available in their EFB.

**ABOVE:** AvPlan is one of Australia's best EFBs, and is a powerful tool to make flight preparation and in-flight calculations much easier.



**LEFT:** Navigators such as EasyFlightNav won't do plans for you, but will show you the way to a selected airport or waypoint.

**RIGHT:** OzRunways has been a cockpit companion for Australian pilots for many years.

**BELOW RIGHT:** MyE6B enables quick in-flight calculations and is a lot easier to use than a whiz wheel!

**FAR RIGHT:** Other flight computers will give you a representation of whiz wheel, which is operated by pushing the rings and slide with your fingers.



still need some way of accessing the charts, even though CASA doesn't require it.

## Calculators

The faithful old circular slide-rule computers (whiz wheels) were challenged years ago with electronic calculators, but managed to survive simply because they cost less and can do their sums quite quickly. They also don't run out of batteries. Naturally, this function has migrated over to iPads and Android devices, which if you're running an EFB anyway means you have one less device to clutter your nav bag and cockpit.

Some apps, such as **Flight Computer Sim**, represent the information with a interface that mimics the look of a whiz wheel. They operate by the pilot using their finger to swing the inner ring around to make calculations on the computer side and by tap-and-drag on the wind side. The only issue is the you need relatively good eyes to read them in-cockpit, especially if you can't bring the tablet closer to you because it's mounted. The **Flight Computer** and **Sparkys E6B** also operate in this fashion.

Other apps, like **MyE6B** and **Sporty's E6B Flight Computer**,

operate more along the lines of the old battery-powered calculators. The pilots selects what calculation they want to do, then fill in pre-selected fields with the data needed and the answer drops out almost instantly. In this fashion, in-flight calculations like TAS, ETIs, points-of-no-return, range and crosswind components can be done easily and with very little angst. Mostly, these systems have large interfaces, even on smaller tablets and can be read quite easily in most situations.

## Pilot Logbooks

Electronic log books are not only great storage platforms for records, but also enable in-depth analysis of a pilot's career over time. Paper systems have served us well for many years, but have resisted easy analysis without a lot of hard work. How many hours have you done in Piper Arrows? What would you have to do to find out? With electronic logbooks you can easily sort and filter the data to show exactly what you're looking for in only a few seconds... or less.

However, if you plan to use this as a primary logbook, keep in mind that CASR 61.365 requires a pilot to provide a hard copy of a logbook if demanded, so you have

to be able to print out pages from the app.

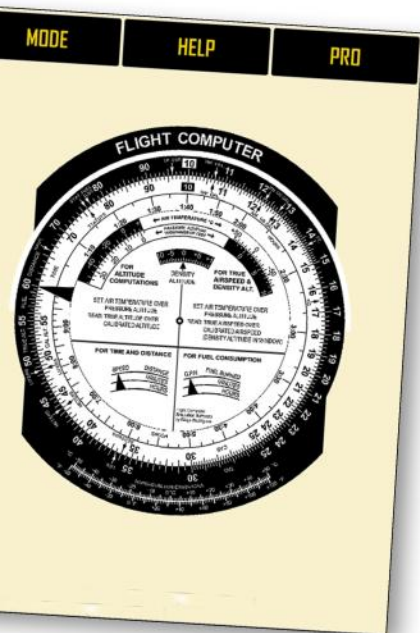
**MCC Pilotlog** and **LogTen Pro** are potent tools for recording flight data and can be synched to desktop computers. They enable quick and simple monitoring of currency and flight time limits and everything is backed up in the Cloud. Logbooks can be presented in up to 40 different formats and instructors can sign your log electronically. If you have a good look at both these apps, you'll realise they're much more than just logbooks, and have the ability to import duty rosters and schedules from other software. They make extracting experience and time-on-type for interviews dead easy.

Have a look also at **Pilot Pro** and **Excel Pilot Logbook**, and in the future, watch out for

Australia's Command Logbook, currently for PC only, to find its way over to both iPad and Android, with the ability to synch with AvPlan.

## Weather

There are two main factors that will cause you to have to make a major decision in flight: fuel state and weather. The more information about both you can get in flight will help pilots make better decisions with more confidence. Although there is not a lot a tablet can do to tell you about fuel, there is a lot it can do to help you with weather by connecting to on-line data systems and displaying the information in a very visually-friendly way. Apps that deliver weather info have to be used with some caution; they are not aviation weather apps so won't



satisfy the CASA requirements, but they can help you make decisions faster in the air.

**AWIS Phonebook** is almost a gotta-have. AWIS numbers are not easy to find, being buried deep in ERSA. This app gives all the phone numbers of every AWIS in Australia, either selected from a database list or by tapping a map. Its only weakness is that it doesn't include the VHF frequencies; critical if you can't get mobile coverage.

Even the Bureau of Meteorology has recognised the value of

**“In short, anything goes, and you need a good understanding of the tool you are using.”**

graphical Terminal Area Forecasts (TAF), something which the app TAFGRAF has been providing for some time. This shows aerodrome forecasts in both graphic form and the official forecast as issued. You can select by keying in the airport code or by choosing from a list of nearest or stored favourites. Touching the graphic itself also brings up an explanation of what you're looking at.

**Weatherzone** is one of the most comprehensive and popular weather apps in Australia. It doesn't deliver aviation weather, but the standard commercial weather in an easy to understand graphic form, complete with seven-day forecasts, rain radars and synoptic charts. It delivers weather information in a much easier way than trying to look up the BOM site on a small device.

**Willyweather** is another one that performs a similar function, delivering weather based on 30,000 locations around the country. It too gives weather info in graphical form and with big text that's easy to read in a cockpit. Most handy for aviators is the first and last light data functions.

## Radars

Flight radars or flight trackers draw position information from a number of sources, but mostly from ADS-B returns. They will show all aircraft detected for a given location and display them on a map. The information given is almost endless: flight numbers, altitude, speed, ETAs and even the current transponder code. Although great for tracking an inbound flight you have to meet or just for curiosity's sake, their value in a general aviation cockpit is probably limited. There is some value in knowing if you're about to encounter an inbound RPT at a regional airport, but you'd

probably know that because you're on the area frequency anyway.

**Flight Aware** is probably the largest in the world, which enables you to track commercial activity anywhere in the world, but general aviation only in the USA or Canada. You can search by aircraft rego, airline, airport and city pair. NEXRAD radar coverage is also provided.

**Flight Radar 24** is also a

very respectable app that covers everything in a vast ADS-B network such as commercial, aeromedical, military (some) and private aircraft. This app also has a 3D function that give you a representation of the topography the pilots would be looking at. You can also track every twist and turn an aircraft made en route even though you didn't have the app turned on for the whole flight.

Also look out for **Flight Navigation, Planes Live** and **Australia's Airports**.

## Navigators

A navigator is not an EFB, but rather a less capable application that will tell you where you are and how to get where you want to be. They enable you to select airports an waypoints, showing you heading and speed information displayed in a form familiar to pilots. More advanced or "Pro" versions contain larger databases, and can be cheap to

load on your tablet compared with an EFB. However, they don't provide charts or weather.

**Easy Flight Navigator**, for example, enables you to choose an airport from a drop-down menu, and then provides track information via either a compass rose or a simple diagram. Distance, speed and altitude info are also given. There is also the ability to put in your own waypoints. **Direct To** is a similar app, but with a different interface that is very user-friendly. Some of the icons and graphics used in some navigators are remarkably similar, which possibly means they are made from template software.

Have a look around at what's available. They are great little programs, but not a substitute for proper navigation skills. However, should you find yourself in a position where you have to divert in a hurry, a quick navigator like this help you do it more accurately.



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## Utilities

There are many other applications for your tablets. Many of them are nothing more than interesting programs that will whet your appetite for aviation stuff and work just as effectively whether you're going flying or not. Literally, there are thousands, but these seem to be the ones that are dominating aviators' tablets at the moment.

**CloudAhoy** is a de-briefing platform for pilots and flying instructors. Data is logged during a flight and a post-flight service provides a comprehensive de-brief. Tracks, profiles and instrument approaches can be analysed as a way of reviewing the flight. This app is accessed via a yearly subscription to the service.

**LiveATC** is a handy app that lets you tune into Air Traffic Control frequencies from countries right around the world where live ATC streaming is permitted. You can search via the airport or ATC code, or by keying in the

frequency yourself. Then you can listen to all the comings and goings at your local airport, or eavesdrop on anywhere around the world where it's permitted. Not the sort of thing that you'd use in a cockpit; that's what the VHF com is for.


**Fuel Burn** is an app that helps with all important fuel calculations in-flight, displaying fuel status, estimated ranges, flight times and reserves in graphical fashion that is easy to read in the cockpit. It also issues reminders to switch tanks and updates status based on estimated usage. However, like most programs, it is only as good as the data the user put into it in the first place.

And although as well-trained pilots we shouldn't need **Zulu Time**, it does make it easy to do confident conversions from local times. After all, who in their flying career has not made the odd



**LEFT:** WillyWeather shows it's a great day for flying in Perth!

that just can't find space in this feature. **Jacobson Flare** comes quickly to mind, a program that teaches this method of landing with simple and effective graphics; **X-plane Flight Sim**, which is a tablet version of the very popular PC and Google Play program and **Radio Navigation Simulator (RNS)**, an app that explains NDB and VOR intercepts simulates aircraft tracks in relation to nav aids.

The point is that the tablet world is much larger than what you see in this feature, and one which needs much exploration. Go and explore, pilot. 

mistake or two on a flight plan or with a SARTIME? It's a very simple app that performs a very simple task so we don't have to.

## Final Say

And as they say, there's an app for everything nowadays, and as aviation and technology have always been great team mates, it makes sense that there would be a vast array of apps out there

*The author uses an iPad mini running AvPlan, MyE6B, Flightradar24, Radio Navigation Simulator (RNS), AWIS Phonebook, Willyweather and Jacobson Flare apps.*



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# Down to Business



## Two weddings and a funeral

*Two jets inch closer to production and Pilatus pulls the plug on the mighty Turbo Porter*

**I**t's still three or four years away from first delivery but the Stratos 714 looks like it will be the next survivor of the failed Very Light Jet "VLJ" revolution to actually go to market, after debuting at the 2017 EAA AirVenture airshow (better known as Oshkosh) in August.

The first prototype of the 400-knot single-engine Stratos flew in to Oshkosh with around 70 hours of flight testing under its belt, including flights to 17,000 feet and 320 knots.

The Stratos is designed to be a four to six-seat personal aircraft, business jet or air taxi, capable of flying four people 1500nm or six people 1200nm at 400 knots, with a service ceiling of 41,000 feet. The prototype is powered by a Pratt and Whitney JT15D-5 turboprop developing 3400lb of thrust, but production aircraft are slated to have the PW535E, which also powers the Embraer Phenom 300. The engine is buried deep in the aircraft's rear fuselage, fed by dual air inlets in the wing roots and accessible for maintenance through removable panels.

The aircraft has some sophisticated systems for an entry-level aircraft, including rear fuselage mounted speed brakes and a pressurisation system that offers a sea-level cabin to 21,000 feet.

Flight testing has demonstrated some sprightly performance, including a maximum weight take-off in 2090 feet. With full

fuel the aircraft could fly nonstop Sydney to Port Moresby, or to anywhere in New Zealand, or to Perth with a single stop.

The Stratos was first announced in 2008, when the Global Financial Crisis (GFC) was putting paid to the dreams of a dozen companies hoping to go to market with a Very Light Jet. To put this in to perspective, before the GFC the US Federal Aviation Administration (FAA) predicted there would be at least 4500 VLJs flying by 2016. NASA was even more bullish, suggesting the figure would be closer to 20,000.

At that time Stratos was expecting a list price of around US\$2 million. But rather than following many of its competitors in to oblivion, Stratos merely went quiet, stopped taking deposits and carried on developing the aircraft. The prototype first flew in November 2016.

Stratos says it is too early to take deposits or announce either a first delivery date or a price. But the company plans to further explore the aircraft's capabilities in flight test, before deciding whether to seek investment to help fund a certification process which may cost US\$200 million and take around four years.

### Syberjet to fly first "new" SJ30 this year

Actor Morgan Freeman of *Shawshank Redemption* fame has been punting his virtually unique SJ30 business jet around the US and across the Atlantic for eight years, but it seems others may finally have the chance to join him.

American company Syberjet, which now owns the SJ30 type



certificate, believes it will fly its first updated SJ30i by the end of 2017 and expects to deliver its first customer aircraft in 2019, with a longer range, more powerful SJ30x to follow.

The Syberjet (previously Swearingen, Sino-Swearingen and Emivest) SJ30 has had a tortuous path from drawing board to production since it was first proposed by Ed Swearingen, father of the Metro and Merlin that bear his name, in 1986.

The six to eight-seat SJ30 was originally going to be built by Gulfstream as the Gulfjet. But by the time the first prototype flew at the 1991 Paris Air Show Gulfstream had withdrawn from the program, as did later backer the US State of Delaware. Lockheed Martin then helped broker a deal with Taiwanese investors as part of an F-16 fighter offset agreement, and Sino-Swearingen was born.

The aircraft had gained lengthened fuselage and wings before the first customer SJ30 was

delivered in 2007. The following year Dubai based investors bought a majority stake and renamed the company Emivest Aerospace, until filing for bankruptcy in 2010 (but not before the aforementioned Mr Freeman took delivery of his own SJ30, in which he has now chalked up more than a thousand hours and a dozen Atlantic crossings). At one point the company is rumoured to have held around 300 orders.

In 2011 MT LLC of Utah in the United States bought Emivest, renamed the company Syberjet and has since redeveloped the SJ30 in to what the company calls the world's fastest and longest range small business jet. And it's hard to argue with their numbers.

Powered by two Williams FJ44 turboprops, the SJ30 has a top speed of Mach 0.83 (486 kt) a 2500 nautical mile range, and maintains sea level cabin pressure up to 41,000 feet (maximum flight ceiling of 49,000 feet). Its 30-degree swept wing makes for high speed and fuel-efficient



The first "new" Syberjet SJ30i may fly this year.



STRATOS AIRCRAFT

The Stratos will fly four people 1500nm at 400 knots.

cruising (long range cruise speed is 436 kt), with leading edge slats and flaps helping keep its behaviour civil at approach speeds. The undercarriage retracts in to the fuselage to help provide the wing's slim 11% thickness to chord ratio. The aircraft's rear fuselage is area-ruled to reduce drag.

Syberjet makes much of the SJ30's Los Angeles to New York range (it would fly Sydney to Perth nonstop) and ability to sit up in the 400 flight levels above most commercial traffic and weather. The company also claims the SJ30 is up to 25% more fuel efficient than other high performance jets. The aircraft has three world records for speed and distance and is certified to the US FAR Part 23 Commuter category.

Syberjet's engineering team has generated 3D models of the entire aircraft, including structural, mechanical, pneumatic, fuel, hydraulic, and electrical systems, and uses a 3D design package to both design wiring harnesses and then route them through the

aircraft for form and fit.

Harness installations have already begun on the flight test aircraft (N50SJ) which is slated to fly later this year.

## Pilatus calls time on PC-6 Porter

Swiss manufacturer Pilatus has announced it will cease production of its PC-6 Porter turbine utility aircraft in 2019, after a production run of nearly 600 units across 60 years since 1959.

The PC-6 delivered an international breakthrough for Pilatus: its short takeoff and landing capabilities and general versatility earned it worldwide fame and a reputation as a robust "all-rounder". Amongst its many achievements, the Pilatus Porter has flown several cargo and passenger trips at maximum useful load to an altitude of 5700 metres above sea level, a world record that has not been bettered.

First flown in May 1959, the first PC-6 was powered by a

340 hp piston engine. But it was the mating of the Turbomeca Astazou II turbine engine in 1961 that created the Turbo Porter and brought the aircraft to its full potential. Two more engines followed: Astazou reliability was troublesome, which led some operators to substitute the Garrett Air Research TPE331. Air America, the US covert force operating during the Vietnam War operated PC-6s built under licence by Fairchild. Finding the Astazou prone to catastrophic hot starts in the Asian climate Air America converted its PC-6s to TPE331 power, creating an aircraft that could land in three aircraft lengths, around 100 feet at sea level, and take off in little more. Air America also appreciated the PC-6 for the fact that damaged units could be tied to the side of an H-34 helicopter for transport back to base.

In 1963 Pilatus mated one of the new 550 shp Pratt and Whitney PT6 turbine engines to the Porter, with a constant speed propeller with reverse pitch.

The aircraft has become legend for its ability to carry load in to hot and high destinations and short airstrips, and one of the few aircraft that can disgorge a fuselage full of parachutists at altitude and beat them back to terra firma (as a short search of videos on YouTube will attest). The Porter holds the world record for a high altitude landing by a fixed-wing aircraft,

at 18,865 feet (5,750 m), on the Dhaulagiri glacier in Nepal.

In Australia the Porter is best known for its service with the Australian Army. Army took delivery of the first of 19 Turbo Porters in 1968, replacing Cessna 180s. Six Porters went to Vietnam with No 161 Independent Reconnaissance Flight, sadly with A14-686 shot down near the Australian Task Force at Nui Dat in December 1969 with the loss of all aboard.

The Porter was officially retired from Australian military service on 17 October 1992, replaced by a new order of nine Australian-designed Nomad transports.

Pilatus is still building around 10 Turbo Porters a year, but with the Stans factory ramping up for volume production of its new PC-24 business jet, the company has decided to rationalise.

"I am proud that the PC-6 featured in the Pilatus product portfolio, this aircraft has earned us fame and recognition worldwide," said Pilatus board chairman Oscar J. Schwenk. "But the time has now come to take a dispassionate look at the facts and admit that every product has a life cycle which must come to an end sooner or later. That moment has arrived for the PC-6."

Pilatus will accept limited PC-6 orders until mid-2018 and existing customers are guaranteed support for at least the next 20 years. 📍

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# Products & Innovation

## Garmin's D2 – nav on your wrist

Just when we're starting to get used to tablets operating as navigation instruments, Garmin has gone one better and packed an instrument panel full of utility in to a smart watch.

Garmin claims the D2 is the first pilot watch to help pilots in flight, boasting a high-sensitivity Wide Area Augmentation System (WAAS) GPS receiver, altimeter with adjustable baro setting, and three-axis compass. And that's just the start.

The new premium end D2 Charlie retails for around \$1200, or up to \$1500 for the Charlie featuring a titanium bezel with "diamond-like" carbon finish.

It features a worldwide airport

database that enables direct-to and "nearest" routing, so you can fly straight to the airport/waypoint of your choice or find the nearest airport if you need to land quickly. The D2 also allows pilots to view their route on a moving map display, or follow the HSI to the destination. By setting user-defined waypoints, users can also easily navigate to any location not included in the database, or even create Mark on Target waypoints to easily reference locations they fly over.

With wireless connectivity to smartphones, the D2 Charlie series can make quick work of flight logging and other record keeping tasks. During take-

off, the watch will detect the aircraft's change in altitude and automatically initiate the logbook function, recording date, duration, total flight time and route. Then after the flight is complete, it will sync this logbook data via smartphone to flyGarmin.com and the Garmin Pilot app.

Between flights pilots can even use the Garmin's sport watch features, including wrist heart rate monitoring and daily activity tracking and training metrics to ensure they're shaving kilograms to maximise payload. And yes, it also tells the time.



## Compact KTI beacon

Long time Personal Locator Beacon (PLB) manufacturer KTI has released a new compact unit that it says has a class leading 10-year battery life.

The new SafetyAlert PLB harnesses the more accurate 406MHz COSPAS-SARSAT satellite frequency to deliver a location accuracy of down to 3.0 metres and faster rescue response times. Ultra-low current circuitry and low-loss antenna system deliver performance that exceeds the COSPAS-SARSAT requirements of 24 hours continuous transmission at -20°C.

The GPS receiver is coupled to a chip style antenna which provides high sensitivity together with superior resistance against detuning by nearby objects. The unit floats, offers five-minute position updates and can typically start from cold and acquire a position in less than 35 seconds.

When emergency services arrive, the SafetyAlert's high-intensity photo flash strobe will guide them straight to your position.

With simple one-hand activation and a weight of just 140 grams, the SafetyAlert comes with a camera-style carry pouch with belt loop, and a lanyard that carries pictorial instructions and a whistle.

The SafetyAlert retails for around \$300.



## Comms on the run

*Steve Hitchen didn't know he needed a hand-held transceiver until given one to try.*

A hand-held transceiver is one of those devices you think you don't have a use for until you get hold of one... then you'll find it's almost indispensable.

Like many other pilots I didn't see the need for one, until Icom Australia asked me to have a look at one of their IC-A15 transceivers. Since I first unpacked it, the IC-A15 has accompanied me every time I've been to the airport, and it has changed my mind about hand-held units.

The following are all routine activities in the aviation world, but I wouldn't ever have considered a hand-held part of the solution until I had one clipped to my belt.

- ♦ Giving direction to a subject aircraft on a photo shoot;
- ♦ Finding out when a particular flying instructor would finish circuits;
- ♦ Tracking the last inbound plane on a fly-away after I'd landed;
- ♦ Giving parking instructions to an arriving aeroplane; and,
- ♦ Asking a pilot returning to the line if they could take the aircraft to the fuel pad.

Consider also the utility value of the unit airside at an air show and the simple joy of sitting on the aero club verandah with a coffee, listening to comings and goings. And a hand-held is a great back-up in case of comm failure.

But there is more to this unit than what you can use it for; as a device for receiving and transmitting, it is a top-class product.

The IC-A15 is one of the clearest hand-held units my hands have ever held. It contains a BTL amplifier that doubles the output, resulting in a 700 mW output that cuts through most of the noise clutter you'll experience around the average cockpit or apron. I was actually surprised how well I could hear transmissions from a taxiing Cherokee only 20 metres away.

Designed to operate in the frequency range 118.000 to 136.975 MHz, tuning this unit to just about any aviation frequency is an absolute breeze. The IC-A15 has a numbered key pad; you can

select a frequency simply by punching the numbers. One little trick is that with one push of the ENTER button all the zeroes are filled in. So, for frequency 120.0, you key 1-2 and ENTER, and the LCD screen shows 120.000. There is also a dedicated button for the 121.5 distress frequency.

The IC-A15 has a memory of 200 frequencies that you can label with eight-character names, making it easier to tune to "ENGND" if you can't remember the frequency for Essendon Ground. You also have the option of collecting frequencies into one of ten banks, so you could have one bank for the Adelaide terminal area, one for Melbourne and so forth.

Powering the Icom unit tested was a BP-232H Lithium-ion rechargeable battery pack, which the manufacturer believes will give you up to 20 hours of operating time. Other options included the lower-powered BP-230N battery and the BP-261, which clusters six AA batteries together for use when you forget to take the charger away.

By aviation standards, the IC-A15 is not a light unit, tipping the scales at 0.350 kg with battery pack and antenna fitted. However (and the Gen-Xers will hate me for this) it is more comfortable to hold and better balanced than most mobile phones.

It is also a lot more sturdy, simpler to operate and has a belt clip that looks strong enough to hold Mike Tyson down. It has a dust and water ingress rating of IPX4, which means that it's considered waterproof. The antenna clicks on and off easily to make it more convenient to keep in your nav bag.

However, and this is something you need to understand if you're contemplating buying a hand-held transceiver, they have a limited range with the standard flexible antenna. Attempts to pick up your favourite CTAF from a long way off may prove disappointing.

They are very, very good in operations around airports, which is where they are the most valuable anyway. And speaking of value, I think I've found enough in the Icom IC-A15 to justify not giving it back.

**Icom IC-A15 Transceiver**  
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# Rotors



## Surplus US Army Black Hawks to join Australian firebombers

Greg Thom presents news and views from the Australian helicopter industry

**B**risbane-based Sikorsky Australia has won a \$63 million contract to overhaul and re-purpose 10 ex-US military Black Hawk helicopters for firebombing and disaster relief operations around Australia and New Zealand.

The deal was signed in late July by Sikorsky, Kaan Air Australia, and StarFlight Australia. The first of the surplus UH-60As will arrive in Australia early next year. Sikorsky has a formal contract with the US Army Utility Helicopter Project Office allowing it to select the most suitable aircraft for refurbishment.

The first two helicopters are currently being overhauled in Huntsville Alabama, allowing Sikorsky Australia to carry out work scope and benchmarking for the Australian operation. The remainder will be completed at the company's Pinkenba facility, near Brisbane airport.

After arrival the helicopters will undergo a three month rework, including fitment of new high performance engines, upgraded main and tail rotor gear boxes and drive train, installation of a Helicopter Terrain Awareness and Warning System (HTAWS) and fitment of new hoists. Sikorsky



Black Hawks are already well established as firebombing helicopters in the United States.

TRENT BELL

Australia general manager Andrew Rushbrook said this is the first time that a civilian Black Hawk conversion programme had the full backing of the Original Equipment Manufacturer (OEM).

The aircraft will be maintained in Brisbane by Sikorsky, which will be a boost for local jobs, potentially creating over 50 pilot and technical jobs, including apprenticeships. Sikorsky Australia will be responsible for training initial StarFlight crews and the company is seeking a training partner based in Queensland. John Skeen, chief executive officer of Kaan Air Australia and StarFlight Australia, welcomed the new agreement.

"This is a game-changer for

aviation in Australia, the purchase of 10, plus 10 optioned Black Hawks represents a significant milestone for the (medium-lift) firebombing and disaster relief helicopter industry in Australia," he said. Kaan Air is a European helicopter utility operator and manufacturer/distributor for AgustaWestland and Russian helicopters. StarFlight Australia is a joint venture between Kaan Air Australia and LifeFlight Australia.

### Hover ban angers operator

A recent decision by Gympie's Regional Council to ban hovering helicopters at its nearby Kybong airport will make it impossible for

helicopters to use the site.

Mike Becker of Becker Helicopters likens the helicopter hovering ban to preventing fixed wing aircraft from taxiing. Becker invested about \$800,000 in purchasing a four hectare site at the airport with the intention of moving some of his business there, but is now in limbo as requests for an urgent meeting with council have been turned down. Becker, who is no stranger to locking horns with Queensland's anti-helicopter lobby, also questioned council's decision to allow residential development at the airport. A spokesman said the council was currently encouraging feedback from the local community on the airport draft master plan.



## Australia and Germany ground Tiger ARHs

The Australian Army grounded its Tiger armed reconnaissance helicopters (ARH) in August following the loss of a German army-operated machine which crashed in unexplained circumstances near the eastern Mali town of Gao.

It has also been reported that Spain subsequently suspended operations of its Tigers. Little detail has been released about the circumstances of the crash, but the German defence ministry indicated that the Tiger lost its main rotor blades after entering a sudden steep descent. The wreckage was consumed by a post-impact fire.

Crash investigators have recovered the helicopter's flight-data recorders, but both are heavily damaged and may be unuseable. Airbus Helicopters, while not directly participating in the accident probe, was contractually required to issue a notice advising that the Tiger is unsafe, without being able to offer any safety guidance or possible root cause of the accident.

## UK CAA and Norwegian authorities lift Super Puma ban

The UK Civil Aviation Authority (CAA) and the Norwegian AIBN will allow EC225LP/H225 Super Puma flights to resume if operators meet new safety conditions.

The grounding followed a crash involving a Super Puma off the coast of Norway in April 2016. The decision to allow flights to resume was made after receiving extensive information from the Norwegian accident investigators and being satisfied with the subsequent changes introduced by Airbus Helicopters through detailed assessment and analysis.

A raft of changes including replacement of suspect gearbox components, and reduced inspection periods will be implemented. British Petroleum (BP), Bristow, and Era have all confirmed that they will not reinstate Super Puma operations until the completion of the AIBN and Airbus investigation into the fatal crash. A CASA spokesman advised that Australian examples currently remain grounded.

## Bell Relentless resumes flight testing

Bell Helicopter announced in early July that its 525 Relentless program had resumed flight testing after receiving its experimental certificate renewal from the Federal Aviation Administration (FAA).

"We have resumed a key element of the Bell 525 program," said Mitch Snyder, president and CEO. "Bell Helicopter has worked with the National Transportation Safety Board (NTSB) and FAA since the loss of the prototype in July 2016, and we are confident in the resumption of flight testing with a focus on certification in 2018." The Bell 525 is the world's first fly-by-wire commercial helicopter.

## FAA certifies bicycle racks for Airbus H125/AS350

Canadian-based Aero Design announced in late June that it had received Federal Aviation Administration (FAA) certification for its Airbus Helicopters H125/AS350 bicycle racks.

The rack allows the transport of three bikes per side and will accept a bike with a 29-inch wheel. Aero Design's quick release system also allows a choice of fixtures including four sizes of cargo basket, bicycle rack, step or a mix of all to be rapidly fitted or removed. Aero Design president Jason Rekke

BELL HELICOPTER



Bell has resumed flight testing of its 525 Relentless.

said, "The bicycle racks have met with outstanding success both in Canada and throughout Europe, and now we are excited to be able to offer them to US operators and cycling enthusiasts."

## AW189 operators warned of explosion risk

The European Aviation Safety Agency (EASA) and Leonardo are calling for modification of AW189 extended range underbelly fuel tank bonding, highlighting a possible explosion risk with the current configuration.

EASA's proposed airworthiness

directive (AD) is related to the electrical bonding on the fuel sump plate. The underbelly tank sump and sump covers are bonded to the external helicopter skin, and in case of a lightning strike, a small amount of the electrical current could be diverted inside the sump plate and into wiring inside the fuel tanks creating an ignition source possibly resulting in a fire or explosion.

The AD requires operators to modify the electrical bonding of the underbelly fuel tank sumps by replacing and re-routing the existing copper straps with bonding cables within 300 hours of the effective date of the AD. ⬆

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## Growth and evolution

*RAAus CEO Michael Linke says the organisation continues to evolve, transform and improve. And importantly, grow.*

**I**n 2016-2017 Recreational Aviation Australia (RAAus) membership grew by six percent. That's an amazing result and demonstrative of the support RAAus enjoys within the sector.

Subscriptions to our Sport Pilot magazine grew by a staggering 33%.

RAAus' digital foot print now sees more than 11,000 Facebook followers and some 23,000 digital news subscribers.

In a word, we are maturing and people like what they are seeing.

Like all things true maturity takes time and sometimes the pathway has obstacles. We are getting better at managing our way through obstacles and planning better to avoid them altogether.

As RAAus Ltd. turns one, the significant maturation process from incorporate association to company occurred seamlessly with significant work going on in the background. The directors and I have been absolutely committed to establishing a robust governance framework that sets us up for success.

Governance isn't just a word you start using. It needs to be backed up by robust processes: detailed analysis, record keeping, due diligence and transparency.

In achieving good governance levels a raft of crucial documentation was developed. Documentation included the development of a Governance Policy Framework, Risk Appetite, Risk and Audit Committee Charter, Code of Professional Conduct for Staff

and Directors, member based Complaints Handling and Disciplinary Framework and a host of supporting documents. As part of our commitment to organisational transparency all of these documents are available to members.

Internally this process led to the review and development of a number of business operational policies.

Our core documents ensure that RAAus operates consistently and that everyone who interacts with us, from our members who are central to everything we do, to third party stakeholders such as our flight training schools, is treated equally and fairly. This

includes non-related parties, such as contractors, the regulator, other government departments and other bodies, aviation and non-aviation alike.

Having done this hard work allows us to focus on our core business, ensuring we get out of the way of our members and let them do what they love doing best; flying or building.

It then pays dividends. More members are willingly reporting occurrences to us, thank you. This data and information is invaluable in our continuous improvement cycle.

We then talk more about safety and in turn as a group, become safer.

### What does the next 12 months look like?

A number of major projects are top of mind, both with the Board and our members. Our push for CTA and increased weight continue to move ahead. We are a little frustrated with the pace of progress in this area, but great change comes in small increments and we continue to work very hard to deliver these two outcomes to members. The important thing to remember is that at no point has CASA said no. CASA continues to engage with us, discuss options, ask questions. It's a two way street and we remain absolutely





CASA has allowed RAAus to develop a safety management system that all 165 flying schools can use.

needs to remain relevant and the work we are doing is always done in the light of relevance and what's best for our members. The difficulty we have is that our member base is so diverse and growing constantly. Our members want to do so many different things, but all these things ultimately lead to some fun, quality air time. We have members, heritage members, who want to want to enjoy the

« **An SMS is a way of doing business, it's not a folder on a shelf.** »

committed to delivering for our members.

The other major project due for delivery next year is our organisational wide safety management system (SMS). In reality an SMS is a way of doing business, it's not a folder on a shelf that every six months you dust off and tick a few boxes. In reality much of a solid SMS is already in place. We have an organisation wide safety policy and safety objectives. We have a macro-level risk appetite. We have our occurrence management system (OMS), a central and vital part of any successful SMS. Additionally we have a range of safety

promotion activities, events and communications.

So in essence we are just about there. Next year will see a major push to work with our flight schools and ensure they have in place an SMS that suits them. It's not a one size fits all. The beauty of RAAus developing an SMS for our 165 schools is that it will be scalable. We will offer a Safety Toolbox from which schools will be able to pick and choose the components needed to help them.

We had a major win on this front with CASA agreeing to allow RAAus to develop a single system, rather than an expectation that all schools self-invest and develop their own system. In real

financial terms this represents around a \$15,000 saving per school.

There are a host of other projects in the pipeline. Major project areas where significant effort is being invested include our training and education portfolio, communication and marketing portfolio and member services portfolio. We have some exciting plans which we will be sharing with members in the coming months.

### **What the crystal ball tells us...**

So where will all of this leave us in, say, five years? RAAus

simpler idea of flying. We have members who love the thrill of the new breed of plastic fantastics on the market. We have members who see RAAus as a stepping stone to a career in aviation.

Any career can start at RAAus. From the obvious pilot, engineer and military career. Less obvious careers we create are air traffic controllers, safety experts and educators.

So how does RAAus be all things to all people? That's our challenge for the future.

Add into the mix the next breed of aircraft; imagine self-piloting two-seat craft weighing 350 kg with 12 to 16 electric engines. What does training look like for this type of craft? What is the rule set? Will they need traditional airports? We are not talking science fiction here. Prototypes exist and in as little as three years we will see them!

So stick around, RAAus is getting a lot of things right and we have a bright and exciting future for everyone. 🚀

## Flying Boat

*After sailing around the Whitsundays in a hired boat Brenton Smith built his own catamaran, which he lived on for a decade, sailing up and down the east coast. Thankfully, the new owner has reported not so much as a hairline fracture on his craft.*  
By Kathy Mexted.

**B**renton's love of sailing was matched by his love of flying, however flying seemed to be beyond his reach. That changed on a working holiday in Perth in 1986 when he took flying lessons at Jandakot.

When he was 13, Brenton saw a Spitfire in a magazine and decided then that he'd like to build his own aeroplane. It was an obvious choice to build an amphibian

given all the water such as lakes and rivers around in Australia. The Volmer Amphibian VJ22 design will combine his two loves of flying and sailing.

"An American, Volmer Jensen, designed this aeroplane in 1958. It is one of the few that are plans-built. You can just buy and build this without committing a lot of money upfront," Brenton says.

Apparently he's hard to buy presents for so five years ago his wife bought him the plans for his birthday. He's been building ever since. She loves sailing, but doesn't fly herself. She does enjoy going up and doing aerobatics with Brenton.

The work to date has taken place in their single car garage but soon the wings will be ready to attach and so the project will move to the Murwillimbah airfield where he is a member and it will be hangared.

Brenton has taken great support from the Sport Aircraft Association's Chapter 19 at the Gold Coast. "I enjoy being a part of it and it's great to meet like-minded people who are bursting with information. It's all aeroplanes talk – the stuff that

makes non-builders' eyes glaze over."

The sliding door from the kitchen has one part of the plans stuck to it for motivation.

"It reminds me to do a bit each day," Brenton said. "And that's a good tip. Do a bit each day."

His greatest joy? When things line up.

"I can't weld so I've had to outsource that. It's been great getting to know the welding

including the rudder, joystick, undercarriage, controls and hinges. A lot of metal parts had to be made twice because there's a lot to learn when you cross from timber to steel. Sometimes there is a fair bit of procrastination and in the end you drill a hole and remember that everything can be fixed. The thing that I got stuck on was the wingtip floats. They had curves and angles all over the place. They're not square and

« For a timber plane, it is surprising how many welded parts there are. »

guys. I was making up jigs and giving instructions to the people at the front counter, but as they got to know me I was able to go out the back and hold the pieces exactly in my hands and when I gave the nod, they were able to weld it, so things got quicker and more accurate. They prefer that too because the onus is off them in case there is a mistake. For a timber plane, it is surprising how many welded parts there are,

they're not round. They were the hardest things to make."

Out in the open, the aeroplane is a gleaming crisp white. The colour at this stage will be white with epoxy being good to make everything cool. Brenton will use Orotex on the wings so there's no painting involved with that or the fuselage.

He has already had a fair bit of success with a roller and foam brush and a painter friend will show him the tricks. If the result is not ideal then he can always spray on top of it using a marine paint.

So far no registration has been reserved. ↗



Brenton Smith with his work in progress Volmer VJ22.

BRENTON SMITH

### Facts and Figures

- Brenton will use a Lycoming 233, which is the 235 that has been put on a diet, now weighing only 95 kg.
- It has electronic ignition and produces 86 kW (115 hp) at 2800 rpm.
- It will be in a pusher configuration.
- Expected cruise speed is 87 km (160 kmh).
- Empty weight 455 kg (1000 lbs.)

## Moving the Needle

*CASA CEO and Director of Aviation Safety Shane Carmody is seeing change in the organisation, but says there is still much work ahead.*

**C**hanging the way an organisation works and behaves is not something that happens overnight. In fact, depending on the depth

and complexity of the change being implemented, it can take years. Policies and procedures can be rewritten relatively quickly, but modifying the way people think and act takes time as change literally seeps across and through an organisation.

Yet for the people who have dealings with an organisation which is undertaking change, and who are affected by the outcomes of change, the appetite for waiting for promised improvements is naturally small. In this day and age in particular we all have an expectation that things will happen quickly and we will get the results we want, when we want them.

None of this is an excuse for avoiding the challenges of tackling organisational change or for tardiness in achieving tangible results. If an organisation promises to change to improve the outcomes it delivers for clients and other stakeholders then it is duty bound to do everything humanly possible to get the right results. Anything less is a breach of trust.

I believe all these points are all very relevant to where CASA is today. We have achieved a lot in making vital changes and

improvements in the last 12 months, while acknowledging there is still a lot more work ahead. There have been tangible results for our clients and other stakeholders, but we accept people are still hungry for even more improvement.

Of course, it is unlikely we will ever reach a point where the whole aviation community says: "CASA you're perfect!". What we do need to achieve is a position of respect and trust, where people accept that CASA is striving to get the best possible safety and regulatory outcomes, while working co-operatively with the aviation community. At the same time we must deliver services to our clients efficiently and effectively.

If anyone doubts there have been improvements at CASA I would ask people to think back to how long it was taking CASA to process an average medical certificate application. A year or so ago there were often lengthy and frustrating delays. By the second half of 2017, medical certificates were being processed on average in 7.5 days. The processing for class one medicals

was even slightly quicker at 6.5 days. More than 93 per cent of medicals are processed within the CASA service delivery timeframe. The CASA Flight Operations and Licensing team is completing more than 99 per cent of jobs within an average of less than two days.

Our challenge, which we accept and embrace, is to consistently provide regulatory services effectively and efficiently month

aviation regulatory services from CASA as smooth and as painless as we possibly can.

Underpinning our work to improve performance right across CASA is our regulatory philosophy. The ten principles in this document are not just a set of words that sit on a shelf or in a corner of our web site. It is a code which lays out how we will behave, reach decisions and take action. We have made it clear


« While it is still relatively early days, I am very pleased that CASA staff are telling me they are approaching their work differently... »

by month, year by year, so the aviation community can have confidence in CASA's ability to deliver. To achieve this we are working on a range of digital and other improvements focussed on getting the best outcomes for our clients. We are committed to making the process of obtaining

the regulatory philosophy applies to everyone in CASA, not just our inspectors and other "front-line" staff. It establishes what is expected of someone who works for CASA, as well as what we should expect of ourselves.

A lot of effort has been put into educating our staff about the regulatory philosophy and this work continues. The goal is for the principles of the regulatory philosophy to be the default position for all CASA staff – how we automatically think and feel about the way we do our jobs.

While it is still relatively early days, I am very pleased that CASA staff are telling me they are approaching their work differently and people from across the aviation community are commenting that they can see a difference in their dealings with us. One CASA staff member recently said the regulatory philosophy made it clear "how important it is to treat industry with respect and respond to their queries quickly and professionally".

Respect, timeliness and professionalism must be at the heart of everything CASA does. 



Carmody believes CASA is moving the needle on industry service.

# What can we learn?

JIM DAVIS



Jim Davis has 15,000 hours of immensely varied flying experience, including 10,000 hours civil and military flying instruction. He is an established author, his current projects being an instructors' manual and a collection of Air Accident analyses, called 'Choose not to Crash'.

## Fuel starvation

*This discussion contains extracts from the SACAA's accident report. It is compiled in the interest of promoting of aviation safety and not to establish legal liability.*

**Aircraft Registration:** ZS-DTK  
**Date of Accident:** 29 May 2008  
**Time of Accident:** 0950Z  
**Type of Aircraft:** Piper PA23-250 Aztec  
**Pilot licence:** Private  
**Licence Valid:** Yes  
**Age:** 70  
**Total Flying Hours:** 612.4  
**Hours on Type:** Unknown  
**Last point of departure:** FAWB (Wonderboom Aerodrome) Pretoria  
**Next point of intended landing:** FASI (Springs Aerodrome) Johannesburg  
**Location of the accident site:** FAWB (Wonderboom) on the right hand side of Runway 29  
**Meteorological Information:** Wind: 110°/05kts. Visibility: >10km. Temp: 19°C. Cloud cover: Nil  
**Number of people on board:** 1+0  
**No. of people injured:** 1  
**No. of people killed:** 0

### SYNOPSIS

The pilot, who also owned a maintenance and overhaul facility, was ferrying the aircraft from Wonderboom Aerodrome to his workshop at Springs Aerodrome for overhauling when the accident happened.

On take-off (just after getting airborne) the aircraft veered to the right, crashing to the right-hand side of runway 29. According to the pilot, the right-hand engine lost power as the aircraft lifted off the runway. The pilot further stated that he applied left rudder to counter the resulting right-hand yaw,

and when this could not bring the aircraft under control he cut power off the left-hand engine. At this time the aircraft impacted with the ground with the right wing. The aircraft was substantially damaged and the pilot suffered minor injuries.

On-site investigation revealed that the fuel selectors had been selected to the outboard tanks; which were found empty. There was no evidence of fuel leaking as a result of the accident.

The pilot was not type-rated on the Piper PA23-250 aircraft. There are no maintenance records for the aircraft between 28 March 2002 and 29 May 2008. The aircraft did not have a valid certificate of airworthiness.

Both engines were dismantled and examined. There was no evidence of engine failure with either.

The pilot told the investigators that he had just purchased the aircraft from the registered owner, even though the change of ownership had not been done at the time of the accident.

There is no evidence of an application for the ferry flight being submitted to SACAA, nor was there permission granted to carry out such a flight. The pilot also stated that he did not obtain a ferry flight permit from the SACAA.

### FINDINGS

The pilot was not type-rated on the Piper PA 23 aircraft that he was flying.

There are no maintenance records on the aircraft for the



ABOVE: The aircraft travelled for 30.3 metres from the point of initial contact before coming to rest. LEFT: Nothing overly complicated here.

period the aircraft was operated between 28 March 2002 and 29 May 2008.

The aircraft did not have a valid certificate of airworthiness.

There was no evidence of engine failure (as a result of mechanical damage) when the engines were dismantled and the components examined and tested.

There was no evidence of fuel in the selected fuel tanks and

carburettor bowls.

There was no fuel in the carburettor bowls.

Both engines failed within seconds of each other.

The aircraft took off with flaps extended, even though this is discouraged by the Pilot's Operating Handbook.

### PROBABLE CAUSE

Loss of power to both engines, due to fuel starvation.

*Aiming to make safer pilots of us, here veteran instructor Jim Davis looks at extracts from official CAA Accident Reports from his homeland of South Africa and analyses why things went wrong and how we all avoid making similar mistakes.*



## Jim's Analysis

Does dropping one's jaw and gaping at the report count as a comment? If not, see my comments below, in italics.

Oh dear, oh dear, oh dear, what a terrible mess. Both the pilot and the accident report.

Remember the old saying: "there are old pilots, and there are bold pilots – but there are no old bold pilots"? This guy has gone out of his way to prove it stone wrong.

I do have one question. It says the pilot's licence was valid. Who did his last renewal test? This sort of sloppiness, and disregard for the law, simply has to be noticed by a half-way vigilant testing officer.

Instructors – signing your name on your mate's flight-test form, may be signing his death warrant.

## Extracts from the full report, with Jim's comments

The pilot was given clearance to taxi to the holding point of runway 29.

*(For crying in a bucket – why 29? It is further to taxi, and it is directly downwind.)*

The information available in the pilot's file and logbook shows that the pilot was not rated on this aircraft type, nor did he have a multi-engine rating on his licence. There is also no information to show that the pilot had ever flown this type of aircraft.

*(Do I need to comment or just bang my head on the floor?)*

The last recorded MPI on this aircraft was on 28 March 2002 at a total of 5662.57 airframe hours. The left engine had 1805.97 hours since overhaul and the right engine also had 1805.97 hours since overhaul.

«**The aircraft would have made a neat hole in the ground had the fuel held out for another minute.**»

*(This simply has to be logbook gyping. Show me two engines that have exactly the same time, and I will show you a Parker pen.)*

The Certificate of Airworthiness of this aircraft had been cancelled due to a lack of maintenance records for the aircraft. This was also done due to non-payment of fees owed to SACAA by the owner of the aircraft.

*(This sounds like a shortage of bucks could have been the reason for lack of maintenance.)*

An application for a special flight permit was completed on 4 April 2003, requesting that the aircraft be flown from Krugersdorp (FAKR) to Wonderboom (FAWB) in order to carry out an MPI. The SACAA

issued the special flight permit Number J15/DTK on 4 April 2003 with an expiry date of 16 April 2003.

*(So the crash happened more than five years after the Permit to Fly expired.)*

There is no record of such flight taking place and there also is no record of the MPI. In the engine log books there is a record of the overhauling of two carburetors (serial numbers R-6B-2217 and R-9-5509) from the accident aircraft, and this is dated 27 March 2008.

*(Ah, so the carbs were overhauled two months before the accident. Good move Mr Pilot.)*

The aircraft veered to the right of runway 29, entered into an uncontrollable spiral dive and impacted with the ground with the right wing followed by the nose dome.

*(Come CAA – did a spiral dive really occur as the aircraft lifted off the runway?)*

The aircraft travelled for 30.3 metres from the point of initial contact with the ground to the final point of coming to rest.

*(Talk about the luck of the devil. The aircraft would have made a neat hole in the ground had the fuel held out for another minute and taken him to a thousand feet or more. Then there would indeed have been a spiral dive.)*

When the wreckage was examined at the time of the accident, it was noted that both fuel selectors were selected to the outboard main fuel tanks. The outboard main were empty as evidenced by the fact that there was no fuel in both carburetor bowls.

The abovementioned factors point to both engines losing power at about the same time, due to fuel exhaustion.

*(Wake up Mr CAA – the Aztec has no such things as "outboard*

## What can we learn?

Sorry – nothing new. Just a reinforcement of the same old, same old:

- Stick to the rules.
- RTFM.
- Understand the machinery that keeps you aloft.
- Instructors – your pen can be an executioner's axe.

*main tanks" – there are mains and auxiliaries. You are making the same unforgivable mistake the pilot made.)*

The pilot was not rated on this aircraft, nor is there any evidence of him ever having flown the type before the accident.

The pilot therefore did not understand the fuel system, hence the wrong selection of the fuel tanks.

*(This is the bit that really gets to me. The CAA feels that a licenced pilot, who owns an aircraft maintenance setup, wouldn't understand the fuel system on an Aztec. Really? Folks, look at my photo of the fuel selector. And the fuel gauges automatically indicate the contents of the tanks selected. The General's dog could get it right.)*

On-site investigation revealed that the flaps had been selected down (landing position).

The flaps on this aircraft have two position settings, i.e. either in the up or in the down position and according to the owner's handbook, the flaps should not be used on take-off, thus should be selected to an up position. Page 30 last paragraph, "Take-Off" in the Owner's Handbook.

*(A simple case of RTFM – Read The Flight Manual. Actually it makes pretty much no difference on an Aztec – particularly a light one. She leaps off the ground happily – with or without flaps.)* ↻

# The kernels of wheatie

DAVE WHEATLAND



Dave "Wheatie" Wheatland started out flying crop sprayers around South Gippsland in Victoria and was instrumental in the development of the GippsAero GA200 Fatman and the GA8 Airvan. He has ferried and demonstrated the GA8 all around the world, clocking up 3000 hours on the type. Dave is currently heading up the test schedule for the GippsAero GA10.

## GA in the USA: compare and contrast

*Dave Wheatland shares his experience of flying in a country where general aviation is not a third-class citizen.*

**O**f recent years I have been routinely travelling to and from the USA to work at many locations and doing quite a bit of cross-country flying.

I used to be very impressed with the standard of service that was provided at the FBOs' (fixed Base Operators) General Aviation terminals. They varied greatly in the level of comfort, style and grandeur, but they always met the needs of a cross-country pilot, and crew, and pax.

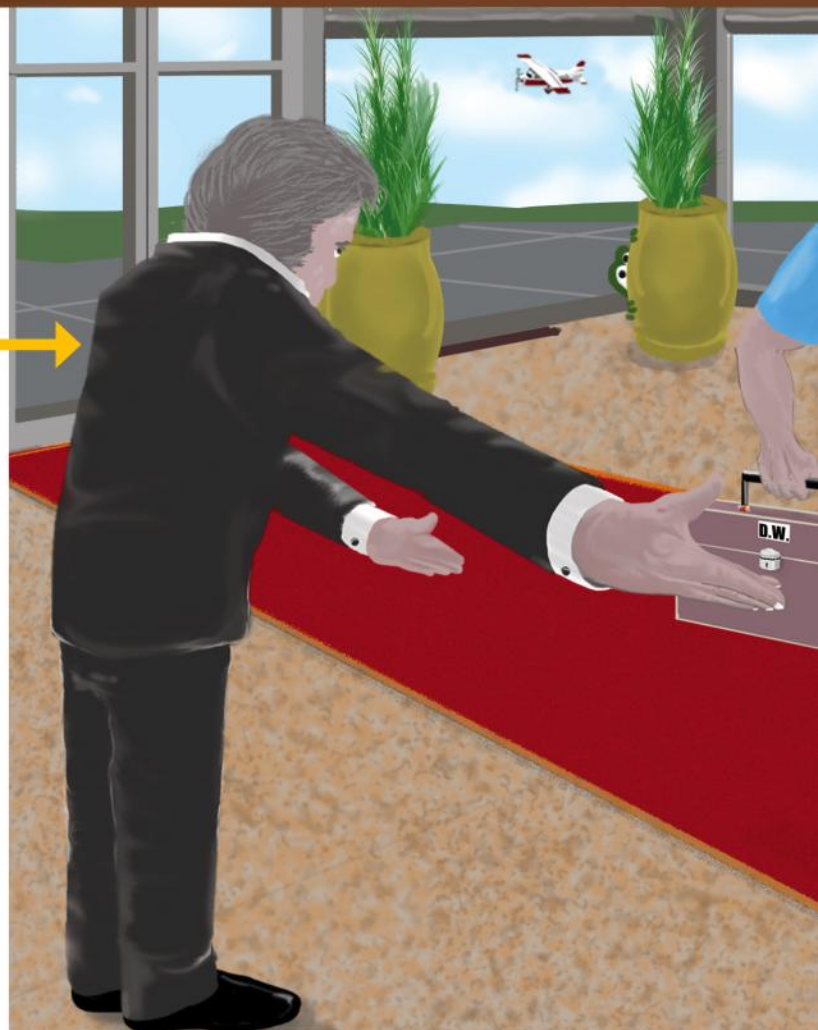
Having now done quite a bit of flying in North and South America (as well as the UK and EU) it is the return to Australia when the impact of these terminals is noticed even more. It is more the almost total absence of general aviation support that is as ubiquitous here as its presence in the USA especially.

The very first time I flew out of Mojave in California and across the Grand Canyon to Four Corners Airport in New Mexico it was the first stop on a transcontinental trip. Seemingly out in the high desert, near the city of Farmington it is remote, but from when the unicom responded to my inbound call with an enquiry if I needed

avgas, to the parking marshal who parked me right out front of Atlantic Aviation, to the red carpet that appeared outside the cockpit door as the prop windmilled to a stop, it was service like I had never previously known. A "good day sir, how much gas do you need?" greeted me as I opened the door, followed by a cold bottle of spring water and directions to the rest rooms and restaurant. Yes, restaurant. Full sit down meal service, while my aircraft was refuelled and the windshield polished. I was offered a (free!) courtesy car if I wished to go off airport for business or sight-seeing. This is typical with several FBO general aviation terminals in some airports.

Four Corners is a serious size airport with RPT, but heaps of GA activity. There are about a hundred movements a day, of which close to 70 percent are general aviation aircraft, light piston singles and twins, which also constitute about 95 percent of all the airport residents, a few jets, and helicopters. In addition to the GA terminal (FBO) there is also an RPT terminal.

The very worst service (Kit Carson airport in Kansas on a windswept 42 C day) entailed an unattended air-conditioned pilot lounge with Wi-Fi, a fridge full of packaged snacks and drinks, a coffee jug, a microwave and a



desktop computer for weather and flight planning, the keys to a 1980s ex-police Ford cruiser hanging from a hook and an honesty box. No security fence or gate codes, just this little lean-to corrugated iron shed beside a hangar with a welcome sign over the door.

Amazingly after almost 20 years of flying in the USA I have become accustomed to this type of greeting, and it is a very rude awakening when the full force of Australian service apathy, general aviation poverty of mind and airport security confronts me as it did again on a recent trip

from YLTV to YCNS a couple of months ago.

After flying from YLTV in light winds and an economy power setting I set up for a descent into M\*\*ee near the Northern NSW border, where I knew there was a swipe bowser for which I had a card. Here in Oz one uses airports with a total lack of human services as it is quicker to do it yourself. Besides, there is no likelihood of a sit down meal, so miles in the air are gold. At the bowser we find that none of the four fuel cards work, so we ring the refueller, who advises us he is gone home for lunch and won't be back for "a while". An hour



*It has been said that no-one will live long enough to make every mistake there is to be made, so to stay safe we have to learn from the mistakes others have made. GippsAero test pilot Dave Wheatland has spent his career operating aeroplanes on the very edge of their limits and has a swag of yarns about how flying taught him some hard lessons that we can all learn from.*



later he arrives and after a false start the credit card works and we have fuel! "Huzzah!" Back in the air for Emerald before dark. There was no "sorry sir", no apologies, no... anything; just a laconic and casual air of indifference to the aircraft that annoyed him by expecting fuel!

I must say that we did have a casual, but very helpful hand at Innisfail where there was someone on site, no hi-viz, security or even footwear, who expedited our stop with a friendly smile and who even dragged the decidedly non-OHS approved refuelling steps to the aircraft. It was a pleasant stop, but

fast and well serviced, even though there was no red carpet.

Our US based colleagues find it amusing that there is so little public or industry interest in supporting the general aviation users as they are regarded as being normal over there and not third class citizens as we are here. The airport where I spend quite a bit of time is similar in many ways to Four Corners, although with more business jets and additionally a SEAT (Single Engine Air Tanker) fire bomber base and a helicopter flight school. When getting fuel, jet or avgas, oil, oxygen, snacks, light meals, overnight hangarage,

marshalling, accommodation at corporate rates, flight documents and coffee, a courtesy car and a welcoming greeting are everyday available at no charge if you purchase your fuel from them, which everyone does of course.

Harry Lanson, an aviation SME owner with whom we work when in Colorado, is based on this airport and has a very nice hangar, with a crew room walled by large picture windows looking toward the snow-capped Rockies, leather Chesterfields and a large fridge full of assorted beverages. Harry has been flying since the Wright brothers it seems and started as many did in the USA in his teens in a Cub (or Aeronca?) tutored by a crusty old WW II Corsair (or B17) pilot. Aviation was exciting and the way of the future and every youth was keen to gain a toe-hold in this progressive and fast moving industry where more pilots were needed to meet the growth in transport, freight and business aviation. Compare and contrast to the stories I have been told of the over abundance of ex RAAF/RAF bomber pilots here who couldn't find jobs in aviation in the post-war years. Aviation in every form was embraced in the Americas and Harry soon saw that there were opportunities everywhere. He joined the Army to fly helicopters, which they duly trained him to do and then sent him to Korea (a topical venue) to learn even more about flying.

Harry got out of the military, became a crop duster pilot and built himself a small company which is now industry respected and sufficiently prosperous to enable leather Chesterfields and large fridge in the immaculately finished hangar, fully air conditioned, with glossy painted floors and a well-equipped

manufacturing facility just up the road. If you are a helo pilot who has ever used a Helicopter ground handling dolly, Harry designed and built it, as well as lots of other stuff.

His business now employs dozens of people, has a very low staff turnover and consistently brings innovative and profit-generating products to rotary and fixed wing operators. Weekends are sacrosanct, but if duty calls his guys answer the call without demur. There are often corporate events on weekends for all staff to participate and helicopter flight instruction is available at DOC for staff members. His business is a shining example but not unique. It shows what a society that respects and support general aviation can provide, not just for aviation but the community as well.

Harry has worked hard and did his duty for his country. He has done hair raising mountainside helicopter rescues in snow and sleet, and spent days out in the prairie lands spraying bug infestations, but these days what I really like about being in Colorado, is a Saturday morning phone call from Larry, who says "hi there, how about you drop down to the factory and we'll get the [Bell] 407 out and go for breakfast at Greely airport. Then maybe we'll fly up the Poudre river canyon and land at the ranch for lunch. Whaddya say?"

That my friends is one of life's great pleasures, not the indulgence of wealth, but rather Larry's wish to share in the spoils of a life of hard work and to enjoy and celebrate every day in an industry that provides prosperity to many and which is respected and fostered by local regional state and federal initiatives. Compare and contrast. 🇺🇸




ATSB

February's King Air tragedy at Essendon was one of 94 incidents and accidents in the first half of 2017.

scene at Essendon. This afforded the opportunity for me to see first-hand the complex, intricate and critical work of our dedicated Transport Safety Investigators. I am in awe of my staff's diligence and professionalism in the face of such tragedy as they went about their work to determine the causal factors contributing to the accident.

The ATSB's greatest resource continues to be 'its people' and we have embraced a change to our operating model introducing a multi-disciplined teams-based approach to transport safety investigations. We are well on the way to creating an environment where our employees are empowered and provided greater opportunities to bring to bear their collective core investigative skills, shared values, passion and drive to improve transport safety. This equally applies to our dedicated and professional operational support staff.

Through the Government's recent 2017-18 budget measure "improving transport safety", the ATSB has been able to secure a stable financial operating environment for the next four years. The funding will enable the ATSB to re-commence recruitment following a self-imposed recruitment freeze and re-profile our capital investment strategies to meet projected needs in essential technical equipment, data warehousing requirements and core enterprise systems.

I am looking forward to continuing to learn and grow in my role as Chief Commissioner of the ATSB. The years ahead will be exciting and challenging for the ATSB and I remain confident that the continued professionalism and capability of our people will ensure we remain a world-leading transport safety investigation agency to deliver the best safety outcomes for the travelling public. 

## ATSB – one year at the helm

*Greg Hood, Chief Commissioner and Chief Executive Officer of the Australian Transport Safety Bureau, talks about his first year in the position and his concerns that general aviation pilots need to learn more from recent history.*

**A**ppointed Chief Commissioner on 1 July 2016, I was humbled yet immensely proud to be given the opportunity to lead a world-class transport

safety investigation agency. As the accountable authority, I am acutely aware that the ATSB's primary function is to improve transport safety with priority given to delivering the best safety outcomes for the travelling public.

Having worked at senior positions in other agencies within the transport portfolio for an extended period of time, I was also cognisant of the agency's operational environment and the associated challenges. It was within this context that I determined the ATSB needed to be repositioned to face these challenges – through a well-considered and consulted change program.

Over the past 12 months,

the ATSB has undertaken a significant transformation designed to enable better resource allocation and utilisation across the agency. A number of change imperatives underpinned this program that provided the impetus to refine our business practices and expand our deliverables.

In demonstrating increased effectiveness, we have become more selective in how we allocate resources towards investigating those accidents and serious incidents that have the greatest potential for safety learnings and enhancement. Concurrently, we have expanded our capacity to improve transport safety outside of these traditional investigations, through safety issue investigations, through greater interaction with operators and regulators, with data and other intelligence in our possession, and through amplified communications, education and promotion.

Focusing on general aviation (GA) for a moment, in the first six

months of this year we've already seen 94 serious incidents and accidents involving this sector. These included the Grumman Mallard accident in Perth's Swan River, a Cessna Conquest accident near Renmark, an Angel Flight Tobago accident near Mt Gambier, two Cessna 172 accidents, one at Agnes Waters and the other which collided with terrain at Ballina, and a Beechcraft King Air which impacted the roof of a shopping complex not long after taking off from Essendon Airport – just to name a few.

Of frustration to us, is the number of times we see the same contributing factors, particularly decision making in relation to weather resulting in VFR into IMC and associated loss of control.

I have been in the aviation industry my entire working life, in service provision, regulatory and senior management roles and the past year has provided me with further learning opportunities. In March, I attended the tragic



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