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Photo: Anderson Aviation



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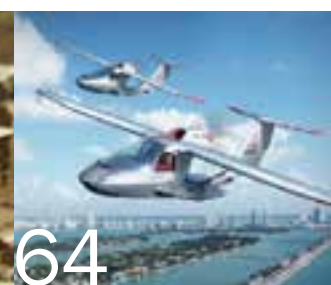
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President's Report

MICHAEL MONCK

Change is afoot

NO doubt many of you will be aware we have had a change of the guard at the top. Others may have just been out flying and not noticed anything at all. But it's worth mentioning things are now different and I hope all of you will soon notice.

I started on the board in September last year. Since then the board has had a strong focus on governance and moving RA-Aus to a more professional model of operation. During this period there was noticeable change in terms of the management of RA-Aus – it has now shifted from the unpaid board to paid professional office staff. During his tenure Mark Clayton put in place some of the changes. Now he has handed the reins to Michael Linke.

Michael brings with him a wealth of experience managing organisations going through rapid change, such as ours. He will use this experience to continue the work started by Mark. Michael will be working with a board which is now focussing on strategic policy, rather than being bogged down in day-to-day management issues. We are starting to see RA-Aus move into the next phase of its life.

Since Michael began we have undertaken a complete review of the budget. We are looking at the office I.T systems, we are reviewing the communication policies and the constitution is being examined. The list goes on.

In his short time (roughly four weeks at the

time of writing) Michael has identified several areas where we are not receiving value for money. He has identified several other, previously unexploited, areas where we can extract more value for members. And, of course, he has reworked the registration process to reduce turnaround times, something which has been a thorn in our side for some time.

While many of these changes will not bear fruit for some time, I expect that by the time you read this you will have noticed at least some change. Certainly by the time we get to view our

▼ We have finished the financial year about \$170k better than was projected

half yearly results early in 2015 we will have some good runs on the board.

Some of the changes made in the past six months are already evident. According to our unaudited numbers (the audited figures were not available at time of writing) we have finished the financial year about \$170K better than was projected by our Treasurer at NATFLY.

It is time for the board to focus on the future.

We have built a solid platform on which to grow RA-Aus, but we can't stop there. It concerns me that for years the board and management paid little attention to setting a solid direction for RA-Aus. We have no strategic plan. The most recent I can find is years old. It gathered dust, because it was never opened after being written.

We have had great boards capable of doing great things and now is the time to equip the current board with the tools necessary to do just that. Historically our boards have been well-meaning volunteers trying to run the business. But time has moved on, board skills have not evolved. There has been a tendency to dabble in daily issues rather than ensuring RA-Aus has good strategic direction.

The current board, I feel, is one which resists the urge to get involved in a hands-on manner, but there are still tendencies to wander into these areas and it can hamper the management team's ability to get on with the job.

To this end we are working to ensure the current board, and those in the future, are sufficiently qualified to carry out the required duties and continue to move RA-Aus out of the 'cake stall' mentality. We have a good management team in place capable of running the multi-million dollar business that RA-Aus has become. Now it's time to ensure the board is equally capable.

Stay tuned for more changes. 🇺🇸

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Calendar of events



5-6 September Birdsville Races

Ballina Aero Club Inc. will again operate the airport during the race weekend. Pilots who make the journey can become a member of the Birdsville Aero Club. Prizes for most aircraft and longest distance flown. Landing fees \$30 per person. Camping available. For more information, (02) 6686 2620 or 0418 663 666.

www.ballinaaeroclub.org.au/birdsville.



6 September

Wings over Warwick

Queensland Recreational Aircraft Assn. incorporating Warwick Aero Club (www.qraa.info) invites all pilots and enthusiasts to the annual fly-in at Warwick Aerodrome (YWCK). The 1,600m strip is all bitumen with no landing fees (www.warwickaerodrome.com). Day will include a display of model planes. Food and drink available from 8.00am. For more information, Kelvin Hutchinson 0407 733 836, Phil Goyne 0417 761 584 or Graham Hawthorne 0427 377 603.



13-14 September

Wagga City Aero Club Open Day and Fly-In

An event to showcase the club and attract new members. Saturday will be an open day for the public. Sunday breakfast available. For more information, 0417 698 336 or gbreust@bigpond.net.au.

www.waggacityaeroclub.com.

13-14 September

McIntyre Aero Club Annual Fly-In

At Goondiwindi. Three course meal Saturday evening starting at 6pm. Sunday breakfast from 7am - 10am. Avgas available. No landing fees. After breakfast on Sunday attend the 'Gourmet in Gundy' food, wine and music festival at the Cultural Centre on the banks of the beautiful McIntyre River.

For more information, (07) 4677 5186, 0439 775 184(AH) or www.goondiwindi.qld.au.



14 September

RVAC Dawn Patrol

This will be the 74th anniversary of the Battle of Britain and the 35th Royal Victorian Aero Club Dawn Patrol. 45 aircraft will depart Moorabbin Airport at first light in stream formation at 30 second intervals. The planned route will be over the Shrine of Remembrance, Point Cook Aerodrome (the birthplace of the RAAF) and Avalon Airport, returning to Moorabbin Airport via Port Phillip Heads. After the flight a World War II veteran will recount his war-time experiences and pay tribute to fallen comrades.

For more information (03) 8586 7777 or flying@rvac.com.au.

20-21 September

Airtourer Association President's Fly-In

At Echuca. A welcome BBQ lunch Saturday as well as the famed Sunday Roast at the Echuca Aero Club. The club will host flying activities Sunday. Forums on CASA registration and AFMs. President's Fly-In dinner Saturday night

For more information, www.airtourer.asn.au/jupgrade/president-s-fly-in-2014.

1-2 November

Back to Holbrook Fly-In

Holbrook Ultralight Club invites aircraft owners and pilots to Holbrook Airpark for its annual fly-in. Forums Saturday afternoon, fly-in dinner Saturday night and a hot breakfast Sunday morning.

Trophies awarded at the dinner. Underwing camping and transport to and from Holbrook township for accommodation and fuel.

For more information, www.holbrookultralightclub.asn.au or Bryan Gabriel (02) 6036 2601.



4 October

Port Macquarie Fly-In and Fly & Spy

Hastings District Flying Club invites all aviators to gather in beautiful Port Macquarie for a weekend of aviation fun and fellowship. On Saturday take part in the Fly & Spy observation trial or soak up the friendly club atmosphere. Fly and Spy involves teams answering questions as they navigate a course in the local area. \$600 in prize money as well as the dreaded Cabbage. Food and drink available throughout the day. A welcome/presentation dinner in the clubhouse Saturday night. The event is proudly supported by the Port Macquarie – Hastings Council.

For more information, Rod Davison roddi194@yahoo.com.au or 0419 632 477. www.hdfc.com.au.

15 March 2015

Darling Downs Fly-In

The Clifton Airfield (Bange's) fly-in has become an iconic event in the region and is the premier attraction for all types of aviation in southern Queensland. Come late pm Saturday 14th for BBQ, drinks. Fly or drive in, see ERSA. On field camping, bring your swag. Advise for catering.

For more information, Trevor Bange 0429 378 370, (07) 4695 8541 or trevorbange@bigpond.com.

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LETTERS TO THE EDITOR

Tex Messaging

North Queensland member, Tex Battle, has been peppering the Minister's office with complaints about the costs and inconsistencies in the policing of ASICs. Here is the latest reply he's received.

Dear Mr Battle

Thank you for your letter dated 17 June 2014 to the Deputy Prime Minister and Minister for Infrastructure and Regional Development, the Hon Warren Truss MP, regarding Australia's aviation security settings. The Deputy Prime Minister has asked me to reply on his behalf.

The Australian Government is committed to reducing unnecessary regulation on individuals and businesses. The Department of Infrastructure and Regional Development is currently working with key aviation industry bodies to identify opportunities to reduce the regulatory and administrative burden on industry without adversely affecting aviation security. This includes reviewing the aviation security settings currently required at regional and remote airports.

It is expected that any changes to current security requirements will result in a streamlined and more flexible regulatory environment. Any regulatory reform will be based on robust risk assessments to ensure operational changes do not adversely affect aviation security or safety.

I trust this information will be of assistance. Thank you again for raising this matter.

Yours sincerely



David L. Whitrow
Chief of Staff

Debt Collector

I have just received an account for one landing at YGLB which has been forwarded to me through RA-Aus.

YGLB is owned by a private operator. It should be that operator who sends out accounts for airport use. The costs incurred by RA-Aus, associated with the administration, postage etc, should not be borne by RA-Aus whose office team has many other duties to perform. RA-Aus is not a debt collector.

Pilots should also check NOTAMs for YGLB. They will find runway 04/22 is not available for aircraft below 650kgs on weekends without prior clearance.

James Carr

PFM presses a button

After reading Kreisha Ballantyne's 'Appy Tale' about Electronic Flight Bags (*Sport Pilot* July 2014), I felt the grey 'wisdom highlights' on my "of a certain age" head, bristling. And I am

not even a pilot!

It is my belief that being a pilot is quite special. It proves that you have learned, and use, certain skills that most of the population doesn't even aspire to, let alone achieve.

Any young whipper-snapper, or old fart, can be taught to press a button, or three, to reach a GO TO position on a PFM (pure 'flaming' magic?) box.

But many of these 'PFM box pilots' now don't even have the desire, or have forgotten, or never absorbed, the knowledge to cope with the possibility of the PFM box failing entirely, as happened to several aircraft tracking from Hay to Menindee Lakes recently. It was illuminating to hear radios crackle with basic questions like, "What's the CTAF for Menindee?" and, "Can't see any navigation features here, what track should I use?" Was

proper preflight planning even done? Or did some pilots actually rely entirely on their PFM box and have trip maps tucked deeply away in their luggage?

Some time ago, a visiting pilot insisted to us that because it was the 21st century, EFBs were here to stay and we should get with the program! All the while his iPad was heating up in the sunny cockpit of his aircraft. As he taxied away, we were bemused to see him frantically waving the cooked PFM box outside his aircraft, desperately trying to cool it down in the hope it would work again.

Still later we received a radio call from him requesting information he needed to fly through Kilmore Gap to his destination - the PFM box was obviously still not working.

Out of curiosity, I pressed a few buttons on my own iPad and discovered that my memory hadn't lapsed altogether. It hadn't seemed so long ago Kreisha was excitedly describing her first solo flight.

I discovered Kreisha had gone flying at Temora on May 14, 2011. After "a few hours" of GA lessons with Schofields, she was now learning in a Foxbat to gain a RA-Aus certificate (sometimes it would be convenient

for the smoke to get out of PFM boxes, wouldn't it?)

What was refreshing, however, was the Ops Team Pilot Talk article on Page 35 of the same magazine, which put the subject right back in perspective (if PFM box pilots get around to reading articles which query their modern, simple, perhaps over-simplified, piloting plans).

In my own opinion, Electronic Flight Bags are a very useful aid to situational awareness in flying, and for this reason I think they are great, but they are certainly not the be and end all.

Anne McLean

Surprised mention

How surprised I was. I recently logged on to the RA-Aus website to get updated and see if the minutes of the general meeting held during NATFLY had been placed in the member's portal. Sure enough, the draft copy was there. However, to my dismay I realised I had received a mention. Basically, a member raised the issue that, at the last AGM, members had asked to see the legal advice given to me regarding my resignation as President (and its subsequent withdrawal).

The advice from the last AGM was that it would be followed up for the members, but nothing had been seen yet. Another member further stated that at the last AGM, the Board was asked to seek from me an agreement to release the information. He asked for this to be followed up.

The action from this request was that the President would endeavour to obtain a copy of the legal advice provided to me and publish this advice on the member's portal.

I was not aware this subject had been brought up at the April 14 meeting or previously, so I went on to check the minutes of the previous AGM and sure enough, it had been requested by the members at the September 13 AGM.

I can categorically state that at the time of writing this letter (July 14) and since the board committed to looking into this matter, firstly in September 2013 and again in April 2014, no member of the board, and specifically the executive or my own board representative (NQ), has had the courtesy or common decency to firstly inform me I was a topic of conversation during the meetings and secondly to follow up this matter as promised to the organisation's members.

When anyone from the board has the decency to contact me regarding this matter, I will provide an answer as requested by the members.

Steve Runciman



No free lunch

Regarding Mark Clayton's dissertation on landing fees (*Sport Pilot* June 2014).

I can relate to the frustration experienced by many of my fellow airpark owners around the country where, on top of the usual maintenance overheads, most of us also accept the additional wear and tear from emergency services, pilots in distress and other beneficiaries we offer free access to.

I can tell you it isn't cheap to maintain 1,000m of tar sealed runway where a simple re-coat costs more than \$100,000. In fact, at Pacific Haven near Bundaberg, like every other airpark in Australia I know of, it costs us additionally in rates, taxes and other government charges for the privilege of merely existing and providing such community services.

When 'Biggles' breezes in, conducting commercial business with his or her customers from outside the airpark, we expect a contribution. That's only fair. We don't even care if they don't pay on the day. Fees and contact details are in the ERSA, as well as almost every other aviation publication, and they can arrange payment through any listed contact.

However, there are some people who don't like to accept the published landing conditions, which include a landing charge. They use the facility for their own commercial gain and refuse to pay. It has been suggested to me this amounts to trespass and/or theft, but it certainly is unconscionable. It leaves owners with little alternative but to direct the bill to the recalcitrant pilot via RA-Aus.

Why through RA-Aus? Privacy is currently a big issue. Although the former GM rightly points to the other aviation bodies openly publishing their members' details, I wonder how many members of these organisations like having their personal details put out there. Too bad if they don't. It is also worth remembering that owners of boats, jet skis, cars, trucks, motorbikes, buses, horses and potentially the lunacy of registered bicycles (where does it end?) do not and will not have such details published.

I am also a member pilot of RA-Aus and, as such, contribute towards the administration costs in the office to handle this task. I also pay landing fees when I fly elsewhere. I feel like I am being hit every which way.

Maybe there is room for a compromise. A simple answer to the financial impost on RA-Aus is to add a cost recovery component to the bill for the forwarding service. This should make it more attractive for pilots to pay the published fee directly to the airfield owner ASAP without going through the office. Perhaps we could even extend this idea into a formal business arm of our office devoted to collecting



>> Pacific Haven Airpark

such fees on behalf of owners at a profit. This would contribute to our parlous financial state and allay concerns from the outside world that RA-Aus doesn't take this sort of thing seriously. One thing is for certain, though. There is no such thing as a free lunch.

Mark Pearce

Member's view

My Letter to the Editor last month was critical of a few things which have been going on, or not going on, or they are still to go on. The members, or a high percentage of them at least, are wondering will it ever happen.

There are a number of critical manuals that were promised from way back at the Queanbeyan meeting where the Board was on notice (move yourselves or get out) and here we still are blundering along on - they are coming, just wait.

My next question is - does RA-Aus have a Procedures Manual? If not why not? The constitution just covers executive positions and the members need to know who is responsible for a lot of ongoing business by sub-committees.

In particular the Tech Manual. Not even a draft put out for members to peruse. The same for other manuals which RA-Aus and its members abide by. If CASA still has the Tech Manual, they need move on it as well. With governance and the continuous changes being brought in, maybe we won't see them.

I understand the constitution needs a huge overhaul, due to structure changes. This has been talked about since Queanbeyan.

The recent elections - everybody provided the

members with really no change, as the same rhetoric was spruiked at previous elections. I just hear too much of "I am going to do this and that" and have no fear of being a transgressor of the law.

One more point. With NATFLY not spectacular really, and Ausfly 2014 cancelled, the two great flying Associations should change to a biennial show, having one each year. It would help the exhibitors cost wise and maybe the Associations. There are many examples of this going on throughout the world.

Also on NATFLY. Why did the research letters only go out to flying members? I was at NATFLY and didn't receive any letter or form.

Keith Baker

Getting out in a hurry

Regarding the tragic story of a VH-registered two seat light aircraft which caught fire after the pilot crashed short of the runway and died in the subsequent fire (Letters to the Editor *Sport Pilot* July 2014).

The letter writer stated that the availability of an emergency crash axe may have helped the occupant escape from the burning aircraft. With many LSA having large canopies relative to the size of the aircraft, occupants would be hard pressed to escape if the aircraft crashed and the canopy locking mechanism jammed. These are usually an over-centre locking device similar to the doors in Cessna 172 series. When flying the Texan Club LSA I have always felt vulnerable especially if a forced landing happened and the canopy rails warped in the impact.

For this reason I always carry a canopy breaking tool with me which I could use to break through

the canopy and increase my chances. The RAAF realised the sort of danger posed by jammed canopies back in 1961 in Sabre, Macchi, CT4 and Mirage aircraft. This followed the experience of the USAF where several pilots died after the F80 Shooting Star fighters in which they were flying caught fire after aborted take-offs. The canopy was electrically operated. When the impact severed electrical sources, it could not be opened and the pilots were unable to get out. In those days ejection seats were limited to in-flight only. After that, canopy breaker tools were installed in cockpits of many types. I was involved in the RAAF obtaining the plans from the USAF of these tools (which were like a hardened point knife) and took part in the successful testing of these canopy breaking tools at RAAF Laverton Base. I still have an example of one of those canopy breaker tools at home.

Call me pessimistic, but since those days I have always carried a small crowbar in my car in case of a need to smash a car window or exit a jammed door in the event of a car accident. I have often thought there would be money to be made if someone could design a canopy breaker tool for GA types including LSA. The RAAF Museum at Point Cook has a Macchi two seat advanced jet trainer and a CT4 on exhibit. If you look closely, you can see the canopy breaker tool inside the cockpit adjacent to the pilot's shoulder level.

John Laming

Natural selection

Thanks again for the monthly joy of your mag. I look forward to receiving it with great anticipation.

Now to the topic - human super powers.

The only super power my life experience has yet to validate is the super power of self-delusion. This power leads us to, among other things, flying when maybe we shouldn't. I include myself in this phenomenon. Most of us are prone, at some time, to thinking we can when chances are we can't.

Why should this be? We are intelligent, rational actors and enjoy flying because it brings excitement and joy to our lives. Why would we turn this into a life threatening activity, one which would be contrary to our obvious goal of life enhancement? The answer is quite simple, it is the very nature of organic life to want more and to take quite extreme risks to get more, often to seek excitement and danger. It is a good survival strategy.

If it was not so we would not exist in such abundance, in such a diverse range of environments. Yes we even exist outside our natural environment, the upper atmosphere and space. Let's call this the risk-reward paradox.

So my point is that you can't control this

fundamental drive, so the misguided paradigm of the Forsyth Report, for RA-Aus to 'control its membership' is, at the very least, delusional and completely unproductive.

The way RA-Aus is, and should continue to 'influence its membership' is as it is already doing - put out a good magazine and fill it with informative stories and articles so we adventurous souls may have useful information to aid us in negotiating our natural instincts with some sound rational thought and honest introspection.

To put it bluntly, you can only control people if you have a monopoly on violence (see North Korea). Thanks to a democratic society, we have no such power over each other.

Paul Woods

Ed - I love your optimism, Paul, but the state is filled with nannies who think they know what's best for everyone else. And don't forget insurance companies rule the world.

Hours of operation

The RA-Aus incident summary Pilot Notes covers much detail, which is just as it should be.

One can read down to see if the incident was because of an engine failure and just what type of engine was involved. However, if one is trying to make any sense about the reliability of particular type of engine, the vital missing piece of the equation is the total number of hours of operation (say, for the year) of a particular type of engine, or at least the number of engines of that type currently registered.

The current situation gives a totally disproportionate view of which engines fail more regularly than others, leading to a situation in which new/prospective aircraft owners are being unknowingly misinformed.

John Dods

From the Ops team - This information is provided on the RA-Aus website under Operations Accident & Incident Summary.

Thank you

I would like to take this opportunity to thank the NSW members of RA-Aus for their support in voting for me to be their representative in the recent board elections. There is definitely 'a wind of change' blowing through the corridors of CASA, RA-Aus and other sport aviation organisations. And with a new, enthusiastic and well-led board, it augurs well for the changes we all hope to achieve in the next couple of years. There is absolutely no doubt the new leadership in RA-Aus is working tirelessly and to great effect to manage and improve our organisation and I am very pleased and honoured you have chosen me to be your board member to help them realise our

hopes and dreams.

My aim is to help RA-Aus grow and prosper by ensuring our administration is modernised and streamlined, that our costs and regulations are minimised and we can all continue to fly for fun, safely and without hassle. Once again, thank you all for giving me this opportunity.

Michael Apps

Thanks team

I would like to take the opportunity to thank the RA-Aus staff in their dealings with myself and my FTF in recent weeks. In particular I would like to single out the supreme efforts of Leanne Cabrera and her registration team on being able to process our application so quickly. This feat was particularly impressive considering the diminished office staff available to her at the time. If the RA-Aus and the rest of the aviation industry had more Leanne's we would be much better off!

Michael Lawrence, PathFinder Aviation

From the CEO - Thanks Michael for your positive feedback. As the new CEO, I am buoyed by Leanne's commitment to helping our members. The whole team at RA-Aus works very hard everyday to achieve these great results. Stay tuned for some great news on aircraft registration.

Got something to say?

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.

editor@sportpilot.net.au

(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).

FROM THE CEO

Aviation starts here

by Michael Linke, CEO

IT'S both a pleasure and honour to be at the helm of RA-Aus at what is shaping up to be an exciting period in our development. I joined in early July and was immediately welcomed to the team.

By way of introducing myself, I'm originally a Sydney sider, born in Redfern, which means I'm a Rabbitohs supporter! Don't hold that against me.

I spent much of my youth in my backyard at Rockdale (directly under the flight path), looking up as planes landed into Mascot airport. The picture (right) was taken minutes before my first flight in 1972. I'm the nerdy looking one on the left.

My career began in the Australian Taxation Office, where I moved through the ranks as I built a career in tax technical and managerial roles. The Tax Pack, tax file number administration, superannuation law changes and the child support agency and associated legislative reform were all major milestones in my 15 year career.

I relocated to Canberra in 1998 as my career evolved with senior roles within the Taxation Office. I left the APS in 2000 and have followed a career path in the not-for-profit sector, working for two major charities over the past fifteen years (Vision Australia and RSPCA). At RSPCA I grew the organisation from a \$1.8M annual budget to \$4M, doubling the workforce and developing some of the most innovative animal welfare care and protection models the animal welfare sector has seen.

I'm very proud of this achievement, which was acknowledged when I was invited to Washington DC to talk to international animal shelter managers on how RSPCA ACT had changed the face of animal welfare, care and protection services. In addition to the core animal welfare successes, I also navigated RSPCA ACT through a macro constitutional and governance reform agenda. This involved significant constitutional reform, introduction of governance policies and the development of a governance framework. As Michael Monck has said in his column, the board of RA-Aus has made significant headway in focusing on governance. I am looking forward to working with Michael and the rest of the board as we further enhance our capabilities.

I'm a qualified accountant and hold a tax law degree and will be completing my MBA in 2015. These formal qualifications, coupled with my experience in the business and community sector, have brought me to RA-Aus. The notion of flying and aviation has always struck a nerve



with me. I recall flying to Lord Howe Island in the 1970s in a seaplane with cracks in the floor. I looked down to see the ocean as we took off and landed as my three brothers held sick bags to their faces. I've sat amazed and in awe in the cockpit of the Concord in New York City and a Space Shuttle at Kennedy Space Centre in Florida. There is something magical about aviation.

As CEO, my role is to harness that magic and sprinkle it among our staff, volunteers, members and supporters.

I'm the type of person who pushes through barriers and I remove people's excuses for not getting something done. Often the only reason something doesn't happen is because one person in the room objects or puts a negative spin on an idea. I see my role as removing that barrier. Often I just punch on through it, but either way the barrier ceases to exist and we move on. I think too often we are concerned or restricted by the reasons we can't or shouldn't do something, when we should always say, how can we do this? How can we make it happen?

As with flying, the journey will not be without bumps, but I promise you the journey will be worthwhile, the journey will be rewarding and the journey will take RA-Aus higher than ever before.

Our best days lie ahead of us. At RA-Aus, aviation starts here.

Giveaway

To mark the 100th anniversary of the start of World War 1, *Sport Pilot* will give away a special 3 DVD boxed set '4 Years of Thunder' to one lucky reader.

The series covers the traumatic events of 1914-1918 as they unfolded in the air above the trenches. Includes the flying aces, the death defying dogfights and the dawn of the age of carpet bombing.

To win the boxed set, simply email editor@sportpilot.net.au precisely on the 100th anniversary of the day when the two sides began to dig the dreaded trenches - not a day before or day after.



OFFICE CLOSURES

Monday 29 September
Family & Community Day

Monday 6 October
Labour Day

Thursday 25 December
Christmas Day

Friday 26 December
Boxing Day

AUGMENTED REALITY READING GLASSES



THE first synthetic vision for light aircraft pilots was premiered this year at Oshkosh.

Using Epson Moverio, Google Glass and other head-mounted displays, Aero Glass will be the first to provide a 3D, 360° experience in the cockpit, regardless of the visibility.

Aero Glass VP of Business Development, Cameron Clarke says over the past decade, GA pilots' ability to visualise terrain, navigation, traffic (ADS-B), weather, and airspace has become easier, along with improvements in convenience and safety items like emergency, preflight, inflight, and landing checklists. But as handy as this information is, accessing it re-

quires pilots to take their eyes off the sky and often access multiple screens and devices.

Because even a head-up display is in a fixed location, Aero Glass has integrated all the functions, and made them available to pilots, wherever their head is turned. The technology was previously available only in specialised military helmets at Defence department prices.

Cameron says, "Our community of Beta testers will work together through an online forum to create the final product which will provide feedback and special features of interest as part of this program."

For more information, www.glass.aero.

RA-Aus Election Results

After distribution of preferences the successful candidates for NSW/ACT were Michael Apps and Andrew Saywell.

There were 226 valid ballot papers and 18 invalid papers.

1. Michael Apps 101 votes
2. Andrew Saywell 69 votes
3. Barry Wrenford 66 votes
4. Colin Jones 52 votes
5. Greg Doyle 40 votes

The successful candidate for TAS was Eugene Reid.

There were 101 valid ballot papers and 8 invalid papers.

1. Eugene Reid 66 votes
2. Andrew Gyenge 18 votes
3. Frederick Benn 17 votes

The successful candidate for NQ was Ross Millard.


There were 84 valid ballot papers and 10 invalid papers.

1. Ross Millard 47 votes
2. Alan Middleton 37 votes

The following candidates were elected unopposed:

**South Queensland – Mike Smith
Victoria – Rod Birrell
Northern Territory – Mark Christie**

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Zigolo to China

THE first Zigolo in China is now finished and was introduced to the public at the Jingmen Airshow in July.

The Zigolo was supplied in kit form by Aeromarine LSA in Lakeland, Florida. At the same time, a Zigolo assembly facility was established in the AVIC R&D center in Jingmen to supply the Chinese market.

“The Chinese have shipped thousands of ready to fly remote control model aircraft to the US. Now they will have the capability to build a man-carrying light aircraft for their own market,” says Zigolo president, Chip Erwin. He noted that the technology and design gap between large RC aircraft and this ultralight motor-glider was small. He says with the eminent arrival of

an electric-powered version of the Zigolo, the gap will narrow further.

Build time for the Zigolo is reportedly about 150 hours. First deliveries are planned for later this year. Both electric and gas-powered Zigolo ultralights were also due to be on display, and in the air, at Oshkosh in July. For more information, www.aeromarine-lsa.com



Diesel for FKs

SILENT Wings Aviation has announced it is about to introduce Australia's first production diesel powered Light Sports Aircraft.

The Mercedes based 80hp engine will be fitted on the well-known FK-Lightplanes FK9 ELA and in the new wide-bodied version FK9 WB.

The FK9WB is expected to be available for demonstration in Australia before the end of the year.

The original Mercedes engine based SMART turbo diesel engine has a strong performance record in the US, having powered UAVs for a number of years. It is approved for UAV use with a service ceiling of 25,000ft.

The diesel and petrol FlyEco engines are also

available for home built aircraft from Silent Wings in a complete firewall forward and instrument package.

Total weight of the package is 89kg and the factory export price is under Euro 20,000 (not including freight, import and GST costs).

The FK9 ELA with the standard body, and the new FK9 ELA WB versions with the standard 912UL/ULS/iS Sport petrol power, will now get the choice of the latest FlyEco turbo diesel or the 102hp SMART petrol turbo injected version factory fitted.

For more information www.silentwingsaviation.com



>> diesel and petrol FlyEco engines



Instructor needed in paradise

WHITSUNDAY Aero Club Inc. is looking for an instructor.

The club has been operating at Whitsunday Coast airport since 1975 and has provided flying training to many locals, some of whom have gone on to the airlines.

In 2010 the club amalgamated with the Airlie Beach Aero Club and the re-formed club operates out of premises at Whitsunday Coast Airport. The members have upgraded the club building to improve the facilities.

The club has had a lot of enquiries lately from people looking for flying training. It has also begun negotiations with a flying school to resume flying training. The club has a suitable aircraft available for training and private hire and now just needs a suitably qualified instructor willing to work in the most beautiful part of Australia to satisfy the growing demand.

In the meantime, the club is still conducting its usual Club Day on the third Sunday of the month and provides regular activities such as fly-aways, fly-ins, guest speakers, BBQs, weather and many other educational forums and, of course, good old aviation talk.

For more information, whitsundayaeroclub@hotmail.com or www.whitsundayaeroclub.com.



CORROSION ADVICE

CASA has released new advice on preventing and treating corrosion on the external surfaces of piston engines and engine mounted components.

Piston engines are sensitive to corrosion and ageing issues and, if not properly controlled, can have a significant impact on airworthiness. Owners and operators are responsible for identifying conditions leading to corrosion and for taking appropriate precautions. Where prevention maintenance is not carried out, it can take a lot of work and expense to repair accumulated damage.

Significant surface corrosion and pitting can, under normal engine vibration stresses, also result in fatigue cracking.

A new airworthiness bulletin from CASA sets out some of the key issues, including paints and protective coatings, engine cylinders and studs and engine accessories and hardware.

For full details www.casa.gov.au/wcmsw/assets/main/airworth/awb/85/017.pdf.

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FLYING TAUGHT ME THIS TODAY

A regular section featuring stories supplied by RA-Aus members which contain lessons for every pilot

Gorillas in the Mist

IT was a beautiful day. The forecast was for a crisp clear autumn morning, the kind that trikers love. The grind of getting up early is rewarded by smooth air and fantastic views. As I drove to the airfield I was assessing the conditions as I always do - any cloud, temperature, signs of wind? - to get my head around the day.

As I approached the field I noticed a very slight line of fog over the nearby creek, a bit of overnight radiation, soon to burnt off as it always does - nothing to worry about. Anyway I still had forty minutes or so before wheels off.

The pre-flight and taxi was normal and again I assessed the sock for any signs of wind, given the forecast was for light winds. A local smoke stack offered no cues, so the preferred runway was chosen. Just another great morning to be flying and I was first up as usual. The other guys don't know how much good flying they miss out on before 7am- oh well, their loss!

There was the ever so small amount of mist, like a gossamer quilt, at the end of the field, but it hadn't changed in over half an hour and the sun was now well and truly up in the east. I gave the trusty Rotax time to get warm and, being a veteran of the 2-stroke generation, I conducted two run ups and a full power check before line up - all good.

The next minute has gone down as a bit of a blur, but bits of it remain etched in my mind forever. The ground roll and rotation were normal, but within seconds on climb out I'd lost almost all visual reference. I could still see the rough outline of trees below and a nearby landmark in my lower left quadrant, but effectively I was flying blind! How did I get into this? It had been clear moments before! The internal arguments of disbelief echoed for what seem like hours, but what was really a nanosecond. I was in fog! Or really low cloud, whatever you want to call it - I was in it.

I faced a decision- climb through it to get on top or get back down? Surely, I felt, if the fog had formed so quickly it couldn't be so thick- I had options. I could go to the coast. I had more than enough fuel. Primary goal? Don't panic!

I looked to my lower left where I saw the crest of the small hill which runs along the airstrip. I knew it intimately and where to find the intersecting runway. Then I could see the ground again.

I kept telling myself "Fly the plane, fly the plane". The beating echoes were in time with my increasing heart rate. I referenced that hill with my wing tip and focussed on a balanced turn as I decreased power and descended to line up on the opposing runway - I told myself that if I couldn't see it when my right wing was on that hill at the end of the turn, then I would bail out and go VFR on top. "My only option you idiot", I thought again. It was like battling a rabid dog hanging on my leg. I was trying win an argument happening in my head at the wrong time and place - fly the plane!

By comparison the rest of the short flight was almost a non-event. I landed normally, taxied to the side and stopped. I looked again for the fog but like a prank of nature, it was gone. The gorilla had come out, taunted me and departed soon after it arrived. I shook my head.

Now no one saw this incident and no one was hurt. But I knew I'd failed. I missed the cues. I'd danced with the devil and on this day he took the lead and I was nothing but an ill-prepared player in a game I could have so easily lost.

So what did I learn?

Fog is like fire - you think you understand it, you reckon you respect it but in the end fire is fire and it burns. What looks good from the ground is always different in the air - it's very easy to confuse the two. As is often said, "Rather be down here wishing I was up there, than up there wishing I was on the ground".

Forecasts are horoscopes with numbers- I heard this said by a veteran aviator and he was right. By all means use everything at your disposal to plan and assess, but in the end if you're in any doubt - don't do it. There will be other days.

Horizon is everything. It's your world. I knew this. I'd flown in and out of the skirts of cloud many times, but the horror of being so close to the ground was like the last of those 178

seconds unravelling in front of me. Did I do the right thing turning around? I was taught never initiate a turn if I lost visual reference. I had that one anchor of visual reference and I never lost it, so it could be argued forever. I did what I thought best at the time.

Finally, what changed so quickly? How did I get caught out? I knew about dew point, radiation and advection fogs. I knew the science and I thought I had it covered - clearly not. I later learned about a lesser known phenomenon known as flash fogs. It appears the dance of moist air around the dewpoint is a precarious one - and that on this particular day, with perhaps the slightest amount of leaside drainage behind my reference hill, I fell victim to it. In any case I treat those beautiful clear early sunrise flights now with a lot more respect.

Flying taught me something that day for sure. 🙏



Do you have a story about a near miss or an accident which gave you grey hair but taught you something about flying? The RA-Aus Safety team wants to hear about it. Every story printed in *Sport Pilot* will earn its author a range of RA-Aus merchandise. Email editor@sportpilot.net.au and clearly label your email "Flying taught me this today".

>> FK-Lightplanes FK51



AT Aero & beyond

by Greg Doyle
Silent Wings Aviation

HOW different AERO was this year from my first visit to the German aviation showcase in 2007.

My first visit happened before the GFC. There were 12 pavilions, packed full of everything aviation. The latest in small jets, a huge fleet of GA aircraft and helicopters and lots of European ultralights (472.5kg MTOW). The new kids on the block that year were the companies gearing up for LSA, mainly for the US. Most of the LSA suppliers were from the ranks of the established European ultralight manufacturers. The GA/commercial manufacturers filled the large courtyard between the rows of pavilions as well as the flight line and courtyard outside. It was a struggle for me to cover everything in four days.

This year, by contrast, it appeared the organisers had struggled to fill the halls. Many significant manufacturers had decided, for one reason or another, they would not exhibit. Manufacturers I spoke to revealed business had been down all over Europe. They had been hit hard by low demand from the US, combined with a soft local European market. It's only now that signs are emerging the market there is recovering.

Cirrus was still visible in the GA space (as well as in the jet market) and the traditional GA companies Cessna and Piper were showing



>> Sirocco Microlight

off their commercial jets. But the numbers of smaller private GA aircraft appeared to be fading fast against the growing strength of ultralight aircraft and the move by pilots all over the world to LSA.

So despite Europe's crazy 472.5kg MTOW limit, a huge range and variety of ultralight and LSA aircraft were on display. A common com-

plaint heard was that the EASA specifications derived from the American ASTMs were almost as complex and expensive as the old GA standards under the FAA.

Another interesting aspect of AERO this year was the range of concept or prototype products on display. Some like the LISA seaplane with its hydrofoil floats, have made it through to

W
I was taken by the beautifully built carbon fibre Sirocco



>> Electric Volocopter proptotype



>> Wrap-wing prototype seaplane



>> Fly Synthesis Catalina seaplane



>> Silent Electro electric sailplane

production and were proudly shown off by their manufacturers. Elliptical wrap around wings or wrap around stabilizer/elevators (some even on seaplanes), showed that imagination and practical innovation are alive and well in Europe.

There is not much sign of rag and tube low cost aircraft these days, but the Europeans have established a 120kg class like the FAA Part 103, intended for low cost personal flying.

I was taken by the beautifully built carbon fibre Sirocco, a modern version of the popular French designed aircraft, of which more than 1,000 were built.

The E-flight Expo section of AERO showcases alternative propulsion systems under the motto 'Electrical, Ecological, Evolutionary.' Germany

has always been sensitive to noise and pollution and insists on stringent test and approval regimes. So it came as no surprise that electric power alternatives from the Germans were big at the show. They ranged from a huge Volocopter from E-Volo, a huge 18 electric motor helicopter in the main foyer, to the tiny motor/prop system of the clever new Italian Alisport Silent Electra DU class glider, which features electric launch and sustain with a folding prop. Check out the flying Volocopter on Youtube.

I also heard rumors of a new hybrid engine with electric and petrol propulsion, and so headed off to the Engine Area, a dedicated zone dominating one of the pavilions.

On display were a number of engines being developed to use electric, petrol and diesel and hybrid models. With the uncertainty around aviation fuel and the development of new fuel-efficient diesel engines, this area was looking healthy. The hybrid turned out to be an early prototype of the Peugeot/Citroen group. It has potential but has a way to go, especially on weight.

I was delighted that my friends at FlyEco (Germany) won an Award for Innovation with their great little Mercedes-based high torque 80hp diesel engine (see news section this edi-

tion). It pulls like a 100hp.

There were also companies demonstrating bolt-on enhancements for Rotax and Jabiru motors. These ranged from big bore kits for Rotax (good for 120hp) and bolt on fuel injection and turbo charging for even higher outputs.

It seems the aircraft motor hot-rodders are well served. I thought they could be just the thing on a seaplane, where extra power is always good.

One of the companies which decided not to go to Aero this year was one of Silent Wings' new suppliers, Fly Synthesis. So I flew directly into Venice and caught up with them on their new home base at Udine-Italy to sign a new distribution contract with them.

I got to fly in all their new models, including the cute Catalina seaplane. Fly Synthesis has always been focussed on carbon fibre aircraft manufacturing. That skill helped them survive the GFC. As aircraft sales shrank, the company filled the gap making wind turbine blades and carbon fibre components which kept their factory humming while they evolved their new Texan Series II and brought the new Syncro high wing speedster and Catalina seaplane into production. 🇮🇹

When is old too old?

by Arthur Marcel

IF you haven't read Kevin McGrath's account of his first solo at the age of 82, sixty years after his first lesson (*Sport Pilot* March 2013), you should. Kevin's forward looking, no fuss, 'just get in there and do it' approach to life is truly inspirational. Of course, Kevin spent most of his working life as a funeral director, so it is understandable he doesn't want to waste any of his allotted time above ground. In fact, you will often find him well above ground, not just as a regular pilot of the Darling Downs Sport Aircraft Association's Jabiru J160, but also as their painter in residence. Kevin regularly climbs onto hangar roofs, ladders and other precarious structures to make sure DDSAA infrastructure is well protected from the elements. Without a doubt, not only is he the club's oldest flying member, he is one of its most active.

I had the pleasure of breakfast with Kevin at a recent club fly-in. He told me his philosophy in life is to have a go at whatever interests him. He tries to make every day an adventure. He said that, in his professional life, he saw so many people, men in particular, whose lives revolved only around their employment and who then didn't live long

after their retirement. He told me he was always saddened when people complained of boredom but never ventured far from home; when people with talents failed to develop them; or when people with passions never pursued them.

Kevin was born in 1930 and grew up on a dairy farm near Millmerran during the Second World War. It was a time of hard work for young rural children, because most of the men were serving in the military forces. The family owned two farms in the area (and managed another two), and Kevin remembers that money was scarce. Survival itself was a matter of independent resourcefulness. Kevin learned from a young age that he either did things himself or they didn't get done.

It was a daybreak-to-dusk existence with schooling squeezed into the middle of the day after milking and other farm chores. Kevin remembers being so dog tired in the evenings that homework was impossible. After the war, when the pressure was off, however, he was to finish his education with Honours in English.

Apart from flying, Kevin's other great interest is vintage cars. He is particularly fond of Austins

and has a fully restored, jet black, 1947 Austin 8, (in which I had the pleasure of sitting). Kevin joked that the car was deliberately designed around a 7.99hp motor, because road tax didn't apply to vehicles of less than 8hp (which, he said, therefore proved that tax evasion was not a new phenomenon). He has another Austin 8 which he is in the process of renovating; that one is a 1945 convertible.

If you read the first *Sport Pilot* story, you would know that Kevin is still married to the same wonderful girl for whom he gave up his original flying lessons. In fact, he and Jacki recently celebrated their 60th wedding anniversary. He also has four children, two boys and two girls, one of whom is following in her old man's professional footsteps. Both boys are pilots - one even owns his own plane.

Kevin's latest ambition is to lay claim to the RA-Aus Come And Get It Trophy (CAGIT), which is still (at the time of writing) in WA. He thinks he might wait until it gets a little nearer to home, however, (perhaps Pittsworth), before he goes to collect it.

So, when is old, too old? Kevin will tell you it never is. 🚗



>> Kevin and his restored Austin



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Victor One

You must fly it once

by Ian McDonald

IT was a challenge worthy of the ages. A flotilla of seven aircraft, 12 pilots and significant others, set off to fly Victor One.

Victor One is a unique piece of G class airspace, situated on the east coast adjacent to Sydney's northern shores and Sydney Harbour. It's below the Sydney Control Zone. You literally fly under the radar. No airways clearance is required.

Most of the aircraft in the fleet are based at or near Murray Bridge in South Australia so the trip was to be more than 1,500nm. Several of the pilots are aged in their late 70's-early 80's but were ready for the challenge. After a great deal of planning, the group, comprising a Tecnam, Savannah, Jabiru, Foxbat, 2 CTs and a Piper Tomahawk, embarked.

Weather, of course, plays a significant part in trips of any length. We'd planned to depart YMBD at 8am but a low and thick fog shrouded the airfield and delayed departures until midday. The plan to track to Ouyen, Hay and overnight at Narromine was never going to happen. The day's weather improved as we headed east, but with light slowly evaporating, the group set down in Hay where we knew there was plenty of fuel.

Early next day, we departed Hay and headed to Narromine but more fog and low cloud meant we sat and waited at Condobolin.

One great service often underused on trips like these is the phone service offered by the BOM/AirServices. Call a weather person direct and they can usually give you great advice about the predicted weather along your flight path. Each state has its own direct number - it's located in the NAIPS weather forecast. They are great.

At Narromine we stayed at Nita and Peter's Tourist Park Motel. It's located right on the boundary of the airfield. They offer great cabins, wonderful service, with an excellent kitchen and lounge facilities. You can just land, unload your aircraft and walk to your bed. They also drove us into town for meals and supplies.



>> Condobolin



The cliffs, the harbour and the water are all just amazing

The next day the flying Gods were partly with us. The plan had been to head to Denman, Singleton and Maitland before going up the coast via the lane, then to Taree and Old Bar for an overnight stay.

But the weather people told us the forecast for the following few days was not going to be conducive to good flying. We risked getting soaked in at Old Bar for several days.

So the decision was made to abort the trip north and head directly to Victor One.

VICTOR ONE

For those considering a trip through Victor One, it's not really daunting. It just requires attention to your location and height and several positioning calls. For the recommended directions and locations, <http://tinyurl.com/ovrmje9>. You are also required to wear lifejackets over water.

We flew along the coast with radios set to the Victor One frequency - 120.8. If you carry a transponder (not required) you set 1200. At Long Reef



>> Building cloud



>> Approaching Hay



>> Sydney from South Head

>> Relaxing at Narromine



>> Staying offshore



>> Cootamundra

you must be at 1,000ft. Descend below 1,000ft by Long Reef and descend to 500ft AMSL (Mean Sea Level - now that really means something) before South Head. Use YSSY ATIS for Area QNH - 126.25. On reaching South Head you must be at 500ft and remain at that height for the rest of the coastal journey. And you must stay coastal. No flying over beaches is allowed.

A radio call is needed when you start the Victor One route. The call is simple. "Victor One Traffic, Jabiru 1234, Long Reef, southbound, 500ft, Victor One Traffic". It's that simple. Aircraft proceeding northbound will be further away from the coast and will report their location. On our trip we didn't see or hear another aircraft as we flew south. A radio call advising when we were clear of Victor One was required after we passed Jibbon Point.

The view is absolutely wonderful. You are there at 500ft, enjoying a unique piece of Australian scenery. The cliffs, the harbour and the water are all just amazing.

THE WAY HOME

After clearing the lane we landed at Wedderburn to regroup, then the group headed off to our planned overnight at Cootamundra, via Mittagong and Goulburn. Mick from the Wattle Tree Motel came out to the airfield to collect us with our gear. It had been a six hour flying day. We were tired.

Next day we departed for Hay under beautiful clear blue skies but a low fog spreading across our path forced us to divert to Temora to wait it out. Eventually we made it safely to Hay. One aircraft landed with a flat tyre so the gang gathered around

with tools and spares, made the necessary repairs and away we went to Mildura and Wentworth.

We have used the Darling Junction Motel at Wentworth on many trips. Lynton happily comes to the airport to collect us with his small bus and trailer. A welcome sight after a long day's flying. The Sunraysia Flying Club also had its Fly-In the following day. The group departed Wentworth on Sunday morning with beautiful clear skies and headed for lunch at Loxton. Bev and Rod at the club opened their doors and prepared a great BBQ lunch.

In total we flew 1500nm, won the award for longest distance flown to the Sunraysia Fly-In, didn't leave anyone in the sky and the flat tyre was our only mechanical problem. Not bad.

Great people, hospitable moteliers and friendly flying clubs. Couldn't be better! 🍷



That Guy

by Brett Vaughan

THAT Guy is the one you see standing behind the fence at any airport.

He stands there, looking at planes and the people who come out of them. Sometimes, he has a camera and is madly taking photos. At other times, he just stands there quietly, taking it all in. For some time now, I've made it my mission to go over to That Guy, and to say "G'day". That Guy is often surprised someone comes over. He thought we were just those rich, elite pilots. "Why is he coming to see me?" he thinks. "I'm on the other side of the fence". That Guy can only aspire to be such an elite pilot, he thinks.

When That Guy finds out I am just an ordinary person, not a mega rich elitist, you can see the change in his eyes. I usually ask That Guy if he's a pilot himself.

Usually, he replies "No, but I'd love to be".

"It's easy", I tell him. "And it's cheaper than you might think".

I point to the Jabiru, in which I learned to fly, and tell That Guy how it cost me less than a cheap

second hand car to get my Pilot Certificate.

Many times That Guy doesn't believe me. But in some, his eyes twinkle as he realises his dream may be closer than he ever thought possible.

Sometimes That Guy is another pilot, just visiting. I usually chat to That Guy about his flying and the friends we may have in common - aviation is a small world. I've had two That Guys recently. One turned out to be the now late Graham White, tragically taken from us. Another That Guy, one to whom I spoke today, hailed from England. He told me stories about his time working on an RAF Training Airfield, watching Tornados, Harriers and all sorts of aircraft perform their flying duties. That Guy had the twinkle his eyes too. I pointed to the Flying School office. That Guy smiled and said "maybe".

I was once That Guy. I was on the other side of the fence looking in.

I remember it well.

So next time you see That Guy standing there, go up and say "G'day". It will make That Guy's day. 🇺🇸

SAFETY MATTERS



KATIE JENKINS National Safety Manager

Report it!

	JAN-MAR 13	APR-JUN 13	JUL-SEP 13	OCT-DEC 13	JAN-MAR 14	APR-JUN 14
ACCIDENTS (A)	4	5	13	37	29	32
INCIDENTS (I)	20	39	21	28	17	22
DEFECTS (D)	6	8	3	1	5	3
HAZARDS (H)	0	0	0	0	0	4
FATAL ACCIDENTS	7	2	0	2	0	3
FATALITIES	9	2	0	2	0	4

THE past 18 months have seen some significant changes within RA-Aus and its reporting of accidents, incidents and defects. Of a particular mention is the way RA-Aus is managing the reports and investigating them using the SMS Risk Management Process (www.raa.asn.au/ra-aus-risk-management-process/).

When a report is received it is logged and assessed by the Safety Manager who gives it a risk score based on the likelihood of the occurrence happening again and its severity. If the incident or accident appears to be at a high or extreme risk level it is forward to the Technical and Operational Managers to review and possible take action.

Not all reports are taken to that level because it depends on whether there's been a breach of the rules and regulations (in accordance with our Technical and Operations Manuals).

All information provided to us on reports is logged and, from there, we are able to use it to assess the areas where there appears to be a weakness in training or areas which require further education. For example, recently there have been airworthiness bulletins issued after events involving RA-Aus aircraft. From the reports we have already been able to identify a significant trend in a particular aircraft and operation.

In looking at the table of reporting statistics (above) from the past 18 months, it can be seen there has been an pleasing increase in the number of reports RA-Aus has received.

That is an improvement in the reporting culture among members, but it is still evident

some reports are not being submitted (as per the requirements by the ATSB and RA-Aus Operations Manual Section 4.08). Of particular note are the low numbers of maintenance related issues (defects reported) and near miss occurrences, where pilots have had an incident but are still able to fly the aircraft. It is this part of the reporting culture we are still trying to improve.

For our SMS to work we require as much information in the system as possible so we can get a correct evaluation of the safety issues in our aircraft and operations and to ensure the training and education pinpoints areas of particular concern.

It can't happen without these reports.

Yes the paper reports are a killer – at the moment you have to either print it out, scan it, photocopy it, email it, fax it or post it in.

However, we are currently in the development stage to automate it and put it online to ease the burden on you and on the administration.

This technology is also essential for RA-Aus to have a system in place to conduct quick and easy analysis, so if an event occurs we can quickly discover if it is a recurrence in an area which requires immediate attention.

At the end of the day, if you think you have identified a hazard or risk which may affect others within the organisation (no matter how small the concern seems) report it! It may not be something which seems significant at the moment but it might just be the information required to help RA-Aus take affirmative action.

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PILOT TALK

The Ops team

Low Level lowdown

MOST RA-Aus pilots operate below 500ft only when landing or taking off. In the main they are safe and law abiding pilots who fly for fun when conditions are appropriate, or just to share the joy with family and friends.

There are also many pilots who use their RA-Aus aircraft for work or gainful employment. Instructors who train students, as well as property and business owners, who transport themselves to and from their businesses.

In addition, there are farmers who use their aircraft to inspect fence lines, water levels and the health of their stock on large properties which would otherwise take hours to complete by car, motorbike or horse.

It's farmers on their own properties who prove to be at particular risk when flying low level.

Not because they aren't safe pilots. It's just that specific dangers exist when flying low to the ground and events on the ground can distract pilots from the core business of safely flying the aircraft. When inspecting fences for integrity, assessing water levels in dams or checking for distressed or sick animals, it is very easy for a pilot to miss something vital.

The issue has been of interest to Operations for some time because there has been an increased number of accidents (fatal and non-fatal) in the past two years which can be directly attributed to pilots flying low to the ground during times of increased workload with the associated potential for distraction.

Many of these pilots have not been appropriately trained for these operations. In such cases, the statistical likelihood of an accident increases enormously.

RA-Aus received advice of a low level accident recently which has reinforced the call for pilots to complete the appropriate training before taking on these tasks.

The pilot had been operating just above the 500ft AGL minimum and didn't believe a Low Level endorsement was required (it was). He was assessing water levels in the dams and troughs on his property. Towards the end of the flight, he realised he had missed one water trough and made the decision to turn back for another pass. According to the pilot, he was higher than 500ft AGL (although not significantly higher) and flying slowly. Midway through the turn the aircraft stalled. The pilot did not have sufficient height to recover and the aircraft hit the ground heavily, resulting in a bruised and rueful pilot and a badly damaged machine.

It was not a fatality, but it had the potential to be far more serious.

The pilot did not have a Low Level endorsement and reasoned that, by remaining just above 500ft AGL, he was operating safely. Obviously, the 500ft AGL limitation is intended to provide a safety margin if a flight does not go as planned, however recovery from an unusual attitude, or from a turn with crossed controls at low speed, actually requires specific training in order to be safely undertaken at these minimum heights.

The common Rumsfeld expression that pilots 'don't know what they don't know' is certainly true in the case of Low Level flying.

Operations strongly encourages all pilots who operate an aircraft on their own properties to undertake the appropriate training with an RA-Aus Senior Instructor as soon as possible.

Stock control

Another task often completed on a pilot's property, which also requires specialist training, is stock control. CASA provides comprehensive training and a detailed syllabus for pilots to achieve an Aerial Mustering endorsement in which an aircraft, gyroplane or helicopter is used to move stock around a property. Operations has researched this area and consulted with specialists in the industry, both within RA-Aus and outside, to create a proposal which will be considered at the RA-Aus Board meeting in October. The proposal is for a Stock Control Approval, which would be required in addition to a Low Level endorsement. A Stock Control Approval would be issued by one of only three or four Stock Control specialists.

It would permit the holder to use an RA-Aus aircraft to spot and identify stock for ground personnel to move. It is not intended to permit the use of the aircraft to move the stock, because this creates too high a level of risk in our category of aircraft. To remain valid, an approval would require regular revalidation with a Stock Control specialist.

Part of the proposal will be an amnesty for RA-Aus members already using their aircraft for stock control purposes, as long as they gain the necessary training in the next 12 months. It should be noted this will not permit the pilot to contract their services to others, because this is considered a commercial operation. A contractor requires a CASA approved Air Operator's Certificate (AOC) to contract for stock work for other people.

Over the years, Operations has received numerous anecdotal stories of pilots advertising that they are available for stock control mustering in RA-Aus aircraft. As outlined above, this type of operation in an RA-Aus aircraft for reward is not condoned or permitted. Operations requests anyone aware of operations of this type to contact us directly and make a confidential report. It's part of a positive safety culture within a mature organisation such as RA-Aus. Pilot communities should consider themselves responsible for reporting such behaviour.

The Ops team looks forward to discussing this further with CFIs at our inaugural National CFI Conference at Dubbo in November and we encourage members to provide feedback and input via email to opsadmin@raa.asn.au.

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The story of a vagabond

by John Dunbar

PIPER Vagabond 24-4634 started out life in South Africa, the property of Mr E.F Muller, a farmer at Kruisfontein in the Alexandria Cape Province. It lived a quiet life there until March 13, 1967.

That was the night a South African Airways Vickers Viscount named 'Rietbok' disappeared while on a scheduled flight from Port Elizabeth to Johannesburg. The ETA for the airliner at East London was just after 7pm, however the weather in the area was bad and the captain advised he might overfly if the conditions remained unfavourable. The last communication from the aircraft was when East London Control was advised the airliner was at 2,000ft with the coastline in sight. Then nothing. (The aircraft crashed into the sea and all 25 passengers and crew were killed).

Piper Vagabond ZS-BZK (as it was then registered) was one of the spotter planes out looking for survivors as soon as the weather cleared. But on its return home, the Vagabond was damaged badly on landing.

Mr Muller sold the damaged plane to an aircraft maintenance organisation in Orange Free State where repairs were made. Then my Australian friend, Murray Cohoe, found out about the aircraft and suggested he and I go to Bloemfontein by car from Johannesburg to inspect and buy it. The price was R1250, including an Airworthiness Certificate, which was a fair price in those days.

After much thought, I decided to buy the plane. The problem was I could not fly it myself without proper training. Brian Zeederberg, the best tail dragger ferry pilot around, agreed to fly down with me to help ferry it back.

The Vagabond has a 60 litre fuel tank mounted behind the firewall and under the dashboard. The engine uses


Railway lines were always good for navigation, as long as the line was going in the right direction

15 litres an hour at 2,000 rpm. The cruising speed at high elevation, between 5,000ft and 6,000ft, is 75mph but headwinds can reduce ground speed drastically.

Our calculations indicated we could get back to Grand Central airport, but with very little fuel left, so we planned to stop at another airfield en route. Luckily we did. On occasions the headwinds reduced our ground speed to as low as 45mph.

When we landed at the airfield to refuel, the pump attendant had some bad news for us. He was closed. His duty period was over and he was off home. Finding us fuel was no longer his problem.

We were not impressed and took off again in the belief we could make it to Grand Central after all. On arrival, there was no circuit traffic and we made a straight in approach. Old Pop, the air traffic controller, knew we didn't have a radio and would have alerted any traffic that we had the right of way.

On landing we discovered we had only 20 minutes of fuel left in the tank. It was a good lesson for me. Never assume anything and carry extra fuel to top up in the event fuel is not available en-route.

The Vagabond spent some time at Grand Central, but eventually Murray, who owned an Aeronca, suggested we look for somewhere else to keep our planes. At that time, there was no club at Krugersdorp and the local council was interested in developing the airfield, so had made hangar sites available.

We were there for some time but Murray later moved his Aeronca to the Johannesburg Light Plane Club at Baragwanath airfield. It was situated on the south western side of Johannesburg, very close to Soweto Native Town-



ship. I eventually moved the Vagabond there too, because it had a social side which Krugersdorp lacked.

Over the next few years I flew the Vagabond to many flying events in the Transvaal, Orange Free State, Natal and Swaziland. My wife, Do-reen, assisted with map reading and navigation.

Our longest trip was from Barragwanath to Margate in Natal, which took 6.10 hours (with many fuel stops). The return flight took 8.25 hours because of the climb from sea level to 6,000ft.

Railway lines were always good for navigation, as long as the line was going in the right direction. We often flew low past the railway stations to read the sign and confirm our position on the map. The 75mph cruising speed of the Vagabond gave the wind ample time to have an effect. I learned that all my flight planning had to include alternate landing places and carry an extra 20 litres of fuel in a drum behind the seat.

Murray had devised a way to transfer the fuel with a hand operated pump mounted between the seats just above the floor. But fuel behind the seat was not a safe idea and eventually I installed a wing tank, mounted at the root end of the left wing. Part of the pre-flight from then on was to ensure the fuel could flow down the gravity feed pipe into the main tank. It was necessary to pressurise the wing tank by physically blowing into the top air vent. A small electric fuel pump would have been a good idea, but that would have taken power from the radio battery which was pre-charged (the engine does not have a generator or alternator).

When radios became compulsory, I installed two batteries - one on standby with an interlinked changeover switch carried in an aluminium box in the baggage area with the box bolted to the floor. The systems all worked well if properly used. They removed the constant worry I'd had till then about running out of fuel.

Murray eventually went back to Australia. I helped him crate up the Aeronca and sent it to Perth.

It took several years before the Vagabond and I followed him. In 2002, I built a hangar at Brooklands Airfield outside York. I flew the Vagabond around York and Northam until 2008.

My flying days are now over and the Vagabond needs a new home. Somewhere it will be cherished and appreciated for what it is - a unique, collectable, historic little aeroplane, one of a very few in the world today.

If that's you, contact me at john.dunbar22@Bigpond.com.

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ALAs facts & fiction

by Steve Tizzard RA-Aus Senior Instructor

BILL Grieve's article titled 'Short Field Landings (*Sport Pilot* March 2014) prompted me to write this contribution. In Bill's article he mentions "his main strip is only six metres wide where it crosses a ditch" and he has "completed nearly 800 landings" on his strip.

In all probability Bill has self-incriminated himself by public comment on the width of his strip, which is way narrower than permitted – by about 40%. I hasten to add this dissertation is not about criticising Bill's article but for raising the safety of air navigation. In short, binging your pride and joy on an illegal strip may result in your insurers not wanting to know you and receiving an unwanted visit from CASA to discuss your aviation sins.

I wrote a similar article about five years ago, when RA-Aus accidents at illegal landing grounds accounted for about a quarter of all accidents in the year under review – I suspect little has changed.

Many members have said to me that because the Civil Aviation Advisory Publication 92 – 1 (1) is only advisory, we do not have to comply. To that I say 'think again' and the torturous route to formulating that comment is set out below.

A short history lesson will save many words.

From at least the late 1950s the Light Aircraft Handbook, and then the old Visual Flight Guide, allowed the Pilot-In-Command to deem a bit of ground (or water) to be an Authorised Landing Area if he or she was satisfied the said piece of dirt was in a suitable geographic location (i.e. not in controlled airspace, 10nm or more from an aerodrome with an instrument approach or not within 5nm of a licenced aerodrome). The physical characteristic had to meet or exceed certain specifications as did the specified surrounds. The surface had to be serviceable, the owner or occupier's consent had to be given and there needed to be a method of determining the wind velocity.

Sometime later, the lawyers at CASA (whatever then called) were unhappy with pilots being able to 'authorise' the said pieces of dirt. Accordingly, an Aircraft Landing Area was born. However, it was still abbreviated to ALA despite internal and external pressure not to use the same acronym for what were different things by genesis.

Enough information is subsequently provided to save you looking up the various pieces of CASA legislation.

The modern ALA is defined in GEN 2.2 (Abbreviations) of the AIP as "Aircraft Landing Area for the purpose of CAR 92(1) (d)". The latter reference states: "the place (not being a place referred to in paragraphs (a), (b) or (c)) is suitable for use as an aerodrome for the purposes of the landing and taking-off of aircraft; and, having regard to all circumstances of the proposed landing or take-off (including prevailing weather conditions, the

aircraft can land at, or take-off from, the place in safety."

Sadly, a pilot cannot say something like: 'My mate's strip is a bit tight, but it is perfectly safe for me to use it, so I have met all the CAR 92 thingies'.

RA-Aus pilots are not exempt from the above CAR, nor are they exempt from CAR 235A, which states in subregulation (1): "In order to ensure the safety of air navigation, CASA may issue instructions specifying the minimum runway width applicable to an aeroplane or type of aeroplane." Subregulation (3) goes on to say: "An instruction issued under subregulation (1) does not have effect in relation to a person until it has been: (a) served on the person; or (b) published in AIP."

The above instruction is, in fact, given in the AIP and I quote from ENR 1.1: "Aeroplanes with a maximum take-off weight not exceeding 2,000kg can be operated on runways as narrow as 10m provided there is no, or only light crosswind. Additional guidance material on minimum requirements for landing areas for aeroplane operations can be found in CAAP 92-1 (1)."

The above CAAP (Civil Aviation Advisory Publication) can be easily located on the CASA website under 'RULES & REGS' and click on CIVIL AVIATION ADVISORY PUBLICATIONS.

THE BOTTOM LINE

Our operations require at least a 10m wide runway with an additional 10m wide runway strip either side of the runway.

The preamble to the CAAP is particularly interesting and reads along the following line: 'experience has shown that, in most cases, application of these guidelines will enable a take-off and landing to be completed safely, provided that the pilot has sound piloting skills and displays sound Airmanship'. This raises the issue of why are so many RA-Aus qualified pilots involved in take-off and landing accidents?

Some claim, and I am sure you have also heard a similar argument, that the CAAP does not apply, because a 'suitable landing area' is contained in the definitions section of our three CAOs (95.10, 95.32 & 95.55) and is defined as: "an area in which an aeroplane, to which this Order applies, can be landed without endangering the safety, or damaging the property, of persons unconnected with the aeroplane." You find the expression is used in Section 7.1 (h) (i) of CAO 95.55 and compressing the data: 'an aeroplane must not be flown over a closely-settled area at a height from which it cannot glide clear of that area to a suitable landing area'.

Food for thought. 🍷

>> We need at least a 10m wide runway





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THE Bendigo Flying Club was founded in 1965 but it can trace its roots back almost to the start of the 1900s.

That's when the founder, Lieutenant W.H. (Harold) Treloar, proposed forming a new club at Myers Flat, eight miles from Bendigo. Bendigo had become very aviation conscious with the appearance of balloons and gliders over the city. Powered flight demonstrations had been given from as early as 1911.

The Myers Flat Aerodrome was opened with much fanfare. Thousands of people paid a shilling to watch a display of aerobatics by two air force officers. The Bendigo Aero Club, as it was then known, was the first club to have its own officially approved aerodrome.

The club conducted flying training in an ex-World War 1 De Havilland DH-6. A flying licence cost approximately £60. In 1929 Bendigo Airways Services was inaugurated to take paying passengers. There was also great excitement when Air Commodore Kingsford Smith visited Myers Flat aerodrome in February 1932.

Despite its early promise the Great Depression took its toll on the club and the Myers Flat aerodrome closed. Instead, the North Bendigo Aerodrome was developed using 'sustenance labour' financed by government support. In 1939 the North Bendigo aerodrome site was taken over by the Department of Defence where it built the Bendigo Ordnance Factory to help in the war effort.

In 1959 a site was cleared at Huntly and pilot training resumed using two Tiger Moths and later a Cessna 172. The ongoing dispute over Bendigo's aerodrome site was resolved when the present site on the edge of the Wellsford Forest in East Bendigo was selected, which meant the Huntly strip was closed.

The present club was reformed in 1965.

A proud history continues



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>> The aircraft is popular with the club's pilots



>> Pop in and chat to club members and instructors



The Mid-Murray Flying Club provided an instructor and a Victa Airtourer once a week. By 1969 the club had purchased and erected an army Nissan hut for a club room. With extensions built in all four directions, it still forms the core of the clubrooms today.

Later the club bought a Cherokee 140, followed by an Archer and, in 1984, an Archer 2.

The Bendigo Flying Club is now well established with a 175 strong membership of aviation enthusiasts enjoying a wide range of club activities and services.

THE CLUB TODAY

Bendigo's latest addition to its flying school fleet is a Bristell, purchased from Anderson Aviation.

The Bristell LSA is a low wing aircraft, powered by a Rotax 912ULS 100hp with a 120 litre fuel capacity.

The aircraft has already proven to be very popular with the club's pilots and many have completed the conversion to fly the plane. The aircraft is used for private hire and navigation training, with the long term aim being to extend this into ab-initio training as well.

The Bristell has already been on a journey to the Fleurieu Peninsula in South Australia. The pilot reported that it was a great plane to take on a trip because of its good cargo capacity and extra space in the wings.

Another group recently took the aircraft to Mildura and again there were some happy faces on the return.

The Bristell looks great among the club's other four aircraft, all of which are available at the club's pre-paid hire rates which saves money.

LOCATION LOCATION

The Bendigo Flying Club is situated in such a great location that no matter which way you want to head off in the morning, there are fabulous things to do and see within easy aircraft reach.

You can go from ocean views and opal mines and back in a day. There are plenty of local, large lakes to fly over, including Lake Epalock and Greens Lake. It's also just a short flight to Echuca from where you can follow the mighty Murray River in either direction and see some beautiful sights.

All the club aircraft are serviced regularly by local mechanic, Rod Shearer, just to the north east of the flying field.

The club operates seven days a week. It holds social events, prides itself in its family friendly atmosphere and is always open for anyone to pop in and have a chat to club members and instructors.

If you have ever been interested in flying, come to Bendigo, reach for the sky and learn to fly.

For more information, www.bendigoflyingclub.org.

ANTHONY GOBEL SCHOLARSHIP

THE Bendigo Flying Club has launched a scholarship to make it possible for young aviators to get a start on their careers.

The scholarship honours a former club president, whose life was cut short in 2005.

Anthony Gobel lived in Bendigo and worked in the family run business, Bendigo Aviation Services, as an instructor and charter pilot. Anthony was different from most young commercial pilots. He always placed the interests of his students, passengers and the Bendigo community before his own professional development.

Anthony Gobel was always happy, positive and the sort of person to inspire others to enjoy aviation to its fullest. It's those values the Bendigo Flying Club wants to see continue.

The Anthony Gobel Scholarship was set up in 2013 to assist young, enthusiastic people, with similar values to Anthony's, to make their dreams become reality.

The \$5,000 scholarship is sponsored by the Bendigo Bank.

The first selection process was conduct-

ed by Bendigo Club members, Will Quint, Tim Salkeld and Colin Hokin, with the shortlisted candidates interviewed by Steve Musgrove and Grant Welling.

There were six criteria - a flight test, a written exam, a test of technical knowledge, questions about their ambitions, their presentation and communication skills.

Lincoln Cottingham was the first recipient selected. Lincoln, who moved from Swan Hill to Bendigo, was a member of the Air Force Cadets in Swan Hill. He began with a Trial Introductory Flight and, since receiving the scholarship, has completed the first three hours of solo flying. He flies every Wednesday at the Bendigo Airport, weather permitting.

Lincoln is not sure yet which path he will follow, but he is grateful to the Bendigo Bank and the Bendigo Flying Club for helping him pursue his aviation career.

Any eligible people keen to start a flying career should consider applying for the next round of the Anthony Gobel Scholarship.

For more information, www.bendigoflying-club.org.



>> Anthony Gobel, and below, Lincoln Cottingham with BFC Flying Instructor Tim Salkeld. Picture: Peter Weaving



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Court upholds appeal

by Anthony J Cordato
Aviation Lawyer

LEARNING to fly is a supervised activity. An instructor owes a duty of care to the student to exercise reasonable care for the student's safety. A driving instructor owes the same duty of care to a learner driver.

But flying and driving diverge when it comes to equipment failure. If a car breaks down on the street, it can be inconvenient. An engine failure in flight can result in serious injury.

The legal question has arisen: Does the civil liability law negate the duty of care by excluding the trainee pilot's rights to claim compensation for injuries?

According to the NSW Court of Appeal in the decision of *Campbell v Hay*, a trainee pilot flies at their own risk.

The reason? There was no breach of the duty of care and 'learning to fly in a light plane is a dangerous recreational activity'.

CAMPBELL V HAY

The flying lessons were in a Jabiru. It was the student's third lesson. The aircraft took off from Katoomba and flew west over the Blue Mountains towards Oberon.

45 minutes into the flight, the instructor felt the engine vibrate. It was faint and the instructor felt it was due to carburettor icing at low RPM. This is not uncommon. The student was instructed to increase speed from 70kts to 100kts and the vibrations stopped after a few seconds.

Five minutes later, the aircraft was on the return leg towards Katoomba. The student was flying at 70kts when the vibrations returned. Again it started out faint, but then it got worse. The instructor took control. He applied full power, carburettor heat and switched on the fuel pump. Then the engine stopped.

The instructor set the aircraft up for best glide and started preparing for an outlanding. Close to the ground, he manoeuvred the aircraft around a tree and landed in a gully in a rough paddock near Hartley.

The student pilot was injured in the landing and claimed compensation from the instructor.

WAS THERE A BREACH OF THE DUTY OF CARE?

In the lower court last year, Judge Marks ruled the flying instructor had been negligent because

he had not acted immediately, after the second set of vibrations began, to fly the aircraft towards an appropriate landing strip.

But this year the Court of Appeal disagreed. It said the flying instructor was highly experienced and had exercised reasonable care and skill by waiting to see if the second set of vibrations corrected themselves, before taking control and looking for a landing strip when the vibrations started to worsen.

The Court of Appeal went further. It said that even if the aircraft had immediately diverted towards the closest landing strip and had reached it, there was no guarantee the instructor would have been able to land the aircraft safely without injury to the trainee pilot.

Therefore, even if there had been a breach of the duty of care, the requirement that the breach caused harm had not been established.

A DANGEROUS ACTIVITY?

Although the Court's decision that there was no breach of duty of care was enough to decide the case, it also looked at whether learning to fly was itself a dangerous recreational activity under civil liability law.

The civil liability law (section 5L Civil Liability Act 2002 (NSW)) provides:

A person ("the defendant") is not liable in negligence for harm suffered by another person ("the plaintiff") as a result of the materialisation of an obvious risk of a dangerous recreational activity engaged in by the plaintiff.

This exemption applies even if the person does not sign a liability waiver.

In Section 5K, a dangerous recreational activity is defined as:

"a recreational activity that involves a significant risk of physical harm."

The Court of Appeal reviewed statistical evidence on air accidents involving light aircraft and concluded the likelihood of engine failure was higher in sports and recreational aviation than in general aviation.

As a result, the Court concluded 'as a matter of common sense':

"If there is complete engine failure in a single-engine light aircraft, then there is a risk that a forced landing will result and a risk that such a

landing will result in serious injury or death. That risk exists whether or not the pilot is an experienced pilot, since it cannot be assumed that all engine failures can be resolved without forced landings in which there is a risk of serious injury or death."

The risk needs to be obvious to a reasonable person. Was it obvious to the student pilot?

The Court of Appeal decided it must have been obvious to the student pilot that, if the aircraft experienced engine problems, there was a risk the flying instructor might not be able to land the aircraft safely, no matter how experienced he might be.

The Court found the risk was likely to materialise even though it had a low probability of occurring (based on statistical evidence that 1 in 500 light aircraft flights in 2007 ended in a serious accident).

Therefore, the court found, in learning to fly a light aircraft, student pilots are engaged in a dangerous recreational activity and any physical harm they suffer is at their own risk.


CONCLUSION

The Court of Appeal upheld the decision of the lower court to deny compensation to the student pilot.

The decision of *Campbell v Hay* not only applies to training in a light aircraft. It has wider implications to other aerial activities such as gliding, hang gliding, paragliding and sky diving, all of which appear to be dangerous recreational activities.

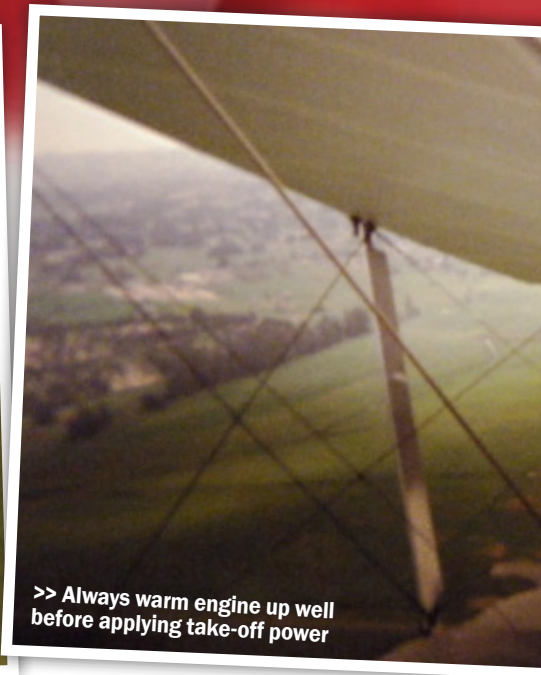
The logic of the decision might also extend to a passenger on a joy flight, but this would need to be tested in the courts - because joy flights may be regarded as non-dangerous recreational activities.

Also keep in mind the decision of *Campbell v Hay* also does not exclude liability if the pilot acts in a foolhardy or irrational way.

Note: Each state has equivalent legislation to the Civil Liability Act 2002 (NSW). 



>> Oil will have a white milky appearance if water seals are leaking



>> Always warm engine up well before applying take-off power

Caring for your 2-stroke

A second excerpt from a forum presented by North Qld board member and L2, Ross Millard, at NATFLY 2014

History

WE all grew up with 2-strokes. Lawn-mowers, hedge-trimmers, chainsaws. They were smoke-belching, noisy, oily and impossible at times to start. The only good thing was they weren't bad on fuel. You could mow an average size yard on a tank and a half of fuel. You might be happy to hear this is not generally where our Rotax or other aviation 2-stroke engines came from (with some exceptions).

In the late 70s a company called Kodiak Research in Canada looked at the two stroke engines used in snowmobiles. These engines were used for transport and survival, often in sub-zero temperatures and in harsh working conditions. So they had to be reliable. Kodiak realised these hard working engines would be well suited for powering the multitude of ultralight recreation aircraft then appearing throughout the world.

Before these engines became available, many of the earlier 95.10 type aircraft used whatever the pilots could adapt. Some of the early Wheeler Scouts used converted Victa motor-mower engines, while others sported single cylinder Yamaha bike engines or ex-chainsaw engines, often with rudimentary chain or belt reduction-drives, or with the prop mounted directly onto the crankshaft (direct drive).

The Weedhopper, which was one of the first, had an engine sandcasted and assembled by the designer, John Chotia. It was a rudimentary single cylinder engine and you could always hear Weedhoppers coming for miles - a good one would actually run for an hour before it required



>> Don't run out of fuel 3/4 the way through the run in

major work.

Rotax, with the assistance of Kodiak Research, produced the 277, 377 and 447 engines specifically for aviation use, featuring integral reduction gearboxes to reduce propeller speeds to usable limits, generally well below 3,000rpm. The 503, with an exciting 50hp (DC), quickly followed and rapidly became one of the classics for reliability, as they still are today.

Together with other types, such as the Kawasaki 440/550, Cayuna 430 and Fuji Robins, they were perfectly suited and widely used to power ultralights in the 1980s into the 1990s

and beyond.

The early engines were mostly air or forced-air (fan)-cooled, single or dual carburetor. They used a single-point ignition system, with a single plug per cylinder. Their reliability could be a problem, especially if operating temperatures weren't respected or monitored, or if the ignition points weren't regularly checked and adjusted (usually every 100 hours or less). If the points weren't kept adjusted, the timing would advance, effectively leaning the engine. Piston galling, with resulting seizures, would occur because of insufficient cooling and heat build-up, especially as



>> Don't fiddle with Rotax engines. Fly them instead



ultralights became heavier in the late 1980s and 1990s.

These earlier engines usually also featured the character-building rope pull-starter, in lieu of the starter-motor equipped turn-key engines we are familiar with today.

Then came the water cooled 532, which had a water-cooled head and new CDI ignition. The 532 still only had a single plug per cylinder but, with no ignition points, but it was a more reliable proposition for light aviation. These engines also introduced the rotary valve with integral water pump, which gave better fuel distribution and more reliable horse-power (due to an ingenious auto electronic timing advance at around 4,000rpm, which electronically advanced the timing 22 degrees).

More improved and stronger gear-boxes also came along about this time, allowing the use of a wider range of propellers.

The 532 was improved upon and followed by the more powerful 582 (grey top). This classic of our sport produced 65hp, had an improved ignition CDI system with two plugs per cylinder and offered full redundancy with two separate ignition systems.

It also featured a new gearbox with a vibration-dampening rubber donut. This helped solve the broken crankshaft problems of the early 532/582s. An improved water pump impeller was also introduced. The water cooling allowed consistent operating temperatures in all conditions, especially with the addition of a thermostat. Plus, a third coolant radiator could be plumbed in for operations in very hot Australian conditions if needed. The rotary valves in these engines have proven to be long-lasting and fuel burn is also consistent. The 582 was the perfect engine at the time and still powers many aircraft in our fleet.

The 582 was further improved upon with the type 99 (1999-blue top) with further subtle refinements, plus some improvements on the coolant system.

The last Rotax 2-stroke model produced was

the 618. This produced even more horsepower (75) and featured a Rotax Adjustable Variable Exhaust system with a reed valve set up to vary exhaust back pressure and fuel burn. Those who used them fell in love with the additional power, but reliability problems with the RAVE system forced Rotax to stop selling them.

The always loved and reliable 503 has since been upgraded with the same dual redundant ignition system as the larger 582 and, with two plugs per cylinder, now runs smoother than they ever did. They remain one of the most popular engines of the class.

Proper care

INITIAL FACTORY RUN-IN

This is probably the most important thing you can do to guarantee the longevity of your 2-stroke.

- ✓ Do it exactly as outlined in the Rotax manual.
- ✓ Don't run out of fuel ¾ the way through it.
- ✓ You must have an accurate indication of engine temperature.
- ✓ You must have a good watch or stopwatch.
- ✓ Observe the maximum temp limits.
- ✓ Correct fluids.
- ✓ Use the recommended oil and coolant as per Rotax Service Bulletins.
- ✓ You do not need full synthetic oil. It is hydroscopic (extra cost, added internal rust, decock problems).
- ✓ Mix oil accurately - 20ml per litre / 400ml per 20 litres - no more or less.
- ✓ Read and heed Rotax Service Bulletins (SBs)

outlining recommended lubricants.

- ✓ Mix coolant 50/50 with demineralised water as recommended.
- ✓ Never use bore water in coolant systems.
- ✓ Use correct grade of lubricating oil, in both engine and gearbox.
- ✓ Do not overfill gearbox (approx. 100ml only).
- ✓ Always use correct recommended fuel grade. I recommend and use Castrol 2TT oil (red) and Castrol Anti-freeze / Anti-boil coolant mixed 50/50 with demineralised water or equivalent. Castrol 2TT is also used in drive-cog reservoir of the 532/582 engines.
- ✓ Don't fiddle with Rotax engines. Fly them instead.
- ✓ Set the carburetors up only as recommended by the manufacturer.
- ✓ Line up slides periodically, they will change due to throttle cable stretch.
- ✓ Keep air filters clean and oiled.
- ✓ Check settings at regular services.
- ✓ Keep a close eye on carby mount rubbers.
- ✓ Float level is set - do not adjust.
- ✓ Keep equalisation tubes clear and properly routed.
- ✓ Always warm engine up well before applying take-off power.
- ✓ Regularly check the water pump seals.
- ✓ During pre-flight check drive-cog lubricating oil reservoir for water contamination.
- ✓ Oil will have a white milky appearance if water seals are leaking. Renew seals.
- ✓ Seals can need renewal around 200-250 hours.

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Remember to share your information and problems with RA-Aus Tech Department.



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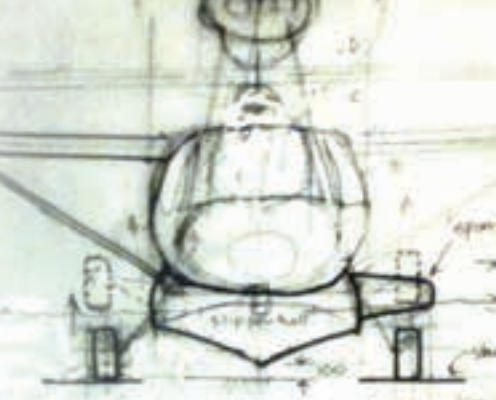
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PILOT NOTES

For a listing of all 2014 accident and incident summaries see www.raa.asn/safety/accident-incident-summaries-2014




It veered off the runway at low level and the pilot was unable to prevent it striking a small tree

Jabiru J170

Pilot experience: 140hrs on type

The pilot was attempting a short field landing and had the aircraft trimmed on approach with full flap deployed. The aircraft was flared high during the landing and quickly lost airspeed before descending rapidly and landing heavily. The pilot was not injured but the aircraft sustained major airframe damage.

Airborne Edge X Classic

Engine: Rotax 582, 116hrs ttis

Following a normal take off, the pilot was about to turn crosswind when the engine failed. An uneventful forced landing was carried out in a paddock and the engine was later removed and rebuilt. No information was given as to the cause of the failure.

Jabiru J160C

Conditions: Strong wind, moderate turbulence

Pilot experience: 45hrs on type

While landing into a strong head wind, the aircraft bounced several times and the propeller struck the ground. The pilot conducted a go around and landed the aircraft without further incident. Damage was confined to the propeller.

Rans S6 S

Engine: Jabiru 2200A, 294hrs ttis

The aircraft was climbing out on a test flight after a 100 hour service. The engine began to miss at full throttle, so the pilot returned to the airfield at a reduced power setting. Investigation revealed the distributor rotors were loose and had caused damage to the contacts in the distributor caps.

Foxbat A22 LS

Conditions: Moderate wind and turbulence

Pilot experience: 50hrs on type

The aircraft had lifted off the runway but failed to gain speed and height. It veered off the runway at low level and the pilot was unable to prevent it striking a small tree. It came to rest with major damage to the wings, empennage and propeller and was assessed as unrepairable. Both pilot and passenger suffered minor lacerations to their hands, not requiring medical attention.

Seamax M22

Airframe: 63hrs ttis

As the pilot prepared to land, he found the undercarriage would not come down. It was recycled several times without success so a wheels up landing was carried out on the grass runway. The aircraft sustained slight damage to a wing skin and the left hand float was torn off. The problem proved to be a faulty micro switch.

DEFECTS

Skyfox Gazelle

Engine: Rotax 912A, ttis unknown. 50hrs since major overhaul

The engine experienced a major loss of power while a ground run was being carried out. An inspection revealed the circlip securing the metering needle in the left hand carburettor had failed, allowing the needle to fall down and block the main jet. The right hand carburettor had experienced the same fault 30 hours previously.

Sonerai 2 LS

Airframe: 559hrs ttis

The left side brake caliper halves separated and one side fell from the aircraft while it was in motion on the ground. The two bolts securing the caliper had come undone. There was no safety wiring or thread locking compound found on either bolt.

Tecnam P92 Echo

Airframe: 3,237hrs ttis

On a pre-flight inspection the park brake actuator failed to provide sufficient braking force. Further inspection showed there was sufficient fluid in the reservoir and the pads were serviceable, but a weld on the actuator rod had cracked, allowing excess play and preventing the rod from actuating the brake cylinder.

Tecnam P92 RG2000

Airframe: 1,000hrs ttis


Shortly after touchdown, the right hand main gear scissor link failed, resulting in damage to both right and left hand linkages as well as the tailplane attachment. The component was replaced with a new unit constructed from chrome moly steel rather than aluminium alloy.

LightWing GR 912

As the aircraft began its descent at the end of a long cross country flight, the pilot noticed a sudden vibration from the engine. He carried out emergency checks and reduced power which lessened the vibration. A precautionary landing was carried out. It was found the leading edge protection strip on one propeller blade was missing. The other strips were removed and the vibration ceased.

AAK Hornet

Engine: Rotax 914, 61hrs ttis

While on a local flight, the pilot heard a sound he described as "like a rivet popping or a bolt snapping". He reduced power and carried out emergency checks, finding everything was as it should be. After landing, it was discovered a nut was missing from one of the cylinder head studs. It is assumed the popping sound was the nut bouncing off part of the airframe. 

DESIGNNOT

DAVE DANIEL

It's a material world

LETS take a break from the invisible mysteries of aerodynamics and concentrate instead on the more reassuringly solid subject of materials. Much has been written about aircraft materials, but most discussions I have seen place an emphasis on construction rather than design, so let's take another look at materials, this time from a designer's viewpoint.

In terms of structure, small fixed-wing aircraft can be broadly grouped into four categories:

RAG AND TUBE A tubular metal frame with welded or bolted joints carries the structural loads with a fabric covering on aerodynamic surfaces and to provide streamlining if desired;

METAL SEMI-MONOCOQUE An aluminium alloy stressed skin both carries the structural loads and provides an aerodynamic shape. Internal frameworks of ribs, spars, frames, stringers and longerons support the skin and provide additional loadbearing structure;

WOOD Often structurally similar to rag and tube but with a glued wooden frame. When higher speeds or greater loadbearing are required, a thin plywood skin may be used in lieu of the fabric covering giving a semi-monocoque structure;

COMPOSITE Mostly Glass Reinforced Plastic (GRP) but with increasing amounts of carbon fibre at the premium end of the market. The ideal composite structure would be fully monocoque, with all loads carried by the skin, but in reality most composite aircraft mirror conventional metal design practices with underlying frames, ribs and spars bearing a significant portion of the load.

Of course many aircraft don't fit cleanly into one of the above categories and it's not uncommon to see designers opting for hybrid construction. For your average amateur kit builder, though, mastering one construction technique is usually enough.

FIRST THERE WAS WOOD

From the dawn of heavier-than-air flight until into the 1930's wood was the structural material of choice for most aircraft. To the designer, wood offers a wide range of mechanical properties, from Sitka spruce with its high

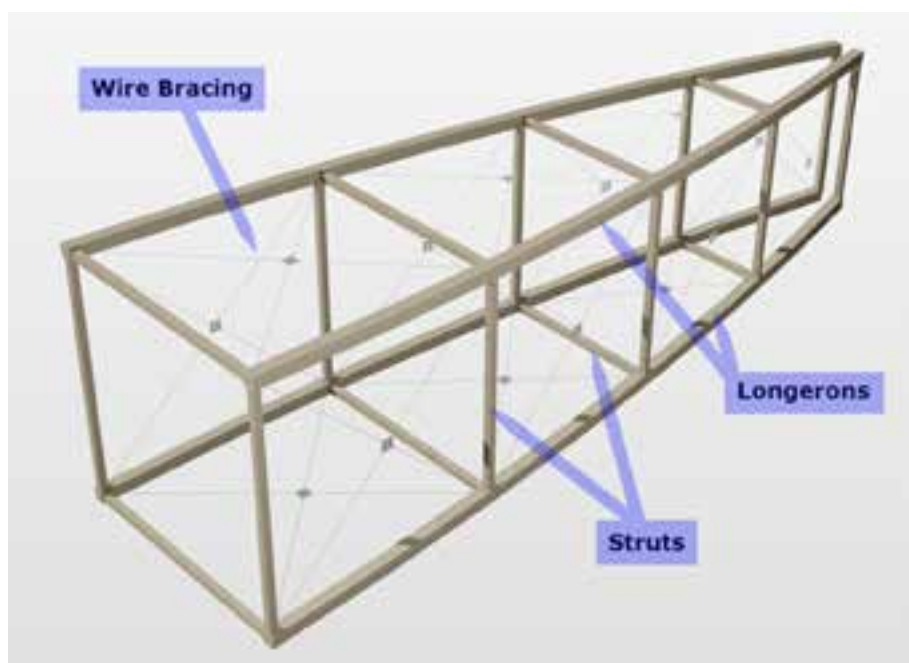
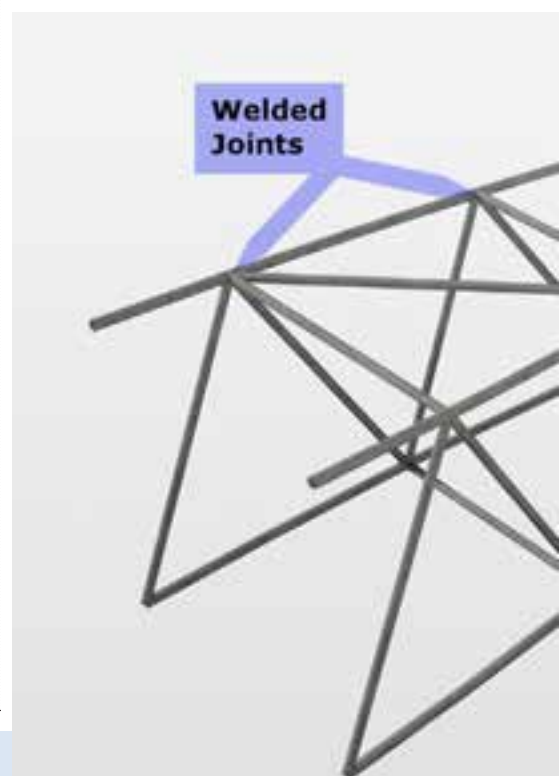


FIGURE 1 A section of a typical wooden fuselage structure

strength-to-weight ratio - ideal for spars, struts and the like - to birch and mahogany for plywood skins and propellers. Even lightweight balsa, not renowned for its mechanical properties, has been used for plywood cores and is surprisingly effective as a firewall material. Unfortunately, after more than a century of intense commercial logging the days of cheap, plentiful, high quality timber are long gone. Nonetheless, wood still has a loyal following among homebuilders, at least partly due to a familiarity with the material and the minimal requirements for specialised tools. Don't be fooled into thinking wood is only for fragile, nostalgia-soaked biplane replicas though. The Sequoia Falco, for example, is fully aerobatic and has a VNE upwards of 200kts.

From a design standpoint wood does have some limitations. Nature takes a Darwinian natural selection approach to quality control - which is fine across whole species, but sadly doesn't do much to assure the quality of individual trees. This inevitably leads to a need for increased safety factors to allow for the variability of the material. Wood, as a combination of cellulose fibres embedded in a lignin matrix, is nature's ready-made composite material, which unsurprisingly leads to wood having





Metals have excellent strength to weight ratios, but they are also dense

several characteristics in common with man-made composites. Firstly, it has markedly directional mechanical and strength properties - it is 'anisotropic' in engineering jargon, having far greater strength and stiffness when loaded along the grain. This property must be accounted for in design and makes grain alignment one of the critical considerations when grading aircraft timber. Of course for some components loading in multiple directions is unavoidable, but here plywood comes to the rescue. With differing grain orientations from layer to layer, plywood sheets are able to deliver far more uniform and consistent properties, making them ideal for items with diverse loading such as ribs and skins.

One other feature wood has in common with most composites is poor bearing strength, the low density of the material means fibres tend to crush under concentrated loads. This creates a need to distribute point-loads over a wider area, a feat often achieved with metal fittings; which leads us nicely to our next material.

THEN METAL WAS KING

Given the now commonplace nature of metal aeroplanes you could be forgiven for thinking that metal is the obvious choice for aeroplane construction. Certainly the availability of modern aluminium and steel alloys, with their high strength to weight ratios and reasonable cost, makes metal an attractive material choice. The closely controlled production processes

result in a material with uniform and consistent properties, allowing designers to save weight through reduced factors of safety. In addition metals can be machined to high tolerances and are excellent at carrying concentrated loads. So why aren't we all flying metal aeroplanes?

Somewhat counterintuitively the biggest problem with using metal for light aircraft is that you need so little of it to meet strength requirements. Metals have excellent strength to weight ratios, but they are also dense, so only thin sheet material is required to carry significant tensile loads. Unfortunately compressive loads have to be carried too, and compressive strength is far less dependent on material properties and much more dependent on cross sectional shape, so a flat sheet of metal has good tensile strength but crumples easily when placed in compression. Roll it into a tube however and things improve considerably.

Of course tubular steel construction is not new, Fokker pioneered its use even before the outbreak of WW1. By the end of that war welded steel-truss fuselages rapidly replaced wood in new designs. Truss fuselage structures benefit from being simple to design and, even without the benefit of modern computers, analysis is straightforward; unfortunately the same cannot be said for stressed skins. Despite first appearing in 1916, stressed skin aircraft took more than 15 years of concerted effort to become viable, with early attempts consistently coming in both understrength and overweight when compared to contemporary wooden aircraft. This is not altogether surprising. Load distribution in stressed skins is hard to calculate. Multitudes of complex failure modes have to be investigated, along with large numbers of bolted or riveted joints - all required because heat treated aluminium cannot be welded without losing a significant amount of its strength. And to top it all, there is metal fatigue.

Metal fatigue results from repeated cyclic loading at levels below the usual failure stress, causing progressive damage at a microscopic level and finally resulting in failure well below the material's predicted strength. Steels have an 'endurance limit' - a loading level below which fatigue failure can be relied on not to occur - aluminium does not; so with every engine vibration and turbulent gust an aluminium airframe deteriorates slightly. The usual ways designers treat this problem are to either avoid it

by ensuring a component's design life is substantially longer than the expected life of the aeroplane, or simply accept that the part in question will require scheduled replacement to remain airworthy.

Clearly metal is a less-than-perfect perfect solution, especially for aircraft at the lighter end of the spectrum. But fortunately a curious combination of plastic and glass has come to the rescue.

COMPOSITES RULE

In an aviation context 'composite' typically refers to plies of strong, stiff woven fibre reinforcement (usually glass, Kevlar or carbon) bound together in an epoxy or vinylester resin matrix. The resulting hybrid material displays properties which fall somewhere between those of its constituent parts, but with the added benefit that tailoring the alignment of the fibre reinforcement results in a material with highly directional properties.

This customisable nature makes composite design a unique process, allowing the material properties to be designed at the same time as the component. This is a mixed blessing because it creates an opportunity to save weight by providing strength only in the direction it is needed, but also exposes the structure to an increased risk of failure if exposed to an unforeseen load aligned with the weaker axis of the part. Even a load considerably less than the primary load for which the part was designed can potentially cause a failure. Of course composites can be designed which are 'pseudo-isotropic' - displaying similar strength and stiffness in multiple directions - but this 'black aluminium' approach gives away much of what composites have to offer, simply providing an expensive substitute for metal with minimal weight benefit.

Glass Reinforced Plastics (GRP) possess good strength properties but have relatively poor stiffness when compared to aluminium or steel. Carbon Reinforced Plastics (CRP), on the other hand, are much stiffer and stronger, but just like sheet metal thin laminates do not resist compressive buckling well due to poor bending resistance. Fortunately, however, a solution does exist because composites lend themselves to sandwich construction. By placing the load bearing composite plies on either side of a lightweight foam or honeycomb core, a sandwich is created which acts much like the familiar steel 'I' beam. This massively increases the bending stiffness by placing the load-bearing material away from the mid-plane of the sheet. Remarkably a foam core only 5mm thick can produce a thousandfold

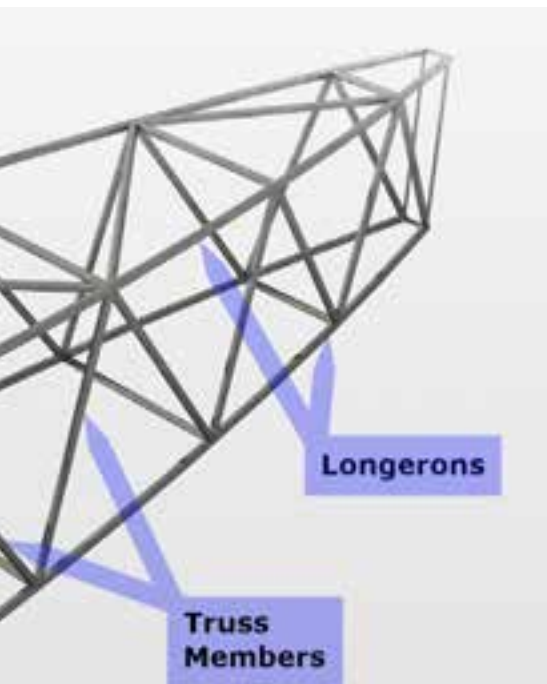


FIGURE 2 A welded tubular 'Warren Truss' fuselage

DESIGN NOTES

There's no 'best' material for constructing aeroplanes

CONTINUED

increase in bending stiffness with only a tiny increase in weight.

Composite design is not without its problems. Analysis of composite structures is complex and determining appropriate factors of safety for composite design can present real difficulties. Composite properties are affected by temperature, moisture absorption and ageing from exposure to UV light. This is in addition to all the variables stemming from the base materials and manufacturing. Impact damage, which is all but invisible on the surface, can cause a delamination which drastically reduces the strength of a part. Designers must take all of these things into account, which often results in a composite aircraft weighing slightly more than its metal equivalent, purely due to much larger safety factors.

So it can be seen there is really no 'best' material for constructing aeroplanes - a fact borne out by the sheer variety of aeroplanes in our skies. You just need to select an appropriate material for the task at hand. Who fancies an all carbon-fibre Drifter?

NEXT MONTH Flaps

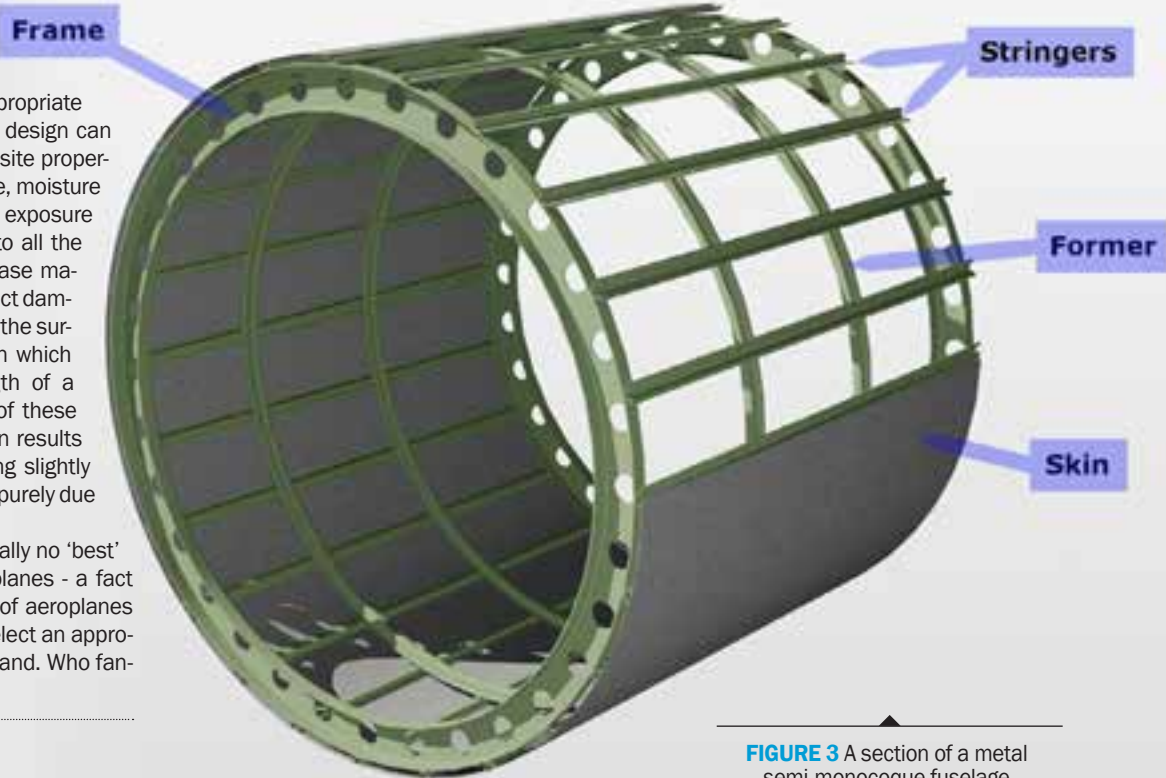


FIGURE 3 A section of a metal semi-monocoque fuselage

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Density Altitude

THIS month's discussion continues on from the one on Pressure Altitude last edition.

Its important students know about Density Altitude when they start their navigation endorsement.

They'll need it when considering aircraft take-off and landing charts. Density Altitude has an impact on aircraft performance, especially in hot, humid conditions on airstrips at higher altitudes. This is of particular relevance if the airstrip is an ALA or on an aircraft owner's own property, where short runways and obstacles can pose additional hazards which require greater consideration.

The density of the air is perhaps the single most important factor affecting an aircraft's performance.

Air Density is Pressure Altitude corrected for temperature. It is the altitude at which the aircraft believes it is - based on the thickness or thinness of the surrounding air mass.



>> Warm air is less dense than cold

SOME FACTS

- Air Density decreases as altitude increases.
- Air Density decreases as temperature increases.
- Warm air is less dense than cold air because there are fewer air molecules in a given volume of warm air.
- When humidity is high, water vapour replaces air molecules, making it less dense.
- The Density Altitude of a particular location may be significantly higher than it's true altitude, due to increased temperature and humidity combining to make the air less dense. The effect of increased Density Altitude on an aircraft include:
 - The aircraft will accelerate more slowly at take-off - requiring a longer runway;
 - The lift generated by the wings is decreased. The aircraft will need to go faster to generate the same amount of lift;
 - The propeller will develop less thrust (being



an aerofoil - reason is same as above);

- Power delivered by the engine is affected, resulting in the aircraft climbing out more slowly. This occurs because the fuel-air mixture is reduced.

FORMULA FOR DETERMINING DENSITY ALTITUDE

$DA = PA + 120 \times (OAT - ISA \text{ temperature})$

RECAPPING FROM LAST MONTH

- Pressure Altitude (PA) adjusts the pressure difference between the actual pressure of the air compared with the International Standard Atmosphere (ISA);
- ISA - Pressure at Sea Level is 1013 Hectapascals (Hpa) and 15°C;
- ISA temperature - temperature decreases at a rate of 2°C every 1,000ft/compared with actual temperature;
- Pressure decreases at a rate of 1 Hpa every 30ft.

A possible, but extreme example:

Airport elevation (E) is 2,600ft, QNH is 998hp and temperature is 35°C.

➤ To find PA = $E + (1013 - QNH) \times 30ft = 2,600ft + (1013 - 998) \times 30ft = 2,600 + 450ft = 3,050ft$.

➤ To find DA = $PA + 120 \times (OAT - ISA \text{ temp}) = 3,050ft + 120 \times (35°C - 11°C) = 3,050ft + 120 \times 24 = 3,050ft + 2,880ft = 5,930ft$.

(ISA temp at sea level temperature = 15°C.

Subtract 2°C for every 1,000ft - in our case 3,000ft → $2 \times 3 = 6°C$ → ISA temp = 15°C - 6°C = 11°C

So on this, probably hot, maybe humid day, with perhaps thunderstorms brewing, our airfield with an elevation of 2,600ft will equate to

>> Density Altitude has an impact on aircraft performance

the performance of an airfield of 5,930ft.

Add to the mix full fuel / MTOW, an obstacle or two (crane/trees) or a short runway and a wise, knowledgeable pilot would give serious thoughts to the decreased performance of his/her aircraft.

TIPS FOR FLYING AT HIGH DENSITY ALTITUDE AIRSTRIPS

- ✓ Fly in the evening or morning when the temperature is cooler;
- ✓ Carry less fuel / make each leg shorter (less baggage/one less passenger);
- ✓ Make a conscious decision - If I have not reached 80% of Take Off Safety Speed (TOSS) by half way along the runway I will abort the take-off.

CONCLUSION

Density Altitude is used to assess an aircraft's aerodynamic performance under certain weather conditions.

Lift, Thrust, the relationship between Indicated and True Airspeed and power delivered by the engine can all be negatively affected by Density Altitude.

If a pilot is not aware of the effect Density Altitude on the performance of an aircraft it could lead to serious consequences.

References: www.AOPA.org/Pilotresources/Safety&Training - Article: Alton Marsh July 1, 2007 'It isn't just for mountain flying'; www.mzero.a.com; www.pilotfriend.com/flighttraining; www.wikipedia-DensityAltitude



Viva Scout

The original Mark I Scout was a two axis (pitch and yaw) aircraft powered by a Pixie Major engine, driving a wooden propeller through a single chain.

Further developments led to a three axis (pitch, yaw and roll) machine with the choice of either a Fuji Robin 244cc single cylinder or Rotax 377, known as the Mk 3-RN and Mk 3-RX respectively. Instead of a chain, the Mk 3 had a multiple (three) Vee belt drive to the prop.

The Viva Scout followed the Mk 3 versions. It had the same control and engine features. Control in the lateral axis was through wing warping (note the control rods on the wing where the red and white Dacron

pieces meet).

The main distinguishing feature of the aircraft was its semi-enclosed cockpit and fuselage. The number of Viva Scouts built and sold is not documented. The aircraft was available as a ready-to-fly machine. The specifications of the Viva Scout are as follows:

The Viva was powered by a Fuji Robin 244cc engine driving a 48 inch laminated wooden propeller.

It had an empty weight of 71.5kgs and a useful load of 83.7kgs. The wingspan was 28ft 6ins (8.835m) and its length was 16ft 2ins (5.01m). The stall speed was noted as

22mph (19.1kts) and the cruise speed as 48mph (42kts).

The example held in the Australian Ultralight Aircraft Museum collection is currently being restored to airworthy status by Museum enthusiast, Neville White. Neville has recently restored a Mark I Scout to a point where it has been taxied under its own power.

Photo: John Harley

Sources: Berger-Burr's 'Ultralight and Microlight Aircraft of the World Vol. 2'; 'Fun Flying! A Total Guide to Ultralights' by Gareth J. Kimberly.

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L EARNING TO FLY

SHANNON LEGUISE

Ancillary controls

I MANAGED to turn up earlier to Jaspers Brush this week for my second lesson, having learned from my first not to be late. I was reintroduced to my instructor, Liz Fox, and was ready and raring to learn more about what makes an aeroplane fly.

Into the briefing room we went, where I was told we would first finish off last week's lesson on the effect of the controls. This week I was going to learn about the ancillary controls.

After a quick refresher, I demonstrated I understood the three axis and how the plane moved around those axis. Then we moved on to ancillary controls.

First off, Liz instructed me on the effects of the throttle and how it had an effect on the pitch of the plane. If the RPM was increased, the nose of the plane would rise slightly. And when the RPM was decreased, there was a slight lowering of the nose. To further advance on this point she explained how when the pitch was increased, the RPM would decrease and airspeed would also decrease. Likewise when the pitch was decreased the RPM would increase and so would the airspeed.

To help me understand this Liz likened it to a car. When it goes up a hill, a car will slow down. More accelerator is needed. When going downhill, the car, the RPM and the speed will increase as gravity takes hold.

Liz explained to me how the throttle mechanism worked, so I could understand the function of the carburettor. Turns out the carburettor is a venturi. Inside, the air mixes with the fuel and then speeds up as it moves through venturi. Inside, a throttle butterfly controls how much of the fuel and air mixture passes through to reach the engine.

This discussion led to one about another ancillary control, carby heat. As the air and fuel mixture moves faster, it reduces in pressure, which also causes a reduction in temperature. If the outside air holds any moisture, it can freeze and form ice inside the carburettor. If the throttle butterfly is closed and ice forms around it, the engine can be starved of fuel. To compensate for this, the carby heat lever must be applied. The lever diverts hot air passing the engine to the carburettor, which melts the ice (or stops it forming in the first place) and allows the correct amount of the fuel/air mixture to enter the engine.

This is all well and good, but I learned that hot air is less dense than cold air, which reduces the power output of the engine - up to 15%. Therefore if I needed to apply full power for any reason, I must first turn the carby heat off.

After making sure I understood everything about carby heat, Liz moved on to explain to me about the flaps. I had a vague understanding that flaps were like air brakes. I wasn't completely wrong, but I wasn't completely right either.

Liz explained that flaps worked to increase the lift produced by the wing, but they also increased drag. When extended, the flaps allowed a lower nose attitude at low speeds. While flying straight and level, the drag countered the increase in airspeed as the pitch was reduced, allowing the plane to fly slower. When the flaps were retracted, the extra lift and drag were removed. As the flaps were raised, the pilot needed

to raise the nose to compensate for the loss of lift. As the drag was reduced, the plane must also adopt a higher nose attitude to maintain the same airspeed.

I was then given a briefing about the trim and slipstream effect. The trim works to reduce the force needed on the control column. This allows the pilot to fly the plane more smoothly and more comfortably. However, I was told, the trim was not to be used to set the attitude of the plane.

The slipstream effect is all about how the air from the propeller moves around the airframe. As the propeller spins clockwise (as seen from the cockpit), the air being pushed from the propeller moves clockwise around the fuselage. As it spins around the fuselage, it ends up hitting the left side of the tail, pushing it to the right. To compensate for this yaw effect the pilot must use right rudder. It all made sense.

It was now time for my favourite part of every lesson, the practical. After the pre-flight and paper work were completed, Liz let me follow her on the controls while we taxied. As we moved towards the runway, she demonstrated the slipstream effect. And just as she explained it, the plane performed it.

As we lined up in the runway, Liz explained why we were to use one stage of flap on take-off. Flaps down meant a lower nose attitude but increased lift. Taking off with flaps up meant a higher nose attitude to maintain airspeed. The aircraft did exactly as she had explained as we took off.

Flying around the Worrigeer training area, I got to play with the other ancillary controls, as

well as the primary controls, to put what I had learned to the test. As I was trying to recall what I had been taught, Liz was demonstrating it. And amazingly the aircraft did exactly what I had been told it would do.

When the throttle was reduced so did the RPM and the nose lowered. When the throttle was increased, so did the RPM and the nose raised. I also had a go at playing with the trim lever. And last but not least, Liz pulled the power to idle and we glided around for a while. She showed me the carby heat, which, as advertised, did exactly what I was told it was going to do.

Heading back to the airfield, Liz joined the circuit, demonstrating how all the controls were used to land the plane. I was on the controls the whole time, trying to watch carefully what was done to get us safely on the ground. After a magnificent landing, we taxied back and jumped out.

We then had another briefing about what I had seen happening in the air. It was a bit of a blur. As I had been the previous week, I was dumbfounded after the flight. How awesome were these machines? Without hesitation I booked in for my next lesson the following week. When I got home, I walked in the front door with the biggest grin on my face. Mum and dad, sitting in the lounge room, simultaneously looked at me. Mum asked "I guess your second lesson went well?" to which I excitedly explained that words couldn't describe the awesome experience of being able to fly an aeroplane and have some knowledge of how they work.

Hours: 2.0 and it just keeps getting better! 🍷

❗ If the throttle butterfly is closed and ice forms around it, the engine can be starved of fuel



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**Notice of Annual General Meeting
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AGENDA

1. Opening of the meeting
2. Receipt of apologies and proxies
3. Confirmation of quorum
4. Declaration of the result of the elections
5. Minutes of last Annual General Meeting
6. Business arising out of the minutes of the last Annual General Meeting
7. Presentation of Annual Reports
 - President
 - Secretary
 - Treasurer
 - CEO
8. Business arising from Annual Reports
9. Special resolutions:
 - [Include resolutions received]
10. Close of Annual General Meeting

Members are invited to attend a BBQ lunch from 12.30 at Lethbridge airfield.
Members are also invited to stay on for a member's forum from 3.00pm until 5.00pm. The board and CEO of RA-Aus will be on hand to answer questions and provide further details about the future of RA-Aus and plans for the coming year.

For proxy forms <https://www.raa.asn.au/about/constitution/>



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2014 ANNUAL GENERAL MEETING MOTION FOR A SPECIAL RESOLUTION

Currently, Rule 23(iv) requires the Board to “. . . convene a General Meeting each year in conjunction with the annual National Fly-in, “NATFLY”. The NATFLY General Meeting is to be held on the Saturday of NATFLY commencing at 11 a.m. Local time.”

When Rule 23(iv) was originally proposed it was thought necessary to allow the Board no discretion in the matter. However, it became apparent last year that this very restrictive requirement could cause problems. For example, what if Natfly were not held at all one year or it was decided to merge the RA-Aus National Fly-in with those of other Aviation bodies or we had a very special guest presenter at Natfly who could only be there for 11 am on the Saturday of Natfly?

Consequently, at the 2013 AGM, a Special Resolution (SR11) was moved that would have given the Board discretion as to when and where the General Meeting could be scheduled. SR11 was a large and complex amendment covering three RA-Aus Rules and did not receive the 75% majority vote required for it to pass.

What is now proposed is a very simple amendment to Rule 23(iv) to allow the Board latitude as to where and when the General Meeting is held.

SPECIAL RESOLUTION 1

That the words of Rule 23(iv) be deleted and replaced with the following words:

“Approximately six months after the Annual General Meeting, the Board shall convene a General Meeting to be held at a location determined by the Board.”

Proposed by:
(D Ramsay 026026)

Seconded by:
(D Isaac 025205)

Currently, Rule 24 Notice, subsection (i) is unclear as to the Secretary’s task with regard to notice for a General Meeting. The addition of words “to be sent” following the word notice clarifies subsection (i) and aligns it with subsection (ii).

SPECIAL RESOLUTION 2

That in Rule 24(i) the words “to be sent” are inserted after the word “notice”.

Proposed by:
(D Ramsay 026026)

Seconded by:
(D Isaac 025205)



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HOME BUILDER

DAVE EDMUNDS

Homemade mixture control

LEAN of peak operation is now accepted as the best way to operate a standard piston-engine aircraft engine. There is a great deal of information available comparing the last of the radial-engine commercial aircraft, which routinely used lean of peak operation, with their military counterparts, which did not.

This is a hot topic in aviation circles at the moment. Google EAA LOP if you want to explore the argument.

There are three basic methods of getting fuel into an engine. High-end Lycoming and Continental engines are fitted with FADEC (Full Authority Digital Electronic Control) systems. These are similar to those in modern cars which control the spark, as well as fuel and air mix. Rotax has now introduced such a system as an option. These systems require sophisticated electronic control and high-pressure fuel delivery. The fuel is sprayed into the inlet manifold near the inlet valve of each cylinder or into the cylinder itself.

Jabiru and Rotax engines are fitted with Bing carburetors. These devices have been around for many years, typically fitted to BMW motorbikes, where they used to work okay before they were superseded around 1984. They have the virtue of being pressure compensated which, in theory, means the mixture is automatically adjusted as the air pressure changes. But they don't do it very well. The supplied mixture is always a compromise between the varying conditions experienced by the device and there is no feedback mechanism to ensure the mixture is appropriate for the conditions. That is, the control is open-loop, which is never going to be as good as a closed-loop control system, as used in FADEC. In a closed-loop system, the measured conditions of the engine are used to update the mixture settings. In a manual mixture controlled device the pilot is part of the feedback loop.

There are a variety of low-pressure throttle-body injectors on the market, for example the one manufactured in Australia by Rotec and advertised in *Sport Pilot*. These are low-pressure devices, closely related to carburetors, which allow you to control the mixture. Unlike FADEC systems, they require no power to operate. All things being equal, they will provide better mixture delivery than a conventional carburetor. There are also a variety of aviation carburetors which allow mixture control.

Those of us who learned to fly some time ago were taught in aircraft with manual mixture controls. The usual technique was to lean the mixture using the big red knob until the



▶▶ We obviously prefer to fly using less fuel

Exhaust Gas Temperature (EGT) reached its maximum, then to increase the mixture until the EGT was 50°F rich of that point. This setting was called Rich of Peak (ROP) and is not now a recommended practice. As you lean, the mixture approaches the perfect stoichiometric mixture - about 15 to 1 - where the amount of oxygen is just enough to burn all of the fuel. This corresponds to maximum EGT. If you further reduce the mixture, you get an excess of oxygen and the EGT drops because of too much cooling air. If you increase the mixture, the EGT drops due to the evaporative cooling of the excess unburned fuel.

All things being equal we obviously prefer to fly using less fuel. This is a primitive version of closed loop control as the pilot adjusts the mixture according to the instruments.

A BETTER WAY?

It is possible to get much better mixture control, better power and better fuel consumption if you can control your mixture more precisely. The problem with manual mixture control is largely operator error. It is not a good idea to set it incorrectly or forget your mixture when you change operating conditions.

But there is a solution and I don't know why I am the only one to suggest this. Mixture control on these devices does not have to be very

sophisticated, so why can't it be digitised?

Because of the narrow RPM range of an aircraft engine - typically only a few hundred RPM between full-power climb and cruise - it is not necessary to adjust the spark advance. A setting of around 28° Before Top Dead Centre, (BTDC) will be very close to the optimum for most conditions. So the digital control would not need to alter the engine timing.

Mixture control would require a low powered microcontroller to monitor EGT on the hottest cylinder and perhaps CHT. It could monitor a range of other variables if necessary, but a pilot currently using a manual mixture adjustment does not have such additional data. The hardware for such a device would cost less than \$10. This could be coupled with the sort of servo used in remote controlled aircraft to control the mixture. This only costs a few dollars. The fail-safe condition would be to return to manual mixture control. The microcontroller would continuously monitor critical parameters such as EGT, CHT and perhaps oxygen in the exhaust. It would drive the servo to adjust the mixture as required. It is somewhat like an auto pilot.

Such a system would allow better mixture over a range of operational situations than either a Bing or a manually-operated mixture device.

Such a system would not have the compromises implicit in the mixture control of a pressure-compensated carburetor. And optimal mixture under all conditions would give better fuel consumption and increase the life of the engine.

The total hardware cost would be around \$20, but there would be a considerable overhead in developing the system, which would also add a few hundred dollars to the price.

Realistically, you could expect to improve the fuel consumption of a Jabiru engine by at least 3 litres an hour and with fuel costs approaching \$2.50 per litre, the system would pay itself off in a year or so. This would not include the savings on engine maintenance, which could be considerable. Jabiru engines with mixture and heat related issues would particularly benefit.

Such a system would retain most of the simplicity found in Jabiru and Rotax engines. It would require a little electrical power to operate, but would not lead to engine failure if there was an electrical failure (A FADEC system will not operate without electrical power). And there would be no need for redundancy, because the pilot could operate the system quite satisfactorily if it failed.

I would be most interested to hear from pilots who may have more understanding and experience in such things. 🛩️

members' market

2671 JABIRU SP 500/6 19-3717



Well maintained hangared. 449.5 hrs. 123kts @19lhrs hr. Sweetapple cruise prop, custom extractors, 10 ply mains, 85ltr tank. STD gauges electric turn coordinator, volt meter, fuel flow meter. XCom VHF & headsets, + UHF & 2xGPS. Grim voltage regulator, Anderson jump start plug. Deliver anywhere. \$48,000. 08 9921 8790

3176 STORM 300 SPECIAL



Level 2 owned and maintained. 912S 100hp Rotax 780 hours. In flight adjust prop, KT79 transponder, 2X VHF radios Lightspeed ANR headsets, carb heat, AH (Vac) Garmin 196 GPS, Man pressure, ASI, ALT, CHT, plus heaps more \$55,000 no GST for quick sale 0419348288 or pbugg@onthenet.com.au

3213 FOR SALE JABIRU J-230D



Airframe 760 hours, factory reconditioned engine 165 hours. Dynon 10 Efi, analog instruments, Garmon 296 colour GPS. Transponder, external charge connector, external recognition light. Lambswool seat covers, adjustable rudder

pedals, new wheel spats, fin strobe. L2 maintained, spare propellor external windscreen cover always hangared original owners. \$78,000 Bill. 0429 054 205

3230 JABIRU FOR SALE



2008 model factory built, Sensinich prop, option 2 panel with additional 6 channels EGT and CHT digital display. Currently 720 hrs, impressive performer all AD's up to date... mechanically A1 couple of minor scratches here and there on the paint. \$70000.00 ono, contact Chad for more info... Mob 0405339858

3238 AIRBORNE WINDSPORTS



2007 XT 912 CRUZE wing, TT 190 hrs, helmets & headsets, Micro-air radio. Roll around trolley system for easy movement - wing UP or Down. ALWAYS hangared! - never dismantled. All in excellent condition. Price \$39,500 Ph 0416 041 007 for more details. Near Taree NSW

3268 EUROPA XS 19-7850



Europa XS. Reg. 19-7850, 170 Hrs. Jabiru 120 HP, 130 Knots cruise, long range tank, 20 Cu Ft baggage. Electric trim, A-Horizon. Reg custom built trailer. \$50,000 Phone 0428 988 662

3276 AIRBORNE MICROLIGHT XT



Tourer trike. Rotax 912, 4 stroke engine, Streak 3 wing, Microair M760 dual comms radio, large windscreen, log book, manuals, registered RA-Aus til 27/9/2014, always hangared, always privately owned, excellent condition, lots of extras. \$34,900. Ph 0429 61 99 87

filblainey@gmail.com

3323 ZODIAC 601 XL-B



Zenith CH601 XLB, Rotax 912 S (100hp) MTOW 600kg, Upgraded to 650 Canopy, 105kts cruise, Dynon D100, Mode C Transponder, Garmin GPS 196, Wing lockers, A great aircraft for touring or just local flights. \$50000 ONO Bendigo. Ph 0417 121 111

3408 JABIRU UL 2.2



TT 800hrs A & E as at 01.06.14, long wing with winglets & vortex generators. Excellent STOL performance. Cruise 95-100 knots @ 13 lph. Electric T & B, strobe, Garmin aera 500 GPS. Spare prop. Always hangared. Sth Aust. phone John 0400865868. \$34,000.

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3425 JABIRU



Very nice aircraft great endurance easy to fly lots of room. Working too much not enough time to fly. All work done by level two. \$70000.00 call 0411 123 669 to find out how this can be yours.

3428 JABIRU J230C



Great aircraft latest engine updates completed, too much work not enough time fly. New prop no accidents great touring aircraft, mains spats not shown in pic. \$75k 0411 123 669 I'm also interested in share holders the aircraft is located at northam wa min two share holders \$25k.

3487 JABIRU SPT-6 TAILDRAGGER



New Jabiru SPT-6 Taildragger, TT 30 hrs, New 3.3 engine, 85 litre tank, STD Jabiru dash, Gloss white ready for your decals. One of only four Jab 6cyl taildraggers. Goes like a rocket, Solo ROC 1800'/min, 125 kts @ 2700 RPM. YBNS airport. \$49000. Phone Martin 0412 617110

3490 JABIRU 170C



August 2008 factory built. 435 hours TTIS Option 1 panel plus Microair transponder, FC-10 fuel computer, garmin 196 GPS. 10ply front and mains. Always hangared. All AD's complied with. \$62000 Contact Kevin 0417131816

3498 JAB LSA, NEW ENGINE - BARGIN!



Total Hours: 2030 Engine Hours: 20 Price: \$28,500 Factory built aircraft, new 2200 engine with only 20 hours on it, new control cables, new brakes (J120 units), new battery. Best value anywhere! Sweet to fly, cheap to operate. Always hangared, LAME maintained. Transponder mode C. ph 0434 082 023

3509 AIRBORNE 912 TOURER



AIRBORNE XT 912 TOURER 2007 MODEL 595 HRS STREAK 3 WING EXCELLENT CONDITION MICROAIR 760 VHF RADIO HELMETS WITH LYNX HEADSETS/INTERCOM PUNKINHEAD COVERS FULL SERVICE HISTORY RAA REG EXP MAY 2015 \$34,000

kenj@jelfor.com.au 0412512457

3526 X-AIR



X-air Standard .Reg 19-3322. Rotax 618. Brojga prop. Doors. Luggage compartment. Full instrumentation with X-com radio with intercom & two headsets. Spats not fitted but included. 255 hours TT airframe & engine. Full maintenance log. New Battery. Always hangared & covered. Excellent condition. Peter 0402599306 or Rod 0448470390. Reduced to \$18,500

3540 CORBY STARLET



Corby Starlet Total Hours: 346 Engine Hours: 346 Rego: 28-1976 Price: Make me an offer Posted: 21 Jul 2013 Mosler 1835 cc motor 65 H.P. injector throttle body has ICOM VHF maintenance log always hangared delight to fly located Serpentine W.A. Tony 0433 33 77 33 or tony.mitchell1943@bigpond.com

3552 JABIRU J230-D 24-5490



Factory built 2008. Airframe & engine 94hrs, Maintained every 25hrs, Nil accidents, Analogue instruments, Icom IC-200 radio, Garmin GTZ-320a transponder, Booster seats, Sensenich prop, Garmin 295 GPS. Always hangared & runs great. Contact Kevin: 02 4283 2671 or 0408 427 458 Email: kaybee@exemail.com.au \$85,000

3554 THATCHER CX4



THATCHER CX4, - single place, completed may 2012. second of type to fly in Aus, 1915CC VW engine, starter, alt. magneto & secondary secondary ignition,

sweetapple prop, tinted sliding canopy, disc brakes, strobe, strong undercarriage, full castoring tailwheel, great plane to fly, \$26K call KEVIN 0448856983(Bris) (NO TEXTS PLEASE).

3579 CARBON CUB SS 180HP



Carbon Cub SS by Cubcrafters Inc, 200 hours, ready to fly away. 180 hp, optioned up, you will never get one at this price again. Tough, Safe, Powerful, and most off all FUN. Come and fly the most exciting cub ever, Tyabb Victoria. Call 0414 444 971 WWW. cubaircraftaustralia.com.au \$230,000

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3603 AIRBORNE XT TUNDRA 912 S3



2008, 199 hrs *Always hangared *Excellent condition *Skydat GX2 *Two helmets/headsets *Microair transceiver *Tall windscreen *Maintenance log *Reg. 26/03/15 *Extras incl:

*Custom heavy duty trailer *Heavy duty covers *All cross-country bags *Training bars** \$40,000. Test flight avail. w/qualified instructor. Contact Geoff 0409913858.

3621 KR2 ALMOST COMPLETE PROJECT



Registration lapsed KR2 99% complete. Needs prop, some re-assembly, a few brackets and fasteners, odd jobs and paint. Subaru ea81, flaps, tricycle u/c easily re-converted to tailwheel. New canopy. Includes intercom. Nice to fly, cruise approx 120 kts. Menocanflynomore forces sale. \$11,500 ono. Martin 0419 333 525

3637 KR2S



Certified Aeropower VW with dual ignition and Sweetapple Prop. Engine/airframe TT 370. Built 2005 and UL registered. Very economical 120kts at 12 L/hr (50L tank). Good condition, always hangared. Airmap 1000 GPS. Bellyboard (flap) fitted.

MEMBERS' MARKET

Can't fit the family so must go. Located WA. \$29000 ono. 0447180958.

3650 JABIRU J200B



19-4103, Avalon winner 2007. Aircraft in excellent condition, always hangared. TT440 hrs serviced every 25 hrs - Mircoair radio. Garmin 296 and 95 GPS. Low fuel warning light 2strobes, manual flaps NIL accidents. \$65,000 ono. Phone: Bevan 0428 536 338 Email: bevanlane@bigpond.com

3660 JABIRU J160-C



Immaculate condition factory built October 2006, 570 TT engine and airframe. Well equipped Dynon D10A, Microair transponder, radio, PCAS, autopilot, Garmin GPS, cabin covers. Always hangared, regular maintenance and nil accidents. One owner Jabiru and never used for training. Contact: theo@graftedvines.com.au Mob: 0418 805204. Located S.A. \$47,000 + GST

3662 CLASSIC SAVANNAH VG AIRFRAME KIT

Classic Savannah VG Airframe Kit. New, complete and still in box - has not been unpacked. \$25,000. Call 0419 215 514

3686 CESSNA 120



Cessna 120, 24-8085, 2 seat, Cont 100hp, engine to run approx. 1300hrs, dual coms, transponder, VFR instruments, always hangared, cruise 95kt @ 20lph, Avgas/Mogas, 45kg luggage, 4 point harness, 100 hourly due 07/14, int/ext very good. Suitable for training. Located East Gippsland, \$40000. ono Phone David 0419 503 157

3709 NEW HOUSE AND HANGAR - TEMORA NSW



Council maintained airpark, 3 runways, taxiway to hangar. 18.5m x 13m hangar, power, lighting. New brick veneer home fully serviced set in beautiful park surroundings. Four bedrooms, ensuite, modern kitchen with separate butler's pantry. Ducted heating/cooling. Great community, wonderful life style, don't wait. \$580,000 inc GST. Phone 0419 389 311

3713 ALPI PIONEER 200 SPARROW



Factory Built. Blue / White. Rotax 912 - 100hp Engine. Electric Variable Pitch Propeller. Dual Controls. Hydraulic Brakes. Long Range Fuel Tanks. AvMap Mark IV GPS. Full GA Instruments. Excellent Short Field Capacity and Climb. Cruise 110 Knots. Excellent Condition. Regretful Sale. Only 280 hours. Contact Andrew 0428442155. toolangatta@gmail.com \$67,500

3728 LIGHTWING GR912S SPORT



Price reduced \$40000. Great first plane, easy to fly. Nose wheeled, 550hrs TT, Rotax 912s 100hp, Flaps, lcom A200 VHF radio, Electric turn coordinator, GPS (basic non aviation type, large screen), 3 blade Brolga prop, STOL performance. Contact Gareth Lloyd on 0402845244 (WA) or blue_sky@live.com.au

3735 NORTHERN RIVERS NSW.

Northern Rivers NSW. Property 228 acres. 700m airstrip. Hangar, workshop, all usual farm facilities. Runs 50 breeders. Suit retiree, club, group ownership etc. Dual river frontage. Asking \$640,000. For further details, photos etc 0427 115225 or didja@skymesh.com.au

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3759 REVMASER ENGINE

2100 cc. Revmaster VW. The engine is disassembled and consists of mostly new components with many used but serviceable items as well. Too much to list here so if you contact me I can supply full details. Asking \$ 3000 and keen to sell. Dean 08 87331235

3787 TERRIER 100



Terrier 100 19-3509 485 hours on 100 hp Subaru EA81 engine and airframe. Standard instruments, Garman 196 GPS, Microair radio/ intercom and always hangared. Good condition and is hangared at Woodstock near Townsville QLD. \$35,000 Ph. John 0410857103.

3796 JABIRU J120



Factory built March 2011, TT 80 hrs, always hangared (Caloundra). Immaculate presentation, standard instruments, elec flaps, Garmin 500, PLB

406 GME, Headsets inc. Pilot 6' 2" - 95kg - easy fit. \$47,500. Call Simon Brown - 0411 833804.

3815 SAVANNAH VG MODEL



Savannah VG Model Category: 3 Axis (UL) Build Year: 2005 Total Hours: 480 Engine Hours: 480 Rego: 194405 Price: \$48000 Posted: 27 Jan 2014 STOL, always hangared and now at Cessnock, kool prop, 100hp rotax 912,

tundra tyres, observer doors, 8 hours fuel, landing light, gps, radio, intercom, Tom Grierson lern2fly@hotmail.com 0419414031

3825 RV3-B



RV3B 3B Wing A/F 223 hours - electric flaps & trim Lycoming O-360 engine -3 blade catto prop -160 knots cruise @ 2350 rpm TOTAL PERFORMANCE phone 0409875926 keneyearsrv4@bigpond.com

3831 JABIRU SK



Like new - only 185 hours TT, 2.2 litre. Serviced and maintained by LAME. Always hangared. Nil accident. Paint work 9/10. Fuel flow/usage gauge. Sigtronics intercom. lcom A200 radio. Located at Moorabbin. \$35,000 Contact Ross +61428394598

3847 JABIRU SP 500



Total hours 420, 2200 engine solid lifters, new pistons, rings, through bolts, 85 l tank, lcom 200 radio, GME UHF radio, Lowrance GPS, turn and slip, fuel flow gauge, 2 prs Lightspeed 20xl ANR headsets, large rudder, upgraded undercarriage, always hangared, 100 kts cruise. \$40,000. Narrogin WA. 08 98814924 0400014924

3853 FOXBAT A22 LS SHARE



Syndicate share. Our syndicate, run by the members, has been running at Caboolture Airfield, Qld for over 10 years. Our current aircraft is a Foxbat A22 LS with 100hp Rotax, Dynon instruments, S mode transponder, tundra tyres and centre stick. Shares currently available. Please call Chris Pfeiffer for details. 0417621097.

3857 JABIRU J160 19-4265

Airframe 1042hrs, Engine 1254hrs, 252hrs since full Top Overhaul. Standard panel plus electric T&B, VSI, fuel guage, 85Ltr Tank, 2 Head Sets, Gamin 12 GPS. Been all over Australia never let us down, Always hangared no prangs. Medical reasons for Sale. Asking \$37500. Mildura. Phone Geoff 0488241181

3865 FOR SALE JABIRU J200



Airframe TT520 hours, Factory rebuilt Solid Lifter Engine 102 Hours. Recent Jabiru Repaint, Factory Service. GA Panel, Analog instruments, Microair Radio, 2XGPS, Total Fuel 140Litres. Strobe Lights, external power, Cold Start Adaptor, spare Prop. Lovely plane, cruise at 118kts at 21Litres, Heated Cabin. Located Dubbo, \$72,000ono contact Jeff, 0418 843954

3869 JABIRU J160



J160 19-4699 L2 built and maintained. This aircraft is in great condition and is fitted with MGL Stratomastor Extreme EFIS, Microair 760 radio and basic instruments. The aircraft can be inspected at West Sale Aerodrome. Reduced to \$42000. Contact Daryl 0466925474, dghooke@gmail.com

3875 J430 JABIRU



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3879 FOXBAT A22



Foxbat A22 24-4270 820hrs uhf vhf transponder AH fuel scan lowrance airmap 2000 GPS verticle card compass new prop just completed 100 hrlly VGC \$62,500 contact 0438981301

3880 SUIT NEW TRIKE BUYER



Airborne Microlight 2011 XT912 Tundra TT105 hours. Ballistic Chute fitted. Streak3 wing never been folded always been hangared. Microair 760 Radio. Two headsets Lynx intercom and helmets. Garmin 196 GPS Punkin Head full covers

and stone guard. Log books RAA Registered. Genuine reason for selling. Inspection Invited. \$55000. O.N.O. Ph 0428456728

3908 X AIR F

X air f 19-3276 TT194 hrs Eng 54 hrs Rotax 618. 3 blade prop, just reweighted, usual instruments, microair radio 2 x headsets, garmin 96C Gps, ELB, reg. to 3/15 \$12,000 John (03) 97461010 0408351072

3912 JABIRU 200



J200 solid lifter 350 hrs 3 blade prop power flaps Matco brakes garmin gps and much more. Great cross country aircraft. Best offer 0249486788. Bobbaza@hotmail.com.

3914 JABIRU J 400



First flew: March 2005 TT: 450 hours basic Jabiru instruments with turn co-ordinator radio, transpond-

er, Garmin 295 GPS through bolts done at 442 hours. new piston rings, valves and springs fitted by Jabiru flywheel mod done Price: \$50,000 If interested, please contact me Rory on 51551392 or 0448551392.

3926 MAGNIFICENT REVO 912 100HP



Recognised as the most technically advanced trike in the world, this Revo 912 has every conceivable extra. Only 81 hrs always hangared and LAME serviced at Moruya airport. At \$75,000 save \$20k on replacement cost. Also custom built

aluminium trike trailer 7 metre internal \$22,000. gary@eldering.net.au mobile 0411550280

3946 SAVANNAH



Rotax 912s 100hp TTIS 390hrs. New 3 blade warpdrive prop. Tundra undercarriage. Long range tanks 7 hours endurance. 560kg MTOW. L2 Maintained. Steam gauges + electric turn & bank. Garmin GPS 196. Xcom radio intercom & headsets. Nil accidents. Always hangared. All books & manuals. Excellent condition. Euro Victoria. Ph Joe 0427941072 \$50,000.

3959 SKYFOX TAIL DRAGGER



Skyfox ca 21 tail dragger, totally rebuilt aeropower less than 75 hrs ago, duel ig, sweetApple prop, 635 hrs total, stitts fabric, good paint, registered, all ads current, \$22000, \$ 24500 with 3 yr old multy purpose tandem trailer for plane, 0455596199 christamarmc@gmail.com

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3961 TECNAM P92



24.3777 Tecnam P92 Total Engine and frame 295hrs. Color GPS 96ltr tanks Transponder Fuel flow meter A/H and Constant speed prop \$85000 firm contact Vin Martin 0411130643 or 0412566019 no texts please

3962 CESSNA 150L



Cessna 150L 1973, TT 6899, ETR 970, PTR 1370, Excellent paint, interior, radios and glass. Economical GA aircraft hangared in SE Qld \$29,500 Tony (07) 5476 0720.

3968 LIGHTWING GR 582 FOR SALE



Lightwing GR 582 \$26,000 Factory built so can be used for training. Grand champion 95-25 class at Natfly in 2006. Excellent condition - always kept in a hangar. Only had two owners. Many extras. Will deliver Contact Bob Burns for further details Mob:0412041701

3973 582 EDGE X TRIKE

This is a golden oldie, still goes well with streak wing, \$8000 also have 25hr eng to go with it at \$3000. you can't go wrong fly away today with spare engine. all prices neg. Eddie Morris 0401006506

3976 SKYRANGER V-MAX \$43,000 ONO



149 hours engine/airframe. Rotax 912 ULS 100 HP. Glass and analogue gauges. Electric Carby Heat. Bolly IFA prop. BRS parachute installed 2012. Zaon Air-Traffic Avoidance system. Alpha Systems AOA meter. Recent 100hour/12month service and under-carriage overhaul. SkyRanger engine mounting upgrade. 90L fuel-tank. Swift wings. Always hangared. 0414496522 David.

3977 FLOAT TRIKE



Outback 912 float trike, 35hrs suit new buyer. Comes with dual wheeled tilt trailer and launch and retrieval dolly with winch. Full trailer covers. Change over frame for wheeled flying. CASA primary certified. Great colours. Will separate trailer and floats if you already

have own base and wing. Fun to fly, \$80,000. ph 0419793877 /tangojohn@hotmail.com,,,,,John

3987 HORNET STOL



Hornet STOL. Total hours 990. Engine hours 675. Built 2009. Rotax 912 ULS. Garmin GPS. UHF/VHF plus more. Phone Andrew for more information on 0427 953 983 or email burtundy@bigpond.com \$60,000

3990 AIRBORNE EDGE X



Excellent condition. 150 hrs base & Streak 11 wing. Tundra wheel kit fitted. Radio 2 helmets. Full covers. Training bars & Bar Mitts. Custom Trailer. \$20,000. Shipping container- fits wing in set up on trolley + base and room for everything else.

\$2,000. Hartley NSW. Terry- 0438 574 228

3991 JABIRU LSA 55/3J



factory built great aircraft to fly always housed in hangar, engine well maintained with all required updates done 135 hrs on engine and 604 on airframe. Lambswool seat covers, full dash with extra instruments. phone John 0428727152 johniep@bigpond.com.au \$37500.00

3992 KR2-S



Speed with economy, plan on 110kts @15 lph. 222 hrs on air frame. Jabiru 80 hp solid lifter engine has EIS with full sensor suite and electric carby heater Instruments include GPS & autopilot. reason for sale another project. Comes with 1 year free hangar rent @Cessnock or \$1000 discount! Price \$32000 O.N.O. phone 0418439620

3995 JABIRU 160C



Immaculate !!! As new, factory build, lame maintained, all AD's done, recent top end o/haul, also honed and new rings. Std panel, dual microair, transponder, fuel flow, aero 500 gps, headsets, covers, service report avail, leakdowns, compressions, perfect, deliver anywhere, looks and flies just beautifully. Russ 0418276747

3996 JABIRU LSA



This Jabiru LSA is a factory built 2.2 model that has a new engine with little usage hours. It also features new cable, new undercarriage and J120 brakes. It's barely used and always in the hanger - in good condition. It comes with one spare propeller. Contact David @ 0434082023

3998 SEAREY CLASSIC



Searey classic 2006 build, 19 8332 reg. second owner, carbon fibre hull, Rotax 912 100 hp, TT 295 hours, analog instruments, micro air radio and transponder. Blue Mountains EFL. Electric retracts. Situated Wedderburn NSW. Live your dream! \$55,000 Nash 0409386661, hotndp@hotmail.com

3999 VARI EZE



Vari. Eze reg 198286 engine 0200. 800 hours to run. Radio analog instruments. Cruise 150 knts @ 24 lts hr or 110 knts @ 15 lts hr. Airframe 9/10 interior 7/10. Situated Wedderburn NSW. Steve 0425221271

4000 SAPPHIRE



SAPPHIRE 19 3866. 168hrs 503 Rotax, 3 stage flaps, 58ltr wing tanks, cruise 80kt+. Always hangared, ICOM radio. Hangared at Lakes Entrance VIC. \$21,000 ono. Ph Jack 0429 801 548 or 03 5156 4355

4002 AIRBORNE XT912 TUNDRA, NEW ARROW K WING



Airborne XT912 Tundra, Brand New Arrow K wing, New Bolly Prop. A full inspection at Airborne and certified LSA. All Servicing done by L2, Trolley great for low hangers, Samsung 7" Tab with Oziexplorer & maps, Training

bars, Landing light, Bar mitts, Engine cover, HGFA registered, 396 hrs Always hangared, Awesome trike to fly in excellent condition. Dixons Creek Victoria. \$38,500 Phone Steve 0419 879 340

4003 FLIGHT DESIGN CTLS

2011 build. TT 600 hrs. Rotax 912 100HP. Full Glass DYNON Skyview D1000 instruments. Garmin SL40 Radio. Garmin GTX330 Transponder. Garmin GPS MAP695. 2/3 Axis Auto Pilot. Constant Speed Prop. Strobe Lights. L2 maintained. 120 kts cruise. Excellent condition, always hangared. Located Gympie. \$118,000 Call Eck 0488 338 895

4005 RV12

RV12, VH-XKH, 25Hrs TT, Rotax 912 ULS, MTOW below 600kg, has AP, Transponder, lighting, interior lining, etc. All components new. Build by multiple RV builder and SAAA technical counsellor. Two pack paint all over white (put your own motif on). Hangared in Mittagong YMIG NSW. Asking \$108,000.- no GST If you have any questions please contact me on: 0411 290 472 or 0248844143 or kahamer@bigpond.net.au

4006 J200 6CYL

Still the best Jabiru around. Only 300hr TT. TAS 120kts. 19.5L/Hr. Nil accidents. Multi awarded, best Jab Narromine, SAAA best homebuilt Cowra, best home built Jabiru factory award, multi awarded peoples choice. The aircraft has been hangared since new and has full service history. Immaculate condition ready to go. Selwyn 0429 368081

4007 JABIRU J230

First flown 2011. Owned and cared for by L2. Dynon D10A and Dynon AP74, Garmin 495, EGT and VSI, Microair 760 and Calibrated transponder, Wing strobes and landing light, 10 Ply Tyre sLeather interior and upholstery, Always Hangared, no damage to aircraft, needs engine. A Beautiful Plane to fly, lots of luggage room. Total time in service 320hrs. \$82,000 Ono. Phone 0407717633

4008 KIT AIRCRAFT FOR SALE

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cockpit, fixed tricycle landing gear, single engine in tractor configuration. Aircraft is made from vacuum-molded composites with lightweight aluminium constructed wings. It has 8.7m (28.5 ft) span wing and a unique zero time Jabiru 3.3 (120 horsepower) engine. Needs cabin assembly and fitout to complete. \$20,000.00. ono Ph: 0417710440 email: robyn_rawson@yahoo.com.au

4011 JABIRU 160 D

As new, immaculate condition, always hangared, service every 20 hrs, New leather seats, Full Carpet, Microair Radio Package, New Sennheiser Headset, On board camera, Garmin GPS, Electric Flaps, Jumper lead kit. 135 l fuel tanks, New 10 ply tyres, Wheel Spats. Can Deliver. john@wholagan.com.au 0419485525

4012 HANGERAGE - COROWA

Hangerage available Corowa Airport. Suit light aircraft. Good sealed runways, Avgas available. Contact Steve on 0429 328053 or steve@corowaflying.com.au

4013 NIEUPOORT 11 PROJECT

Fuselage tail plane and two lower wings already built. Enough aircraft grade aluminium to complete upper wings. wheels and plans included. \$500.00 Townsville NQ Phone Steve. 0412354757

4017 X-AIR BRAND NEW ZERO HOURS NEW 582

Brand New X-Air Standard for sale Brand-new professionally built X-Air standard. Unstarted blue head Rotax 582 engine with oil injection and 3:1 E type gearbox, Bolly three blade propeller, all standard instrumentation including Ultralam fabric finish in yellow primary colour blue leading-edge. Contact Michael Coates Phone: 0418168665 Price: \$33,000.00

4018 AIRBORNE EDGE X EXECUTIVE

Airborne Edge X Executive. 9mths rego, 260 engine hours, new crank at 120hrs, new battery, lcom A20 radio head sets. SEQ. \$4000. Ph: 0490129563

4021 SADLER VAMPIRE

Factory build by Skywise Ultralight. 447 Motor has been decoked, new rings ect. by Berd Flood Melbourne Mai 13. 6hrs. flying-time since. Cruises 80kts. and flays well. Will except any offer above \$12500. That includes custom made trailer. g. remlein@hotmail or ring Gerry at 08-87252586

4023 WANTED

WANTED Damaged or written off Foxbat for parts. I will consider any condition. ph Tom 0419476677 or email planesmaker@gmail.com

4024 WANTED

WANTED time-expired or accident damaged Rotax 912 or 912S or 914 Ph 0419476677 or email planesmaker@gmail.com

4026 AIRBORNE EDGE X MICROLIGHT

1998 Airborne Edge X Microlight. Rotax 582 2 stroke engine, 486 hrs. Streak wing, Vertex radio, intercom, headsets, helmets, wing covers, trike base covers. Hangared Coff's Harbour. \$ 14,000

ono. Ph Tom 0409537440 or email tpieper28@bigpond.com

4027 JABIRU J120-C

Owner is CFI and is about to retire therefore aeroplane is surplus to requirements. All reasonable offers considered. All AD's complied with This aircraft is hangared in Northam WA Fully maintained by L2 Extras include: 6 inch wheels cabin heater Transponder VSI Contact: Steve Yeates 0416 654 428 \$38500 ONO

4028 QUICKSILVER GT500

2 seat in tandem GT 500 in good condition. New upholstery and tyres. 471 air frame hrs. Silver head 582 with 264 hrs. Fabric good condition. Flown regularly. Micro air 760Q radio with two headsets. Based at Dalby QLD. Always hangared. Dream to fly. Ph 0437 738 869. Email greg@braziertrailers.com.au

4033 QUICK SILVER GT500

Quick Silver CT500, registration number 55-640 Two seater with dual gauges and dual controls Rotax 912 UL engine Always hangared Excellent fabric and quality stitching Date of Manufacture 30 October 1996 Hours flown 663 Contact Margaret Hewitt 03 93946757 or vijayantimala@gmail.com Asking price \$33,000 (negotiable)

4039 WANTED

WANTED- 2x6pin 912cdi modules. (Mine both failed at the same time). Ph: 0490129563

4040 MID WING AEROBATIC PLANE

Mid wing aerobatic plane project, needs engine and prop, wing is a composite wing 90% complete \$3000 0400781038

4042 2007 SUMMIT II



Fully 32 registered, less than 30 hours, electric start 582, 500 sq.ft. rectangular wing, 2 seat dual control, loads of extra's, on easy load trailer. Very good condition. See full details Ra-Aus web site, or Powered Parachutes Perth. Located South

Australia. \$20,500. Contact 0885551031, 0429942703, vaylorke@bigpond.com

4043 J2 SPORT



J2 Sport 95:10. TT185 Engine 188Hours. 264 flights. Recent cosmetic updates. KFM 2 cylinder 2 stroke, Electric start. Basic instruments. Aluminium and fiberglass construction. Fuselage is getting professionally recovered in Dacron before sale (included in sale price) Comes with registered enclosed trailer. Ph. 0423362957 \$5500 ono. NSW

4045 FOXBAT A22LS



Foxbat A22LS, year 2013, white, 24-8344, 100hp. Rotax Injection Engine, Dynon SV1000 with auto pilot, yokes, lcom210 Radio, tundra tyres, L2 serviced, no accidents, top condition, low hours, \$106,500 email jonank@live.com.au

4047 WANTED

Wanted 2 seat Bantam anything considered. contact keith 0427 687001

4048 TEMORA PROPERTY FOR SALE

9.5 acres, 3 bedroom cottage needing work, electricity/water/phone all connected. New colorbond 15mx8m shed, concrete floor & water tank, also has dam on property. Directly across the road from airport & Temora Airpark Stage 3 Development, 3.5 Km's to CBD. \$139,000 Ph. 0412468494, email: ninety-neairportst@yahoo.com.au for more info or photo's.

4049 AIRBORNE MICROLIGHT SPARES & TRAILER



BRS - 5 Ballistic Parachute, model 1050, due for repack. \$3,000. Factory built trailer with wing carrier, electric winch & spare wheel. \$1,250. Punkin Head covers; wing, base, travel, prop & bar mitts. All half price. Garman 296 \$700. Max 0418 316 207

4050 AUSFLIGHT DRIFTER A582



Brolga 4 Blade prop, Electric start, 70L Fuel, Intercom, Icaro Helmet. Lots of spares. Aerial seeder and electric dingo bait dispenser. \$13 000 Located near Roma Ph 0427 800 373

4053 WANTED KING KX145 NAV/COM

Wanted - King KX145 nav/com in working condition Contact Len 0439456077 lenminty@live.com.au

4054 AEROCHUTE DUAL 503



Aerochute dual 503. Includes covered trailer, electric start, servo-assisted controls and other accessories. \$12,000 Located Central Victoria - Alan phone 0407 842 537

4056 ESQUAL VM1



Almost completed all glass Esqual VM1. Fast cruising machine. Upgrades to the fuel, canopy frame and throttle system. Carbide heat as well. Rotax 912 with a Rospeller constant speed prop. Wiring done with factory harness. 110 litre fuel tanks. Strobe lights Andrew Repton reptonsa@bigpond.com 0409371001 \$90000

4057 AIRBOURNE EDGE X 582



AIRBOURNE EDGE X 582 Blue Top. Streak 2B wing; 72 hrs, engine Blue Top oil injection; rebuild 216hrs. included; lcom radio, GPS, helmets, suits, log book & manuals. Windsor NSW \$10,000 Phone Mark 0425151420

4058 TECNAM ECHO CLASSIC P92



Tecnam Echo Classic P92 2007 Model, This aircraft is in Excellent Condition and is a Pleasure to Fly, 200 hours on New Rotax 100HP Engine, 755 Total Time, Serviced every 25 Hrs, UHF, VHF, Mirco Transponder, Siren, Intercom, Many More Extras, Always Hangered, \$\$\$ POA Contact Ben, (07) 46554018

4059 GOAT GLIDER



Goat Glider and Trailer. Very Well Built. Easy to fly. Rugged but beautiful Little Plane. Cliff Launch-able, or winch, or Tug or Car Tow. enclosed Trailer with Rego. \$5500.oo Wife says sell. see: 'Gold Coast Goat Club' online video's. Ph. Bud: 0413770272. Can deliver. admin@bud.com.au

4061 SKYFOX CA22

Skyfox ca22. new fabric new engine-vw Ohrs nil accidents all ads and annual inspec up to date. trailer if required. always hangered. \$27,500 inc gst. 0429 441727.

4062 WANTED

Wanted 2 seat raa plane 100kts plus cruise rotax engine .up to \$50000 Engine condition irrelevant as have replacement. Phone 0418681653.

4063 JABIRU J160 SHARE



A share in a syndicate of 7 in a 2007 factory built J160 based at Aldinga SA. \$7000. Always hangered. Level 2 LAME maintained. Go anywhere, cheap to fly. ph Bart 0418816158 bjlewie@hotmail.com

4069 JABIRU J170-C



Jabiru J170-C, factory built 08/2009, 847 hrs TTIS, very clean and well maintained aircraft in excellent condition, Microair VHF and Transponder, always hangered, all maintenance carried out by L2, all AD's completed, \$47,000 ono. Located Barwon Heads Vic. Contact Bruce on 0400 849031 or bruce@vickersaviation.com.au

4077 TECNAM EAGLET



Tecnam Eaglet Reg No. 24-7008 Rotax 912 ULS 4 Stroke 100 Horsepower, Total Hours 685 Dynon EFIS D100 Panel, Garmin 296 GPS, Garmin SL40 VHF, Garmin GTX 327 Transponder, Electric Flaps, Electric Trim, Toe Breaks. BurnRate 15 LPH Maintained By A Level 2. \$110,000.00 Ono Contact Franco 0400 591 401

4078 FOXBAT A22 LS SHARE



Our syndicate has been running at caboolture airfield for over 10 years. The current aircraft is a Foxbat A22 LS. with 100hp Rotax, Dynon glass cockpit, S mode transponder, tundra tyres and centre joystick. shares currently available. please contact Chris Pfeiffer for details. 0417621097

4079 JABIRU J160C



Jabiru J160c Rego 24-4766, 1 owner, a/c eng TT 1330, LAME maintained. VGC, Microair radio & transponder, digital compass ASI, VSI, ETC, OIL P/T CHT, ALT, Elec flaps spare prop always hanged, maintenance/flying logs, Nil accidents, \$50000 ono, Clifton QLD, Ph Daniel 0409465812 or Daniel@housereports.com.au

4099 JABIRU SP500 6 CYLINDER ENGINE



Great little factory built a/c: 6 Cylinder engine: 100 Litre wet wings: 6 inch wheels: Garmin GPS: Standard Jabiru Instruments: 2 head sets: Fast cross country a/c: Registration expires 05 Sep 2014: Always hanged and located near Kilcoy: Nil accident history: Price reduced to \$41000: Contact John 0402-133-742.

4100 JABIRU J200B



Jabiru J200B, 19-3872, Immaculate aircraft, Natfly winner, Solid lifter 3300 engine, 365hrs TTIS, serviced 25 hrlly, Full panel, Certified American Instruments, IcomA200, UHF, Transponder, Fuel flow meter, Independant brakes, Custom upholstery, Garmin 296, Two pack paint, carbon prop, Cummins spinner, Always hanged, Must see. Geelong, Vic. \$79,000 Ph 0418 131838

4102 RYLSTONE AIRPARK HANGAR RENTAL

Two slots available in late August at Hangar 49 located on the all new Rylstone Airpark. All new, insulated, painted floors, kitchenette for a casual stayover. Rylstone airpark is located 2.5 hours from central Sydney Full details tucono-replica.blogspot.com.au & click on Hangar Rental Contact Gary 02-96221916 AH raf.tucano@gmail.com

4106 USED GSC PROP



I have for sale my surplus to requirement GSC propeller hub, hub washer, bolts and drive lugs. The blades are 960's sweeping 66 inches diameter, not recommended for flight as they are USED. Selling the lot as is for \$350 ono. Lawrie Barton-Johnson 0404489576

4107 WANTED - 24 REGISTERED LSA (NOT JABIRU)

Looking for LSA 24 Registered aircraft with good hours to run. Must be suitable for flying school. Cash Purchaser Ph Melissa 0417725577 ausair@tpg.com.au

4109 TIGER MOTH FISHER PRICE R-80



Two seater dual control 80% scale, immaculate condition, 40hrs TT. 100hp Suzuki G13A engine, RoC 1000 fpm, cruises 65 knots at 4800 rpm and 75 knots at 5400 rpm Aircraft has been meticulous built, full instrumentation, radio. Magnificent to fly and land. \$40,000. Phone 0428 662 528 email barry@emugully.com.au

4116 ROKO / BRM AERO



Fully equipped twin 10" skyviews - Auto Pilot- ballistic recovery system- Garmin sr30-GTX327-696 GPS sr3000 woodcomp constant speed prop with new ground adjustable prop - winglockers-tow release immaculate condition only 339 engine hrs built 2010 ready for immediate delivery with fresh 100hrly replacement cost \$170K for sale \$117plus GST Les 0419444546

4117 AIRBORNE EDGE EXECUTIVE 582



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4125 PIPISTREL VIRUS LSA



g, Rotax 912, 120Kts cruise at 13l/hr, 585kg MTOW, 304kg BEW, 25kg luggage, 100l long range tanks, GPS, AI, VHF, mode C transponder, ballistic chute,

cabin heat, full composite airframe, punkinhead cockpit cover, lovely to fly, surplus to needs, hanged near Townsville, \$69,000 Ph 0497465526

4127 EUROPA CLASSIC



Europa classic only 58 total hrs GA registered but can be Registered RAA full GA panel elec trim, AH, DG, transponder icon radio with intercom and strobe it comes with its own purpose built trailer two new ANR headsets pilot with Bluetooth 125 knot cruise on 13 litres \$60,000 phone Tony 0429132128

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The company described the aircraft as the first A5 built from the production design, with production tooling and using production methods and components. It was built over a five-month period and successfully completed its first flight on July 7 in California. This aircraft is one of three that will be used to verify performance and complete FAA approval prior to the start of customer deliveries in May, 2015.

A second production prototype is currently under construction and scheduled for completion and structural testing later this year. Full production for customers is due to start next year. For more information www.iconaircraft.com.



2429

Worldwide commercial airline fatalities in 1972, the worst year ever

Source: cnn.com

678

Number of business jets sold worldwide in 2013

<http://www.gama.aero>

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slingaircraft.com.au

Garmin GDL39 3D Portable ADS-B

The GDL 39 is a simple and economical solution for pilots who want to receive the benefits of ADS-B In. It combines a dual link ADS-B receiver which supplies ADS-B traffic and WAAS GPS data to Bluetooth compatible iOS and Android devices. The Garmin Pilot app enables both the display of backup attitude information and the optional moving map page with traffic overlay while in split screen mode, so it's easy to view flight information alongside the attitude information at the same time. The GDL 39 is compatible with the aera 795, aera 500 series, and GPSMAP 695.

The GDL 39 3D includes advanced ADS-B features, including TargetTrend which provides a faster, more intuitive way of judging target trajectories and closure rates in relation to your aircraft's position. In dense traffic environments, TargetTrend allows the pilot to more easily discern the aircraft which pose the greatest threat. SURF technology also supports the display of ADS-B-equipped surface targets so pilots are more aware of aircraft and vehicles on the ramp.



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OFF THE SHELF



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The SCx System is an accurate and reliable wing lift measuring and display system designed as a pilot aid to help achieve consistent and repeatable take-off, climb, cruise and landing approach performance based on AoA. The system provides the pilot with AoA-based guidance for a variety of high-lift operational conditions including: normal and short-field take-off, Best Angle (Vx) and Best Rate (Vy) of Climb, wind-compensation for Long Range Cruise (LRC) and Normal and Short-field Landing approach. The system consists of a wing-mounted leading edge Lift Transducer and the SCx Indexer Computer.

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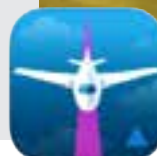
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HAPPY LANDINGS

The gift

by Andre Maertens

TETRAPLEGIC pilot, Langdon Wieff is about to finish his Pilot's Certificate, having passed his theory and practical tests with flying colours. He plans to go on and get his Instructor's rating. I am enormously proud of him.

My personal aim is to see more people like Langdon get out of their wheelchairs and experience the freedom of flight. Our aircraft is based at Gympie Kybong airfield and we can make ourselves available usually at short notice.

Readers can see Langdon do his first solo flight in a Flying Flea on Youtube: Search for balerit downunder. 📺



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

>> Clipping from The Gympie Times

Andre's gift is a flight to freedom

Southside man brings whole new world to the disabled



"ONCE you're up there, you forget the pain," says ultra-light pilot Langdon Wieff. Aviation has become a liberation for Mr Wieff, who is working towards his instructor's license, with the help of Southside aviator Andre Maertens and a unique aircraft known as the "Flying Flea."

Free of the confines of his wheelchair, the embrace of flight is a miracle of mobility. And Mr Maertens believes he can help more people with disabilities to learn the greatest mobility of all, under the auspices of Brisbane Aviation and his chief flying instructor Willy Bystrovants.

Mr Bystrovants himself has had an arm and shoulder in the hard work involved in overcoming that sort of disadvantage.

"So a guy with one arm teaches a man with no use of his legs to fly," Langdon Wieff says with a smile.

"Langdon's learning fast. I give him the books, the air-traffic information like briefing paper," Mr Bystrovants said.

"Once he's in the cockpit, he's just like everybody else."

The Flying Flea comes



ABOVE: Florence Granter helps Langdon Wieff get into the Flying Flea, with pilot Andre Maertens holding the wheelchair.



RIGHT: Mr Maertens enjoys a "first eye view" of the world.

BELOW: Like the wings of a butterfly, Mr Maertens unfolds his Flying Flea.

PHOTOS: ARTHUR CORRIE



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 - GNC 255A Nav/Com 10w \$4750
 - GNC 255B Nav/Com 16w \$5950
 - GNS 430W recertified \$9675
 - GNS 430 recertified from \$7595
 - GTN 650 GPS/Com/Nav \$12500
 - GTN 750 GPS/Com/Nav \$17995
 - GTX 327 transponder \$2195
 - GTX 328 Mode S transponder \$3295
 - GMA 240 Audio panel \$1050
 - GMA 340 Audio panel \$1595
- For all other GARMIN AVIONICS not listed please call



- GARMIN AERA 500 \$ 742
- GARMIN AERA 550 \$1264
- GARMIN AERA 795 \$2118
- GARMIN GPSMAP 695 \$1889
- GARMIN GPSMAP 196 \$ 725



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- GDL 39 3D w/DC cable \$1055
- GDL 39 3D w/cable/bat \$1115



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 - Distance
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- Zulu.2 ANR Helicopter \$1045
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- HM40 ANR H/set ... \$495
- HM51 child headset \$199
- Peltor 8006 GA H/set \$350
- Sennheiser HME 110 \$329
- Sennheiser S1 Passive \$499
- Sennheiser S1 Digital \$1095
- Sennheiser HMEC250 \$599
- David Clark H10-13.4 \$459
- David Clark H10-60 \$499
- David Clark H10-13H \$489
- David Clark ProX ENC \$895



Bose A20 Headset

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- A20 GA twin no bluetooth \$1250
- A20 Helicopter w/bluetooth \$1350
- A20 Lemo w/bluetooth \$1350
- Installed wiring harness \$75

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 - IC-A6 Sport \$495
 - IC-A6 Pro \$695
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