

SPORTPILOT

RECREATIONAL AVIATION AUSTRALIA / NOVEMBER 2015 VOL 51 [11]

AGM REPORT

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SW51 Mustang



On the cover: Ready for duty A replica Sopwith Pup, built and owned by Bruce Clarke from a Rob Baslee kit. The VW engine is a 2275cc Revmaster. Photo: Alan Betteridge



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PRESIDENT'S REPORT

Another year

BY MICHAEL MONCK

As I write this I am sitting at the back of a fairly large room in Bundaberg filled with CFIs from around the country. The gathering is the result of the ongoing dedication and hard work of our staff to organise the second RAAus CFI conference.

Although it is only the second time we have run this conference, it continues to evolve in structure and content to reflect the needs of our flying schools and those who own and run them. Part of it includes the obvious updates on regulations, changes to the training syllabus and alterations to our Operations Manual. But there are other elements too.

I feel in the past we somewhat undervalued the importance of the flying schools and the fact they are usually the first point of contact for all our members. Even when we get enquiries through our office, we usually refer them to a school in their local area and from there our instructors become the focal point.

To assist the instructors and schools, we are now working to provide them with additional information and resources, not only to train students, but to market themselves to new students, process records more quickly and shift the focus back to their area of expertise – flying.

My Bundaberg visit was not only about the CFI conference. We also held our AGM, a board meeting and question and answer sessions on the organisation and our future.

As part of the formalities, we welcomed three new board members – Barry Windle, Teresa Avila and Don Ramsay – and thanked the outgoing board members. Ed Herring has been an integral part of the board for the past few years and has personally supported me by making himself available to sanity check ideas and provide guidance. Jim Tatlock has served as Treasurer for the past few years and has done an admirable job in terms of stabilising the financial situation of RAAus. Due to his efforts we are now, for the first time in recent history, forecasting a small surplus in the next financial year. Andy Saywell left us earlier this year before completing his term on the board. Andy was an active and motivated board member and played a key role in the successful delivery of our modernisation projects which are to be rolled out over the coming months (much of it will be live before you read this). I'd like to personally, and on behalf of the board, thank all three people for their significant contributions.

The primary focus of the board meeting was responding to the needs of all sorts of members. Just one example was a call from members who

live on large properties. These pilots often use their aircraft to monitor their properties, including checking fences and dam levels and monitoring stock. The problem, of course, is that we haven't had any training courses to help them learn how to do this safely. The Operations team has recognised the lack and put a proposal to the board to introduce such training. The board has accepted the proposal. There'll be more on this over the next year or so as we develop and introduce a process for the appropriate endorsement.

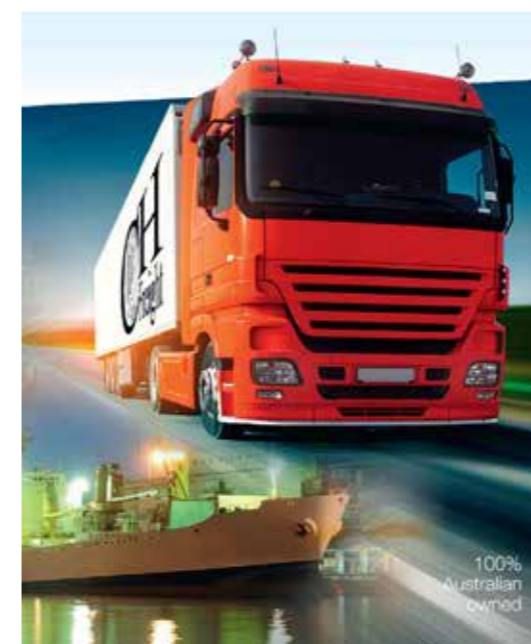
We've also recognised that our history risks being lost if we do nothing to protect it. So we will be establishing a Heritage Fund to support activities such as the Australian Ultralight Aviation Museum in Holbrook. These initiatives are important and we should support the efforts of the people already involved. Over time we will ask everyone to contribute to a Heritage Fund. We'll also support other organisations involved in preserving our history.

Other things discussed in Bundaberg included the draft of the new constitution, which was well received. The draft took a lot longer to prepare than expected, but I am pleased to say it is now available for download on the website.

One point much discussed was the mechanism to be used to appoint people to the board. Under the current constitution, board members are often elected by default, because there has been no contest. This can lead to an organisation where the board make up is based on postcodes rather than on finding the best people to serve everyone's interests. The new constitution will allow everyone from across the country to vote for anyone who has been nominated. No longer will you miss out on having a say simply because there is no contest in your state. The full constitution can be viewed on the RAAus website.

To help you understand the document we have prepared a memo to accompany it and step you through its logic. We encourage everyone to contact us with feedback and comments on the proposed changes and we look forward to holding numerous conversations about it over coming months. It is our hope we can put the constitution to a vote at our next general meeting in May next year.

We have some really exciting things to roll out over the coming year, all of which are designed to improve your experience with RAAus. I would, as always, encourage you to contact me or the CEO to provide feedback and tell us what you think. ☺



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**A. 31 OCT-1 NOV
JACARANDA MUSTER**

South Grafton Airfield, 150 Vere Street, South Grafton. Grafton Aero Club's Jacaranda Muster involves local and visiting aircraft from around the state flying in for the weekend. Aircraft may be viewed by the public. Trial flights and refreshments are available.

Complimentary flights over the city are provided to the Jacaranda Queen contestants on Sunday to view the Jacarandas in full bloom. For more information, Kevin Wilson 0429 344 158.



**B. 14 NOVEMBER
ARMIDALE AIR AND AUTO SPECTACULAR**

Aerobatic and warbird air show as well as 150 vintage cars (Sunday November 15 is the alternative if the weather is no good). Includes a four hour flying display involving Paul Bennet, RAAF Roulettes, warbirds, Russian Roulettes, Matt Hall Red Bull Racer and more.

The event is a fund raiser for the Armidale Transport Museum - to build a permanent home for around 70 local vintage cars. For more information, www.aaas.org.au.

**C. 5-6 DECEMBER
GATHERING OF THE MOTHS**

An unusual gathering at Mt Beauty in the Victorian Alps. Fly in to share, experience, learn and demonstrate mountain flying. Fly out during the weekend to investigate other interesting mountain strips. Saturday evening dinner. Breakfast, lunch and dinner all available at the airfield. Number of aircraft which can be accommodated is limited, so register beforehand (no obligation).

For more information, www.ymbt.org.au.



Photo: Tyler Boyd

**D. 9-10 JANUARY 2016
GREAT EASTERN FLY-IN**

Evans Head Memorial Aerodrome, NSW. Every sort of flying machine welcome. Lots to see and do, markets, classic cars, model boats, classic movie, pilot's dinner, re-enactment group, air displays and adventure flights, underwing camping and caravan and motorhome camping for the flight crew. Have a flying summer holiday at the Great Eastern.

For more information, Gai Taylor 0427 825 202 or www.greasternflyin.com.

**F. 13 MARCH 2016
TYABB AIR SHOW**

The theme for the show will be Winged Warriors. Aerial displays, antique aircraft static display, new LSA display, classic cars, model aircraft display. Food and drinks.

For more information, pac@pac.asn.au or (03) 5977 4406.



**G. 13 MARCH 2016
CLIFTON FLY-IN**

This has become an iconic event in the region and is the premier attraction for all types of aviation in southern Queensland. See various types, shapes, sizes and models of recreational, ultralight and homebuilt aircraft. Come late pm Saturday for BBQ and drinks. Fly or drive in, see ERSA. On-field camping, bring your swag. Advise for catering. For more information, Trevor Bange 0429 378 370, (07) 4695 8541 or trevorbange@bigpond.com.



**E. 5-6 MARCH 2016
AEROFEST**

Busselton Aero Club in WA. Big family day with everything aviation, skydiving, food and drink. Saturday evening BBQ. Busselton Regional Airport is the gateway to the Margaret River wine region.

For more information, Ken Manton 0429 967 172 or ken.manton@bigpond.com.



**H. 26-27 MARCH 2016
BACK TO HOLBROOK FLY-IN**

Holbrook Ultralight Club reminds you to put its annual event in your diary for Easter next year. Forums on Saturday afternoon and a planned local fly-out Sunday morning. Dinner plus award presentation Saturday evening and BBQ breakfast Sunday morning. Underwing camping and transport to and from Holbrook township for accommodation and fuel available.

For more information, John Harley 0456 357 735 or www.holbrookultralightclub.asn.au.



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LETTERS TO THE EDITOR

GAME CHANGER

On August 27 I became aware of the following facts concerning the availability of leased hangar sites at Warrnambool airport.

1. Live-in facilities are permitted as such complies with their definition (caretaker's house). Must be used in conjunction with airport or heliport.
2. There are at least 29 such sites available now, of various sizes.
3. Power and sewage lines to all sites.
4. Taxiways and vehicle access to all sites completed.
5. Freehold sites not available.

I have applied for a site and I think a lot of RAAus members would also be interested.

Contact Warrnambool City council-Peter Robertson, probertson@warrnambool.vic.gov.au. For building applications, Fiona Casterly, moyne@moyne.vic.gov.au.

For full details of site rentals, service charges, applications, etc contact both of the above.

The airport is now virtually complete and ready for applications. Millions of taxpayer dollars have made all this possible and the permission to live there on a leased site is an offer nearly too good to believe. But it's true!

I was advised on August 27 by the above two contacts, that Warrnambool City Council rules for their airport do not involve a permit. As long as it meets the requirements of a caretaker's house, which must be used in conjunction with airport or heliport and is defined as follows- "a dwelling on the same site as a building, operation, or plant and occupied by a supervisor of that building, operation or plant".

So if you supervise the building on the site, with your aircraft in the building (hangar), you comply with the definition. And so you have living accommodation (a caretaker's house) on that site.

An airpark, not restricted to huge freehold costs. A game changer!

RON FISHER

DEAD HERO

With reference to Brian Bigg's altimeter troubles and Dafydd Llewellyn's mention of having three AH's for safety in IMC (*Sport Pilot* September 2015), I could have suffered Brian's worst case scenario - had I flown a medivac.

The circumstances took place on a dark

night on the coast, at Kota Kinabalu, Sabah, Malaysia.

As the duty pilot, I received a call well after midnight from the oil company's radio operator requesting a medivac flight to their offshore rig. Both the Bell 'Huey' turbine chopper and I were licenced to fly night VFR ops and I regularly practised flying solely on the gauges which is necessary when heading offshore on an overcast night with no horizon or terrestrial lights. But I told the radio man I wouldn't go because of the thunderstorms and waterspouts I'd seen developing as the sun set. You can't see them in the dark and the chopper was not designed to swim.

Some people have no idea, I thought while heading back to bed. He didn't even know what the medical problem was and I was not going to risk others and my own life to be a hero.

Murphy showed his hand when I took off next morning. After lift-off into clear morning weather and giving my departure call at 200ft, just having crossed the coast, I saw the AH begin a slow lean as I flew wings level. There was no red flag to indicate a failure but it continued to slowly roll over before eventually toppling.

Had I tried to be a hero and fly at midnight as requested, just after leaving the brightly lit airport and city behind me and facing the IFR blackness offshore, the AH would probably have had me into the sea within a few seconds. Especially without a red flag appearing and flying alone. It's easy to say I could have checked the co-pilot's AH but we know what rapidly turning one's head when close to the ground or water can do, don't we? We also know that two pilot airline crews have also flown into the sea just after take-off into pitch darkness.

It's easy to say one should crosscheck all the instruments, but in an inherently unstable chopper, at low airspeed and altitude, you rely heavily on the AH when transitioning from very bright light to complete darkness. I wonder what the odds were for an unheralded AH failure occurring just when asked to do the only night flight in a year - apart from training?

The lesson here? Be prepared to say no, rather than be a dead hero. Murphy is always waiting, especially when doing something new or unusual.

PHIL LATZ

ROD END RUST

I fly my Jabiru model 55/3J and generally do all my pre-take off checks.

However, it is awkward to check the rod-end ball

coupling on top of the wing for activation of the flaps.

It was a lovely day to fly and I decided to do a few circuits.

All went fine for a couple of touch-and-goes but in my final circuit for the day, when I applied first stage of flap I had to counteract the lift from the right wing by using a fair amount of aileron. I thought it might have been turbulence, but as I had to keep full right-hand aileron for a while, I decided to take the flap off, which stabilised the flight.

I checked the flaps again (by hand on my LSA) and I could see only the right flap activated. There was no problem in doing a flapless landing at all.

On inspection back in my hangar, I found the top rod-end connection screw had broken due to fatigue. The ball had been rust seized. You may see this on the photo I've included.

I wonder if there would have been serious consequences if I had electrically operated flaps, not enough altitude and with an electrical system not as instantaneous as it is when hand operated. Should a spin occur before the problem is identified there would be little chance of avoiding a crash.

Rest assured I shall be checking the connecting rods above both wings from now with some RP7 at hand to make sure there is free circular movement, even though space is quite limited on my little Jabby.

TOM BANKO

FROM THE TECH DEPT / Tom, why not submit a defect report via the new OMS, which can be located from our new website or by directly visiting oms.raa.asn.au.

NUMBER CRUNCHING

On page 45 (*Sport Pilot* June 2015), the phone number for the Rescue Coordination Centre is listed as 1800 815 257.

On page 5.11 of the 'Emergency Procedures' in Version 5 of the Visual Flight Rules Guide, the number is listed as 1800 641 792. Please confirm which number is correct.

NEIL WILLIAMSON

FROM THE ED / According to the AMSA website, 1800 815 257 is for aviation search and rescue. 1800 641 792 is for maritime search and rescue.



WRITE IN: EDITOR@SPORTPILOT.NET.AU

The state of the organisation is reflected in the Letters to the Editor columns. The more letters - the healthier the organisation. So don't just sit there - get involved. Your contributions are always welcome, even if no one else agrees with your opinion.

The Editor makes every effort to run all letters, even if the queue gets long at certain times of the year.

(By the way - the Editor reserves the right to edit Letters to the Editor to shorten them to fit the space available, to improve the clarity of the letter or to prevent libel. The opinions and views expressed in the Letters to the Editor are those of the individual writer and neither RAAus or *Sport Pilot* magazine endorses or supports the views expressed within them).



TIME RUNNING OUT FOR CALENDAR

BY MICHAEL LINKE CEO

READERS of the printed edition of *Sport Pilot* have only a month to subscribe to get their popular free RAAus yearly calendar.

The calendar full of aircraft pictures will be delivered free to subscribers with the December edition of *Sport Pilot*.

If you aren't a subscriber by November 20 you'll miss out this year.

Don't forget for a limited time you still receive six free editions of the magazine with every 12 or 24 month subscription.

For members, simply log into your ac-

count on the website and follow the prompts. Non-members can download a form or call the office.

The digital copy of *Sport Pilot* is on the ISSUU website. Subscribe to that for free. There is also a low resolution version on the website if your internet access is stuck in the dial up age.

Sport Pilot remains the voice of Recreational Aviation Australia and the best magazine in the sport aviation sector.

Now with the free calendar, its better value than ever.



COMPLAINTS TO CASA

A NEW industry complaints commissioner has been appointed by CASA.

Jonathan Hanton took up the position, which reports directly to CASA's board, in September.

Mr Hanton has worked as an ombudsman at the UK Financial Ombudsman Service and in NZ as a senior investigator in the Banking Ombudsman's office. He is a qualified lawyer who has held senior roles in managing, investigating and resolving complaints.

CASA's industry complaints commissioner can be used by people in the aviation community to lodge complaints about the regulator's action or behaviour. Complaints can be made about decisions and administrative actions or services provided by CASA staff, delegates or authorised persons which are considered to be wrong, unjust, unlawful, discriminatory or unfair.

For more information, www.casa.gov.au.



TECNAM TOTALS CLIMB

TECNAM has announced it has just completed a bumper quarter.

The Italian company revealed it had delivered a record 32 aeroplanes during the period, including 12 high wing (P2008 and P92), 11 low wing (Astore and P2002), seven P2006T twins and two P2010 four seaters.

Tecnam says many customers (especially those based in Europe) chose to collect their aeroplanes directly from its Capua head office. Tecnam has significantly upgraded its Visitor and Delivery Centre to en-

sure it continues its emphasis on customer satisfaction and quality.

"Quality and service are at the very heart of everything we do at Tecnam," says Paolo Pascale, Tecnam's Managing Director. "We are extremely proud that so many of our customers take time to visit us and then take delivery of their new aeroplanes direct from Capua. We really welcome the opportunity to offer a such personal service and support".

For more information, www.tecnam.com.



MEET CLARE

BY MICHAEL LINKE CEO

RAAUS has appointed Clare O'Dwyer as its first ever Training Coordinator.

Clare has spent the past ten years working in vocational education and training. For the past five years she worked as an Online Instructional Designer for various registered training organisations owned by Study Group.

With Study Group, Clare liaised with subject matter experts and curriculum managers to transform old style paper-based distance education into an interactive online experience for students and facilitators.

RAAUS is about to launch a major new online learning initiative. Clare will soon be implementing a new user-friendly learning site which will link directly from the main web-



Clare says her goal is to meet the training needs of all RAAUS members and keep everyone up to date with the latest training initiatives.

Keep an eye out in future editions of *Sports Pilot* and online for a whole new world of RAAUS training tools.

For more information, clare.odwyer@raa.asn.au.

site. The new learning site will initially be open only to RAAUS staff, Chief Flying Instructors and student pilots.

In 2016 RAAUS plans to roll out blended learning courses which will combine face-to-face training at a flight school and RAAUS online learning. It will be accessible through mobile devices, online and offline.

MEMBERS' MARKET CHANGES

RAAUS members wanting to advertise their aircraft for sale will soon have a much wider audience.

As part of the roll out of our new website, RAAUS has formed a partnership with Aviation Advertiser, Australia's largest aircraft marketplace. As well as *Sport Pilot* magazine, prospective buyers from around Australia now have access to the most extensive network of new and used recreational and light sport aircraft types online. This new partnership offers members a more competitive pricing model, so it will be cheaper for you to place an ad. It also offers a simpler and more streamlined ad placement tool. Members will also get exposure to over 70,000 registered users of the Aviation Advertiser website. The new partnership will also pave the way for RAAUS to grow its membership and expose potential buyers to RAAUS aircraft.

The *Sport Pilot* component of Member's Market will not change, except for some branding, and members will still have the option to place ads online, in *Sport Pilot*, or in both. Anyone with an existing ad will be migrated to the new system without charge.

You'll find Members' Market on the home page of our new website.

For more information, <http://www.aviationadvertiser.com.au>.



CTA ENDORSEMENT PROGRESS

RAAUS Operations department has been looking into getting approval for RAAUS pilots to fly into controlled airspace.

Operations initially set out to determine the scope of the proposal and its potential impacts. This included an assessment of current CTA training and privileges available in Australia and overseas, research into the CTA options available to holders of other qualifications, syllabus and competency requirements and current qualifications of RAAUS Instructors and higher approval holders.

RAAUS has had a total of 16 flying schools operating in CTA under an exemption, with 13

training in Class D airspace at the moment. Since 2007, these schools have trained 682 pilots in Class D procedures. Curiously these same pilots are denied the opportunity to operate in CTA using their RAAUS Pilot Certificates unless they add an RPL or higher licence.

In April, members were asked to participate in a survey to determine the number of members already operating in CTA using other qualifications and how much demand there would be for such an endorsement for RAAUS.

Of the 219 respondents, over half reported they held an RPL or PPL and over 65% of these pilots already held CTA privileges. Less

than one fifth had entered CTA the preceding week, and only 25% the preceding month. One third held an Instructor rating, with over 60% of these a Senior Instructor or higher.

A meeting was held at Airservices Australia in Canberra in May. The response from Airservices was encouraging. They had no major objections to the proposal, based on their assessment as a service provider that the potential increase in traffic levels could be managed appropriately.

The RAAUS board will consider the progress made to date with a view to a formal approach to the regulator early next year.

AGM A BIG HIT

BY BRIAN BIGG

IF YOU needed proof that RAAus is a different organisation than it was a couple of years ago, you need look no further than the AGM in Bundaberg last month.

For a start it was held in Bundaberg. Gone are the days when we all had to troop off to Canberra to see what the board was up to. We are all getting quite used these days to seeing the board turn up in our local area instead. People came from all over northern Queensland to attend.

As well, another 60 people were logged on to watch the live streaming feed of the meeting on the website. This is a fantastic facility and one which is slowly gaining popularity. For the first time members watching the streaming feed from anywhere in the world had the opportunity, through the webmaster, to ask questions of the board and many took the opportunity to comment on the events taking place in the meeting. It was just like being there, and a lot cheaper.

If you missed the meeting, it will soon be available for you to watch on YouTube.

The other big difference was the fact that for the first time in many years, a printed annual report was made available, containing the full financial picture of the organisation. Regardless of what that financial picture might be, it was refreshing to have it all laid out for us before the meeting. Another sign the organisation is changing for the better was reflected in the financial news that we are \$155,000 better than forecast on the budget and that expenditure was \$50,000 less than expected. That demonstrates commitment and discipline. RAAus now has \$1.3m in the bank.

It was also refreshing to be able to discuss the draft constitution, which should come into effect next year. This has been a long time coming and, by all accounts, has been a very difficult process.

As well the question-and-answer session for the board members turned up a lot of interesting information about the future of RAAus.

The entire event was very professionally organised and reflects the fact that RAAus is becoming a more modern, focused and responsive organisation. The board and CEO should be congratulated.

As the President, Michael Monck reflected to the meeting, we have faced a lot of the challenges and come out all right. Now we get to focus on the fun stuff. ✕



A GOOD YEAR OVERALL

Michael Linke was mostly upbeat in his CEO presentation to the AGM in Bundaberg. Why wouldn't he be? The organisation has emerged, by and large, from its darker days, and appears to be powering ahead on all fronts. The one exception is safety. Too many pilots are still dying.

2014-2015 THE GOOD

- MARAP rolled out.
- L1 assessment tool rolled out.
- Member engagement and communication.
- Record year for GYFTS.
- Registration delays solved.
- Insurance options expanded.
- 14 fly-ins attended.
- Modernisation project.
- Engagement with RAAOs.
- Success of the digital and subscription models of *Sport Pilot*.

2014-2015 THE BAD

- The ongoing Jabiru debate.
- Too many members dying in crashes.
- Members not reporting incidents and accidents.

THE YEAR AHEAD

- Rolling out the modernisation project.
- Finalising our plan for new endorsements.
- Autumn 2016 focus on maintenance.
- Further expansion of GYFTS.
- New Tech (V4) manual.
- Revised Ops (V7.1) manual.
- New Training Co-ordination Role.
- Training programs rolled out in January 2016.
- Marketing and promoting RAAus to stimulate growth.
- Finalisation Safety Management System.
- Constitutional reform.

HOT TOPICS

SPORT PILOT

- 1,584 subscriptions in 120 days.
- 200,000 impressions on ISSUU in 120 days.
- 16,000 digital magazine reads.

- Every back issue of *Sport Pilot* being digitised and uploaded to both ISSUU and website.
- Monthly cost of *Sport Pilot* down by over 60%.

HOT TOPICS

ENDORSEMENTS

- CTA application to CASA this summer.
- MTOW increase application to CASA by Autumn 2016.

HOT TOPICS

MODERNISATION

- Live demo after the AGM.
- Planned go live by end of October.
- Members take control of their data.
- Purpose built incident and accident reporting system known as the OMS – Occurrence Management System.
- New website.

STATISTICAL SNAPSHOT

- Membership numbers slowly declining.
- 620 members renew per month.
- 130 new students per month.
- 23 hours averaged in the air per member.
- Aircraft fleet slowly growing.
- 392,000 fleet hours.
- 188,000 landings.
- 3-axis make up 85% of fleet.

FATALITIES

Nine in 2014/2015.
3.78 per 100,000 hours.

ACCIDENTS/INCIDENTS

Accidents: 100 reported in 2014/2015.
Incidents: 99 reported in 2014/2015. ✕



RAAUS FINANCIALS LOOKING SOUND

TREASURER'S REPORT

Former Treasurer Jim Tatlock has handed over the reins of the organisation's finances to new/old board member, Don Ramsay for the coming year. Jim has left the organisation in good (and getting better) fiscal shape. Here is what the AGM at Bundaberg was told.

CEO, Michael Linke presented the organisation's financial picture on behalf of the retiring Treasurer. For the 2014-2015 financial year, he reported RAAus had achieved a \$155,000 better position than had been budgeted.

THAT CAME FROM

- \$100,000 more revenue than budgeted.
 - \$50,000 less expenditure than budgeted.
- The organisation has \$1.3M in cash reserves, so was still very liquid.

WHAT FACTORS HELPED THE TURNAROUND

- Reduced staffing.
Overall staff expenses had been lowered by the equivalent of 3.5 positions.
- Tighter fiscal control.
A number of internal measures were introduced to monitor and manage spending.
- Reducing waste.
- Introducing efficiencies.

- Embracing the use of technology.

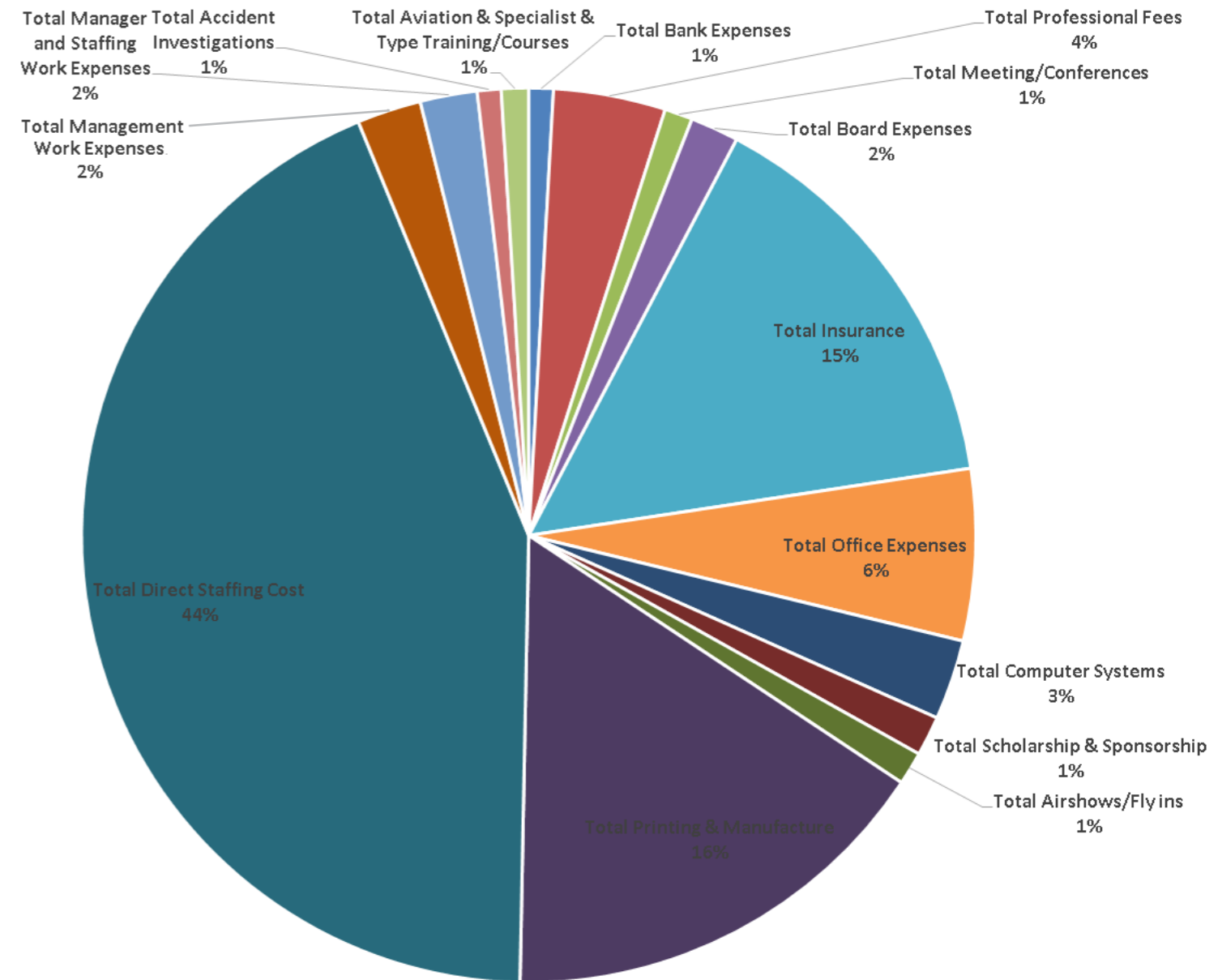
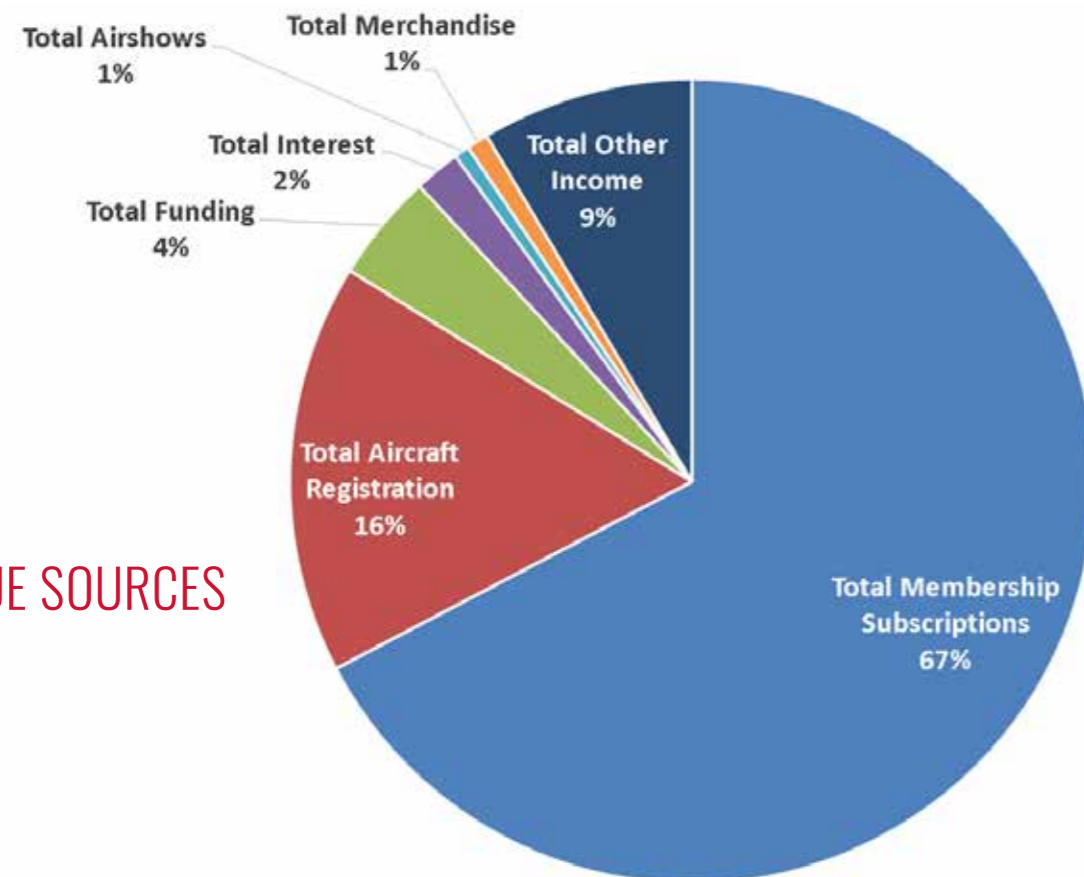
ANALYSING THE DEFICIT

- Total deficit was \$268,000.
- Budgeted deficit was \$423,000.
- Careful cash management, proper allocation of accruals, prepayments and depreciation protected the cash flow.
- Overall drain on cash reserves during year was only \$9,000.

THE NEXT 12 MONTHS

RAAus remains financially strong and is looking to invest in technology to generate further operational savings. Major items, such as salary costs, will remain stable as the organisation operates with fewer staff than in previous years. Insurance costs will remain stable as we continue to work with our insurers to offer members extensive coverage and put in place strategies that demonstrate our commitment to safety. The cost to deliver *Sport Pilot* will be lower than in previous years as a result of the subscription model introduced in July.

REVENUE SOURCES



EXPENDITURE SOURCES

FROM THE BOARD

As part of the AGM weekend in Bundaberg, RAAus board held a meeting to discuss a variety of issues. Here is a summary.

FLY INS

OVER the past year RAAus has made an effort to attend multiple events across the country, instead of attempting to run one single event. This has resulted in an increased level of member engagement, compared to what was achieved with NatFly.

NatFly catered to less than 5% of pilots and a similar number of aircraft owners. When you consider the overlap in the figures (aircraft owners are pilots and often fly their own aircraft to NatFly) the penetration rate of NatFly was less than 5% of the total membership and aircraft owners.

By comparison, the fly-in initiative has exposed RAAus to more than 3,000 pilots, aircraft owners and the public. The cost of this initiative has been approximately \$15,000.

The board has chosen to continue with this form of member engagement, given its effectiveness in terms of reaching the membership, its financial benefits and the positive reception received from members.

RECOGNITION

The board has discussed the way it awards recognition for members who have done significant things for the organisation. In the past it was done on an ad hoc basis with little or no guidance in terms of what was considered as being worthy of recognition.

In light of the lack of clarity, the board has agreed to undertake a review of all types of recognition (including life membership, pioneer awards, meritorious awards, etc.) to establish a set of guidelines for the future.

HERITAGE FUND

The board was also presented with a proposal to grant funds to the Australian Ultralight Aviation Museum in Holbrook. The board was unanimous in its agreement that the history of the organisation needs to be protected, but was concerned about the lack of detail in the proposal. It was agreed a Heritage Fund should be established with support from the membership and that these funds be managed through a process established by the management team.

It was agreed RAAus would seed the fund with \$20,000 from capital reserves and proposals for grants would be considered after the proper controls had been established.

CONFIDENTIALITY AGREEMENT

In previous years, the board was subjected to varying levels of confidentiality requirements which sometimes led to a lack of transparency and at other times to situations where all information was disclosed. It is important RAAus meets its obligations to the laws and regulations as well as respecting commercially sensitive information and privileged discussions.

For this reason, a new confidentiality agreement has been written which strikes a balance between transparency for the members and ensures disclosure of significant information of interest, while also protecting the privacy of members, commercial activities of the organisation and other confidential information.



UTILITY ENDORSEMENT

As the organisation grows in stature it has become increasingly clear that different types of activities are being undertaken in our aircraft. The board recognises the risks these activities pose to the organisation. It has also considered the recommendations of legal authorities, such as the State Coroner's offices around the country.

In light of this information, it has been agreed RAAus should provide training for members involved in operations relating to property management for private landholders. The new endorsement will be rolled out as the syllabus is developed. It will offer education in the areas of stock spotting, fence checking, aircraft selection, etc. and is intended for landholders conducting operations on their own properties. It is not an endorsement which will provide an avenue for employment by a third party for commercial purposes.

More information will be released as the detail is developed.

SPORT PILOT

The move to the new combined electronic and paper platform for *Sport Pilot* has been well received. With more than 1,500 paper subscribers and over 66,000 electronic reads each month, the reach of the magazine now exceeds our member base.

There has been an extended incentive period to encourage uptake of the paper subscription through the offer of an 18 month subscription for the price of 12. This reduces the price to \$5 per issue which is slightly below cost, resulting in a small subsidy being provided by those members who do not subscribe. At the regular price, the cost is almost identical to the GFA offering (which is likely the best comparison available in terms of organisation, magazine content, quality, etc.). The GFA magazine is offered bi-monthly which means six editions per year at \$47, \$2 per year more expensive than *Sport Pilot* if both were produced at the rate of 12 editions per year.



STRATEGIC PLAN

An update on performance against the strategic plan was provided with a few adjustments made to incorporate unforeseen circumstances. The board is yet to peruse the updated timeline.

CONSTITUTION

The draft version of the new constitution was discussed, with a focus on board appointments. The main point (aside from the need to further develop board charters, member charters, etc.) was that members would always maintain their right to appoint and remove board members. The primary point of difference is that members will gain the right to vote for candidates outside of their state of residence, instead of being restricted to those in their region. This is an improvement over the current constitution which has resulted in many seats going uncontested and some members losing the ability to have a say.

MODERNISATION

The board has been provided with an update on the modernisation

project which was ready to be rolled out at the end of October. The rollout incorporated three main components – website, occurrence management system and PULSE back end.

SAFETY

Much was discussed about safety. The board was informed of the latest statistics and told that even more information would be provided as the new modernisation project was rolled out.

In addition the management team has worked with CASA on an amnesty (see Pilot Talk this edition). The intended outcome of the amnesty is to encourage non-current pilots and aircraft owners to rejoin RAAus and become compliant.

CTA AND MTOW CHANGES

The management team updated the board on progress with respect to these changes. CASA has encouraged RAAus to pursue these changes in parallel with the support of the Director of Aviation Safety. The planned submission time for the MTOW changes is still mid-2016, in line with the current strategic plan. ☺

NEW WEBSITE LAUNCHED

IT'S been one of the biggest sources of complaints from members for several years. The outdated and patchy RAAus website. While the rest of the world has beamed into the future on the internet, we've been jogging along with a system well past its use-by date. Not anymore.

At the AGM in Bundaberg, CEO Michael Linke unveiled the long awaited new RAAus portal and the system went live at the end of October.

Michael said members should enjoy the new website.

"The new experience will bring a host of new features via a redesigned portal and we will be adding even more features over time", said Michael.

"In addition to the new member's portal is a redeveloped member's area of the website where everyone will have access to a raft of information, tools and documentation. We are progressively migrated new material to this area all the time.

"For the public and budding recreational aviation enthusiasts, we have built a new web experience. The website incorporates a responsive design so it is easy to access in all screen sizes across a range of devices, tablets and smart phones. The website showcases critical information about RAAus and is a great launch pad for anyone interested in joining or finding

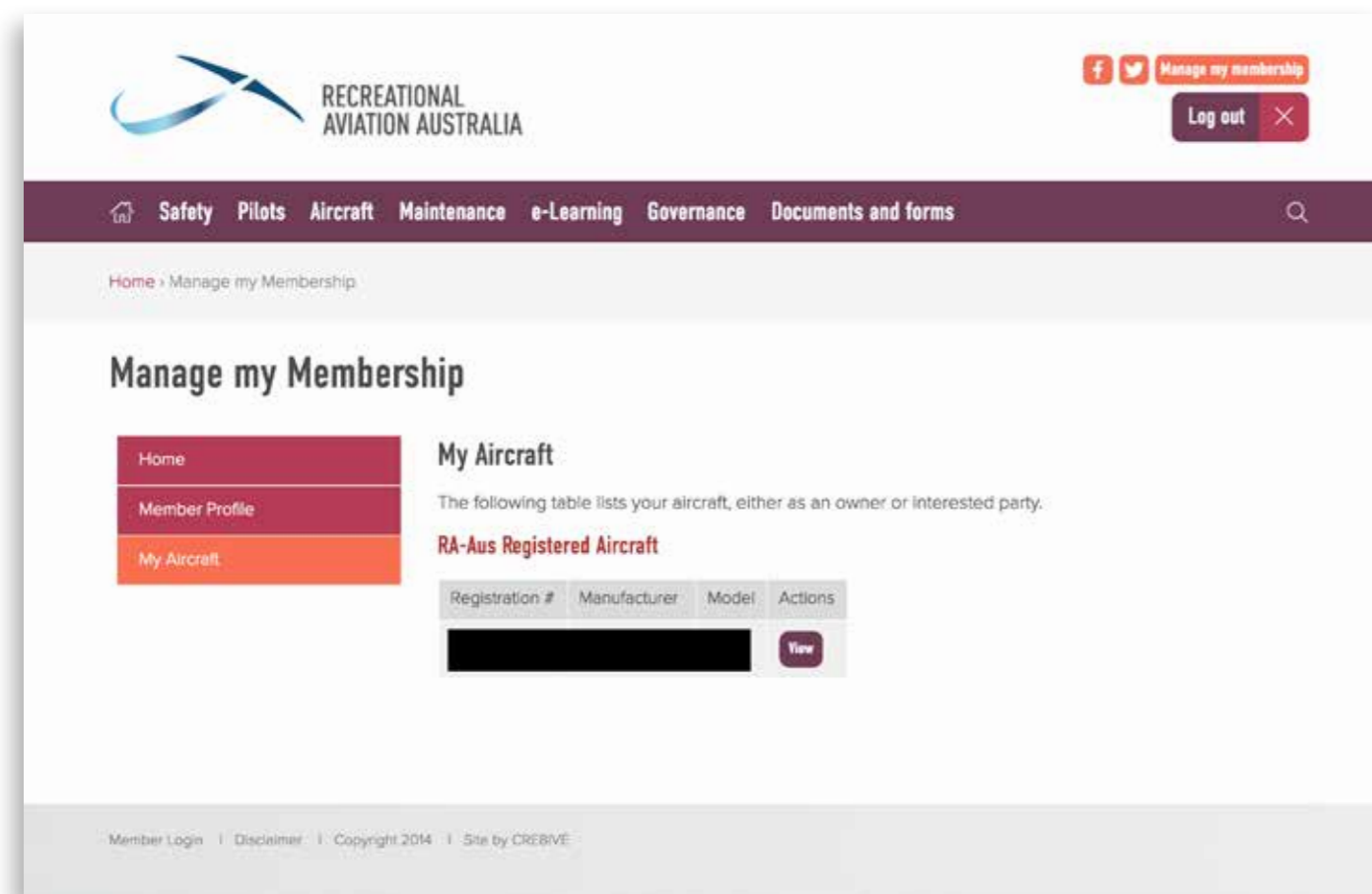
out more about sport and recreational aviation.

"The next part of our new experience is an enhanced in-house built member's database. For internal use only by staff, this is where we will host and maintain member's records. Built using the latest technology to ensure privacy and security of data, this new back-end will enhance the efficiency and effectiveness of our staff to deliver quality service.

"The final part of our new digital experience is a world first purpose built occurrence management system. From time to time, members will have an accident, experience an incident, have a need to report a hazard or lodge a complaint. The occurrence management system, which we call the OMS, will cater for each scenario in a seamless easy to navigate online system."

Michael advised everyone to keep an eye on their inbox for dedicated log in and password details. Due to the size of the RAAus database, log in details were progressively rolled out over a ten day period in late October. If you didn't get yours, contact the office.

"The website and portal have feedback areas," said Michael. "We want to hear from members about the experience, as well as suggestions for improvements and new features." ☺



A screenshot of the new website



CFI CONFERENCE VERY INSTRUCTIONAL

BY JILL BAILEY RAAUS NATIONAL OPERATIONS MANAGER

MORE than 60 CFIs and Senior Instructors attended the second national RAAus CFI conference in Bundaberg in October.

There were several goals for this year's conference. At the top of the list was standardisation of training for RAAus pilots and instructors. This was something many RAAus instructors had indicated they wanted to discuss in depth.

Also on the list was safety, of course and from RAAus' point of view, understanding the pivotal importance of the role of the CFI and instructors in driving cultural change in RAAus itself. These subjects grew out of the successful inaugural conference in Dubbo last year.

Presentations were made by specialists from Airservices Australia, the Australian Maritime Safety Authority, ATSB, CASA and the Australian Air Force Cadets as part of the RAAF, as well as RAAus managers.

Following the welcome and official opening by CEO, Michael Linke, and President, Michael Monck, National Safety Manager Katie Jenkins provided detailed information to CFIs about the development of the Safety Management System, and her part in RAAus' modernisation project, the Occurrence Management System (OMS). This topic has been the subject of keen interest by CFIs, so the information Katie provided gave them some assurance and insight into an area which is to become vital in the future.

During the first day, Assistant Operations Manager, Neil Schaefer, facilitated a lively and interactive session about key elements of the RAAus training syllabus. Neil also provided two other presentations during the conference, 'Tricks of the Trade for Instructors' and information about the new Instructor Training Reference Manual. The manual has been a major focus for Neil over the past year and formed part of a major consultation process involving Neil and a number of RAAus Instructor Trainers and Pilot Examiners. Examples of draft briefing sets were provided which are intended for use with both Pilot Certificate holders and Instructor candidates, and there was a discussion about how to ensure instructor training standards remain high.

At one point all RAAus managers and staff left the room, so CFIs would have the opportunity in an open forum to discuss issues important to them, without feeling they were on trial. It was also a way for them to provide feedback to RAAus. And did they ever.

When RAAus staff returned to the room, they found they had feedback from the CFIs on a number of key topics, including information about the

Operations Manual, school inspections, RAAus support and advocacy for the issues surrounding the Jabiru Instrument, insurance, online membership applications and suggested revisions to the syllabus.

Fortunately, most of these areas were noted as already on RAAus managers' radars, and in some key areas, development is already underway.

By the time you read this, our modernisation project will have already begun, so presentations were provided to CFIs on relevant topics such as the impact and intent of the modernisation project (by Assistant Technical Manager, Jared Smith) along with new training initiatives by National Training Manager, Clare O'Dwyer. These presentations were warmly welcomed.

CEO Michael Linke presented an interesting session on marketing strategies for flying schools and the ways RAAus will be offering support and assistance to them. These areas are all new and exciting for RAAus and reflect recent changes and improvements in RAAus' use of social media, marketing and communications.

Safety initiatives such as National Safety Month, Hangar Talks, safety vests and key rings and the amnesty period were all applauded by CFIs as strong messages to the wider RAAus community about the cultural change going on within RAAus and its relationships with the various government departments, including CASA.

The key note speaker for the dinner was Squadron Leader Sarah Stalker who provided entertaining and informative stories about life as an RAAF transport pilot and the challenges of being the only female in her intake. Sarah has deployed six times to the Middle East and remains closely involved with testing of aircraft and development of training packages within RAAF Williamtown.

All presentations from the conference will soon be available on the RAAus YouTube channel, allowing those CFIs and instructors who couldn't attend, the opportunity to review them.

The next CFI conference will probably be held in 2017, leaving an opportunity for RAAus to trial a number of different communication strategies and initiatives, including the possibility of a number of regional professional development sessions, and an alternative conference in 2016 for L2s and the technical side of the organisation.

The future is looking brighter and communications have never been better. It is an exciting time to be a member of RAAus. ☺

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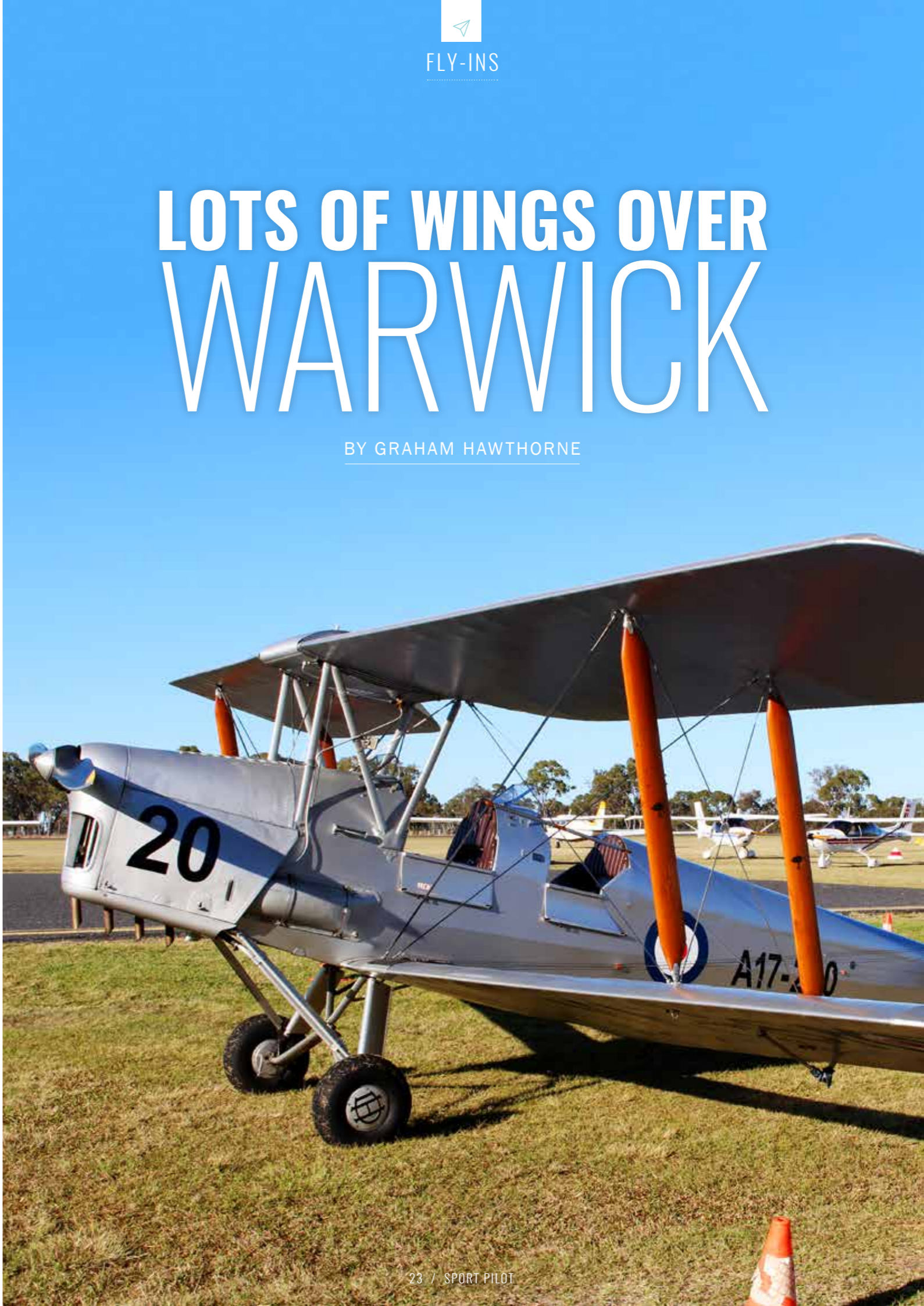
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LOTS OF WINGS OVER WARWICK

BY GRAHAM HAWTHORNE



Jeff Braddich's RV8 under construction



Super Petrel



Aviat Husky



Bright yellow bug

Lots of wings over Warwick

CLEAR blue skies and almost no wind guaranteed success for the 25th annual fly-in for the Queensland Recreational Aircraft Assn incorporating Warwick Aero Club at Warwick's Massie Aerodrome in September.

It was pleasing to have many local and visiting aircraft join us on the day. The skies were busy all day with demonstration flights and aircraft coming and going.

There was plenty of action on the ground as well. The Warwick Aero Modellers displayed their planes and there were also some beautiful motorcycles and classic cars around the field.

One of QRAA's Brisbane based club mem-

bers brought his band, Below Zero, and kept the crowd entertained throughout the day with music from the 70's and 80's.

Jerry Finch had his full sized Warwick based Spitfire replica out for everyone to admire. The aircraft was designed and built by Jerry and his wife, Auriel. Danny McCartin also had his Warwick based Tiger Moth on display which proved extremely popular with the crowd. Another vintage plane, a Leopard Moth, was flown from Boonah by its owner, Bill Finlen and caused a stir. It was 80 years to the day from the Leopard Moth's first flight on September 12, 1935.

Jeff Braddich's RV8, which is still under construction, was also on display so the pub-



Jerry Finch's Spitfire



Tiger Moth and crowd



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Bob and Robyn Dennis' RV9-A



lic could appreciate the work that goes into a home built aircraft. Bob and Robyn Dennis arrived in their beautifully prepared RV9a, which was also home built by Bob from a kit.

Another interesting aircraft for the crowds was an Aviat Husky. There was also a Super Petrel amphibian, flown in by a club member from Middlemount.

The Oakey Army Aviation base provided a Kiowa helicopter and, in contrast, there was a gyrocopter visiting as well.

Other aircraft on display either by club members or visiting aviators included Jabirus (one of which was the award winning Jabiru built from a kit by club member, Phil Goyne), Tecnams, Cessnas, RVs, Pipers, Drifters, Bonanzas and numerous other ultralights, sports, recreational and general aviation aircraft.

The 25th fly-in shows why the annual Warwick weekend continues to be a highlight on the aviation calendar. ☺

"The skies were busy all day"

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Aerial view taken early in the day

DECISIONS DECISIONS

BY NOEL THOMAS

I HAVE often heard that decision making becomes more difficult as you get older. I suddenly found this happening to me. Happily retired but needing something absorbing to hold my interest in between family visits and the odd overseas holiday, I thought about learning to fly.

When I was at the age of choosing a career it had been the consensus that before you even thought of becoming a pilot you needed to top your class in every subject and have very wealthy parents. I didn't fall into either of these categories, but I had always looked skywards at the sound of overhead aircraft and wondered "what if?"

I live in Alice Springs where the weather is very conducive to aviation. There's an aero club and flying school here so my first decision was relatively easy. I met with the helpful instructors, had my initial flight and was soon on my way to a new adventure.

I grew up on a farm, so had learned basic engine operation and maintenance early in life. Then I did an apprenticeship as a Radio and Television Technician so already knew some of what was required to make an aeroplane aviate, navigate and communicate properly. After a few lessons on handling and control, my forward thinking lobe kicked in and told me that if I planned to continue down this path then buy a small plane to enjoy all my newfound knowledge, why not buy that plane now and use it to complete my training?

But which aeroplane should I buy? I was completely in the dark and out of my depth. The obvious thing was to ask people who did know, like the flying instructors and local pilots I had recently met. Problem there was they all had different opinions. Naturally talking to the aircraft dealers returned the same result. It soon became clear the only way to find what suited my particular taste was to venture forth into the great unknown and rely on my good old gut feeling. I already had a preference for low winged aeroplanes so went to AUSFLY 2013 to sample the fare. I was still only a student pilot but companies I approached at Narramine all managed to find a flying instructor to take me up so I could get a feel of their products. Trouble was, I enjoyed flying all of them, so my

"I was completely in the dark and out of my depth"



Sling in the red centre

“I was all smiles, until the following day”



Clockwise from left: at Mataranka, over Kakadu and Drysdale River



decision was no closer.

I had written up a check list featuring everything I required of my new plane, mindful while I did so of my central Australian location. Endurance, comfort, durability, serviceability and reliability were at the top. After comparing models, I found the Sling 2 had ticked all of the boxes and Errol from Global Aviation invited me to the Gold Coast after Narromine to spend more time familiarising myself with the plane. Go Fly Aviation at Caloundra already had one in service and Errol offered to shout me an hour's lesson. Ritchie, the instructor at Go Fly, was so full of praise for the Sling that I had to ask Errol

if he was part of the sales team or on commission. But it had helped me make my mind up. I decided to buy one.

It was great arriving home to Alice Springs and I was all smiles, until the following day when I learned that, in my absence, both RAAus rated flying instructors at the Alice Springs Flying School had left. I now had a new plane on the way but no one to help me finish my training. Fortunately after a couple of anxious days, Jim from the Aero Club informed me that Ken Watts operated a flying school at Bond Springs airstrip, just 21km north of Alice, so I arranged a meeting with him to explain my situation.

As I soon learned, Ken has a lifetime of experience from his businesses of heli mustering, flying school and even hot air ballooning. He listened patiently to my history (nine different instructors in seven different aircraft) and made the swift analysis my hours had not been spent learning to fly but merely familiarising myself with the aeroplanes and instructors. He also suggested I should do some more training in a more basic aircraft than my new Sling. This was not what I really wanted to do, but I could see his rationale so I went back to basics again in his Skyfox Gazelle. Errol delivered my Sling to Alice Springs in May 2014.

Over the next couple of weeks with some conversion to type and a few more lessons, I went solo in my own aeroplane for the first time. Great feeling!

Ken then taught navigation from the grass roots up, or in our case, from the rocks and sand up. In this part of the world, there are very few man-made location identifiers away from the main highways and I had to learn to read all the contours, creeks and changes in elevation from WAC charts to find my way around. Until I became familiar with the whole process, I found it very difficult. And although I would surely starve in the desert, after a cou-

ple of failed attempts I did manage to pass my final nav test and was awarded the cross country endorsement on my Pilot's Certificate. Only then was I allowed to turn on the Sling's GPS and other expensive electronic nav aids.

Over in Queensland, Errol had mustered up enough interested new owners to do a 'Sling around Australia' trip starting from Heck Field on the Gold Coast. I considered myself too green to undertake such a long trip, but I joined them for a leg from Kakadu to the Kimberly. Errol and Mariette now have the new Sling 4. Michael and his mate Des, Keith and myself in Sling 2s made up a flock of four aircraft flying

from Cooina to Bachelor, Kununurra, around the Bungle Bungles and up to Drysdale River Station over a period of three days. From there we parted company. I planned to go back towards Alice Springs via Hall's Creek leaving Errol, Mariette, Michael and Des to continue the journey around the coast of WA, SA, Vic, NSW to QLD.

During our final dinner together at Drysdale we all reflected on the great time and experience we had enjoyed. Then the suggestion of doing it again in a couple of years was offered. My hand went straight up. Decision making had never been easier. ☺

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Submissions may be edited for clarity, length and reader focus.



How AvPlan saved my day

BY DOUG MCCULLOUGH

I USED to plan big trips as part of my role as an assistant events coordinator at Queensland Recreational Aircraft Association, based at Warwick, Qld.

These trips have involved as many as 12 aircraft in the group, flying to destinations like Karumba, Broome, Lake Eyre and down the east coast through Victor 1 in Sydney.

I'm now in the middle of planning a trip for May 2016 from Warwick across to Carnarvon, in WA via Birdsville and Ayres Rock, down around Perth, Bunbury, Albany, then home across the Nullarbor via Ceduna and Broken Hill.

All these leg lengths and fuel stops have been made much easier to plan since I started using an EFB.

Recently, I installed AvPlan Live, which has the ability to live track other aircraft and post our planned route on our Facebook page.

In August I was on a two-week return trip from Caboolture to Shute Harbour with a number of stopovers which brought up to 11 aircraft together.

On all legs I activated the Facebook link so friends could track our progress.

On the Middlemount to Shute Harbour leg, I was approximately 20nm south of Proserpine tracking close to the eastern side of the range, west of Mackay. The wind was 15-20kts from the south east with the occasional gust and I was at 4,400ft just under the Mackay 4,500ft CLL.

It only took a few seconds for a gust going up the eastern side of the range to put me at 5,000ft, which prompted Brisbane Centre to request a reply from the aircraft which had just incurred Controlled Airspace.

I responded, explained and declined clearance, because I planned to descend after Proserpine in readiness to enter Shute Harbour. I quickly descended to 4,400ft.

I then realised this had been a reportable incident and started to consider what details I would need to provide for my report.

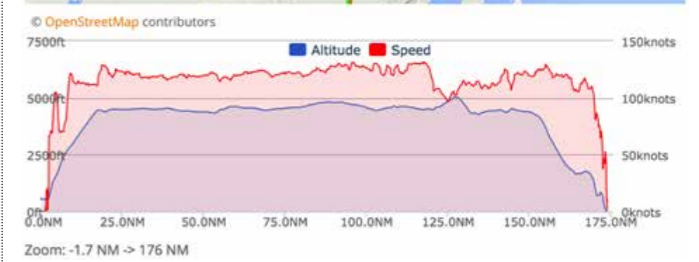
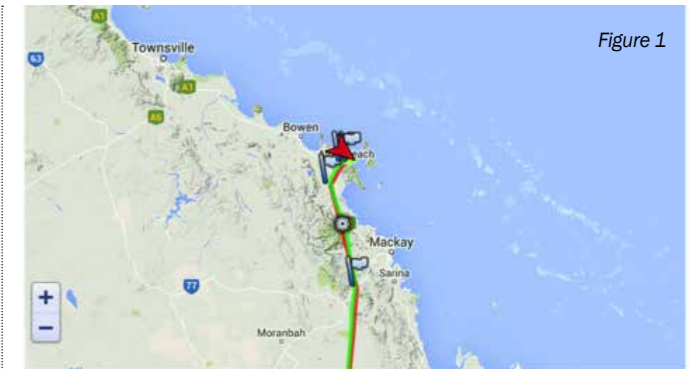
I went to the AvPlan EFB connection on my Facebook page and, as well as the map showing my plan and track, the graph also showed my average altitude and speed. Right where I incurred the controlled airspace was a spike in my altitude that you can see at the 125nm marker (Figure 1). The graph allowed me to prove my hiccup into controlled airspace was not intended.

On another occasion, I used another AvPlan Live feature which shows other AvPlan EFB users' altitude, speed and direction.

We were three aircraft at Agnes Waters wanting to track to Caboolture and had already delayed our departure by a day because it was cloudy with showers.

We all had AvPlan Live turned on, which meant we could see each other on our iPads.

After checking the weather, we departed Agnes Waters climbing to 5,500ft above the broken cloud. Approaching Gympie there was a solid



bank of cloud around 3,500 - 4,000ft.

By the time I phoned Caboolture, which reported 8/8ths, I'd already passed over the leading edge of the cloudbank.

The other aircraft in the group immediately descended to 3,500ft while I was at 5,500ft needing to do a 180-degree turn so I could come back around behind them.

When I got below 3,500ft it was dark and murky under the 8/8ths cloud and even though I was only 3-5nm behind the others, I still couldn't see them. But I knew where they were because I could see them on AvPlan Live. With radio comms we confirmed our positions, which married up exactly with our iPad plots.

My wife, Robyn, is my non tech-savvy co-pilot and prefers to still have maps on her lap even though we have an iPad Air 2 mounted on the dash, a backup iPad mini synced to the iPad Air 2 and a Garmin GPS in the dash.

I guess I'll have to work on how easy AvPlan EFB is to use. I'm not leaving home without it. ☺

FROM THE OPS TEAM / Pilots are reminded of the pre-flight planning requirements to ensure meteorological conditions are suitable for the proposed flight. Obtaining and monitoring weather, in combination with early and mature decision making, will ensure safe conclusions to flights.





Taxi!

BY TONY KING

MINICAB 28-4325 was amateur built by David Fels in Brisbane under the old ABAA rules.

It was a project which started in 1974 and culminated its first flight as VH-SLV in 1982. The aircraft was sold several years later to John Brock, who flew it for ten years before selling it to his brother Cyril. Cyril owned it for 15 years and kept it at Forest Hill (near Gatton in South East Queensland) before selling it to me in April 2015. It was transferred to the RAAus register in 2005.

The Minicab was not a new design, even in 1974. The GY-201 is actually a later development of the CAB GY-20 Minicab, an early post-war French design by Yves Gardan. It's a conventional two-seat light aircraft with a low cantilever wing and fixed tailwheel landing gear. The GY-20 was a scaled-down version of another Gardan design, the SIPA S90. The pilot and passenger sit side-by-side and access to the cockpit is via a one-piece, forward opening (hinged) Perspex canopy. From the outset, the aircraft was intended to be low-cost, easy to fly and easy to maintain. It was also designed with potential for homebuilding in mind. The GY-201 is a more refined version with a strengthened undercarriage, split flaps and castoring tailwheel.

Construction of the Minicab is timber (spruce) with Stitts fabric covering. The cowls and fairings are fibreglass and the canopy is Perspex on a steel tube frame. The main landing gear uses oleo struts and disc brakes. The aircraft has dual control sticks and dual rudder pedals with toe brakes on the left set of pedals only. Headroom will be an issue for anyone over 180cm tall.

Early Minicabs used a Continental A65 horizontally-opposed, four-cylinder, air-cooled engine (65hp), but 4325 has a Rolls Royce O-200A (100hp) under the cowl.

The Minicab is a fairly simple aircraft and quite easy to fly. The first thing you'll notice from the pilot's seat, unusually for a taildragger, is that, when taxiing, you can see where you're going just by looking out the front. No need for S turns here! Set first stage flaps, push the throttle all the way in and the wheels will be off the ground in about 150m. With the stick in the neutral position, the tail will lift by itself as the speed builds up and the aircraft will start to fly when it reaches the mid 30kt range. Make sure you use a bit of right rudder or (at Forest Hill) you'll find yourself collecting the windsock halfway down the left side of the runway. Retract the flaps and trim for climb at 600 - 700 fpm and 60kts. Once at the desired



“The Minicab is a fairly simple aircraft and quite easy to fly”

4325 started life as VH-SLV



Off the ground in 150m



KEY SPECS

Empty weight: 369kgs

MTOW: 561kgs

Fuel: 74 litres 91 RON Mogas or 100LL Avgas

Fuel burn: 20 litres per hour

Cruise: 94kts

Vne: 104kts

Stall (no flaps): 35kts

Stall (flaps): 32kts



Not a particularly short field aircraft (above) and (right) dual control sticks and dual rudder pedals



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altitude, level off and pull back the throttle. Full throttle straight and level will see you reach (and pass) Vne fairly readily. Maximum structural cruise is 94kts and 4325 will maintain this speed at 2400rpm burning around 20 litres per hour.

Stalls are unsurprising and recovery is easy. There is a little buffet just before the stall and a tendency to drop the right wing. Stall speed is 35kts clean and 32kts with flaps. Both speeds are at max weight. Gentle application of rudder is all that's needed to correct the wing drop - too

“Low-cost, easy to fly and easy to maintain”

much rudder will see the aircraft start rolling the other way. Nose down, then power on and the aircraft starts flying again with minimal loss of altitude.

Landing is also quite straightforward - turn base and power back to idle, nose up to slow to flap extension speed (62kts), apply first stage flap and trim for 55kts. On final, apply second stage flap and trim for 50kts approach speed. When the runway is certain apply full flap and fly it down to the strip. Level off just above the strip and let it slow down and

settle. It's easy to bang the tailwheel onto the ground first if you try and slow the aircraft by raising the nose. The Minicab is not a particularly short field aircraft (and I'm still getting the hang of it), but I've yet to need the whole 550m at Forest Hill, even coming in over the trees at the southern end.

There are a handful of Minicabs in Australia, but I've only seen one other and I've yet to see two in the one place. With its unusual configuration (low wing taildraggers aren't that common) and the excellent workmanship of the builder, Minicab 4325 attracts admirers wherever it goes. ☺

Do you have a Minicab too? Email editor@sportpilot.net.au and tell us all about it.

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PILOT TALK

Come on back

BY THE OPS TEAM



NATIONAL Safety Month was a chance for all RAAus members to focus on key safety issues and awareness.

A number of initiatives were started to encourage everyone to operate as safely as possible. We are also trying to revitalise the concept of 'hangar talk' to provide focus for safety discussions.

As part of this initiative we want to put out the welcome mat to lapsed members to return to RAAus. So as a follow up to National Safety month we'd like to announce an amnesty period, where lapsed members can return to the fold without fear of rebuke. The amnesty period will run from December 1 to February 29, 2016.

On the surface, it may appear it's not such a serious thing to fly without holding current RAAus membership, a current Biennial Flight Review, a correct endorsement or to fly in a non-registered aircraft.

But our accident research has proved non-compliance in one or more of these key areas was actually a significant factor in many recent serious or fatal accidents. This information formed part of a Pilot Talk article ('Five years, 40 deaths' *Sport Pilot* July 2015).

We realise lapsed members may simply not be flying or at least not flying RAAus aircraft, but we would encourage all former members to give RAAus another look. It's a much different organisation than it was a few years ago. You might be pleasantly surprised.

And if you have been flying an RAAus aircraft without holding current membership, current BFR or your aircraft is not registered, you know you are operating outside the requirements. During the amnesty, you can come back - no punitive action will be taken against you (providing, of course, a serious safety issue is not discovered). You can re-join

and complete any missing compliance such as BFRs, aircraft registration, etc and be free to fly legally again. We will be advertising the amnesty in a number of ways, including *Sport Pilot*, letters to CFIs, aircraft manufacturers and importers and dredging up contact details of past members from our database. Current members can become involved by telling any pilot they know at their local airfield.

The first step is to use the Membership Reactivation Application to re-join RAAus, <https://www.raa.asn.au/wp-content/uploads/2012/02/Application-for-Membership-reactivation-Nov-2014.pdf>.

Once you are current again, contact your local CFI for a BFR, re-training for a specific endorsement, or help ensuring your aircraft is registered and compliant.

While we don't want to dwell on the negative, it's important to note that at the end of the amnesty period, the gloves come off. If we find out a lapsed member is flying an RAAus aircraft while not complying with requirements, information will be provided to CASA for further action.

RAAus Operations and Technical Managers are committed to helping you get back to compliance and will be ready, willing and able to assist you as required during the amnesty.

During National Safety Month we also encouraged everyone in recreational aviation to openly talk about safety. We have written to CFIs and GYFTS scholarship recipients to encourage them to host a 'hangar talk' event in their area, including a presentation by the CFI (provided by RAAus) or GYFTS scholarship recipient. A free gift will be provided to everyone who attends these 'hangar talk' events. Contact your local school or club and get involved. ☺



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EDITOR'S CHOICE

I own an aeroplane

BY BRIAN BIGG



"I didn't mention it had taken me two days waiting for the weather to clear"

IDON'T think the manufacturers ever intended it, but there is an added benefit to owning a recreational aircraft.

You get to say to people, "I own an aeroplane".

Sure, an aeroplane can be a valuable business tool. That's how we justify it to the tax department.

It can also be a useful transportation device. That's how we justify it to our partners.

It is also a source of endless hours of pleasure, excitement, fear and a deep sense of satisfaction. That's how we justify it to ourselves.

Those are already enough reasons to open the cheque-book and plonk down a silly amount of cash on a machine that will spend most of its life indoors. We never care for our cars quite as much, do we?

But there is another, more visceral benefit to owning a light aeroplane.

It changes the way people look at you. And changes what they think of you, without you having to do or say anything else.

I live in the country. Sometimes, when the weather is good and my aircraft is working correctly, I fly it to Sydney where I sometimes work. It's cheaper than taking the jet (sometimes), but it's also highly dependent on the weather and other factors which mostly gives the jet the advantage.

But recently when I told a colleague I had spent the weekend at my home in the country, he made the comment that the travelling must cost me a lot in air fares.

I replied to him, "Not really, because I have my own aeroplane". The look on his face was precious. "You have your own aeroplane?"

And it wasn't long before people in the office started coming up to me to ask "Are you the bloke who commutes to work by aeroplane? You lucky bastard."

And it really didn't matter how good I was at my job. People started assuming I must be somehow special and obviously better at the job, because I was 'successful' enough to have my own aeroplane.

I soak it up too.

I just don't tell them that often weather conditions are such that my little plane can't make the trip, nor do I tell them that I have to plan to get home before dark, that I often have to stop and spend money for extra petrol if the wind is fierce in my face, or that sometimes the turbulence is so bad the trip is like spending hours trapped inside a washing machine. Or that I have to land if I need to go to the toilet. I don't

tell people that on those sorts of days, the jet is a godsend.

I keep that all to myself, because I prefer to see their look of awe rather than pity.

It was the same at the school reunion.

Once the MC announced to the room that I had flown my own aeroplane to the reunion, it didn't matter how successful or otherwise I might have been in my career. My old school-mates all assumed I must have hit the big time.

Again, I didn't mention that it had taken me two days waiting for the weather to clear across the mountains before I could make the journey. Nor did I tell them afterwards that on my way home, a 35kt headwind and rain meant a couple of nights in an airport motel with only a paperback and my flight bag for company.

I didn't tell them any of that.

I basked in their wide-eyed admiration instead because the looks on their faces were worth \$1 million, even if the true story makes it worth a great deal less.

The purchase price of an aircraft is cheap at half the price when you can say "Yes, as a matter of fact, I do own my own aeroplane. You don't?" ☺



PACIFIC HAVEN FOR BREAKFAST

BY MARK PEARCE

Coffee with Brett &
Julie Poole's Hornet

Pacific Haven for Breakfast

THE inaugural Pacific Haven Breakfast Fly-In in September was dominated by RAAus aircraft and their owners.

The tide is certainly changing in this former VH stronghold. Pilots flew and drove in from many points including Redcliffe and Childers to be greeted by clay oven-cooked pizzas created by the oven builder himself, neighbour Joel and ably assisted by his busy partner who together operate Fraser Coast Wood Fired Ovens. Their tasty morsels marched off the production line with military precision as arrivals descended onto the featherless bird feeding station. Flying is a hungry business, isn't it? Wood flavoured pizzas with a myriad of brekky toppings? Why not? There are a number of clay ovens at Pacific Haven. Their owners operate them almost as obsessively as they do their aircraft.

Fly-In organiser, YPAC resident and Texan flyer, Bruce McGill, claimed he had limited advertising of the event so as not to be overwhelmed at his first attempt. But with the assistance of a few trusty (but probably not really needed) dedicated supporters, proceedings went smoothly.

Uncharacteristically blustery conditions in the days before, and the forecast for rain on the day, meant many of the 80 to 100 flyers

who turned up came by car but conditions were certainly ideal for the feast.

While most fly-ins are dominated by Jabiru, other type names seen over this weekend included X-air, Drifter, Tecnam, and Savannah, as well as a representation from our GA cousins.

The event was about more than just food, believe it or not. There are three other air-parks in development in the Wide Bay region alone and we aviation tragics at Pacific Haven think it is fantastic. The more the merrier and safety in numbers. South-East Queensland is clearly continuing to be the recreational aviation mecca of Australia. It can only create further interest and participation in our passion.

Pacific Haven has been established for almost 40 years. As such, there is plenty of experience here. The fly-in afforded an opportunity for people involved in the new developments to talk with us, find out what life is like living next to your hangar and understand the important details they will need to know in order to make informed decisions about what is, after all, a big investment.

Thanks to Bruce and his wife, Carol, for their hospitality. We can't wait to see this event evolve into one of the more popular fly-in events of the aviation calendar. Equidistant between Bundaberg, Maryborough and Hervey Bay, it should be. ☺



X-air Hanuman



Some of the crowd



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"At cruise, CHTs barely go beyond 100°C," explains Kai Lyche of Norway. "They just work!" In fact, liquid cooling is working so well for Kai, it's allowing him to turbocharge his Jabiru 2200.

"It's nice being able to fly home in the summer," says pilot Terry Ryan of rural Victoria, Australia (upgraded Jabiru 3300 engine featured below). "Before liquid cooling, the Jabiru engine had all sorts of heat related problems."



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Flight servicing

BY CURTIS OLIVER

Curtis responds to the President's column 'Lessons for All' (Sport Pilot July 2015). In that article, Michael Monck commented on the number of fatal accidents which had taken place in the organisation, some of which were put down to improper pre-flight checking.)

I FOUND the issues raised in President Mick's article to be concerning.

Firstly, I guess, I should give you a little detail about myself. I have been around aircraft since I can remember and I am the son of a GA/RAAus pilot and aircraft home builder. I have spent the past 12 years working for the RAAF as both an aircraft technician and an armament technician. During my time in the RAAF, one thing repeatedly highlighted in many different avenues - from informal chit-chat over an after-work cold can, to very formal briefings and interviews, was to 'Learn from mistakes - be they our own or our mates'.

The RAAF has a very open culture when it comes to sharing lessons learned. The formal version of these come in the form of a Safety Occurrence Report (SOR) where an ASOR is Aircraft (or more accurately flying related) and a MASOR relates primarily to the area of Maintenance.

Let me share one of my own experiences. One rather nice, warm morning in Newcastle NSW, I found myself preparing an aircraft for its day's flying. I noticed, across the tarmac, a few shiny bums with heavy shoulders had converged on another aircraft also being prepped for its upcoming sortie. Work continued, aircraft were signed off as ready for flight and, a short while later, the pilots arrived. They

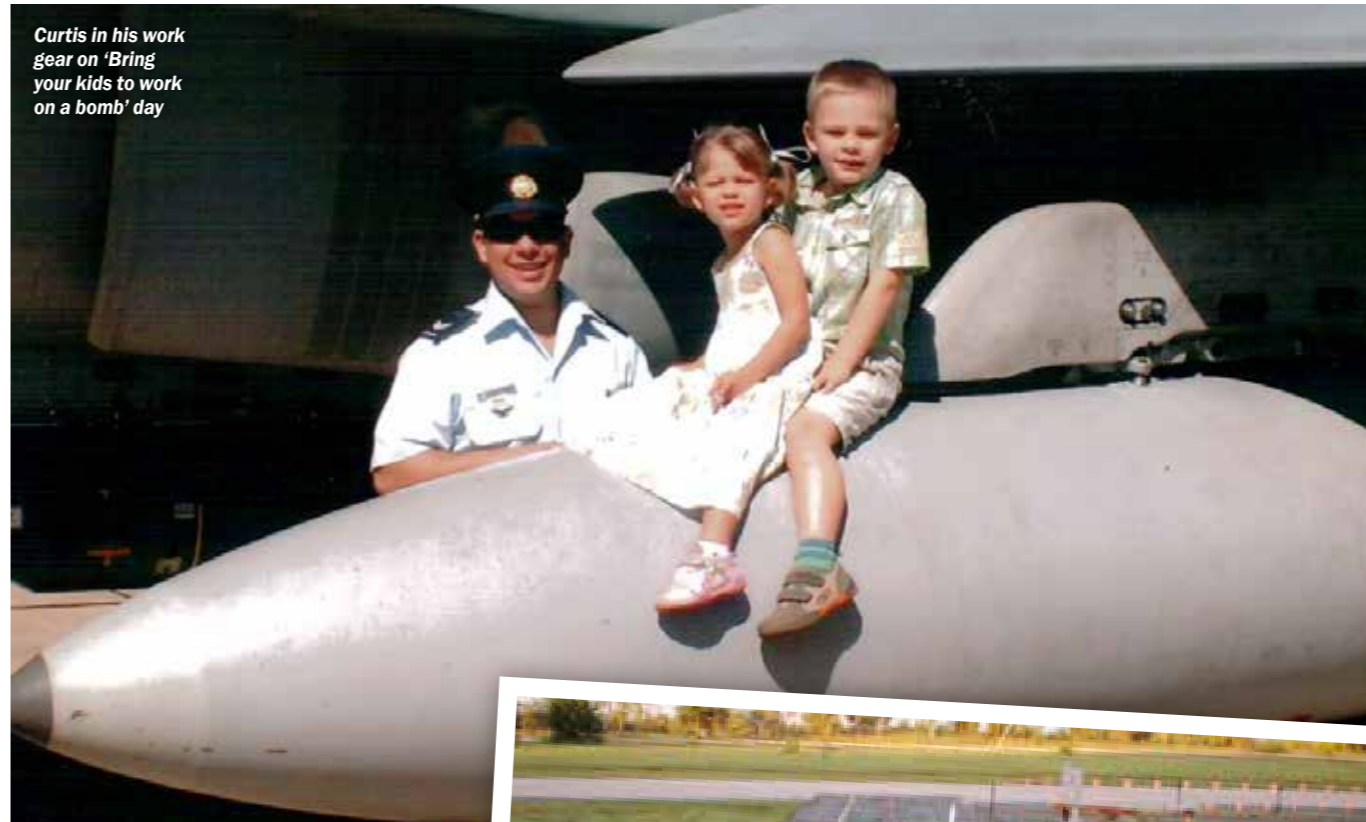


Curtis in his weekend office

conducted a walk-around and took off. A few minutes later we heard "Pan Pan Pan" over the radio. Sure enough, it was one of ours reporting that an undercarriage had failed to retract.

Procedures were followed and the aircraft returned safely to the ground.

A fairly formal investigation followed this incident which brought to our attention three



Curtis in his work gear on 'Bring your kids to work on a bomb' day



Pre-flying the scale model

main areas of concern. The cause of the failure of the right hand main undercarriage to retract was simply that the undercarriage lock had not been removed. As you can imagine, the question of 'Why not?' was asked and the results were as follows:

1. The ground crew member responsible for conducting the 'Before Flight Servicing', which included the removal of the undercarriage locks, was interrupted by those of far higher rank. Because he had felt intimidated, he did not request the brass move to another aircraft to allow him to continue his work uninterrupted.

Following this incident, all ground crew were reminded they have the authority and are encouraged to be left undisturbed when carrying out maintenance.

2. The undercarriage lock did not have the required 'Remove before Flight' flags fitted, so the flight-line supervisor had no indication the lock had not been removed.

Following this incident, all equipment such as covers and locks which require removal before flight, were inspected and those requiring 'Remove before Flight' flags had them fitted accordingly.

3. The pilot who took the aircraft for its sortie had been trained overseas and, despite being a very experienced pilot on the type, had been trained to remove a 'pip pin' style undercarriage lock which differed greatly in size, lo-

"A few minutes later we heard 'Pan Pan Pan'"

cation and function to the style of lock fitted to the Australian version of the same aircraft.

Following this incident, the pilots conducted refresher training on 'before flight' walk-arounds in order to ensure all were current on the type.

One fairly minor incident and three major lessons:

1. Don't allow yourself to be interrupted during flight servicing.
2. Don't fit something to the aircraft which is not easily identifiable as 'Removal before Flight'.
3. Do make sure you are both familiar and current on the aircraft type you intend to fly.

From a maintenance perspective, I dislike the term 'walk around' and feel it's very important the culture be changed to that of 'flight servicing', three types in fact - Before Flight, Turn Around and After Flight.

Before Flight is the servicing conducted before the first flight of the day and valid for a period of 24 hours.

Turn Around is the servicing conducted after each engine shut down, immediately prior to the next consecutive flight, but within the valid 24 hours of a Before Flight servicing.

After Flight is conducted at the end of the day's intended flying which concludes the 24 hour period of the Before Flight servicing.

It might seem like overkill but its better to overkill than to be killed. ☹

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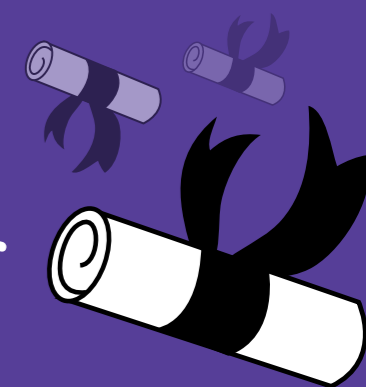
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FLIGHT INSTRUCTOR'S FORUM

Don't sweat the short stuff

BY PROFESSOR AVIUS AVIATION GURU



ALL our takeoff and approach training focuses heavily on flying the aeroplane well within a safety envelope.

The takeoff safety speed, climb speeds and approach speeds are all worked out with a fair degree of safety margin built in.

One of the most useful training sequences in a pilot's training though, short field operations, is often only given short coverage and a tick in the box, which is a shame because the benefits for a pilot from a solid series of lessons devoted to short field operations, are significant.

A normal takeoff involves smoothly applying full power and accelerating straight down the runway. Once a safe speed is reached, a gentle increase in back pressure should get the aeroplane flying gracefully and well within its design envelope. This technique, while the safest, will use up more runway than the aeroplane actually needs to get airborne.

A good short field technique will see the aeroplane get airborne using significantly less runway. Take note though, careful consideration is needed to ensure it is handled safely, because we are reducing the safety margin.

First of all, if conditions are gusty, it's best not to practice this sequence. The airspeed changes which happen during gusty conditions could cause an upset, especially if the wind strength dies off quickly at a critical phase.

While your aircraft will have its own published technique for the short or soft field take offs, generally the same techniques apply.

SHORT FIELD TAKEOFF

1. Back track and use as much of the runway as possible.
2. After your pre-takeoff safety brief and final configuration check, hold the brakes on as you apply power. Once at full power, release the brakes and keep straight with rudder.
3. Try to keep the controls as clean as possible to reduce drag by keeping the elevator and ailerons neutral.
4. Once the Indicated Air Speed passes the quoted clean stall speed, raise the nose and get the aeroplane flying. This can be little disconcerting as the back pressure required can be more than usual.
5. Once airborne, relax the back pressure and allow the airspeed to increase to the Take Off Safety Speed, while keeping the aeroplane in the ground effect as long as possible. Once TOSS is achieved, climb out and accelerate to Vx until the obstacles are cleared.

It takes some practice to get the feel for exactly when you can ask the aeroplane into the

air, but once you get a feel for it, it becomes second nature.

CONSIDERATIONS

Always operate in accordance with the published procedures in the Pilot Operating Handbook or flight manual.

Careful management of the controls in the critical phase just after rotating is paramount.

Be aware of the stall stick position.

Careful management of the flap retraction in types which use more flap than normal for short field operations.

Always consider strip elevation and local conditions.

SHORT FIELD APPROACH

As with the takeoff, the approach needs careful consideration of the conditions.

Again, don't practice this sequence on days where there is a gusty wind because the approach will be at a reduced IAS, so there is less of a safety buffer over the stall speed.

The circuit is normal up until the final leg where the IAS is reduced to the published short field approach speed. A general rule is to use full flap and power. The extra airflow over the wing created by the prop wash will give the wing a slight advantage and allow a slower speed on the approach. Very careful control of the IAS is crucial, while maintaining the touch down point at one place in the windscreen, which should produce a nice, controlled approach, at a lower IAS.

One key thing to note is the higher than normal attitude during this type of approach. The

pilot is basically re-arranging the forces so the aeroplane requires a slight amount of power to enable the same lift at a lower airspeed.

Another consideration to point out is the ailerons will be slightly less effective than normal and good co-ordination of rudder and aileron is also important.

The round out is slightly delayed and should be simultaneous with the power coming to idle.

There should be little or no float and the aeroplane should settle on reasonably quickly.

Once the nose wheel is down (if you have one) maximum braking can be applied.

What you are looking for is a stable, controlled approach and accurate control of the touchdown point. It's good practice for the instructor to nominate a spot on the runway where the pilot should attempt to touch down. It's no good flying a slow approach if the touchdown point is half way down the runway.

CONSIDERATIONS

Be conscious of the stall stick position.

Work cycle on final, far end-aim point-air-speed. Airspeed should be between 5kts of the quoted approach speed.

Simultaneous power reduction and nose up will cause a rapid increase in drag.

Good short field techniques, when taught well, will improve a pilot's over-all handling skills and give them confidence in themselves and the aeroplane. The technique is useful for operations to and from marginal strips and its great fun!

As always, good airmanship is paramount when practicing and using this technique. ✪





The Spin Doctor

DESIGNING YOUR OWN AIRCRAFT BY DAVE DANIEL

IT'S no secret that spins are a killer, so the last thing you want to do is design an aeroplane which spins easily (if at all) and recovers slowly. A quick glance through FAR23 for GA aircraft will uncover a requirement that a spinning aircraft "must be able to recover from a one turn spin or a three second spin, whichever takes longer, in not more than one additional turn after initiation of the first control action for recovery." So for GA aircraft, rapid spin recovery is a clear design requirement. However, if you stood the average pilot in front of a light aircraft and asked them to point out the features which contribute to its spin behaviour, I suspect a fair few of them wouldn't get much beyond the vertical tail. The truth is spin behaviour is affected by a wide array of features.

As we discussed last month, the primary driving force behind a spin is a difference in lift and drag between the left and right wings. In addition, once a spin is established the sideslip involved also generates a pro-spin force from the area of the fuselage in front of the aircraft centre of gravity. Counteracting these forces is the drag of the airframe behind the c of g and the sideways lift generated by the vertical stabiliser and rudder.

Providing a large enough vertical tail area is an obvious design start-

ing point but, as the saying goes, size isn't everything. In a spin the sideslip angle is high and the vertical tail can experience a very high angle of attack, so a low aspect ratio surface is important to delay the stall and keep the tail flying. This is the main reason you don't see many long slender tail surfaces. The next major issue is horizontal tail placement. The steep angle of descent during a spin causes the horizontal tail to shed a wake of disturbed air upwards and rearwards which, for a conventional tail configuration, can blanket the vertical tail and dramatically reduce the effectiveness of the rudder. Offsetting the position of the horizontal and vertical stabilisers avoids this problem to some extent and is a common solution, as is extending the vertical stabiliser and rudder below the horizontal tail and away from the disturbed air. Alternatively T-tails, H Tails and V tails avoid the problem by ensuring the tail is operating in clean air, but they each come with their own unique sets of design issues - discussion of which I'll save for another day. Whatever the chosen solution, the rule of thumb is that at least 1/3 of the rudder area should operate in undisturbed airflow during a spin.

One of the less obvious contributors to an aeroplane's spin resistance is the shape of the rear fuselage cross section. Having sharp chines or a box shaped rear fuselage cross section doesn't have a huge

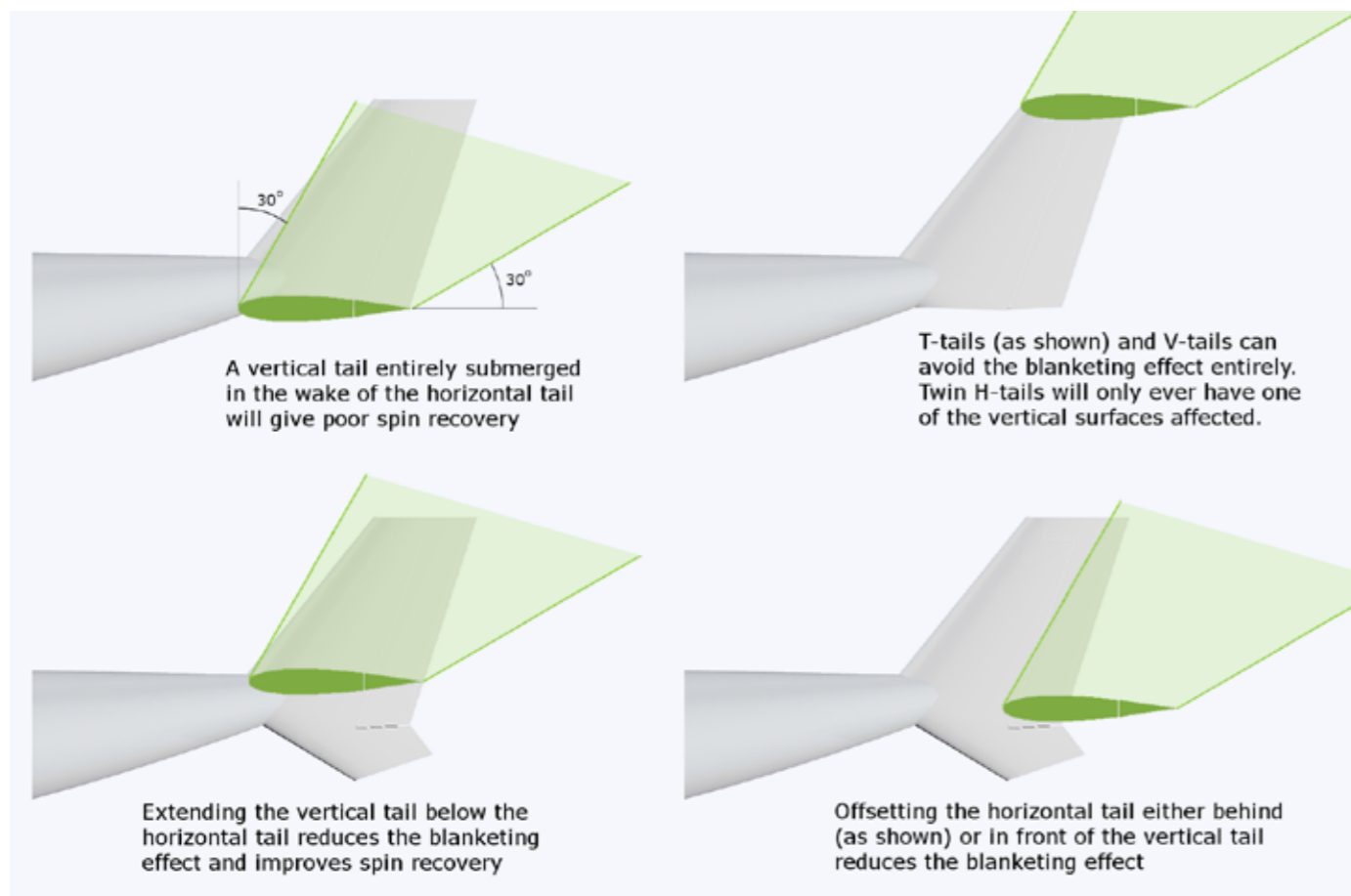


FIGURE 1

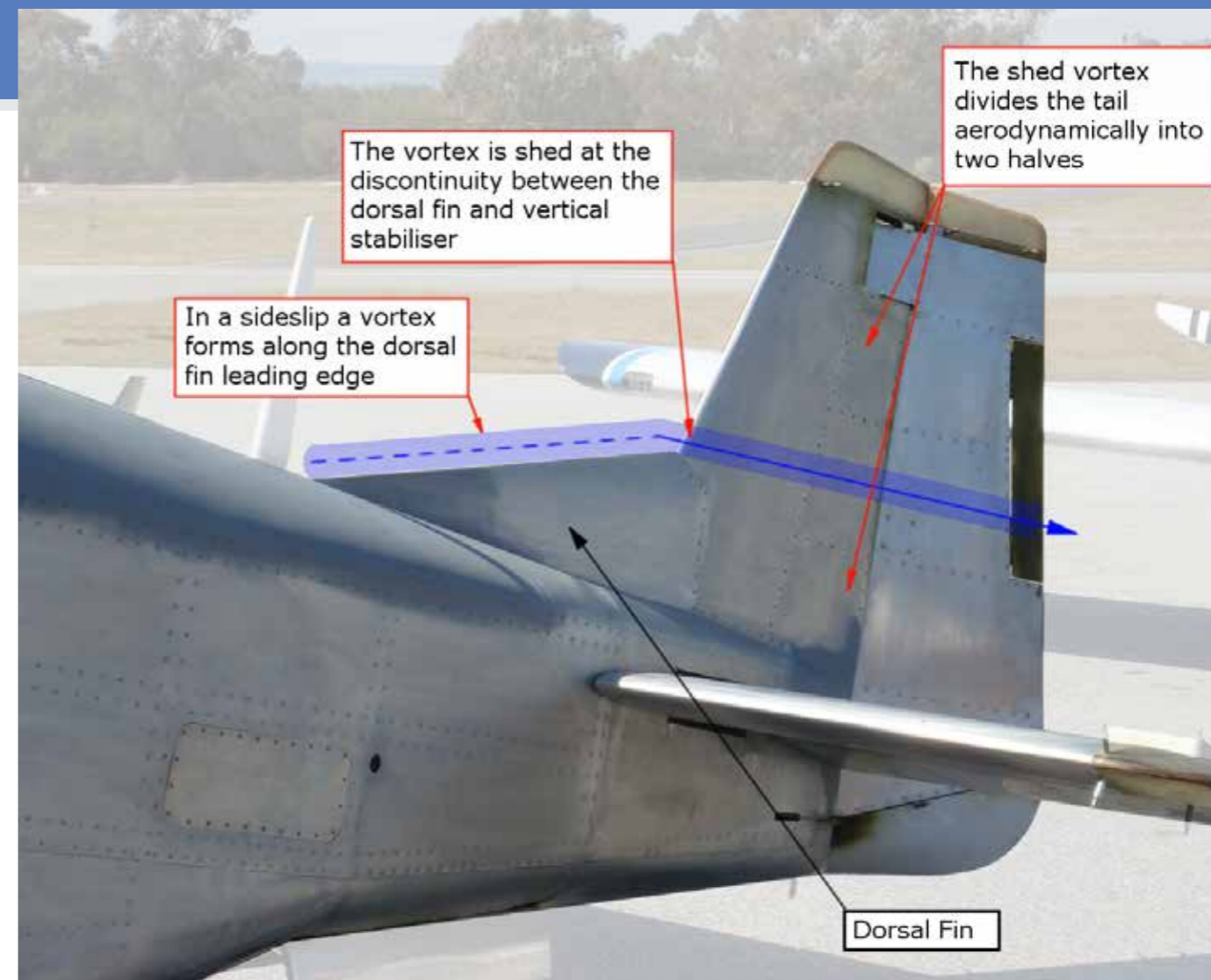


FIGURE 2

impact on drag when the fuselage is aligned with the local airflow but in a spin, where there is a flow component across the fuselage, these features can increase drag significantly and so aid spin resistance. Conversely, aircraft with long well rounded noses can have the forward fuselage act like a wing, generating a sideways lift force when sideslipping, which is destabilising and thus pro-spin.

So what do you do if flight testing demonstrates that your brand new design has unacceptable spin behaviour? The usual solution is to add a sharp edged dorsal fin to the upper rear fuselage. This obviously adds to the effective vertical tail area, but dorsal fins also have another trick up their sleeve. Where the dorsal fin and vertical stabiliser meet a discontinuity is created in the leading edge of the vertical tail surface. This discontinuity causes the vortex formed along the sharp leading edge of the dorsal fin to be shed downwind whenever a sideslip develops. This vortex aerodynamically divides the vertical tail into two parts, which behave as if they have much lower aspect ratios than the tail as a whole, allowing them to retain effectiveness to higher angles of sideslip than would otherwise be the case.

If a dorsal fin alone proves inadequate, the next option is to add

ventral fins to further increase the vertical tail area. It's worth noting however that the presence of ventral fins does not necessarily indicate a treatment for a spin problem. These versatile little surfaces also turn up as a fix for deep stall and Dutch roll problems too!

Spins are aerodynamically complex so spin behaviour can be notoriously difficult to predict. In addition, designers are strongly motivated by both drag and weight reduction to make tail surfaces as small as possible. The result is that it is not unusual for designs to require tweaking when flight testing demonstrates poor spin behaviour. Similarly, later models of a type often sport larger tails or dorsal fins, either to correct a perceived problem or simply extend the loading envelope, allowing the c of g to be further aft.

As a final thought, given that intentional spins are prohibited for RA-Aus aircraft, a good approach to spin safety is to design an aircraft that gives plenty of stall warning, has roll authority right up to the stall and is high on impossible to accidentally stall asymmetrically. After all the easiest spin to recover from is the one which doesn't happen in the first place. Ⓞ

"Spin behaviour is affected by a wide range of features"

A momentary lapse

BY DARREN BARNFIELD RAAUS TECHNICAL MANAGER



I was Saturday afternoon and I was at my local sushi restaurant, eating my lunch and listening to tunes. RAAus managers take it in turns to be on call and this weekend was mine. A call interrupted my day.

When I looked at my phone, I noticed there was no caller ID. "Uh oh", I thought. I took out my pen and notepad, hoping I was worried for nothing. But, as I feared, the call was from the Australian Maritime Safety Authority. The operator told me there had been a fatal aircraft accident. We discussed the location, aircraft type, the registration details and I confirmed it was an RAAus registered aircraft. Whenever I get these calls I always hope it will prove not to be one of ours, but in this case it was.

The operator also gave me the name and telephone number of the police officer in charge at the scene of the accident. Before I called him however, I checked the RAAus computer system to identify the owner of the aircraft and to see if it had been fitted with a Ballistic Recovery System. I copied the aircraft and membership file so it could be given to the police.

My next call was to the RAAus CEO and senior management team to notify them. Then I rang the police officer at the scene. I explained to him who I was and who RAAus was (most have no idea about us but that is slowly changing) and I asked if he would like my advice and assistance. RAAus only attends accidents at the invitation of police. My offer is usually accepted and it was this time as well. When I hung up, I arranged care and transport for my daughter to and from school for the next few days. These calls cause turmoil at home, but my wife and daughter are wonderful in their support for me in these situations. Then I booked an airfare and grabbed my accident investigation Go Bag and headed off. RAAus response time is very quick these days. Sometimes we are unfortunate to arrive while the deceased is still in the wreckage.

When I arrived at the scene, I made myself

known to the officer in charge. He or she is the one who must prepare the report for the coroner, so for us accident consultants it's important from the first moment onsite we begin to build good strong relationships with the first responders and play by their rules.

I also put in a call to the Bureau of Meteorology and asked for a snap shot of the weather conditions for the time of the accident.

With the approval of the police, I then began taking photographs, measurements and formal identification of the wreckage. At all such incidents, a police crime scene photographer records everything, but I still check every time before an item is moved. Moving

made available to me. RAAus has investigated accidents on hilltops, out to sea, in mangroves and I've been covered in leeches and bush ticks while mapping and locating debris on the sides of a mountain.

The police share all their data with us too, including witness statements, because it all provides the coroner a picture of what caused the accident and clues on how similar accidents can be prevented.

When all the work onsite was finally done, I helped the emergency crews recover the wreckage and helped dismantle the major items, such as the engine, for further review. ATSB often provides assistance to RAAus

when mechanical things require specialised inspection. The new technology they have is amazing. In this case I didn't, but sometimes I also provide support and guidance while dealing with the family of the deceased pilot. It was meant to be just another flight on just another day until the media, the police and I knocked on their door to let them know, in the hardest way possible, that their much loved husband or father was not coming home.

After three exhausting and emotionally draining days crawling across the wreckage field, I returned to my hotel room to pack and catch the flight home. I'm always very glad to get there and hug my own loved ones tightly.

My role is interesting and diverse. I've worked hard to develop my in-

vestigation and engineering skills and qualifications which allow me to be a useful investigator. It's never easy. I have been to accidents this year which have made even the most hardened police officers ill. Add into the mix grief stricken family and friends and an accident scene is always a nightmare.

Most accidents I've investigated have been the result of a momentary lapse by the pilot. But take it from me, the outcomes of that lapse are horrendous for everyone else involved. ☹



Making the news

"Most accidents I've investigated have been the result of a momentary lapse by the pilot"

things can uncover personal belongings or human remains. It all needs to be photographed, mapped and removed with the utmost respect for the dead.

I always do a thorough inspection of the aircraft. This included the primary flight controls, engine for fuel and oil, structures and coverings and many other things. There's no time limit put on me. An investigation takes as long as it needs to and the full resources of the SES, fire departments and police are always

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Going nuts over bolts

THE BEST BITS ABOUT BUILDING YOUR OWN BY DAVE EDMUNDS



I THINK my favourite workshop tool was my digital caliper. Unfortunately, after 15 years of use, it died. I replaced it with one which now also reads in fractional inches. For example, it will read 3/16 of an inch. Which is great.

I did a comprehensive search for metric aircraft bolts, that is, I entered 'metric aircraft bolts' into Google and found nothing useful. You can find references, but nothing that takes you anywhere.

On the other hand, enter 'AN hardware' and specifications are available everywhere. AN is an acronym for Army Navy, US of course. This is a very tightly specified system describing aerospace hardware of all kinds and, as you would expect, is in imperial units. Incidentally, I have not yet found out whether the US uses the term 'imperial' to describe their measurement systems.

So, a bolt specified as AN4-5 is a high tensile bolt, with a rolled thread, cadmium coated, 1/4" in diameter (4/16"), 5/8" in length and the end is drilled. If you want the undrilled version you need to specify AN4-5A. So, the diameter is specified in 1/16" increments and the length in 1/8" increments. Incidentally, the spanner size for these bolts is 3/16" larger than the diameter, so in this example the bolt is tightened using a 7/16" spanner.

You may have noticed your spanner set has shafts of different lengths, useful for stacking them together. However, the length of spanners is set so that an average man exerting a reasonable amount of effort will tighten a nut to a sensible torque. This is another argument against using adjustable spanners where it matters. It is important to tighten aircraft structural bolts using a torque wrench. Near enough is not good enough.

You may well think you can save a lot of time and money by ducking down to Bunnings and buying a nice bolt, not dissimilar in appearance to an AN bolt, for a fraction of the price. It is possible the Chinese craftsman who made the bolt was having a good day, and it may well be cadmium-coated and look very similar. But it is not. It will have cut, not rolled threads and will not necessarily meet any particular specification for steel type and strength. These should not be used in aircraft structures.

The AN system specifies the torque required to set a nut. Charts of these torque settings are all over the internet. So, an AN4 bolt should be tightened to 50 to 70 inch.lbs, or 6 to 8Nm. These values are specified for dry cadmium coated bolts. The cadmium coat has particular frictional qualities that make a difference.

The clamping force for this situation is around a half a tonne. If you significantly exceed the specified torque you risk stretching the bolt beyond its design limits. If you tighten an oiled bolt to this setting you will exceed the design limit. If you are tightening oiled bolts, look for the appropriate

torque value on a chart. It will be lower. Similarly, the setting required for nylok nuts is a little different.

To add a bit of complexity, there are three ways of describing, say, a 3/16" bolt. It can be described variously as AN3, 3/16 UNF, or 10-32. That is, the bolt has 32 turns to the inch, which is the specification for a Unified National Fine thread, of #10 machine screw diameter, which is 3/16" in diameter. AN bolts follow the UNF design. Note that while you could put the same nut on different bolts specified in this way, the bolts are not equivalent because they may use different alloys and tempering.

Machine screw diameter is not the same as wire gauge. #10 machine screw diameter is roughly #7 wire gauge.

Of course, the British Whitworth system is different, but not used in aviation now. During WW2 the British and Americans agreed on a common standard for aircraft bolts to reduce confusion. The British agreed to a 60° thread angle, moving from the 55° angle specified for Whitworth bolts, and the Americans agreed to rounded threads. This standard became the UN system. However, the British continued to use Whitworth bolts in cars.

The system sort of works because it is internally consistent, but it would be so easy if the world simply worked in metric. Just to give one simple example. A 6mm bolt, usually referred to as M6, has a 1mm pitch. The mechanical advantage of a 1m long spanner is 2*pi to 0.001, that is, 7180 to 1. So, one rotation of such a spanner will result in a movement of the nut of 1mm vertically. So, disregarding friction, a 10Nm torque setting will apply a clamping force of 7180 newtons or 0.718 tonnes. How simple is that?

And there is more. While we have been talking in fractional inches, for some small quantities the Americans talk in decimal. So, the sort of aluminium sheet used to cover a wing is described as 20 thou, (thousandths of an inch) or 0.020 inch in thickness. Aluminium plate may be described as 1/8" or 0.125", depending.

And one more thing. It is difficult to find 6mm aluminium rod in Australia. My local aluminium dealer sells 1/4" instead, that is, 6.35mm rod. This sort of soft conversion is still very common in Australia. The particular alloy required for an aircraft part is always stated, but Bunnings does not provide that detail.

Much of this simply requires some learning to understand how the system works, but it is a bit irritating.

I am just so pleased my new digital caliper is able to alleviate some of the problem and relieve my angst.

If you are considering buying one, go for the 8" rather than the 6" model. It is amazing how often you need to measure something that is 6 1/8" long. ☺

- READER IN A SPIN -

FOLLOWING publication of last month's Home Builder article on spinning, a fellow pilot chastised me for not making clear the difference between a spin and a spiral dive and the importance of being able to identify the difference between the two.

A fair point given that the recovery ac-

tions required are very different. So in the interest of completeness I should clarify that, unlike a spin where the airspeed will be low and will remain low, in a spiral dive the aircraft is not stalled and will have an airspeed (and rate of descent) which is constantly increasing - and will increase

past Vne if allowed to do so.

Recovery from a spiral dive requires cutting the power, rolling the wings level, centering the rudder and then raising the nose to ease out of the dive. A response that definitely won't help if you are spinning.



Chute check

BY STEPHEN CONTE

I HAVE been asked by Aerochute owners recently to reassure them about the safety of their canopies, in light of a number of incidents involving aircraft with some elliptical canopies.

The Aerochute canopy is custom designed for the Aerochute frame. It has been in use for 26 years with no failures. It has proven itself to be one of the most reliable, stable, easy to use and trustworthy canopies in use today. Other canopies may have features some people like, but they are not legally able to be fitted to an Aerochute frame. This is beside the fact that trim, COG and loading will be different and could induce unstable flight. Most people just want to get up into the air safely, enjoy their flight and return home safely. With that in mind, you do need to have your canopy inspected periodically or after a certain number of flying hours. The main things which can affect your canopy performance are porosity, trim and ultra-violet light damage.

POROSITY

This is the amount of air which permeates through the fabric. The Aerochute canopy is made from Zero-porosity fabric also called 'zero-p', which is treated with a silicone-based coating which prevents air from passing through it. This gives it a uniform quality that lasts the life of the canopy.

TRIM

The trim set on the canopy is designed to give it optimal performance and stability. The obvious reason you may need a trim check is because your lines have stretched/shrunk out of trim, so your parachute no longer opens, flies or flares to its original potential. The earlier canopies were manufactured with spectra line which will stretch by approximately 5% of its total length over time. However not all lines across the canopy are subjected to the same forces, so they do not stretch at the same rate. An Aerochute canopy with white spectra lines should be inspected for trim within the first 50 flying hours, then every 150 hours. More frequent inspections should be done if you notice a loss of performance.

UV LIGHT

The Aerochute canopy will last up to 800 hours of flight time. UV will deteriorate the fabric over time, especially if you have fluoro colours. You should not leave the canopy out in the sun between flights. Pack it in the bag or put a tarp over it instead. During an inspection, a section of fabric is pull tested to measure the strength and determine the UV damage. If the canopy is still okay after 800 hours it may still be used solo, but not for dual flights. Large changes or fading of the colour may indicate the fabric has been UV weakened and should be strength tested.

We recently inspected a canopy with 510 hours of flight time. It had the newer Technora lines (tan coloured) fitted and we found it was still within trim. I knew this Hummerchute had done a lot of work on a farm, checking crops and taking up hundreds of neighbours to have a look around, so it was always loaded up. It was excellent to see the canopy still within trim and passing its strength test.

Your parachute manual explains how to check your trim and do minor repairs. If you think you are due for a canopy inspection and trim check, get in contact with Aerochute Industries or an experienced parachute rigger to have it done. This will ensure your canopy gives you hundreds of fun, safe flying hours with the peace of mind of a correctly fitted wing. ☺



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Sparviero with 100hp rotax. Under 100hrs t.t. -- Cruise 110kts+, Fuel cap 120ltrs. Bags 30kgs. All motor ADs done. Short t/o & land (barn door flaps). Extreme comfort. Returning to NZL reason for sale. Bargain at \$80k plus GST .reg24-7801. Ph Nico 0357458250 or Geoff 0413152288

4557 FOXBAT A22



Factory built 916Hrs Total Time. Always hangered and Private use only since new. Never used for training. Full instrument panel including transponder mode C. A/H, D/G, FPS Fuel Flow meter accurate to 1 litre remaining. Very good condition both inside and out. Phone John on 0412834225 for more details.

4587 JABIRU FACTORY-BUILT 2009 J230D



2009 Factory J230D, Garmin 495, MicroAir transponder, iPad Mini, new Matco brakes, 10-ply tyres, solar battery charger, Serviced 25 hourly, TT 420hrs. Prop/cabin covers, electric tyre pump. Fantastic tourer, trip 20lph at 120 knots. Price \$56K. Details: www.ivfr.net, go@ivfr.net or Thomas 0417 480 414 or Jack 0407 241 783.

4592 DRIFTER FOR SALE



Drifter .A-582 1992 Total airframe hours 3724.7 Always hangered Elevator trim, rudder trim. Complete new engine blue head, 15.5 hours third radiator installed Includes VHF, UHF, Intercom, Garmin GPS, spare engine 504hrs in need of overhaul, light weight flying helmet with comms. Price: \$15000 ono Contact 0407 964241 llorac@outlook.com.au

4618 650 SUZUKI TRAIL MOTORCYCLE



For sale \$29,000. Partially built Just Aircraft Highlander, tail wheel configuration with side by side seating. Build so far carried out by retired engineer to a high standard. Will suit Rotax engine. (Not included) Reluctantly selling. Phone Chris 0499 555535.

4622 FOXBAT A22 LS SHARE



Syndicate Share for sale. Long running, well managed syndicate operates at Caboolture airfield.

Run by members for member's benefit. Current aircraft is a Foxbat A22-LS. 100hp Rotax, Dynon instruments, Mode S Transponder, Tundra tyres, centre stick and low hours. Please call Ian McDonnell on 07 38865828 or 0448777025 for details.

4629 AIRBORNE XT 912



FOR SALE Airborne XT912 Tundra Build Year: 2010 Total Hours: 590 Engine Hours: 590 Arrow Wing Hours: 10 Price: \$38,000 Radio, Transponder, Landing, Nav & Strobe Lights, Lots of Extras Including Helmets, Bar Mitts, Covers, Hangar Trolley & Trailer 5 Year Rubber Replacement Complete. Contact Col 0409 295 516

4634 JABIRU J 230 D



JABIRU J230D Reg 24-7419, Factory Built May 2010, Tack 300 hours, Dynon D180 EFIS, Garmin 495 GPS, Microair Radio & Transponder, Twin Strobe Lights, David Clark Headsets, Always Hangered from new. NIL damage. \$77,000. Contact IAN - 0419703926

4635 JABIRU 3300 6CYL ENGINE HYD.LIFTER

Jabiru 3300 .6 cyl. Engine complete ready to fly Only 246 hrs. Hydraulic lifters. 2011 build. Has inhibitor for storage. Will ship from Latrobe Valley Airfield in factory made box if required. Asking \$9500 or near offers considered. phone Michael 0409139442

4648 X-AIR REG 618



X-Air 618. 260 hours TT airframe & engine. X-com radio with intercom & headsets. Condition report & bearing test by Lvl 2 LAME available on request. Always hangered & covered. Lethbridge Vic. Really good aircraft-Must sell-REDUCED TO \$14,500. Call Pete on 0402 599 306

4649 AUSTER J2 ARROW



J2 Arrow Special , smallest lightest Auster1947 nil accident, Lyc 0-235, 115 hp, TBO 750, high comp. In all cyl, 1.8 lph, cruise at 75, stall 30 , full docs

and manuals , always hangered, \$35000, Gympie, 0428459392, 0428184604

4651 SKYFOX CA21



Skyfox CA21 1990, approx. 600 hrs. Aeropower motor, VH and UHF radios, headsets, folding wing, new tyres and battery. Two owners only and always hangered. Cheap and easy two up flying. \$23,000 Contact Brenton 0417830902.

4654 XT912 TUNDRA - ARROW



Airborne XT912 TUNDRA with ARROW topless wing. Converted from SST in 2012. 2000hr TBO, engine has never skipped a beat, well maintained. Includes GRS ballistic chute, tall windscreen, GARMIN 196 GPS, belly bag, headsets, helmets and intercom. Hangarage at Albion park Available. Call 0415530939 or email: lgdiscala@bigpond.com

4665 SUPER BABY LAKES BIPLANE



Super Baby Lakes .C of A Experimental but suits LSA parameters . LYC 115 hp.TBO 1940 hrs . .Stitts polyfibre fabric and paint . burns 22 litres / hr at 65 % power. Hand start. One owner, hangered Redcliffe, Qld . \$30000 neg . Ph 0438749213.

4666 LIGHTWING 582



Great short field take off. Blue head 582 220hrs. New bolly prop with aircraft.garmin area 500. Exterior 7/10 interior 8/10. Needs to sell have no time to use. Aircraft needs a look over before flying. Price neg. Atherton tablelands FNQ Lafras0488367937 lafras_joubert@yahoo.com

4670 KARASPORT



FOR SALE: Karasport single seat ultralight Price: \$10,000 ONO. Rego: 100411 Powered by Rotax 582. Total Airframe Hrs: 210 Hrs. Skin and paint in good condition. Located at Wedderburn NSW. Able to email photos and log books etc. Deceased estate, please phone Amanda on 0401655755 amandaeastham@hotmail.com

4671 ROTAX 912ULS FOR SALE

Rotax 912ULS for sale. 2000hours TBO, removed running from Tecnam Golf. Engine maintained by LAME, good condition and runs well, all AD's and SB's up to date. Manufactured 9/2006. Contact Ashley, ashley.wile@gmail.com 0410 576 011.

4673 MAZDA (RENESESIS) ROTARY ENGINE 120-180 HP

Complete with engine mounting, variable pitch propeller hub, dual ECUs, hand controller and company-provided laptop program for tuning and performance monitoring. Engine running can be demonstrated at Taree Airport. Call 0427 563 274

4679 EVEKTOR SPORTSTAR PLUS



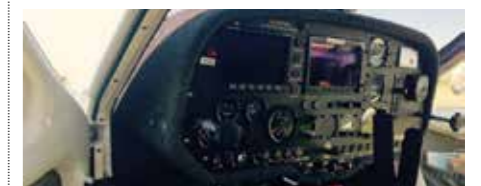
2006 Evektor SportStar Plus VH-EVU TTIS 1645 PTIS 80 (replaced prior to expiry time with Woodcomp SR200B) King VHF Com & Transponder, Intercom, Garmin 296 Maintained by a CASA LAME Can be re-registered RAAus \$55,000 (inc GST) info@airwarrnambool.com.au 0429439991

4680 EVEKTOR HARMONY LSA



Rotax 912 100hp, ADI, Garmin area 500 GPS, Garmin SL40 VHF COM, Garmin Transponder, PM3000 Intercom. Woodcomp SR 200B on ground adjustable propeller. Comfort interior package with extra map pockets, cup holders and additional arm rest. Maintained by CASA LAME Aircraft can be re-registered RAAus Contact: info@airwarrnambool.com.au 0429439991

4683 JABIRU J230-D



Jabiru j230-D factory built 2009 model Aircraft in very good condition 787hrs on airframe only 50 hrs on up graded engine. Dynon D-100 & all so Auto pilot,new bolly prop Radio and transponder New brake pads and always hangered. Price \$63,500 inc GST Phone Steve 0407489959

4684 AIRBORNE XT 912 TUNDRA STREAK 3



Mint condition. Level 2 maintained. With Microair radio, Lynx comms with helmets, Airzone strobes, Stone net, All Air Hogg, belly bag, heavy duty travel covers, and light covers, wing cover ,floor glove box, Ozee XL flying suit, and Garmin 196 GPS and mount, extension windscreen. \$40,000. Rob 0428527200.

4689 CORBY STARLET



CORBY STARLET 2200 jabiru 145hrs \$19,000. Must sell immediately, paid 26k april 2014 has not flown since. Going overseas. EFI, encoding alt-ais, Turner disc brakes and canopy. Aux fuel tank. excellent cond. Heathcote Vic 0497 787889

4690 EDGE X CLASSIC



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4692 AIRBORNE XT-912 ARROW WING



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4694 STORM 300



storm 300 912 ULS 100Hp 525Hrs Engine & airframe, Microair Radio & Transponder, Toe Brakes, a delight to fly. Located Nowra For more info call Syd Ph 0423 407 998

4696 DRIFTER STRUT BRACED 582



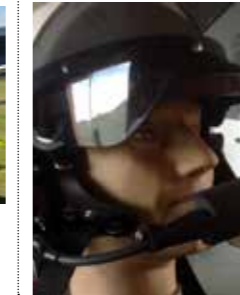
ASI, ALT, TACHO, EGT, H2OTemp, Old Icom A1. 2 Helmets (1 x GC ANR headset; 1 x Fair Cond) Main sails new 12 months ago. Tail feathers VGC.

4699 AEROPUP



Aeropup aircraft with 80hp Aerovee engine. Folding wings. Mgl Instruments, Icom A-210 radio. 69/ hours. 90L fuel tanks @16L/h. Cruise speed average 80Kts. Based at Geraldton W.A. Some finalisation work will be required. Call or email for details. Seeking a quick sale as building a second plane and it's almost finished. Brett 0429 401 080

4701 ACCOUSTICOM HELMETS



Two Accousticom Helmets with noise attenuation, removable visor, wind reduction microphone muffs, removable adjustable sizing pads. As new. Will sell separately. \$850 each ph 0429054205 caboolture-warbirds@bigpond.com

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4708 FOR SALE FOXBAT A22LS



FOXBAT A22LS 2010 build. Airframe 2972hrs. Engine 1221hrs. Very good condition. Serviced every 25 hours with full service history. Analogue instruments with Avmap Ultra EFIS. Yoke controls. Fuel flow meter. Microair transponder and radio. Always hangared. Nil damage. Making way for new Foxbat. \$68,000 incl GST. Contact Rod 0419632477



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WHERE IS CAGIT?

CAGIT HEADS NORTH

The Come and Get it Trophy has a new home, the third in as many months. And it is going to take a reasonably big commitment if you want it for yourself.

John Gotts and Rene Smit snatched the trophy from David Carroll of Central West Flying at Bathurst in September after an epic journey from the Northern Territory in their Jabirus.

Rene reported on Facebook "We made it to Bathurst. Last leg was 3.3 hours with increasing cloud cover which forced us down into the dumpy air. Bathurst was in full swing with gliders, tug planes and training operations. Left and right hand circuits for both 17 runways, tar & grass, active. Fantastic reception from the Bathurst Aero Club. Club Presidents, past and present, supported by members, put on a diet shattering feed of scones and cakes."

Rene and John have now taken the award to MKT, Noonamah.

You can talk to them (Rene on 0437 272 645 or John on 0438 711 887) if you think you've got what it takes to grab the trophy for yourself and take it home.

For a full list of the rules about capturing the CAGIT visit raa.asn.au/events/cagit-trophy.

Also Dexter Burkil's great Facebook page is a valuable resource if you are planning a move on it. www.facebook.com/CagitHunters?ref=hl



David Carroll and John Gotts at Bathurst Airport

RAAus at a glance

ALL ABOUT YOUR ORGANISATION

<p>9,367 MEMBERS</p> <p>The total number of members as of September 30, 2015. It was 9,762 at the same time in 2014 and 9,822 at the same time in 2013.</p>	<p>23.19 HOURS</p> <p>The average hours flown by each member in 2015 (so far). In 2014 it was 24.72. In 2013 it was 25.25.</p>	<p>41 CLUBS</p> <p>The number of recreational flying clubs operating as of September 2015, down from 45 clubs in 2013.</p>
<p>226</p> <p>The number of weight shift aircraft on the RAAus register in September 2015, down from 244 at the same time the previous year.</p>	<p>831</p> <p>The number of Jabirus on the RAAus register in 2015, five times more than any other brand.</p>	<p>3.78</p> <p>The number of fatalities per 100,000 hours in 2015 (so far), up from 2.65 at the same period last year. But down from 4.51 in 2013.</p>
<p>12</p> <p>The number of aircraft defects reported, up from three at the same period last year.</p>	<p>59</p> <p>The number of people who logged on to watch the 2015 AGM in Bundaberg, up from five at the previous meeting.</p>	<p>87%</p> <p>The average pass mark of RAAus members sitting the online L1 maintenance course. 80% is the required pass rate in the time of three hours 30 min.</p>

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Another Moree milestone



MOREE local, Craig Estens, flew his first solo at the end of September.

According to CFI, Fred Nolan, Craig achieved his milestone flight off RWY 19 in Jabiru 24-5064.

"Craig faced a light crosswind of about 4-6kts", says Fred. "He flew in command for the first time very competently and, after a break of a couple of hours, flew a second solo, following an additional check flight. Craig now is well on his way to achieving his RAAus Pilot Certificate.

"The week preceding Craig's solo was fraught with high winds and the weather system prevailing over NSW was still abating. While it's not common to send a student solo in a cross wind, I've

found Craig to be an above average student who had demonstrated his ability consistently to handle the conditions."

Craig manages a cotton farm and an orange citrus growing operation at Moree and ultimately intends to go on to a PPL and fly the Estens family Cessna C210N. ✕

SEND IN YOUR STORIES

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



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P92 EAGLET G5



P92 ECHO CLASSIC



P92 TAIL DRAGGER



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