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RECREATIONAL AVIATION AUSTRALIA / APRIL 2017 VOL 68 [4]

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ON THE COVER

"I am passionate about birds, art, science communication and conservation."

Amellia Formby on the migratory path of birds
Photo: Amelia Formby

REGULARS

COLUMNISTS

NEWS

FEATURE STORIES

READER STORIES

FLY-INS

EXTRAS

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Becoming relevant

BY MICHAEL MONCK

THE past few years has been quite interesting for me. I joined RAAus around a decade or so ago and, in that sense, I guess I am still a newcomer to some. But a few years later I found myself unable to fly on a regular basis because of the inability of RAAus to re-register my aircraft. I was appalled. I understood RAAus existed primarily to oversee pilots and aircraft at our end of the aviation spectrum and it had failed me miserably. I decided to get involved and see if I could help out.

Here we are now some years later and I think we are getting there. We have an incredibly hard working team in the office dedicated to supporting members. Our relationship with CASA has strengthened and is a positive working one. We are being heard by the government department responsible for aviation. The ATSB works with us more closely than ever. We have just been asked to join the executive committee for The Australian Aviation Associations Forum (TAAAF). The evidence goes on.

At the time of writing this, I am just a week away from getting together with policy makers and the Transport Minister, Darren Chester, to discuss matters relating to the sector. This will be done in the context of the General Aviation Advisory Group which is made up of members of the aviation industry. The group includes the RFDS, Regional Aviation Association, Aerial Application Association, Helicopter Industry Association, Air Sport Confederation, the Association for Unmanned Systems and the Business Aircraft Association. As well, there are several chief pilots, small individual business interests and aircraft manufacturers.

If you look at the list, it is pretty obvious this group is serious about aviation. We are the only organisation within this cohort which represents pilots and aircraft owners who fly for predominantly non-commercial reasons. The only exception is the group responsible for unmanned systems, but they aren't looking after people in the sky like we do. Even the Air Sports Confederation doesn't look after individuals. It's up to us.

This is how far RAAus has come in the past few short years. We have been accepted as a serious player by government departments and agencies and private sector groups. People are taking notice of what we are doing and what we are working to achieve. We know much of the battle still lies ahead and we must continue to work hard, but we are being listened to nowadays and we have an audience which is paying attention.

Some will argue we have gained that attention because we have around 10,000 members and 3,500 aircraft, making us the biggest per capita player in aviation in Australia. No doubt that is part of it. We might not have the turnover of Qantas and we don't fly the hours or miles of Virgin, but in terms of private aviators we are by far the largest. But that is also not the entire story.

Such a large group of aviators coming together presents lots of opportunity but also a few risks. Arguably the biggest risk is that of repeating the errors from the past - failing to recognise we have a considerable responsibility to all members and, perhaps more importantly in some respects, the community at large. But the opportunity is also there to demonstrate we accept this responsibility and we are happy to be held to account. The reason we are in the position we are today is because we have demonstrated our willingness to accept the challenges and continue to work hard to meet our obligations.

> "by changing the way we do things, we have maintained our relevance"

It might be said the range of changes we have made over recent years is why we have gained prominence in the sector. That may be true. I would, however, prefer to think that by changing the way we do things, we have maintained our relevance.

There are some members who have told me they don't like all the things we've done and others who've clearly told me they don't agree with all the choices we have made. Honestly, there are some things I would have preferred we didn't have to do. But when I look back and think about what the landscape looked like a few years ago, when I couldn't go flying, and compare it where we are today, I am satisfied the hard choices have been for the best. It has helped us get to this point where the industry, government and other community groups look at us with acceptance. And we can stand among them as equals for the first time.

When I consider this has allowed us to defend the interests of RAAus members in the right forums and we are actually being heard, I feel comforted knowing we have become relevant.

Acceptance. Accountability. Relevance. They're three words associated with RAAus today. Who would have thought? That's not a bad result in my books.

DIGITAL DIRECTIONS

There are many ways to interact with RAAus these days.

Website: www.raa.asn.au
Member portal: www.members.raa.asn.au/login
Lodge an occurrence: www.oms.raa.asn.au/lodge
Back issues of Sport Pilot: www.raa.asn.au/sport-pilot-magazine
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Sport Pilot online: www.raa.asn.au/sport-pilot-magazine
ENewsletter: www.raa.asn.au/become-a-member/member-benefits/e-news

A. 7-8 APRIL
LOXTON AERO CLUB FLY-IN

The focus this year is 'Partners of Pilots'. Highlights include hangar dinner, raffles, awards for best presented plane and the pilot who has flown the furthest to attend. Presentation Saturday from Howard Hendrick (WW2 bomber pilot – now 93 years old and still flying). For more information, loxtonaero.com.

B. 8 APRIL
VALLEY VIEW AIR DISPLAY

Valley View Farm, Northern Gully (23kms east of Geraldton Airport). Joy flights, military equipment, skydivers, model aircraft, Light Horse display, 11th Battalion AIF - Leane's Trench Tours, produce, food and drink stalls, bouncy castle and face painting, free camping. For more details, www.valleyviewvintage.com.au or our Facebook page.

C. 22-23 APRIL
GREAT WAR FLYING DISPLAY

See page 13 this edition for details

D. 15-16 APRIL
BACK TO HOLBROOK FLY-IN

Holbrook Ultralight Club invites ultralight and recreational aircraft owners and pilots to Holbrook airfield for its annual Easter fly-in. Forums Saturday afternoon which will include an RAAus member's forum. Fly-in dinner Saturday night, BBQ breakfast and local fly-out Sunday morning. Underwing camping and transport to and from the township for accommodation and fuel available. For more information, John Harley 0456 357 735 or visit www.holbrookultralightclub.asn.au.

E. 29 APRIL
ORANGE FESTIVAL BREAKFAST FLY-IN

Gayndah Aerodrome 7-10am. Good hearty breakfast and bottomless cup of coffee. Be part of the big festival to celebrate the Burnett Shire's favourite citrus fruit. For more information, (07) 4168 6248, burnettflyers.org or burnettflyers@yahoo.com.au.

F. 20-21 MAY
BAROSSA BIRDMEN FLY-IN

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

G. 6 MAY
GOING BUSH

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

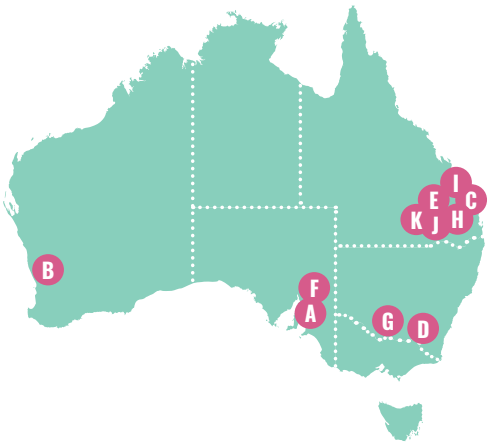
H. 14 MAY
MOTHER'S DAY FLY-IN

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

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

The Old Station Flying Club staged its unique and popular fly-in air show from 1989 to 2007. In 2011 the format was altered to include tractor pulling and truck show.

Proceeds from the weekend to the Capricorn Helicopter Rescue Service. Aviators and campers welcome on Friday for an informal meet & greet at The Feed Barn. Warbird joy flights, other aerobatic and general aircraft flights, displays all weekend. Children's entertainment, market stalls, fashion parade, food and drinks, fireworks. For more information, flyin@oldstationflyingclub.com.au or leonie@creedgrazing.com.au.



J. 23 JULY
JUMPERS & JAZZ BREKKY FLY-IN

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

K. 9 SEPTEMBER
WINGS OVER WARWICK

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

INSURANCE AND SAFETY PARTNERSHIP FOR RAAUS MEMBERS

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

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

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LETTERS TO THE EDITOR

Oh my God!

ANOTHER FACE

Found another pic for your collection of faces (*Sport Pilot* November 2016).

A

***FROM THE ED** / What A is referring to is a picture story we did showing the expressions on the faces of some designs of aircraft.*

OVER THE SOUND WAVES

First, let me tell you I have travelled to many parts of Asia on numerous occasions and a long time ago I worked in PNG for almost two years.

The reason I have mentioned my past is to emphasise that anything I write from hereon has nothing to do with race or religion. My only concern is about enhancing safety when we are up there.

I am not professing to be an expert in the use of aviation radio.

Many of my peers have privately expressed their concerns about hearing incomprehensible radio calls. I am sure other pilots know what their intentions are, but often we have trouble clarifying the message.

Compounding the problem sometimes is the poor condition of the equipment and the signal strength can be poor even in excellent weather.

On one flight in Gippsland, I could clearly hear the pilot of a helicopter approaching Warrnambool, but the call made from an aircraft just a couple of nautical miles from me had to be repeated at my request.

One of my colleagues had a near collision with another aircraft crossing the field at low level. Once again, the offending pilot knew what he was doing, my friend didn't. His intentions were hard to decipher.

Inviting aviation students to train in Australia is a very important component in enhancing good relationships with our International neighbours.

But is level 4 English good enough to fly when you are in charge of two hundred to five hundred passengers? A licencing inspector told me as recently as this week that some company airlines insist on level six English in the cockpit especially when flying into places such as LAX.

I think it is incumbent upon all flying schools to make sure elocution and articulation of speech are given a more intensive emphasis in their school curriculums. Just as some people fear using the telephone, I suspect some keep their mikes only as a necessary evil. We all know clearly indicating your position and intentions are an important factor in keeping our airways safe. Over and out.

IAN HONEY

***FROM THE CEO** / One strategy RAAus suggests is a simple, "Say again. Slowly." Additionally, have a look at my article on diversity within RAAus. As we evolve, the membership demographic is shifting. The best recipe for success is everyone working together, communicating and discussing matters like this.*

GET INVOLVED

The Editor makes it clear that contributions are welcome. I make the same plea about the Right Seat Anecdotes.

I know there are plenty of instructors out there who could tell some fantastic tales about their students, or even about themselves, and readers would be fascinated to read such tales.

Readers may not know it, but I am growing old and only have so many anecdotes left in me before I go to the big hangar in the sky and meet up with the Chief Instructor Himself.

So please! Send your contributions to the Editor. Just mark them Right Seat Anecdotes and share with others your experiences, be they funny, tragic, educational or just plain interesting.

DAVID P. EYRE

WRITE IN: EDITOR@SPORTPILOT.NET.AU

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

WELL ATTENDED FORUM

MICHAEL Linke, CEO and RAAus Technical Manager Darren Barnfield, visited Lethbridge for a member's forum in early February as part of a two day tour of a number of schools and airfields in Victoria.

Michael explains: "Part of the RAAus strategy is to get out and engage with members where we can; whether it is Board members, me or our staff, both managers and operational. Engaging at this level really allows us to take the pulse of RAAus and listen to complaints and compliments alike.

"More than 120 people attended Lethbridge and a number of topics were covered.

"Hot on the minds of members was RAAus' push for access to controlled airspace and an increase in weight for RAAus registered aircraft. It is important all members understand that both of these proposals, if successful, will be optional. If members want to continue to operate outside controlled airspace in legacy and heritage aircraft, they will be able to. In fact we are working on ways to create a simpler rule set for members wishing to do just that."

Other visits are planned in coming months to a variety of locations up and down the east coast where there are lots of RAAus members. Members in central Australia and the west will see visits in early 2018 as the office manages the workload of staff, as well as the judicious use of member funds.

DON'T BE LATE, MATE

THERE'S going to be a cost if your membership renewal is overdue.

From March 1, renewals overdue for more than 30 days will be subject to a reactivation fee of $22.

CEO Michael Linke says, "RAAus incurs costs when a member joins or reactivates their membership, so rather than putting fees up, we have introduced a fee to cover the membership record setup or reactivation for new or expired members.

Staying on top of your membership renewal will help you avoid the fee. If in doubt about the expiry date of your membership, log in to the member portal to access your membership summary and renew your membership instantly.

"Did you know if you let your membership lapse for a month, you are no longer covered by our broad-based member's third-party property policy? It's important you stay current and, by renewing your membership on time, you won't be exposed to any additional charges."

DEATH PUTS AIRPARK IN DOUBT

EFFORTS to save Evans Head airport from real estate developers has been dealt a blow by the death of the man leading a bid for a new airpark on the site.

Peter Lynch, 52, and his partner Endah Cakrawati, 30, were killed in a sea plane crash in Perth on Australia Day.

Peter led the consortium which last year submitted a multi-million dollar development application to the Richmond Valley Council. The local council, which has a history of opposition to the airport and has several times tried to get an aged care home built on its perimeter, has now put the airpark proposal on hold.

The council is reported to have said the application still stood but the council had paused its progression to allow Mr Lynch's family to grieve and decide their next steps with his assets.

Hundreds of people recently attended a memorial fly-over with historic Royal Australian Air Force planes at the aerodrome in Peter's memory.

WARLIKE DISPLAY

BY ANDREW CARTER **TAVAS**

AUSTRALIANS know all too well the role our soldiers played at Gallipoli, especially on the day of the ill-fated landing, now remembered as Anzac Day.

But few Australians realise the major part our airmen played in the Great War. We had our own flying corp and raised eight squadrons to serve overseas. More than 60 Australian pilots became Aces during that conflict, 40 of them received the Distinguished Flying Cross.

In every major conflict in which Australia has been involved in the past 100 years, Australian pilots have flown and fought and performed admirably.

On the weekend before Anzac Day this year (April 22 and 23), The Australian Vintage Aviation Society (TAVAS) will hold its second annual Great War Flying Display at Caboolture airfield in South East Queensland, to commemorate those aviators.

TAVAS can do this because it houses Australia's only flying collection of authentic reproduction and replica WW1 aircraft, some actually powered by the original engines used 100 years ago. TAVAS will have at least eight WWI types on show and half of those will be flying. Aircraft from WW2, Korean and Vietnam wars will also fly on the day. Last year the ADF sent a Navy Seahawk helicopter for a flight display and the organisers hope for involvement from the Navy again this year.

This is a great fly-in event for pilots who can make it. You will require a radio, you will need to read the 'Flying In' section of the website and comply with the conditions listed. This promises to be a fantastic weekend and a unique event, which literally cannot be seen anywhere else in Australia.

For more information, www.tavas.com.au.

SPEAK UP ON FREQUENCIES

CASA has urged pilots to have their say on the most appropriate radio frequency to use at low levels in uncontrolled airspace.

It has issued a discussion paper setting out two options for radio broadcasts in the vicinity of aerodromes in class G airspace which are not marked on aeronautical charts.

The options are to use the appropriate area frequency or the MULTICOM frequency 126.7.

CASA's acting CEO and Director of Aviation Safety, Shane Carmody, said the class G frequency discussion paper was the first step in reaching a settled position on this issue.

"CASA will not make a final decision issue until we carefully review all feedback and publish a summary of the results of the consultation."

The discussion paper sets out detailed arguments and safety assessments for both options, as well as looking at overseas practice.

CASA's preferred option is to retain and enhance the use of the appropriate area frequency in the vicinity of unmarked aerodromes in class G airspace.

You have until the end of April.

For more information, https://www.casa.gov.au/standard-page/dp-1610as-frequency-use-low-level-class-g-airspace.

HAVE YOUR SAY BEFORE THE END OF APRIL

REGISTER YOUR ROTAX

BRP-ROTAX has begun a new registration service for owners of its engines.

The company says it wants to get to know their customers and their engines better. By knowing who runs its engines, the company says it can optimise its distribution and service network according to customer's needs.

Registered owners receive newsletters and notifications on engines and new technical documentation.

Another advantage is that in case of a reported engine theft a re-registration of the engine would be impossible.

Since the launch of the new service in December, 320 owners have registered their engines via the new online system.

For more information, www.flyrotax.com.

Women in Aviation organiser James Bange with participants Jazz Lamborn and Debbie Michell

Women in aviation on the rise

PHOTOS AND PICS BY ALAN BETTERIDGE

THE sight of women in the cockpit of a commercial airliner isn't new but it wasn't always so.

The first recorded flight by a woman pilot was in 1784 when Marie Thible flew a hot air balloon in France, a flight which lasted 45 minutes and covered about four kilometres at a height of 1,500 metres. But it was to be many years before the sight of a women at the controls of a RPT flight in Australia was to become fairly common.

Despite women's participation in aviation from the beginning, in 1986 the American Airline Pilots Association said the reason there were only two women Boeing 747 captains at the time was; 'because women in aviation are a relatively recent phenomenon and everything in the airlines industry is done by seniority.'

This statement ignored the fact that Helen Richey became the first woman to fly a commercial airliner in 1934.

She quit that job ten months later because the all-male pilots union would not admit her and she rarely got to fly.

American author and politician Clare Luce once wrote: "Because I am a woman I must make unusual efforts to succeed. If I fail, no one will say, "She doesn't have what it takes." They will say, "Women don't have what it takes."

In Australia Reg Ansett thought women in aviation were fine, as long as they knew their place.

Hosties could push trolleys along the aisles of his planes and hand out airsick bags as long as they remained young and decorative, but there was absolutely no question of a woman behind the controls.

In February 1976, a 22 year-old flying instructor named Deborah Lawrie applied to Ansett Airlines for position as a trainee pilot.

She was not the first women to do so and although company management could see the writing on the wall, Reg Ansett was adamant – "Not while I'm here," he declared.

By 1978, Lawrie, by then using her married name, Wardley, took her case to Victoria's recently established Equal Opportunity Commission.

On the day the High Court heard the case Reg Ansett stood down as chief of his company.

Deborah won the case and Ansett was ordered to accept her into the next pilot intake.

"RAAus has long been a champion of women in aviation"


Jazz recieving her certificate of participation from James


James with Jazz arrive back after her free flight around the Clifton district


Debbie recieves her certificate of participation from James

James with Jazz Lamborn and Debbie Mitchell

She made her first commercial flight for Ansett in January 1980.

RAAus has long been a champion of women in aviation and encourages more women to join the ranks.

Only six per cent of the membership of RAAus are women and the organisation is actively working towards changing that figure.

The Lone Eagle Flying School in partnership with RAAus held a 'Women In Aviation' event in combination with the annual fly-in at Clifton in March.

The offer was for any woman aged 14 or over, who had never flown in a light aircraft, the opportunity of a 15 minute flight around the district at no cost.

For its part RAAus offered to donate the amount of the first yearly membership fee towards the cost of their flight training.

Year 12 student Jazz Lamborn took up the offer and enjoyed the experience.

"I didn't know what to expect but it was great. I would like to start a career in aviation when I have completed my school studies.

'I have always been interested but this experience has really excited me," Jazz said.

Another to take up the offer was Debbie Mitchell, an animal carer from Toowoomba.

At 53 Debbie thought she might be too old to fly commercially but her reasons for doing the flight were different.

"When I was young my Pop and I would go out to the aerodrome on a Sunday and watch the aircraft coming and going.

"He had a real interest in planes and, although he never got a licence, he really installed a love of aviation in me.

"It's taken me this long to be able to have the time to perhaps really make it happen.

"And I know it would make Pop really happy if I was to get a Pilot's Certificate.

"Besides that my partner, Michael, has a Drifter and I have often thought that, if I were to go flying with him some day, I would like to be able to take over if anything happened to him," she said.

Event organiser James Bange said although the numbers of women taking up the offer of the free flight were down on last year, the school would continue with the project next year.

"It is something we really want to do," James said.

Currently only nine per cent of pilots employed by airlines are women.

RAAus, Lone Eagle Flying School and other affiliated flight training organisations are determined to see those numbers take off in the years ahead.

"We had an opportunity to engage with a demographic not normally associated with RAAus - families, specifically kids and their parents"

RAAus Technical Manager Darren Barnfield working with a couple of the hundreds of people who built their own wing ribs

SO YOU WANT TO BUILD A PLANE?

BY MICHAEL LINKE **CEO**

DURING RAAus' four day presence at Avalon we were a great hit with the kids.

Three hundred of them visited our stand and built themselves 300 wing ribs. Another 300 others built themselves a complete aircraft. It was a huge success and drew crowds to our location every day. The exercise was the brainchild of RAAus Technical Manager Darren Barnfield, and was a masterstroke in taking our sort of aviation to the masses.

The interaction with 600 families allowed them to get closer to aviation than ever before and, at some point in the future, near or far, their journey may continue.

This was the strategy behind what we did. We raised over $4,000 for scholarship funding as well, but our main goal was to make a statement - aviation is for everyone.

RAAus is evolving, our schools are evolving and collectively we have a product which has lasted the test of time. All we need to do now is let everyone know about it.

> "We need to let everyone know about it"

While I stood at the shop front at Avalon, I was amazed at how many people asked me "What is RAAus?", "What do you do?", "Where is a flying school near me?" and "Isn't it too expensive for me?"

At each interaction our team was able to provide answers to these questions, questions we don't get when we attend a member's local fly-in.

I did some research in 2015 about our membership demographic and found more than 80% of our members live within close proximity to an airfield. They got involved in aviation largely by word of mouth with other locals who spent time at the airfield.

Think of the potential outside of this close proximity demographic. We saw at Avalon, people travelled from far and wide to attend the air show. So something we have begun planning is to cast the net a little wider to attract the next wave of aviators.

Our schools may want to think about doing something similar. It's a big country out there.

Jill, Michael M, Katie and Michael L having fun at the RAAus stand at Avalon

DIVERSIFYING

BY MICHAEL LINKE **CEO**

WHAT do you see in many of the photos of the RAAus marquee at Avalon? Kids and families.

Compare this with our typical member, a 51-year-old male and, you might ask yourself, why are the pictures so different to the reality? Our strategy was deliberate, planned, considered and well executed. Nowhere else at Avalon were kid's activities planned. It was a big hit.

We had an opportunity to engage with a demographic not normally associated with RAAus - families, specifically kids and their parents.

No longer can we rely on the middle aged male as our main source of membership. Six per cent of RAAus members are female. Five per cent are classified as juniors (under 18).

So the people visiting us at Avalon represented the largest group with propensity to join RAAus and take up a career in aviation, or to fly recreationally. I spoke to hundreds of people who had never even heard of us. Hundreds of others pored over the map of our schools across Australia searching for a school near to them. From as far wide as the Northern Territory, SA and WA. We gave away more than 1,500 free 30-day membership cards and many of these (at the time of writing) have already been activated.

Questions we were asked focused on: Cost - we are the most affordable within our sector. Safety - we boast a solid safety record, and one which is improving. Age – a person of any age can join and anyone can go solo at 15.

So the message is slowly getting out to a non-traditional audience and, as such, we need to gear up for a more diversified membership in coming years. RAAus needs to understand more about what people want when they get involved. For many years we've made decisions about what junior members want, what women want. It is now time to ask the question: What do you want from your experience at RAAus?

Additionally we need to look inwardly and do all things possible to be as attractive as possible to families, kids and women. How our hangars are presented, how we are presented and how we engage and interact with people getting involved with us for the first time.

Our future is a diversified one, are we ready for it?

CREATING OPPORTUNITIES

BY MICHAEL LINKE **CEO**

FOR many years RAAus has seen itself as the entry point for aviation in Australia. People wanting to get into aviation, whether they are young or old, have seen RAAus as an affordable and accessible option.

We started our GYFTS Scholarship scheme ten years ago, a wonderful strategy to get people involved in flying. Hundreds of young people have benefitted as a result of this strategy.

For the most part, though, the focus has been on pilots. There is so much more to aviation than piloting an aircraft and our 'Creating Opportunities' strategy is designed to highlight that. As an example, 14 staff work at RAAus, and just four of them are pilots. That's ten careers in aviation created by RAAus which are not pilot related.

The RAAF has about 125 career path roles, and one of them is a pilot.

So we have developed a 'Creating Opportunities' graphic to display this concept visually. So it is obvious that if someone joins RAAus, not only is the sky the limit, but the hangar, the air traffic control tower and anywhere in the military also become possible. Quite simply there is no limit to where you can go when you start with RAAus.

One of the best ways we can continue to grow and develop RAAus is to talk about the opportunities we can create. Each and every one of our flying schools has an opportunity, not only to train young and old people how to fly, but also talk more broadly to people starting a career, people looking to augment an existing career or people looking for a career change.

What an opportunity we have. We just need to think a little laterally.

A TRIP FOR

THE BIRDS

BY BRIAN BIGG


Flight 2 - 2022
Broome to Siberia
Red-necked Stint
Flight 1 - 2019
Melbourne to Broome

A trip for the birds

A PERTH zoologist plans to fly a microlight from Australia to Siberia to raise awareness of the plight of a group of shorebirds facing extinction.

Amellia Formby, from the University of Western Australia, will fly along the same migratory path the birds fly every year. It's a 12,500km journey which will take her around three months to complete.

Originally from Melbourne, Amellia is a qualified zoologist and artist and in her spare time, volunteers as joint Shorebirds 2020 WA Coordinator for BirdLife Australia to survey and monitor shorebird populations.

She lives in Perth, working full-time as a technician in the School of Animal Biology at the University of Western Australia.

"I am passionate about birds, art, science communication and conservation. Before I pursued a career as a zoologist, I completed a Bachelor of Visual Arts at Monash University, majoring in tapestry, then worked as a professional tapestry weaver at the Australian Tapestry Workshop in South Melbourne for seven years. I now blend my passion for both art and science as a zoological illustrator, with a focus on Australian birds."

For Amellia, the Siberia trip is not just about for the shorebirds.

"When we care for shorebirds and other species, we also indirectly care for ourselves because we share and rely upon the same environments as they do to survive," says Amellia.

"Understanding how we are connected to each other and all living things via global ecosystems is crucial if we are to improve things for the future for all species."

Amellia is crowdfunding to raise funds to purchase an aircraft and is planning to test her wings on a shorter flight from Melbourne to Broome — visiting key Australian shorebird sites to produce a documentary film — at the beginning of 2019. Her next stop will be Siberia in 2022.

Amelia in her own bird

> "The Red-necked Stint weighs only as much as a Tim Tam"

Shorebirds feed in intertidal areas or around freshwater wetlands, and make up around 10% of all birds in Australia. The smallest of these migratory species, the Red-necked Stint, weighs only as much as a Tim Tam, but every year makes the trek thousands of kilometres from its coastal Australian home to breeding grounds in Siberia.

The birds fly up to 3,200km at a time and depend on stopover points along their path in the East Asian-Australasian Flyway (EAAF)—stretching from Australia and New Zealand up to Far North Russia and Alaska—for shelter and to feed.

But degradation and the loss of wetlands along the pathway—a result of increasing economic development—means the critical stopover areas are disappearing. This is forcing them towards extinction.

"I see shorebirds as a living expression of global community. Their migration path is a thread which links billions of people in 22 countries across four continents together in the EAAF," says Amellia. "By mimicking their journey, I want to show how important our environment, and the connections we all have to it, is to our survival and that of other species."

Amellia's journey is being supported by RAAus, the University of Western Australia and BirdLife Australia.

Mike Bamford, Chair of BirdLife Western Australia says "This is an exciting project which draws attention to the amazing annual feat of these birds which are so threatened by human actions."

Jill Bailey, National Operations Manager at RAAus says "Recreational Aviation Australia is thrilled to support Amellia on this exciting journey. It's fantastic to see the important role aviation can play in the conservation of these shorebirds, and the greater environment.".

For more information, wingthreads.com and her crowdfunding campaign can be found at www.chuffed.org/project/wingthreads.

Refueling without sparklers

Two clamps attached to the exhaust and the pointy end of the spoke pushed well into the ground


Mr. Funnel with wire bolted to the bottom


Earth strap made from braiding

BY DAVE KING

RECENTLY I read about aircraft catching fire when refueling, even with Mogas being decanted from drums.

When I built my first ultralight, it was under the SAAA system and the final inspection was required to be conducted at Bankstown Airport. I was lucky enough to meet a CAA inspector by the name of Peter Knowles. Peter explained to me the virtues of bonding the fuel system to the aircraft frame. Since then I have built four aircraft and I continue to bond the fuel. Bonding ensures that, when refueling, fuel going into the tanks and any fuel already in the tanks is electrically earthed.

> "The refueling devices are small and light"

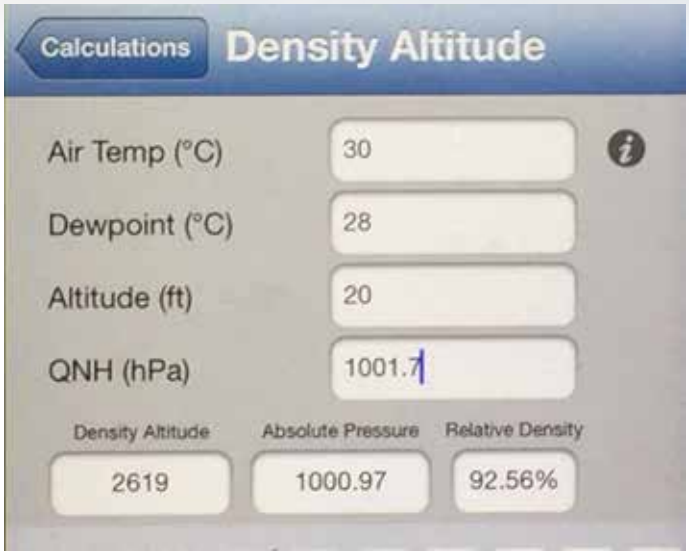
Peter explained to me how to set up the aircraft and my refueling equipment. Each of my aircraft have either had fibreglass or plastic rotary-molded fuel tanks. One of the photos shows an earth strap made from braiding and soldered at either end. The strap is long enough to reach into the lowest point of fuel in the tank with the other end attached near, or on, the filler neck in such a way that an external wire can bond to the firewall and the engine.

Another photo shows my Mr. Funnel which has a wire bolted from the bottom of the water trap and a clamp attached. Also in that photo is an earthing device. This is the longest and thickest motorcycle spoke I could find which has a wire attached and is long enough to be pushed into the ground and reach the exhaust pipe with a clamp. When refueling I connect the two clamps to the exhaust and push the pointy end of the spoke well into the ground. Any static electricity then goes straight to earth. In situations where the aircraft is on concrete or sealed ground and can't be moved to grass, I lay the spoke under a tyre as flat as possible with as much of it as possible in contact to the ground. Naturally test all connections with a multimeter and solder as many joints as possible. Support those joints with short lengths of heat shrink material.

The refueling devices are small and light enough to keep in the plane on cross-country trips and have worked well for me over the past 25 years.

CLEARING THE AIR

BY NORM SANDERS



"IT'S not the heat, it's the humidity!" Well, actually it's both. Hot days with high humidity can be killers. Density altitude plus temperature plus humidity all affect performance at any time, but add them all together and look out.

It is obvious that thinner air means less lift and longer take-off runs. However, this is only part of the story. Hotter, less dense air also means less oxygen. Less oxygen always results in lower potential power. This is a given, but less obvious is the effect on mixture. Gas and air burn at a ratio of about 14.7:1 by weight. The more air (oxygen) you put through the engine, the more fuel you can add and the more power you can produce. Increasing one (air or fuel) without increasing the other will not produce any more power. Less air at altitude requires less fuel to maintain the 14.7:1 ratio the engine wants. Fuel economy is better, but available power is less (About 20 % less at 6,000ft).

Any reduction in density by an increase in altitude means the mixture will be richer, which is why it is necessary to lean the mixture when climbing. Lower atmospheric pressure (QNH) also means less dense air and proportionally less oxygen,

Humidity is another important factor. Dry air is denser than moist air. A certain volume of air will contain a certain number of molecules (based on the 'ideal gas law') and it just happens that water molecules are relatively light compared to Nitrogen and Oxygen (H20 vs 02 and N2) Therefore the more moisture, the lower the density. Higher humidity results in richer mixtures.

The other day I took off at YTYH (elev. 20ft) in the Sonex with an air temperature of 30 degrees C., a dew point of 28 degrees C. and a QNH of 1001.7mb which is moderately low pressure.

The density altitude was 2,619ft. and the take-off run was longer than usual, which I expected. But I didn't expect the reduction in RPM and the slightly rough running of a too rich mixture. I leaned out the mixture control and all was well. Once airborne, I enriched the mixture to see what would happen. The RPM fell off again and the CHTs dropped markedly due to the rich mixture and the evaporative cooling of the increased moisture in the air (This is the same effect as water injection into WWII fighter plane engines for takeoff). Incidentally, high temperatures are no protection against carburetor ice which can occur up to 36 degrees C. in some cases.

Bing or Stromberg CD (Constant Depression) carburetors used by Rotax and Limbach have no pilot-operated mixture controls and handle density changes automatically up to 6,500ft or so. However, the loss of power due to reduced oxygen at lower densities is the same as for normal carburetors.

Sonex Aero Carbs have mixture controls, but can have problems in extreme heat. My throttle was getting harder and harder to push. I looked up Aero Carb on the net: "When the carb is subjected to high heat, the Delrin Slide could expand and jam, rendering the carb inoperable." I followed the instructions, took the carbie apart and worked the edges down with sandpaper until I had .008in. (0.2mm) clearance on each side. It now works perfectly. You learn something new every day!

The bottom line is to be alert to all the factors which can cause decreased performance in hot, muggy conditions.

Our good friend Bill and his bush camp

AROUND THE EDGE

STORY & PHOTOS BY JULIE HANDS

AFTER our epic journey to Uluru to retrieve B.O.B our Zenith 701 (*Sport Pilot* December 2016), it was time to explore our great land once again.

This trip was to be a month long journey following the edge of Queensland.

My partner Ian Wells and I met up with some flying friends at the Australian/Italian Food Festival in Ingham where we sampled some great olives, cheeses and cristoli.

We also remembered our dear friend Ross Millard (RIP) who's first and last planes were on display there. Ross was killed when a Lightwing he was flying crashed at Woodstock in November 2015.

Then it was north to Tully where, of course, it was raining.

From there it was all new sky for us.

We had planned to fly to the west of Cairns to avoid controlled airspace but, with rain showers and low cloud making that impossible, we decided to strap on our life jackets and fly to the east of the Cairns CTR.

It was a bit daunting having all that water under us and no floats, but it was the safest route.

The coastline past Cape Tribulation and up to Cooktown was stunning. Steep windswept rainforest covered ranges on one side and the Great Barrier Reef on the other.

Now began the challenging stuff up to the Archer River Road House just north of Coen. Here we had to negotiate strong winds, low cloud, rain and extremely scrubby tiger country.

We were very glad to land, set up camp and have a cuppa I can tell you.

We met a television film crew making a fishing program and a guy riding his Postie Bike to the tip of Cape York.

We awoke to better weather, thank good-

ness. Our destination this day was Muralag Island (formerly Prince of Wales Island) via Thursday and Horn islands.

My friend, Laura, grew up on the island so we were privileged to get a local's look at the place.

From Muralag Island we headed south to the mining town of Weipa on the west coast of Cape York. Our first impression of Weipa was red, dusty and big machinery.

We hired a car and camped in it near the ship loaders - noisy but interesting and actually very pretty when lit up at night.

On to Karumba, oh what fantastic waterways. Here we met up with Bill who was joining us for the rest of the trip.

Burketown for breakfast then south to Adele's Grove, an oasis of fresh water gorges.

After overflying Camooweal on the border of Qld and NT, where we noted the many caravans camped by the Georgina River, it was onto Urandangi about 200kms south west of Mt Isa.

It has a great pub apparently but no phone reception and it was a long walk. So, sadly, we never made it to the bar.

Tobermorey Station for breakfast and fuel, then a UHF call got us a lift into the station.

On leaving here the desert started and we followed the pale sand dunes into Bedourie.

The owner of the roadhouse kindly loaned us his car so we could have a look around and fuel up.

At times the town becomes an island but it was all dust this time.

The museum/info centre had some great photos of the floods and old timers digging their way out of the pub after a sandstorm.

We crossed the edge of the Great Sandy Desert, cheered on the 4x4s as they climbed over 'Big Red', and into Birdsville.

We have been here several times now and it was great to be back - best bakery and the pub at your wing tip. What more could you ask?

Next morning we headed for Innamincka.

The airstrip is on the top of a very blustery hill overlooking the township - crosswind of course!

We made an important and sanity saving purchase here, fly nets for our hats. I will never leave home without one ever again.

On to Nappa Merrie (The Dig Tree) a great bush camp. Curried camel pies from the Birdsville bakery heated in Bill's jaffle iron.

Cameron's Corner road house next for fuel straight from the bowser. On landing we found ourselves in the middle of a swirling dust storm, so we tied to a tree with sand and grit in our eyes and teeth and ran in for homemade scones with rosella jam and a cuppa.

When the dust storm had cleared we flew on to Hungerford, a township right on the dog fence line. Human population 10 and eight of them were in the pub.

It was a long walk back to the airport. Thankfully we got a lift. Bill took a room in town but our tent was less draughty. The walls in Bill's room didn't quite reach the ceiling!

Next day we ventured over the border into NSW and dropped into Lightning Ridge.

Again, it was a long walk to town but the Bowls Club and the pub both had courtesy buses.

We booked a tour next day and were driven all about getting educated in the art of noodling and spotting 'colour'.

Lightning and thunder that night on the Ridge - appropriate we thought, but the next day we were grounded still waiting for the weather to clear.

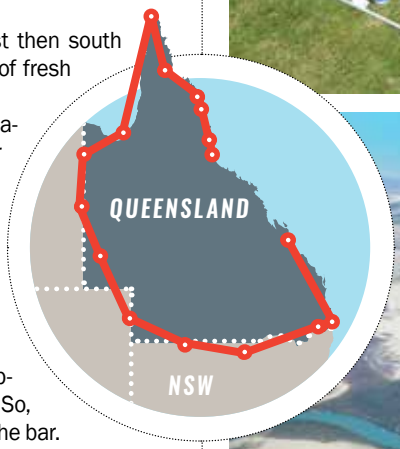
Bill had flown off to get Avgas and got stuck in Moree due to the weather. But he found the hot springs and settled in.

We made hot chocolate and made the best of it.

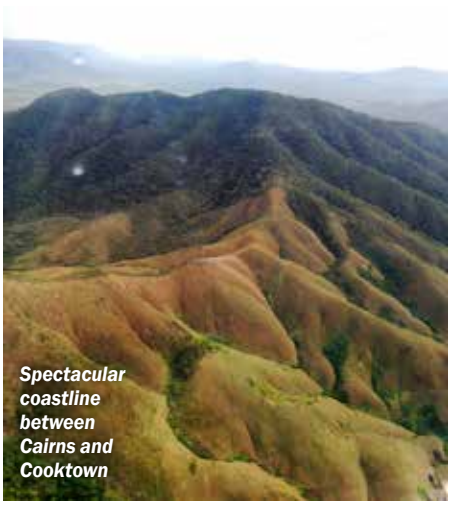
Next day dawned with low cloud but with flat ground ahead it was doable so we headed for Inglewood and used the weather cams to look at Cunningham's Gap through to Boonah.

'Stuff' ready to be packed into the Savannah prior to the trip

Strzelecki Desert



At the Archer River Road House we ran into Stuart on his way to the tip of Cape York on his Postie bike



Spectacular coastline between Cairns and Cooktown

Gulf Country around Karumba

Never ending sand dunes near Bedourie

Enjoying a dinghy ride to Thursday Island (TI to the locals)

Julie Hands with her beloved Savannah 'Cab Sav' at the Brisbane Valley Airshow

Cameron's Corner in far west Qld

Not ideal conditions, but there was enough room to get through.

We landed at Boonah and were made welcome in the Flying Tigers club house. Just as well too because it rained cats and dogs for two days, closing the field as it went under water.

Now for us 'mostly country flyers' the next flight was all new. We made it over the range near Mt. Tamborine and there was the Gold Coast laid out in front of us. We flew out to Stradbroke Island and back in via Bribie Island (to avoid Coolangatta and Brisbane CTRs) landing at Caboolture. We were housed, fed and watered by our good flying friends, Ken and Sally.

We set off for Watts Bridge and the Brisbane Valley Air Show next morning, arriving early and getting a front row park.

Some of our Whitsunday flying friends, Paul and Julie, and Mike flew down to meet us, so we had a really lovely time enjoying all forms of aviation on display together, however we northerners suffered when the ground froze overnight.

We departed early morning to avoid the busy sky we had observed the day before.

We made several stops, first Gympie for breakfast (great club house) and to see some friends, then overflew Rainbow Beach where flying started for me (paragliders) and on to a private property near Bundaberg for a spontaneous picnic lunch with Pat Hawes and friends.

The destination was Emu Park near Rockhampton where we indulged in pizza, beer and warm weather.

Suddenly we were tired, dirty and oh so close to a comfy bed. So the decision was made to fly directly home to Heathrow the next day instead of our last planned stop with our friend Jordan at Waterfield Park in the Byfield National Park.

Sorry Jordan, next time we promise.

Nice to be home. Time to cut the grass on the runways and sort out the best of over 3,000 photos.

Messing with spins

BY DAVID P EYRE

THIS ARTICLE HAS BEEN PROMPTED BY THE TRAGIC ACCIDENT AT BUNDABERG IN MARCH 2012 AND IS INTENDED TO RAISE AWARENESS OF PILOTS TO THIS TYPE OF EVENT AND APPROPRIATE PREVENTION OR RECOVERY ACTIONS.

THE CIRCUMSTANCES

On March 19, an RAAus registered aircraft departed from the Bundaberg Airport on a training flight. On board were an instructor and a student pilot. The briefed exercise was to practise stalls.

The aircraft failed to return and search and rescue action was commenced when the estimated flight fuel would have been exhausted. The next morning a searching helicopter located the aircraft in a cane field about 10nm NE of the airport. There were no survivors.

THE PHOTO

A photograph of the accident scene appeared in the local paper. It gave some clues as to the last few moments of the flight.

- The aircraft appeared relatively intact, but with major damage to the left wing and obvious impact damage to the rest of the airframe (Not shown was that the canopy was still attached and closed).
- The area immediately around the aircraft had not been disturbed.
- The indication was that the aircraft had descended in a flat attitude and nearly vertically with very little forward motion.
- At impact, the left wing was slightly down and the nose slightly low.

These indications are consistent with the aircraft being in a flat spin.

WHAT IS A FLAT SPIN?

A normal spin is when the aircraft is in a stalled state, spinning around a vertical axis and in a nose down attitude 45° or more to the horizontal. This is also referred to as an erect spin.

Depending on aircraft design, characteristics and loading, the rotational speed could typically be as high as 300° per second and the descent rate in excess of 2,000 feet per minute.

A flat spin differs from an erect spin in that the aircraft fuselage will be at less than 45° to the horizontal. An aircraft in a flat spin could have a rotational speed of 400° or more, per second and a reduced descent rate but still more than 2,000 feet per minute.

From an operational perspective, an erect spin is recoverable, provided correct control techniques are initiated promptly. On the other hand, if a flat spin has developed in a normal category aircraft, it could be difficult, if not impossible, to recover and a crash becomes inevitable.

FACTORS

Readers should be aware an erect spin could become an unintended flat spin, depending on aircraft design, loading, pilot technique and other factors.

- **WEATHER** Either just after or just before an aircraft stalls, a sudden gust could place the aircraft in an unusual attitude and, if not immediately corrected, could lead to a spin.
- **FLIGHT INSTRUCTOR INCAPACITATION** If a pilot becomes incapacitated at the point of a stall, or, during the recovery, inappropriate control action could lead to an inadvertent spin.
- **FLIGHT INSTRUCTOR LACK OF SKILL** If the flight instructor lacks the ability to recognise the development of a spin and/or fails to take timely corrective action, an inadvertent spin may result.
- **STUDENT PILOT INAPPROPRIATE ACTION** Quite often, as any flight instructor can attest, a student pilot can react to a stall by not using correct recovery techniques. This requires prompt and forcible action by the flight instructor to recover the situation.
- **STUDENT PILOT TOO STRONG** It is possible a flight instructor could be prevented from taking timely corrective action because a student pilot, simply reacting to the perceived threat in a stalling manoeuvre, overpowers the controls. The student could be pulling on the control column while the flight instructor is trying to push it forward, for example.
- **ENGINE POWER** If an aircraft is spinning and power is applied, the gyroscopic forces can cause the nose to pitch up and an erect spin can become a flat spin.
- **AIRCRAFT MALFUNCTION** It is possible a malfunction can lead to an inadvertent spin. The rudder control could become jammed, for example.
- **AIRCRAFT LIMITATIONS** Aircraft Operations Manuals stipulate the operational conditions of a particular aircraft. These conditions could also be shown as placards in the aircraft and may include weight and balance limits, limiting speeds, permitted manoeuvres and notes for the safe operation of the aircraft.

A note in the Operations Manual of certificated aircraft could state - *'There is no uncontrollable tendency of the airplane to enter into a spin provided normal piloting techniques are used'. WARNING: INTENTIONAL SPINS ARE PROHIBITED,* or words to a similar meaning.

Certificated aircraft are required to have a safety margin in case a stall recovery is delayed. This margin must be proved by flight testing the aircraft to demonstrate it is recoverable from a one turn spin, or a three second spin, whichever takes longer.

Reprinted with permission Bundaberg News-Mail

"No stall - no spin!"

As these aircraft may not have been flight tested beyond the one turn spin, its spin and recovery characteristics are not known if the aircraft exceeds this limitation.

LOADING LIMITATIONS - If these are exceeded, the ability of the aircraft to recover from a stall or spin is unknown.

What is known is that if the aircraft is loaded with the centre of gravity behind the aft limit, an unrecoverable stall or spin could result.

FLIGHT INSTRUCTOR PUSHING THE LIMITATIONS - Because an aircraft is capable of stalling and spinning, some instructors will experiment. This could lead to the development of an unintentional spin event.

(I am aware RAAus does have some instructors who do this, even to the extent of deliberatively spinning aircraft not approved for spinning! I am not suggesting that in this accident, the instructor did this).

OPERATIONS MANUAL SYLLABUS - The RAAus Operations Manual Advanced Pilot Award requires the candidate in Units 10 and 12, to complete a stall recovery from skidding and slipping turns. The problem with this requirement is that it is precisely the method used to deliberatively enter a spin. That is, the controls are crossed at the point of the stall. Even though the syllabus states a recovery should be initiated at the point of the stall, this may be too late to prevent an inadvertent spin.

FABRIC WINGS - An aircraft in a spin will have one wing more stalled than the other.

A fabric covered wing which has not been doped may, at the point of stall, become more deeply stalled than the other one and this could lead to an unintentional spin.

WHAT TO DO?

The basic fact is that an aircraft will not spin if it is not stalled. No Stall – No Spin!

Stalls are a vital and mandatory part of the training syllabus and can be safely practiced dual or solo. Practice will develop student confidence and an awareness of the signs and symptoms of a stall. Conscientious practice of prompt stall recognition and recovery technique should ensure the aircraft will never enter an inadvertent stall.

A FEW TIPS

- Always check the aircraft loading to ensure the C of G is within safe limits.
- Be cautious about holding the aircraft in a stalled state.
- Always exercise prompt stall recovery techniques.
- Always follow the Flight Manual instructions for inadvertent stall and spin recovery action.

And, don't mess with spins!

***FROM THE OPS DEPT** / The article states the author is aware of instructors deliberately spinning RAAus aircraft. If any member is aware of deliberate breaches in aircraft operation which contravene the Operations Manual or aircraft Pilot Operating requirements, these should be reported via the Occurrence Management System (OMS). A thorough investigation will be undertaken in accordance with RAAus' published procedures. A reference is also made regarding aircraft handling outlined in the Advanced Pilot Award. The article implies this promotes inappropriate handling which may lead to a spin condition. The syllabus items referenced in the APA call for crossed controls in sideslipping and slipping turns, but not skidding turns which are known to create unfavourable outcomes and possible development of a spin beyond the incipient stage. Crossed controls operation is an important development skill, especially for instructors and can be safely executed when conducted within the limits of operation in the aircraft POH.*

Could this Pipistrel Panthera be in Peter's future?

PETER HAS A VIRUS AND HE COULDN'T BE HAPPIER

BY ALAN BETTERIDGE

PETER Bugg couldn't be happier with his decision to purchase a Pipistrel Virus 914iS.

"It is just the perfect airplane for me," he told me when I caught up with him at the Clifton fly-in during March.

"There is not another aircraft in this category that can match its speed and economy and that alone was reason enough to convince me to buy one."

But Peter's Pipistrel is not just any ordinary Pipistrel – it has a unique history.

"The 01 markings on the tail indicate this was the first Pipistrel Virus in the world to be fitted with the then new Rotax 912 iS fuel injected engine."

The Slovenian based company was in fact the launch customer for the new Rotax 912 iS engine back in 2012.

The engine was an evolution from the proven and reliable 912 series of engines which have been around for many years but provides owners with dramatically improved fuel efficiency, multiple system redundancy and smoother engine operation due to the specially designed fuel injection system.

The Rotax 912 iS fuel injected engine is neatly fitted and provides easy working space

The injection system automatically adjusts fuel-air mixture to be optimal for every cylinder at every altitude and throttle setting – clearly a huge advantage over normal carburation.

Peter said although the engine still produced only 100hp, the fuel consumption had been reduced by as much as 21% - and with fuel prices continuing to rise this brought significant savings.

"I can reliably get a genuine 15 litres per hour at around 145kts.

"There isn't another aircraft in this category which comes within cooee of these figures.

"If I want to extend the range, all I need to do is to reduce the airspeed to 120kts and the fuel consumption reduces even further to only 10 litres per hour.

"My aircraft has a 100 litre fuel tank and with the right conditions it is theoretically possible to fly from my home base at Southport on the Gold Coast in Queensland to Melbourne non-stop."

While I am sure his aircraft could do the distance non-stop, if Peter is anything like me, his personal endurance would put paid to that idea!

Peter came to own this particular aircraft

"The addition of air-brakes gives a huge amount of control when landing"

Peter Bugg is super happy with his decision to buy a Pipistrel 912 iS Virus

Peter's aircraft as it was displayed at Oshkosh in 2012

while touring Europe in 2012.

"I was in Europe and ordered the aircraft from Pipistrel.

"After I had made the purchase they asked if they could display it in the upcoming Oshkosh event in the US, given that it was the very first one fitted with this engine.

"The original plan was to fly it from the factory in Slovenia, to the US, then to Australia for me.

"Unfortunately the amount of paperwork required proved to be too much in the time available so the aircraft was eventually put in a container and sent by ship."

When the aircraft made its debut at Oshkosh it caused quite a stir and, with its new fuel injection system giving such a saving on fuel, it became an instant success.

Peter said his aircraft was fitted (as are all Pipistrel Virus aircraft) with speed brakes, which are commonly found on gliders but rarely on LSAs.

"The addition of air-brakes gives a huge amount of control when landing and really negates the need for side-slipping when trying lose height and reduce ground roll after landing."

Peter said the one thing he had to be careful about was cruise speed.

"Because this aircraft is so efficient it can actually be made to cruise faster than its VNE so you have to be careful."

The Pipistrel Virus was a development of the venerable Sinus range. It has a shorter wing span and has proven to be extremely popular around the world.

Today there are over 1,000 aircraft flying.

I asked Peter if he would buy a different type next time.

"They are working on an aircraft similar to the Cirrus SR22 which looks interesting.

"I have seen one and it looks like it is doing 300kts when it is still on the ground!

"I would definitely like one of those," he laughed.

The aircraft to which he is referring is the Pipistrel Panthera. The aircraft will be a four seat, low wing powered by a Lycoming IO-390 producing 260hp.

Pipistrel has yet to confirm a start-of-production date for this new entry.

"I think that would be way down the track, so for now I am totally happy with my Pipistrel and really have no intention of changing it anytime soon."

And with that type of speed and economy why would he?

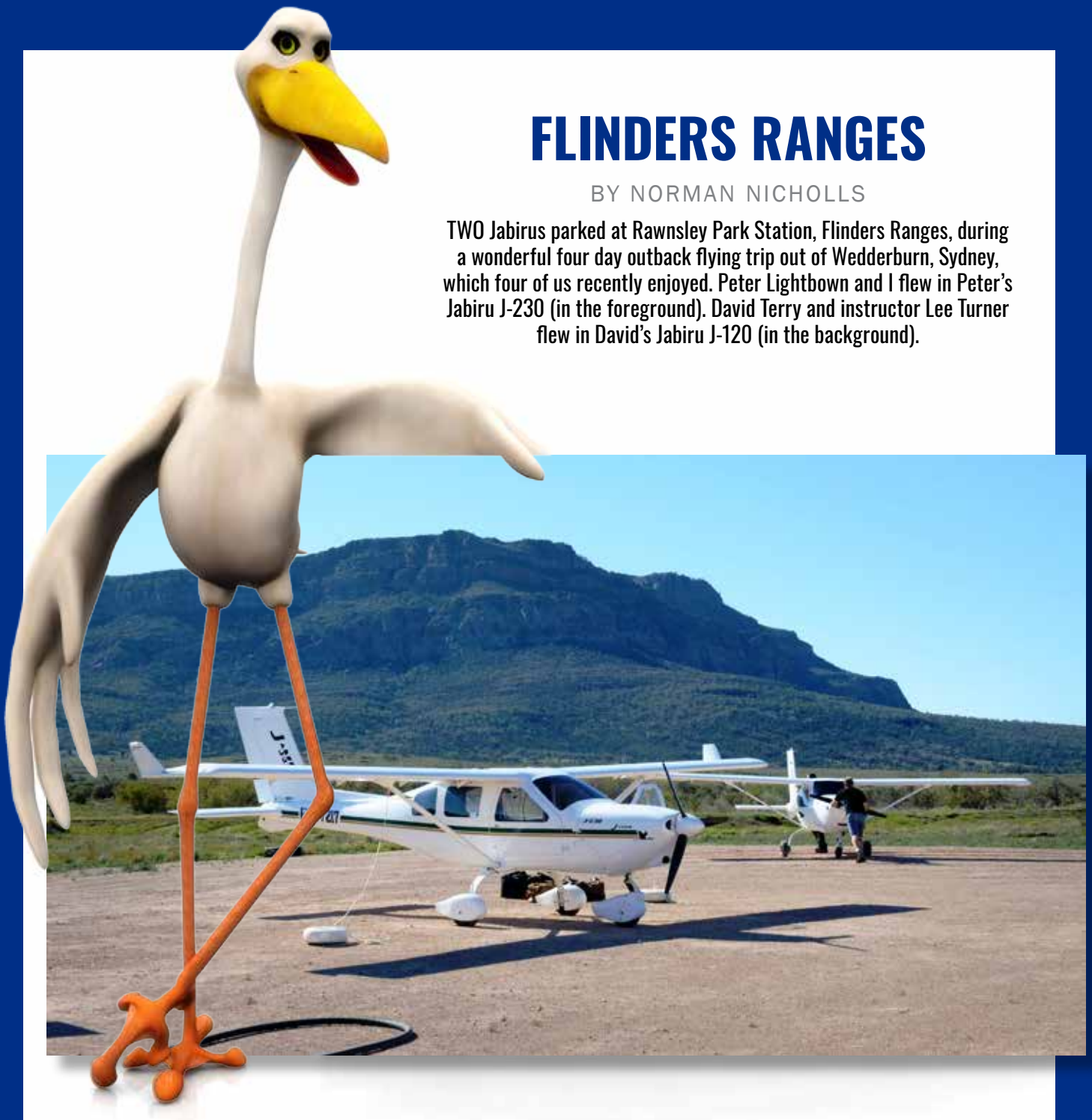

E24-7217


J-230

FLINDERS RANGES

BY NORMAN NICHOLLS

TWO Jabirus parked at Rawnsley Park Station, Flinders Ranges, during a wonderful four day outback flying trip out of Wedderburn, Sydney, which four of us recently enjoyed. Peter Lightbown and I flew in Peter's Jabiru J-230 (in the foreground). David Terry and instructor Lee Turner flew in David's Jabiru J-120 (in the background).



POSTER OPPORTUNITY

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

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

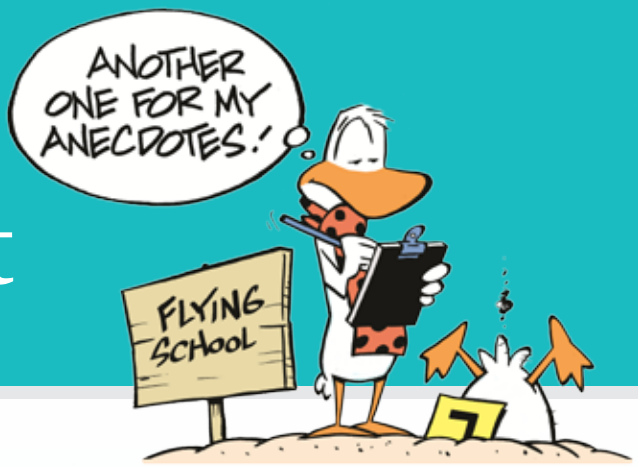
Each edition one photo will be chosen (We will try and make sure every photo sent in gets a run). If you are an aircraft seller, it's a great chance to show off your product.

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

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

Serves you right

BY DAVID P. EYRE



A SERIES OF STORIES FROM FLYING INSTRUCTORS. THEY ARE DESIGNED TO BE EDUCATIONAL, AMUSING OR SERIOUS – SOMETIMES ALL THREE. THEY CARRY A MESSAGE ABOUT SAFE OPERATIONS.

RECREATIONAL pilots often ask instructors to conduct low flying training with them. There are not too many instructors who have the qualifications to legally conduct this type of training, but those who do face a conundrum. What does this applicant want to do with the endorsement?

"If they do not have a valid reason, should I give the endorsement training?"

The problem is that if they do not have a valid reason and you do not do the training, will they go ahead and conduct unauthorised low flying anyway? Because they are not properly trained, will they come to grief?

Joe was a bit of an adventurer and enjoyed sailing his yacht around the harbour. As is often the case, Joe decided to combine sea and air and took up flying. He did not appear to be reckless and indeed, showed a lot of discipline throughout his training.

After a little while, Joe purchased his own aircraft and was often seen to be flying by himself and taking in the local sights.

Inexplicably, one day Joe was seen to be low flying over a yacht race in the harbour. He must have been buzzing one of his mates.

Anyway, he flew so low his wingtip struck the mast of a yacht. He crashed into the sea with an almighty splash.

Somehow or other he managed to extricate himself from the wreckage before it sank. He was pulled from the water, semi-conscious and bleeding heavily from a gash to his head. At the inquiry, Joe stated that, as soon as his aircraft hit the mast, he realised a crash was imminent so he released his seat belt. Naturally enough, when the aircraft hit the water its forward momentum was halted but Joe kept going and was lucky to survive.

Recently there was an article about another aircraft forced to ditch into the sea. The pilot and passenger both reported they released their seat belts before impact.

I do not understand why these aviators undid their seat belts.

A friend of mine decided to buzz a local cricket match. He zoomed over the tree tops as a batsman was about to hit a ball. Being somewhat distracted by the low flyer the batsman missed the ball and was cleaned bowled. The only problem for the pilot was that the batsman was the DCA Chief Pilot Examiner!

By the time the pilot returned to the airfield, he found out he no longer had a licence.

Recently, I refused to give a pilot a low flying endorsement because he did not have a valid reason and I suspected he would only use it to buzz people on the ground. My suspicions were quite correct because he was caught buzzing people in a small coastal village. Suspended Certificate and a fine. Serves him right.

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

The rules of fuel management

BY OWEN BARTROP

MANAGING YOUR FUEL SHOULD BE SIMPLE AND STRAIGHT FORWARD. BUT OBVIOUSLY NOT ALL PILOTS FOLLOW GOOD AIRMANSHIP PROCEDURES BECAUSE ACCIDENTS CONTINUE TO BE CAUSED BY AIRCRAFT RUNNING OUT OF FUEL.

MUCH has been written and said about fuel management over the years. But some pilots are not getting the message so a different approach is required.

Let's examine the procedures which will guarantee enough fuel is available to complete the flight.

ENOUGH IS ENOUGH

There is a tendency by some pilots not to fill the fuel tanks completely because the planned flight does not need that much fuel and dragging around excess fuel hurts performance.

But let's look at that statement. Sure, carrying excess fuel will slow your aircraft. But in terms of money, the amount of additional fuel you burn carrying full tanks (as opposed to half full tanks), would be less than two litres – maybe enough to buy a cup of coffee. Even if it was double that - four litres – it's still less than a cup of coffee and a muffin. Isn't your life worth more than your morning tea?

RULE #1:
Always fill all tanks before taking off, even if you only plan to do circuits

It's only circuits. What could happen? Consider this scenario.

You are number two in the circuit and the aircraft in front of you has a landing mishap. The wreckage finishes upside down in the middle of the intersecting runways. The airport is closed for who knows how long.

You divert to the closest airfield - 20 minutes away. As you approach you realise it is shrouded in fog and you can't land. You divert again. This time the nearest airport is an hour away. You probably didn't check the NOTAMS for that airfield and when you get there you find the runway is closed for maintenance. Your local flight will have turned into an emergency because you took off with half empty tanks, just to save enough money to buy a cup of coffee.

There is an adage which says, 'If three things go wrong on a flight, a major accident usually results'.

RULE #2:
Always dip your tanks before doing your pre-flight checks

Fuel gauges are notorious for not reading accurately. Some aircraft don't even have gauges, so how do you judge how much fuel you have. The only sure way is to dip the tanks. Always dip the tanks even if you have just filled them. Some aircraft have baffles in the tanks and the fuel can take a while to find a level. They may not be as full as you think.

If you do not have an accurate dipstick, make one.

Get a ruler, a few buckets and, if you are not at a fuel bowser, some jerry cans of fuel. You also need a container with 5L marks, so you can fill each tank 5L at a time.

Put the aircraft on a level footing and drain the fuel. Then, pour in 5L, dip the ruler in and measure the depth. Write down the result.

Now add another 5L, measure the depth and write down the measurement. Continue this procedure in 5L steps until all tanks are full. By keeping the tanks at the same level the aircraft will remain in balance.

To make the dipstick, use the measurements you have written down and cut a ring around a piece of wooden doweling (or other suitable material) at the distance of the first 10L measurement. For an aircraft with two tanks, measure from each end so you have one end for the left tank and the other end for the right. Continue until you have ringed the doweling at each 10L measurement for each tank.

Next mark the 5L measurements as a dash on the side of the dowel. Use a black ink pen or felt pen to colour all the cuts and annotate each 10L marker with the level it represents - 10, 20, 30 etc. Now you have an accurate dipstick with the left tank on one end and the right tank on the other.

If your aircraft has only one tank or more than two, modify the dipstick(s) accordingly. Keep your written measurements, because if you lose the dipstick, you can easily make another.

Always carry the dipstick in the aircraft. You will need it if you land away.

RULE #3:
Think of fuel in terms of time

By thinking of fuel capacity in terms of time you can easily calculate how far you can fly.

You need to know how much fuel your aircraft uses in each stage of flight.

The Pilot Operating Handbook should show fuel flow rates for some types of flying, but if it doesn't, you should work it out for yourself. Flow rates will change with speed and height, so try and standardise the way you operate.

To calculate the flow rate, fill all tanks to the brim and take about a two hour flight at one of your normal operating settings. Note your flight time from take-off to landing. After landing, dip your tanks and determine the fuel used.

Then apply some maths. You can estimated you used about 5L taxiing and doing the engine run-up. Extract that from the total capacity. Then subtract the fuel remaining in the tanks and you will have worked out the fuel used for the period the aircraft was airborne. Divide this by the time the aircraft was airborne in hours (to the nearest decimal point) and the result will be an accurate fuel flow per hour.

If you use different speeds, such as a slower cruise in turbulence, fly a test run at those speeds and note the fuel used. Write down the results and keep them handy.

Let us say that your aircraft carries 100 litres but only 96 litres are usable. By the time you account for the fuel used in taxiing and run-up, your usable fuel when airborne will be down to 91 litres - let us say 90 litres to be on the safe side. Allow for a 10 litre reserve,

Part 6 of a multi part series on one of the most mysterious aspects of becoming a good pilot

which will bring the total usable fuel down to 80 litres. If your burn rate is 15 litres an hour your fuel range is 5.3 hours flying ((100 - 10 - 10 = 80) /15 = 5.33).

When flight planning, calculate the time taken to fly to your destination, let's use as an example 3 hours. Now you know you will arrive with 35 litres of fuel (100 - 10 - 10 - (3x15=45) = 35), plus reserve or, to put it another way, another 2.3 hours of safe flying.

You can see that you will need to keep an accurate time so you know exactly how much airborne time you have left and hence how much fuel. How accurate you fly will also have an effect on fuel usage. If you do not feel your flying is smooth enough, add a safety margin.

Time is always the critical element. And, as with everything to do with time, do not rely on your memory. Write it down.

Use a timer, be it a stopwatch, kitchen timer, watch of phone. If you remember to start the timer, you won't have to do any calculations. Also, at the end of the flight, the timer will give you your total flight time. Write it down. Over time you will build up a library of real time and accurate fuel flow information.

And now you use a timer to keep track of your fuel, starting the timer should be added to your pre-take-off check list. Also, stick a plaque to your instrument panel to indicate the flow rate you have worked out. Always better to write it down.

RULE #4: Use your common sense

Having said time is the best way to keep track of fuel usage, do not ignore your fuel gauges and fuel management. Timing can be a more accurate way of measuring fuel, but it does not replace common sense.

When flying, be aware the forecast wind will probably be incorrect, so be prepared to recalculate your flying time and the fuel you need to get you to your destination. If the fuel becomes touch and go, divert to an alternate as soon as practical and fill up the tanks before proceeding further.

No matter how you calculate fuel usage, always double check your calculations.

Your pre-flight check list will require you to select a tank for take-off. You rely on that tank to get you off the ground safely so pay particular attention for water contamination (obviously check all tanks thoroughly anyway). Make it a policy to use your timer to remind you to change tanks regularly during the flight, say every hour.

THE COST OF A COFFEE

By following these four rules, you should eliminate the potential for running out of fuel. The cost may be slightly more, but your safety will be greatly improved. And that's what Airmanship is all about.

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The Oracle of Delphi

VIEWPOINT

I READ with interest Professor Tetlock's view in *'Superforecasting'* that, "We are all forecasters. When we think about changing jobs, getting married, buying a home, making an investment, launching a product, or retiring, we decide based on how we expect the future to unfold."

From Tetlock's studies of political pundits' ability to predict world events, the people who stood out were those who used multiple information sources.

That sounded almost self-evident eh? (Except for the getting married bit. I mean, how valid is anyone else's opinion?) That then brought to mind a number of jokes (another given), but foremost was the one about economists being invented to make meteorologists look good.

That lead me to thinking about meteorology forecasts and I wondered why NAIPS still doesn't put them in in normal English. Can't be that hard, there's software available and both RAAus and OzRunways use it.

WHY MAKE SOMETHING COMPLICATED?

All professionals use jargon - but I suspect it is mostly to make themselves look good and charge more for interpretation. Doctors and lawyers come to mind, although bad handwriting covers a multitude of sins. I imagine that disclaimers help though because, even when the jargon interpretation is done, the professional is off the hook. I have no idea what my accountant means but I merrily sign the disclaimer rather than go through the shoe box full of receipts.

But in the real world of aviation and meteorology, do we really need jargon? Why not cut out all acronyms (unless explained when first used) and put everything in plain English? Wouldn't that be safer? There, I've used the magic word and now you can't ignore me. And, what do we actually do about using multiple sources of information? Would it be useful to carry out an anonymous survey? I bet most people would put 'looking out of the window' as their first port of call.

What comes next? NAIPS? Synoptic chart (High pressure, anticyclone good/low pressure bad)? Phone app (are there any good ones)? Call Auntie Maude who lives near destination? Last nights' TV news report?

> "The military used to send up an aircraft to assess the weather"

I wonder how many people, after looking out of the window, would take off on the assumption they could turn back, divert or land in a known paddock if the weather deteriorated? The military used to send up an aircraft to assess the weather before the morning met briefing. So, look and see might not be as silly as it sounds. Depending on your experience, the aircraft you are flying, the terrain, the alternate landing grounds, fuel reserves etc.

If weather patterns move from west to east and you live on the east coast, forecasting shouldn't be all that hard. I mean there are all those people to the west of you who should be able to tell you what's coming. Furthermore, if weather patterns move relatively slowly, say over three days, then forecasting tomorrow's weather as the same as today's should give you a 66% chance of being right.

Anyway, surely in 2017 there have to be simpler, safer and more reliable systems for forecasting the weather. Especially since Aunt Maude was diagnosed with dementia.

Down the hole

NAME WITHHELD BY REQUEST

THESE STORIES ARE REAL – JUST NAMES AND PLACES HAVE BEEN CHANGED TO PROTECT THE INNOCENT

As a recent convert to navigating using GPS, I have been happily flying all over the east coast of Australia confidently assured of never being 'temporarily uncertain on my position' ever again.

What I didn't realise, until recently, is that, for all its benefits, GPS can also be the cause of major problems.

The lesson was learned during a recent fly-in. A friend and I set off early in the morning, heading inland from the coast in what can only be described as perfect weather – not a cloud in the sky.

Crossing the ranges, I checked my position using time, map and ground and was pleased to see I was right on track.

I usually operate the way I was taught 20 years ago, only using the GPS as a backup.

When I looked out the window and saw a town on the map, I'd say to myself, 'that should be Wee Waa (for example)'.

On the GPS, the map clearly showed it was Wee Waa and I felt confident I knew where I was, down to a tee.

The fly-in was a treat and the weather for the trip home even better than for the trip down. My friend dozed in the sunlight coming through the canopy as we droned along at 8,500ft with a very welcome 20kts tailwind. Not a cloud in the sky.

Approaching Tenterfield for the trip across the mountains to the coast, I noticed cloud appeared to be stacked up on the coastal side of the ranges and looked reasonably solid.

There was nothing vertical in it, just coastal overcast and at, my cruising level was well below me.

I decided to continue so I could get a better look at how far the overcast extended. Fifteen minutes later I could see the cloud was eight eighths and appeared to stretch unbroken to the coast.

I then realised that I had no visual reference to the ground and was now navigating solely by the GPS.

No good. I'm a conservative pilot by nature and, with a passenger on board, try never to take chances. I turned the aircraft around and set a new heading on the GPS back to Tenterfield which was about 20nm behind me.

The air over Tenterfield was mostly clear, so I descended until I was below the cloud, then turned back eastward for the coast.

No good. I wasn't 15 minutes along my new path when I realised it was grey and dark under the clouds and the mountains ahead of me were greyer still. The bumps got progressively worse as we neared the hills and it became clear we would have trouble getting through that way. It started to rain on us.

I didn't wait any longer but turned around again and headed back towards Tenterfield once more.

Now I know the smartest thing to do at this point would have been to land and work things out from the safety of the ground, but I was fixated on getting home and, to be honest, the thought never even occurred to me.

I still had a couple of hours of fuel on board and was only half an hour from home – and I had the GPS. So back over the top of Tenterfield, I climbed back to my original cruising height and set course for the east again. At least the air was smoother up there.

Halfway to the coast and with nothing but a blanket of white beneath me, the GPS low battery light started blinking. It had been a problem since I had bought the device second hand off EBay and I had been planning for a while to get it looked at. But there I was. I made up my mind to return to Tenterfield again, but just as I was about to turn, I spotted a hole in the overcast. Then another. I marked both on the GPS, thinking I could come back to them in a few minutes if I needed to. It also gave me the hope that more holes would appear as I neared the coast.

They didn't. It was solid, all the way to the sea. I was over the top of home, but had no way to get there. What to do? I circled for a few minutes, my eyes alternating between the GPS and its low battery warning light and the fuel gauge. It didn't seem as confidently full as it had at Tenterfield a short time earlier. I knew I was painting myself into a dangerous corner, but couldn't work out the best thing to do.

I decided to go back to Tenterfield, for the third time. My friend was now worried about all the coming and going and had picked up on my rising stress levels. Along the route back towards the mountains, I found the holes I had earlier marked as possible answers.

The GPS told me I was still over low lying coastal land, I knew if I could get down a hole, I could scud run the rest of the way home. I decided to go for the hole. Halfway down I realised it probably wasn't wide enough. Descending at normal speed was taking too much space. I slowed down, put on full flap and drove the aircraft into a tight turn. Still not enough room. I steepened the turn, fully aware that I was now near Vne and must be only moments from a stall. I could sense my friend getting more and more nervous beside me. If only he knew.

Still not enough room, I was going to enter cloud. I was nearly vertical. I couldn't steepen the turn any more. There was no other choice. Just as I knew we were done for, we popped out the bottom of the cloud and I let all the air in my lungs out in a large sob.

The weather under there was grey and damp, but who cared? We flew through several showers as we scudded our way home, but who cared? It was violently bumpy the whole way too. Who cared?

We were below the clouds and VFR and I could see the airport ahead of me and that was all that really mattered.

I made a reasonable landing and we pushed the aircraft away for another day. On the drive home, I occurred to me that if I didn't have the GPS I would never have risked going over the top of such a solid cloud layer. One look under the clouds would also have had me turning around to find somewhere to land – I'd done that many times in the past.

I had put both our futures into the hands of an uncertain GPS. I don't want to think about what could have happened if the battery had given up while we were still well out on that shaky branch. My friend has not flown with me since that day. I can't say I blame him.

FROM THE OPS DEPT / *VFR flight can only be legally conducted over a maximum of 4/8 cloud cover and the pilot must at all times be able to navigate with reference to the ground". This article provides an excellent example of why reliance on GPS can change your decision making. Only by sharing these stories can we all learn and stay safe.*

Nothing more than feelings

BY BRIAN BIGG

IT was one of those days in your life you never forget.

The sun was warm, the sky mostly clear, hardly a breath of wind to speak of.

I'd been waiting several weeks for just this sort of pearl of a day.

I'd rejected several others where the wind was a touch too blowy and others when the cloud cover was a bit too bulgy for such a low time flyer like me.

And I'd rejected one after I had already pushed the plane out and completed my pre-flight. I'd stood in front of the aircraft and couldn't shake a feeling that something was not right somehow. I'd not had that feeling before.

It was weird. A definite sense of foreboding.

I'd been over the aircraft with a fine toothed comb. Found nothing amiss. But still..

The longer I stood there, the stronger it felt.

I now know it was my subconscious trying to alert me to something it had noticed, something my conscious mind had not registered.

I've felt that feeling several other times in my life since and I've learned never to ignore it.

I didn't ignore it then either, thankfully, because the pilot who hired the same aircraft after me, was mid downwind in the circuit when the engine gave out a big 'clonk' sound and stopped cold. The pilot made a proper emergency landing and we all had a laugh about it.

I couldn't, for the life of me, figure out what it was which had tipped off my unconscious mind to a potential problem. There was nothing obviously out of place in the engine compartment. But my silent alarms had gone off strongly enough to wake my conscious mind.

The second time I got that same feeling was while scuba diving, 10m underwater off the coast of Byron Bay. Our group had been hand feeding little fish by cracking open sea anemones and holding them out. The anemone meat is like cocaine to reef fish. They go mad for it and we were all surrounded by shoals of lovely looking fish. I spotted a sea anemone lodged midway down a section of reef but, as I reached for it, my legs stopped paddling all on their own. The feeling had screamed at me and I was unable to move. I hovered in the water staring at the anemone and it was a full minute before I saw beside it a large moray eel, motionless, with its mouth wide open, gaping fangs warning me not to come closer. I had been about to put my hand in its mouth. You ever see the teeth on those things? You don't want that.

On another occasion some years later I was about to walk between two cars parked on a slope when the feeling hit again. By this time, I was well trained and hardly hesitated. I diverted

to pass above the cars and, as I did so, the higher car rolled back and smashed into the lower one. I never ignore the voice I heard for the first time as a student pilot.

Whenever I feel it during a pre-flight, the plane goes back into the hangar, regardless of where I need to be. No discussion.

But on this particular pearl of a perfect day I had no uneasy feeling, no weather excuses, no reason at all I could come up with to delay the moment any longer. I was ready.

I fronted the desk at the flying school and asked for the CFI. I was here to take my final test.

My instructor, a young bloke who later went on to fly zeppelins in the US, hovered nearby. We had become as close as is possible for two males in Australia to be, without actually marching hand in hand in the Mardi Gras parade.

He'd saved my life in the cockpit several times. In turn, I'd given him enough flying horror stories to scare dinner guests for the rest of his life. But if he said I was ready, then I was. He gave me the thumbs up.

The CFI at my school should probably have retired a few years earlier. He was a Second World War veteran, a feared figure around the airfield because "the young people today are out of control" and "flying schools are hopeless because the way we were taught in the war was the only proper way".

By the time my turn came around, he'd pretty much given up day-to-day instruction and only supervised the final flying exams.

The old codger was a terrifying prospect to us students and even his own staff tiptoed around him.

I didn't get off lightly. He picked holes in my paperwork and found fault with my logbook. Hell, he even found fault with the way I was dressed. He found a thousand more faults in the way I did my pre-flight and several hundred more in the way I taxied to the runway. He never wrote a single note on his pad, but you knew he wouldn't forget a thing.

My nerves should have been shot by this stage. I should have screwed up more and more as he continued to find fault in me because we all know terror is a terrible management style. But I didn't. And as we took off, I had a strong feeling of confidence.

We climbed out towards the low sun, a long slow underpowered drone to the air above the training area. Then something strange happened. The warm sun and droning put him to sleep.

For the next half hour, with the CFI snoring gently beside me, I flew around as smoothly as it is possible to fly. I made turns that were so gentle, Bob Hoover would have been impressed.

It became a challenge. How long could I keep him slumbering before I hit a bump or made a mistake and he jolted awake and my test would begin.

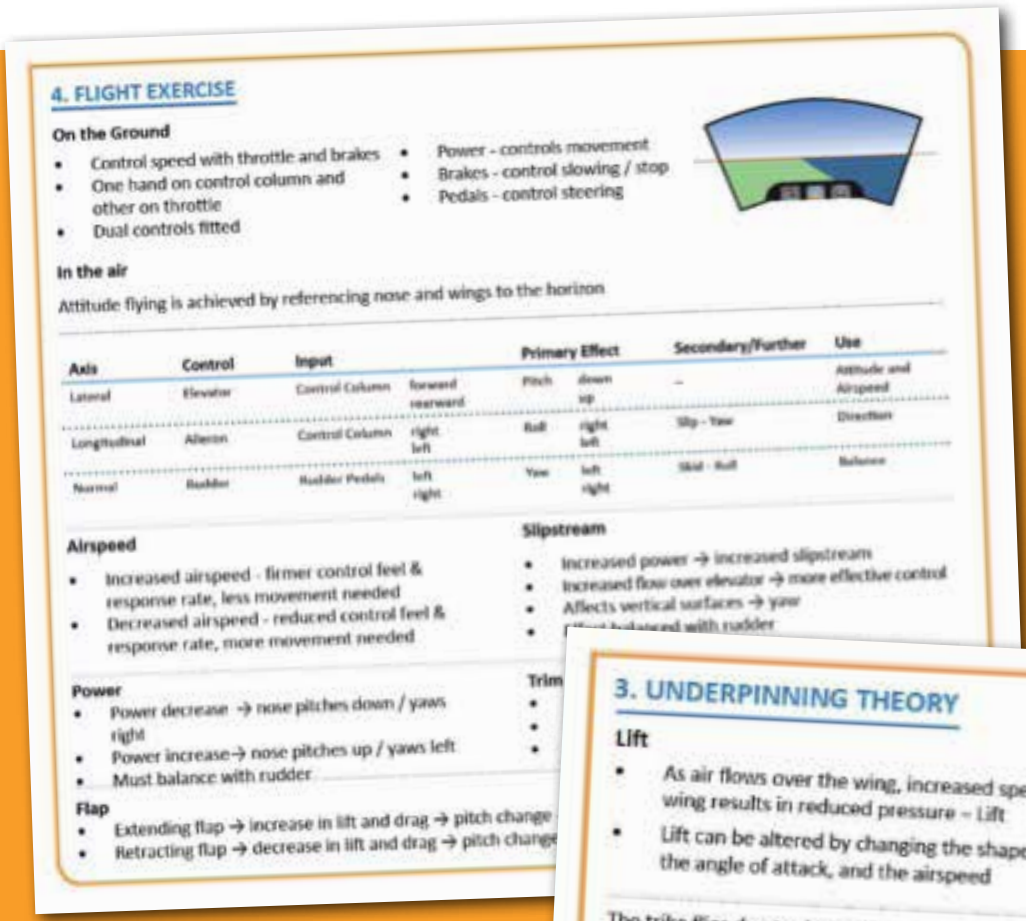
But he snored on and eventually I felt it best to head back before our fuel ran out. Concentrating on landing, which in those days seemed a lot harder than it does now, I didn't notice when he finally woke up but he was silently watching me. I made by far the smoothest landing I'd ever done to that point and was greeted with a 'Well done, young man". It was unspoken neither of us would mention what had happened. I was very happy he hadn't really tested me and found me wanting. He was no doubt keen to keep his nap away from the board of directors. We did go out quietly a few weeks later and he tested me properly. And I passed thankfully. He retired with all honours six months later. There were to be a lot of tests in my aviation future and I've passed them all. Quite frankly you'd never get away with it today. But that particular day is special for me.

With my newly stamped logbook, I went and sat on the log which was the airport fence in those days. I turned my face to the warm sun and smiled to myself. It may not have been an entirely proper way to do it, but I was a pilot at last. It was a good feeling.

RAAus gets FIRM with instruc

BY THE OPS TEAM

THE OPS TEAM IS PLEASED TO ANNOUNCE THE VERY FIRST RAAUS FLIGHT INSTRUCTOR REFERENCE MANUAL (FIRM) HAS BEEN COMPLETED



4. FLIGHT EXERCISE

On the Ground

- Control speed with throttle and brakes
- One hand on control column and other on throttle
- Dual controls fitted
- Power - controls movement
- Brakes - control slowing / stop
- Pedals - control steering

In the air

Attitude flying is achieved by referencing nose and wings to the horizon

Axis	Control	Input		Primary Effect		Secondary/Further	Use
Lateral	Elevator	Control Column	forward rearward	Pitch	down up	–	Attitude and Airspeed
Longitudinal	Aileron	Control Column	right left	Roll	right left	Slip - Yaw	Direction
Normal	Rudder	Rudder Pedals	left right	Yaw	left right	Skid - Roll	Balance

Airspeed

- Increased airspeed - firmer control feel & response rate, less movement needed
- Decreased airspeed - reduced control feel & response rate, more movement needed

Slipstream

- Increased power → increased slipstream
- Increased flow over elevator → more effective control
- Affects vertical surfaces → yaw
- [illegible] with rudder

Power

- Power decrease → nose pitches down / yaws right
- Power increase→ nose pitches up / yaws left
- Must balance with rudder

Trim

- [illegible]

Flap

- Extending flap → increase in lift and drag → pitch change
- Retracting flap → decrease in lift and drag → pitch change

3. UNDERPINNING THEORY

Lift

- As air flows over the wing, increased speed above the wing results in reduced pressure – Lift
- Lift can be altered by changing the shape of the wing, the angle of attack, and the airspeed

The trike flies due to the production of lift created by the wing and is controlled by the movement of control bar to affect weight shift in pitch & roll (2 axis)

- Control Bar movement affects C of G
- Moving forward/aft sets attitude of wing
- Rolling is achieved by moving bar sideways
- Rolling of wing occurs due to changes in wing shape

THIS ground breaking manual started over two years ago with a significant consultation process from RAAus CFIs, instructor trainers, pilot examiners and our GA brethren. It was aimed at providing a reference document to assist with standardisation of RAAus instructors by using standardised briefings, terminology and cockpit patter. It is planned all RAAus students and pilots will also benefit from this manual.

This is an industry first for RAAus and reflects substantial amounts of work over months, not only by Jill and Neil as the Ops Team, but input from our core CFIs and PEs and weeks of layout and graphic design work from Hayley Wilson, RAAus' Learning and Development Co-ordinator.

Right: A small extract of one part of a briefing on Effects of Controls for 3-axis.

The briefings provide example information for all lessons from Effects of Controls to Circuits and Circuit Emergencies for 3 axis and weightshift aircraft. Here is an extract of one element from the briefing on Effects of Control for Weightshift or Group B aircraft:

tors

RECREATIONAL AVIATION AUSTRALIA

CHAPTER ONE

The Flight Instructor

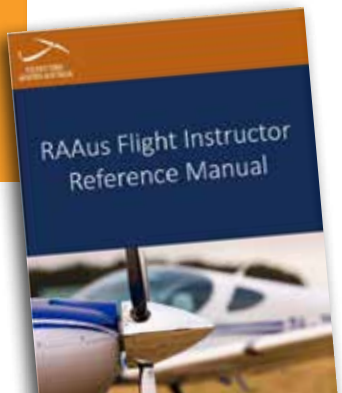
30 years ago, the first Instructors were drawn from the longest surviving ultralight pilots. They received little formal training or assurance of standardisation. RAAus has significantly evolved as an organisation since those early days. Survivability and aircraft handling skills which may have been appropriate in early ultralight instruction are now insufficient. Instructing is a skill that can be taught but teaching is an art that must be developed.

Only by acknowledging and integrating recognised teaching methods can we really start to address the requirements that denote a good Instructor in any aviation organisation.

Finally, here is an extract from the first chapter as a sneak peek.

The FIRM will become the standard reference text for all RAAus schools and replace the current Operations Manual Section 3.01 requirement for schools to have a copy of the CASA Instructor Manual. As a result all CFIs are expected to hold a printed copy and we will encourage all senior instructors and instructors to purchase a printed version as well.

Check the online shop soon to buy your copy.



A lot to take in

BY KEN NICHOLAS

THERE is a thing I found extremely worthwhile doing when it came to getting familiar with the aircraft and, in particular, the cockpit.

It dawned on me when I arrived home from my first training flight. I had been trying to recall the cockpit layout. I thought if I could memorise the instruments and switches, I could get in front of the game next time out.

So the following session I captured the complete cockpit instrument panel in one shot with a nice wide angle lens which became my wallpaper on the laptop. So even though my flight lessons were generally a week apart, I got to look around the cockpit every day when I booted up the computer. I also printed and laminated some close-ups of the instruments all powered up and showing their normal conditions.

I loaded the whole lot into a plastic pocket A4 binder, so I not only had some pretty pictures of the layout, but they included the list of V speeds, my pre-landing checklist, local radio frequencies and transponder codes and even runway numbers all nicely stuck in the middle of the panel for quick reference.

It's amazing just how much actually goes on in each lesson.

I tried to break it all down to individual items, a sequence of events from the time I started going through the checklist until I turned the master switches off at the end.

Very helpful, too, were the handouts I was given to help with the radio calls and a nice text description of circuit procedures, altitudes, speeds etc.

A light sport aircraft with pretty basic instruments shouldn't be too hard but, in the early stages, it was just about trying to put it all together and staying in front of the game. It wasn't just me either. I heard the same story from other students in the early stages like me.

The other thing which also helped, was keeping a flight diary. Like others, I use the ubiquitous GoPro. It does a very good job and is great for reviewing my day's efforts and to listen to my instructors comments again.

MOVING ON

After being shown straight and level, I moved on to medium turns.

Cloud around Lethbridge when I want to go flying seems to be consistently around the three to four thousand foot mark.

I set up cruise in the Tecnam, 5,000rpm and trimmed for straight and level flight. The weather wasn't so bad, a few bumps, but that just added to the challenge. All trimmed, the instructions were to head for the lake to the south west and maintain altitude.

The discussion then turned to looking out for other aircraft, keeping the wings level, the ball in the middle and oh, a quick check of fuel, temps and pressures. Then the question came, "how's your altitude going?"

Somehow while the looking around, doing other checks and having a chitchat, I'd gained something like 250ft and we were still climbing. It was an issue which became very apparent in my flying. Even though I considered myself to be pretty vigilant and alert to small changes, at 3,500 or 4,000ft I was not going to pick up on a change of a couple of hundred feet without looking at the instruments.

In times past, when I had the opportunity to be front seat of a GA aircraft, predominantly Cessnas, I had a memory of the instrument panel and cowling being quite high and in my face, restricting the view below and straight ahead.

It is completely different in the Tecnam. Trimmed for straight and level, the Tecnam looks for all the world like you're heading downhill, even though I'd set my rpm to cruise revs. At 5,000rpm and trim set for level flight, I still had the tendency to pull back on the stick ever so slightly because, from my previous experiences, it didn't look right. That was why altitude gain was something I knew I would have to watch out for.

It did seem like a battle at times. Where should I be looking? Ball in the middle, wings level, rpm, altitude and oh, I was climbing again. Of course, each time I'd look up from the instruments I'd discover a cloud had snuck up on me.

There was a lot to take in.

Level medium turns were next on the list, not quite like driving around the local supermarket car park. David demonstrated what he wanted and then it was over to me. First to the left, the instructions were for a co-ordinated turn keeping everything balanced; rolling in to 30° of bank angle and around we went. A full 360° orbit using the lake below as our start and end point. I rolled out and went into a right hand turn. I found it interesting to see how much difference there was in the amount of rudder needed from left to right turns. I found it was better if I went into the turn with a bit of rudder to start the turn and then balance it all with aileron and elevator, so I didn't over-roll or lose altitude, both of which I found myself doing early on.

After the runs we went back to the airport for circuits and I discovered my left and right legs still hadn't decided who was boss when it came to the rudder.

No billycart driver problems, thankfully, but I was just not relaxing when I should. I guess we'll see which leg wins next time out. They can sort themselves out though. I have too much else to take in.

To ‘V’ Or Not To ‘V’

DESIGNING YOUR OWN AIRCRAFT BY DAVE DANIEL

THAT IS THE QUESTION. WHY AREN’T WE ALL FLYING AIRCRAFT WITH V-TAILS?

THE history of aircraft design is littered with innovations which, at the time of their inception, were heralded as being game-changing or even revolutionary. However, with the exception of the jet engine, the vast majority have failed to live up to their promises. This shouldn’t really come as a surprise. Combine overly enthusiastic engineers excitedly pursuing a novel idea with a marketing mentality keen to make grand attention-grabbing claims and it’s easy to see where the hype comes from. But while you can fool people, you can’t fool nature, and many a promising idea has fallen foul of the laws of physics.

I’d argue that V-tails fall into this category. On paper they have a huge amount of promise and they turn up quite regularly on UAVs and jet-fighters. However, in the ultralight and GA world they remain something of a curiosity; but why is this?

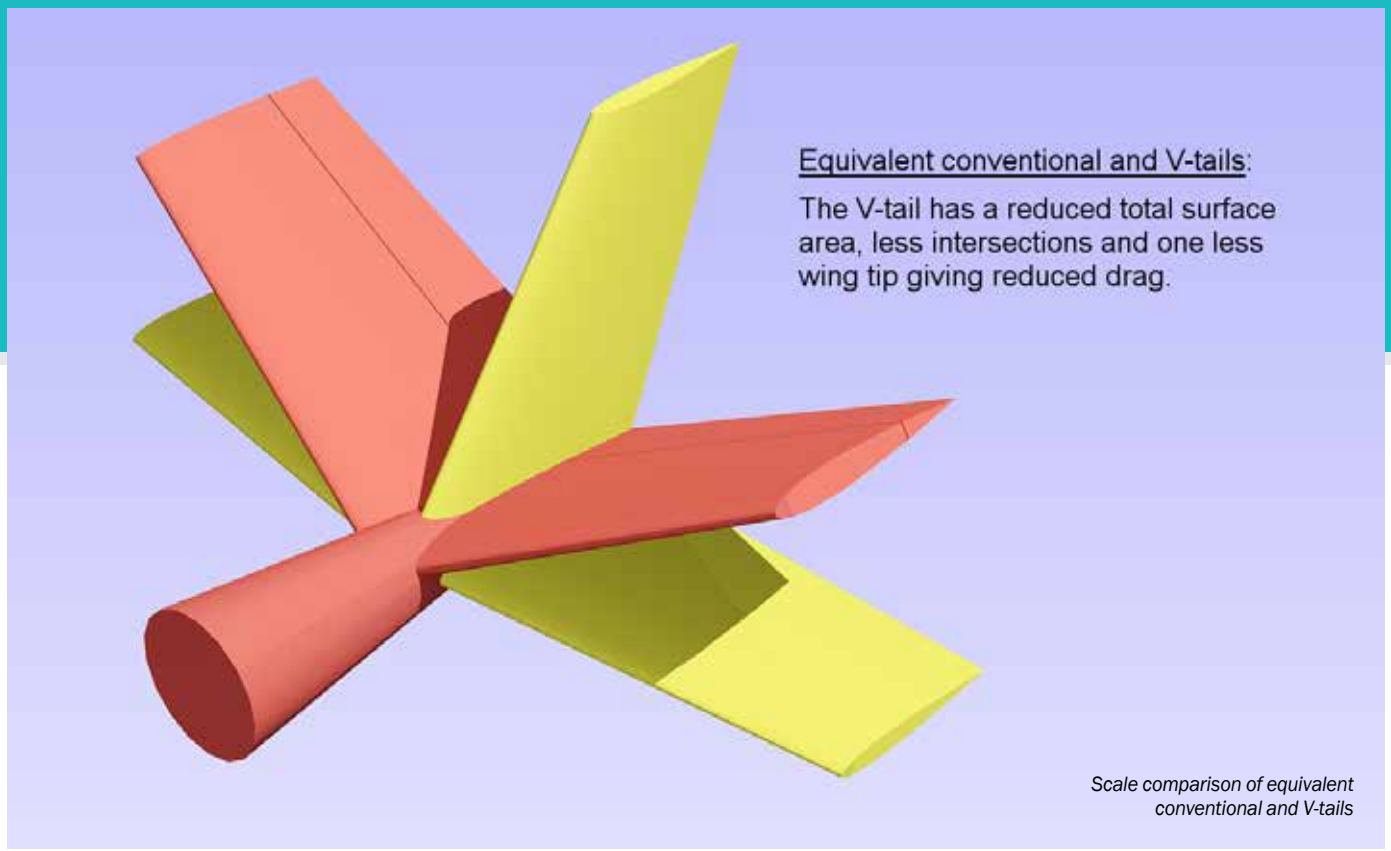
V. GOOD

Theoretically V-tails have a lot going for them, especially in the drag department. Firstly a V-tail reduces both wetted and frontal area. The theory goes that the two diagonally mounted aerofoils of a V-tail can perform the same job as the three separate fins in a conventional empennage, but with a smaller combined area. Hey Presto - smaller area, less drag. But wait, there’s more! Because a V-tail only has two fins, there is one less intersection between surfaces and one less wing tip too, so you get a bonus reduction in interference and tip drag as well. Clearly if you are chasing speed, a V-tail is the way to go.

Next on the list of V-tail benefits is control; starting with resistance to Rudder Lock. Rudder Lock is a phenomenon where large yaw angles, such as those occurring during a spin, generate massive aerodynamic forces on the rudder, pinning it hard over with more force than the pilot’s legs can overcome. Clearly an undesirable trait, and one which should be avoided in any aircraft, certified or otherwise.

V-tails have two other potential control benefits – based on the V configuration raising the tail surfaces relative to the fuselage. Firstly the V-tail is less exposed to ground effect meaning it won’t suffer from the same loss of elevator effectiveness conventional horizontal tails experience when close to the ground, i.e. when flaring for landing or raising the nose for take-off. Secondly, a raised position places the centre-of-pressure of the control surfaces above the centre-of-gravity of the aircraft. The benefit here is that you get greater pitch–up authority (albeit at the cost of reduced pitch-down authority) at large control surface deflections. This is because the drag generated by the deflected con-

V-tailed ultralights are out there, like this SV11



Scale comparison of equivalent conventional and V-tails

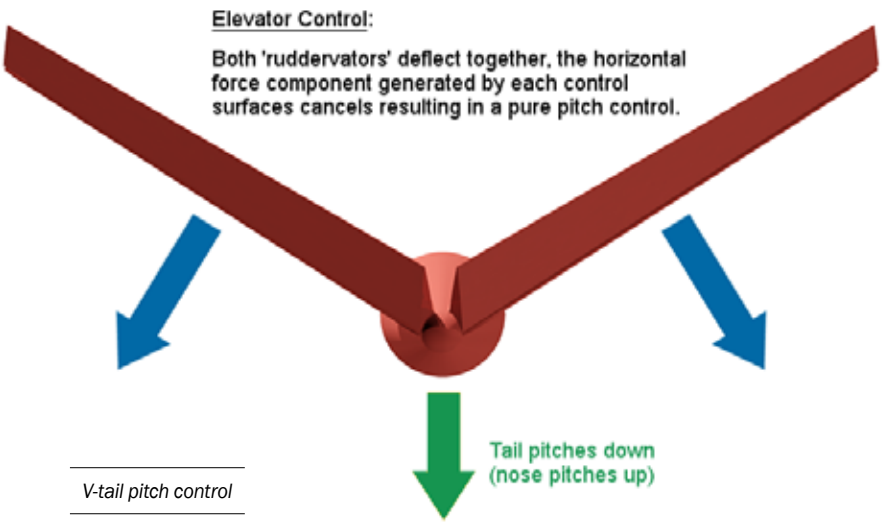
trol surfaces creates a supplementary pitch-up moment in addition to the usual pitch–up due to control surface lift.

V. BAD

So that's the good points wrapped up, but what about the bad stuff? First-up there are some drawbacks to combining the rudder and elevator functions. In aircraft with manual flight controls - which is pretty much all ultralights - aerodynamic forces acting on the controls get fed directly back to the pilot. For pilots used to conventional aircraft this can make for some unexpected interactions between control forces, notably when large amounts of trim are applied, or when applying large amounts of rudder input, such as sideslipping for a crosswind landing. Control forces are not the only problem, there is also potential for the controls themselves to interact, such as increased drag from large rudder inputs will also cause some degree of pitch-up.

The next problem is also control related. Mechanically combining conventional stick and rudder control inputs to give differential control surface movement for rudder and coincident movement for elevator requires a mechanical mixer assembly. This is not only adds weight but represents a complex mechanical component which is also a single point of failure for the control system, effectively putting the elevator and rudder control eggs in one basket. Trim can also be an issue. Providing a trim system on the pilot side of the mixer assembly is relatively straightforward, but removes the benefit of having a trim system which is independent of the primary controls. A separate trim system, on the other hand, will provide redundancy (required if an aircraft is to meet FAR Part 23), but is more complex and heavier to implement.

On the subject of weight, you might imagine that having fewer and smaller surfaces would produce a weight saving. Somewhat surprisingly this turns out not to be the case. While there is inevitably some saving from the reduced overall surface area, each V-tail fin is doing duty as both horizontal and vertical tail and so tends to be larger in area than any single conventional tail surface. The end result are greater aerodynamic loads, which in turn require stronger and thus heavier structure, giving up any weight benefit.



V-tail pitch control

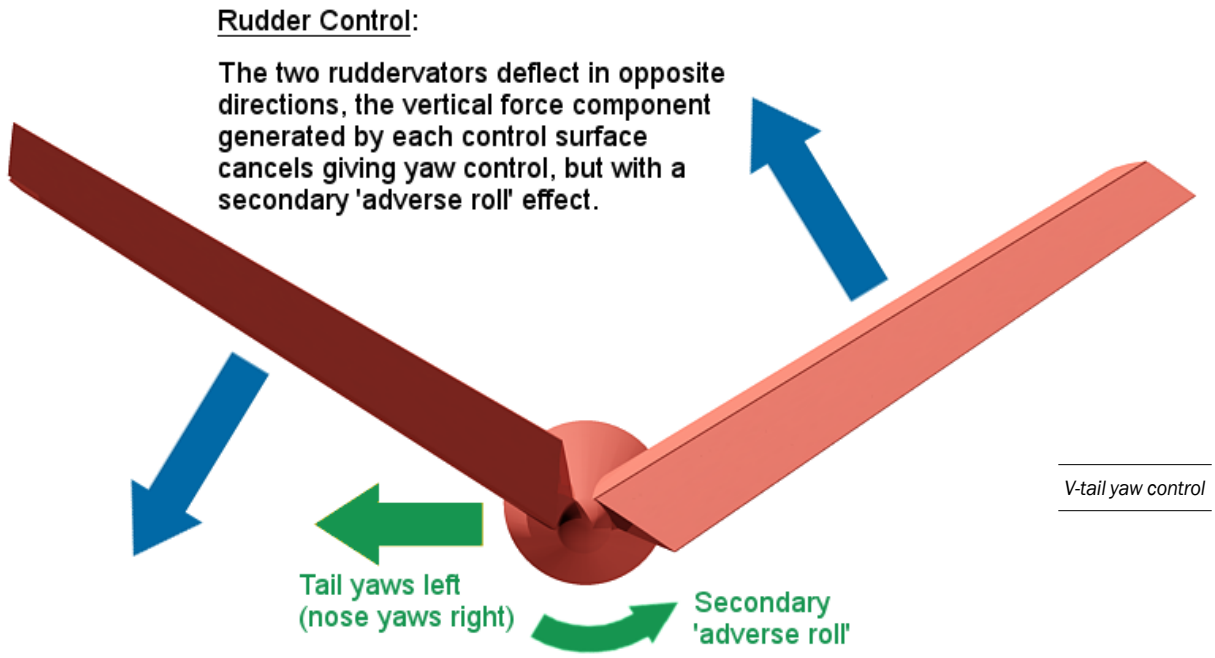
The final drawback for V-tails is adverse roll. We are all familiar with adverse yaw, the tendency for the nose of an aircraft to yaw away from the direction of bank when rolling - caused mainly by a difference in drag on each wing due to aileron deflection. The usual piloting response to adverse yaw is to apply rudder to counteract the yawing moment, but with a V-tail the act of applying rudder to counteract the yaw generates a rolling moment which tries to roll the aircraft out of the turn, i.e. adverse roll.

IT'S JUST DIFFERENT

There are a few aspects of V-tails which don't fall into the realm of advantage or disadvantage; they are just differences that need to be considered. One of these is dihedral effect. A V-tail, by definition, has a lot of dihedral and this supplements the dihedral effect of the main wing. This tends to make the aircraft more laterally stable, but also makes it more prone to Dutch Roll. With a conventional tail, the solution would be to increase the directional stability by increasing the vertical tail area. This isn't an option for a V-tail, because decreasing the 'V' angle to give more vertical tail area also increases the dihedral effect and so doesn't fix the problem. In fact, the usual solution is a Y-tail which adds a small fixed vertical tail to improve directional stability.

To 'V' Or Not To 'V'

DESIGNING YOUR OWN AIRCRAFT BY DAVE DANIEL



V-tail yaw control

Finally, a claim often made is that V-tails are easier/cheaper to manufacture – because there is one less fin and one less control surface to build. This simplicity argument is certainly true for servo-controlled systems, but for manual systems it's not so clear cut, having to be balanced against a control system which is significantly heavier, more complex and costly.

In summary, V-tails do have their place. If you have jet wash or water spray to avoid; or are fanatical about minimising drag, they might be the way to go. They make even more sense if your craft is unmanned or fly-by-wire - thereby avoiding the control feedback quirks. However, for an ultralight, I don't really see the point. As the comparison between the Sonex and Waiex demonstrates, there is no real performance or weight difference to be had between the two tails. In the end it really comes down to aesthetics, so if you like the look, why not? Just don't expect miracles in the performance department.

Doing the 100th COW

BY PROFESSOR AVIUS **AVIATION GURU**

THE education system constantly promotes the importance of the correct environment. It notes that learning is a state of mind. Life is continually about learning and then storing those experiences in a prioritised order so you can quickly and orderly draw on them (experience) when required.

To learn from a syllabus, firstly the syllabus needs to be created. The pioneers of flight didn't have a syllabus and, during the first experiences of powered flight, man and machine often didn't emerge unscathed. But the experiences were noted - some officially, others in the minds of survivors and, over the 100 plus years of flight since, these experiences have been consolidated into a flying training syllabus.

The RAAus training syllabus is generally in harmony with other flying training syllabi. It is about the accumulation of the positives and the negatives via systems developed to reinforce the positives, addressing the negatives and leading to the objective of managing risks and progressing toward the ultimate outcome of elimination – no accidents.

SO WHAT IS LEARNING?

The learning environment typically refers to an educational approach, culture or physical setting in which the teaching and learning occurs. It typically refers to the context of educational philosophy or knowledge experienced by the student, but may also encompass a variety of learning cultures (tutoring/practice/proficiency). For a learning environment as in aviation, it also includes factors like the operational characteristics of the instructors, the instructor group or institution. CFIs manage, as far as humanly possible, the delivery of pre-flight briefings and ensure instructors in the school deliver similar messages in all aspects throughout the training process.

As infants we learn to crawl (self-taught); from crawl we learn to walk (now we're more accepting of assistance in the learning process). Many falls and maybe a few gravel-rashes and even the odd broken bone later, we finally master that experience. Then we grow and the falls, busters and gravel-rashes happen all over again when we lean to ride a bycycle (further assistance). And so on.

The learning environment for RAAus schools is controlled. The FTS is approved at the initial setup and inspection and reviewed by RAAus Ops at the biennial review; the operational characteristics of the instructors are managed through the instructor BFRs and CFI reviews.

The pre-flight inspection can be described (and should always be considered) as trying to find a reason not to go flying, hence the need to be ultra-diligent and thorough (the same as we expect from our maintenance providers); and, many would argue, just as important as each of the other actions throughout the flight itself. The need for diligence doesn't stop after the pre-flight either. Our undivided attention needs to be there from the moment we open the hangar doors and only ends when the hangar doors are closed.

Even planning a single circuit contains many steps, of which are often semi-automatic: Pre-flight inspection; fuel management (quantity/refuelling/water checks); positioning the aircraft for start; start-up and taxi; entering runway; pre-take off safety brief; it seems to go on and on and on – but collectively it is sequence of otherwise normal processes. If the approach to the stall and the subsequent full stall and recovery wasn't deemed to be important, it wouldn't be in the syllabus; similarly this is just as important as being able to conduct a safe landing on return to the field when there is a moderate crosswind.

> "A prime example of normalisation of deviance"

If the training has been delivered in accordance with the syllabus, and the Pilot Certificate candidate meets the minimum standards and the BFRs are thorough, why is it that our flying machines continue to be bent and pilots injured? In the main, is it the result of an accumulation of factors which amount to the normalisation of deviance.

How many times have you done the COWS fuel check (Colour/Odour/Water/Sediment) and not identified any issues – I would suggest 100's if not 1,000's of times. The numbers are no surprise but there have been a few, over many years, where traces of water were found (after the aircraft was parked in heavy rain for example). Would I upload fuel from the local aerodrome refuelling facility without completing the COWS check? No. But have I seen it happen. Maybe the pilot had more confidence in the system than I do, a prime example of normalisation of deviance. It's the view that if the previous 99 COWS checks were OK, there was no reason to do it again at number 100. We all know what happens then.

The flying training syllabus is a continuing effort to make sure that the deviance never becomes normal.

Digital assistance

THE BEST BITS ABOUT BUILDING YOUR OWN BY DAVE EDMUNDS

EONS ago I purchased a Garmin 96C GPS navigator. I thought it was magnificent because, for the first time, I knew exactly where I was. I have always been a bit challenged and uncertain about traditional navigation methods, viewing arrival at my destination as something of a miracle.

My Garmin had a very rudimentary database. It showed controlled airspace, airfields and some other locations, with a lot of blank space between. It also allowed the addition of user waypoints.

I did not go digital, except for a spreadsheet, to flight plan. I used my desktop computer to look up weather and NOTAMs.

For people who did go digital there was quite a large range of support programs, which generally stood alone. For example, weather information was not connected to your digitally developed flight plan. There were some rudimentary ways to upload flight plans to your GPS device.

The smartphone and the tablets derived from them revolutionised all of this. This technology had two main technical advantages. Firstly, the quality screen allowed the display of information simply not possible on the earlier devices. The screens made readable moving map software possible. Secondly, the vast processing power and integration of other electronic capability, such as GPS and 4G, allowed a level of integration and innovation simply not possible with devices such as the older Garmin.

> "There is no reason to suppose the GPS chips used in certified devices are any better than those used in tablets."

Without having researched this, my discussions with other pilots suggests most of us are now using either Apple IOS or Android devices running either Ozrunways or Avplan. The wise among us are probably using an IOS phone and Android tablet or vice versa, to provide some additional insurance against possible software glitches. Both programs provide for two devices in their licences. On trips, I use both my phone and tablet in the cockpit.

The suite of programs and tools we used in the past are now neatly organised and integrated for us. We no longer need separate flight planning software, weather information (though there are some caveats), and increasingly we will not need traffic information near civilisation. We have flight plan submission and a host of other bits and pieces related to our moving map software.

The ability of these devices to offer live information is also very useful. For example, the flight planning software allows you to determine an optimum altitude based on current weather information.

I particularly like the feature whereby you can overlay NAIPS weather onto your flight plan. Ozrunways allows you to click on a hyperlink to show weather fronts in relation to your plan. I have always been frustrated by statements in weather information such as "ISOLATED SHOWERS E OF MVI/YCOM CONTRACTING TO NE OF MVI/YGLB/NAMA AFTER 23Z"

Most devices incorporate a solid state magnetic compass in addition to the GPS unit. The ability to calculate crosswind is now something of academic interest, as the devices will provide you with track and ground speed. You can display both track and heading, but unless I am missing something, you cannot directly display crosswind. I stand to be corrected.

The capability of what we have is far ahead of our regulatory environment. For example, both Avplan and Ozrunways provide live traffic information, providing you are within mobile range. This begs the question as to just what additional electronics is required to provide full transponder functionality. Surely we do not need another GPS chip in the cockpit. There are not many manufacturers of GPS chips and there is no reason to suppose those used in certified devices are any better than those used in tablets. There is a difference in the software, but really, that is all.

I emailed Ozrunways and asked whether it would be technically possible for them and Avplan to use a common database so traffic information from users of either program could be displayed on each other's software. Turned out to be a very sensitive topic but I think it would be a terrific safety tool for pilots.

There is a free EFIS application available on both iPads and android systems. The iPad one I tested was not quite there. It requires more work on stability. You can buy an electronic module which connects to your device and improves stability. However, there is no intrinsic reason why the internal sensors cannot be made to provide sufficiently good information. This is rather the point. Modern tablets have astonishingly good sensors for monitoring their environment and it is this feature which has allowed the development of the range of applications. I have no doubt an EFIS program will get here fairly quickly.

Additional systems monitoring is another question. The range of sensors provided on a tablet cannot provide systems monitoring. Some of the things you would require are EGT and CHTs, water temperature, oil temperature, oil pressure, air and manifold pressure, RPM, power output would be nice, voltage and current and air speed.

I have used an RPM application on my phone to check my tachometer. It works by listening to the exhaust pulses. It only works well for me outside the cockpit, where the sound is less muffled.

The latest Apple devices and a large range of Android devices have a barometer, although I am not aware of any flight software which uses them, nor can I see how they might provide accurate information in the cockpit. The doors in my plane don't fit too well, and the airflow seems to provide quite strong air currents.

The sensors required to do any of this literally cost only a few dollars, if that. To acquire and store this data is, for most of these parameters, remarkably simple. To display the data on a tablet is a simple task for anyone experienced in programming the things.

My experience is that programming them is not rocket science, but the development systems are so large and complex, this sort of development is better left to someone who deals with the programming environment on a regular basis.

I mention this because I am not aware of any off-the-shelf system that will display this sort of information on a tablet. There does appear to be a hole in the market for a data acquisition device, perhaps communicating via Bluetooth and tablet software to display that data. There was nothing on display at Oshkosh this year.

You can, of course, buy a complete instrumentation package which will do exactly this. A JDM 740 engine instrument will perform a fair subset of the list above and costs $3,200, without sensors. You may see my point.

DESTINATION

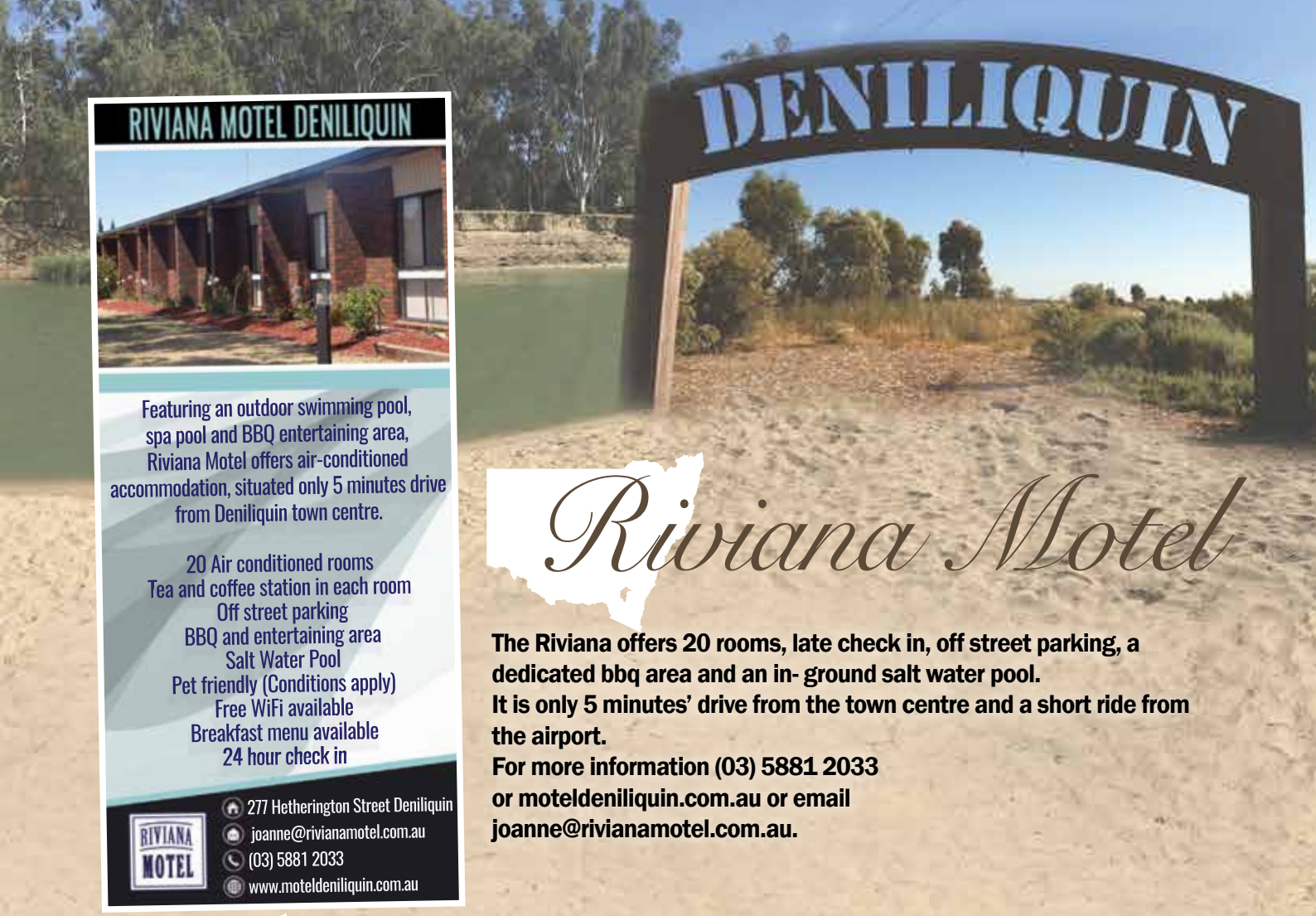
Delightful Deniliquin

Deniliquin is the perfect place for a weekend or week-long getaway. It has nature, action and outdoors. The town is located in the Murray region, 725km south west of Sydney and 285km north of Melbourne. It's an aquatic playground for waterskiing, wake-boarding, boating and fishing. The region is also a bushwalker's paradise. The Edward River is home to the Murray Valley National Park and Murray Valley Regional Park, which were established to protect the Riverina's majestic river red gum forests, a unique ecosystem with more than 60 threatened native animal species and 40 threatened plant species.

There are lots of things to do; camp out overnight by the river, go walking along the tranquil Gulpa Creek trail, fish for your dinner in the mighty Murray, paddle along the river in a canoe or kayak. If you're interested in birds, the Reedbeds Bird Hide is also popular. Deniliquin is a favourite destination for houseboats. The perfect camping spot around every corner, NSW's most enjoyable farm stay experiences, caravan parks, motels and very comfy hotels.
The town is an extensive range of accommodation to suit every budget.
Here are the best ones.

Settlement Motor Inn

Large spacious rooms, queen beds, lovely air conditioning.
The Settlement is only two minutes from the centre of town and a short hop from the airport. It's a great base to explore the region.
For more information, (03) 5881 3999 or settlementmotorinn.com.au.

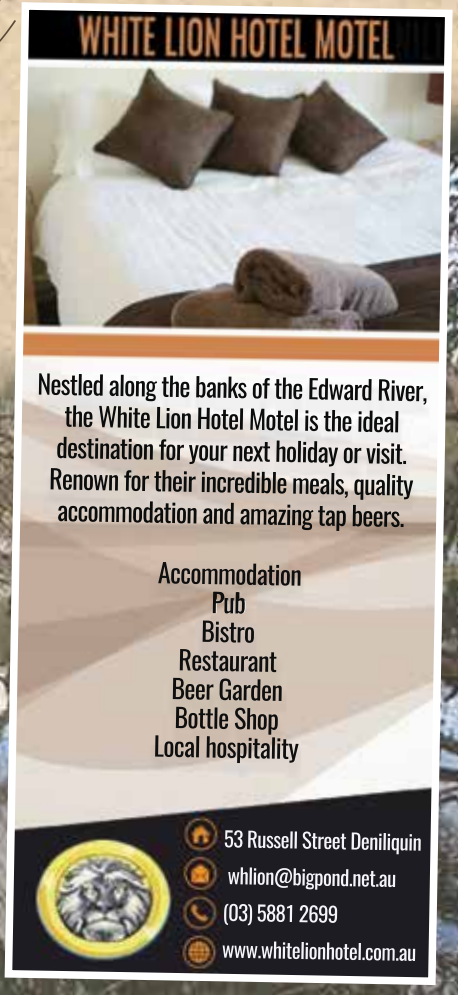


Riviana Motel

The Riviana offers 20 rooms, late check in, off street parking, a dedicated bbq area and an in- ground salt water pool.
It is only 5 minutes' drive from the town centre and a short ride from the airport.
For more information (03) 5881 2033 or moteldeniliquin.com.au or email joanne@rivianamotel.com.au.

White Lion Hotel

The White Lion is renowned for its meals, quality accommodation, tap beers, contemporary, old country styling, open fires and warm hospitality. It's just a 10 minute stroll to the local shops and 5 minutes from the airport.
A pick up service is available for pilots in the hotel's mini bus by prior arrangement.
For more information, (03) 5881 2699 or www.whitelionhotel.com.au.



5000 10 X 6 FT BOX TRAILER

nil Airframe Hours, nil Engine Hours, nil. 10 x 6 ft Box Trailer with 2,000kg GVM. Mechanical override brakes, 50mm towball. Please contact 0424 530 225 and talk with Paul.
PRICE $2000.00
CONTACT KELLY STIRTON

5003 X-AIR HANUMAN

270 Airframe Hours, 1350 Engine Hours, Hanuman X-Air Hanuman. Rotax 912 100hp. 80 Litres Fuel @ 15.7 litres per hour. MTOW 544 kgs. Cruises 85 knots @ 4800 Rpm. Climbs at 1000 fpm at mtow. 270 hours on Airframe
PRICE $37500.00
CONTACT GEOFF SHEATHER 0439 131 313

5016 SONEX 3300

5 Airframe Hours, 5 hours Engine Hours, Sonex. Sonex taildragger, 3300 jabiru, sensenich prop, MGL velocity avionics, engine management & radio. May be able to arrange delivery.
PRICE $38000.00
CONTACT TONY MESSENGER 0400 610 076

5017 SAVANNAH VG

62 Airframe Hours, 62 Engine Hours, Savannah. Savannah VG, excellent condition, low hours, always hangar'd. (12m x 12m hangar also for sale, $40,000)
PRICE $60000.00
CONTACT ERIN JAMES POTTER 0427 042 350

5024 SKYFOX GAZELLE

980 Airframe Hours, 980 Engine Hours, GAZELLE. Skyfox Gazelle three axis light sports aircraft, reg RA-AUS 24-4090 Rotax 912 T/ time engine, airframe 980 hours. Fitted with radio and intercom. Garmin 500 GPS.A delight to learn in and fly, Can be purchased with custom built trailer.0407692299
PRICE $32500.00
CONTACT JOHN SMITH (08) 8735 7115

5026 JABIRU FOR SALE

674 Airframe Hours, 674 Engine Hours, UL500. Jabiru UL500 2200cc Solid lifter LCH conversion A reliable, delightful, simple, no vices aircraft. Long wings with winglets provide stability, reduced take off, approach and stall speeds. Call for a detailed data sheet. 0468931895
PRICE $40000.00
CONTACT DANIEL COSGRIFF 0468 931 895

5032 MORGAN CHEETAH

326.2 Airframe Hours, 55 hours Engine Hours, Cheetah. Morgan Cheetah, Camit 2200 engine, 55 hours on the motor, 350 airframe, no accidents, 115 KTS cruise, Black.
PRICE $38500.00
CONTACT JOHN TERENCE MURPHY 0409 308 232

5036 TOPAZ AIRCRAFT - FLYTOPAZ.COM

200 Airframe Hours, 200 Engine Hours, Topaz. The TOPAZ LSA climbs like a rocket and glides like an angel (17:1), light on the controls, Rotax powered, carbon fibre design with stainless steel fixtures, cruise to 120kts, low fuel use, suit a new buyer - see aircraft at www.flytopaz.com.
PRICE $95000.00
CONTACT AIRSPORTS 0422 446 622

5037 AIRBORNE XT912 TUNDRA ARROW MICROLIGHT TRIKE

317 Airframe Hours, 313 Engine Hours, XT912 Arrow. Trike & wing in excellent condition. Kept in darkened hangar. Trike TT 317 hrs. Arrow S wing TT just 40 hrs. Flies perfectly, all maintenance recorded. Two yrs rego. 912 freshly rehosed. Meticulously cared for. Trike trailer loan by arrangement.
PRICE $29500.00
CONTACT ROB STEWART 0438 394 174

5039 RANS COYOTE II S6ES

260 Airframe Hours, 260 Engine Hours, S-6es Coyote li. Registered till June 2017. Rotax 582 UL engine 260hrs. New BRS recovery chute installed December 2015. Large roomy cockpit with sliding seats. Folding wings for easy storage/trailering. All VFR instruments. Search Youtube for "Tuflux RANS Coyote".
PRICE $27500.00
CONTACT GORDON JAMES BAILEY 0409 348 293

5042 X-AIR HANUMAN

200 Airframe Hours, 200 Engine Hours, Hanuman. TTIS 200hrs. Factory built (can be but never has been used for training.) 80hp Rotax 912, 80ltr fuel tank 15lts / hr MTOW 540kgs 75kt cruise STOL. Quick folding wings for storage 2 headsets with column mounted PTT. Dash mounted Garmin 495 GPS. Always hangared a treat to fly ideal 1st aircraft.
PRICE $43000.00
CONTACT ROY ELLIS

5046 AEROPUP 19-5206 TAIL DRAGGER X2 SEATER TANDEM

475.0 Airframe Hours, 475.0 Engine Hours, Aeropup. Aeropup Tail Dragger 475Hrs TT, Jabiru 2200 85hp 475hrs TT (a good one), folding wings, see WWW. aeropup.com , can be registered GA, Stits covered, XCom radio, Miser fuel flow meter, registered trailer, Strobes, wigwags, electric flap, tundra tyres.
PRICE $36000.00
CONTACT TONY PETER LOEFFEL 0432 341 681

5049 JABIRU SK

1217.4 Airframe Hours, 1217.4 Engine Hours, SK. Jabiru SK with 2.2 solid lifter motor, complete service history, cabin heater, always hangared, 1000 hour engine rebuild 200 hours ago, 65 lit tank plus 50 lit back up, Garmin GPS AREA 550, new tyres. Flys like a new aircraft.
PRICE $29950.00
CONTACT JOHN FREDERICK YOUNG 0418 855 235

5050 AIRBORNE XT 912 OUTBACK

65 Airframe Hours, 65 Engine Hours, Outback xt 912 trike. Outback 912 xt.Very nice condition,always hungered,fully serviced and logged,many extras .65 hrs on base,25hrs on arrow-s wing. .Trailer this unit away at a give away price JOHN 0419793877
PRICE $37000.00
CONTACT JOHN ELCOCK 0419 793 877

5055 AEROCHUTE DUAL

32 Airframe Hours, 32 Engine Hours, AEROCHUTE DUAL BIG PROP. AEROCHUTE DUAL
PRICE $17000.00
CONTACT ED HERRING 0408 787 018

5057 RV-3A

286 Airframe Hours, 626 Engine Hours, RV-3A. RV performance with Lycoming reliability. Lycoming 0-320-A2B 150HP,150-160kt TAS cruise @32lph. New prop, instruments & paint. A/C can be registered VH if aerobatics required, and can be delivered anywhere in Australia for cost. $65,000. ph 0428719639
PRICE $65000.00
CONTACT PETER GILBERT 0428 719 639

5063 AIRBORNE TRIKE

205 Airframe Hours, 205 Engine Hours, XT582. 2012 airborne trike XT582, cruise wing, adjustable trim, 205hrs wing and base. excellent condition. wing never packed. Easy and a pleasure to fly. Skydat digital display, radio, headsets.$25000 email ianholmes3@optusnet.com.au. BRS parachute $2200
PRICE $25000.00
CONTACT IAN HOLMES 0409 156 931

5071 JABIRU J 230 D

305.5 Airframe Hours, 305.5 Engine Hours, J-230. This plane is in excellent condition and performs great. Always parked in a Hangar and well maintained. Has loads of power for short runway take of and landings.
PRICE $69000.00
CONTACT BARRY ESPINOS 0428 216 816

5072 X-AIR F

365 Airframe Hours, 365 Engine Hours, X-Air F. X-AIR F, rotax 618, brolga 3 blade prop, micro air 760 VHF, partially dismantled. Phone: 0417 228 671
PRICE $7500.00
CONTACT MIKE BRADY 0417 228 671

5073 JABIRU TAILDRAGGER - 3300

650 Airframe Hours, 650 Engine Hours, SPT-3300. Solid Lifter Engine with fine finned heads, Standard Instruments plus Microair Radio, GTX327 Transponder, Garmin 196 GPS, GT40 Flight Data, Card Compass, Tru Trak Auto Pilot coupled to GPS. Aircraft hangered at YWSL. Total time - A/F & bottom end 650hrs, top end 150hrs. PRICE REDUCED TO $35000
PRICE $35000.00
CONTACT DARYL HOOKE 0466 925 474 DGHOOKE@GMAIL.COM

5075 AIR CREATION TANARG 912 TRIKE

437 Airframe Hours, 670 Engine Hours, Tanarg 912 Bionix 13. Due to recent medical restrictions i need to sell my very safe and comfortable french made TANARG. Very sad. It has the amazing BIONIX 13 WING with in flight adjustable trim giving you easy short landings and a faster cruise speed. Check out the 'SPORT PILOT' May 2015 issue for the write
PRICE $45000.00
CONTACT MICHAEL MURPHY 0488 361 236

5077 JABIRU LSA .3J

620 Airframe Hours, 147 Engine Hours, LSA55:3J. Jabiru Factory built Dec 1996. Reg No 55-1846. Total air-frame hrs 615hrs. Always housed in Hangar at Wentworth Aerodrome. Standard instruments plus vac pump (AH & DG). full condition report available. Offers around $30,000. ph: 0428727152
PRICE $27500.00
CONTACT WILLIAM POWELL 0428 727 152

5078 ROTAX 503 ENGINE AND GEARBOX

nil Airframe Hours, nil Engine Hours, nil. Rotax 503 engine (twin carb / twin ignition) and B "type" gearbox total time 1.5 hours of run in time ,never used to fly an aircraft . Also come with a complete new exhaust system. Phone Russell on 0428404156
PRICE $5800.00
CONTACT RUSSELL SMITH 0428 404 156

5080 JABIRU J120

450 Airframe Hours, 114 since Zero timed Engine Hours, J120. Engine 114 since Zero Timed.Many new parts used. Crankshaft magnetic particle checked. Aircraft could go back into commercial work with check. 1/2 share in Steel Hangar near Bega/ Merimbula available cheap
PRICE $45000.00
CONTACT NEVILLE JOLLANDS (02) 6494 4125

5084 F OXBAT A22LS

120 Airframe Hours, 120 Engine Hours, Foxbat A22LS. FOXBAT A22LS. Near new aircraft, 120 Hours, in pristine condition. Would suit new aircraft buyer. Fully equiped panel including Dynon Flightdek D180 EFIS / EMS, backup Alt. & ASI, Mode S Transponder, i/Pad & GPS mounts. Always hangared.
PRICE $97000.00
CONTACT WARREN MCILWRAITH 0427 183 232

5086 ROTAX 912A 100HP CRANKCASES FOR SALE.

nil Airframe Hours, nil Engine Hours, nil. Rotax 912A 100HP crankcases for sale. Year 2011+ improved crankcases, tt 1335, in good condition. Ideal for replacing earlier model flawed cases.
PRICE $3850.00
CONTACT CHRIS 0434 141 377

5087 SHARE IN NEW VIXXEN

50 Airframe Hours, 50 Engine Hours, Vixxen. 13th Share in a new Vixxen based at Caboolture (YCAB). The aircraft has 50 hours currently and is operated by a friendly group for the benefit of the members, in the interests of economical flying. Price negotiable.
PRICE $10900.00
CONTACT HUGH DOUGLAS 0428 400 737

5088 FLIGHT DESIGN CTLS

598 Airframe Hours, 598 Engine Hours, CTLS. 598 airframe and engine hours. 130L fuel giving over 6 hours endurance at 110-115 TAS. Empty weight of 329kg giving useful load of 271kg.Always hangared and L2 maintained.No accident history. Immaculate condition inside and out. Price $132,000
PRICE $132000.00
CONTACT WILLIAM DAVISON 0419 632 477

5094 PIPER ARCHER II SHARE FOR SALE

0 Airframe Hours, nil Engine Hours, Piper Archer. Wanting to get your CASA ,Äì RPL/PPL/CPL Or just fly cheaply from Parafield this is the deal for you: PARAFIELD SYNDICATE SHARE ($5K) ,Äì PIPER ARCHER II. Fly $150 per hour wet and $75 per month fixed.See website: www.parair.webs.com 0400 132 138
PRICE $5000.00
CONTACT COLIN DREW

5095 TOPAZ

250 Airframe Hours, 250 Engine Hours, Topaz. Topaz 24-8438 ttis 250 hours. Rotax 912UL cruise 105 kts at 15 lph. Ballistic parachute. Standard analogue gauges, electric flaps, trim on central joystick. Wide cockpit, centre arm rest, leather seats, 40 kg luggage.$90,000 Contact Bob 0400230895
PRICE $90000.00
BOB MELDRUM 0400 230 895

5098 KARATOO J6

660 Airframe Hours, 385 Engine Hours, J-6 Karatoo. Two (2) seat side by side recreational aircraft with Subaru EA81 engine and Warpdrive 3 blade propeller. Two owners only and mine since 2007. This is a stable, reliable, economical aircraft to own and fly.
PRICE $22000.00
CHRISTOPHER ROBERT STEWART

5100 SAVANNAH 912 ULS

890 Airframe Hours, 890 Engine Hours, Savannah 912 ULS. Savannah 912 ULS well presented and maintained. Always hangared. Located Heckfield Gold Coast. Nil accident history. Inspections welcome anytime.
PRICE $45000.00
CONTACT SEAN SIEGMEIER 0458 122 990

5103 ZENITH 750 CRUZER

0 Airframe Hours, nil Engine Hours, 750 Cruzer . This is a brand new fully built kit which only requires a hanger to put wings on. Basic panel with radio.The kit alone is worth 42000 and it is already built
PRICE $38000.00
CONTACT BRIAN HOWARD 0401 060 613

5104 LIGHTWING TAILDRAGGER

2500 Airframe Hours, 324 approx Engine Hours, Lightwing GR912
PRICE $18000.00
CONTACT KERRY WATSON 0428 553 190

5107 SONEX 3300

242 Airframe Hours, 242 Engine Hours, Sonex. Price reduced. Sonex with Jabiru 3300, Winner of RAAus Best Kit / Amateur built at Ozkosh Narromine 2016. Easily removable long range tank 32L. 97L total. 130kt cruise @ 19LPH, 500nm range. Always hangered, first flown 2010. Engine complies with curr
PRICE $46000.00
CONTACT STEVEN WOODHAM 0434 727 152

5108 NARCO AT150 MODE C TRANSPONDER

nil Airframe Hours, nil Engine Hours, nil. Narco AT150 mode c transponder. This unit has no air time, it has been mounted into a project powered and tested by an avionics technician and found to preform as intended. The unit was removed from the project for an upgrade to mode S. This transponder is supplied with mounting
PRICE $450.00
CONTACT GRAHAM JOHNSTON 0417 985 200

5109 EUROFOX 3K 24-8546

1.8 Airframe Hours, nil Engine Hours, 3K. 2015. New aircraft with test flight hrs only, conventional instruments with Garmin GTR225 VHF Com and Garmin Aera 500 GPS. Excellent opportunity due to exchange rate and immediate delivery. $99,588.60 + GST. Ph Tony (03) 5381 1727 or 0418 811 737
PRICE $99589.00
CONTACT ANTHONY BRAND 0418 811 737

5111 SLICK MAGNETO AND HARNESS FOR VW

nil Airframe Hours, nil Engine Hours, nil. Slick mag impulse coupler, harness and auto plug converters for VW engine.
PRICE $350.00
CONTACT ALAN HAWKINS 0400 580 852

5112 JABIRU J160D LSA

650 Airframe Hours, 400 Engine Hours, J160D. Jabiru J160D light sports aircraft located in narrogin west Australia may be able to arrange delivery within Australia
PRICE $48000.00
CONTACT TONY MESSENGER 0400 610 076

5117 JABIRU J160

316.7 Airframe Hours, 316.7 Engine Hours, J160. Jabiru J 160 water cooled. No more heating worries. Home built by competent builder Rear door fitted. Always hangered. Low hours. Contact duguidls @ bigpond.com
PRICE $49000.00
CONTACT LES DUGUID (07) 4126 1280

5119 WANTED

nil Airframe Hours, nil Engine Hours, nil. Jabiru J230D factory built with Gen 3 roller cam engine low hours in VG condition. Contact Terry 0418 191857
PRICE $0.00
CONTACT TERRY CLARKE 0418 191 857

5121 JABIRU J170C

1902 Airframe Hours, 140 since overhaul Engine Hours, J170C. Jabiru 170C located at Jindabyne in Snowy Mountains. Lives in an excellent NEW hangar owned by Alpine Aviation Australia. The aircraft can remain here and be hired to/maintained by flying school. Great opportunity for a new owner! Great Position!
PRICE $52500.00
CONTACT NORMAN COOKE 0417 876 195

5122 FLY SYNTHESIS STORCH S500 100 HP ROTAX 912 ULS

200 Airframe Hours, 200 Engine Hours, Storch S. Always hangared.¬†Owner Built Kit. Aircraft, good looking and in good condition. Maintained to Fly Synthesis maintenance manual and Rotax schedule.¬†Business and social commitments have necessitated this regrettable sale.

PRICE **$52000.00**
CONTACT **LANCELOT GEORGE BOKAY 0416 074 701**

5125 TERRIER 200

237.0 Airframe Hours, 261 Engine Hours, Terrier T200. Factory built, composite construction, Registered Dec 2016 - 100 hp Subaru EA 81 engine 261 hours. STOL New prop, new additional oil radiator and pump. EPIRB Headsets, strobe and landing lights, electric trim, Tundra tires. Located Proserpine Qld.
PRICE **$40000.00**
CONTACT **ROGIN TAYLOR 0417 646 075**

5126 HUGHES LIGHT WING

466 Airframe Hours, 466 Engine Hours, 3A. Low hours low price. Aging pilot not flown for 6 years. Wings detached for transport. Requires maintenance related work VW engine, converted duel ignition and fuel pumps, well instrumented previous VHF registered now RAAus. Condition report by L2 Ex
PRICE **$23000.00**
CONTACT **MICHAEL KULOW**

5129 JABIRU J160C

4600 Airframe Hours, 1130 Engine Hours, J160C. Jabiru J160C in good condition inside and out, radio, transponder, flown regularly, good engine compression, 25hr services, Jabiru serviced regularly, Warwick QLD, $38,000 0407733836
PRICE **$38000.00**
CONTACT **KELVIN HUTCHINSON 0407 733 836**

5130 WHEEL PANTS

0 Airframe Hours, nil Engine Hours, Sonex. One set of two Sonex wheel pants fabricated here in Australia, light strong construction, in mould painted, with a high gloss finish. Dimensions= L 750mm x H 250mm x W 150mm. These wheel spats are ready to drill off and fit to your aircraft, no sand.

PRICE **$300.00**
CONTACT **DOUG TOPPAZZINI 0410 184 606**

5131 SONEX #1237

0 Airframe Hours, nil Engine Hours, Sonex. Sonex airframe professionally built with solid rivets through out. All major airframe work has been carried out. At this price you can have the airframe built for less than the price of a kit, not to mention shipping and taxes.
PRICE **$20000.00**
CONTACT **DOUG TOPPAZZINI 0410 184 606**

5133 SG AVIATION STORM 300

503 Airframe Hours, nil Engine Hours, Storm 300 SG Aviation Storm 300. Easy to handle and easy to fly. Cruises around 90-100 knots. $45,000 ONO. Please call Sid after 6pm.
PRICE **$45000.00**
CONTACT **SYDNEY BARKER 0423 407 998**

5134 JABIRU J230 D

911.1 Airframe Hours, 173.2 Engine Hours, J230 D. Jabiru 230 D Sept 2009 , Glass cockpit , Dynon 100 , Avmap EKP4 , Digital CHT , LOW fuel warrning ,Dynon AP74 Autopilot , Micrair VHF radio and trasponder , Turn coordinator , Cold start . TTIS 911.9 TETIS 173.2 (series 3 engine). Damage history 2012 , Prop and wing tip and new engine , unrecorded of hard landing , now noted in log book. Approved modification by ...
PRICE $68000.00
CONTACT PETER NOCKER 0403 279 587

5135 AGI SERIES 2000 - STATIC EARTH REEL

nil Airframe Hours, nil Engine Hours, nil. I have a spare static earth reel for sale. This reel is purpose designed for the petrochemical and gas industries to control static electricity hazards during transfer of flammable liquids and gases. This item would make an excellent static reel for an aircraft refueling station. 316 stainless steel construction with 30m ...
PRICE $325.00
CONTACT STEVE GRAHAM 0413 702 792

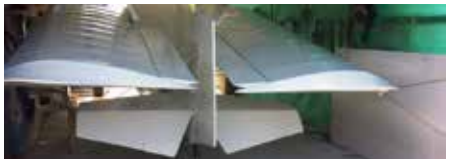
5136 FOXCON TERRIER FOR SALE (OR TRADE + CASH ON RV7)

750 Airframe Hours, 750 Engine Hours, TERRIER T200 CAMPER. FOXCON TERRIER T200 CAMPER 2004
PRICE $39000.00
CONTACT CARSTEN MANNTZ 0411 961 877

5137 AIRBORNE TRIKE 912 TUNDRA

100 Airframe Hours, 285 Engine Hours, XT 912 Tundra. Airborne XT 912 Tundra .Trike and wing in excellent condition. Always hangered Somersby NSW Airborne XT912 Tundra (serial #318) TT 285 hrs ,Ä¢Streak III wing TT just 100 hrs SN ST-295 All AD complied with . Punkin Head covers.
PRICE $38000.00
CONTACT GREGORY 0434 284 715

5139 DAKOTA HAWK



0 Airframe Hours, N/A Engine Hours, Dakota Hawk. All controls complete. A/C is fitted with Matco wheels and brakes. A/C is fully covered and painted. Will take a Rotax or Jab 100hp. Fully folding wings.
PRICE $28000.00
CONTACT BRIAN HOWARD 0401 060 613

5140 PARADISE P-1

286 Airframe Hours, 286 Engine Hours, P-1. PARADISE P-1
PRICE $95000.00
CONTACT ROBERT MCCOMBIE 0407 294 486

5141 SKYFOX GAZELLE

1070 Airframe Hours, 960 Engine Hours, Ca25n. Skyfox Gazelle three axis light sports aircraft, registration RA-AUS 24-4565. Roatx 912, 980 hours. Airframe 1070 hours. Fitted with radio and intercom. Certified for training purposes. Further enquires call Barrie 0429 456 438 or (03) 51456438 a/h.
PRICE $33000.00
CONTACT BARRIE JONES 0429 456 438

5142 95-10 SAPPHIRE TRI GEAR + TRAILER

300 Approx Airframe Hours, nil Engine Hours, Sapphire 95-10. For sale is a rare factory designed tri-gear Sapphire 95-10 with approx 300 AFHRs in a fully enclosed trailer. Aircraft is currently unregistered and in need of some work to fly again. Comes with some spares including a blown canopy.
PRICE $12000.00
CONTACT BRIAN O\'ROURKE 0411 535 388

5143 PIPISTREL ALPHA TRAINER NEW

8 Airframe Hours, 8 Engine Hours, ALPHA Trainer. Pipistrel ALPHA Trainer New 24-8302. It has both digital and analogue instruments fitted, radio, transponder, GPS, ELT, ballistic parachute and it is LSA registered and approved for training. Call Charles 0400 376 400
PRICE $118000.00
CONTACT X-AIR AUSTRALIA 0418 168 665

5144 MICROLIGHT FOR SALE

300hrs Airframe Hours, 300hrs Engine Hours, XT 912 Outback. Airborne XT912 Outback Trike
PRICE $25000.00
CONTACT MICHAEL LUDBEY 0499 283 194

5149 LIGHTWING GR 912

930 Airframe Hours, 536 Engine Hours, GR 912. Australian Lightwing GR912 Great rugged, reliable aircraft suitable for bush strips, nil accidents, dual headsets, ICOM vhf radio, maintained by owners and L2. Cruise 65 knots @ 13L per hour. Located near Hobart, Tasmania. Call Rob 0419 337 169.
PRICE $24000.00
CONTACT ROBERT EASTHER 0419 337 169

5150 TEENIE TWO

0.00 Airframe Hours, nil Engine Hours, Teenie Two. Teenie Two project. 50% completed all aluminium single seat aircraft. Wings 95% complete undercarriage made, maitco wheels and brakes Most materials needed to complete. Asking material costs only $4500 Ph 0354234116 Kyneton Vic
PRICE $4500.00
CONTACT NEIL LAWRY

5151 SONEX 19-8726

74 Airframe Hours, 2 Engine Hours, Sonex. VW Aerovee engine rebuilt 6 months ago with big bore kit. Not flyable at present. Engine runs but runs hot. Needs more patience and expertise than I have.
PRICE $19000.00
CONTACT KEVIN BOTSMAN 0404 009 861

5153 WANTED TO BUY (NO PHOTO)

unknown Airframe Hours, nil Engine Hours, ultralight. propellor.70"-72"diameter ivoprop 2 blade quick adjust [tractor] to suit 503 rotax
PRICE $0.00
CONTACT MAXWELL WILLIAMS

5154 TEENIE TWO

61 Airframe Hours, nil Engine Hours, Teenie Two. Teenie Two, 1835 VW engine Dual Ignition. 61 hrs air frame - 70 hrs engine 100 knts approx 10-11 lt hr. New cases and internal parts fitted Removable wings VG,Äôs fitted 12v battery Dual brakes Always hangered. $14,000 neg GARRY 07 34084895
PRICE $14000.00
CONTACT GARRY KELLY (07) 3408 4895

AVIATION CLASSIFIEDS

5157 AIRBORNE 912 SST TUNDRA

153 Airframe Hours, 153 Engine Hours, 912 SST tundra. Airborne 912 SST Tundra, 153 hrs, immaculate, always hangered, Garmin GPS196, BRS, undercockpit travel bag, Bolly prop with stone protector, Vertex VX 220, Skydat GX2, Air Magic helmets, Alpha Com Pax Headsets,training bars,engine cowling,lots extras
PRICE $43000.00
CONTACT LEONARD DAVID RESNEKOV 0418 220 452

5162 EVEKTOR SPORTSTAR MAX

166.3 Airframe Hours, 166.3 Engine Hours, Sportstar Max. Pristine low hours (166.3) Sportstar Max. Always hangared. Last 100 hrly July 2016 included mandatory Roatex 5 year total rubber replacement (by Rotax mechanic). Contact Chris 0419668743
PRICE $78000.00
CONTACT CHRIS JELLIFFE 0419 668 743

5163 THRUSTER TST 300

940 Airframe Hours, 442 Engine Hours, TST. Thruster T300 in excellent condition, 123 hours since total airframe referb, all parts crack tested and all new AN hardware (bolts etc). 70 ltr fuel tank,New late model pod, new windscreen, new tundra tyres. New springs,Pneumatic tail wheel. Skins in good condition. Rotax 582- C type gearbox with centrifugal clutch. ...
PRICE $12000.00
CONTACT DAVID WALKER 0438 263 233

5164 JABIRU UL6

420 Airframe Hours, 150 Engine Hours, UL6. Jabiru UL6 (6 cyl, 3300), Good condition, extended wings for slower stall speed. Frame: 420 hrs. Engine: 150 hrs only. New upgraded brakes and larger alloy wheels, Always hangared. Standard instrumentation+ Fuelgauge
PRICE $29000.00
CONTACT JOHANNES LUTHY

5166 PIPER WARRIOR 2 FOR SALE

5020 Airframe Hours, 1300tso Engine Hours, PA-28-161. 1980 Piper Warrior 2 for sale. 5020 total time Engine 700 to run Prop 300 to run. in very good condition. Annual due nov 2017. full wheel spats, canopy cover. can be sold with a fresh annual. $ 56k, ph 0410491866
PRICE $56000.00
CONTACT DAVID TENNANT 0410 491 866

5167 X-AIR 19-7965

143.2 Airframe Hours, 256.9 Engine Hours, Standard. Well maintained, only used locally , 582 rotax blue head with E-Box . Oil pump ready to fit. Offers considered. Rego to Feb 2018 . Ph 0414722740
PRICE $15000.00
CONTACT BRYAN ROBERT FIDDES LOW

5169 LAMBADA UFM 11

418 Airframe Hours, nil Engine Hours, UFM 11 UK. LAMBADA UFM 11. 420 hrs. 80hp Rotax. Short takeoff. 1000 fpm climb. 85 kts at 10l/hr or 100 kts at 13 l/hr. 11M for cruising or 13M wingspan for 26:1 gliding. Pleasant to fly. Deriggable. Easy maintenance. Bose Heasets. Full instrumentation. $60,000
PRICE $60000.00
CONTACT BARRY WRENFORD (02) 6458 3583-EVENINGS

5170 WALLABY AIRCRAFT FOR SALE

unsure Airframe Hours, 50 Engine Hours, Wallaby. 9/15 factory built Flight Synthesis Wallaby composite light sport, dual controls, always hangered, no GST, folding wings, parachute, Rotax 582, around 50 hours total time. $40,000 - located Southport, Kerry 0417 753 446
PRICE $40000.00
CONTACT KERRY HERRON 0417 753 446

5174 1/4 SHARE IN HANGER

nil Airframe Hours, nil Engine Hours, nil. This is a 1/4 share in a freehold hanger at Moruya Airport on the south coast of NSW The hanger is owned by 4 people the land is leased from Eurobodalla Shire Council. The total outgoings for 1/4 share is $155.00 per month which includes land lea
PRICE $40000.00
CONTACT JOHN CRUIKSHANK

AVIATION CLASSIFIEDS

5175 X-AIR STANDARD 19-8277

60.0 Airframe Hours, 60.0 Engine Hours, Standard. An ideal local run-about. Cruise 55-60 kts. In excellent condition. Always hangared.
PRICE $23500.00
CONTACT JEFFREY DOUGLAS CARDWELL 0400 505 058

5176 SONERAI 2LS 19-3852

33.6 Airframe Hours, nil Engine Hours, Sonerai IILs. This Aircraft has been lovingly built, and now is available for another aviator to complete the test flying, yes another 8 hours to be logged. The aircraft is at the point of refinement. Modifications to the cooling system being the most pressing.
PRICE $17500.00
CONTACT JOHN KURKO

5177 SAVANNAH STOL

708 Airframe Hours, 708 Engine Hours, Savannah. 2003 Savannah STOL for sale. Excellent condition. Always under cover. Located near Ingham in Nth Qld. Rotax 912. 4 Fuel tanks, VG Kit, No accident History.
PRICE $45000.00
CONTACT GEOFF BROWN 0417 191 852

5178 GRAEME.ANSWERTH@GMAIL.COM

1010 Airframe Hours, 139 Engine Hours, J400. Jabiru J400 19-8733 Ser No 114 Factory engine installed in 2014 139 hours, always hangered. Extras include 2 sennheiser noise cancelling headsets new, New Jabiru simitar composite prop. Contact 0498 679 040 or graeme.answerth@gmail.com Price $59000
PRICE $59000.00
CONTACT GRAEME JOHN ANSWERTH 0498 679 040

5179 RV9-A T-T 38 HOURS

38 Airframe Hours, 38 Engine Hours, RV9-A. RV9-A T-T 38 Hours. 180HP Engine. New Sensenich Prop. As new. Located Caboolture, Queensland. Full Set Flight Instruments. A$68,500.00 ONO No GST. Call: 0419 705 509
PRICE $68500.00
CONTACT BARRY GARTSHORE 0419 705 509, EMAIL: BARON2000@ECN.NET.AU

5181 JABIRU J160 FOR SALE

Email: baron2000@ecn.net.au. 957 Airframe Hours, 957 Engine Hours, J160. Engine and airframe 957hrs. Always hangared. Std instruments plus Garmin 196 GPS. Two headsets. New wheel spats never fitted. All AD's done. Solid lifter conversion 280 Hrs. V.good order. Selling due to retirement.
PRICE $30000.00
CONTACT ROSS VINCENT DAY 0427 763 082

5182 ZENITH CH701 PROJECT

0 Airframe Hours, nil Engine Hours, CH 701. Zenith CH701 project. Partly complete Zenith CH701 all aluminum aircraft 95% of the parts are complete and only need to be assembled. Plus Rotax 912 100HP engine ready to be installed
PRICE $21000.00
CONTACT NEVILLE MCELROY 0405 288 866

5183 HANGER SCONE AIRFIELD

nil Airframe Hours, nil Engine Hours, nil. Hanger Scone airfield. 15m x 12m in prime corner position with side entry and view of the strip
PRICE $125000.00
CONTACT NEVILLE MCELROY 0405 288 866

5185 JABIRU 170 FACTORY BUILT - BEST BUY

2770 Airframe Hours, 340 Engine Hours, J170. Jabiru 170. Excellent condition for age (2011) as has been maintained by the same Jabiru specialist maintainer since new. Latest spec series 3 engine approved for Flying School use without restrictions. Priced to sell at $39,000 + GST. Bathurst NSW.
PRICE $43000.00
CONTACT CHRIS STOTT 0418 223 694

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David Ford (r) handing it over to the new holder, Rick Morawski

WHERE IS CAGIT?

CAGIT NOW IN WINE COUNTRY

MARGARET river resident, Rick Morawski, has snatched recreational aviation's most coveted prize, the Come and Get It Trophy from its recent home in Esperance. Here are his trip details.

"I departed a private strip at Margaret River at 0630 on Saturday, February 18 and pushed east against a 10kt headwind to Hopetoun – a distance of 262.4nm in 3.5hrs.

There I picked up an old mate for the ride to Esperance (Myrup), another 95.1nm and 1.3hrs.

At Esperance, I met David Ford, the current holder of the CAGIT. He informed me the trophy was at his private strip a couple of miles north. So off we went for a flight of a few minutes to David's place. When David arrived, I finally got my mitts on the CAGIT. You beauty!

From David's place I was westbound again, back to Esperance to refuel for the home run. Then back to Hopetoun, a trip this time of 89.7nm and 1.0hrs where I spent the night.

The following morning, I made a late departure after a cooked breakfast with an old mate. Unfortunately, the wind had swung 180 during the night and I now had a headwind for the home run. I departed at 0930 with 10kts on the nose. Decided on a comfort stop at Gnowangerup - 111.3nm and 1.4hrs. Then the last leg home to Margaret River - 153.6nm and 2.1hrs.

THE NUMBERS

Aircraft - Savannah S (19-8402) with Rotax 912uls.
Outbound 363.2nm and 5.0hrs
Inbound 367.5nm and 4.7hrs.
Total fuel 184.3L.

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

ADVERTISERS INDEX

Liam is our youngest

BY IVAN TYSON

Liam in the cockpit after his first solo

Liam with CFI Tom Petersen after his flight test

LIAM Morey is a special young man.

I have just received confirmation from RAAus that he is the youngest member with a Pilot's Certificate.

Liam started his training with the Sunshine Coast Aero Club when he was 14 years old. One day after his 15th birthday, he did his first solo (he would have done it on his 15th birthday but couldn't due to weather).

And at 15 years and five weeks, he passed his RPC. All this was done at the Sunshine Coast Airport which is in Class D, making his achievement that much more challenging.

Liam has funded his flight training himself, juggling the roles of a full time student, part time work and flight training. Not a bad feat if you ask me.

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

Find out more at www.airborne.com.au
or call 02 4944 9199

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