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APRIL 2013 VOL 22 (4)

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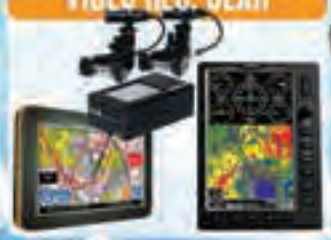

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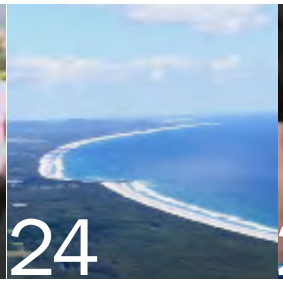

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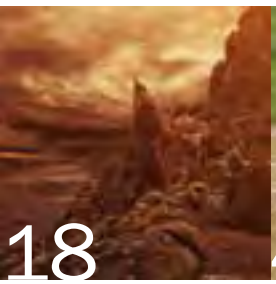
> *He then reversed back to deep water, changed to forward thrust, spun around and taxied off*



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President's Report

STEVE RUNCIMAN

I AM happy to report that the transcript of the General Meeting held on February 9 is now available from the RA-Aus website and for those unable to access the website, a copy is available on request from the office free of charge.

Progress has been made in many areas since the meeting but, for a number of reasons, progress in other areas has not been as quick as we would have liked. The sub-committee for the restructure of the organisation has been formed, but at the time of writing this article, for a number of reasons, they have not been able to meet or do any significant work towards the study. I am sure that serious effort will start in this area in the very near future.

I can also state that the process of reviewing the organisation's insurance requirements has begun and this is being run by board member, Mike Smith. I can also report that, following a presentation from Brian Bigg, he was granted another twelve months for the production of the organisation's magazine.

I have great pleasure in informing you all that the recruiting process for the new General Manager (previously known as the CEO) and the Technical Manager has concluded. It has been a long process, which began in December 2012, but one that has been well worth it because the board was presented with a number of great individuals for both positions. I would like to take this opportunity to thank Kate Prior from Face 2 Face Recruiting in assisting us with this process and giving the board and interview panel a great deal of advice and assistance.

I am pleased to inform you all that the person selected to the position of General Manager is Mark Clayton and the person selected to the position of Technical Manager is Wayne Matthews.

As stated, there were a number of great individuals who expressed an interest in each position and the decision was not easy. I would like to congratulate Mark and Wayne on being successful and would like to take this opportunity to thank the other candidates for expressing an interest in these positions. Wayne began work on March 12 and Mark is due to begin work on or around March 25, depending on a number of things. Wayne has introduced himself in this edition of the magazine and you can all look forward to getting to know Mark a bit better in the next edition. I wish them both well, I am sure on behalf of all members of RA-Aus, for the challenging but, no doubt, exciting times ahead of them.

> *"I implore you all to check and re-check before taking off*

By the time you read this, NATFLY will have been and gone for another year. For those lucky enough to have attended, I have no doubt you enjoyed it; there has been a lot of planning and work gone in by various board members and members of staff to ensure it is a successful one. For those of you who were not able to attend, I am sure you can look forward to reports and comments on the event in the next edition of the magazine. Of course, there will be opportunities for some of you to attend other RA-Aus sponsored fly-ins in the future. Also, looking at the calendar of events in the magazine there appears to be plenty going on.

I would like to close by saying that it is with regret that, despite me mentioning this matter in my last article, I again state that this year has not begun well in regards to accidents and fatalities and it continues to get worse. Already this year we have exceeded the total number of fatalities from last year. These accidents are still being investigated, so there is no indication as to the causes or to determine if there are any trends. However, it is incumbent upon us all to do what we can to reduce the risk of accidents and I implore you all to check and re-check before taking off and make all necessary preparations well in advance to ensure the flight is conducted safely. Let's work together on this matter and assist each other where we can. Remember to commit to remaining safe while enjoying our passion for aviation.

13 April

Burnett Flyer Breakfast Fly-In

The fly-in will also mark the grand opening of our newly renovated Operations Centre. Thereafter brekky will be served every second Saturday of the month at Angel Field, south of Murgon at the end of Macalister Street (E151.55.771 S26.15.160) The Burnett region has some special scenery to see from the air. For information burnettflyers.org or email burnettflyers@yahoo.com.au or Deb (07) 4168 6248.

13 April

Loxton Aero Club Fly-In

At YLOX in South Australia. Hangar dinner on the night. For more information Kerrie (08) 8584 7790.

13-14 April

Esperance Aero Club Fly In

At Myrup Fly-In Estate (YMYU) [33 47.2S 121 57.4E]. BBQ Saturday evening. Saturday lunch and Sunday breakfast available with notice. Limited billet accommodation (first come first served). No formal flying program, but plenty of opportunity for sight-seeing and flying. For information Dick 0438 179 088 rwelbon@bigpond.com, Shane 0419 198 438 shane@oneillsheds.com.au or David 0407 036 173.

14 April

Barossa Airshow

The Fly-In at Rowland Flat in the Barossa Valley will be a full day of things to do for the aviation enthusiast. Aerobatic displays, joy rides, amusements, static displays, stalls, food and wine. If you are not familiar with the 600m strip, contact Steve Ahrens 0427 244 930.

5 May

Childers Fly-in Drive-In Walk-In Breakfast

This annual event is run by the Isis Flying Club Inc. and is the premier attraction for all types of aviation in the Childers area. All types of recreational, GA and home built aircraft. Come late pm Saturday 4th for BBQ and drinks. On field camping, bring your swag. RSVP for catering. For information Bill Brown 0418 724 645, Ian Laing 0428 714 690 or isisflyingclub@gmail.com

5 May

Colac Aero Club 50th Anniversary Open Day

Colac Airfield, McKays Rd, Irrewarra. A day of family entertainment, including flypasts, flying demonstrations, joy flights and static aircraft displays. Tour our facilities and chat with past and present members. Take a Trial Introductory Flight in our brand New Jabiru J170D. Food and drink stalls, displays, music, a jumping castle, reptile show, face painting and lots more for the kids. Motorbike and car display from members of the Ulysses Motorcycle Club and Colac Classic and Custom Car Club. Sit Down dinner on Saturday 4th. Booking essential. Free underwing camping Saturday night, plus taxi and courtesy bus into Colac. For information www.colacaeroclub.com.au, admin@colacaeroclub.com.au or Peter 0419 386 340.

CALENDAR OF EVENTS

12 May

Gatton Airpark Pancake Breakfast Fly-In

A great opportunity to grab an early flight, a great breakfast with friends, and check out all the new developments at our Airpark. Details in ERSA or Martin 0419 368 696.

18-25 May

Megafauna Flyaway

This year the destination is Bathurst. 19th Sunday - Yarrawonga to Wagga. 20th Monday - Wagga to Cowra. 21st Tuesday - Cowra to Bathurst. 22nd Wednesday - Lay day. 23rd Thursday- Bathurst to Parkes. 24th Friday- Parkes to Narrandera. 25th Saturday - Narrandera to Yarrawonga. All welcome, places are limited. Call or email Peter or Anne (03) 5744 1466 or email yft@yarrawongaflighttraining.com.au.

18-19 May

Barossa Birdmen Fly-in

At Truro Flats Airpark (check ERSA). Limited accommodation, dinner on Saturday night. Avgas and Mogas by prior arrangement. Pilots should be aware of restrictions regarding overflying neighbouring properties, particularly to the SW of the airfield. For information Dennis Martin (08) 8263 0553, Roy 0408 802 667 or email royp@phillipsperformance.com.au

25 May

Watts Bridge Memorial Airfield Inc. All-In Fly-In

The Watts Bridge Open Day celebrates the rich diversity of all forms of recreational aviation. The airfield is situated in the Brisbane Valley and is the home base for a wide range of aircraft, including vintage, aerobatic, recreational, gyroplanes and Warbirds. On-field catering and coffee available. Entry is free with no landing fees. For information Richard Faint 0412 317 754 or www.wattsbridge.com.au

25-26 May

Old Station Fly-In & Heritage Show

Aviators, exhibitors and campers are welcome to arrive at The Old Station near Raglan in Queensland on Friday 24 May in time for the dinner that night (bookings essential). Saturday and Sunday (until 2pm): truck show, heritage machinery, vintage tractor pull, fashion parade, joy flights, children's entertainment, stalls, licenced bar, food/drinks, live band Saturday night and presentation of George Creed Memorial Trophies. Avgas available. No landing or camping fees. Proceeds to the Capricorn Helicopter Rescue Service. Weekend camping: $30 per site. No power, No bookings. Strictly no dogs. Admission: $10 per person by donation (CHRS) under 12 free. Information Leonie Creed, (07) 4934 6562, 0438 346 563 or email: leonie@creedgrazing.com.au

26 May

Casino Beef Week Muster

Casino Aero Club and Beef Week welcome all aviators to Casino Airport in northern NSW. Saturday Beef Week parade; Sunday family fun day; Both days joy flights and lots of Beef Week activities. For information www.casinobeefweek.com.au or contact Bryan Low 0414 722 740 or Debbie Kennedy 0438 627 607.

LETTERS TO THE EDITOR

Battling the muck

I have been reading with interest the recent discussions on flight into IMC conditions. All VFR pilots will tell you how they had a close brush with IFR conditions. There have not been too many suggestions as to how to fix the problem. Here are two.

When I learnt to fly in Austers and Tigers in 1960, we were strictly told to stay away from cloud and to always be back on the ground half an hour before last light, no matter where that land might be. We were also told that any landing you walked away from was a good one. To that end, a good deal of time was spent on forced landing and precautionary landing training – anywhere, anytime. We were also told that bending the aircraft was preferable to losing our lives. We also spent a few hours of low flying training and I mean seriously low flying – under 50ft in varying terrain.

The other fix is to fit all aircraft with an elementary autopilot. At its most basic all this needs to be is a wing leveler. I have recently been involved in autopilot design. With solid state gyros and digital circuitry, these systems can be small enough to fit inside a matchbox. The only item which has any bulk and draws any power is the servo and only when it is operating. The thinking part of the autopilot can be made to recover from any attitude. Electronic components can be bought with varying levels of reliability. The very reliable ones (far more reliable than humans) are not prohibitively expensive. Environmental testing against, say, RCTA DO-160 (at least parts of it) is not expensive. Protection against surges (lightning strike – quite common) is essential as is temporary power backup for the thinking part of the autopilot (a small battery or large capacitor).

A wing leveler would be connected so that it boots up on turning the master switch ON. It would only become active when commanded. The pilot controls the aircraft in pitch using the longitudinal trim control and the ASI. This gives the pilot time to work out where he/she is and what to do next. With just about every aircraft fitted with a GPS, this is not difficult. Obviously some limited pilot training is required.

Regarding outlandings, the crash resistance of many modern recreational aircraft is woefully inadequate. In particular, low wing types with no credible overturn structure, no credible means of escape once overturned, no credible head strike arc distance and no credible ductile structure between the pilot and the front of the aircraft. These last points I have made often in public and nothing has been done. They should be incorporated in recreational aircraft design standards and insisted upon by RA-Aus before registration.

Bill Whitney

> *"It was suggested that I take my medicine and be a good boy*

Step by Step

I feel I have to reply to the article 'Watch your Step', (Letters to the Editor December 2012) where Duane Stace claimed it was "complete nonsense that there is some magical 'step' for an aircraft to climb over, like a boat on water".

Maybe Duane flies an aircraft grunty enough and slippery enough to be 'on the step' at the top of climb and doesn't have to juggle attitude and power to achieve the 'legendary step'.

I fly a GR582 Lightwing (I would love a 912s up front, but the cost of the airframe upgrade and engine prohibits that) and with my smaller horsepower engine, I fly as much as I can 'on the step'. I'll try to explain it this way. If my cruise altitude is to be 3500ft, I achieve this by continuing my climb-out, albeit slowly to between 3650ft and 3700ft. I level out, and my IAS will stabilise about 65kt while maintaining 5600/5700rpm. (It's a 2 stroke and will maintain those revs without overheating). Keeping an eye on the IAS, I slightly lower the nose and watch the speed increase to around the 70 to 73kts indicated, then gently reduce rpm to about 5300/5400rpm and the aircraft will maintain this speed and altitude. A 2 stroke, as most of us know, is more economical at 5000rpm or below, but with a tank of fuel on board, if I reduce my rpm to 5000, it will slow enough to come off 'the step' and will continue to fly in a slightly nose high attitude which causes it to (for want of a better way of explaining it) tend to drag itself through the air and will slow to around 63 to 65kts depending on the temperature and air density etc. I can increase rpm to 5500/5600 and the Lightwing will fly along at 65kts. So why not get back 'on the step' and gain around 5 to 7kts for the same rpm and cruise at 70kts instead of 65kts?

So yes, there are some of us out here who do fly 'on the step'.

David See

ASIC joke

Thanks to Ray Morgan for bringing ASIC cards back in focus (Letters to the Editor February 2013). When this was being introduced and because I had risk management experience, I wrote to then Minister for Aviation, Warren Truss, asking for a copy of the risk assessment, which had brought about the decision to introduce the ASIC/AVID, or, failing that, provide me with the credentials of the risk assessor.

I indicated my concern that, as a risk management tool, the card would have minimal effect (equivalent to erecting a sign,) while having a disproportionate bureaucratic and financial impost on industry participants; particularly private pilots who would have to personally pay the cost. In the response penned for Mr. Truss, in excruciating bureaucratese, it was basically suggested that I take my medicine and be a good boy. I replied, advising the response did not address my concerns and added an alternate suggestion: that rather than get the industry offside with further costs and legal imposts, why not encourage workers at airports, and in the skies, to be more vigilant and to report suspicious activity; after all who knows our environs better?

I also asked (tongue-in-cheek) whether the next move would be to ID truck and bus drivers, because they would be able to launch much more explosives than my tiny 2-seat aircraft. Needless-to-say, the response was more of the same and I'm certain the bureaucrat writing on behalf of Mr. Truss took himself far too seriously; 'We are not amused Bernard'!

I took my medicine and paid the hefty costs of procuring an ASIC, but was never asked to produce it in my travels (mostly around Queensland) so I surrendered it when requested and I didn't seek to renew.

To further highlight this nonsense of the usefulness of ID cards: I once had a (fair-haired) male colleague in a large private enterprise who exchanged his photo for that of a dark-haired women; he was never challenged by the private security people, whom he walked past (on average) three times daily.

My point now is that all policies and systems should be tested periodically to determine their effectiveness. Therefore, I call on our Board or administrators to request advice as to the

review frequency, and ask for participation in applying modern risk management rigor. At the very least, our aim should be to achieve changes along the lines suggested by Ray.
Andrew Girault

PS I also request the Board investigate and report on the prospect for on-field bulk provisioning of Premium Unleaded 98 fuel at Natfly 2013.

Ed - *I also have another bleat about the ASIC card in this edition. See Editor's Choice. Your other request re the fuel has been passed on to the relevant person.*

Getting a lock on vapour

I learnt a lot from Dafydd Liewellyn's letter "Petrols aint Petrols" (Letters to the Editor February 2013).

His comments regarding the differences between the Reid vapour pressure (RVP) of Avgas compared to Mogas led me to the Internet, and I was interested to have this source confirm that, due to its higher RVP, Mogas is more susceptible to vapour lock than Avgas, and the higher RVP of Mogas also makes it more susceptible to carburettor icing, another reason not to use Mogas in an aircraft engine.

Also courtesy of the Internet I discovered the different parameters that determine the Research Octane Number (RON) and Motor Octane Number (MON). There is no doubt the parameters used to determine MON are far more applicable to highly stressed engines, such as those used in aero and racing car applications, than the parameters used to determine RON.

Additionally, Dafydd's explanation of the fuel transfer methods used by fuel companies, and the resultant opportunity for lower octane contamination of various grades of Mogas (which does not affect motor vehicle engines due to the almost universal adoption of knock sensors in these engines, but can destroy an aircraft or racing car engines) is another reason not to risk Mogas in an aero engine.

The question now in my mind is how do the manufacturers of Rotax, who recommend using Mogas instead of Avgas in their engines, overcome these limitations?

Can anyone explain why Mogas can vaporize, cause carburettor freezing and detonation/ preiginition in other aero engines, but not in Rotax engines? Or does Rotax consider these risks are negligible?

Thank you for a very thought provoking article, Dafydd.
Gordon Foran

Fuel me once

Somehow we seem to be losing sight of the original problem about fuel (Letters to the Editor 'Fuel for Thought' December 2012) and my follow up comments on the subject.

Dafydd Llewellyn's letter 'Petrols ain't Petrols', although interesting, unfortunately misses the original point.

We are being told to use a fuel, designed for GA aircraft, in RA-Aus aircraft which the manufacturers clearly state is not ideally suited for their engines or fuel delivery components.

The specification is simple - 95 RON octane (or higher) with no Ethanol content.

The problem I want to see fixed by consultation between RA-Aus, CASA and the fuel companies is:

1. Decide on a suitable MoGas specification ie. 95 or 98 Ron which is available now and make it available at all registered and certified airfields accessed by ultralight and LSA aircraft. No testing or lengthy bureaucratic process needs to take place because the manufacturers have already approved it and we are using it without problems. We just need to be able to buy it at the airfield instead of carting it from the local servo.

2. Also make Avgas available at all of the same airfields for GA aircraft. With a mixture of no fuel of any sort available at many airfields, plus no suitable fuel for ultralights at any airfield, this is surely a safety issue.
Jim Crocker

What a Meeting

I would say the General meeting in Queenbeyan on Saturday 9 February can be marked down as a quantum leap forward for RA-Aus.

After a dishevelled start, the meeting actually moved forward, probably to everyone's satisfaction. The so-called protagonists finally got through to the management that things need to improve dramatically. To the management's credit they started to fall out of the trees and got onto the same page. For the people who couldn't turn up or wanted to turn up, the results at this point are great.

From the floor there were some great suggestions - I can't remember all the names – and there are signs that many weaknesses will be strengthened and the Board knows it's on notice and accepts that.

One thing which should be taken on board by members from afar is that the office has been under tremendous pressure recently and is working to getting things settled again.

Another point, members should make sure their information is spot on. If in doubt, check with the Ops team for the correct course of action.

I suggest call your board member and he will put you onto the track of who you could talk to. The rules and regulations are simple to read and understand as they are.

There will be changes to the Constitution in time, as well as the Ops and Technical manuals if we are patient.

I write this as a previously disgruntled member, but I am now relaxed on the basis that everybody knows where and what they stand for and there is vision among all.

I wish to thank David Isaacs and Don Ramsay for bringing this to a head, because if it hadn't, I can assure you it would have still been the same in twelve months time. Forward.
Keith Baker

Ed - *Members should direct aircraft registration enquiries to the Technical Manager and enquiries regarding Certificates, Ratings or Approvals to Operations.*

Sharp eyed reader

I am probably not the most eagle eyed aviation enthusiast about, but the photo on pages 38 to 39 (Sport Pilot February 2013) amused me with its mistakes, obviously the result of reversing the photo so the Jab flies in the opposite direction. Was this part of a 'Spot the mistake' competition? Here are the ones I noticed.

Air intake on front of cowl moved to the wrong side.

Front cowl decals are not straight and wrong. Part of the auxiliary power port is visible on the wrong side of the aircraft. The pitot tube is on the wrong wing strut.

The rego decals appear as if on a concave rather than convex surface. And the rudder control cable is exiting the wrong side of the tail.

Can I suggest that real enthusiasts would prefer the chance to closely inspect unaltered photos.
Paul Fletcher

Ed - *Good spotting Paul. Turns out you are the most eagle eyed aviation enthusiast about. But I bet you can't pick the altered one this month.*

Proud 95.10er

Regarding Chris Conroy's call to 'Recharge our Past' (Sport Pilot December 2012).

I, Michael Forrest of Wannon, Victoria, agree that 95.10 rule should be kept. I am a proud Thruster owner myself. I think the 95.10 should be kept because flight should be enjoined by all of its enthusiasts and not just the fat cats and the rich money men - not all people are financial enough to do it.
Mick Forrest (Gipsy Mick) and his grandson, Lawrence Leonard

And another one

I completely agree with Chris Conroy regards 95.10. Let's get on with it.
R J Haggarty

And another one

My apologies for the late reply to the above. I am pleased to know that someone had the nouse to highlight the worth and desirability of the 95.10 aircraft. Over time, I have owned and flown many GA aircraft and gliders. Those were the days when a working man could afford to fly. DCA to CASA has all been downhill and relies heavily on newcomers who really are not aware of how great it was. Then, in the 1970s, the minimum aircraft movement was born. Soon talented individuals produced lightweight, safe, affordable aircraft. And so was born 95.10.

The enthusiasm resulted in fantastic, clever designs and they created good aircraft with limitations because of their light weight.

A whole lot of ex RAAF and GA pilots unable to afford rising GA rates found their new heaven. They also had much experience and were a huge asset to us all.

They are largely hands on people who maintain and improve their aircraft. I sincerely hope Chris has stirred us into the type of action that occurred in the seventies. Put me down as a willing helper.
Keith Nolan

Exceptional proof

I'd like to take issue with the statement made by Henry Schneebeli
that "the exception confirms the rule". (Letters to the Editor December 2012)
The original aphorism is: "the exception proves the rule". In this case, "prove" has the old meaning of "test", as in "proving grounds" and "alcohol proof".

What the aphorism means is that if you encounter an apparent exception to a rule, that exception acts as a test of the rule in question. An example of this can be seen in aviation history, with the rule that heavier-than-air flying machines were impossible. When the first aircraft was flown, that "proved" the rule, and the rule was found wanting.

Proper thinking is vitally important to all people, especially pilots. I appreciate that Henry was making a point about regulations (which are far from natural laws or rules!), but to think that one can demonstrate the truth of a rule by acknowledging an exception to it is simply wrong, and has led many otherwise clever individuals to reach some shockingly incorrect conclusions about the world in which we live.
Duncan Bayne

Red tape relief

The recent problem encountered with registrations makes me think of the overworked office staff again. They must have been run off their feet, as were some board members and, apparently, a few volunteers (Are these last two groups one and the same?).

Regardless of the reasons leading up to this and wishing to avoid a blame game, one thing we all agree on is that it revolves around red tape. Questionable in safety terms and corporate efficiency? Perhaps, but there is still no escaping from it. All industries have to deal with it. Some more than others.

Red tape is typically labour intensive. It involves checking, box ticking, filing and other duties usually handled very capably by our office staff. However, sometimes it simply becomes an issue of sheer volume. We have around 10,000 members. Many of them are retirees. It is a shame we don't have a head office near/on an RA-Aus friendly airfield. Seemingly limitless quantities of intelligent, skilled labour is available to us on tap, just for the asking, if only these members could easily get there. One existing staff member could transition to become a 'Volunteer Coordinator', arranging availability schedules, head office work duties, accommodation (billeting out) and other personal requirements. I imagine this to be a great opportunity to meet great, civic minded members with 'get-up-and-go' and come to know them personally. (I wouldn't mind the job myself.) This would not require any more staff. After all, many of our head office staff would benefit from having their work load reduced.

I guess if we have more of these red tape issues in future we won't have to worry about looking after our overworked staff. They would have all left to go and work somewhere less chaotic.
Mark Pearce

Something to say?

DON'T hold it in and give youself a headache. Share it with the members and get it off your chest.

Maybe it's you and your completely reasonable opinion about the world of recreational aviation that no one else will listen to.

Email editor@sportpilot.net.au and have your say.

(By the way - the editor reserves the right to edit Letters to the Editor to shorten them to fit the space available or in case of libel. We don't want your completely reasonable opinion to land you in court.)

Have you been to Flysafe yet?

by John Brandon

THE new www.raa.asn.au website has a subdomain 'flysafe.raa.asn.au' (no www) containing all the 'Fly safe' tutorials and guides.

The subdomain is very much larger than www.raa.asn.au.

The tutorials and guides are important, because they reinforce the point that there is a host of Commonwealth regulatory material which is very much pertinent to sport and recreational aviation.

For examples see:
http://flysafe.raa.asn.au/navigation/electronic_nav.html
http://flysafe.raa.asn.au/navigation/adsb.html
http://flysafe.raa.asn.au/navigation/safety.html
http://flysafe.raa.asn.au/students/joining_sra.html
http://flysafe.raa.asn.au/regulations/regulations.html

Head on in there and have a look.

A RECORD ATTEMPT

by Tim Howes

IN early May I plan to set a new Australian record. The most take off and landings in a single day. The previous record set in 2011 was 102. That was established by Ron Watts in a vintage Beechcraft Musketeer on behalf of the Mission Aviation Fellowship. My goal is 120 take-offs and landings in a Drifter.

Because it is an RA-Aus aircraft, I will be restricted to daylight hours only. The attempt will be made at Lismore in northern NSW on May 4 with an alternate of Evans Head should the weather not permit.

I will make the attempt to raise money and awareness of the work of Friends of the Hound Inc. It is a volunteer-based and not-for-profit organisation which helps greyhound owners, breeders and trainers from all over NSW and SE Queensland to rehome their dogs as pets, and rescues greyhounds from pounds and shelters where possible. It is an expensive undertaking and needs all the support we can give it.

For more informationwww.fly.friendsofthehound.org.au

Air Warnambool on a high

SOUTH West Victorian aviation company, Air Warrnambool, is flying high after being named the region's Business of the Year.

The company's owners, husband and wife team, Tony and Melissa Franc, were presented with the Business of the Year honour at the recent Powercor Warrnambool Business Excellence Awards.

The nine-year-old company beat other notable - and larger – local businesses to claim the top prize, which came in addition to a win in the Professional Service category and an honourable mention for its owners' social media marketing savvy.

This year's award success built on the company's past performance in the local business awards; in 2009 it was recognised as the best-performing Micro-business in the region.

The Francs' passion is a potent ingredient in Air Warrnambool's success. Tony first started studying flying at the tender age of 13. He gained his private pilot's licence at 17 years of age and his commercial licence a year later.

The couple – who attended the same Warrnambool secondary school, but didn't meet (and eventually marry) until after they had graduated – were working in the flight and tourism industry in Far North Queensland when the opportunity to run their home town's only aerodrome came up in 2003. They were both just 23 years of age.

Today, Air Warrnambool has nine staff across two aerodromes. Tony is the company's Chief Flying Instructor and Chief Pilot, while Melissa keeps her feet on the ground running the company's day-to-day operations. Another three GA and recreational aviation instructors work across two sites – Warrnambool and Colac – and a crew of ground staff is also on hand.

>> Picture: Air Warrnambool

The company also oversees the grounds of the aerodrome, undertakes airport reporting officer duties, manages the Air BP fuel site and looks after ground support for Bristow Helicopters. Early in 2012 Air Warrnambool became the South East Australia Dealer for Evektra aircraft. This involves regular travel to all parts of Tasmania, South Australia, New South Wales and though Victoria to demonstrate the aircraft.

For more information www.airwarnambool.com.au

Good news for Evans Head

>> Action at the this year's Great Eastern Fly in

IT appears there will be no aged care home built at the end of the Evans Head runway after all.

In February RSL Lifecare rescinded its contract to build the facility, citing delays by the local council.

The President of Evans Head Memorial Aerodrome Association, Richard Gates, says it appears the decision will also spell the end of an associated 24 lot subdivision planned for the aged care facility

The RSL's decision to abandon the aged care home is good news for the many aviation locals who have campaigned against the development, which would have dramatically shortened the main runway and restricted flightpaths at the heritage listed aerodrome.

However as part of the deal, RSL Lifecare was to have put $250,000 into the Evans Head Memorial Aerodrome Trust Account to aid with the restoration of the historic Bellman hangar at the airport.

This hangar was to be ready to accept one of the RAAF's retired F1-11s by August.

The council has agreed to stump up that money so the hangar work will still go ahead.

NATFLY

The timing of Natfly this year meant it had not happened by the time this magazine was produced. Never fail, a full report will appear in the May edition

Flood help

by Peter Gray

THIS is a photo of North Bundaberg during recent flooding, taken from our Austflight Drifter.

We recorded the event, flying from our private strip, and also helped friends out with providing information about their homes when they had no other source of information.

They were pleased to have certainty about what was happening. We kept out of the restricted area when active, and stayed out even when not active. This photo was taken early in the day, when most of the helo pilots were resting as they had reached the limit of their duty hours.

SAM'S FIRST FLIGHT

THE first flight of an all-new design is a thing of beauty, especially when all goes well; and that's exactly what happened with SAM at the snow-covered Lachute Airport near Montréal, Quebec, Canada.

"Liftoff was perfect, in about 300ft," said Thierry Zibi, President of SAM Aircraft. "We were not at gross weight, so our climb of nearly 1300fpm felt like a rocket." The test pilot, Raphaël Langumier reported that the initial handling was exactly as expected. "With the prop set at a climb setting, we saw a maximum level speed of 127mph."

The SAM LS is a roomy tandem, retro-look, metal aircraft, powered by the 100hp Rotax 912S. It has a Sensenich ground-adjustable composite propeller. It will be available ready-to-fly or as a kit in three configurations (short, long, and standard wing. The SAM LS was designed to be comfortable, rugged, easy to repair, economical, fun and to have the distinctive classic look of a warbird trainer.

The ready-to-fly price out of Canada is CAN$135,000. The Standard Kit is CAN$39,000.

For more information www.sam-aircraft.com

TECH TALK

WAYNE MATTHEWS

Here I am, here I am

WILL you look at this. My very first column in Sport Pilot as the Tech Manager. Who'd have thought Uncle Wayne would one day wind up sitting at this desk? I have to tell you, I feel both proud and honoured to have been selected for the position.

Right! Enough of my sighing expressions of amazement. I've work to do. I'll introduce myself first with a quick run through about where I've been and what I've done on the way to this office, and then put forward what I believe needs to be addressed by our association on the subject of aircraft maintenance.

I joined the RAAF in 1968, when I was 16, and graduated as an Airframe Fitter from number twenty two intake of apprentices. Then in 1971, while still officially an apprentice based in Canberra, I was cross trained on engines and began travelling all over the country as a Flight Fitter A (read: flying spanner) on the UH1 Iroquois helicopters being operated at that time by 5 SQN.

In 1973, after having completed an electronics course at the RAAF School of Technical Training in Wagga, I was the youngest person selected to be on the initial cadre team to go to the US to get Australia's first Chinook helicopters, the CH 47C. In 1975, I was selected and trained to be a Caribou Loadmaster/Flight Engineer.

In 1980, I left the RAAF and joined Air Nauru as a B727 Flight Engineer operating throughout the Pacific. In 1983, I was seconded to Air Tungaru for three months as their Chief Flight Engineer while they found a replacement. On returning to Air Nauru, I was appointed as the Assistant Operations Manager where I assisted and at times carried out the duties of Air Nauru's Operations Manager whenever that man was not available.

In 1985, after Air Nauru sold its B727s, I returned to Australia as a Flight Data Officer in Air Traffic Control. Then in 1986, I went to QANTAS as an Aircraft Maintenance Engineer working on B747s and the then brand new B767s. In 1987, I was approached by QANTAS management to join its ground school as the Flight Engineer Specialist Instructor. In 1990, I was transferred across to the flight simulator to train Flight Engineers and Second Officer Pilots to operate the F/E panel on the B747.

In 1996, after ten years in QANTAS, I bought a farm in the Mid West of America and moved my family over there, so my kids could get to know their mother's side of the family. Once established on the farm, I sat for and got my FAA Airframe and Powerplant (A&P) maintenance license (US equivalent to an Australian LAME licence), then applied to the American companies who operated aircraft with professional flight engineers.

Ryan International was the first of several to come back to me, and the one I chose to go with. They wanted me to join their team to put DC10s on their operator's certificate. After completing the ground school and flight sim, and then while carrying out the proving flights with up to thirty FAA examiners on board at a time, I was appointed as Ryan International's Senior Check and Chief DC10 Flight Engineer.

In 2004, After six good years, Ryan International traded in their DC10s. After selling the farm, I brought the family back to Australia and bought the Billabong Motel lease in Gunnedah. While running the motel, I bought my Piper J3 Cub, the only enclosed hangar on Gunnedah's airfield, became a CFI and L3 Maintainer, and began setting up Billabong Aviation. A business dedicated to passing on a lifetime of aviation knowledge and experience to people who want to be aviators for the pure joy of it.

So that's what I've done on the way to this office. Now let's look at some maintenance issues that I think need to be addressed by our association: We have over 3,300 aircraft in our fleet being maintained by our 9,600+ members. Most of who have maintenance privileges attached to their Pilot's certificates. Which I think is great, and I do not want to see that changed. But (there's always a "but" after a lead-in like that) if we're going to preserve and protect those privileges, despite the fleet getting older (some of our aircraft are more than 20 years old now), we're going to have to continue demonstrating that our aircraft are being maintained to the required standards laid down in the Tech Manual.

To do that, and I'm going out on a limb here with an idea I'd like everyone to consider, I'm going to suggest we recruit 30 to 40 L3s, and have them made available to give technical advice to local members. I'm also going to propose that our L3s be trained to run maintenance training seminars for our members.

So there you have it. That's who I am, where I've been, and where I see us going maintenance wise... If you think you have what it takes to be able to help other members with their maintenance, or you know somebody you think has what it takes, I'd like to hear from you please.

Keep the sunny side up.

The Banana Canyon

The story '178 seconds to live' in Sport Pilot in December brought back some memories for this pilot

by Rob Dawson

IN 1999, my wife, Di and I flew our kit-built Jabiru 2200 from Rockhampton to yet another successful and enjoyable NATFLY at Narromine.

When it was over, we set out for home. We almost never made it.

The forecast was for more of the perfect conditions we had experienced on the way down. We deviated from our flight plan a bit from time to time, but still stayed west of the Great Dividing Range.

Approximately 20nm SW of Glen Innes, we saw smallish balls of cloud drifting from west to east. They appeared to be multi-coloured, very symmetrical and increasing in number. I couldn't recall having seen anything quite like it before. We considered our options. We could either continue as planned, or call into Glen Innes, top up our fuel tank and re-assess our plans. We decided on the latter.

On the ground at Glen Innes, we could see the very thin light cloud was not far away to the west, but there appeared to be little change in the wind. The sun was shining above and it looked OK to the east. So we checked the weather report for Ballina, which read clear skies with light wind. By this time, we were in company with two other Jabirus, which had also put into Glen Innes. Both of these were piloted by CFIs, so, naturally, I was interested in their opinions. They seemed to think we could beat the weather, so we all quickly refuelled and took off together.

At 3500ft, we found ourselves climbing through growing patches of cloud. However, Ballina was only 60 minutes further on and it was all downhill. The flying conditions had not changed and it seemed easy to climb higher into the clear skies just above us. So we climbed and climbed, but the visibility quickly deteriorated. The weather seemed to be catching us. Suddenly, we heard one of the other pilots report that he had found a hole in the cloud cover and was descending through it. That was the last we heard from him. We didn't know it at the time, but he landed on a mountain ridge without injury (but with damage to the propeller).

Moments later, the second pilot also reported he was descending through a hole (and we learned later he, too, had landed in difficult terrain without injury).

On receiving these reports, we looked for our own escape hole, but there was none. The situation was becoming more than a little alarming. Then voila! We emerged into this clear space; a long crescent shaped area of perfectly clear sky surrounded by solid white cloud walls. We just flew into it. It was really beautiful, like a long banana-shaped canyon of pure

air hidden in the clouds.

At this stage, though, I noticed I was having difficulty maintaining engine rpm. Our motor was icing up. "OK", I thought, "no worries – pull on carburetor heat", and very quickly we had full power again. Then the left wing stalled. I quickly picked it up. Then the right wing stalled. I picked it up, then the left wing again, then the right, and so on. It became repetitive. I could see rime ice coming up the windscreen. I chanced a quick glance at the left wing. Oh no! My wing strut was carrying long fingers of rime ice along its whole length. These fingers were more than two cms wide and evenly spaced horizontally, about 150mm apart and the full width of the strut. I reckon I could not have spaced them more evenly with a ruler and pencil. I had no time to look at the starboard strut, but assumed it had to be the same.

Realising the aircraft might soon stop flying, I reduced power and tried to fly at a lower airspeed even though this made it more difficult to maintain control. Logical or not, my thinking at the time was that the aircraft skin temperature would be higher if I flew more slowly. At that stage our inside air temperature was 4°C. We were at 10,000ft, in summer clothing, yet not cold.

Reluctantly, I decided to look up to see what was happening on the underside of our wing surfaces. Horror of all horrors – there was rime ice from the leading edge almost back to the ailerons! The ice was in strips about two-and-a-half cms wide and spaced about 300mm apart, also very evenly. Still picking up stalling wings, I turned to Di and said, "We are in big trouble".

> *"Horror of all horrors – there was rime ice from the leading edge almost back to the ailerons!*

We were trapped in this huge canyon, the dimensions of which I would estimate at about 4 to 5nm long, 2nm wide, with a curved bottom about 1,500ft below and a similar height above. All the walls seemed smooth and brilliantly white, and above these walls, great clouds boiled and twisted. We were at maximum altitude and going nowhere.

So we committed our aircraft and ourselves to God's hands and asked that He lead us to Ballina.

I rechecked my airspeed and trim settings then buried the aircraft's nose into the smooth white wall of cloud and began a gradual descent.

Our aircraft has a full GA panel with an attitude indicator, turn and bank indicator and directional gyro. However, I had absolutely no instrument flying experience. Consequently, I suppose, it wasn't long though before I started to feel very strange. I felt I was flying OK, but my DG was beginning to turn to the left at an increasing rate. Also, the airspeed needle was slowly but surely moving in a clockwise direction around the dial. I did not realise it at the time, but I guess we had started to use our allotment of those 178 seconds. The plane was gradually, but inevitably, entering a death spiral. I knew things were not quite right, but my brain had difficulty convincing my body what to do about it.

I know many people will not believe this next part of my story, but just then I heard a man's voice say to me, clearly and distinctly, "right rudder, right rudder".

Di, sitting beside me, did not hear it, but I did, and I believe this was God's Holy Spirit speaking to me. I immediately obeyed and applied pressure on the right rudder pedal. My DG then showed me we were straightening up. I also eased back on the control stick and the speed reduced and the descent became more controlled. I was completely disoriented and my body was not giving me proper feedback,

but I became fixated on the instruments and we continued to descend under control through the cloud.

When we built our Jabiru, I had fitted a full panel, but, even to this day, I have never been trained to properly use it. Occasionally, while flying VFR, I had tried to fly on instruments only, but I knew this was far short of flying on instruments for real. I can say, however, that I knew the function of those instruments and what they should have been indicating if the aircraft was flying well.

On we flew through the cloud, still descending. So intently was I concentrating on my flight instruments, that I had no idea in what direction we were going. I asked Di to check the GPS and read the heading information aloud to me. Gradually I was able to get us back on a heading for Ballina.

Then there was a sudden red splash of colour reflecting through the clouds. I jokingly said, "Don't tell me we have a fire in the motor as well!" In seconds, the whole cockpit was lit with a brilliant flash of red, which immediately disappeared. Actually, we think we passed through the eye of a rainbow. To us it was confirmation we were not alone.

It was now starting to rain, slowly at first and then in torrential proportions. The cloud we were in began churning. Still flying on instruments a new sound filled my ears. Bang, bang, bang! Good grief – whatever was that? We can't be running into solid objects thousands of feet in the air? Then the penny dropped. I had forgotten about the ice on the wings. The rain was melting it and there were chunks of the stuff hitting our tailplane and rudder. This continued for a few seconds and then we were back to the sound of pelting rain and the humming motor.

The rain forced itself in wherever it could, through the top of the door, and the air vents. It continued for the next 15 minutes or so, then stopped. So did the turbulence. We were still in heavy cloud and had zero visibility, but it was very still.

With about 30nm to go, I looked down through a small break in the cloud. Not very far below I had a fleeting glimpse of a house on a ridge.

A short time later we slipped gingerly out from under the cloud and, to our amazement, found ourselves only a couple of hundred feet above flooded, harvested cane fields. There was a road to my right, a car travelling towards us with its lights on and an occasional street light. But we were too low! We could easily have flown into high tension power lines, so we pulled up into our cozy clouds to an altitude no pylons could reach. I say 'cozy' because, by that stage I was feeling perfectly at home and really safe up there.

About 6nm out from Ballina, I once again began a cautious descent. Still on track for the airfield, easing ever so gently out of our cloud cover, what incredible joy we felt. Right on the nose was runway 06. All grass surfaces were under water. Only the runway, taxiing and hard standing surfaces were above the water. They must have experienced much heavier rain for a longer period than we had had. The forecast had been way off.

"An alert phase had been declared on our aircraft

When we finally planted our wheels on the ground, a man came running up through the rain to ask if we had left Glen Innes in company with the two other Jabs. Apparently, one of the CFIs had been picked up by a farmer and had phoned Canberra.

An alert phase had been declared on our aircraft, one we were only too happy to cancel. As it turned out, the rain and low cloud continued for the next three days. This unscheduled stopover gave us time to unwind and relax before taking off on the last uneventful (almost boring) leg of our journey home to Rocky. By the way, I met both of those CFIs again. They found it unbelievable we had made it safely.

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EDITOR'S CHOICE

BRIAN BIGG

That stupid card

THOSE of you who have followed my editorials over the past few years will know I don't think much of the dreaded ASIC card (and yes, I do realise the 'C' in ASIC stands for card, but it's the way everybody refers to them).

The cards were a knee jerk reaction by the former federal government to the events of September 11, 2000. They wanted to give the public the impression they were making Australian aviation immune to terrorism. But when they found out just how much such a thing would cost, the powers-that-be decided on a smoke and mirrors campaign instead. Tell everyone you are locking the airport gates and hopefully everyone will believe you.

Unfortunately, instead of asking pilots to become a cheap additional level of airport security, the government demonised us, making it plain that we were part of the problem. (Don't forget it wasn't a licenced pilot who banged the planes into the towers, the planes weren't light aircraft either, nor did it happen in Australia). The experts say it's more likely terrorists would use a truck bomb here, but do you see truck drivers being forced to go through the same level of bureaucratic nonsense we are forced to go through?

Pilots are the ones who hang around airports the most. Aren't we more likely to notice a person who has no business being there? They even ask the RPT flight crews to wear ASIC cards. If you can't trust the captain of the aircraft carrying 200 people, you can't trust anyone.

Part of the security at an RPT airport in my area is a wire fence which runs around three sides of the field. Do they really think a person intent on doing something bad won't work out the flaw in that? The fence keeps out some animals, but that's about it.

Security gates are just as silly. Most of us get a group text each time the code is changed, telling us of the new number. It's common knowledge that at most airports, the code is printed on the back side of the gate. Stick your telephone through the gate, take a photo and you are on your way. Has anyone ever used those security flaws and done something bad? No? So where is the problem they are pretending to solve?

And what is the point of having a security officer wander round once every two or three weeks to check if we are all prominently displaying our cards? Invariably somebody wanders into the hangar to tell us the security dweeb is out and about and those of us without our cards wander off until he has gone by. How does that make the airport secure from terrorists, as opposed to merely hassling the only group of people with every right to be there in the first place?

The end result has been that the ASIC cards, instead of improving security, have turned many of us into passive resisters, hell bent on finding ways around the system. That actually weakens security, which is not in anyone's interest.

My intense dislike of the useless cards has been rekindled because it's time again for me to get mine renewed.

Forget, for the moment, the relatively expensive nature of the renewal. It works out to be about $100 a year, depending on which organisation does it for me, which is pretty expensive really for what I get (includes cost and time to get photographs, photocopies and postage etc).

Why not have a validity period of five years, which would bring down the cost to about $20 a year?

What burns me most is the time and the inconvenience it takes to go through the renewal process as comprehensively as the first time I applied for the card.

Surely, in the two years since my most recent card was allocated to me, if I had become a federal security risk, the government would know about it and my name would pop up on a computer somewhere with a big notation beside it 'Do not give Brian a new card, he's become a bad person'.

Why do they need me to get two new photographs endorsed by an approved person? Can I change that much in two years?

If they trusted the approved person the first time round when he or she said the photograph was of me, what can have changed? Maybe every ten years or so my face will have changed enough to justify a new photo.

Even getting someone to endorse the photographs in regional Australia can take considerable time and effort. Justices of the Peace are as rare as hen's teeth in some parts.

If they had my birth certificate and passport the first time round, why would they need to see them again? It's not as if my birthdate has changed. And the federal government gave me my passport in the first place. That involved some sort of security check. Surely they have a record of it there somewhere.

Wouldn't it make more sense to just send me a letter saying something like "this is who we think you are. Has anything about you changed since your last renewal? If so, fill in the details. And if we catch you lying, we will take it off you and fine you." That works fine for most things, like bank accounts and library cards. Why is this different?

Keep in mind, of course, that no matter how complicated and difficult they make the process of getting a card, it will never really prevent a bad person doing something bad. It's merely a way of keeping tabs on the rest of us.

The whole process has the appearance of lazy bureaucracy. They are keen to be seen to be doing something, but they want us do all their work for them.

It might be worth it if the cards actually had some value. But outside the metropolitan airports, they are pointless. As a test, I let my first ASIC lapse and carried around the expired one for almost a year. At none of the airports I visited, including Archerfield and Bankstown, did anyone ever stop me or ask to see it.

And don't get me started on how stupid it was for the government to allow each airport administration interpret the security laws any way they want.

At one airport, the security Nazi will make local pilots' lives hell with of a whole swathe of local rules which may or may not make sense. While at an airport up the road, the local security bloke is nowhere to be found and you can wander in off the street in your undies.

Security is really no better than it was before September 11, 2000. And as long as the government baulks at spending the billions it will take to make the system actually work, it will remain just a con trick. One that we help pay for. As a start, they need to come up with an approach which makes pilots part of the solution, not part of the problem.

THE CIA'S AUSSIE AIRPORT

by Norm Sanders

MOST Australian airports started as paddocks, occasionally visited by a biplane. Those which escaped being swallowed up by houses then grew in varying degrees, some becoming bloated beyond recognition.

Tyagarah Airport has a more sordid past. It was built as the Australian base for drug imports from Southeast Asia.

Tyagarah (YTYH) is a 900m grass ALA located north of Byron Bay, NSW, between the freeway and the beach. It is now home to a bunch of motorgliders, RA-Aus machines, Tiger Moths, GA aircraft, helicopters and a skydiving company. The closest town is Ocean Shores.

Anyone with a long memory might recall that Ocean Shores was caught up in the shady dealings of the Nugan Hand Bank in the 1970's. The story of Ocean Shores reads like a spy novel. It involved a US Green Beret officer, a CIA Air America pilot, a billionaire shipping magnate, media and transportation moguls, and, of all things, popular American singer, Pat Boone.

Nugan Hand Bank was founded by Griffith lawyer, Frank Nugan, and former U.S. Green Beret, Mike Hand. Hand was CIA, first sent to the Vietnam War, then asked to train CIA backed Hmong guerillas in Northern Laos. This established his ties to the Golden Triangle heroin trade. The two men generally split bank duties. Nugan took care of tax fraud and money-laundering for the CIA and others. Hand managed the drug money and the international branches.

Nugan Hand rapidly expanded from a single Sydney office to a global network which included branches in Chiang Mai, Manila, Hawaii, Cape Town, Hong Kong, Taiwan, Cayman Islands and Washington DC.

The Nugan Hand Bank bought respectability by recruiting a number of retired senior U.S. military and intelligence personnel, such as former Rear Admiral Earl "Buddy" Yates as president and ex-CIA head, William Colby, as legal counsel.

The Ocean Shores real estate development was a major part of the bank's money laundering operation. They took it over from a mysterious shipping billionaire named D.K.Ludwig and squeaky clean American evangelical singer, Pat Boone (It was named after Boone's home in Ocean Shores, Washington.) Very few lots were actually sold before or after the bank took over. It's estimated less than $100,000 worth of land was sold.

In addition to arranging drug and armament deals around the world, Nugan Hand reportedly started importing directly to Ocean Shores by air. Rumor at the time, never substantiated, was that the bank had bribed customs officials with cheap lots.

Ex Air America (CIA) pilot, Bud King, did the flying. He lived in Ocean Shores and at first operated from a road near the beach. Nugan Hand then built an airstrip (05-23) in coastal scrub near the Tyagarah Swamp in 1973. It is a pity they didn't put in an 18-36 strip as well. The often turbulent crosswind plagues present users.

Tyagarah locals remember the flights, but don't recall the aircraft type other than it was

Rumour at the time, never substantiated, was that the bank had bribed customs officials with cheap lots

a light twin. When not hauling drugs, King flew businessmen and potential real estate customers up from Sydney.

King had a Thai housekeeper whom he had brought from Asia. Apparently, he didn't treat her too well. During a visit to a lawyer in Sydney over an unrelated traffic accident, she took the opportunity to dob King in. She claimed he regularly flew planeloads of narcotics from Southeast Asia to the secluded Tyagarah airstrip. Mike Hand, according to the housekeeper, was part of the operation.

The lawyer contacted narcotics officials, but nothing was done with the information. It was merely the first of many dope-smuggling complaints involving Nugan Hand principals.

The bank eventually became a major public scandal and there were a number of investigations into its murky operations before it was shut down. None of the main characters was ever jailed.

Frank Nugan was found dead in his Mercedes near Lithgow with a .30 calibre rifle by his side. The official verdict of suicide was not widely accepted.

Mike Hand left Australia by way of Fiji, using a false passport and sporting a fake beard and mustache. He is believed to have received a new identity from his CIA mates and has never been seen again.

Pilot Bud King's last flight ended badly when he "fell" ten floors from a Sydney apartment building.

All very heavy stuff. But at least we got an airstrip out of it.

Reference *"The Crimes of Patriots – A True Tale of Dope, Dirty Money and the CIA," by Johnathon Kwitney.*

Does your airstrip have an interesting history?

Doesn't have to be drugs and murder like Norm's, but it will still make a good read. Email editor@sportpilot.net.au

>> My dad's first trike

My *friend* Jozinko

Peter McLean from Yarrawonga Flight Training has received a letter from a Slovakian pilot friend. Turns out they are addicted to aviation too. Here's his story.

I REMEMBER we were on holiday in Slovakian mountains in 1975. I was six years old. We went up the hill by lift. When we were there, the Hang Glider pilots took off. My father asked some people where they would land. "Down into the camp". Then our family trip ended and we went down by lift, sat in the car and drove to the camp, where the last pilots were just landing.

Father went to talk to them and my mother, brother and I stayed waiting for him. After two hours my dad returned and said to my mum: "Can you lend me 200 Czechoslovakian Krowns, please?" Then he returned to the others and we waited for him again. Next he came and said: "I ordered plans for building a wing." During the next months we drove all over Czechoslovakia and bought dural tubes, igelit sail, steel cables and more and more things for a wing. All by himself, he made his wing. But he didn't have any information about flying, or about wing settings. We used to go to all the hills around here and we (he) didn't have any success. Then he said the hills were too small and we went to a 300m high hill near the ruined Branc castle. The wind was blowing about 5 metres per second and he went to do his first take off. Immediately he was up and climbing. My mum and I watched him and he was climbing and climbing. Using binoculars we watched him try to climb using the control bar. Next he tilted the wing and by spiralling, he flew down and landed heavily into the big shrub. Only the trapeze tubes were bent. Then other pilots came and my father consulted with them about his wing and his flight. Many things were bad. Some

> *"Other pilots told him that a small wing must fly quickly*

years later he became an instructor.

When I was 14 years old, I started my hang gliding flying career. When I was 18, I had to go to the military for two years. In 1990, when I came back, father had his first trike. He sold his hang glider wing and made a trike base with a 250cc motorcycle engine and made his own propeller. Next he modified it and used a Trabant engine. He and my friend, Milan, next bought new wings. My father made two trikes, his for solo flying with an 11.7m wing area, and Milan's was a two seat trike with a 16.7m wing area, as Milan had a sponsor. Both were learning by themselves. System: test – mistake. When they could fly, Milan became my instructor.

That was in 1992. I flew on Milan's trike quite often and I flew with passengers too. My father had his small wing and he told me it is quite nervous (twitchy) wing. "You only had to think about turning left and the wing went to 45° left immediately". When he asked me if I would like to try his trike, I thought, "If I say no, I don't know when I would try it". Milan was afraid to fly it and my father told me it was nerves. I said, "Yes!" But I was very nervous. When I took off I found it was a great wing. It was smaller than Milan's big 16.7m wing and its control was very easy and nice. The third turn I made using only one hand. I flew about 70-75km/h and it was beautiful flying. After landing we consulted to father about it being nervous. I told him I didn't feel nervous. Next we found reason. Speed. My father flew at high speed, about 85-90km/h, because other pilots told him that a small wing must fly quickly. After that time I flew more and more hours and kilometres in my father's trike. It flew well in 12-14m/s wind. I love that wing.

In 1994, I passed my pilot exam and I received trike pilot licence. In 2001, I bought my first trike. It was a used Ukrainian manufactured complete Antares trike, UFO 14.2m wing with a reducted Trabant engine. The Trabant was very problematic engine. Then my father made me a VW1500 engine without reductor. I flew over half of our country. It was a beautiful trike. Then I bought new SkyGlider wing. It was 12.8m area.

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Continued ...

It was a beautiful, modern wing. It was even better than the UFO.

In 2003 I became an instructor for trike flying. In 2004 we went to Ukraine to learn float flying. Our friend, Vitalik, was Aeros dealer and test pilot. All the guys had their trikes modified for field spraying.

Unfortunately in 2005, my friend, Jozef, crashed with my trike and he died, and my trike and wing was deeply damaged. I thought my flying was ended because my plane was damaged. But in this year, only one month after this crash, I won Championship of Slovakia. When I stood on the first place podium, I looked up on the sky and I said: "Thank you Jozef." After I won the championship, Mr.Verner offered me his engine VM-133MK very cheaply. Next Mr.Rehak offered me work as his dealer, and his trike, a Cross 5 Sport very, very cheaply. So I had a trike with instruments and engine, but I had no wing and propeller. I sold my personal gun.

In 2006, I went out of police and they give me money for my work. My wife called me, "I keep the cheque!" "Ok I will come." I came home. My wife was very happy and she dreamed about a holiday by the sea and new sofa set for the living room. I took the cheque from her hand (105000Sk=approx 3500€). I went to the post office, changed the money, went to the change office - my friend give me a very good exchange rate - and next went to the bank and sent the money to the Ukraine and ordered a new Aeros Profi 14 wing. My wife hated me at this time.

In 2007 I passed an exam for Radiotelephone Operator for aeronautical service. Yes, I have it for English communication, but I never use it. I communicated with towers only in Slovak language. I must learn it and sometimes use it in future maybe.

In 2010 I became Inspector for trike flying of Flying Amateur Association of Slovak Republic. I do theoretical and practical exams for new pilots and instructors here.

I told my wife about your invitation to Australia. She said, "Yes!" But her parents are not in good health and we must help them. I proposed to visit you on a holiday for about 10-14 days. But it would be a very expensive holiday for us. The cheapest plane ticket costs about 3000€ for two, and that is my three month salary. Accommodation, eating and trips through Australia, that would be too much for us. I hope I win the Lotto and then we both can drink beer in Hangar 19.

GOING COMMANDO *in the air*

by John Smith

>> John and Monica enjoying the sun

MONICA and I run a small resort style caravan park in the South East of South Australia exclusively for nudists.

That's right! For people who like to get their gear off to enjoy the freedom of the sun and wind on bare skin. I reckon nudism, just like flying, motorbike riding and sailing, is all about freedom.

We are considering establishing an airstrip at the resort and have recently purchased a Skyfox Gazelle with a view to getting a Pilot's Certificate, flying over our beautiful coast and, with the folding wings and trailer, take it on holidays.

However fishing is difficult from the Gazelle, you need a very, very long line.

I have always wanted to fly. I did a stint in the RAAF, but unfortunately the illegitimate sons of English gentlemen kept telling me what to do. Did I sign up for that? This was way back when Australia had Canberra bombers, and the cost to learn to fly was quite high.

Mind you, my brain might have been a tad sharper and the number of lessons a mite fewer back then. All in all, flying is very easy. Let's face it, I can very nearly take off on my own. Someone moves the landing strip as I roll along it and when I am just in the air, my Gazelle wiggles her wings and I head off in a totally different direction, all the while I have this very annoying voice in my ear saying things like "lift the nose , drop the left wing and watch your speed". I am a man, for Pete's sake. I can only do one thing at a time and at my age, I am lucky to do that... lucky for muscle memory.

By the time I hear the instruction, work out what it means, process it and tell the muscles to move, 10 or 15 minutes has gone by. Flying around is easy breezy as long as you are not bothered about height or direction thanks to the pesky thermals or the breeze which blows up to a force 10. The landing, is easy too. Except for the bloody fence at the end. I am going out one dark night to cut the wire and dig up the posts. I am convinced the same bastard who raises the runway every night, lowers it when I am not watching.

How about the lingo? I am a Pom and proud of it, but I must admit, the only time I think about it is when the Pommie cricket team is here. For a Pom, I have enough trouble with English, let alone the abbreviations aviators use. I know in the early days abbreviations were necessary. Let's face it, it would not have been right to let the general population in to the aviator's world of words but, c'mon, printing is cheaper now.

So far I have completed 30 hours. After each lesson my ill suffering instructor looks like he has gone five rounds with Mike Tyson. The 30 hours has been great, I love it. I should have done it sooner. Exciting isn't it?

Enjoying a flig to the

THE SeaMax is a production light sport, floating hull seaplane from Brazil. I had the fortune to meet Mig, the SeaMax designer and owner, when he visited Australia recently. He impressed me as a nice bloke, proud of his creation, prepared to back up his product, continually refining its design and open to ideas and suggestions. He has just set up a new modern factory to cope with the increasing demand for the aircraft.

The SeaMax has a composite hull, with fabric covered metal ribbed wings to minimise weight. All metal components are either corrosion resistant, fully corrosion coated and proofed, or double anodised. SeaMax aircraft in Brazil are almost all operated in salt water, and are designed for this purpose.

I flew Phil Woodbridge's SeaMax, the top of the line version. A great deal of care has been spent to produce a very high quality of urethane finish on the exterior, but planned future production will replace the fabric skins with aviation quality vinyl skins. These do not require painting and will reduce its weight even further from the existing 370Kg equipped weight. The tricycle gear is electrically retracted, as are the flaps.

The steering is by differential toe brakes, which enable the SeaMax to be spun around in a very small circle. This model didn't have a parking brake, although this may change in the future. The hull design is a shallow vee, using lifting strakes on the sides, which help give a fast take off with minimum spray, and a surprisingly smooth ride on rough water. Generally, shallow vee hulls have shorter take-offs than deep vees, but deep vees are more comfortable in rough water. Shallow vees seem to be more tolerant of side motion on the water, as they don't 'bite' in the way a deep vee can, and as a result, are less affected by directional stuff ups when alighting.

In my experience, the longer the hull forward of the step, the more docile they are in pitch, but design features can change this and the take-offs are somewhat extended. Turbulators, or vortex generators, have been fitted behind the cockpit, to stabilise airflow to the tail surfaces for improved stability. The 912S in Phil's aircraft is fitted with an Airmaster constant speed reversing propeller, using the Warp Drive metal edged blades. The flaps range from negative to plus 40°. VNE is listed as a calculated 151kts, with a cruise of a measured 95-100kts using around 19 litres/hour at 75% power. Production has well exceeded 100 aircraft, and it has an unparalleled record of water safety with no capsizes, gear up or down. The SeaMax is the only seaplane I know designed to cope safely with gear down alightings, as the nose wheel fork and wheel are designed to shear off on impact, to prevent overturning. The current production now has the option of single person folding wings, designed for trailering.

THE COCKPIT

The cockpit is rather sumptuous with a width of 1130mm at around shoulder height with adequate room for two. Entry is exceptionally easy. The cockpit is fitted with a centre stick, with trim and PTT buttons on the top, and throttle levers on each side. The main bank of switches is mounted in a row beneath an overhead arm, with the labelling sequences duplicated on the front console. A generous luggage area behind the seats allows 10kg each side, with perhaps more if the seats and luggage are moved forward. Ventilation is very good by two wing inlets venting at head height at the rear, and by two canopy air scoops.

THE CONDITIONS

The aircraft was loaded to 600kg with two occupants, 75% fuel and cross country gear. It would be hard to load the aircraft to the allowed 650kg unless the two occupants were very heavy. The wind varied from calm to around 10kts. We alighted on Lake Keepit, which is fresh water and some 1000ft above sea level.

LAND OPERATIONS

The empty SeaMax is almost balanced on the main wheels. Indeed, with low fuel, and without the solo ballast weight, it will want to rest on the tailskid. This balance makes it remarkably easy to pull around on the ground by holding on to the lip of the nose wheel well, where the nose can be lifted with one hand. Tie downs are best held from the wing struts and the nose wheel and with the fuel tanks preferably full to keep it nose heavy. The central stick rests heavily in the forward position, as the all flying elevators don't need more than light mass balancing. As a result, a firm positive pull is needed to hold the elevators central when taxying on rough ground, to avoid them banging against the stop. Taxying requires the use of the differential brakes to steer, and while the suspension has rubber dampers, the ride on rough ground is firm. The take-off roll needs some right brake to counter propeller torque, and pilots used to steerable nose wheels would need a little practice to become familiar with its differential brakes. The take-off run was 12 seconds, no wind, on upslope bitumen. In full climb, the nose attitude is quite high, with the direct view ahead obscured, but with forward view around both sides of the curved instrument panel. The climb rate indicated was 700fpm.

TAXYING ON THE WATER

Idle taxying without using the water rudder makes for slow turning, but it just handled a 5kt crosswind. Using water rudder it is more responsive, requiring a bit of push on the pedals. For plough taxying, the SeaMax was quite manoeuvrable without the water rudder, which is to be expected. It was dry in all phases in a light chop, but attracted spray as wind and wave

ght max

by Barry Wrenford

height increased. Forward visibility was good at slow speeds, and one could still see over the nose in a moderate plough position. Right on the hump though, view was obscured, but was good again on the step. For getting up on to the step in light winds at our high loading, power was best fed in smoothly to avoid excessive yaw from prop torque. The stick was held full back until the nose rose to the hump, and loaded as we were, moving it forwards slightly helped it crest the hump around 17kts. As the nose lowered, full back stick was necessary as it rapidly accelerated through 25kts, then eased forwards to reduce drag, until lift off at 45kts. With the aircraft lightly loaded, full back stick could be held over the hump until 25kts was reached, where the stick then eased forwards as before. At higher AUW, in light winds and some CG positions, between 18 to 25kts water speed just past the hump area, it exhibits a nose high porpoising. It is harmless and is minimised by keeping the stick full back in this zone. It is common in many seaplanes. The step taxy is stable from about 25kts upwards, with 30 to 32kts being optimum, where it is quite tolerant to the fore-aft position of the stick. The SeaMax easily handles step turns with the hull visibly skidding sideways with no ill effects. Mig told me that with practise, the SeaMax can be taken off in a circular path of a 100 metre diameter, but we didn't try it. On rougher water with wave height around 150mm, step taxying was smoother than I expected, probably due to the downward deflection of the wash from the lifting strakes on the sides of the hull.

TAKE OFF AND CLIMB

Flaps can be set at position 1 or 2 (10° or 17°) for take-off. 17° seems better and reduces the nose attitude in the climb slightly. After getting on the step, reduce the back stick a bit to allow for better acceleration, and when 45kts shows, ease back again to lift off, otherwise it will fly itself off at about 50kts. From start to take off in calm conditions could be achieved in 15 secs, but gunning the throttle to achieve this, requires full rudder to counter the very strong initial yaw from the prop torque. Feeding the throttle in more smoothly reduces the yaw, and still gives a take-off of 18 to 20 seconds. Keep in mind that in salt water at sea level, it would give better results. After lift-off, the nose needs to be raised well above the horizon to maintain 55kts, then 65kts clean. Rate of climb was 700 fpm at our wing loading, either clean or flapped.

CRUISING

The SeaMax reached 95kts in cruise, and with flaps set to -5° 100kts cruise is economically feasible. The Airmaster set the revs, and Phil set the fuel flow to 19 l/hr for the power setting, which would be around 26" manifold pressure. The view over the nose was fine although the nose attitude was higher than some other seaplanes. Actually the forward view and nose attitude for idle taxy, step taxy, cruise and water approach doesn't differ greatly. Controls are roughly harmonised for application forces, progressive in their action, and quite responsive to inputs. Hands free, the pitch stability is just positive. The angle of bank is

maintained in the roll, not coming back to level, and yaw again was just positive. Opening the canopy scoop vent fully can yaw the aircraft, as apparently it affects the airflow through the turbulators, and for us, it limited the amount of vent opening. Phil's SeaMax is best described as having almost neutral hands free stability. In smooth air the aircraft can be trimmed to fly level and in turns with hands off. The SeaMax controls have full authority in all circumstances, but a bit more push and pull than usual can be needed in rough conditions for corrections.

STALLS

These are benign, with either a mush or a lowering of the nose without any wing drop. Full flap stall is claimed as 39kts, but indicated 31kts with a straight nose drop. One position flap indicated 39kts, and clean was 44kts.

APPROACH FOR ALIGHTING

Speed was reduced to 55kts, flaps lowered to position 2, causing a slight nose up pitch and requiring a retrim. Gear needed to be checked as up, and the propeller control set to take off. The nose attitude was slightly lower than for level flight with an adequate view forward, but not as much nose down as one would normally expect with flaps. This is because the wing incidence is designed for high cruising speeds, rather than

for a panoramic forward view. Touchdown is the same as any other seaplane, except there seems to be very low hull drag, giving a long planing period if back stick is not applied for braking. As it slows near the hump, the stick is brought right back, where there could be brief oscillations before slowing to a stop.

GETTING ASHORE

Here is where the SeaMax shines, with its reversing propeller. You can taxy towards the shore, set the revs to 3000rpm and vary the pitch from forwards, through neutral, and into reverse. You can stop the aircraft, reverse it, or just let it hover in neutral pitch. Reversing requires the use of the water rudder, which then makes it possible to steer and to actually reverse into wind. Phil approached in an onshore wind and, with the gear up, hovered nose in at the shoreline, while I got out to take photos. He then reversed back to deep water, changed to forward thrust, spun around and taxied off. When he came back he repeated the exercise. Without the reversing prop, I would have had to spin him around and get into the cockpit from deep water.. It is possible to stop and start the engine in neutral pitch, which allows a cold engine to warm up without having to charge all over the waterway collecting spray on the canopy. We did need to be careful raising the canopy while in reverse pitch because of the forward acting slipstream. But the canopy struts are quite beefy and the canopy is well reinforced, so when we raised the canopy while reversing, the dampers handled the blow forwards without problems. Getting out while grounded was surprisingly easy. You just stand up in the cockpit and step almost horizontally over the side, where the bottom is almost at floor level. The tricycle gear uses standard LSA tyre sizes which could bog on soft shorelines, so to avoid damaging the failsafe nose wheel assembly, check the shoreline first before running ashore. When taxying up ramps, plan to be able to spin around at the top, and to re-enter the water forwards. It always surprises me how easily a seaplane can climb up horribly steep ramps, but you have to be able to turn around at the top. Castering nose wheels don't take kindly to backing down ramps into the water. The SeaMax could be launched backwards by hand down a ramp, by simply lifting the nose wheel clear of the ground. For forward descent use both brakes and reversed pitch for braking control.

AIRFIELD LANDINGS

The nose attitude is lower than for water operations, as full flap can be used, using the same 55kt approach speed. Lowering the flaps initially causes a slight nose up pitch, which disappears at the full flap position. At the low flapped approach speeds in rougher conditions, the aircraft is quite reactive to the turbulence, but the controls are always very positive. Flare is carried out lower down than for your Jabiru, as the fuselage and your seat is very close to the ground. For anyone used to normal cockpit heights, the first landing in a SeaMax seems to threaten personal physical contact with the runway, which takes a little getting used to. Directional control on the ground can be maintained by rudder initially, but as speed decreases, the differential brakes are needed to control the rollout.

ENGINE ACCESS & MAINTENANCE

The engine is readily accessible at shoulder height. Adjusting the engine while running would, of course, have to be done from standing over the cockpit, to keep clear of the prop. The fuselage and wings have many sealed ports, for access to every control mechanism. By removing panels at the rear of the cockpit, a somewhat restricted access can be obtained to the fuel system, fuel filter, gear and control mechanisms. Later production will have large hinged access hatches on top of the fuselage. The instrument panel cover is easily removed with four screws.

EMERGENCIES

Some pilots regard large bubble canopies as being dangerous because when inverted, occupants would be unable to open the canopy due to water pressure. Mig's advice was that while no-one doubts the difficulties of removing headphones and harnesses and untangling oneself while inverted, the SeaMax canopy can be unlatched, and opened sufficiently for water to enter around the sides to flood it. This then allows for easy opening, with the advantage of a very wide space then available for exiting. Anyway, the SeaMax is designed for anyone who forgets the gear when alighting, and a bubble canopy should not be a safety consideration. Also, for emergency landings on land, the SeaMax and most seaplanes can land with gear retracted. On reasonable surfaces, the reinforced hulls are not damaged, and short landing slides would be well under 50 metres.

CONCLUSIONS

The SeaMax is designed to be a fast, luxury, travelling seaplane. To achieve its speed, the wing incidence is set so that in the cruise mode, the fuselage is at the minimum drag position. At lower speeds the nose attitude is higher, but visibility over the nose is still typical of many recreational aircraft. The design of the SeaMax makes it quick off both water and land. To me, it would have the shortest water take off of any of our available 912S powered seaplanes, making it well suited to operating from restricted areas. I believe the quicker the take-off, the safer the seaplane in marginal or unforeseen circumstances. The SeaMax has a high rate of climb, is fast in the air, and historically it is very safe for water landings. Some familiarity with the SeaMax is needed on the water for smooth transits past the hump phase, otherwise it is quite easy to manoeuvre on the water. With the reversing propeller, it is exceptionally suited for operating from shorelines. Being a tricycle gear, it will be restricted to taxying ashore on firmer ground or from suitable boat ramps. A parking brake was not fitted, but this will change. The SeaMax is now also available as a trailerable folding wing version, designed for single person operation. A trailer is being designed for this, meaning that you could take it home or tow it away on your holidays. What other seaplane can offer this convenience?


24-7703

SeaMax

FLIGHT INSTRUCTOR'S FORUM

Facilitated by the aviation guru Professor Avius

Landing with flare!

AS an instructor, one of the most critical lessons to be taught by you is the explanation and technique of landing.

I remember being at my wits end with student, Pete. His hours in the circuit were building, as was his and my own frustration. Both time and money were ticking by, but still Pete remained nowhere near being competently safe enough to send solo.

Pete was an older student and as keen as mustard. Before his weekly lesson he read all of the texts that I pointed out he should revise. His general flying was very good, his knowledge of aeronautical theory was brilliant. His enthusiasm was off the Richter scale. I pride myself with being able to land nicely, most of the time. Yet for the life of me, I could not communicate to Pete that last crucial action which occurs between short final and safely rolling to a full stop. Pete seemed to accept the lack of consistency and predictability as normal. I seemed unable to trouble shoot and critique sensibly and constructively.

And then I remembered. It was a handout that came from a safety seminar way back in 1999. Thank God for us hoarders. So I dug out the information titled "The Jacobson Flare". (See also 'The Flare Point' by Bill Dinsmore Sport Pilot March 2013 for more on this subject - Ed) I recall in the early days, reading over the article and trying to emulate the technique as described.

The second paragraph of the handout says it all, "We have accepted second-rate, trial and error "Goldilocks" techniques of "too high, too low and just right." Surely this is no longer good enough for the technical precision demanded by today's world.

As far back as 1987, Australian Airline Captain, (now retired) David M Jacobson developed "a practical and very tolerant technique for establishing a consistent landing flare that "does not rely on the pilot's peripheral perception of vertical height."

I am no mathematical genius, yet the technique has served me well. What's more it makes sense! Jacobson has used "mathematical derivations of a relevant formulae and the use of geometric angles to develop a technique which enables measurable consistency and which is readily adaptable between aircraft type".

Recently, I called the mobile number I had scribbled on that handout sheet, those many years ago. I was actually quite surprised when the man himself, David Jacobson, answered the call. As it turns out, he is revamping his website and producing an app to help students understand his concepts. Look out for that one.

In the meantime, here are some tips to share with your students:

A safe, smooth and accurate landing is set up way before the touchdown point. Initially, a well flown circuit is of great importance. The technicalities of how to fly the circuit; where to join, when to turn base, extend flaps and the height at which to turn final is found in all good text books. What we are now looking for is a precise and meaningful explanation of how and why a landing has a successful conclusion.

> *A safe, smooth and accurate landing is set up way before touchdown*

FLY A STABLISED APPROACH I point out to the student the importance of flying the final leg of the circuit fully aligned with the runway centre line, like an arrow (ie the aircraft) heading for a bullseye on the target. Once established on final, fly at a nominal altitude and distance at a chosen airspeed and configuration.

The Jacobson Flare technique emphasises the importance of an aiming point. "This aiming point is a spot, not an imaginary line crossing the runway". Whether it is the numbers at the beginning of the runway or maybe the first or second centre line, this becomes your aiming point. Keep this point at eye level height in the windshield of the aircraft and fly towards it. This will assist the student to fly a constant profile or a visual angle of approach, as against porpoising up and down.

FLY BY NUMBERS Establish and maintain a constant airspeed, in accordance to your aircraft's handbook. This will help when establishing the flare. Too much airspeed, the wings will obey and generate lift...the aircraft will balloon. Too little airspeed and the aircraft will stall. Controlled stall a couple of centimetres from earth = perfect landing: Too high could result in disaster.

THE FLARE The purpose of the flare is basically twofold: The flare reduces the aircraft's vertical speed, by reducing its forward speed. It should be smooth and stable. in a tricycle configured aircraft, the flare ensures that the main wheels touch down before the more fragile nose wheel. What the flare is not: It isn't a full on pitch up.

When flying touch and go circuits, occasionally bring the landing to a full stop. This will ensure your student gets practise in keeping the aircraft straight and centred on the runway until the aircraft comes to a complete stop.

AND ALWAYS REMEMBER perfect practise makes for perfection. So practise, practise, and practise the art and technical skills required to master the satisfaction of landing... with flare.

By the way Pete finally got it. He went solo. He emailed me "A big thrill today. The fact that it took a little longer than first thought made it all the sweeter. Many thanks for your work, patience and confidence. More work to do yet. Again, thank you. A lifelong dream partially realised."

The best feeling for an instructor.

NEXT TIME The Art of Cross Wind Landings

References *Jacobson's Flare: 10 page handout (website under reconstruction), The Art of Better Landing by Russell Still, How to land an airplane: stoenworks.com, www.pilottalk.com/betterlandings, PhillipGreenspun.com/avaition*

Email contributions to editor@sportpilot.net.au

AVGAS WH

by Ray Hodges
(CPL with instructor rating), Monash Uni, Gippsland. Retired Associate Professor (Applied Science)

THE market lives of many commodities follow a cone shaped graph. Sales start exponentially, peak and then decline when other products take over. Crude oil resources are at 'Peak Oil' and it is now time to consolidate products made from it because local refineries are closing.

Avgas was an advance on petrol when iso-octane was synthesised from refinery catalytic cracker gases, butane and iso-butene. This gave World War 2 aircraft a much needed performance edge and set the specification for aircraft designers.

Avtur (kerosene) used in jet engines bypasses the need for high octane. These engines are costly to buy, have poor economy low down, but suit flying at high speeds and altitudes. Nowadays Avgas is less than 1% of aviation fuel sold, making production and distribution costly.

Reliability has replaced performance as the priority, and this includes a reliable supply for safe flying. Avgas specifications are an overkill for low altitude piston engines and when questioned, engineers and regulators become defensive.

The next abundant fossil fuel resource are gases (like methane and LPG) are but these lower take off engine power and have major safety issues for aircraft. Methane is convertible to high octane petrol using a Mobil Zeolite catalyst (NZ did this in the 1990s). Another possibility is alcohol (E85) which is used in a Brazilian crop-duster but range is 30% less and involves stainless steel tanks.

Diesel engines would be ideal if limitations could be engineered out, but any major alternatives typically take 20 years to implement. What happens to spark ignition engines still in service?

One simple solution remains clear; petrol is still the closest readily available fuel to Avgas and since WW2 its quality and octane has kept improving. Any spark engine would require minimal, if any, engineering changes like lower compression pistons and good cooling.

Turbocharged engines get most of their extra power from the higher air/fuel mass flow rather than compression ratio. Since 2010, Avgas is no longer used by the RAAF, it is not sold in many Pacific Islands, such

HAT NEXT?

as the Philippines, and the Indonesians buy training aircraft certified for petrol. An essential component of Avgas is TEL (tetra-ethyl lead) and this is now made only by Associated Octel in a batch process in the UK.

Most countries ban leaded petrol and the sunset for Avgas is not far off. Sixty years ago, there were five grades of Avgas; 74 (unleaded), 80, 91, 100, and 115 (very high lead) and now there is only one.

In contrast petrol is widely available and suits high performance and reliable car engines. Why persist with a product in decline? It's like flying into a dead end valley with descending cloud. The latest engines from Lycoming and Continential with FADEC ignition are designed for petrol.

Why isn't petrol already sold at airports? Bureaucracy, infrastructure, stigma and existing engines which need Avgas.

In 1978, only one refinery in Australia made Avgas and it shut down for two years for an upgrade.

Overseas supplies were uncertain and private owners (like myself) and agricultural pilots were left short.

My interest began when a batch of Avgas 80 bought at Bankstown was found in our Beech 23 (Sport 150) when it came up for a 100 hour inspection. The LAME said the fuel smelled like petrol. Being an analytical chemist, I ran it through a gas chromatograph and found it to be 50/50 aviation alkylate/petrol components.

I felt petrol for light aircraft seemed worthy of study. At the time, Ag pilots were using petrol to keep their businesses afloat, but the authorities refused to contemplate petrol until the Transport Minister intervened.

After a tense seminar, I was warned "the aviation secretary has taken a personal interest in your research" meaning he intended to stonewall it. But as I was an academic not dependent on flying for my income, grounding me would have little effect. Bench studies at the Department of Aeronautical Engineering lead to me receiving a 'best lecture' medal by the Royal Aeronautical Society. After I made another personal visit to the federal minister, permits to fly on Mogas were granted in 1984 for testing in all weather (including total fire ban days). The key was to keep the fuel pump and lines cool.

It took 10 years to get one STC in Australia but hundreds of approvals were granted in the US. They began marketing a Volatility Tester I developed. By 1989 we were permitted to sell their STCs here. CASA invited me to tour Australia in 1991 to talk on petrol at their monthly pilot safety seminars and in 2007, they did the same for LAME seminars. Over 25 years, more than 1000 GA planes ranging from 60hp vintage aircraft to 600hp crop dusters have been approved for Mogas here and 130 volatility testers sold. In 1998, Avgas excise was reduced from 38 to 3 c/L but since July 2012, any business can claim the full 38c/L excise for 'off road' use of petrol too making it typically 50% cheaper than Avgas.

To fix the 1978-9 shortage, the CAA urged other refineries to also make Avgas. Shell in Geelong (its future is uncertain) makes Avgas 100LL and this, like petrol, is high in aromatics. BP in Perth makes Avgas 100. In 1999, Mobil Avgas grounded most of the light aircraft in South East Australia when its fuel fuel contained gum formed EDA (ethylene diamine). The plant did not re-open.

Besides the EDA problem and poor availability, Avgas 100 continually caused plug fouling, and its bromide scavenger caused corrosive wear plus crankshaft pitting in many engines. This has necessitated regular legislated inspections and increased maintenance costs.

How do we fix the fuel availability problem? Diesel aero engines are new and yet to replace many existing piston engine installations. Fuel distributors can be 'black banned' by oil companies if they knowingly supply petrol for aircraft. This is something aviation lawyers need to address – perceived liability makes the oil industry issue such threats, but lack of supply is itself a safety hazard. Many shires have withdrawn points of sale for Avgas because of insurance costs. Who becomes liable if an aircraft runs out of fuel when supply is unknowingly withdrawn?

Petrol was the only aircraft fuel back in the 1930s. Airfields were close to towns, but in many cases, these have been closed or moved further away. Plane travellers need better links with ground transport, but progress is not always forward. Fuel facilities in remote places present problems and are closing; this needs a creative solution. Perhaps country taxi drivers could be allowed carry petrol to sell it to pilots.

THREE IS FOR SHOW

RICHARD Sweetapple is a name synonymous with high quality, Australian made wooden propellers. However, Richard has finally decided to call it a day. He plans to stop making propellers after his 80th birthday in May this year and is on the lookout for someone to take over the business and service the needs of the homebuilt and sport aircraft fraternity. Richard's replacement would need experience with light aviation, woodworking and an understanding of physics and maths. Richard has mentioned he is prepared to offer back-up help and assistance for up to three months, so if anybody is looking for a new lifestyle business this may be your perfect opportunity.

A little while ago, I visited Richard and his lovely wife, Mary, at their lakeside Capalaba home to get the spin on the propeller business. I also got some background on the man himself.

Richard was born in Inverell, NSW in 1933. He graduated from Inverell High School with a NSW Leaving Certificate in 1950. He was conscripted in 1951 and spent 176 days at Amberley Air Force Base being trained in electronics and military defence. In 1952, he went contracting in western Queensland (earth moving, dam sinking, fence-line clearing, road making etc). The wages back then were only 13 pound a week.

He started flying in 1957 with the Royal Queensland Aero Club and earned a CPL while supporting himself doing mechanical repairs. In those days it cost five-and-a-half quid an hour to hire a Tiger Moth. In 1959 he began a career as an agricultural pilot spraying from a converted Tiger Moth, but moved on to doing charter in Cessna 175, 185, 206, 210, Piper Aztec and Helio Courier aircraft. His last commercial gig was in the right-hand seat of a Bristol Freighter doing overnight produce runs from Archerfield to Sydney and Melbourne. He somewhat fondly remembers the Bristol Freighter as the noisiest aircraft on the planet.

G IS FOR GO!

by Arthur Marcel

In the early 1970s, the family spent a lot of time at Kingscliff and Cabarita just south of the Gold Coast. Richard's three children wanted to learn to water ski, so he built them an aluminium ski boat. It was powered by a hot Holden motor and could lift up to 14 skiers out of the water at a time. To build that boat, Richard first had to build himself a MIG welder, a rare thing in those days (That welder is still working today!).

In the mid-70s, flying jobs were hard to find, especially for older pilots, so he started a business fabricating steel for the building industry. This was in the days of high-set Queensland houses, which required a considerable amount of steel for posts, beams, steps, stairs and handrails. He had four employees, and Mary ran the office. They did that for about 10 years through until the mid-1980s.

> *"This turned out to be the start of another career*

About that time, Ron Wheeler introduced the Scout aircraft, a rag and tube minimum single-seater powered by a single-cylinder 240cc two-stroke engine. From this little aircraft, the 95.10 ANR exemption category was born. Having flown many hours in all-metal aircraft, Richard decided to design and build an enclosed all-metal 95.10 plane for himself. The best time to fly this new toy was at daybreak when there was frost on the ground, so he made it all enclosed with hot air coming off the cylinder heads into the cabin for comfort. He flew the plane between 1985 and 2006, when he decided he didn't have enough free time to continue using it.

When he built the plane, he also made himself a propeller to go with it. This turned out to be the start of another career in which he has been very much immersed ever since. One of his fondest memories is making the three massive four-bladed propellers (left, right and one as a spare) for the Vickers Vimy replica aircraft that in 1994 re-enacted the Smith Brothers 1919 record making flight from England to Australia.

WHY WOODEN PROPELLERS?

Unlike plastic and alloy propellers, wooden props don't have fatigue lives. They are very suited to direct-drive motors like the Jabiru (motors without pulse absorption). CASA approves only a few types of timber for use in aircraft propellers and Richard uses Mountain Ash for most of his props. Very rarely he uses Hoop Pine and he always buys his wood in 25mm thick planks.

The first thing he does is slice those 25mm planks into two pieces about 11.5mm thick (after you take out the width of the saw blade), then turn one around and glue the two pieces back together. He does this so the density variation along the length of the plank is cancelled out; a very simple but brilliant idea. He then continues with another layer to build up the propeller thickness required for the particular aircraft.

PROPELLERS: HOW MANY BLADES?

Richard told me that the fewer number of blades on a propeller, the better the efficiency. The best efficiency is obtained when there is just ONE! But a one-bladed propeller has two major problems. Firstly, the counterweight to balance the blade has to be as close to the hub as possible or it will interfere noticeably with the airflow. This means it will be somewhat heavier than if the propeller had two blades. The other significant problem is balance. If the prop blade is wooden and the counterweight is metal, changing humidity can create an imbalance between the two.

Richard believes the two-bladed propeller is the optimum arrangement for most applications. He told me that, "three was for show but two was for go!" So, I asked him why, if a propeller functions most efficiently when it has the least number of blades, do some planes use propellers with three or more?

Richard explained that adding blades to a propeller allows its diameter to be reduced while providing almost the same amount of thrust. It also reduces tip speed, which in turn reduces noise. Adding more blades to a propeller will always result in less thrust for a given power input, but there are many applications where noise and/or clearance limits don't allow a more efficient alternative.

Richard Sweetapple is a true aviation legend and we wish him all the best in his retirement.

PITCH CONTROL
and a pilot's perspective

by Rod Flockhart CFI/L2,Flightscope Aviation, Queensland

PITCH control can mean many different things to many people. Cricketers, musicians and salesmen will all have their own definition. As do pilots.

I have trained hundreds of pilots, both old and new, and often find they exhibit average pitch control. If you can fly pitch accurately, you can fly anything.

Pitch is easy, right? Forward to fly, back to die, so the saying goes. Half of one of our most basic formulas is controlled by pitch.

POWER+ATTITUDE=PERFORMANCE

Most of us soon learn that if we use full power and hold a particular nose attitude, it will get a particular rate of climb; in fact even the most rudimentary aeroplanes have at least an elevator trim control to aid in achieving this.

Some manufacturers in the past even reduced 40 degree flapped aeroplanes to 30 degree configurations because poor pitch control and flap management during go rounds caused accidents.

One of the most important lessons, I learnt from my first aerobatic instructor was a term called "stall stick position" as a good rule of thumb (ignoring the use of flaps for the moment). For any given phase of flight your aircraft will stall at a particular stick or yoke position within about 20mm of the same position every time.

Most of us have seen the low level air show loop gone horribly wrong. The pilot starts the loop too low and too slow and when they realise they are running out of altitude, they pull the stick back just a little more. It doesn't help. The aeroplane is already G loaded and doing its best rate of pitch. Pulling the stick back further only increases induced drag and or results in a high speed stall, which uses up even more precious altitude.

Next time you go flying, take your next lesson or Emergency manoeuvre training at a safe altitude (min 2000ft), conduct a number of stalls and get intimate with just where that stick/stall position is for your aircraft. One of our training aeroplanes is a STOL design and, from very early on in our training courses, we will often just kiss the stall many times during the lesson.

Try this yourself with an instructor if necessary and see just how slow you can fly your aircraft without actually stalling it. By the time our students earn their Pilot Certificates they are competent with this slow phase of flight.

Some food for thought. Some aeroplanes exhibit less than desirable stalling traits. Some have mild, some wild and some almost nonexistent pre-stall buffet. That said, the current crop of training aeroplanes are, in the most part, well behaved.

Having a little discipline each time you go flying will reap huge rewards when next you want to change or upgrade your aircraft type or obtain a new endorsement, such as tail wheel or formation flying. It will make the transition safer and easier.

Try practicing a short/soft field take-off. Put the power on and hold the nose in the desired climb attitude (nose wheel aircraft) and maintain that throughout the takeoff roll and climb out, obviously being mindful of your aircraft's take-off safety speed.

Don't chase airspeed. Some pitot static/ASI systems may have one or more seconds of lag, so set the desired attitude and wait for the desired speed/performance.

Always have your aircraft trimmed.

Remember, flaps, retractable undercarriage, and power changes generally affect attitude, so it's your job to accurately control the nose attitude during their use.

A trip of many firsts

by Andrew Mills

SINCE completing my Pilot Certificate with various endorsements and subsequently becoming the proud owner of 'Kermit the Texan' (with his green trimmings), I hadn't done any overnight trips, at least not until I convinced my trusting wife, Emily, that we should escape our beachside town for a bush experience.

After much deliberation about where to go, we decided Cherrabah Resort was the place for us. We'd heard about its sealed airstrip, its chilled out atmosphere and various activities, and the fact that it's only about a 1.5 hour flight from Kermit's home at Caboolture was perfect.

After much pondering over VTCs, VNCs and WAC charts, a route was decided that not only avoided the controlled and restricted airspace around Brisbane, Sunshine Coast, Amberley, and Oakey, but would also be quite scenic. Emily couldn't quite comprehend the number of hours planning I felt were necessary for what was a relatively short trip.

We loaded Kermit full of fuel and luggage, with him weighing in just a few kilograms under MTOW. All the major airfields in the vicinity were reporting CAVOK, clear skies and light winds - fantastic. However, the predicted temperature out west was 40ºC. I had sweat pouring off my face before I'd even completing Kermit's daily inspection. What a relief it was to get the prop spinning to push some airflow through the cockpit.

In my previous experience with Kermit, he would leap off the ground soon after applying full throttle. Today was different. The combination of full load, extreme temperature, and no headwind meant a fair bit more runway was needed to get off the ground.

What a great flight. This was only Emily's second time flying with me since I had completed my passenger endorsement a year ago, and despite a few nerves over a couple of bumpy patches, she enjoyed the flight and was very helpful in passing me the necessary charts. We found Cherrabah with no trouble, and as we approached the field, a car pulled up to the strip to greet us. We buzzed the strip as recommended in the National Airfield Directory. We then buzzed it again (in the form of a go-around) because the sloping runway had deceived me and I was too high on approach.

Once on the ground, we were greeted by Dave, Cherrabah's Manager. He gave us a quick tour of the property before we checked in and made ourselves at home. First thing on the agenda was to jump in the pool and cool off. Later in the afternoon we got some exercise with an 8km trail run up to Balancing Rock, a great experience and definitely a highlight for me.

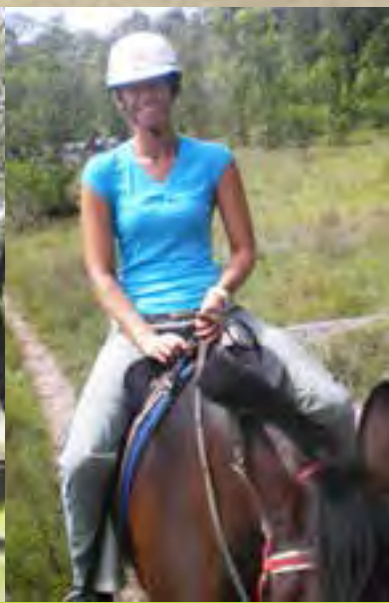
We could recommend Cherrabah as being a great place to fly and enjoy a day or two in the country. The fact that the airstrip is on the property and only a 10min walk from the main homestead was a bonus and added to the ease of the trip. The staff were friendly and accommodating, from preparing meals at our request to printing out the NAIPS weather forecast, nothing was too much trouble. The rooms while basic, were clean, tidy, and functional.

The next day, we awoke to low cloud, strong gusty wind, and poor visibility, not at all what the forecast had predicted. Oh well, we thought, we'll just have to spend another night at Cherrabah. I had no problem with that at all because we hadn't even made a dent in the activities list– tennis, canoeing, trail biking, relaxing in the spa, cooking marshmallows in the bonfire. We spent morning horse riding around the property, with me regularly checking the sky. By midday, the cloud was gone, the wind had died down and the visibility was good, so we loaded Kermit and headed back to the Sunshine Coast. Although it would have been nice to spend another night at Cherrabah, it was also nice to get home. Who knows what the next day's weather would be.

This was a trip of many firsts for both Emily and me. My first proper Nav since completing my endorsement, Emily's first time in Kermit, our first overnight flying trip, our first time visiting Cherrabah and my first time riding a horse. Great to get these checked off the bucket list.

"He would leap off the ground soon after applying full throttle

>> It was Emily's first trip with Kermit the Texan



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LEARNING TO FLY

DR GERRY CONSIDINE

Crosswinds and Myalgia

MY instructor, Earl, was flying back to Pirie from the Gawler Ranges after visiting a station, so I had arrived a day too early on this occasion. Before heading up in the Jabiru on the correct day, I had the opportunity to head up to a local farm to have a quick flight to look around a property. The farmer was planning to build an airstrip and wanted some tips on the best place to site it. So we all loaded into his Cessna 172 and roared into the air. After an hour looking at potential landing strip sites away from trees and power lines near his farm sheds, we made a beeline back to Pirie. The landing was very smooth with the Cessna's huge barn door flaps giving a great view over the nose on final approach.

Soon it was the Jabiru's turn and we rolled onto runway 26 to begin some more training. Today would be a refresher of some of the techniques I had learned in the last few sessions. Forced landings, precautionary search and landings, steep turns, flapless landings and stalls. Although they were skills I had practised before, it was exciting because I knew the final flying exam would be soon. A few refreshing circuits got me used to flying the Jabiru again. But it was after two or three of these that I started to get sore shoulders and back. Two nights previously had been a very intense gym and oval session for footy training back in Wudinna.

Despite the moderate myalgia and severe whinging on my part, the training refresher went well. As far as steep turns went, I struggled to hold the 45-degree bank with back-pressure. Engine failures were well drilled, but again I was a little bit rusty on the radio calls and passenger briefing. Perhaps because I hadn't had my usual 2-3 hour drive prior to flying. Driving to Pirie usually gives me enough time to practice radio calls and think about the different procedures I will need in the air.

At least I was able to land on both the gravel and tarmac strips without much hassle. Before the day's flying was over, we had time to practise a few crosswind landings because a nice breeze had blown up. This meant flying a bit sideways, which was fun. What wasn't fun was then straightening the plane up and stopping it from drifting across the runway. For this, lots of rudder and aileron input was needed. I found it difficult transitioning to the straight flying, while at the same time holding the plane off and letting it land. It was kind of like patting your head, rubbing your tummy and filling out a Sudoku puzzle with your foot. Plenty to think about before attempting the certificate flight test.

NEXT MONTH

Gerry tackles the long awaited flying exam.

>> Flying a bit sideways is fun

Drif

I THOUGHT readers new to the ultralight aircraft world might take some comfort in knowing that those frail looking, clothesline-clad, open to the elements, cockpit aircraft are in fact a well-designed and engineered product which can stand up to the extreme duty that my two friends have put them through for nearly 22 years.

This is also a testament to the mighty little two-stroke Rotax 582 engines which have been along for the ride.

CASE ONE

Let's call the owner/operator Mr W from the central west of Queensland, who came to the then Drifter factory at Austflight Aviation in Boonah around 1990. He learned to fly, then purchased his own second hand a582 aircraft, which had a total time of about 350 hours on the airframe.

Mr W flew his aircraft home to his modest property to begin what has become in my opinion an almost unbelievable, but incredibly true, journey.

This man and his aircraft have accrued some 11,800 hours together over 20 years. 10,000 of those hours took only 12 years to accrue. Due to the drought and other commitments, the remaining hours took a while to clock up.

The aircraft had at least three factory refurbishments during its life, with few structural component replacements. The exception was the replacement at 5,200 hours of the main boom tube, due to monitored cracking at the engine mount attachment area through the electrical conduit hole. This was a problem found to occur in some airframes and even though a factory fix was available, it was elected to replace the tube with a new one.

Six engines were used up during the course of those 11,800 hours. A spare was kept on site so each one was run out to between 450 and 500 hours (Due to an oversight in the logbook, one did run out to 740 hours before removal).

The engines were then overhauled including the mandatory change-out of the crankshaft and pistons. The remaining components were assessed for serviceability and reused as required. Some of these engines ran up 2,400 hours before retirement. The average use was around 1,500 hours.

The Brolga 60 inch propellers were replaced at around 2,000 hours.

From the log books (of which there are three, completely documented including all landings) the Rotax mod 90 engine had continual water pump seal leakage problems, however these did not cause any in-flight problems. Earlier records indicate at least one crankshaft connecting rod bearing failure (small crank pin) which resulted in an outlanding, with minor damage to the aircraft. Two outlandings are recorded because of engine failure due to fuel contamination and ignition electrical problems. Another outlanding was caused by a detached starter motor with serious damage to the E type gearbox.

Even though the skies are a lot quieter around the Central West these days, Mr W and his drifter are still an item.

CASE TWO

Mr D, a close friend of Mr W, found himself in a similar situation in the early 1990s and he also purchased a cable braced Drifter. While having it flown out to him, a sudden storm caught it unattended on the ground and blew it on its back. The aircraft was transported back to the Boonah factory. It later rolled back off the assembly line as a strut braced aircraft.

Mr D also spent most of his life strapped into the well-known uncomfortable front seat. By 2004 they had accumulated 8,500 hours together in the air, until a connecting rod failure on the engine required a forced landing in tall timber.

The aircraft was written off, but Mr D fortunately suffered only an injured pride.

He soon purchased a replacement second hand braced Drifter and has accumulated a further 3,211 hours doing what horse and rider do best together.

Again the Rotax 582 model 90 and 99 engine is the workhorse and Mr D has used about six or seven of them during his monumental accumulation of hours.

Using an on-site spare engine, I regularly overhauled the engine between 500 and 600

A tale of two ter drivers

by Richard Eacott

hours. Fortunately Mr D's outlandings have been few and, apart from a crankshaft failure, have been limited to contaminated fuel or ignition electrical problems.

One time, it took three burnt out stators over a period of 300 hours before we could isolate a problem as an intermittent failure of a CDI pack. Some problems also arose which caused engine coolant overheating. This was later traced to the restricted core of the auxillary radiator. As a testament to the durability of the 582 engine and the correctly maintained K and N air filters, the cylinders were still within Rotax wear limits after 2,400 hours.

So to all you would-be new pilots who walk past the Drifter in preference for the Fantastic Plastics which look like a real aeroplane, spare a thought for these two magnificent old, bold pilots and their wonderful flying machine, the Drifter.

Clifton fly-in

EVERY year, the Darling Downs Sport Aircraft Association stages a fly-in at the beginning of March at their home airfield at Clifton. Last year the event was cancelled due to appalling weather, and this year it was almost the same story. However, the rain relented with a few days to go, and on Saturday 9th and Sunday 10th March, the airfield was dry enough for operations. It actually looked quite magnificent. Fifty aircraft turned up. Unfortunately, airfields north from Caboolture were non-VFR, and it was raining heavily along the Northern Rivers area as well. Also, many airfields in the Lockyer and Brisbane Valleys were too water-logged for aircraft to take off. However, people came from as far away as Temora, and one keen aviator even flew in from London.

About 50 people attended the Saturday night dinner in the main hangar, where the highlight of the night was a presentation to CFI Trevor Bange for 50 years service to aviation. Trevor and his charming wife, Janet, also celebrated their 40th wedding anniversary.

The DDSAA is Australia's most geographically dispersed aviation club with more than 170 members spread across four states. While the club commenced operations in 1976, the airfield was established by Trevor's father in 1932. This very successful club is run on a purely volunteer basis.

>> A small but hardy crowd braved the weather

Please note the election is for half the members of the Board, in accordance with Appendix B of the Constitution, each Board Member having a two-year term. The Board elections called this year are for Group B which consists of:

- Two (No.1 & No. 3) representatives for South Queensland
- One (No. 2) representative for New South Wales including the Australian Capital Territory
- One (No.1)representative for Victoria
- One representative for South Australia
- One representative for Western Australia

Board Members (term expires at the RA-Aus 2013 Annual General Meeting)

South Queensland	John McKeown
South Queensland	Myles Breitkreutz
New South Wales including the Australian Capital Territory	Dave Caban
Victoria	Jim Tatlock
South Australia	Ed Herring
Western Australia	Gavin Thobaven

BOARD MEMBER DUTY STATEMENT

Notice under Rule 20 (vi) of the Recreational Aviation Australia Inc. Constitution and Rules.

BY-LAW No 10

Represent the Members of RA-Aus as a whole and the Members of the Region specifically.

Actively promote and encourage the ultralight movement through liaison with government and other organisations in the Region, on behalf of RA-Aus.

Attend all Board meetings or arrange alternate delegate or proxy.

Perform all tasks and duties agreed by the Board, as far as possible within the Member's power.

Delegate tasks as required but remain responsible for all actions and decisions of delegates.

Act on matters as directed by the Board.

Carry out all duties described in the Constitution & Rules.

Forward reports on all matters of relevance to the RA-Aus Office in a timely manner.

Extracts from the Recreational Aviation Australia Inc. Constitution and Rules

Election of Board Members

The Board shall be elected by the membership on a one Member - one vote system.

ii. The Members of each region with Representative(s) in:

Group A (Appendix B) shall elect their Board Representative(s) prior to the Annual General Meeting of the Association in each even numbered year. The names of the Members elected shall be forwarded to the Chief Executive Officer prior to the Annual General Meeting of that year and the results of the elections shall be announced at the beginning of that Annual General Meeting. The Members so elected shall hold office from the beginning of the Annual General Meeting at which their election is announced, until the beginning of the Annual General Meeting of the Association following the group elections pertaining to Group A.

b. Group B (Appendix B) shall elect their Board Representative(s) prior to the Annual General Meeting of the Association in each odd numbered year. The names of the Members elected shall be forwarded to the Chief Executive Officer prior to the Annual General Meeting of that year and the results of the elections shall be announced at the beginning of that Annual General Meeting. The Members so elected shall hold office from the beginning of the Annual General Meeting at which their election was announced, until the beginning of the Annual General Meeting of the Association following the group elections pertaining to Group B.

Regional Definitions	Representatives
North Queensland (North of latitude 22° S)	1
South Queensland (South of latitude 22° S)	3
New South Wales including the Australian Capital Territory	3
Victoria	2
Tasmania	1
South Australia	1
Western Australia	1
Northern Territory	1

Recreational Aviation Australia Inc.

BOARD ELECTIONS 2013
NOMINATION FOR BOARD MEMBER

FOR .....REGION

NOMINATIONS CLOSE - 4.00 PM EST Friday 31 May 2013

Under the Constitution and Rules of the Association the members of each Region shall elect Board Member(s) in accordance with Rule 13

Proposer:

I nominate.....RA-Aus Membership No.....

for election as Board Member representing the Region detailed above

Proposer.....RA-Aus Membership No.....
(Printed name & signature)

Seconder.....RA-Aus Membership No.....
(Printed name & signature)

Candidate:

I consent to this nomination for the position of Board Member of Recreational Aviation Australia Inc.

Candidate's Signature.....Date: / / 2013

Candidate's Electoral Statement: Please read the statement conditions in By-Law No.4

Notes:
1. **In accordance with By-Law No.4 a member standing for office must state their commercial interests and involvement in the recreational aviation industry for the information of voters.**

BY-LAW NO.4: Election Statements by Candidates

Candidates for positions as Board Members of Recreational Aviation Australia Inc. shall be entitled to submit an election statement of their own choice for insertion in "Recreational Aviation" magazine at no cost to the candidate.

The statement must be prepared in black ink on one side of one sheet, of white A4 size paper at the candidate's own cost, and shall be forwarded with the candidate's nomination paper to the Association's office prior to the nomination close at 4pm EST 31 May 2013.

The statement must include a statement of all positions of income, remuneration or honorarium in an organisation with aviation related interests. Such organisations shall include those of sole trader, partnership, unincorporated association, incorporated association or limited liability company.

After close of nominations, all statements received shall be printed in "Recreational Aviation" magazine in alphabetical order by surname in each position nominated for.

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members' market

2567 JABIRU J160C

Factory built in 2007, total time flown 120 hours, fitted with standard instruments, permanently hangared, not used for training. Contact Paul. Mobile 0428 661 902. PRICE: $55,000 including GST

2580 TECNAM BRAVO LSA

Immaculate condition only 165 hrs TT. 100hp Rotax 912. Dynon EFIS D100. Garmin Mode C transponder. Garmin radio. AvMap large screen colour GPS. Dual fuel flow meters with electric fuel gauges. Electronic trim. Fully maintained by LAME. Always hangared. $95,000+ GST. Phone 0411 471 273 for more details.

2663 AERO PUP

2 seater total time 35 hours. It takes 5 minutes to fold the wings back, fitted with 6 cylinder Jabiru engine. Cost $58,000 to build, CASA engineer report available. Selling for medical reasons $27,000. 0412 421 032

2671 JABIRU SP 500/6 19-3717

Well maintained hangared. 449.5 hrs. 123kts @19ltrs 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

2760 JABIRU J230C

First to see will buy. Excellent condition, Flies hands off, genuine 120 knots, one owner, always hangared, serviced every 20hrs, TT445 hrs engine & airframe, Microair radio, transponder,JPI Fuelscan computer, couples to Garmiin 296 GPS, iPad bracket, Garmin Pilot II GPS, 10 ply tyres, Low fuel light, Dual strobes, many extras, can deliver. Reduced to $67 500 + GST. Ph 0418 930 100

3028 FLIGHTSTAR 11 SC

Brand new 2 seater.Protective covering still on doors and windscreen.Airframe 0 hours.Engine 0 hours.HKS 80 HP fuel injected turbo with intercooler.Aerolux 3 blade adjustable prop with spinner and individual blade covers.Hydraulic disc brakes.Carpeted interior.Easy clean Mylar flying surfaces.ASI,VSI,Tacho,Manifold pressure,Slip indicator.$39.500 complete or if desired, $29.500 minus engine and prop.Ph.0419439976. Email formefitness@bigpond.com

3062 HKS 700E ENGINE

3.47 b type gearbox. Only 5 hours from new. The engine was purchased by Airborne from HKS direct and was used to evaluate a potential new product. The engine performed well but is better suited for a tractor installation. Comes with: HKS Tacho, Electric Fuel Pump, Type 4 muffler set, Oil Tank, Oil Cooler. See engine http:www.hks-power.co.jp/hks_aviation/products/700e/cad.html $7500 plus shipping Australia wide. Call spares or email spares@airborne.com.au. Airborne Australia (02) 4944 9199

3077 AIRBORNE 912 TUNDRA

TT 540hrs. Ugrad Airborne 375hrs to Tundra Mk2 w/new Streak 3 wing & mast. Has 2 Lynx h&h, t/bars,lge w/s,e/cowl cover,hand mitts,set of h/d trailer covers (pod,wheels,prop) plus camping & wing covers. Always hangered. All log books & manuals available. Price $37500.ONO.Canberra area.Contact Rick 02 6258 5579 Mob 0409 847 680

3098 TECNAM BRAVO P2004

Serial No. 069 ,TT171 hours - one owner. Rotax 912ULS engine 100hp, TAS 115-120kts at 19LPH, 100 litres Premium unleaded or Avgas. As new condition - 2 place all metal aircraft. Has been GA registered - now RAAus registered. Fully maintained by qualified LAME with all log books - Nil damage history. Airmaster constant speed unit, Variable pitch propeller, Fuel flow meter, Vacuum Pump, Artificial Horizon, Turn Co-ordinator, Altimeter, Air Speed Indicator, Vertical Speed Indicator, Compass & Directional Gyro, King Transponder Mode C. Intercom, King VHF Radio, XCOM VHF Radio, Strobes & Nav Lights, 406 MHz EPIRB distress beacon, AVmap EKPIV large screen colour

GPS. Cost $125,000 (no GST applicable) Phone: 0428-878-505

3113 SPORTSTAR SL

Bargain low hour Sportstar SL, private use, 215 hours approx TTIS. Dynon D10A EFIS, almost new Varia 2-blade in-flight adjustable prop, Garmin GPS495 AirGizmo dock, electric t&b, Whelen LED landing light and external power socket. 600kgs MTOW. L2 maintained, RA-Aus registered. $93,000 no GST. Please call Mark 0414 642 340

3117 2004 EVEKTOR SPORTSTAR

Reg 24-4399 certified for 12000 hrs TT 3300Hrs, Rotax 912ULS TT920 hrs. Three blade wood comp prop. Standard instrument pack plus Bendix radio, Transponder mode A and C, Tru track GPS and horizon. Always hangared, level 2 maintained. $65,000. John 0412 965 407

3125 BRUMBY LOW WING J600

(Experimental) Jabiru 3300 engine. TTSN 100hrs. Standard Instrumentation. Call Paul 0414 677 971 or 02 6341 1635

3126 EUROPA XS CLASSIC

Rotax 912s engine Airmaster constant speed propeller. Endurance 3 hours 2 adults and luggage. 1700 hrs to next major engine overhaul. Excellent condition only 260 hours, 130 knot cruise. Extra avionics, GPS included and custom built trailer. Offers around $70,000. Contact David King: 0429042740 or 44212721

3154 JABIRU J230D POA

3300 Rego 24-7370. Factory Built Dec 09 TT311Hrs with fresh annual completed. Factory Option 6 Panel. Dynon 180 EFIS Garmin 495, Microair Radio and Transponder Led Navigation and Strobe Lights Always Kept in Hanger Nil damage. Full window covers included. $85,000 ono Contact David 0407 008 896 or email davidg@fnoc.com.au

3176 STORM 300 SPECIAL

Level 2 owned and maintained. 912S 100hp Rotax 780 hours. In flight adjust prop, KT79 transponder, 2X VHF radios Lightspeed headsets, carb heat, AH (Vac) Garmin 196 GPS, Man pressure, ASI, ALT, CHT, fuel, oil temp and press $65,000 no GST for quick sale 0419348288 or pbugg@onthenet.com.au

3195 2010 PARADISE P1

Total hours 460, beautifully finished and well instrumented including Dynon D10, AirMap EKPiv GPS, PCAS, IC-210 radio, Garmin mode C transponder, A/P. Rotax 912 ULS engine, Airmaster constant speed propeller, cruises at 100 kts burning 17.5L/hr, 2x50L tanks, Mogas or Avgas. Plenty of luggage space. Contact 0439620158 - $95,000

3198 TRIKE TRAILER

Trike Trailer . ACT rego. Has 4 x 20L. Wingrack. Price $1800. Garmin GPS Model 111 $250*, GME PLB MT410G (GPS)$350* , Vertex Pro V1 (h/ held VHF)$350*. plus *Postage. Canberra area. Contact Rick 02 6258 5579 Mob 0409 847 680

3203 FLIGHT DESIGN CTSW

435 hrs TT engine and airframe, 7+ hrs endurance @ 18 lph, 110-120kts cruise, VHF, Dynon EFIS, Mode C, 50kg luggage. Owned & maintained by L2. $99,950 ONO No GST. There is no better aircraft advertised here. 0419368696

3204 AEROPUP19-5174-WITH TRAILER

2 seat folding wing Built 2008 TTIS 160 hours.Jabiru 2200hydrauic engine; cruise 80 knots. Instruments include; virt card compass; fuel pressure; CHT, EGT,oil pressure & temp, Magellan315 GPS; Xcom radio; Dave Clark headset.Tandem enclosed trailer, registered & professionally built. $45K. Always hangared, phone Russell:0488938050 Mallacoota Vic

3213 FOR SALE JABIRU J-230D

Airframe 900 hours, latest factory reconditioned engine 10 hours. Dynon 10 Efis, plus analog instruments, Garmon 296 colour GPS. Transponder, external charge connector, external recognition light. Lambswool seat covers, adjustable rudder pedals, wheel spats,fin strobe. L2 maintained, always hangared, orginal owners. $85,000 incl GST, phone Bill 0429 054 205

3214 FACTORY BUILT LIGHTWING

Lw1-045, 582 Two Stroke 65HP TT290hrs. Rego 25-326 July 2013, New brake linings, Frame and skin in very good condition, always Hangared. ALT, EGT, RPM, ASI, VSI, Turn Co-ord, Eng Temp, Volt, Fuel Gauges, VHF, UHF, Intercom. Currently at Ballina at Lightwing Factory. $23000.00 Can arrange inspection. Call Sam 0427929211

3218 SKYRANGER SWIFT

240TT Always hangered, Rotax 912 ULS 100hp, XLAM Covering, 90L Tank ICOM A200 Radio, SoftCom Intercom, Precision Vertical Card Compass, Duel Magnum Strobes, adjustable carb heat, Garmin 96C GPS. $42,000 Contact Doug 0400 737 911.

3223 AEROVEE 2.1 80HP ENGINE KIT

Kit includes Nikasil Cylinders 2 into 1 exhaust, Baffles, Air Filter Ass, Oil Temp Sender, Oil Pressure Sender, Machined oil sump plate. $8000.00 Negotiable. Mobile 0457 193 667

3225 CORBY STARLET

Most timber & plywood required for construction. Timber is Perfectus (the best) & plywood is aircraft grade Finnish birch to GL1 spec. Also metal fittings, tank, NZ fibreglass tips & spats, plan set, newsletters & more. For details email Colin juliecolingamble@bigpond.com

3238 AIRBORNE WINDSPORTS

XT 912 CRUZE wing, TT 188 hrs, two helmets & headsets, Micro-air radio. Has engine cover. Comes with roll around trolley system for easy movement - wing UP or

Down. ALWAYS hangared ! & All in excellent condition. Price $44,500 Ph 0416 041 007 for more details

3241 AIRBORNE EDGE X SERIES & TRAILER

Wizard wing, 582 Rotax 376 hrs TT, custom made registered trailer, heavy duty covers, helmets, Micro avionics, UL-200 headsets, Garmin GPS, stonegaurd, landing light, tall windscreen, well maintained with maintenance history. $17 500 ono, Email bear.humphries@gmail.com, or ph. David 0414 256 246

3245 EVEKTOR SPORTSTAR

Low hours and great cosmetics for its age, a joy to fly at 93 knots on 17 lph. 2005 model, Rotax 912ULS. 1200 TT, 800 engine remaining. Bendix VHF and Mode-C. Always hangared and L2/LAME maintained. Based Gawler, call me and we'll go fly! $69,000 ono. Bas Scheffers bas@scheffers.net 0405011330

3248 EVEKTOR SPORTSTAR - REDUCED

Pristine Evektor Sportstar Plus - REDUCED TO SELL! 150 hrs TTIS Fresh 100hrly, level 2 maintained hangared 3 blade Woodcomp in- flight adjustable prop.BendixKing Xpdr and VHF Garmin Aera 500 GPS Trutrack ADI Electric trim Cover All A/Ds complete Townsville 0419668743 $100,000 negotiable

3249 1/6 SHARE JABIRU J230D

Jabiru j230d 1/6 syndicate share,micro air VHF x 2 ,transponder, avmap insured and hangered at tooradin vic, zero hours on latest engine $16000.$140 PCM and $70 per hour. Call Glenn Wattie 0418320385

3252 FOXCON TERRIER

838 TTIS ea81 Engine New Propellor & Tyres Micro Air Radio 2 headsets Standard Instruments Garmin GPS Balistic shute Cruises 85 95 kts Hangared S E Qld Selling lack of use $28.000 pilot00lw@hotmail.com 0466966259

3253 SYNDICATE MEMBERS WANTED

Flight syndicate starting Toowoomba - Resaleable share certificate issued at cost (TBA) approximately 8000-10000. Monthly contribution to cover insurance, registration and maintenance & low fixed cost wet hire hourly rate. Ring Geoff 0408775725 (example photo)

3254 SKYRANGER SWIFT WITH ROTAX 912S

Skyranger Swift, first registered 2008, TT 171 hours with Rotax 912S, TT 1812h with new sprag clutch, Xlam skins, Icom A200 radio, 60L aluminium tanks, Powerfin prop, includes wing fold kit. Good condition, rego till December 2013. Contact Chris 0418 493989 or chrisoz@gmx.net

3255 1835 VW NICASIL CYL & PISTON SET

New unused aluminium nicasil piston and cylinder set. Icludes pistons ,rings ,pins, circlips ,spare ring set in original packaging Runs cooler and weighs less than std steel assys. Bill 07 5424 2381

3257 JABIRU J230

Share in Jabiru J230 hangared Murray Bridge. wingtip strobes, transponder, elect flaps, trutrak, lambswool seats. tt70hrs land lights.cabin heater. mike 0438400601 graham 0400144282

3258 STREAK SHADOW

TT947hrs, Immaculate Record Holder, 2-place tandem, rebuilt Jabaru-2200, Instruments inc Radio-GPS, Two-Axis elec-trim. Extend-Rear Foot-Well, Engine-Mon camera-screen, Carb-Heat, Isolate-switch. Nil-Accidents. Rego Aug-2013. Easy to Fly, $23,500. Dave 0402107927. Also-avail Enc-trailer. $3000. Together $25,500.00. Full Details Photo's

3263 ROTAX G/BOX

Rotax B type G/Box 2.58 to 1 Ratio.Zero hrs since Bert Flood O/H.$450.00 ONO Phone Ray 0412710344

3264 ALPI PIONEER 200XL

Factory Built. Metalic Green / White. Rotax 912S 100HP Idrovario Constant speed prop. Dual controls, Hydraulic brakes inc park. Icom radio,Avmap 1V GPS. Flybox altimeter, Hour meter/ Revs, Prop control. Long range fuel tank Excellent short field capability and climb. Cruise 115 Knots Contact: Jim Rodgers ridgacre@msn.com 0457054123

3265 "GOLD COAST SAVANNAH STOL"

Amazing Gold Coast Savannah Super STOL** flys hands off **safe and fun 28knot stall 100hp Rotax 1000fpm, *always hangered* tundra tires,*possible 1/3rd hangar subject HG Muwillumbah * Paddock hopping adventure touring, southpolenorthpole@hotmail.com

3266 FOXBAT A22

24-4548 colour:- Yellow, 468 hrs, Std instruments, Garmin 296GPS, X-com radio, 2x Head sets, stobes, Aircraft cover. Location Drouin $70,000. Ph Trevor 0438619116 kaydan@dcsi.net.au

3272 LIGHTWING GR 582

Lightwing GR 582 25-380 Factory built Helliview, Rotax Bluetop engine 300hrs. All instruments, large bush tyres, brolga prop + many extras. very safe & reliable aircraft. Looks & flys great. regretful sale & priced to sell. $23000neg. call Steve 0408813915 email sjnlramke@bigpond.com

3274 FOXBAT A22L

Foxbat A-22L 24-4621, Excellent condition, 660hrs, std instruments, X-com radio, transponder, Garmin 296GPS, Fuel flow, auto pilot, BRS chute. New doors inserts. Hangared Mittagong. $ 67400. Ph. Victor 0400-505451.

3275 JABIRU LSA55

Reluctant sale. This aircraft is in terrific condition and flies beautifully. 2.2Litre motor s/n 1307 (solid lifters) Engine: 552Hrs Airframe: 993Hrs New propeller. Large wheels Wheel spats included. 1 owner pilot for last 5.5 years plus 1 owner pilot for approx 5 years prior to that. Sydney Mobile:0417781778

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 27/9/2013, always hangared, always privately owned, excellent condition, lots

of extras. $39,900. Ph 0429 61 99 87 flblainey@gmail.com

3278 XT 912 AIRBORNE TRIKE

XT 912 Airborne 4 stoke 80hp, BRS, Lynx coms, icom radio, LOTS OF EXTRAS, full log books ph0425000785 Qld

3279 JABIRU LSA 55-3260

JABIRU LSA 55-3260 TTAF 3900hrs, TTE 430hrs, Always hangared and serviced every 25hrs by L2. Icom-A200 VHF and Bendix/King transponder. Well equipped. 65L fuel tank, headsets etc. Flies well, excellent performance. $32,000. Hamilton Victoria. 0355724236 or colinke@bigpond.com

3280 J170-C PRICE REDUCED!!!

2007 Factory built J170-C For sale. 800TTIS and engine replaced at 575 hours. Factory repaired in 2011, with all A/d's complete, L2 maintained and always hangared. Price reduced to $58,000 ono. For more details contact Graham 0427 472349.

3281 RALLYE MS 80B

All metal aircraft, 4 seater, was VH REGO currently RAA. Continental 0-200 Motor, 70 hours since full overhaul. $28,000 spent. All typical engine and flight guages, GPS . Total airframe hours 1070. Spare fuselage and wings available. This is a nice aircraft for its age. Contact: Terry Jones terryroyjones@gmail.com 0427748094

3284 STORM 400/CENTURY PROJECT

Metal 2+2 seat. 70% complete. Almost ready to close. Most kit to finish, no engine/prop. Logs/books, photos, rivets, large number additional parts beyond standard kit. Many tools & instruments included/available for right offer. All offers considered. Call Scott 0449113897

3285 JABIRU J120

JABIRU J120 Reg 24-5485 08 model factory built 495 hours tt airframe and eng standard panel plus vsi 296 garmin, cabin heat, spare prop, maintenance up to date, cruise 100+ knots @ 14lt/hr, always hangered, nil accidents, no training hours, can deliver. Excellent condition as new. $42,000 inc. ono 0428954262

3286 JABIRU J120C

This privately owned "as new" condition aircraft has only done 290hrs. Always hangared. Nil Accidents will suit school or private use with cross country 105kt capacity. Extras include VSI , Cabin heat, Garmin 296 GPS, Strobe Lights, Headsets and new tyres. Inspection will not disappoint. $51,000 (incl. GST). Reg. 24-5315. Call David 0408591067.

3287 EUROFOX 3K

2008 EUROFOX 3K. TT:1650. L2 maintained 912ULS. Excellent touring A/C. Great condition. Solid performer. Dynon D100 EFIS, AvMAP IV GPS. Hangared since new. For sale due club fleet upgrade. Contact Peter Ford (pford@mac.com) 0438882052. Hastings District Flying Club - Port Macquarie (www.hdfc.com.au)

3288 SKYBOX CA25 IMPALA

Skybox CA 25 impala ,all ADs up to date, with purpose built trailer. Contact Mal 0418546511.

3289 FOXBAT SYNDICATE SHARE

share available in long running syndicate located at Caboolture Qld. 2012 Foxbat A22 LS. rotax 100hp. Dynon skyview system. transponder and G.P.S. Centre Y stick and tundra tyres. aircraft approx 120 Hrs. contact Chris Pfeiffer for details. 0417621097

3290 JABIRU J120

Manufactured May 2010, 252 hours trouble free, AD's up to date, new through bolts/nuts. Nil incidents, LAME/L2 maintained, suit new aircraft buyer, Dynon EFIS, Transponder, VHF/GME UHF CB radio/intercom, Garmin 495 GPS, Leather embroidered seats,

Sensenich prop, Cabin heater, booster seats, aircraft flies/runs like a dream, Always hangared, 9.5/10. Sean 0418 614 102

3292 ARION LIGHTNING

Professionally built 2011. TT42hrs, MGL glass panel & radio, ASI guage Electric flaps & trim, Adjustable pedals, Jabiru 3300 Hangared Horsham Health issues force sale Free training available POA, too low to print (no GST) Ph Bill 0468323396, email (preferred): punga.iwi10@gmail.com

3293 SPECTRUM BEAVER RX28

Been in storage for many years. Last flight: 09 MAY 98. A great little aircraft to fly. Stall = 28mph. Rotax 447. Spare parts & manuals. Wing skins are in excellent condition. Looking at reasonable offers. I can provide pictures on request. Please email: Sniper73@bigpond.com

3294 JABIRU LSA

Jabiru LSA Factory built 1998 TT 765Hrs Recent paint new windscreen; Big wheels; Basic panel; Garmin GPSMAP196; L2 maintained; I-com VHF; UHF; Located Gladstone Qld; $30,000; Ph 49756790 Mob 0400317085 rdgram86@yahoo.com.au

3295 JABIRU 2200

Jabiru 2200 Engine, No: 22A 2107 250 Hrs TT. All current ADs up to date. Engine removed for 6 cyl upgrade. Includes ram air ducts, oil cooler and exhaust. $8,500. Jabiru Propellor 60x44 good condition $500 Phone Brian 0411135050

3296 QUAD-CITY CHALLENGER II

Quad-City Challenger II 19-3391 503 Rotex Eng & Air Frame 229hrs, Radio, Headsets, Intercom nice to fly. Tennessee Prop recently reconditioned fibre-glassed and static balanced. Currently stored in Garage (No Hanger available) Priced to sell need garage back. $13,000ono Phone 0429995649

3297 JABIRU TAILDRAGGER

Solid Lifter 3300 engine. At 500 hours fitted with fine fin heads. Patroney 3 blade ground adjustable propeller, Tru Trak auto pilot, GTX327 transponder, Microair radio, 85L tank. Aircraft is based at West Sale (YWSL)

3298 EVANS VP - 1 ULTRALIGHT AIRCRAFT

Always hangared, flys well, lots of extras, radio, GPS, spare propeller, spare piston & cylinder group. Based in Camden Haven N.S.W. Only $7,000. For further information contact 02 65844004 or 0407537537

3299 JABIRU SK

19-1963. TT 145hrs. Good panel of instruments. Vacuum/Electric. Bendix King flip flop radio. Always hangared. Nil accidents. Price $27,500.00 phone 0428 538 306.

3301 SAVANNAH - STOL

Rotax 912 80hp. DUC bipala prop. Slats fitted. Has extra instruments and new MGL trans and coms system fitted. King transponder. wheel spats. Fully maintained by ICP in Italy. Ideal aircraft for low hours pilot. Always hangered. Situated at Mandurah, contact Garth at garth.lb@bigpond.com or 0409 599 845.

3302 JABIRU SP 500 4W

Jabiru SP500-4w, built 2006, 250hrs. TT Engine & Airframe. 2200A Hyd lifter, serviced every 25hrs, trouble free. Brauniger LCD panel, back-up, airspeed & elec bank. Lowrance 2000c GPS, Excom VHS. Nil accidents, 135 ltr wing tank's. 0428 367 839. 02 6343 2448. $45,000 Neg.

3304 TEXAN TOP CLASS SPORT 550 WITH GOOD

Texan 2007 top class sport 550 New Duc prop TBO on Rotex motor 2000hr 667 to run Avmap ADI Gramin Transponder Xcom radio New paint plus much more . Currently working out of Caloundra or Cabooture with leading flying school payed weekly for more info call 0418713350

3307 RV 12 - FOR SALE

TTIS 187 hours . Factory new rotax 912 uls 100 hp. Sensenich ground adjustable prop,dynon skyview glass panel,garmin aera gps, icom a 210 radio,always hangared, (yltv), auxillary 20 l. Fuel tank, current 100 hourly.No accidents, excellent condition.Price $89000 (no gst) phone roger 0438519922

3308 J170 SYNDICATE INTEREST

J170 syndicate interest Posted: 15 Feb 2013 looking for expressions of interest from fellow pilots,in establishing a syndicate to buy and fly a J170. based in SE QLD, - nth Brisbane area Pls ph 31185893 to discuss.

3309 THRUSTER TST

Good condition, always hangered. TT 1292 hours, 348 hours Rotax 582 motor. Heavy Duty under carriage. Intercom with 2 head-sets,UHF Radio.Very reliable, making room for new aircraft. Contact Anthony 02 69 938189 or 0429 938189

3311 GIPSY MOTH 3/4 SCALE PROJECT

Gipsy Moth 3/4 scale project Price: $negotiable Three quarter scale Gipsy Moth with complete frame including full set of instruments, fuel tank, battery and fire extinguisher. Offers encouraged. Photographs available upon request. Located in Central Ballarat, Victoria. Contact: Anna Caterer anna.caterer@gmail.com 0458327938

3312 ALLEGRO 200

Allegro 2000, twin Seater, full panel with all, radio + headsets navigation equipment, Rotex Motor. Beautiful little plane well serviced + hangared in Kyabram Vic. 361.4 hours since new No damage history. $55,000 ONO. Call John 0427156327

3314 FOR SALE

Evektor Sportstar Max, 2010, 450 hours, Excellent Condition, always hangared, Rotax912ULS, In-flight adjustable prop, leather seats, Dynon-D100, Landing Light, Garmin GPS Mount, Icom Radio, Mode-C Transponder, Additional vents, toe brakes, 115Kts TAS, superb aircraft to fly. L2 maintained. Brisbane. Extras approx $16K. $108,000 inc GST. Ph: 0421 278 580

3315 JABIRU - SHARE THE DREAM

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Australian Agents For EuroFox & Dynon Avionics:

EuroFox:-

Superb Workmanship
Rotax 912 Engine
(80Hp or optional 100Hp)
3 Blade Propeller
Short TAke-off & Landing
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Quick Folding Wings
Modern Cowling & Landing Gear
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Bob Keen
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smokeysmail@bigpond.com
Northern NSW, Qld, NT

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3316 FOR SALE

For Sale BantamB22J Jabiru Engine with oil cooler,89hours,no accidents,always hangered,registered. Price $25000 ONO Contact Gloria Armbrust Ph 0740943080 e-mail garmbrust@activ8.net.au

3317 SONEX

Aerovee 80HP. TT 110 hrs. Dual controls. Polished Metal. Garmin 196 GPS. Microair Radio. Headset. Intercom. Grand Rapids EIS 4000 will monitor CHT, EGT, Oil Pres, Oil Temp, Alt, RPM. Canopy cover. 17 lt/hr. Cruise 100kts. Excellent condition. $44,000 Phone 0412 537 730 sonex386@gmail.com

3319 J3 KITTEN

J3 Kitten, 10.3660 Classic single seat aircraft, 447 Rotax TT90hrs , Electric start, MicroAir760 radio CHT/EGT ASI&VSI Compass, Fuel flow, Dual fuel tanks Capacity 43litres, Won best 95,10 Natfly 2008. With a registered, custom built, enclosed trailer, ideal first aircraft. $15000 Ph Mike 0412776849

3320 CTSW

CTSW 484TT LAME Maintained Hangered Inflight adjustable 3blade Neuform Prop 50kg luggage comp 18 lts /hour 110 kts 4300 rpm Cruise120kts 1000 fpm roc $90000 Location Alice Springs. Cliff 08 8955 5200

3322 FOXBAT A22

Foxbat with 1769tt. Rotax 912s 100hp with 665 since new. Lots of fun to fly, very responsive. Stall 28kt, cruise 90kt, VSTOL, takeoff in 30m. Standard instruments. Never damaged. Can fly without doors fitted. Brand new Foxbat on the way. Located Forbes NSW. $60500 inc GST. Call Gary 0458576667.

3323 ZODIAC 601 XL-B

ZenairAustralia is upgrading its 601 XL-B, Rotax 912 S (100hp) MTOW 600kg, Upgraded to 650 Canopy, Crusie 105kts , Dynon D100 with auto pilot, Mode C Transponder, Garmin 196, Wing lockers, A great aircraft for touring or just a local flights. All AD's/Mods done. Bendigo. Ph 0417 121 111

3324 AEROCHUTE

Excellent condition. One owner. ELECTRIC START. Wide top plate. 367sq ft high lift chute. Large prop'guard which can facilitates big prop's & more thrust ! New 62

3327 AEROCHUTE FOR SALE

Aerochute for sale High lift Chute with 126 hrs Wide Head-plate Steering Sticks - Very sought after Helmets, Intercom, VHF & UHF Radios. Tools etc Contact Kurt 0423 881 360

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