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Behind the scenes

BY MICHAEL MONCK

I WAS asked the other day about what happens in the office. What do all the people in Canberra do all day? It's an interesting question and one I don't often think about because I already know what goes on. But it is a fair question from someone who isn't as close.

I'll start by giving a quick outline in very general terms of the office structure. We have three main areas – Ops, Tech and Safety – which are all supported by an admin team. But it isn't that cut and dried. Safety affects everything we do, the decisions we make (both as pilots and the administering organisation) and influences how we are viewed by external parties. Operational changes may influence the need for technical amendments and vice versa. And without the other staff looking after membership renewals, aircraft registrations, paying the bills and so on, nothing gets done.

So let's go back to basics. We have roughly 9,700 members and about 3,500 aircraft. That means we have a total of around 13,200 routine transactions to process each and every year just in renewals. With an average year having around 250 working days it equates to a bit over 50 transactions per day.

On top of this we have the non-routine things which need to get done. According to the latest census, around two in every five people move house every five years. Our membership may not be representative of the full population, but if we assume for a moment they are, this means around 5,700 records need to be updated once every five years just to account for changes in memberships and registrations. That's an additional 1,100 odd updates every year, another five per working day.

We also have to consider that every flying member is required to undertake a flight review every second year - creating another 4,850 updates assuming everyone does it when it falls due. That's another 20 updates per working day.

And then there are things like adding endorsements to Pilot Certificates, changing registration details when an aircraft is sold, answering member queries via telephone or email and so forth. You can see the workload adds up.

This is part of the reason we have automated our systems, to streamline these processes. Our admin team is full of bright people doing routine work. It makes more sense to get them to do more productive work which yields more value for members.

If we turn our attention to the Ops and Tech teams, a similar story emerges. Our Ops team is responsible for overseeing the operations of about 175 flying schools around the country. We get numerous enquiries from these schools on a daily basis and each school has to go through an audit process once every two years. This results in our Ops team having to visit, on average, one school every three working days.

To add insult to injury they also have to conduct regular reviews on documentation, the obvious one being the Ops Manual. They visit accident sites to investigate the causal factors. They liaise with local event organisers to ensure fly-ins are managed safely. And every now and then they are asked to attend to formal duties like coronial inquests.

Like the Ops Team, the Tech Team is also responsible for accident investigations and the review of documents such as the Tech Manual. They also participate in reviews of flying school activities and to examine airworthiness standards of school aircraft.

And let's not forget our educational efforts. As part of our ongoing efforts to improve safety, we are producing a range of materials to help members learn new skills and reinforce existing ones. The Tech and Ops teams work closely with the Safety team to ensure these things are delivered in an effective way and so the messages reach our schools and students.

A lot of effort is also put into events. This includes coordinating with local flying schools, clubs and members to attend member forums. We have a couple of board meetings to be organised each year in accordance with the constitution. Then there is our flagship event, AirVenture Australia which also takes considerable effort to ensure it is a success.

As pilots and maintainers we probably consider the rest of the office functions as boring and mundane, but it doesn't make them any less important. There is a team of people behind the scenes who work hard as a collective to make sure we meet all of our administrative obligations.

When we changed from an association to a company, some of these obligations were alleviated but we still have a raft of things to consider. We have to remain compliant with tax requirements, there are legal obligations in terms of workplace practices and employment arrangements. We have to deal with aviation regulatory requirements.

All in all you can see it is a busy workplace. When we consider that in order to look after the interests of our 9,700 members, we have to please a range of other people from the tax man to the general public, you begin to realise it isn't as simple as it might first appear.

There's a lot going on in the background you might not be aware of and, quite frankly, if we can keep it that way, I think we will do a pretty good job. After all, we exist to make sure you can go flying under a simple set of rules appropriate for our end of aviation.

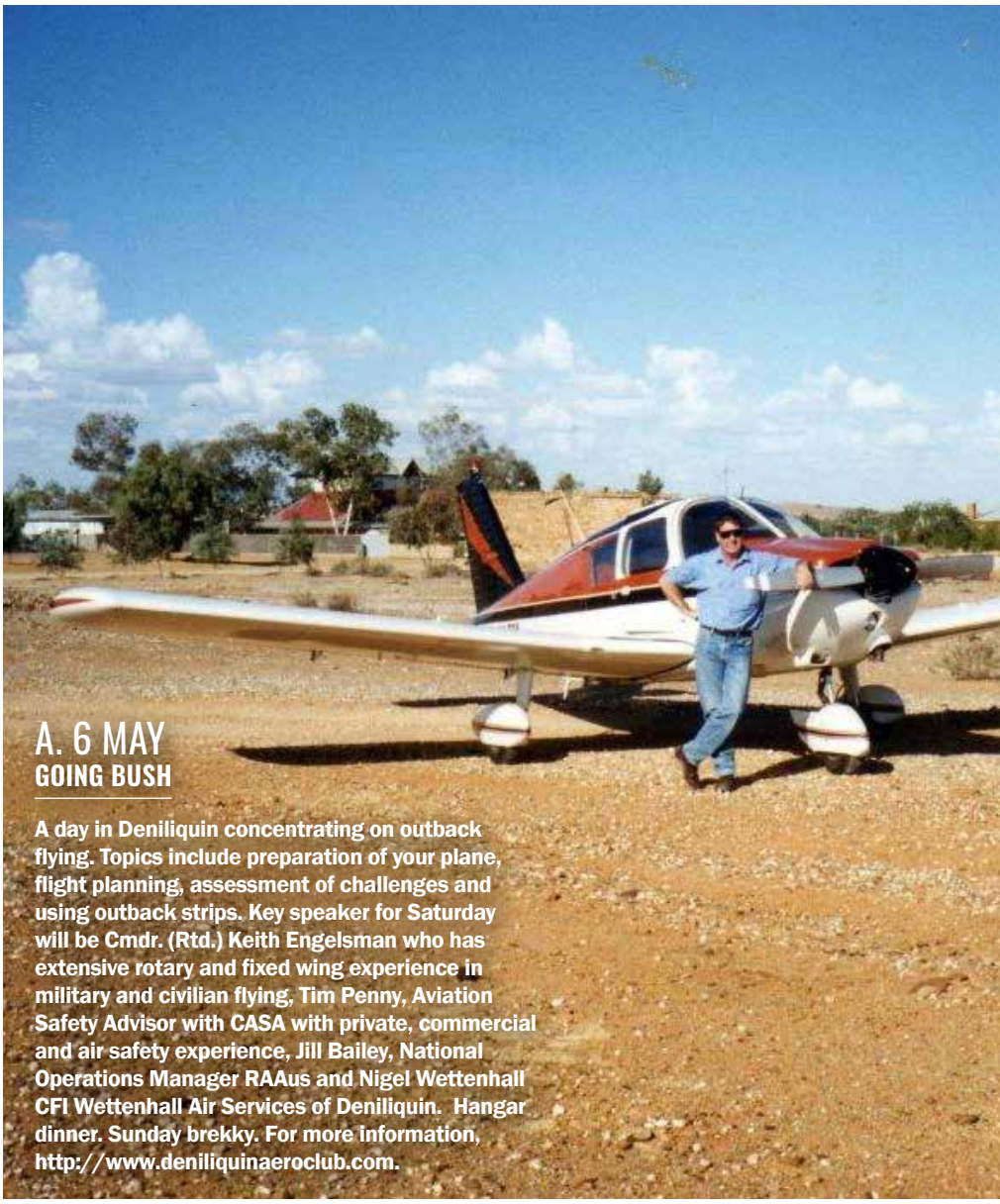
In other words, the office staff deal with the boring stuff so you can do the fun stuff. That's the way it should be, right?

B. 14 MAY
MOTHER'S DAY FLY-IN

Gatton Airpark annual Breakfast Fly-In. Hearty country breakfast, chat with friends and see the latest developments at the airpark. 0700 start so you can still get home to visit your mum. Better still, bring her along. Check ERSA for airfield details or phone Martin 0419 368 696 or www.gattonairpark.com

C. 20-21 MAY
BAROSSA BIRDMEN FLY-IN

Truro Flats Airpark. Limited accommodation. Avgas and Mogas available on request, Saturday night dinner. Pilots should be aware of restrictions regarding overflying neighbouring properties and hazards. See ERSA. For more information, Jeff Mackereth 0418 809 840, Roy Phillips 0408 802 667 or royp1948@gmail.com.



A. 6 MAY
GOING BUSH

A day in Deniliquin concentrating on outback flying. Topics include preparation of your plane, flight planning, assessment of challenges and using outback strips. Key speaker for Saturday will be Cmdr. (Rtd.) Keith Engelsman who has extensive rotary and fixed wing experience in military and civilian flying, Tim Penny, Aviation Safety Advisor with CASA with private, commercial and air safety experience, Jill Bailey, National Operations Manager RAAus and Nigel Wettenhall CFI Wettenhall Air Services of Deniliquin. Hangar dinner. Sunday brekky. For more information, http://www.deniliquinaeroclub.com.

D. 13 MAY
GOLD COAST SPORTS FLYING CLUB OPEN DAY

Everything on display – biplanes, seaplanes, old and new. Free entry. Hot food, cold drinks, joy rides, vintage cars. Located at Jacobs Well Road in Norwell, just north of Behms Road. Look for the red balloons. For more information, 0408 151 662 or www.gcsfc.org.au.

E. 27-28 MAY
OLD STATION FLY-IN AND HERITAGE SHOW

The Old Station Flying Club has staged its unique and popular fly-in air show from 1989 to 2007. In 2011 the format was altered to include tractor pulling and truck show. Proceeds from the weekend to the Capricorn Helicopter Rescue Service. Aviators and campers welcome on Friday for an informal meet & greet at The Feed Barn. Warbird joy flights, other aerobatic and general aircraft flights, displays all weekend. Children's entertainment, market stalls, fashion parade, food and drinks, fireworks. For more information, flyin@oldstationflyingclub.com.au or leonie@creedgrazing.com.au.

F. 17 JUNE
LISMORE AVIATION EXPO

Come along to the fastest growing regional airshow in the NSW northern rivers. Joy flights, flying displays, aviation education, market and trade show. For more information, 1800 878 387.

G. 24 JUNE
BIGGEST MORNING TEA

Fly in for morning tea, then stay on for a BBQ lunch at Max Hazelton Aero Centre, Orange Airport, from 10am - 12pm. All money received will go to Cancer Council. For more information, Orange Aero Club 0499 766 190, Stuart Porges 0428 652 204 or info@orangeaeroclub.com.au.

H. 23 JULY
JUMPERS & JAZZ BREKKY FLY-IN

Massie Aerodrome near Warwick, starting at 8am. After breakfast, transport will be arranged to go into town to enjoy Warwick's quirky Jumpers & Jazz festival. For more Information, www.qraa.info or Graham 0427 377 603, qraawarwick@gmail.com or ghawthorne@bigpond.com.

I. 5-6 AUGUST
GYMPIE FLY-IN

Gympie Aero Club. Aviation Expo Saturday, Aerodrome Open Day Sunday. Aviator's dinner Saturday. Free camping. For more information, cumulusairpark.com.au or Paul Garrahy 0436 47

J. 9 SEPTEMBER
WINGS OVER WARWICK

Queensland Recreational Aircraft Assn incorporating Warwick Aero Club (www.qraa.info) invites pilots and enthusiasts to our annual fly-in at Warwick Aerodrome. The strip is 1,600m all bitumen (www.warwickaerodrome.com) Food and drinks available. For more information, Phil Goyne 0417 761 584 or Graham Hawthorne 0427 377 603.

K. 8-10 SEPTEMBER
GOONDIWINDI FLY-IN

The Gundy food and wine festival provides an excellent reason to fly in. The aero club will have aviators dinner on Saturday. Breakfast Sunday from 7:30am. The Gundy festival is set among the beautiful gardens of the local Community Cultural Centre, located on the Macintyre River, and has been staged in the Goondiwindi region for the past 16 years. The festival focus is 'Food, Wine and Music' showcasing fine regional food, award-winning wines, and live music. The weekend also features the running of the Goondiwindi Cup. For more information, Marg Scells (07) 4677 5186 or 0439 775 184.

Find out more at www.airborne.com.au
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A SPIN TRICK

I refer to David Eyre's article on flat spins (*Sport Pilot* April 2017).

The issue of recovery from a flat spin was raised long ago in the 50's by the old wartime instructors at the Royal Aero Club of NSW where, during the war, these had occurred and had been recovered from.

First thing is that aft CGs have contributed to a normal spin going flat. An aircraft spinning horizontally has mass in the front and in the back around the centre of rotation, trying to pull the aircraft outwards from the near vertical to the horizontal position. This force is always there, but adding weight to the longer arm of the tail by an aft CG will increase this force, tending to flatten out the rotation.

Recovery was achieved by pumping the throttle and stick together, forwards then backwards to rock the aircraft out of its horizontal position. I cannot answer for T tails, but the horizontal tailplanes in those days were usually within the propeller slipstream. In this case full forward stick combined with full power provides both a lifting force on the tailplane, with the engine also accelerating the aircraft, helping it get the stalled wing to fly. The idea of going from full back with stick and throttle, to full forwards with both, is to rock the aircraft into a sufficiently nose down position to break the lock of the flat spin. The rocking motion is also using the momentum of the mass of the front and rear ends in the vertical sense to help in the recovery. Opposite rudder would also be driven by the prop blast to help to rotate the aircraft to accelerate the stalled wing and should be left full on for the manoeuvre, until recovery.

Can anyone else contribute to this?

BARRY WRENFORD

NO FEES

I contacted our local region D class airport recently, re landing fees, and was pleasantly surprised they had a policy of not charging landing fees to RAAus aircraft.

The airfield in question is Parafield in South Australia. It is a very busy training base with mixed operations, twin, single engine and helicopters using two contra circuit runways.

For an RAAus pilot, it's very challenging and rewarding to use this controlled airspace.

SUSAN INGHAM

TO CASA

I'll give this a go, although it will fall on deaf ears.

To avoid the worry and cost of hard work on how to implement the ICAO (ref:UN Agenda 21) dictates, and more and more regulatory controls on the aviation industry in Australia,

and how to find a way to appeal to all pilots' common sense and to market and convince pilots of just how potentially dangerous flying really is, why don't you just stop pilots from flying? Ground all aircraft and kill off aviation in this country altogether. Then you can actually put a true cost on safety.

All these rules and regulatory changes the aviation industry has suffered will never stop accidents from happening. It's just an excuse for an ever increasing cost (tax) burden on aviation. It's obvious to me that keeping a CEO in CASA is impossible. Once the CEO understands what the directives from ICAO mean to Australian aviation, and the added burdens he must implement, he quits.

Most pilots are responsible, safety conscious people. They are not stupid. You will always get an anti-authoritarian cowboy in any part of society. It's human nature. Why are the majority always paying for the stupidity of a minority? The statistics on fatalities for hours flown just doesn't stack up. Flying is safer than driving a car on the road for distance travelled. We pilots know that. Then calculate the percentage of those fatalities to health problems. Doesn't calculate! The existing medicals have been more than adequate to date. You'll kill pilots and manufacturers off with stress, worrying over their jobs and businesses. They've invested a great deal of time and money into the infrastructure of aviation in this country and you want to strike

them down with the stroke of a pen.

You will do your best, wave your big authoritarian sticks around, ignore the common sense comments from the aviation industry as usual and kill aviation with over-regulation and higher costs. No wonder the flying schools cannot recruit enough new students into the industry. Flying schools are suffering and more and more just can't afford to operate. The end of individual freedom and the exercise of personal responsibilities are being usurped by dictatorial authorities.

Independence is dead and inter dependence is the new dictate of the New World Order.

You're going to lose all of our good dedicated pilots. You're killing what little manufacturing and servicing industry is left in this country.

Remember one thing, you only have your job because of the aviation industry.

Kill the industry and you are out of a job.

IKE GOODWIN

CANCELLING SARTIME

Thank you to Geoff Raebel and Jeremy Robertson for an enlightening and informative article regarding SARTIME (*Sport Pilot* March 2017).

It's an article I will show to all of my students because it made the entire process simple to understand and relatively easy to follow. Remembering we are recreational pilots and submitting a SARTIME is not something we do regularly.

SARTIME does have its drawbacks. It has been a problematic subject and lodging one requires a certain knowledge base. Getting the coordinates, spelling or format wrong results in endless frustration resulting in a "we could have driven there by now" scenario. Failure to cancel SARTIME, deviating from course and, of course, the long delay from incident to SAR phase.

The most favoured method for RAAus pilots to do a SARTIME is to leave one with a trusted person, it's easier and far simpler. But even that has its drawbacks with telephone coverage for cancellation.

Modern technology has given us new and faster ways of tracking down a troubled aviator, such as PLBs, however the basic and most common of the PLBs carried by RAAus pilots requires the user to activate it, something not always easy following a botched landing at a remote strip. The same can be said for transponders.

The other solutions are satellite-tracking systems such as Spidertracks.

This system is fail-safe, simply requiring the user to go flying, anywhere, any time. It will automatically turn on and track your progress when you start to fly. If you stop or the unit stops working, you will be phoned to see if you are ok. If you don't answer, it will ask people (except those at AMSAR) to look for you at your last known location. Pretty simple eh? No paperwork, no radio calls, no formatting, no waiting, just fly where you want, when you want and if something goes wrong have peace of mind that help is on its way.

Lets look at two scenarios, one using SARTIME and the other using Spidertracks.

Joe wishes to fly 350nm from point A to point B. He submits his SARTIME using fuel endurance as a cancelation time, in this case about departure + 5 hours. Or he uses last light, which in this case is about five hours away. Or he uses arrival + 1 hour which, as you guessed, is about five hours away.

Joe departs location and 1.5 hours into the flight notices a farmer burning off on his course line. He deviates a few miles to miss the smoke and maintain visibility, then adjusts his course to intercept point B when suddenly a wedge tail eagle lands in his lap (it happened to a friend of mine recently). Badly hurt Joe looks for a place to land and ends up upside down unconscious in his aircraft, alive but not healthy. Three and a half hours later a SAR is initiated. How long does it take to find Joe? An hour? Two? A day? A week?

How much did it cost the taxpayer to find Joe's body? How much does it cost the taxpayer to monitor SARTIMES?

If Joe was using Spidertracks, he simply gets in his aircraft and heads off. Within 15 minutes of a crash, help is on its way – directly to Joe.

A government subsidised Spidertracks would be more efficient, accurate, simple and way less costly than the current SARTIME system.

I am not involved with Spidertracks and do not derive any income from it. I am just sick and tired of bureaucratic bumbling when there is an easier, cost effective technology available.

I ran this letter past the people at Spidertracks just to make sure I had my facts right. As you would expect they were very supportive. Actually the NZ government did do a scheme with them and it worked well. RAAus has a voice of 10,000 members which could be put to good use by the organisation elected to represent them. Is this something worth investigating?

GORDON MARSHALL

WRITE IN: EDITOR@SPORTPILOT.NET.AU

The state of the organisation is reflected in the Letters to the Editor columns. The more letters – the healthier the organisation. So don't just sit there – get involved. Your contributions are always welcome, even if no one else agrees with your opinion. The Editor makes every effort to run all letters, even if the queue gets long at certain times of the year. (By the way – the Editor reserves the right to edit Letters to the Editor to shorten them to fit the space available, to improve the clarity of the letter or to prevent libel. The opinions and views expressed in the Letters to the Editor are those of the individual writer and neither RA-Aus or *Sport Pilot* magazine endorses or supports the views expressed within them).


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TECHNOLOGY FIRST FOR BOARD

THE RAAus board meeting in February was unique..and much cheaper than normal.

It was the first time a formal board meeting had been run just using technology. So, for the first time, there were no travel or accommodation costs. The board is planning more technology based meetings like this to save money.

During the meeting, several key issues were addressed including:

BUDGET

Significantly, RAAus is still managing its way through a deficit budget situation. Major costs such as member based insurance and *Sport Pilot* magazine, coupled with a small decline in membership fee income, continue to impact the budget. The Board and staff continue to explore ways to balance the budget.

RISK MANAGEMENT

The Risk and Audit Committee was formed in October with Barry Windle (Chair) and Luke Bayly as RAAus Director members. Additionally, Lorenzo Mazzocchetti is a non-Director independent member. The committee operates under a Board approved charter.

The RAC reported that work on the RAAus Risk Appetite had been completed. The Risk Appetite guides the board on strategic decision making and also informs the management team and staff when implementing operational plans. It is a document which describes RAAus' appetite for risk taking. The document is available to members on the website.

CTA/MTOW

The CEO, senior staff and Board Chair met with CASA a number of times in January and February. CASA continues to show a willingness to work with RAAus in achieving both outcomes. RAAus has addressed all questions raised by CASA and we continue to engage at the most senior levels to ensure no momentum is lost.

GOVERNANCE

The Board discussed three critical areas of governance, namely; Director performance and measurement, future strategic planning and Board working groups. Outcomes of these discussions included Luke Bayly taking a lead role in further development of an overarching Board performance measure and the Board scheduling two strategic planning sessions to engage with staff and explore future strategies. It is important to note member surveys will play a role in RAAus' strategic development during 2017. Further work is being undertaken by Rod Birrell on Board working groups. This topic will be revisited later in 2017.

> "Revenue strategies need to be further examined"

REVENUE STRATEGIES

The Board acknowledged that progress had been made in reducing the burden of ongoing deficits, however we remain in a deficit budget situation and, as such, revenue strategies need to be further examined. All possible measures have been explored to reduce our cost base, including reducing our staffing footprint by a further staff member in late 2016, negotiating a better insurance agreement, using technology where possible for meetings and staff using technology to meet and interact with each other.

The CEO implemented a number of revenue generation strategies agreed to by the Board following the October 2016 meeting and further refinement will take place in the coming months.

SPORT PILOT

The overall desire of the Board, CEO and staff is to offer *Sport Pilot* to any member who would like a printed version at no extra cost. At present however, to do this would prove economically unsustainable. The current subscription model is working well and communication with members in the most part is working well across a number of our communications channels. Everyone acknowledged we can always improve how we communicate with members and we will continue to explore ways to do this.

AIRCRAFT

Two key topics on aircraft were discussed, the first being the need to ensure ongoing maintenance requirements were being met. The Technical Team is currently undertaking a review of maintenance standards across the fleet and will report to the board in May. CASA has indicated it will audit RAAus in the near future and, as such, everyone needs to continue to work together to ensure maintenance standards remain high.

The second issue was the opportunity for multi-engine aircraft to sit on the RAAus register. The Board did not rule anything out, but felt at this stage we have ample strategies on our agenda and, as such, should see those through first before exploring further technical changes.

The board will meet again in June.

ASICS TO BE A BIGGER PAIN

FROM August 1, the Department of Infrastructure and Regional Development will implement major changes to ASIC issuing bodies and applicants. The major changes are: all applicants will need to present in person to an issuing body (or the issuing body's agent) to verify their identity with original documentation; and new categories of identification documents are being introduced and will replace the current identification document check.

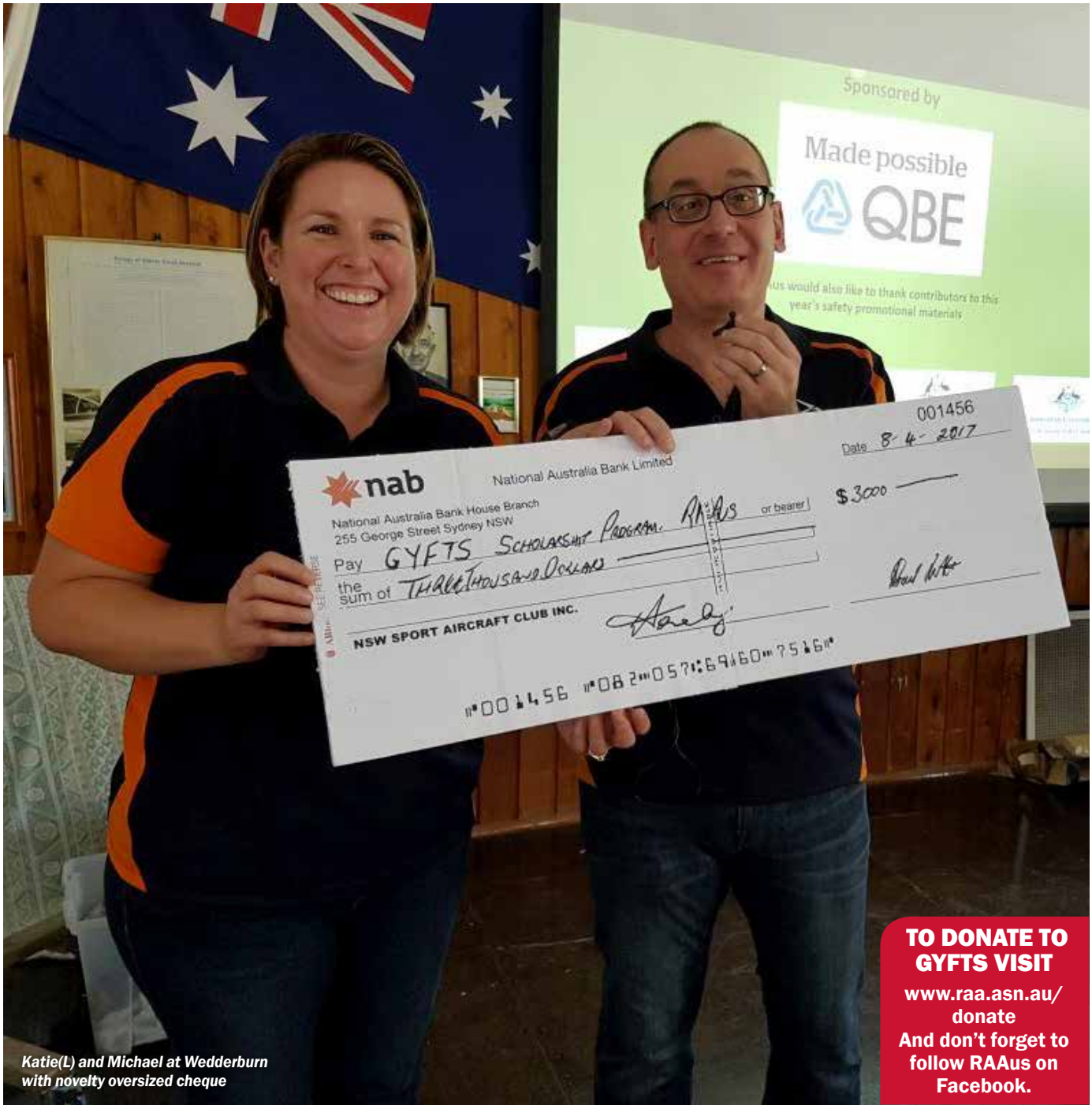
What do these changes mean to us?

RAAus members will be required to go and see an RAAus CFI acting as an agent on behalf of RAAus to verify their documentation. Members will only be able to use CFIs to verify their identification.

Soon, RAAus will ask for expressions of interest from CFIs willing to become agents on behalf of RAAus as an issuing body for the issuance of ASICs.

Regular updates on this issue will be made when RAAus receives them.

For more information on the changes, visit the Department of Infrastructure and Regional Development's website.



Katie(L) and Michael at Wedderburn with novelty oversized cheque

TO DONATE TO GYFTS VISIT
www.raa.asn.au/donate
And don't forget to follow RAAus on Facebook.

RAAUS AT WEDDERBURN

CEO, Michael Linke and National Safety Manager, Katie Jenkins, visited Wedderburn airport in April as part of the local fly-in hosted by the NSW Sport Aircraft Club.

Michael and Katie hosted a member's forum with a safety focus and Q and A session. About 30 members attended the session with the main topics of interest being safety and the work RAAus has been doing to understand more about human factors and pilot decision making. Other topics of interest included RAAus' push for access to CTA and the increase of the maximum take-off weight. The presentation was live streamed on Facebook and is available on the RAAus Facebook page.

The club also presented Michael and Katie with a $3,000 cheque towards the GYFTS Scholarship program. This year RAAus received a record number of applications, some 96 (25% up on last year) and, as such, any funds raised by local clubs and schools will help more kids get into flying.

RAAus would like to express deep thanks and gratitude to the team at Wedderburn. Ray and Pablo and their committee are doing an outstanding job and the airfield and club are shining successes of what is possible.

Keep an eye out for more RAAus member forums coming soon.

MORE ROTAX VETERANS

BY KEV AND CAROLE MCNALLY

LATROBE Valley was a great location for our most recent Rotax maintenance course. We had full use of the 'terminal' for the classroom part of the course. It was air conditioned, had its own pull down screen, coffee area, soft comfortable seats for breaks/lunch and the all-important ladies and gents toilets as well.

We would like to thank Geoff White, CFI of DTK Microlights, for organising everything. Also a big thank you to the people who keep this terminal in great shape for people like us to use, and also to Hugh and Tony for offering their aircraft for the practical elements of the course.

From Left: Les Scott (refresher), Dr Jon Hodson, Graham Loft, Peter Weller, Michael North, Ken Roberts, Tony Vuillermin, Alan Jenkins, Jan Evert Giliam, Bernard Silvey (refresher), Hugh Evans.

NEW WEATHERCAMS

WE may be about to get a new weather camera network to help us make smarter decisions about go/no go decisions.

Airservices Australia has been asking the aviation industry to take part in a survey to help ensure a network is installed in locations which will deliver the greatest safety benefit.

The idea is for the network to be hosted on a public website and provide access to an array of cameras pilots can use to help view actual weather conditions at a variety of locations.

Aviation activist and entrepreneur Dick Smith donated $160,000 to Airservices in December to fund the network. Airservices has since been working closely with the Bureau of Meteorology and airports to identify sites with existing power, communication infrastructure and cameras, using these to provide the new service.

Once the sites have been identified, the website will be launched with six locations. That's expected to happen sometime this month. Other locations will then be rolled out.

For more information:
www.airservicesaustralia.com

RECENT ACCIDENTS

DEVONPORT, TAS

On Saturday March 4, RAAus member Milfred Knight was killed in an aircraft. He was flying an amateur built Avid Flyer.

RAAus continues to assist local police with the investigation.

RAAus would like to remind members of the importance of referencing all service and mandatory bulletins to ensure the safe and continued operation of aircraft. Specifically, members should review AN 08082014 Rev2 regarding flight control duplicate inspections, available at https://tinyurl.com/lwre2no.

OAKDALE, NSW

On Friday March 10, RAAus member Amrinder Singh was killed in an aircraft. He was flying an amateur built Fisher Mk1 in the vicinity of The Oaks airfield.

RAAus continues to assist local police with the investigation. A trained and qualified accident consultant attended the scene and is preparing a report. At this stage, the preliminary investigation has revealed no immediate safety or mechanically related factors. The investigation will continue and further updates will be provided in due course.

Fisher Mk1 at The Oaks

NEW BLACKSHAPE GABRIÉL

INNOVATIVE Italian light aircraft company, Blackshape, has launched another LSA model, which will no doubt make its way here eventually.

The Bk160 – Gabriél, is another two-seat tandem aircraft like the company's flagship model, the Bk100 – Prime. It has an MTOW of 750kgs, too big for RAAus at the moment, but perhaps not for much longer. It also has a top speed of 164kts, and 3.2 hours endurance.

Unlike a lot of LSA aircraft, Blackshape has opted for a 160hp Lycoming IO-320 engine. The airframe is also approved for +5G and -2.5G. It will have military grade wiring, anti-blast fuel tanks and a ballistic parachute. It will also be made from fully impregnated carbon fibre,

The Bk-100, which has sold 58 aircraft in 18 countries, was launched in Australia earlier this year at a price of more than $250,000. There's no local price on the Gabriél yet, but we can expect it to live in the same socio-economic grouping.

SNAKE ON A PLANE

A NORTHERN territory pilot has been given a nasty fright when a large snake crawled across his leg mid flight.

According to news reports, Braden Blennerhassett said the snake, believed to have been a non-venomous Golden Tree snake, slithered out from behind the instrument panel during a flight to a remote outback settlement in the Northern Territory from Darwin. It crawled across his leg several times as he manoeuvred his Beechcraft Baron to land back in Darwin.

"I've seen it on a movie once, but never in an aeroplane," Blennerhassett told the ABC. "You're trying to be as still as you possibly can when you've got your hands on the power levers," Blennerhassett said. "You're kind of worried about the snake taking that as a threat and biting you."

On landing, a firefighter spotted the snake but authorities were not able to catch it so the plane remained grounded.

SELLING YOUR PLANE

BY ALAN BETTERIDGE

"First impressions are important"

THERE are a multitude of reasons why you might decide to sell your aircraft. Maybe you have made the decision to upgrade to something a little larger or slightly faster. Maybe a single seater just isn't cutting the mustard for you anymore. It may even be you have decided the time has come to hang up the goggles.

Whatever the reason, most people who decide to sell want to do so quickly and without too much fuss or bother.

By the way, if you are selling to upgrade, and you need to sell your current ride to help finance the new one, never take the chance of hoping for a quick sale. Wait until you have a confirmed sale before you sign on the dotted line for the new one. The danger is the same as if you are selling your old car. If you don't sell yours within the first few weeks, you will be tempted, or forced, to sell at a lower price than you anticipated – and that is never good.

THE PRICE

The first order of business is to set the price. This is not as easy as you might think.

If you set the bar too high it will sit in the hangar for a long time. Set the bar too low and buyers may consider it is so inexpensive there must be something wrong with it.

The best place to start your search is in the aviation market place ads, such as the ones featured in *Sport Pilot* Aviation Classifieds.

Most other specialist aviation sales publications in Australia tend to deal primarily with GA types and, as such, might not be of much help to you selling an RAAus registered aircraft.

The same goes for aircraft brokers. Most, if not all, don't deal with our type of aircraft and have no real experience in valuing them.

Brian Jones, of Aircraft Sales Centre in Tyabb, says while his company did not normally deal with RAAus registered aircraft, he could see the day when maybe it would.

"If we get approached to market an RAAus registered aircraft, we take each on a case-by-case basis," he said.

"Normally, the answer is no. It is simply not an area in which we have the expertise. In the future maybe, but not really at this point."

When comparing aircraft which are on the market, make sure you are comparing apples with apples. It should be obvious if your aircraft has high time engine hours, basic instrumentation and has not been hangared you won't get the same price as an aircraft which has low times, always been hangared and top of the range instrumentation.

If the reverse is true, don't be shy in asking more.

A good point to keep in mind when setting the price is that, no matter if you set it really low, buyers will still offer you less. It is simply people's nature to do so.

On the subject of GST, the Australian Taxation Office has advised me that, regardless of price, if the sale is of a private nature, and the aircraft is not currently used for commercial purposes, then GST is not applicable. They further advised me that it is illegal for someone, who is not a registered GST payer, to add GST to a sales price.

SPRUCE UP

Once you have settled on the price, it is time to give your aircraft a good spruce up.

There is no need to go to the expense of a repaint, but at the very least give it a good wash and polish.

Remove any items from the cockpit that won't be included in the sale – this will save you a lot of hassle later.

Vacuum and clean the interior – sometimes a bit of elbow grease is all that is required to add a few thousand to the aircraft's value.

Consider what inexpensive items you could replace to make it present better, new carpets and seat covers can make quite a difference for very little outlay.

Polishing any chrome or bright work, removing any grease stains from around the wheels and giving the tyres a quick clean can go a long way in increasing its kerb appeal.

Always remember that first impressions are important. If your aircraft is hangared, get it outside before any inspection and try to do it on a sunny day. There is nothing like a shiny aircraft gleaning in sun to whet a buyer's appetite.

SNAP, SNAP

At some stage you are going to need a few photographs of your aircraft to help in your marketing plan.

You could use a professional photographer but, with a decent camera and some forethought, most people can get great shots.

The major difference between a happy snap and a good photo is attention to detail.

Before taking a photo, remove any clutter. A wheelie bin, luggage, cleaning materials or people near your airplane, will take a potential buyer's attention away from your pride and joy.

Take photos from various angles, including the rear, to give the buyer a better overall view.

Don't forget to take some interior shots. If your aircraft is fitted with a glass instrument panel, switch it on to liven up the shot.

Don't be tempted to use your phone to take the photos. Despite what the manufacturers say the quality is not good enough in most cases to make your aircraft look attractive.

If you don't own a good camera, borrow one or, better still, get your friend with the camera to help you take the photos. Often, the promise of a free flight will be enough incentive to get them to give you a hand.

MARKETING

Now you have your aircraft in pristine condition, and you have taken some great photos, it is time to consider how to market it.

Publisher and philanthropist William Randolph Hearst once said that doing business without advertising is like kissing in the dark: you know what you're doing, but nobody else does!

You can advertise by letting your aviation friends know your aircraft is for sale by putting a notice on aerodrome notice boards. This may be cheap and easy, but will seldom get the coverage you require.

Consider using specialist advertising publications, the same ones you used to determine the value of your aircraft.

The advantage they have over newspapers is that they are aviation specific and are often far cheaper to advertise in. (*Sport Pilot* is by far the best way to do this – Ed😀)

When preparing your script, it is vital to be up front with descriptions. If your aircraft is not as you have presented it, the potential buyer will quickly discover it and be suspicious something is not right. They are likely to back off straight away.

Look for items which make your plane stand out from the competition. For example, does it have an up-market GPS? Are the radios above average? Has it recently had the interior refurbished or does it have a custom paint job. If it has, these are the points you need to get across in your sales pitch.

Most publications will only allow you to use one photo so pick the best of your collection. When you get an enquiry, you can email the rest of them to the potential buyer.

Make sure you have at hand all the documentation such as logbooks, compliance with any ADs, maintenance records, registration certificates and everything else associated with your aircraft.

When you do get an enquiry, you don't want to be searching around trying to find them.

"You are selling yourself as much as your aircraft"

It is also a good idea to swat up on your aircraft's performance data like rate of climb, take-off and landing distances, cruise speeds etc.

Ask yourself "what questions would/did I ask when I purchased my aircraft?" because these are likely to be the same questions your prospective buyer will ask. And being able to answer these questions without having to tell the buyer you will get back to them, will give them the impression you know your aircraft and are serious about selling it.

You can almost bet on the fact that if you hesitate, or try to bluff your way through, the buyer will think something is dodgy and that will be the last time you hear from them.

INSPECTION

When it comes time for the inspection make sure the battery is fully charged, all equipment is in working order and the aircraft ready to go, because the prospective buyer will almost certainly want to take the aircraft for a test flight.

Unless you know them, it is a wise move for you to fly the aircraft yourself, or at the very least, go with them.

If your aircraft is a single seater it will be a judgement call. It would be an idea to have an instructor handy to help you make the assessment.

SELLING YOURSELF

Remember that every prospective buyer is looking to you for clues to whether or not their purchase is going to be a good one. So you are selling yourself as much as your aircraft. Are you trustworthy? Are you the sort of person I am going to f eel comfortable giving thousands of dollars to? So know your aircraft and everything about it. Don't try and oversell it. We all know how second hand car dealers put us off when they try and sell us too hard. Don't be afraid to sell the lifestyle the buyer can expect with your aircraft as much as the machine itself. One of the most effective aircraft sales ads ever was a picture of an amphibian moored on a pretty beach. On the beach were an attractive couple and their two attractive children all seated at a picnic table having lunch. The ad wasn't selling the aircraft as much as it was saying that this was the sort of attractive lifestyle you could expect if you bought one. If you just sell the machine based on its numbers, the buyer will only be making their decision based on price, like it's a commodity. Sell the dream instead.

Spend time building rapport with the prospective buyer. If you become friends he is

more likely to trust you and the thing you are selling. Learn about the buyer's goals. That way you can work out if your machine will suit those goals and save you time if it doesn't.

IT'S SOLD

If the prospective buyer wants to become the actual buyer, it is a good idea to put some sort of sales agreement in place. A written agreement prevents most arguments later about what was or was not agreed to. A written agreement also has the effect of making a buyer commit emotionally and intellectually to the sale. If it's written down and I sign it, I feel obliged to go through with it.

The agreement should set out details such as full price, description of aircraft, what is included in the sale, deposit required and the details of what happens if the buyer backs out of the deal.

In Australia, the law requires any deposit must be returned if the aircraft is not as stated or not fit for purpose.

If the buyer simply changes their mind, they may forfeit part or all of any deposit they paid.

Both seller and buyer should sign and date the agreement and each should get a copy.

Copies should be signed individually, a photo copy of a signature is generally not considered legal unless it has been certified as being a true and correct copy of the original.

Once the sale has been made a transfer of registration accompanied by an Aircraft Condition Report along with the transfer fee (currently $65) must be sent to RAAus within seven days by either the buyer or the seller.

The Aircraft Condition Report must be completed by either a level 2 or LAME. The person doing the ACR must not have any pecuniary interest in the aircraft.

Selling your aircraft comes down to attention to detail, preparation, making it stand out from the crowd and being honest. Nothing more, nothing less.

When it comes to buying an aircraft, that's another ball game altogether.

NEXT MONTH Tips on buying an aircraft.

Whether to Fly

BY ROB KNIGHT

PART 2 OF A SERIES ON WHY IT'S IMPORTANT YOU GET WEATHER DETAILS BEFORE EVERY FLIGHT

IN *Sport Pilot* March 2017 we looked at the means by which a pilot might use their eyes and imagination to get a visual impression of the local wind currents in the vicinity of their aeroplane. This impression is local and on the spot, but what weather has actually been forecast?

All VFR aircraft must operate under Visual Flight Rules, so RAAus pilots must operate their aircraft solely in VMC (Visual Meteorological Conditions – the meteorological minima specified for visual rules flight). The specifics to these criteria are presented in two documents – CAR 172, and the VFRG which basically state that:

1. An aeroplane may not be operated if the Flight Visibility is lower than the minimum specified;
2. The aircraft may not be flown closer to cloud than is specified;
3. When flying below 2,000ft above ground or water, the pilot must be able to navigate by visible ground feature and not just by compass;
4. The aeroplane must be operated at subsonic speeds not greater than 250kts.

In simple terms, for RAAus aeroplanes, VFR flight must only be carried out when the weather conditions hazardous to operations are equal to, or better than, the worst set of conditions prescribed by CASA. These specifications are of three weather limitations:

1. Flight visibility *(Flight visibility is defined as the average forward horizontal distance, from the cockpit, at which prominent unlighted objects may be seen and identified);*
2. The horizontal distance an aircraft is required to remain from cloud; and
3. The vertical distance an aeroplane is required to remain from cloud.

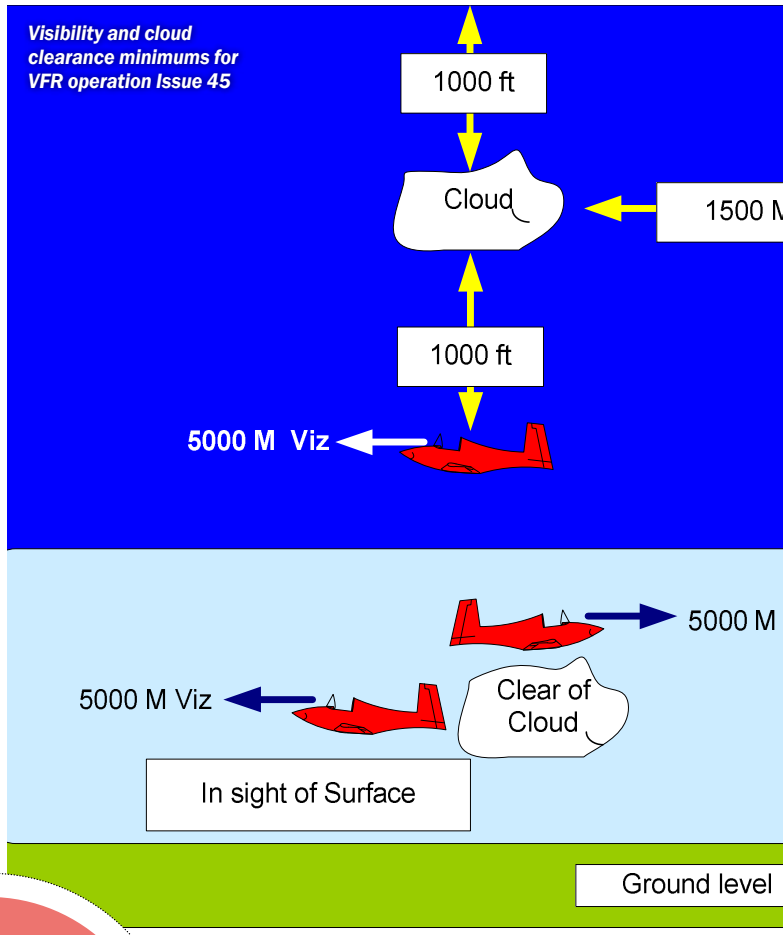
Thus, essentially, VFR requirements specify just two things - the lowest flight visibility in which it is legal to fly, and the closeness an aeroplane may fly around clouds.

Remember, though, they also contain a directive that if you fly at or below 2,000ft above the earth's surface, you must be able to navigate by visual reference to the ground.

Let's look in more detail at the two sets of limitations (Note I am not discussing any minima above 10,000ft).

As this table of minimums has variations according to height AGL (above ground or water) or AMSL (Above Mean Sea Level) at which the aeroplane is operating, let's simplify them.

1. If you are cruising in your aeroplane at or below 1,000ft AGL you must remain clear of cloud (no minimum distance) and always have at least 5,000m (5kms) of flight visibility;
2. If you flying at or below 3,000ft AMSL (or above 3,000ft AMSL but are still closer than 1,000ft to the earth's surface, the same minima applies as in paragraph 1;
3. But if you are a higher flier still, and are cruising above 3,000ft AMSL and are more than 1,000ft above the earth's surface, you must not fly so close to any clouds you encounter. Up here, cruising above 3,000ft AMSL and more than 1,000ft above the earth's surface, you are required to stay at least 1,500m away horizontally from cloud and 1,000ft vertically. This is to ensure your safety should an aircraft operating under IFR (Instrument Flight Rules and allowed to fly in cloud), suddenly pops out of a cloud and finds you in the way. Being run over in flight is absolutely non habit forming.



"It is your responsibility to ensure the weather will be VMC"

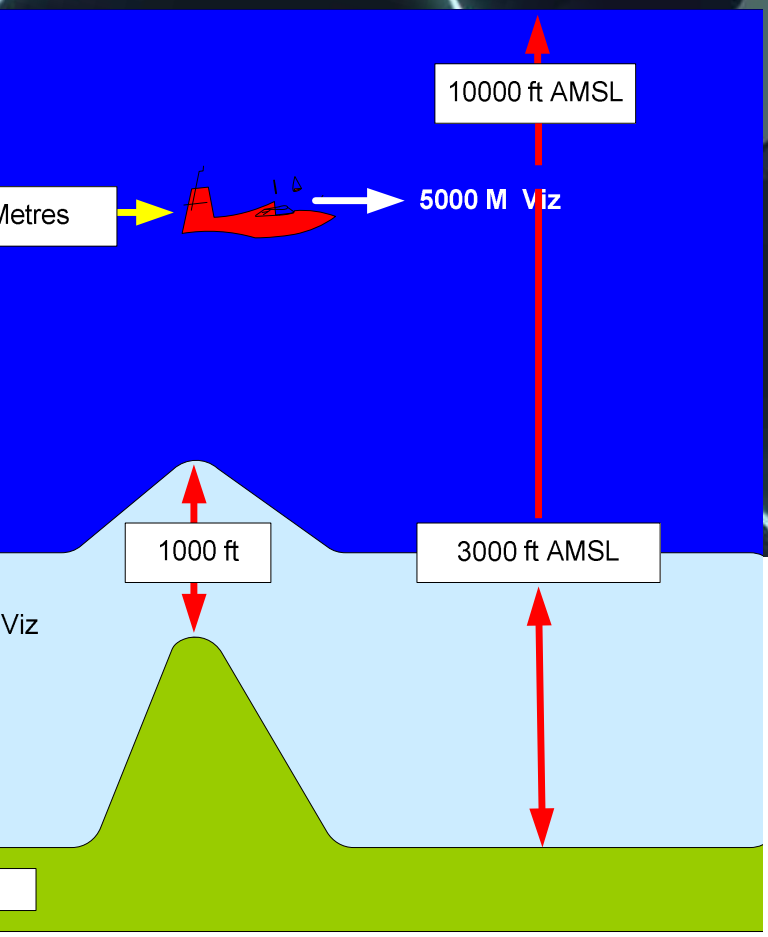
A QUICK WORD OF CAUTION

5,000m is a very short distance in terms of flying time. At 70kts this distance will be covered in just 138 seconds. Thus, when flying an aircraft at 70kts in 5,000m visibility, you can't see things that are just over two minutes ahead of you. This is even more unhealthy than smoking a packet a day.

So what does a weather forecast have to do with all this? You will tell me you can see the weather from the ground before you leave and can see what the conditions are like from your cockpit in flight. In this you are absolutely correct, insofar as it relates to local flying where you remain close to your departure aerodrome.

But what if you are leaving on a flight covering hundreds of miles and several hours of flight time? Remember, you are operating under VFR, so it is your responsibility to ensure you have VMC conditions in any area in which you are flying.

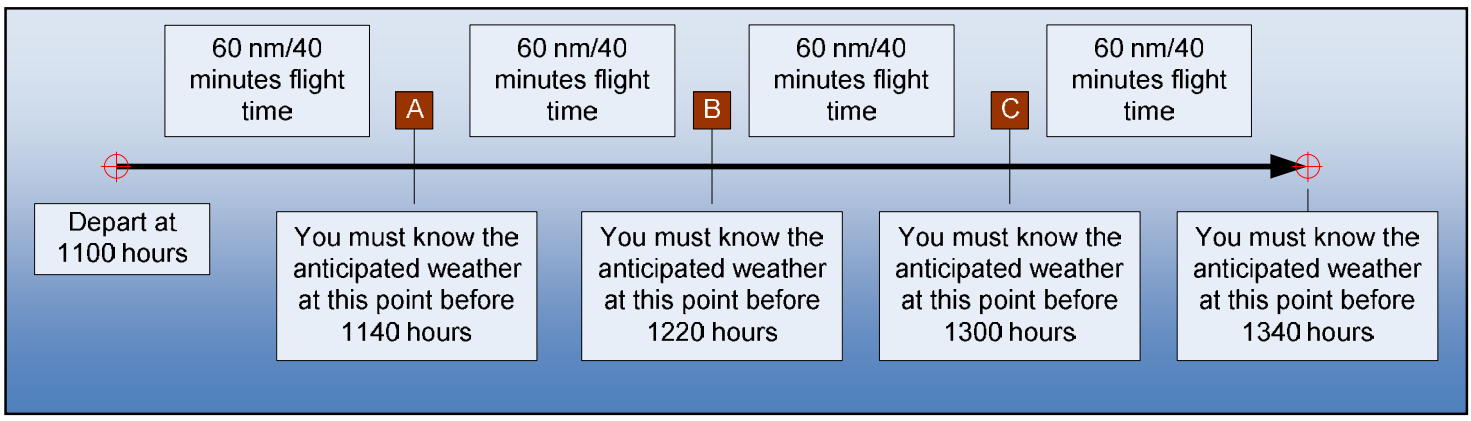
Consider, for instance, that you take-off on a flight to a destination 200nm away and three hours in flight time. It is your responsibility to ensure at each point along your intended route the weather will be VMC and so is suitable for VFR at the very time you reach that point. In other words, if you are departing at, say 10.00 hours, you would anticipate arriving at your half-way point,



line. The flight is a straight line from Departure to Destination via checkpoints A, B, and C. For simplicity we'll assume that the ground speed is 90kts (15nm/minute) for the duration of the flight. The overall distance is 240nms.

So what weather details should you be looking for? Let's look logically at the entire operation. We need current weather details and future weather predictions for the departure and destination points and each point along the track for the time the aircraft will be in that vicinity. These details are contained in:

- METAR (Meteorological Aerodrome Report);
- SPECI (Special weather report: issued when one or more elements of weather become notably close to minimums or safety limits;
- TAF (Terminal Aerodrome Forecast) if available for either departure or destination aerodrome;
- ARFOR (Area Forecast) to cover the area or areas through which the track passes.



at 11.30 hours, so you must work out if the weather at that point and at that time will be equal to, or better than, the minima we listed above. In other words, a quick check of the sky before you leave is simply not enough. You need to check the weather forecast (prediction) and look at a time line along your intended route. Aviation is unforgiving to the cautious and wary and deadly to the unknowing and careless.

For clarification, let's look at a schematic of this as a time

NEXT MONTH **Where to find these METARS, SPECI, TAF and ARFORs and how you can use them.**

DINOSAUR STOPOVERS

BY RICK FRITH

Enroute to the Winton museum

Winton museum

Volunteer at Eromanga museum preparing specimen

Destructo memorial plaque

Footprints - Lark Quarry

Eulo - world centre of lizard racing

"The size of these specimens is simply amazing"

Cooper's leg bones in the holotype room, Eromanga

Winton raptor

AUSTRALIAN dinosaurs were previously known only from fragmented fossil remains. However, recent discoveries of relatively complete specimens in Queensland have revolutionised our understanding and produced an exciting new suite of destinations for outback aviators.

The names of these specimens often reflect the nearby towns ... Muttaburrasaurus, Wintonotitan or Walgettosaurus, and many have claims to being the oldest, fiercest or biggest.

Most dramatic site, however, is probably the trackway discovered at Lark Quarry, 50nm south east of Winton at 142° 26E 23° 01'S. Here you can see a set of fossilised footprints made when a herd of chicken sized dinosaurs were ambushed by a massive predator stalking them by a waterhole 95 million years ago. The well maintained, 1,300m gravel strip is only 2kms from the museum and, when we visited, the tour guide gave us a lift to and from the airstrip. The exhibit has just been reopened after an expansion to the viewing platforms and is extremely popular with visitors of all ages.

Nearby is Winton, the self-proclaimed 'Dinosaur capital of the world'. We stayed at the Winton Outback Motel, which not only provided airport pickup, but also generously lent us their ute to visit the Australian Dinosaur Museum, located about 24kms east of the town. A shuttle bus service to the museum is available, but we were delayed on arrival and missed the last bus of the day. If planning to visit, make sure you include the tour of the laboratory to see how the fossils are prepared. Winton also boasts the Musical Fence and the Waltzing Matilda Centre, recently reopened after a devastating fire in 2014. While in the area, other attractions include the giant marine fossil Kronosaurus at Richmond and "Hughie", the Mutaburrasaurus at Hughendon.

Avgas is available at Winton and Hughendon.

Our final destination was the newest dinosaur hot spot in south west Queensland at Eromanga, with a 1,400 m sealed airstrip and nearby Avgas at Thargomindah and Windorah. The first stage of the museum has recently opened to celebrate "Cooper" and "George", Australia's biggest dinosaurs. The tour includes entry to the holotype room, a carefully controlled environment holding the original leg bone fossils of the key species identified. The size of these specimens is simply amazing. Museum volunteers are also excavating a large collection of megafauna (including giant kangaroos and diprotodons) at nearby Eulo, the international home of lizard racing. Eulo has a 1,500m gravel strip adjacent the main street and is worth a lunch stopover in itself to pay homage at the plaque commemorating "Destructo", the racing cockroach tragically killed at the track in 1980.

The Eromanga museum is a 2kms walk from the airport, but the welcoming museum staff not only collected us from the airport, they also provided transport to and from our accommodation in town about 4kms away. The museum is building four star accommodation units on site for overnight visits, or extended stays if you want to learn more and assist in preparing dinosaur fossils for scientific study. The local council has also committed a shuttle bus for the museum and community, to cater for larger touring groups and provide transport into town, where there is a pub and a motel.

Eromanga lays claim to being the furthest (gazetted) town from the sea in Australia. Whether true or not, the pub does serve a fine dish of fish and chips. While in town, don't miss the Knotosaurus sculpture and the local history museum next to the pub.

Recipe for success

BY JULIE HANDS

JULIE HANDS AND PARTNER IAN WELLS HAVE FLOWN ALL AROUND THIS GREAT COUNTRY AND, IN THIS STORY, SHE SHARES A FEW OF HER TIPS ON WHAT GOES INTO PREPARING FOR EACH TRIP.

PLANNING a successful flying trip is a bit like a recipe. You must have all the ingredients together at one time and they must be as fresh as possible.

Anticipation of, and planning for, a trip should be a pleasure, not a last minute chore or worse, a random wandering into the wilderness.

All recipes can be changed and adapted to improve them, but I start with the basics.

First an idea of where I want to go is clearly set out. For this I prefer a big map onto which I place a few brightly coloured pins. These are definite destinations or turn around points.

What is my intended time frame? How long will the trip take compared to how much time I have available? This will give me a reality check and I often find that I will have to adjust the recipe.

I consider the time of year I am planning to go. It's no good wanting to see the Top End or the Red Centre in December or January because it will be hot, dangerous and uncomfortable.

Also when I intend to circumnavigate this great country I take the prevailing wind into account. There is nothing worse than pushing into a headwind all the way.

I set the basic dates. It is a good idea to allow a weather window, not just one day but three or four, so I can choose the best weather conditions for my departure.

For example I might plan to depart on a Friday, but am prepared for a weekend departure if need be.

I present my planning work so far to flying friends and ask who wants to come with me.

(Please note almost everyone will initially say they want to come - commitment comes later).

I take note of what type of aircraft people are flying because the aircraft type will give me an indication of what aerodrome conditions will be required, its endurance and the experience level of each pilot.

Again, as a result, I might need to alter my recipe.

I ask anyone who wants to come to put their own pins in the map, different colours to mine, highlighting things they want to see. I ask them to start their own research on those places i.e. contact names and numbers, strip conditions, permission required, camping, food and fuel.

Because I am the co-ordinator, I ask each of the flyers to return the information to me so I can act as a central register for it.

The plan is now starting to come together.

Now we join the dots on our map and see where we are going.

There will be areas with longer distances between them or which cross large tracts of tiger country. This will be our next challenge, to fill in the gaps to suit the group.

We always keep in mind that we are planning a holiday, not a marathon. Short flights ensure the group stays together, no one gets tired, and we get to visit more people and places.

It is better to have too many known landing areas than not enough. We don't have to use them all, the more we know about along the entire route, the easier and safer it will be to alter plans if needed.

We don't book anything because that would make us slaves to a plan, time frame and 'get-there-itis'. Most places will be happy with a vague intended date of arrival, especially if we are camping. It's not so easy if we intend to use hotels or rooms. We can always confirm arrival a few days before while enroute.

Now is the time to get a serious commitment from those who have told us they are coming on the trip. Almost certainly the recipe will need alteration at this point.

We start getting together at 'bounce ideas' breakfasts, 'looking at landings' lunches and 'doubts and dilemmas' dinners. All are great fun, team building and ensure everyone is prepared for a great trip.

We spend time going over each other's intended camping gear. There are always things which can be eliminated or items which have been overlooked.

We weigh everything - and I do mean everything. We make it a bit of competition about who can carry the least weight.

Where it is possible we do a few overnight or two overnight 'shake down' trips so any problems are ironed out close to home. These are a good way to confirm commitment among our party.

They are also good for finding which gear can be left at home before the big trip.

Each aircraft must have all its own equipment. We never carry essentials for anyone else. If, for some reason, we get separated, i.e. weather, engine problems or health issues, someone will end up spending the night getting eaten by mozzies because they have no tent, or they can't go for fuel because I have their drums or can't make a cuppa because the cooking stuff is in someone else's plane.

What we can do, if there is a bigger and more able aircraft among our team, some luxury items can be carried in that.

Communication is essential. The team becomes its own SAR operative.

Over our morning cuppa we have a short brief to check everyone knows the day's plan and the destination for that night.

Julie, Ian, Roger and Jim at a 'doubts and dilemmas' dinner

Some aircraft may start later than others or go exploring enroute, but it is hoped everyone will end up at the same night camp.

It is a good idea to radio call the team at 15 min intervals on the chat channel to see how each is traveling. It's also good to compare tail winds and thermic comfort, as well as checking on your mates.

Traffic on OzRunways and Avplan is really good to keep track of everyone too. In case of a problem, Spottracker or Follow me App is reassuring.

Of course we all have EPIRBs.

A FEW MORE TIPS

A Hemma Map spread out on the table gives an overall view of the intended trip. Great at home or on the camp table to show interested folk where you are going or where you have been.

OzRunways or Avplan allows the team to have the same route marked.

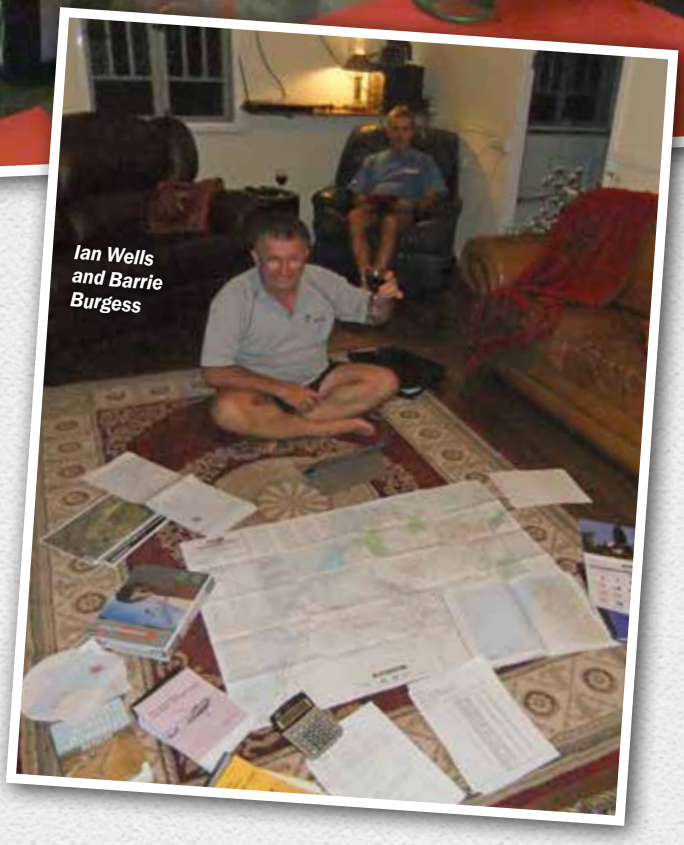
Word of mouth and local knowledge is wonderful, but must be checked for up to date info. It is better to make the phone call and talk to the owner or other local person.

The Country Strips Guide and AOPA Airfield Directory are a wealth of info, but again make the phone call or email to confirm the current conditions.

I like a hard copy of the intended landing strips both from Country Strips and Google Earth. Together they are printed on an A4 sheet and I can jot info beside them like the owner's name (it's nice to be greeted by name and put a face to the voice you have spoken to on the phone) or UHF channel to be used as we overfly the homestead or pub.

I find it helps to identify the strip from quite a distance out - up to 20nms look for the white grain silos or the sweep of the river, the strip will be this side of town. This info can be shared with the team as we approach.

Nominate one person to be the contact or an overall co-ordinator to do the ring round so stations and resorts are not bombarded with everyone enquiring and asking permission to land.



Ian Wells and Barrie Burgess

If you are flying coastal, carry a tide time table for the area. It may not be ideal but a tide out landing is better than tide in should it be needed.

Some areas are used for military training and activation or restricted times are very important. Know these before you set off each day.

Radio frequencies will change enroute so make sure you have noted them so you are not the random guy flying in silence while everyone is trying to talk to you.

Now, as with any good recipe, pop everything into your vessel, dial up the right frequency, sit back and enjoy. Don't forget to photograph the result to encourage others to have a go.

Ryan Walsh loves Mustangs!

AN RC ADVENTURE

BY DAVE TONKS

IF you are reading this, it is likely you have already been bitten by the aviation bug and discovered it can be quite debilitating, particularly with respect to your wallet.

But if you can't do the real thing, there are a couple of options. Two in particular have been the cause of my 'aviation tragic' label. I've been lucky enough to enjoy the magic of flying my Drifter as well as these two options.

The first is flight simulation – some of you might recall the many articles I've written over the years on that subject. The second is radio control aircraft. There has been something of a revolution in this hobby over the past few years, particularly in relation to technology and the availability of relatively inexpensive aircraft from Asia.

Let's start with technology. The two main advancements in the RC hobby (not just aircraft) are brushless motors and lithium polymer batteries. The combination of these has enabled fliers to move away from the often noisy/smelly/complex/expensive option of fuel-driven aircraft.

Early electric aircraft were both underpowered and heavy – but times have changed. The current range of brushless motors is staggering, as is the range of lithium batteries to power them. Combine that technology with the current availability of cheap goods in Asia and we have a recipe for the availability of a huge range of high quality, high performance aircraft at a very reasonable cost.

One tiny little fly in the ointment is the lack of after sales service from internet-based hobby suppliers – yes, they are cheap, but if your model arrives damaged, missing parts (or not what you ordered) you are staring down the barrel of major frustration. It's a Catch 22 situation with your local hobby shop – the over-the-counter personal service is (usually) excellent, but their prices are naturally higher because of their overheads. I've heard some RCers say that they buy some bits from shops because they want them to be there when they need a part in a hurry – fair enough.

Another advantage of fooling around with RC aircraft is the knowledge you earn when you get hands-on with the aircraft (and all the bits you need to make it fly). Even a simple thing like how the flight controls make the aircraft move through the sky is the sort of thing which reinforces your aviation knowledge. In the case of youngsters, it teaches them by actual hands-on work which stays with them forever.

Beautiful big Zlin

All the bits needed + the airframe

Yak54 Victim of Dumb Thumb Syndrome

Want to know the first rule of RC flying? If you don't want to see your aircraft lying on the ground in a hundred pieces, don't take off. That's it – there's a song which goes something like 'there are 50 ways to leave your lover'. With RC aircraft, there are a hundred things which can go wrong – usually it's down to DTS (Dumb Thumb Syndrome). RC aircraft are flown with two thumbs on the control sticks, and all it takes is a slow (or wrong) reaction to the problem at hand, and – kaboom – new aircraft coming up!

But there is at least some good news about your pride and joy coming to an untimely end. Usually all the components come out of the deceased aircraft and go into the new one. Unless of course your problem has been something like a failed receiver, in which case your model may decide to head north for the winter and is never seen again – a good reason to put your telephone number in your aircraft with the promise of a reward – paying $50 to the finder is better than paying $150 for new components.

On the subject of RC aircraft flying off into the distance (and possibly landing on somebody's bonnet, causing them to veer off the road), I have to stress the importance of joining a club and flying from their registered (and insured) field. The camaradie and knowledge you will gain from members is priceless – just don't get them started on the game of 'Show Me Your Scars'. RC propellers can slice and dice you almost as good as a full sized one, so treat them with respect, lest they turn against thee and decide to remove thy fingers.

> "RC aircraft are flown with two thumbs"

Most clubs have a training aircraft (controlled by two transmitters linked via cable) so you have the perfect scenario to learn how to fly – make a mistake and the instructor simply releases a switch on his transmitter and takes control of the model. Another brilliant way to learn (and hone your skills) is to install a program on your computer which allows you to control the aircraft on-screen with your transmitter – this also happens to be a wonderful way to cheer yourself up, because you can go online and fly at an airfield with six other lunatics, hell bent on knocking each other out of the sky!

When it comes down to it, the hobby is both entertaining and addictive. You can fly just about any aircraft known to person, from tiny little indoor choppers right up to monster three metre wingspan aerobatic aircraft with motors twice the size of the one in your lawnmower. It's a great way to get kids involved in aviation and it must be one of the best dad/son/daughter bonding opportunities on the planet.

Feel free to contact me if you have any questions (dasuton@bigpond.com). If it is to ask something like "where can I get a P51 with a wingspan over one metre" the reply will be "ask Mrs. Google – she knows everything".

ON THE COVER

BY ROD RIDDLES

AFTER visiting New Zealand Wanaka Airshow, I met with Ivan Campbell, the agent for Fisher Flying Products and looked at a Tiger Moth replica he had built.

I had decided after building a composite Jabiru, and metal MK26 Spitfire and Savannah, that it was time to try my hand at timber and fabric. The replica Tiger Moth seemed to be the most ambitious.

The aircraft kit was built at Port Lincoln, basically using Fisher plans and Stewart Systems covering products with Three Systems T88 two pack epoxy glue for all wood joints.

I ordered the quick build kit. Thar included manufactured wing ribs to save myself a lot of tedious fabrication.

Covering the aircraft using Stewarts Systems was a pleasure - easy to use and the water based paint also made painting a less toxic job.

The aircraft was then fitted with a Rotax 912 ULS, giving it a great power to weight with the Empty Weight at 323kgs.

It came with a Omega wooden 76in propeller from New Zealand, but it was a little fine, so I contacted Rob Patrony and he made a 72in ground adjustable composite prop. This improved the aircraft performance while not over the top, and gave me a cruise at 65-70kts with a stall at 35kts.

It is a true replica of a Tiger Moth with all the handling characteristics of an older, slower aircraft and it certainly teaches you a lot about rudder inputs to balanced flying.

COVER OPPORTUNITY

WANT TO SEE YOUR AIRCRAFT ON THE COVER OF SPORT PILOT?

Because of the success of our poster opportunity, we've decided to extend the idea and offer you the cover of *Sport Pilot* as well. If you have a spectacular photo of your aircraft or you and your aircraft, send it in and maybe get to see it on the front cover in all its glory! The file size has to be at least 4megs and the shot should be in portrait, not landscape mode, if possible. A simple uncluttered background would be good too. Send in your photo to editor@sportpilot.net.au.


19-4939

SAVANNAH 4939

BY CHARLES MOLLISON

THE photo was taken at Aldinga in South Australia in 2009. It is being flown by the bloke who built it, Colin Goldsworthy (He went on to build a Cub and now lives on his grazing property near Holbrook where he has also built a strip and hangar. He also has an RV6).

I bought 19-4939 from him in April 2010 when it had 226 hours on it. I have flown it all over Australia, including three trips to Melbourne, two trips to Narromine, Tasmania, Karumba on the Gulf of Carpentaria, Darwin, Kununurra, Uluru and Birdsville. On another trip, I went all the way around Australia including Broome, Perth, Esperance, Kangaroo Island, Goolwa, Melbourne, Sydney and back to Gympie.

I now live on a grazing property near Kilcoy about an hour out of Brisbane where I have a strip and hangar. 4939 has now done 830 hours and still looks as good as it does in the photo.

POSTER OPPORTUNITY

Want to see yourself or your aircraft larger than life on your clubhouse or bedroom wall?

Sport Pilot **is offering subscribers the chance to show off their favourite aviation photo in this double page centre spread of the magazine each month.**

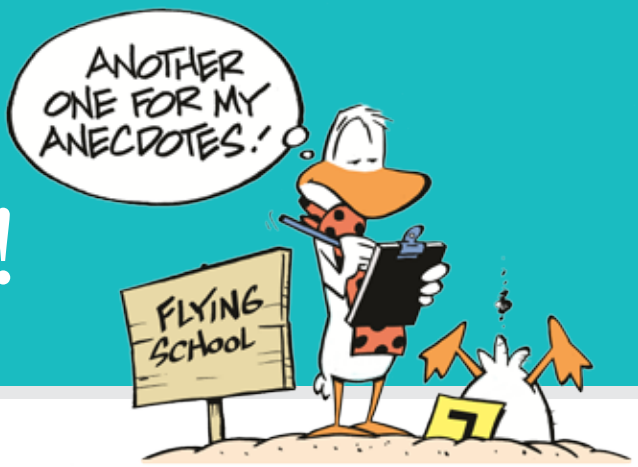
Each edition one photo will be chosen (We will try and make sure every photo sent in gets a run). If you are an aircraft seller, it's a great chance to show off your product.

If you have a fancy paint job, now is the time to show it off. And if you have a great photograph of you and your mates at a fly-in, it will make a good memento.

Send your photos (as separate jpeg attachments) to editor@sportpilot.net.au. It obviously has to be in landscape, not portrait, mode and be as big a file as possible please.

Believe it or not!

BY DAVID P. EYRE



READERS MIGHT FIND IT HARD TO BELIEVE BUT THESE INCIDENTS ACTUALLY HAPPENED.

1. A pilot, obviously in a hurry, strode out to his aircraft, which was secured to tie down wires, along with a whole line of other aircraft. He didn't bother with a pre-flight inspection, but he did remove the wing tie-downs from the wires.

He climbed aboard and started the engine, without realising the tail tie down was still attached to the wire.

As he tried to taxi and felt the resistance, he applied more and more power and even more. Eventually the wire was pulled forward and all the other aircraft pulled with it. The result? The terrible and expensive, noisy clash of a lot of aircraft being bashed together. Our dashing pilot's aircraft escaped without any damage.

LESSON?
Never try to short cut established procedures.

2. For those new to recreational flying, a Drifter is a wire braced, tandem, two seat aircraft with only a small nose cone in front of the pilot seat. For centre of gravity reasons, the pilot, when flying alone, must sit in the front seat. The minimum weight for the front seat is 75kgs and the maximum weight is 95kgs.

One day the owner and pilot of a Drifter decided to take his friend up to allow him to make a parachute jump. Because of the wire bracing, it's not possible for someone to jump from the rear seat, so the parachute friend was seated and strapped into the front seat.

So far so good.

The Drifter, with the owner/pilot now sitting in the rear seat, took off and climbed to 4,000ft. The pilot then told the parachutist he was cleared to jump.

Our intrepid parachutist undid his seat belt and with a cheery wave, jumped into the void.

The Drifter, now with no weight on the front seat, reared up like a bucking bronco, stalled and, completely out of control, started to descend like a falling oak leaf.

Our pilot, who up to now had displayed no common sense, finally acted with some sense, probably in the realisation he might soon meet his maker. He undid his own seat belt and edged his way around the kingpost, hanging on for dear life until he managed to get to the front seat and restore the aircraft to balance.

LESSON?
Look before you leap.

3. I heard this story second hand, so cannot vouch for its authenticity.

The father of a pilot who owned a Drifter, died. This pilot had an airstrip on his property and there was also a flat area, suitable for a landing, alongside the church where the funeral ceremony was to be held.

On the day of the event, the pilot decided to fly the coffin to the church.

Maybe he thought there would be a problem with the cg, so he seated himself in the rear seat while his friends placed the coffin crosswise across the front seat. (The Drifter must have looked like a hammerhead shark).

The pilot started up and applied full power for take-off. As the Drifter started to gain speed the tail lifted up, the nose skidded along the ground, the coffin jettisoned itself from the aircraft and ended up smashed and splintered. What happened to the body is not known.

LESSON?
Always stick to cg limits. In any case, remember the maximum load in the front seat of a Drifter is 95kgs.

David welcomes your own aviation anecdotes. Email them to editor@sportpilot.net.au

Final Tips

BY OWEN BARTROP

THIS IS THE LAST IN OWEN'S TERRIFIC SERIES OF ARTICLES ON WHAT GOOD AIRMANSHIP IS ALL ABOUT.

IN Part 1 of this series, I described Airmanship as "what do I do?" and "when do I do it?". If you have read each article, you should now see why it is so important to have your thought process in front of your aircraft, knowing what to do next and what may happen which could require all your skills.

The need to practice emergencies was shown to be important and how time was of the essence. Emergency procedures usually need to be executed immediately, and "what to do" had to become instinctive.

Flying an aircraft is not like driving a car. There is so much involved which affects your future that you have to be on the ball all the time. I have heard some pilots say they become bored on long trips. If you become bored, it is time to give up flying. If an emergency does occur, you will get such a fright you will probably have difficulty coping, because your mind is not thinking ahead. I hope for your sake it doesn't happen.

THE WEATHER

One area of aviation not fully covered is knowing the media in which we fly. You can read all the books, but they will only tell you so much. What you have to do is learn to read the sky, the wind, cloud, temperature and humidity. They all affect how you and your aircraft perform.

Probably you are well versed on the atmosphere at your home airport. Local knowledge is something meteorologists do not have, yet it has a huge effect on your flying. Besides local knowledge, you must be able to recognise weather related phenomena when you are away from home.

For instance, did you know thunderstorms usually go in the direction of the wind at 15,000ft? Or that a cold front is usually preceded by cirrus cloud starting some 200nm ahead of the front? Fronts usually travel at about 15nm per hour. Weather used to be cyclic and unless affected by severe conditions, traveled across Australia roughly in a 6-8 day cycle. If it was fine this Tuesday, it would probably be fine next Tuesday. However, with global warming things have changed.

Get a calendar and mark each day with a coloured marker - green for a good flying day, yellow for maybe, and red for not suitable. As the months roll by, you will start to see the patterns for your area so you will be able to forecast the weather, just like a meteorologist.

Can you look at the sky and tell what the weather is going to be for the rest of the day? Is the cloud cover or wind strength likely to increase or decrease? Can you look at a cloud and judge its base and tops? If you can't, have a guess and then telephone the local AWIS and compare notes, or jump in your aircraft and check it out. If you do this every time you go flying when there is cloud about, your judgment will soon improve.

If you are going to land away from home base, where possible telephone a pilot at your destination and ask about the existing conditions. They will know more than a non-flying relative about what conditions you require.

NAVIGATION

Airmanship also covers navigation. If you are going to fly a cross-country or go to visit your Aunt Sally in another state, when and where do you do your navigation? It should be done just before you close the front door of your house. It will be fresh in your mind and you will leave knowing where you are going and how long it will take. You have had time to think of the plan and ensure your calculations are correct.

One thing which needs careful consideration is fuel. Do you have enough fuel to safely fly the course that has been planned? The predicted winds will probably be incorrect and, where you planned for a 20kt tailwind, you could end up with a 20kt headwind or vice versa. If in doubt, plan on landing at a refueling point enroute.

What if the weather closes in and you can't make the desired landing point? Have you prepared an alternative? Do you know its frequencies, runway direction, height, length and facilities, such as the availability of fuel?

Further questions arise when considering diverting. How will you know what heading to fly? What will be your safe minimum altitude? Are you likely to fly through controlled airspace or a restricted zone? Your initial planning needs to cover these aspects because once you are airborne and in bad weather, your ability to make sensible decisions will be markedly reduced.

A cross country trip can become hazardous once you are airborne and on your way. Let's say you planned to fly west at 4,500ft. But after an hour you find yourself approaching clouds at your altitude. Sod's Law says clouds are always at your altitude, no matter what altitude you plan to fly. The question arises, do you climb above the cloud where it is nice and smooth, or do you duck under them where it is bumpy but easier to read the map.

The answer to this question will depend upon so many factors there is simply no right answer. If you climb, you must be able to keep the ground in sight. Let's say you do, but after a few more miles, the gaps in the cloud get fewer and smaller. How do you know when to descend and continue under the cloud? A tip is to look at the ground ahead through the gaps in the cloud and, if you cannot see sun on the ground somewhere up ahead, it is time to descend before the gaps disappear altogether. Descending through cloud is not on, so find a hole and descend, remembering you must stay visual.

"The front seat of an aircraft is not the place to feel anxious"

If you decide to fly under the cloud, the considerations are different to those above the cloud. Is there sufficient room between the cloud base and the terrain? Are there any rain showers on the route? Is there any high ground or obstacles I need to avoid?

If there are rain showers about, obviously change heading to avoid them but note the number of degrees you apply and how long you travel along the diversion heading. Once past the rain shower, apply these figures in the opposite direction to your original heading and you should regain your original track.

If you fly reasonably close to the cloud base, it is difficult, if not impossible, to tell the extent of the cloud. The greater the distance between you and the cloud base, the easier it will be to see the extent of the cloud. This does not mean you violate the 500ft minimum ground clearance rule. Flying under cloud will increase your anxiety, especially if the base is getting lower the further you fly. If you start to feel uneasy, do a 180 degree turn and get out of there while you can. The front seat of an aircraft is

Part 7 of a multi part series on one of the most mysterious aspects of becoming a good pilot

not the place to feel anxious.

If you are going to fly over tiger country, desert or sea, do it in the morning before the thermals get up to full strength. Not only will it be smoother, but if you are forced down, a rescue party has all afternoon to find you and rescue you.

LANDING

To stress what was said about safe landings in Part 5 of this series, here is the recommended procedure. Make sure you know what effect the wind will have on your aircraft. When strong winds are present, carry out a missed approach to familiarise yourself with the media in which you are flying.

Fly a good circuit, use the yaw method on final approach to maintain the runway centreline, ensure you are at the correct speed, hold aircraft attitude on final, aim at your aiming point, flare at the correct height and bring the aircraft down to about 30cm off the ground. Let the speed bleed off and as the aircraft starts to sink, kick it straight and touchdown, keeping the nosewheel off the ground to maximise aerodynamic braking. Once on the ground, be prepared for the aircraft to veer into the wind. Keep controlling the aircraft until you slow down to taxi speed and you exit the runway. To maintain control in a strong crosswind, you may have to lower the nosewheel immediately after touchdown.

IN SUMMARY

All the matters discussed above deal with good airmanship - "what do I do and when do I do it?". Like other parts of this series, be prepared by thinking about what can happen and what you have to do before the event happens. When possible, practice emergencies for any situation which has the potential for a bad outcome.

ED / Thanks to Owen for this informative and valuable series. If you missed any of them email editor@sportpilot.net.au and I will email them out to you.

CLIFTON FLIES HIGH

STORY AND PICS BY ALAN BETTERIDGE

EVERY year the Clifton fly-in seems to get better – which is not surprising given that it first started life in 1982.

For the first time in a number of years the weather also played its part in the success, with no showers or rain activity over the ranges which lay between the coast and Clifton on Queensland's beautiful Darling Downs.

In past years weather in these parts led to a number of aircraft not being able to join in the fun. Not this year.

Aviators and crews started arriving early on the Saturday to set up tents and swags so they could remain overnight and partake in the traditional Saturday evening meal and Sunday morning breakfast – which have become legend in themselves.

Many people (myself included) arrived by road with caravans, camper vans and tents to make the most of the weekend.

The Clifton fly-in is held at Bange Field, the home of the Lone Eagle Flying School.

Owner, Trevor Bange said the fly-in was to foster the spirit of aviation and was one of the main reasons they never charged any camping or landing fees.

The owner of this Savannah forgot to stop painting when they came to the prop!

"This is not about money, it is to the foster the comradery of like-minded people," Trevor said.

"This is the way it was when we started it and the way I hope it will continue for many years to come."

Bart Edwards and partner Amy Balson arrived early on the Sunday and set their chairs under the wing of their SP470 Jabiru to watch the gaggle of arriving aircraft.

Bart purchased his aircraft two years ago having gained his certificate in 2012 and has since travelled from his home base in Wyreema, near Toowoomba to as far afield as Merimbula to the south and Innisfail in the north.

"A lot of my mates were buying new Toyota 4WDs and the like, but I decided I wanted a plane," he said.

"I know I have to put a bit more time in on the aircraft, but it is just so much fun to be able to fly."

Bart now has over 200 hours on the aircraft and purchased the plane because of the convenience.

"If I had decided to use aero club planes, they may not be available when I wanted to fly or there would be restrictions on when and how long I could be away."

I did point out to him his aircraft was named 'Annie' but clearly his partner's name was Amy.

"You know what it's like," he said with a sheepish grin. "It's a bit like when you get a tattoo, sometimes things just change."

In any case Amy could luckily see the funny side of it and had no problems with the name.

Another aircraft that caught my eye was an unusual and rare Thatcher CX4. The air-

Philip Orr with friend Don Mitchell flew over from Coominya in Philip's FK14-B2 Polaris

VW powered Platzer Kiebitz decked out in WWI colours drew quite a crowd

Sabre ISR looked impressive

Neat as a pin, new Fly Synthesis Wallaby

Bart Edwards and partner Amy Balson with their Jabiru SP470

Attracting a lot of attention was this Thatcher CX4

'Where Eagles Dare' was the motto of this neat little Savannah

craft had a huge rudder and appeared to have more rivets than a Bunnings store at sale time.

But it did look good both in the air and on the ground.

Rod Waldon flew into Clifton in his new Sabre ISR and was justifiably proud of his purchase.

"I have owned it for six weeks now and I am very happy with the way it performs," he said.

"It is powered by a 100HP Rotax 912 and really gets along.

"The flight from Southport to Clifton took about one hour, and that beats the hell out of driving I can tell you."

Philip Orr and his mate Don Mitchell flew into Clifton in Philip's pride and joy, a FK14-B2 Polaris.

"As you can see my aircraft is a low wing where most FK14s are high wing and I am very happy with it," Philip said.

"I can cruise at a very respectable 120kts so the flight from Coominya to here wasn't too long, although it was a bit longer than it could have been, because we decided to take the scenic route," he laughed.

Philip has owned his aircraft for three years and loves it.

"Like most light sport aircraft these days, it is well built with plenty of attention to quality control."

Another aircraft which drew a lot of attention was the Clifton based three quarter scale replica Spitfire.

It looked like it was ready to take to the sky at a moment's notice, just like the Spitfires of the British Air Command would have been during the Second World War.

This one is absolutely immaculate and is powered by a Jabiru 3300 six cylinder engine.

Once again the Lone Eagle Flying School in partnership with RAAus held a Women in Aviation event.

The club offered any woman, aged 14 or over, who had never experienced flight in a light aircraft, the chance to see the district from the air in a free 15 minute joyride.

For its part RAAus offered to donate the value of the person's first full year's membership fee back into their flight training. A win-win situation all round.

A sad note this year was that it was the first fly-in without long term club stalwart and good friend Keith Bange, Trevor's brother.

Keith lost his battle with pancreatic cancer in December.

I am sure that, while he wasn't present, his spirit was and that showed in all of the volunteers who made this event what it was.

Clifton is an event that is iconic in the region for all the right reasons.

If you haven't been you don't know what you're missing. It will be on again next March so make the effort and call in.

I can guarantee you won't be disappointed.

Myth Busters

VIEWPOINT

MYTH 1

There are no studies validating personality types which reliably predict subsequent long term behaviour.

In fact, personality typing was found to be worse than useless many years ago and it is staggering it still has so many subscribers. Short term behaviour is a combination of habit and circumstance.

Interestingly there has been one recently published longitudinal 60-year study showing that personality at age 75 bears no resemblance to how it was assessed at age 15. Generally, we categorise people mostly by whether or not we like them. Don't believe just because you think someone is a 'couldn't care less' type of person, that is how they would necessarily behave in the air. Personality typing is a falsehood.

MYTH 2

Carbon monoxide (CO) poisoning (exhaust fumes) is noted in several aviation texts as being cured by oxygen. False. You can bubble oxygen through contaminated blood (carboxyhaemoglobin) but you cannot dislodge the carbon monoxide from it. The best you can hope for is to survive long enough to form new 'oxygen capable' red blood cells over the next few days. Get a CO^2 monitor in your cockpit.

As an aside, at least one well known test claims you can cure hyperventilation by breathing oxygen. Also wrong. The symptoms of hyperventilation are due to low carbon dioxide (CO^2) and the treatment is to replace the carbon dioxide (breath in and out of a paper bag where you accumulate your own CO^2). Oxygen is not a cure all and, indeed, breathing 100% oxygen has some evils of its own.

MYTH 3

These days the rule on alcohol before flying is zero tolerance. The previous rule of eight hours from bottle to throttle was ludicrous because alcohol has zero order kinetics. This means it degrades at a set amount each hour. The amount you have in your blood stream after eight hours depends on how much you had in your bloodstream eight hours previously. Hence the new rule is correct.

Other drugs, such as sleeping tablets, degrade at different rates. Temazepam, for example, has a half-life of four hours. That means half of it is still in your system after four hours, 25% in your system after eight hours etc. Other tablets such as Nitrazepam (Mogadon) have a half-life of 24 hours and hence will take 4.5 days to be metabolised. The rule is ask your doctor - don't believe some generic ruling on how long after a sleeping tablet you can fly - such as appears in various texts.

MYTH 4

Dehydration vs thirst. There are lots of myths about how much water you need to drink and whether or not you need electrolyte rich type drinks. The truth is that drinking too much water leads to urine, which is obviously not a good idea before a long cross country journey. As a rule of thumb, given that we are all about 60% water, a 70kg person would be about 42L water. A dry tongue equals about 5% dehydration and so represents a deficit of 2.1 L of water, which is a lot, and can be considered the first symptom of dehydration. Fortunately, you will get thirsty long before this stage and hence you are likely to be forced to drink something well before getting any dehydration symptoms. On a cross country however, it makes sense to carry water to cure thirst.

MYTH 5

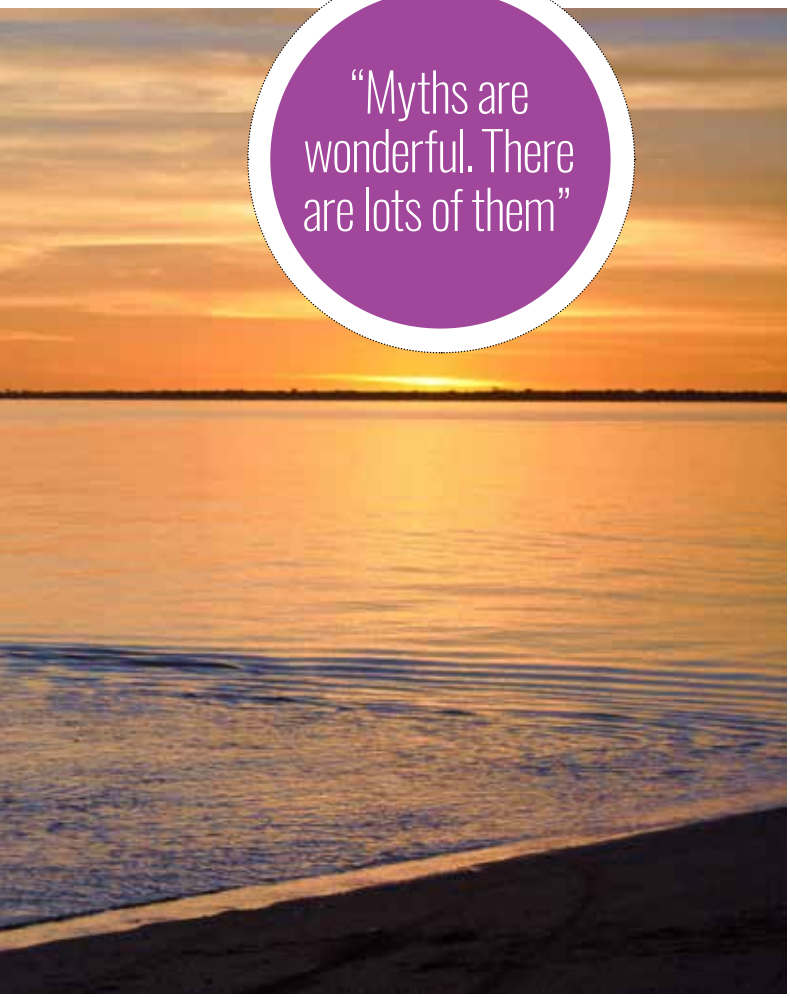
Food poisoning. Most cases of vomiting and diarrhoea (gastroenteritis) are due to a viral illness. Just like catching a cold but in the gut. Like the common cold virus, it is very contagious and has self-limiting, if unpleasant, symptoms. It is caught from other people by hand to mouth transmission. It is not food poisoning, which is a very severe bacterial illness with high fevers and bloody diarrhoea. It seems logical if you get a tummy upset to blame the last thing you ate, but it's actually much more likely from the last person you shook hands with. Aviation texts telling you not to eat at airports, or to be very careful what you eat because of food poisoning, will be wrong 95% of the time. It's a virus.

IMSAFE

The whole of the IMSAFE acronym should be considered (which is the idea of the Devil's Advocate articles anyway).

I is for Illness – but most illnesses have some effect on your wellbeing before you are aware of any obvious symptoms. That doesn't mean you should ignore symptoms. It means be aware you can get the first onset of symptoms after you have made the decision to fly and are in the air.

M is for Medication and as previously discussed, you need a lot of knowledge to make informed decisions. Many naturopathic drugs can



"Myths are wonderful. There are lots of them"

have effects. Over the counter drugs and even food can have effects themselves or interact with drugs (broccoli with Warfarin etc.). Ask your doctor.

S is for Stress. By now everyone must have seen the stress/performance curve. You need to have a bit of stress to improve your performance (ask any student just before their exams). The trick is not to have too much stress. How do you know how much is too much? The answer is complex and depends on you and how much else you have going on in your life and your own coping mechanisms. You need to think this through but don't be distressed by a bit of stress. It's probably good for you.

A for Alcohol has already been discussed, but it's worth noting the severe symptoms of alcohol withdrawal, such as seizures, occur more often after binge drinking than chronic alcohol use. Ten drinks at Sunday lunch, by someone who doesn't drink much, is more dangerous on Monday than withdrawal over 24 hours from chronic alcohol use. Don't binge drink and fly – even 24 hours later.

F is Fatigue and the airline rules for this are ridiculous. Ask any QANTAS pilot how long he or she gets between shifts allowing for time out to travel home. Never enough. Fatigue is tied in with many other factors, such as stress. Only you can know how fatigued you are. Trust me however, if you have an accident, the finger pointers will have a different system of assessment. You will often misjudge your own level of fatigue and they will be right. Never be afraid to say "I'm too tired to fly". You will be held accountable and it's a very grey area.

Lastly E is for Eaten. What happens when you eat? 1 - somnolence; 2 - blood flows to the gut and away from the brain; 3 - A gastro-colic reflex (your bowels will want to work - awkward in flight). You probably don't need immediate food before flying because most of us have enough glycogen stored in our livers to provide glucose for 24 hours.

Nevertheless IMSAFE makes a good mnemonic and losing the E would be a shame. Myths are wonderful. There are lots of them. Many of them, I think, are the result of a little bit of knowledge plus a good imagination to fill in the blanks. Finding even one myth leads us to being cautious about believing hallowed truths handed down to us from previous generations of thinkers, to whom intolerance to ignorance was unbearable. I might have contributed a few myself.

Using up friends

BY BRIAN BIGG

REGULAR readers might recall I've had a few problems with the brakes in my plane over the years. It's a small system, apparently filched off, or based on, the same braking system as found in Ducati motorcycles.

There is a bleed nipple on each wheel, and a narrow clear plastic pipe attached to each which make their way into the cockpit where they join a handle grip attached to the joystick. The joystick has a small oil filled hydraulic cylinder.

It's designed to be simple and light but as many of you may remember from my earlier complaints, it's maybe too simple because it's caused me no end of problems.

The big issue, I reckon, is that there's no separate oil reservoir, so whenever air gets into the system, which it does on a bloody regular basis, it slowly degrades the effectiveness of the brakes until eventually I have no stopping power.

And, because it has no reservoir, there is no easy way to add extra oil to top up the system.

The second, and more important problem, is that the operation to bleed the brakes and refill the system is not a one man job. Well, it could be if that man was four metres tall or had arms long enough to scratch someone's back in another room.

You have to slide underneath the plane until you are by the wheel, undo the nipple, slide back out from under the plane and climb up into the cockpit. There you unscrew the nut which clamps the tube, attach to the tube some sort of oil supply and start adding oil into the tube from the top. When you think you have added enough, you clamber back underneath to close the nipple, then climb back up to the cockpit and clamp it off there as well. If, during this process, air has managed to creep back into the system while you are clambering hither and yon, which it always does for some reason, you have to undo it all and repeat the process. And, because I have two rear wheels, I have to do it all twice.

It can take hours. I end up with skinned knees and covered in brake oil. If the thing at the top leaks while I am underneath the wings, the cockpit also gets coated in brake oil. It's a nightmare.

So early on, I learned to make friends with people. My plan was to do them so many unasked favours that, come the time my brakes needing fixing again, they would be so indebted to me they'd have no choice but to lend me a hand. Despite these efforts I'm running out of friends because once they've helped me do it once, they never volunteer again. I've had grown men run when they see me walking towards them in the hangar. I'm sure they are texting each other, "Look out, he needs someone to help him with his brakes again. Run!"

I've been forced to cancel several trips over the years because when I've pushed my plane out and tried the brakes nothing happened. And the thought of struggling on my own to fix them, had me giving up and going home.

I had solved the problem for a while by screwing the nipples in so tight it would have taken an act of God to get them free. But the more clever among you will see the obvious weakness in that plan. When the time came that I had no brakes and had to undo them again, there was no unscrewing the things for love nor money.

I used up another friend to wrench them off. We used brute force (and his tools), and of course I mangled the entire system. The nipples were so twisted and torn as to be virtually useless.

So, recently I bought new nipples from the factory and a new handle grip. They would cost $5 locally, but the ones I ordered from the Czech Republic are apparently made by vestal virgins using extremely rare metals and are carried from an altar high in the Nepalese Alps on silk cushions. The parts, which lumped together would fit in a CD case, cost me an eye watering $600. They better be virgins.

"The bigger problem came with finding another friend to help"

The bigger problem came with finding another ahem, friend, to help me do the installation.

I got lucky. I got to talking with Sean Griffin, who lives near Camden. He's another Zephyr owner. His aircraft would not look out of place in a showroom, it's so beautiful and well cared for. Sean is a mechanical wonder and his beautiful aircraft is a credit to him. His Zephyr makes mine look like a bucket of prawns which has been left out in the sun too long. I really do have to spend some time and money on the interior this year. To be fair, I've been putting it off until I got myself a new Mode S transponder. When I do, it will mean cutting new holes in the panel, and I've decided to make up a new panel. So I have been saving up all the work for when I can get holidays, which has been proving problematic because I have two other jobs as well as my editoring work. In the meantime, of course, my interior looks like squatters live in it.

Anyway, Sean showed me he had invented a neat trick for using a syringe to replace the brake oil. Crack open the nut in the cockpit and a squeeze or two of the syringe and voila! Brakes. When he showed me on his plane, it took mere moments and he had fully functioning stopping power.

Quite ill-advisedly as it turned out, he agreed to come and perform his little trick on my plane.

So on the appointed day, Sean turned up with all his gear. Underneath we installed the world's most expensive brake nipples, carefully ensuring we (I) didn't strip the threads again. We then installed the world's most expensive brake handle in the cockpit.

Then out came the syringe, filled with oil and onto the tube in the cockpit it went. Sean squeezed. Nothing happened. The air bubbles just sat there. So Sean did the obvious and squeezed some more. Still nothing. The air bubbles just sat in the tube mocking us. More squeezing, then more squeezing. And more nothing.

I tried to help by standing there with a vacant look on my face, while Sean no doubt had more constructive thoughts going on. He then decided he'd try the squeezing from underneath, so while I monitored the progress of the air bubbles from the comfort of the cockpit (a tough job I tell you), he slithered and clambered underneath and tried squeezing his syringe from the nipple attached to the wheel. Nothing. Then he slithered back out and we thought some more. Actually, he thought some more. I kept up my helpful blank stare. He changed the syringe to a bigger one to get more leverage and slithered underneath again. This time the bubbles moved. Success! An hour later, he was still squeezing and the bubbles were moving up and down, depending on where the syringe was, at the same rate as the glaciers melt. But he persisted, climbing back out from time to time to check on progress and to make sure, no doubt, that I was still helping.

The hydraulic chamber painfully slowly filled up with oil and several hours after we'd (he'd) started, we tightened the nipples for the last time. He slowly scraped himself from underneath the plane, covered in dirt and brake fluid. I squeezed the brake and what do you know? It worked! Hallelujah!

By now it was nearly dark and Sean had a lots of missed calls on his phone, no doubt from his family wondering if daddy was ever coming home again.

He'd done me a big favour and the last I saw him, he was nearly jogging to get to his car. I guess there went another friend I won't see again. But at least I have brakes.

A turn for the better

BY KEN NICHOLAS

I'D missed a week as the weather had been starting to turn and, as I was finding out, Lethbridge is a windy place. I only live 15 minutes back down the highway, but it's not far short of 500ft lower, so I can leave home with a gentle breeze and get to the airport to find the sock almost straight out.

I was discovering I didn't mind the challenge of the crosswind landings. I guess at this early stage you have a confidence booster sitting alongside you in the form of your very talented flying instructor who will save the day when you manage to get things crossed up just a little too much. Climbing and descending were on the menu today, according to David.

On this particular day, the weather was okay, so we went through the pre-flight checks and briefing and got under way. My cockpit familiarisation I'd devised the previous month (*Sport Pilot* April 2017), with the photos of the instrument panel and the computer desk top background picture of the cockpit layout, was working well. I'd also had the radio calls going round in my head for days. I must have been driving the wife and all the guys at work nuts talking about it. I'd wake up in the morning and find myself doing circuits with those radio calls in my head, so no chance of getting back to sleep. I think that it was when my long time passion for flying really starting to show. I told those around me, "if I keep going on just stop me". It seems, for the time being at least, they don't mind the stories about my day and what is happening to me out at the airport.

After the last minute checks of temps and pressures (all green), and the wind sock sighted, I was ready for a little aileron into wind, a rolling call and we were away. David told me to keep it down the middle (there's that lazy right leg again, not enough rudder to compensate for the power setting). Thinking about that later, I realised it really wasn't so much a lazy right leg but the timing of how much rudder and how quickly to feed it in as the power came on. It was something I would develop a feel for, a hand foot co-ordination thing, which David assured me would eventually come.

With the airspeed in the white arc, David reminded me a bit of positive back stick would make it rotate nicely and fly when it was ready. We lifted off. I put the nose on the horizon, watching for a good positive climb and not exceeding flap extension speed. Then it was flaps up, climb out and departure to the south west of the training area levelling off at 3500ft, a bit of scattered cloud so not too many bumps.

Effectively I had been doing climbing and descending turns since day one in every circuit - and that wasn't too far back - but this was to be a little different. We arrived at our favourite training area locality for this exercise, about 8nm south west of the airport. By the way I use the Jim Davis' PPL *Practical Guide To Flying Safely*, as recommended by the school and it is easy reading. For this particular exercise there is one page of text describing what you have to do. You think to yourself, that looks easy. But of course, there is a bit more to it than that. There are all the other bits I need for entering, maintaining and rolling out of turns. What bank angle do I use to turn in a descent? How fast do I want to descend (or climb for that matter)? What power setting do I need? What was my airspeed meant to be?

David reminded me to get my head out of the office. "You're trying to be an instrument rated pilot before your time", he said. "Look out the window and get the picture right. The instruments are only there for you to check you're doing right".

I had to go back to seat of the pants flying. If it looked good and felt good, it probably was good and that's when I check my instruments. This took me back about 40 years to when I'd done that bit of gliding in Horsham. When I was handed the controls I was told, "see that strand of wool taped to the canopy in front of you? That's your air speed indicator. If it starts to flap around, you're flying too slow". That was an early seat of the pants lesson. David is one for accuracy though and he did chase me around the cockpit a bit to get the bank angle right to get that ball in the middle and maintain the air speed. So, yes, I was guilty of flying on instruments and not looking out the window.

But, hey, that's what learning is about. Getting the feel. Knowing what a 20° right handed bank looks like or a left handed steep turn at 45° bank angle. Listening to the engine for that slight increase in rpm which tells me I am gaining speed because I let the nose drop a bit in the turn. These are the things I'm learning very quickly. It's not like just jumping in a strange car and taking it for a fang around the block. I imagine it's a bit like a blind person discovering how much more they can see with their other senses. Or for that matter, a deaf person becoming very visually aware because they have to. That's what I need to do, become very aware with all my senses.

It's not a sensory overload, but it did seem that way at times because I was not only trying to get the feel and that picture out the window right, there were a lot of different pictures and feelings I was finding out about.

Your instructor will very soon let you know when you have it wrong, as mine did. Another great day out in the wild blue yonder.

Professional flight discipline

BY THE OPS TEAM

"WE FLY FOR FUN", I HEAR YOU SAY, "WE AREN'T PROFESSIONALS."

PROFESSIONAL flight discipline is not exclusive to pilots who receive payment when they fly. Being a professional pilot actually should be the goal of every pilot, regardless of why you fly, or which aircraft you operate. It forms a vital part of how we conduct ourselves before, during and after flights. It also creates an image for how we are viewed by others in the aviation community.

And it is more than that. A professional pilot will strive to act responsibly and professionally if involved in an incident or accident. They will view any event as an opportunity to learn and improve their flying and interaction with other pilots. A professional pilot will not react angrily or abusively when approached by a pilot if an incident occurs at an aerodrome, or if someone cuts them off in a circuit.

A professional pilot will not try to make excuses for why the other pilot was at fault, or deflect responsibility onto someone else. The professional pilot will take responsibility for their own actions, and try to improve their behaviour and the behaviour of others by leading by example.

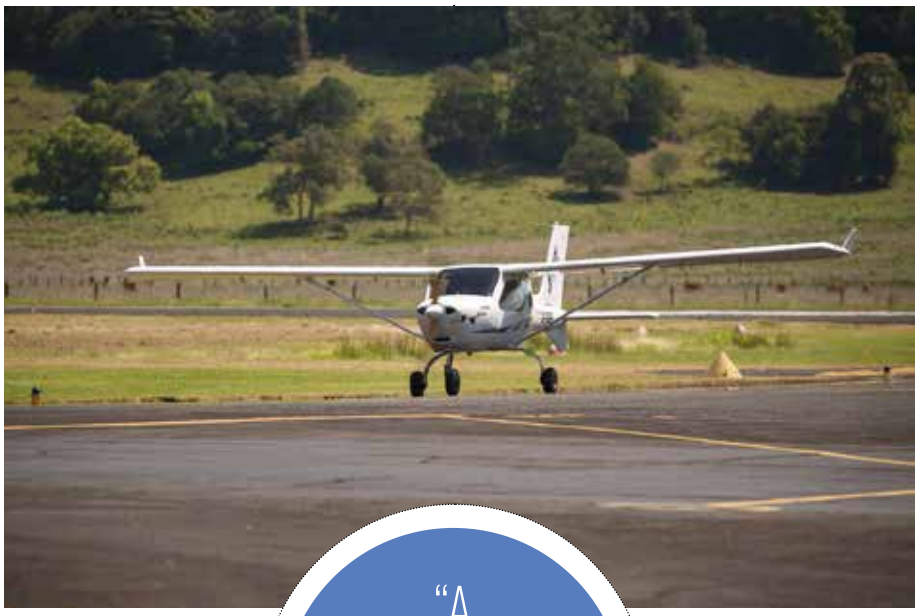
A professional pilot will never use the radio as a means of chipping another pilot for their unprofessional behaviour. The professional pilot will try to conduct every aspect of their flying as if they were being assessed by a peer.

A professional pilot makes sure the aircraft looks as good as it possibly can. After all, if it is yours, you have the right to be proud of it. If it belongs to someone else, they will appreciate it being looked after.

A professional pilot can be a student, who is striving to conduct their flights in emulation of what they see and hear from their instructor or other pilots at the aerodrome. I am sure if we think about it, we could name a number of professional pilots at our home aerodromes or clubs, and likewise a number of pilots who could improve their professionalism.

Does the professional pilot boast about how they conducted a flight? Not usually. Does a professional pilot throw their weight around or demand others act in the same way they do? Not usually. The professional pilot is more likely to be quietly sipping a drink at the bar after their flight, rather than being the one propping up the bar, boasting of their exploits or berating others for not following their example.

A professional pilot makes sure their passenger enjoyed their flight, and doesn't hotdog around doing steep turns or conducting a beat up to try and impress them. A professional pilot will also consider how the passenger is feeling, and won't let the passenger egg them into doing something they shouldn't.



"A professional pilot will strive to act responsibly"

A vital part of evolving and growing as a professional pilot is the use of personal discipline. Conducting a flight to the best of your ability, and to a set of minimum standards of behaviours, forms the basis of flight discipline for all pilots, regardless if they fly FA-18s, Airbus A-380s or a Foxbat.

Personal disciplines can include:

- Using the checklist, even though you have been flying the same aircraft for years;
- Aiming to fly as accurately as possible (+/- 100ft, +/- 5kts, +/- 10 degrees);
- Conducting regular practice of emergencies, both in, and away from, the circuit;
- Making sure your passenger is comfortable and feels safe;
- Encouraging other pilots to act appropriately;
- Owning your mistakes and learning from them;
- Being considerate of others;
- Aiming to be professional in all your interactions with others.

When do we stop learning?

A very wise CFI once said to me *"You should never stop learning because all knowledge is useful, never stop talking to pilots and improving your skills and disciplines."* CFI Neville Sinnott.

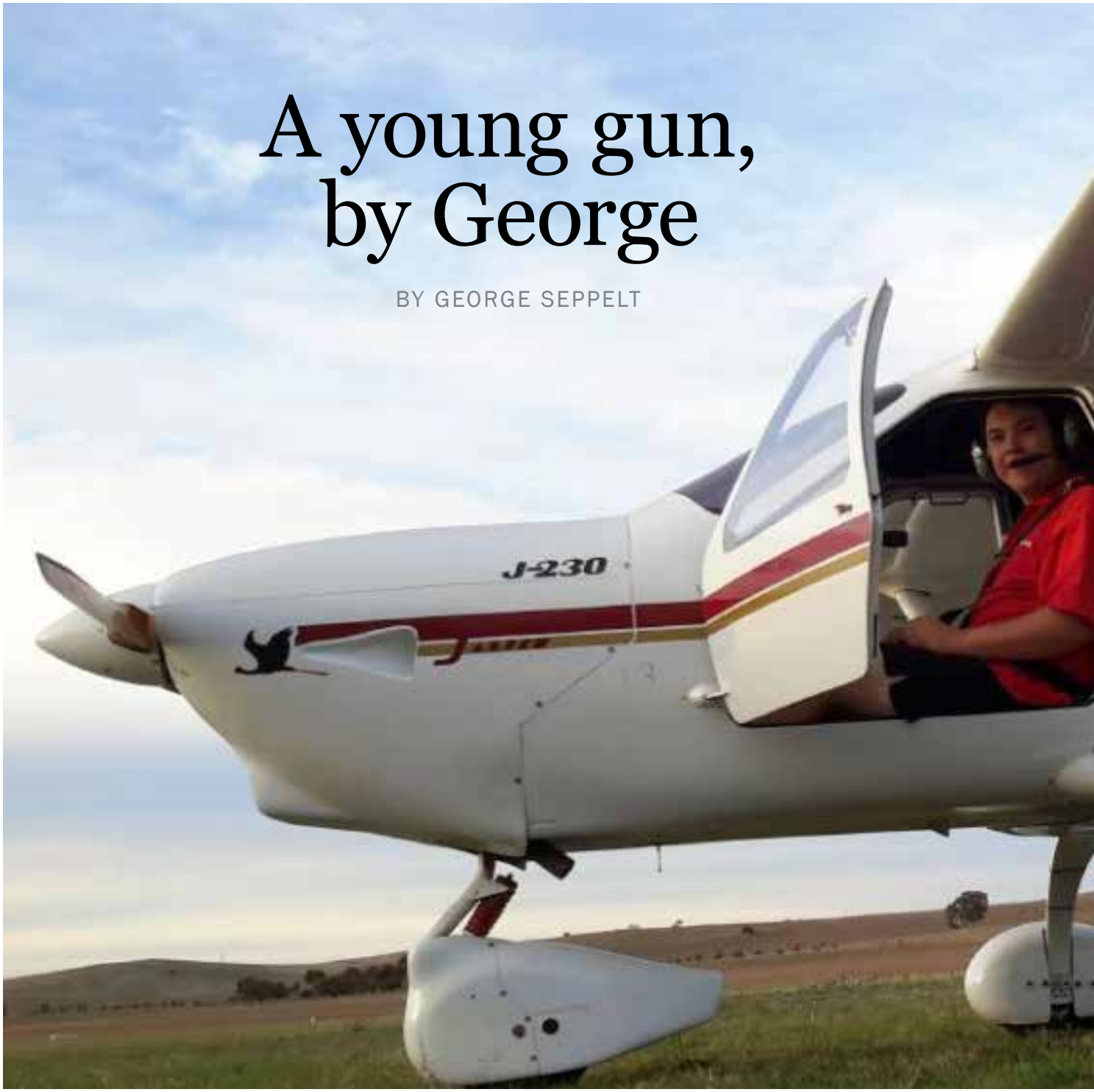
I have kept these words top of mind throughout my aviation and working career and have continued to read aviation books, engage with pilots and instructors and learn from hangar talks and discussions around the bar after flying. This willingness to learn forms part of my personal discipline and has helped me successfully run my own business for 20 years, to become an RAAus CFI and in my current role of RAAus Operations Manager.

I am proud to say we have a high number of professional pilots in RAAus, who plan and conduct their flights carefully, consider how to structure their radio calls to make sure they clearly indicate where they are and their intentions and remove the possibility of confusion.

Let's work together as a community of pilots to encourage and develop more professional pilots. It will reflect well on RAAus and help us continue to lead by example in the aviation community.

A young gun, by George

BY GEORGE SEPPELT



I LIVE in Jamestown, South Australia and have had a passion for aviation for quite a number of years. I am not really sure where this passion has come from, but certainly visiting friends on remote sheep and cattle properties over the years has influenced me a great deal. Having their own planes and also being pilots on their properties, made for great conversation whenever I visited, always sitting close to them to talk all things aviation.

In 2014 I applied and was accepted into a two year aviation course, run through Mid North Christian College in Port Pirie. This course took me out of my regular school lessons for one week each term over two years. During this course, I developed my knowledge of flying, including the theoretical and technical components. I was also very interested in researching the history of the Aero-45 formerly VH-WWH, which students at the college are restoring to display standard. I was awarded the Most Achieved Pilot Award in 2016 for my enthusiasm toward flying.

I am now the youngest active member of the Jamestown Flying Group. At the 2015 Jamestown Air Spectacular I met the first teenager to fly around the world solo, Ryan Campbell. Ryan encouraged me to apply for a GYFTS scholarship. I received the scholarship in May

"I will never forget the feeling on my first solo"

2016 and my dad, Simon, and I flew to Canberra to accept the award. At the dinner I received an offer from Airservices Australia to spend time in the Adelaide and Parafield control towers to experience what it takes to be an air traffic controller. I am very grateful for the support of the GYFTS scholarship. Without it I would have struggled to learn to fly.

I will never forget the feeling on my first solo of been pushed back into my seat and then realising that, for the first time, I was in full control of the airplane. I have completed all of my flight training out of Port Pirie Aerodrome. I hope to carry on with my flying and start using the Jamestown Club Jabiru soon.

I am not sure what career I want to take but, after volunteering at airshows across South Australia for aerobatic pilots Chris Sperou, Paul Andronicou and Paul Bennet, I am considering aerobatics. I also like the idea of becoming a commercial pilot, RFDS pilot or remote area mail pilot.

I am very grateful for the support of my family and friends and also the fellow pilots who are mentoring and guiding me along my aviation journey.

Into the vortex

DESIGNING YOUR OWN AIRCRAFT BY DAVE DANIEL

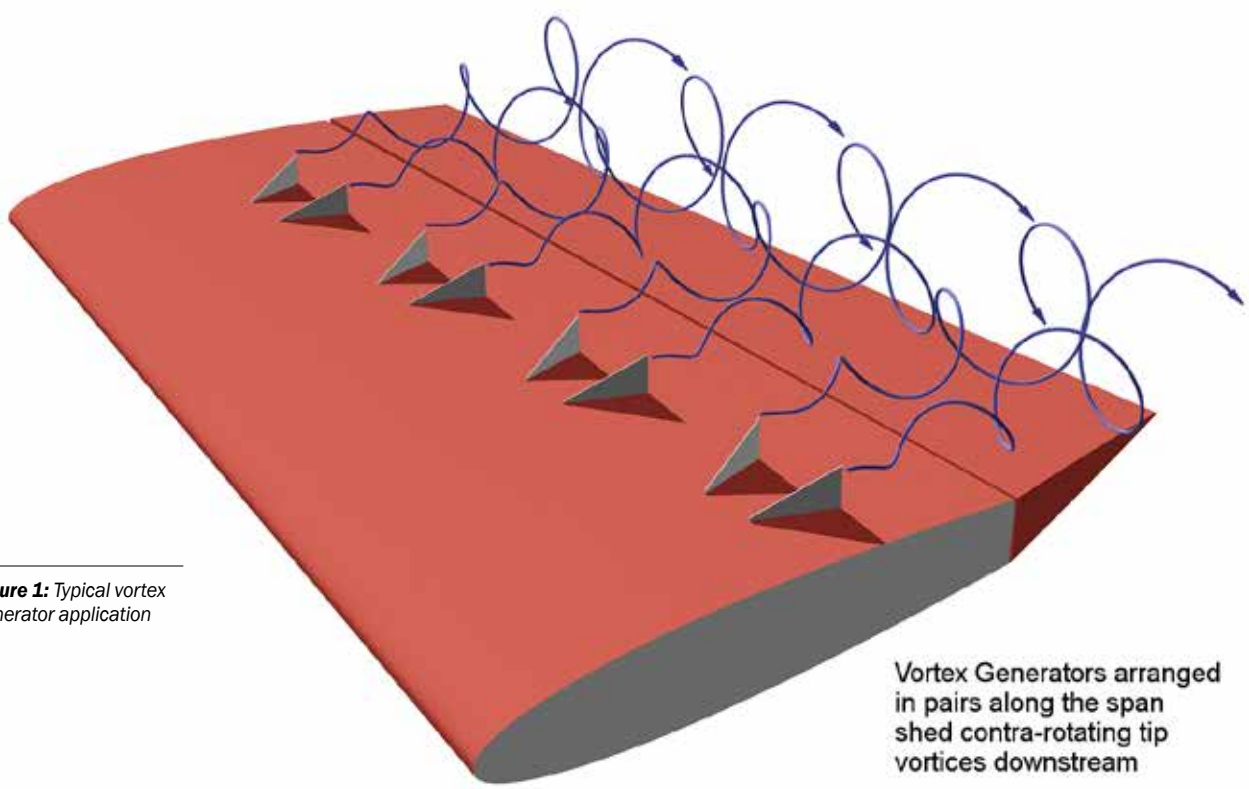


Figure 1: *Typical vortex generator application*

AERODYNAMICS is a strange thing. On the one hand familiar, but also mysterious. We've all been outside on a windy day or stuck our hand out of a moving car window. So we're acquainted with the general effects of fast-moving air. But what the air itself is actually doing remains invisible, the realm of wind tunnels and high-powered computer simulations.

Many, many years ago I was one of those slightly annoying children who asked, "Why?" all of the time and, growing up near a golf course, it wasn't long before I enquired of my father, "Why are golf balls lumpy?" Pleased to be furthering his child's education my father confidently replied, "Son, It makes them go further". Intrigued, and frankly somewhat suspicious, (I was old enough to know that slippery things like fast cars and aeroplanes were smooth and streamlined; and also that parents were not always reliable sources of information – after all they appeared to believe in both the Tooth Fairy and Santa). I paused, cocked my head to one side, furrowed my brow and launched my second-most-favourite question, "How?" I don't remember the exact response, but I'm 100% sure it didn't involve the words "delaying turbulent boundary layer separation", although there just may have been a mumbled mention of, "less drag", immediately followed by dad disappearing behind the newspaper or going off to do something urgent in the shed.

Why am I telling you this? Mostly because I want to talk about vortex generators, and they fall into the same category for pilots, as golf ball dimples do for golfers: That is to say most are familiar with them, a good portion know what they do, but far fewer know how they actually work.

But before we plunge headlong into how vortex generators work, let's have a look at what they are and what they do: VGs (to save ink I'm going to call them VGs from now on) come in many different shapes and sizes, but in their commonest form are thin, usually triangular, tabs attached perpendicular to a surface and at an angle to the oncoming airflow (see Fig.1). Invariably used in groups, when applied to aerofoils they are usually arranged in pairs along the span set back from the leading edge.

So we have established what VGs look like, but what do they do? The obvious answer is, "Exactly what their name suggests". They generate vortices. Behaving like tiny wings, each VG creates a small amount of lift perpendicular to the oncoming airflow and in the process sheds a trailing vortex downstream from its tip. This explanation is all well and good, but not very enlightening, so a more practical answer is that VGs, "Fix aerodynamic problems".

SEPARATION ANXIETY

You can be pretty confident VGs were nowhere to be seen in the original designs for almost every aircraft to which they are attached. In fact chances are they were added later after something unsavoury turned up during flight testing.

As far as possible, aircraft designers like the airflow to stay firmly stuck to the surface of their aeroplanes. Depending on the location, detached flow can result in a multitude of effects, from additional drag and early stall to ineffective control surfaces and stability problems. None of these traits is desirable, but unfortunately detached flows are hard to avoid. As soon as aerodynamic bodies start to narrow, such as at the rear portion of an aerofoil or fuselage, the airflow wants to separate from the surface. Gentle tapering of surfaces helps, (giving familiar streamlined shapes), but is not always practical and is ineffective at higher angles-of-attack, or where surface discontinuities such as flaps or control surfaces occur.

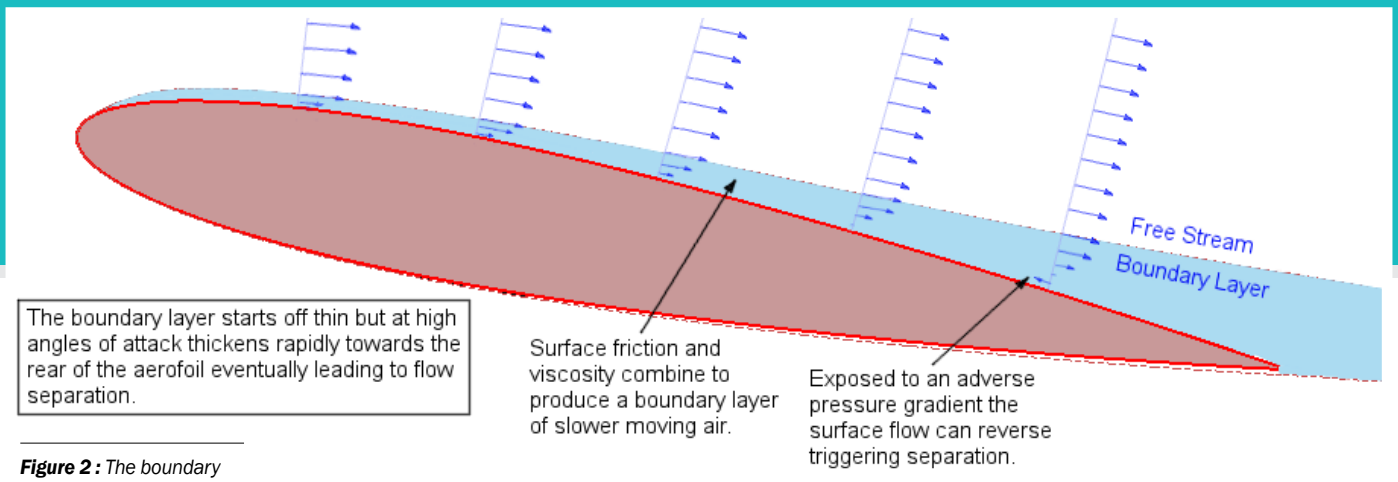


Figure 2 : *The boundary layer and flow separation*

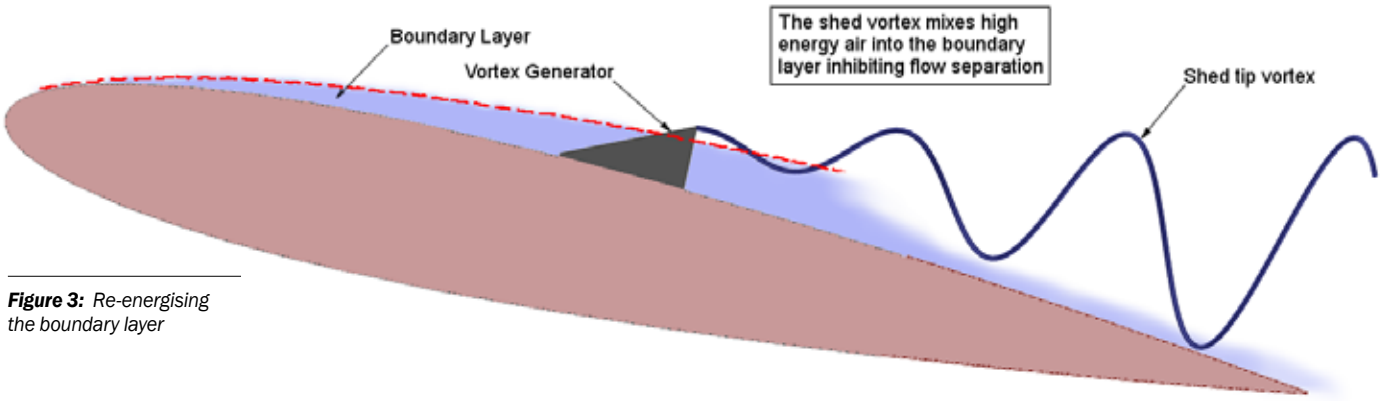


Figure 3: *Re-energising the boundary layer*

HITTING A BOUNDARY

Flow separation occurs thanks to the behaviour of the air in a thin layer immediately adjacent to the aircraft's surface (See Fig. 2). Air has some viscosity - it's not in the same league as honey, but nonetheless it possesses a degree of 'thickness' or internal friction. What this means is that when air flows over a surface, some molecules stick to it while others rub against each other as they flow past and are slowed down. This area of friction affected air is called the boundary layer and it starts off very shallow, but thickens as the air travels further along the surface.

When air flows over a tapered surface such as the rear portion of an aerofoil, there is a combined effect of viscosity and also an adverse pressure gradient (the pressure is lowest over the front portion of an aerofoil where most of the lift is produced and then increases as the surface tapers). In this case the air immediately adjacent to the surface experiences both viscous drag and a pressure differential trying to push it back towards the lower pressure area at the nose. This can cause the airflow at the rear of the aerofoil to turn back on itself, reversing direction and acting like a wedge, forcing the oncoming airflow to separate from the surface.

A QUICK FIX

If an aircraft design demonstrates flow separation problems, the obvious solution is to tweak the aerofoil shape or re-contour the fuselage profile to solve the problem. But if the aircraft is already at the flying prototype stage, or is a one-off design, significantly altering the outline of the aircraft will be expensive at best and, at worst, completely impractical. This is where VGs come to the rescue. Because they are simply attached to the existing surface, aerodynamic problems can be fixed without the need for re-tooling or major structural changes.

Vortex generators work because sluggish air in the aforementioned boundary layer is at the root of most separation problems. Correctly dimensioned VGs extend slightly above the boundary layer and create vortices at their tips which grab fast moving air in the free stream and mix it into the boundary layer. The now highly turbulent, energy rich boundary layer is far more resistant to flow separation and so will follow more sharply tapered surfaces, better negotiate sharp discontinuities caused by deflected control surfaces and resist aerodynamic stall to higher angles of attack (Fig. 3).

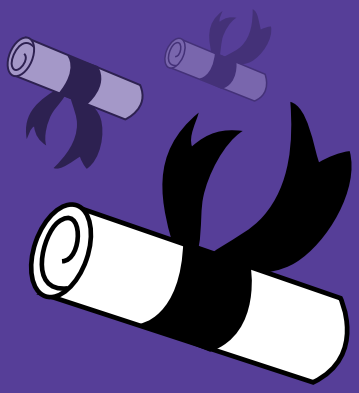
BUT THERE'S NO FREE LUNCH

Of course it can't all be good news or our aircraft would be peppered with VGs. In reality, you have to pay somewhere, and for VGs that penalty is drag. While they avoid the large drag increases which come with flow separation, the drag generated by VGs occurs in all flight regimes and so adds to the total parasitic drag of the aircraft whenever it is flying, even in conditions where flow separation may not actually be a problem.

To control the drag, VGs dimensions and positioning are critical. If VGs are well proportioned and well positioned, the bulk of the VG (around 80%) will sit inside the boundary layer and the drag incurred will be modest. Make the VGs too tall and unnecessary drag will result with no added benefit. Too short and they simply won't work.

In the final analysis, if VGs are taming poor stall behaviour or a loss of control authority at high angles of attack, a modest increase in drag is a small price to pay. Similarly, curing a fuselage flow separation problem during cruising flight is almost guaranteed to give a net drag reduction and be well worthwhile. As long as VGs are the right size and in the right place, there is very little down-side to them as long as they are correctly applied. At a stretch they are quite delicate, which makes them prone to damage, but that's about it. In fact, for me, their biggest drawback is that whenever I see them I immediately ask myself the question, "Is that a clever piece of design, or just a band-aid solution to an unforseen problem?"

THANK YOU DAVE **This will be Dave's last Design Notes column. His contribution to the magazine over the past couple of years has been incalculable. His level of expertise and his ability to break down complicated engineering concepts into simple English for the rest of us, has been remarkable. Design Notes has been a highlight of *Sport Pilot* and one of the factors which brought this magazine such success. I know you will join me in thanking Dave for his contributions. We shall miss them. Brian Bigg, Editor.**



Eggs, ham & bacon

BY PROFESSOR AVIUS **AVIATION GURU**

AS CFIs and instructors we have a duty, not only to RAAus, but to the Flight Training School and ourselves, to ensure our products, RAAus pilots, are competent in theory and all the procedures related to flying and their endorsements.

We are fortunate in that to fly, no formal educational qualifications are required; however there are some theory examinations to sit, so basic literacy and numeracy are requirements.

So, what's the real relevance of the theory exams? BAK, Air Legislation, Meteorology, Navigation, Human Factors, etc. In the main, they take the required knowledge base back to the basics, establish a foundation and then add the building blocks. Ultimately it doesn't matter how reliable the engine is, if the wings aren't going to stay attached to the fuselage.

I'm sure you've all likely heard a candidate statement along the lines of "I'm not really interested in this theory crap, I just want to go flying". I have also heard there might be an FTS or two out there, which might be circumventing some of the examination protocols (and the pilot candidate actually completing the exams with appropriate study). First and foremost remember, if you are the person who has signed off the student as being competent, it could come back to haunt you. A significant issue with exams is not determining the correct answer, but rather interpreting the question – a problem at all levels and not just limited to aviation.

"Dumbing down might be the smarter approach"

The one thing evident in the transition of life is, if you really want to do or achieve something, you will find the time to be attentive and learn. Think of the young person at school who wasn't really interested in maths or English and was obviously less than attentive. However, his focus was footy and he really wanted to play footy – so when it came to footy he was most attentive. The key to success with every student is that we need to persevere, then provide encouragement and ultimately provide input by way of assistance. It's the key to the positive outcome you require.

In the hierarchy of aviation, recreational aviation is often considered toward the lower end: accessible, simple, affordable and day VFR only. But many RAAus products (especially the younger generation) have the potential to go on to bigger and better things – airlines or the military. While RAAus might well be considered the grass-roots of aviation and many look down on us, it is a very good foundation for stick and rudder skills. Just how good is demonstrated by the many converting pilots who are not comfortable actually using a rudder as described in the theory. Regardless of anyone's ability, their first logbook will always reflect where they started out in aviation.

If a candidate is dedicated to achieving and really wants to learn to fly, they will commit to the total process, including the theory. I always like the references to lift/weight and thrust/drag and relationships to velocity squared; drag is difficult to simulate by example, but lift in relation to angle of bank is easily demonstrated.

As instructors what we need to ensure is that we provide the student with recognised theory documentation. The issue with human nature is that we are generally reluctant to admit we don't understand when something new is introduced; therefore we need to provide an environment which the learning process; and, to enrich the learning process and to provide learning/tutoring assistance to ensure the candidate is ready for the exam.

The old saying about the dumbest question is the one which isn't asked. All the while remember there is a downside to multiple choice questions. If the candidate gets an answer wrong, it's easy to identify, review and ensure they fully understand the topic. The problem is when a candidate guesses an answer and gets it correct. You will never know if they fully understand particular subject matter. Therefore, it is a good idea that when going through the answers, randomly delve into why an answer was chosen, before advising them it is correct.

My father used to refer to examinations as eggs, ham and bacon – where the ingredients had been well and truly scrambled. The flight test is to assess the practical competencies; the exams are a test of your student's understanding of the subject matter and are just as relevant.

I have a good friend who is a check and training captain on 747s with an international airline. Some years back we attended a large truck show. I'm moderately familiar with the cabin of a heavy truck and was therefore taken aback when Mike climbed into this large road train prime mover and commented "look at all the instruments". It highlighted to me, about being familiar with your environment.

So when you are in your zone (and comfortable), slow down and think back where you have come from and spare a thought where your student is going; Sometimes dumbing down might seem dumb at the time, but it may be the smarter approach. Be patient.

A trip with my wife

THE BEST BITS ABOUT BUILDING YOUR OWN BY DAVE EDMUNDS

WE are getting close to touring season. For the past few years, I have gone on an outback tour, usually alone in my plane in company with Rick Frith, who also writes for this magazine. This year I am planning a trip which might appeal to my wife. She is an avid traveller, but says, quite reasonably, "There is a lot of brown dirt down there".

Sport Pilot publishes quite a few articles on aircraft tours, so I don't want to repeat them. This article is about planning a trip which might intrigue my wife. The constraints and goals of such a trip might appeal to other potential trip companions.

So, the constraints. These fall into two areas, firstly, the requirements of my plane, and secondly, those which are required to make the trip comfortable and interesting for a passenger.

I have the impression many pilots are a bit daunted by the prospect of remote flying, but with some preparation, it is remarkable just where our little planes will take us.

It is difficult from either the ground, or from a high-flying jet, to get any idea of the complexity and beauty of our vast country. It is an astonishing privilege to be able to see it in the best possible way, from a thousand feet or so above the ground.

I try and limit the stages to two hours. My fuel capacity is 65 litres, of which the top bit tends to slop overboard, so I don't put it in. I plan on 14 litres per hour, TAS 94kts. Subtracting a 45 minute reserve, that gives me a range of 305nm or 3.25 hours. However, there is not much wriggle room in my cockpit and my bladder is not what it used to be. So, two hours is long enough. This means if there is a significant headwind, I have plenty in reserve. It also allows some relief for passengers.

My Jabiru is light and, like all such planes, needs to be actively flown all the way. Combined with the normal cockpit monitoring and navigation tasks, I find that four or five hours per day in the cockpit is quite sufficient. Longer days become a bit of a chore - doable, but the fun factor diminishes.

We have some light-weight camping equipment for bicycle touring, so this is a possibility. However, I always see camping as something you do to make a trip possible, and prefer crisp white sheets if available. So overnight hotel accommodation is part of the planning.

Getting into town is another consideration. Often towns do not have taxis, so you need to work this out in advance. It may make a difference as to where you stop. Walking is best if possible.

Most importantly, of course, the trip has to be interesting. The goal on this trip is to get to Dig Tree on Coopers Creek, leaving from my home airport of Goulburn. To see the reason why I have chosen this route, look at the track from Thargomindah through to Port Augusta on a WAC or iPad. You will see the extensive drainage from South West Queensland to Lake Eyre, and then the Flinders Ranges. This is interesting country.

The goal of day one is to get to Lightning Ridge. This is a destination a bit different from most, not exactly pretty, but interesting. This day requires two refuelling stops. The first is at Dubbo, 166nm, then Walgett, 133nm, and lastly a short hop of 35nm to Lightning Ridge. Lightning Ridge has no fuel.

In the past, the lovely lady from the Black Opal motel has picked us up from the airport. It doesn't take long to walk around the town. The highlight to my mind is the thermal pool, a nice way to relax at the end of the day. Opal towns are not the best places to buy opals, just as vineyards are not the best places to buy wine. Don't eat at the trattoria. The club is not much better. Stick to bread and cheese from the IGA. Get a good breakfast from the excellent coffee shop directly across from the motel.

Day two will take us to the real outback. The first stop is Cunnamulla, 151nm, then Thargomindah, 96 nm. It is about a half hour walk into town and there is a surprisingly good cafe. From there it is only another 66nm to Noccundara Hotel. Google it. There is a long but stony strip here, and you can taxi up to the hotel. Accommodation is in dongas. Meals are available and good. There is no fuel. This is real outback country. The country around here is interesting. You fly over the creeks and washes which drain into Lake Eyre.

Day three will be very short. The first leg is to Dig Tree, 81nm, the spot on Coopers Creek where Burke and Wills died. The inscribed tree survives and is protected by a fence. There is a sandy strip just adjacent to the tree. You should over fly and check if it has been raining. The stop is worth an hour or so to have a look before a short 19nm hop to the Innamincka township strip. This is a long, wide unsealed strip with quite a slope. It is about a kilometre walk from the township itself. You need to ring ahead to arrange fuel, and then someone from the local store will drive you back up to the strip with a barrel of Avgas in a trailer. There is a choice of accommodation and good food.

I'll only go through one more day. Day four will take us to the Flinders Ranges. There are a couple of ways to do this. You could fly to Arkaroola on the east side of the range. Fuel can be arranged there, but the strip is tricky. For the sake of variety on this trip we will fly first to Leigh Creek on the west side. This will be a 210nm leg, longer than I would choose, and the longest leg on the trip. Leigh Creek has an excellent sealed runway and fuel. For most of this leg we will follow the Strezlecki Track. It is advisable on these outback trips, where possible, to follow roads in case you do have a problem. From Leigh Creek it is a short flight to Rawnsley Park. I haven't been there before, it is one of a number of possible overnight places in the Flinders Ranges. Wilpena Pound, another option, is close by. Landing at these remote places needs to be arranged in advance. Check their website and call. Don't take my word on fuel, or anything else, it may have changed.

Calling is easier said than done. Mobile coverage is limited, so you have to plan a day or so in advance.

On day five we will fly to Port Augusta, only 69nm, and back into civilisation. The overnight stop will be the Murray mouth town of Goolwa. They used to have a courtesy car at the Goolwa airport, but I will check before going there. Then the Coorong and we will wend our way home over the next few days. Mungo Lodge is on the list of possible stops.

For each of the places mentioned above, there is a reason. It might be fuel, interest, accommodation, convenience or simply curiosity.

I will talk a bit more about equipment and preparation in a future article.

So, over this touring season now just starting, give a thought to a bit of outback touring. That is what your plane was born for.

And another thing. The Devil's Advocate (*Sport Pilot* April 2017) commented on the arcane language in aviation weather information. I couldn't agree more. I think it verges on dangerous. Ozrunways has a plain speech translation I find much preferable.

ELECTRIC AIRCRAFT WATCH

A well-resourced startup called Wright Electric is designing a 150 seat commuter aircraft, called the Wright 1. It looks like pie in the sky, but these things always do. Airbus is looking at something similar.

5026 JABIRU FOR SALE

674 Airframe Hours, 674 Engine Hours, UL500. Jabiru UL500 2200cc Solid lifter LCH conversion A reliable, delightful, simple, no vices aircraft. Long wings with winglets provide stability, reduced take off, approach and stall speeds. Call for a detailed data sheet.
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260 Airframe Hours, 260 Engine Hours, S-6es Coyote Ii. Registered till June 2017. Rotax 582 UL engine 260hrs. New BRS recovery chute installed December 2015. Large roomy cockpit with sliding seats. Folding wings for easy storage/trailering. All VFR instruments. Search Youtube for "Tuflux RANS Coyote".
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CONTACT GORDON JAMES BAILEY 0409 348 293

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286 Airframe Hours, 626 Engine Hours, RV-3A. RV performance with Lycoming reliability. Lycoming O-320-A2B 150HP,150-160kt TAS cruise @32lph. New prop, instruments & paint. A/C can be registered VH if aerobatics required, and can be delivered anywhere in Australia for cost.
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450 Airframe Hours, 114 since Zero timed Engine Hours, J120. Engine 114 since Zero Timed.Many new parts used. Crankshaft magnetic particle checked. Aircraft could go back into commercial work with check. 1/2 share in Steel Hangar near Bega/Merimbula available cheap.
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660 Airframe Hours, 385 Engine Hours, J-6 Karatoo. Two (2) seat side by side recreational aircraft with Subaru EA81 engine and Warpdrive 3 blade propeller.Two owners only and mine since 2007. This is a stable, reliable, economical aircraft to own and fly.
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PRICE $46000.00
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5137 TRIKE AIRBORNE XT 912 TUNDRA

100 Airframe Hours, 285 Engine Hours, XT 912 Tundra. Airborne XT 912 Tundra .Trike and wing in excellent condition. Always hangered Somersby NSW Airborne XT912 Tundra (serial #318) TT 285 hrs ,Ä¢Streak III wing TT just 100 hrs SN ST-295 All AD complied with. Punkin Head covers,
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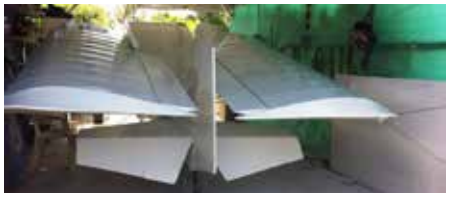
5139 DAKOTA HAWK



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PRICE $22000.00
CONTACT ROBERT EASTHER 0419 337 169

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153 Airframe Hours, 153 Engine Hours, XT-912. 153 hrs, immaculate, always hangered, Garmin GPS196, BRS, undercockpit travel bag, Bolly prop with stone protector, Vertex VX 220, Skydat GX2, Air Magic helmets, Alpha Com Pax Headsets,training bars,engine cowling,lots extras.
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5190 CROSSHIRE OR PRIVATE HIRE SPORTSTAR PLUS

nil Airframe Hours, nil Engine Hours, nil. Hello, I would like to offer my Sportstar for private hire or crosshire to a flying school in the Redcliffe/ Brisbane area. The aircraft is currently hangared at Redcliffe Airport. The aircraft is fully L2 serviced & maintained @ $135p/h dry.
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0.0 Airframe Hours, 1,450 Engine Hours, Spitfire Mk 25. Supermarine Spitfire MK25 with Rotax 912S, Woodcomp inflight adjustable prop, electric retractable landing gear, electric trim and Galaxy BRS.call for more information, pictures and inspection. Chris 0418 493989 or chrisoz@gmx.net
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258 Airframe Hours, 258 Engine Hours, XT582 Tourer. XT582 CRUZE. 258 hours on Wing and Base. Always Hangared. LAME owned and maintained. Full set of Covers. Trailer Available if Required. Xcom Dual Band VHF.
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SHOPFRONTS GENERATING $1000 + PER WEEK AND STILL STORE 4-6 AIRCRAFT ON-SITE. LOCATED 1 HOUR FROM BRISBANE AND GOLD COAST.
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100 Airframe Hours, nil Engine Hours, 230 D. , Excellent condition, Microair Radio, Microair T2000 Transponder, Garmin Aera 500 GPS, UHF Radio, Outside air temp gauge, Landing Lights on Wing Strut, Leather Upholstery, Extra Padded Seats, Cockpit Cover, Always Hangared, One owner, never hired, no training, no accidents
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PRICE $50000.00
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309.2 Airframe Hours, 309.2 Engine Hours, CA21 Skyfox. Skyfox CA21 in excellent condition,T/Hrs 309.2 recovered using Stitts system, new upholstery. All ADs completed incl. alum. laminated aileron hinges GA dash. May be oldest flying Skyfox in existance S/N CA-21010. Easy to fly. Phillip 0427632590
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600 Airframe Hours, 600 Engine Hours, Gyro. Zenon GyroCopter. 2 seat, side by side, fully enclosed cockpit, Turbo 912 Rotax engine. Tri-cycle undercarriage. Located in Ingham Nth Qld. For more details please e mail geoff@ nqaviation.com.au or phone Mob 0417191852
PRICE $80000.00
CONTACT GEOFF BROWN 0417 191 852

5202 FLIGHT DESIGN MC. 2010 MODEL. 743 TT. GARMIN 430W GPS

743 Airframe Hours, 743 Engine Hours, MC. FLIGHT DESIGN MC. 2010 MODEL. 743 TT. MAF OWNED SINCE NEW. VH-REGISTERED. (OPTION TO LSA) 100 HP ROTAX. ALL GARMIN. G430W GPS/NAV/COM. 2ND COM. EFIS x 2. MODE S TRANSPONDER. AUDIO / ICOM. ELT. FDR. NIGHT VFR. COMFORT PACK. SIDE BY SIDE SEATS.
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467.0 Airframe Hours, nil Engine Hours, Skyfox Ca22. Skyfox CA22 Factory Built at "Caloundra" one of the best of it's type 9 1/2 /10 condition Rotax 912 80 HP. Engine and Air-frame 473 hours, radio, h/seats, GPS, road trailer. Built 1995. No 54 Always Hangered, new tyres.
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CONTACT MARK WHITE 0428 850 062

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28.4 Airframe Hours, 28.4 Engine Hours, XTC. Dick Smith is selling his 4 stroke trike. He is going to make do with the 2 stroke! 912 XTC Edge. Cruze wing. Sky Dat DX2. 28.4 hrs ,Äì Always hangared at Gundaroo, low hours. June 2006.
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840 Airframe Hours, 840 Engine Hours, A22LS. 100hp Rotax 912. Dynon Skyview 10 inc transponder. Analogue ASI and Altimeter. Warp Drive Prop with nickel leading edge. Tundra tyres and mud guards. Long range fuel tanks 112 usable litres. Centre Y joystick.Strobes. C/Heat. EQ1 Headsets.
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90hrs Airframe Hours, 90hrs Engine Hours, Acrolite 1B. 90 hours engine and airframe. 80HP Jabiru solid lifter all current. Disk brakes, steerable tailwheel, compass, gauges, radio, 2 new tyres. Always hangared. First flown 2013. 85kt TAS. Well built, strong, fun aircraft.
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1335 Airframe Hours, 1335 Engine Hours, SR22 G3 GTS Turbo. FRESH CIRRUS SERVICE CENTER ANNUAL INSPECTION - OCTOBER 2016. NO Damage History. Inspection Status: 1330 Hours AF&E, Garmin G1000 Perspective, FIKI, Air-Conditioning, Turbo, GFC700 Autopilot, SVT, Known-Ice Approved, Yaw Dampener, WAAS, Fresh Cirrus.
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1195 Airframe Hours, nil Engine Hours, PIPER PA-28-181. EC-JQO. 2004 Piper Archer III, 1195TT, Avidyne Entegra Glass Panel, Dual Garmin 430Ws, S-Tec 55X Autopilot, XM Weather, Beautiful Paint And Interior, Complete Logs.
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Rick Morawski (L) when he took CAGIT from David Ford in February

WHERE IS CAGIT?

CAGIT GOES ON HOLD

BY DEXTER BURKILL

THE current holder of the Come And Get It Trophy, Rick Morawski has passed away.

RAAus, his friends and fellow pilots extend their deepest sympathies to his partner, family and friends.

As a result, the movement of CAGIT has been suspended for the moment out of respect for Rick and those close to him.

A process is being put in place for the resumption of CAGIT's movement, because there were pilots already well advanced in negotiations to grab the trophy from Rick.

With the assistance of a friend of Rick's, in conjunction with CAGIT Hunters Facebook Group Administrators, the trophy will move on very shortly.

Rest in Peace Rick.

If you or your crew are contemplating a high speed heist of recreational aviation's most coveted prize, its best to keep up-to-date with its latest location by checking the CAGIT Hunters Facebook page, administered by Dexter Burkill, Peter Zweck & David Carroll www.facebook.com/CagitHunters/.

ADVERTISERS INDEX

The trip into town

SPECS

WEIGHT 12.5kgs (packs up into supplied backpack)
RANGE 30km
MAX SPEED 20km/hour
FULL RECHARGE 200 minutes

THE question, "but how will I get into town from the airport?" may well have been answered definitively.

Have a look at this magnesium / aluminium folding bike, which has just gone on sale on a number of websites from a Chinese supplier. It's an 8in smart mini portable electric power bike. It weighs just 12.5kgs and folds up into a back pack you can easily carry on-board.

The Android/iOS app which comes with it has a remote control, alarm system and instrument panel. It can be remotely locked and comes with anti-theft alarm. It's waterproof, has an LED driving lamp, taillight, turn signal lamp and brake lamp.

The manufacturer claims it will climb a 30 degree slope and take you 30kms on a full charge, depending on the road conditions. Plus it will take between four and six hours to recharge.

There are some difficulties for pilots – primarily the lithium battery which powers it, which we know has to be treated with care in the air. Also the small wheels mean it will probably be hell on the bum on a rough track. And there's little likelihood of it ever being street legal, so forget the idea of using it to get back to town anywhere near civilisation. But out where the rivers broke, the bloodwood and the desert oak, Holden wrecks and boiling diesels, steam in forty five degrees – it might just get you cooler quicker.

For more information, banggood.com (This is just one site which offers them for sale. There are others).

SEND IN YOUR STORIES

Got an aviation moment you'd love to share? Your kids or maybe your club get together? Send a photo as a jpeg attachment and a short explanation to editor@sportpilot.net.au

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PSB Insurance Brokers is pleased to provide a tailored insurance program exclusive to RAAus members, underwritten by QBE Insurance and Agile Aviation Underwriting Services.

The partnership has safety at it's core with Australian Red Bull pilot and RAAus member, Matt Hall delivering a number of safety initiatives.

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