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Contents



Cover: A Tecnam Astore in kiwi clothes
Photo: Tecnam



08



11



19

Regulars

- 07 President's report
- 08 Calendar of events
- 11 Letters to the Editor
- 66 Happy Landings

Columnists

- 30 Design Notes
Dave Daniel
- 32 Instructor's Forum
Professor Avius
- 45 Tech Talk
Darren Barnfield
- 49 Safety Matters
Katie Jenkins
- 51 Learn to Fly
Anthony Sibary
- 53 Home Builder
Dave Edmunds

News

- 17 New constitution
- 17 RA-Aus spreads its wings
- 17 Sport Pilot goes digital
- 18 Modernising RA-Aus
- 19 CWF to rep BRM
- 19 New VFR guide

Readers' stories

- 24 I've got a great idea
Jack Donsen
- 40 Born Ready
Julie Hands

Features

- 22 Buying and selling your plane
Jared Smith
- 28 Just a super Stol
Brian Bigg
- 35 Delightful D-Motor
Brian Lyford and Brian Hope
- 38 CAMit Aero engine
Arthur Marcel

Fly-Ins

- 20 Great Eastern was great again
Gai Taylor

Cover story

- 26 Astore gets you grinning
Grant Benns

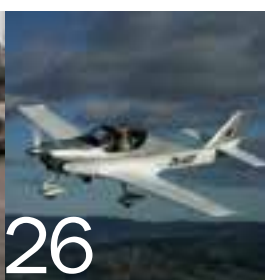
"The Astore's ailerons are delightfully light and have feel. I grinned many times"

Extras

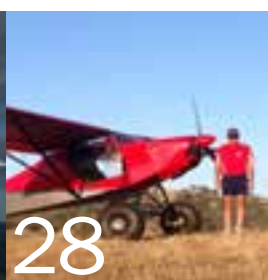
- 54 Members Market
- 63 Where is CAGIT
- 63 Statistics
- 65 Off the shelf



24



26



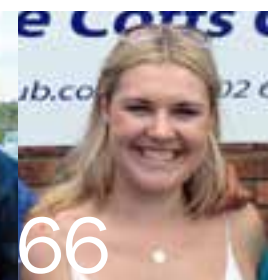
28



40



51



66

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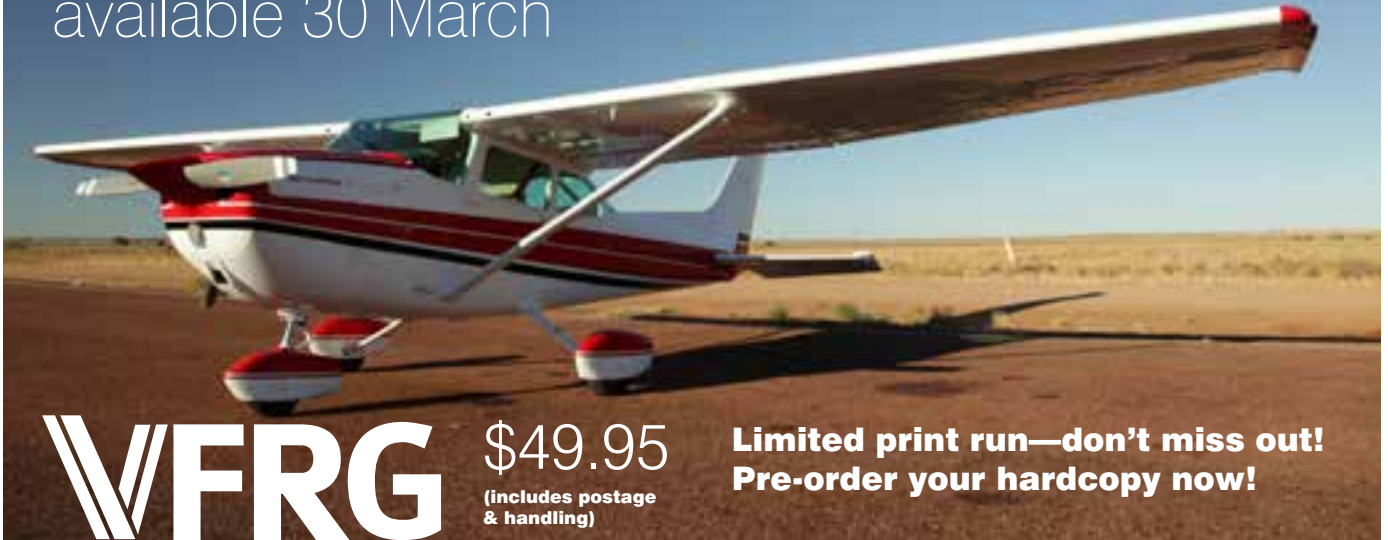


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President's Report

MICHAEL MONCK

Politics and money

I've had many discussions over the years with pilots from different organisations sprouting how their brand of aviation is better than others.

RA-Aus gets an ear bashing from GA pilots about how we will never be real pilots. Glider pilots always claim that learning in a machine that can't do a go-around forces perfection every time. And RA-Aus pilots claim we're the best because our aircraft force us to be real stick and rudder flyers.

It's all garbage. Politics and infighting in aviation is about as useful as a chocolate firewall. It advances no one's cause and simply creates a rift among those with a common love of flying.

I stood in front of a bunch of aviators at Evans Head a few weeks back

and spoke about what RA-Aus means and where we are headed. My vision, I explained, was to bring Australian aviators together regardless of what they fly. As far as I am concerned we are all the same - we push the stick forward and the trees get bigger, pull it back and they get smaller.

The facts and figures show that aviation in Australia is dwindling. Yes, RA-Aus shows strong growth over time, but the industry as a whole is not growing. Airports are closing. Those which do stay open are getting harder to access. Security constraints are getting beyond ridiculous. Regulation is making it harder to fly every day.

No matter what flavour of aviation you engage in, these issues affect us all.

It's time we got focussed and started looking at the bigger picture, instead of just worrying about our own little patch. We need to work together and forget our differences. We need to focus on what we have in common.

As a result of this, RA-Aus will this year work to strengthen its ties with likeminded bodies, including the other self-administering organisations. I want them to be seen alongside us and I want us to be seen alongside them. We'll attend their events and I hope they'll attend ours. We'll work to draw on their expertise and share with them the lessons we learn.

We'll also work towards meeting more aviators of all breeds. In place of two general meetings a year (where we fork out thousands of dollars for the entire board to attend in order to meet a handful of members), we want to spread the love.

It seems ridiculous to me that we have a national organisation but create only two opportunities a year to meet our members. Moreover, the number of members we can meet is driven by political arguments.

There's a simple fact - our members are mostly located on the eastern seaboard and are, roughly speaking, evenly spread across Victoria,

NSW and Queensland. Over the past couple of years we have held meetings in each of these states but still mostly only got to see those people located within about 100kms of each venue.

The most we have at any meeting is around 100 people. Normally we get somewhere in the order of 30-50, which means we're spending huge amounts of money on about 0.5% of our membership.

To address this we are trying to change the way we hold these meetings.

We'll still move them around and try to get to different locations, but we've discussed other ideas too. The conduct and agenda of the general meetings are prescribed by our constitution, so it appears only politics and the fact that "this is how it's always been done" is driving the attendance of the entire board. There's no real point in spending money to fly 13 people around the country for what is essentially a formality. There may be some notable exceptions to this, when there are special resolutions and so on, but in general, why don't we cut out these costs?

A few of the board and, more importantly, the CEO can deliver the required messages more efficiently and more cheaply. After all, the CEO has access to all the latest information. Wouldn't you rather get an update from him?

Instead of creating two expensive, and hard to get to, meetings each year I propose we put our efforts instead into getting key people to key events around the country.

Let's support our members in their local environments and give them all an opportunity to meet our staff in person. This might mean sending the Ops and Tech teams to some events. It might mean sending our CEO and/or the President out. It might mean sending board members out.

To be honest, I don't know at the moment what it will look like, but I can assure you of one thing. As a board we will work to ensure you're getting value for your money. There'll be no junkets. We'll use your money wisely, limit spending on the board meetings and refocus it back on the members.

I'm interested to hear your thoughts on this, so feel free to contact me and let me know what you think. In the meantime, I think politics belongs in the conversations between RA-Aus and the regulator, not between pilots. Pilots should just enjoy flying, no matter what flavour of aviation is their preference. 🇺🇸

"Regulation is making it harder to fly"

RA-Aus General Meeting 2015

Date: May 2

Time: 10am to 12pm

Venue: Hunter Recreational Flying Club
Western Side of Cessnock A/Port,
Grady Road, Pokolbin NSW 2320

All members welcome.

The President and CEO will provide an update about the activities of RA-Aus, including a half yearly financial report and projected financial picture for the forthcoming year. The meeting will be webcast for members to view live or download on the RA-Aus YouTube channel. The link will be sent to everyone in the electronic newsletter closer to the date. The Executive will also be on hand to answer questions at a forum after the meeting.

Michael Linke
CEO

The board will hold a routine meeting at head office on May 3 from 8am. Members welcome to attend.

Calendar of events



6 - 7 MARCH

Wagin Woolorama

WA's largest regional agricultural show. Over 350 commercial exhibitors; over 1,000 sheep, cattle, horses and chooks in competition; working sheep dogs; hourly fashion parades; art, photography and crafts in competition; education options; side shows; free entertainment; lifestyle displays; wool handling and shearing competitions; markets; current and future rural industry products and services; travel products; smoke free environment; indoor and outdoor displays; 20,000 visitors; massive local community effort; family friendly. For more information, www.woolorama.com.au.



15 MARCH

Darling Downs Fly-In

The Clifton Airfield (Bange's) fly-in has become an iconic event in the region and is the premier attraction for all types of aviation in southern Queensland. Come late pm Saturday 14th for BBQ, drinks. Fly or drive in, see ERSA. On field camping, bring your swag. Advise for catering. For more information, Trevor Bange 0429 378 370, (07) 4695 8541 or trevorbange@bigpond.com.

A large poster for the Valley View Summer Concert & Air Display. The poster features a biplane flying over a banner that says 'VALLEY VIEW VINTAGE AIRFIELD'. Below the banner is another biplane. At the bottom, there is a scene of soldiers marching in a field, with a large explosion or fire in the background. The text on the poster includes:

Valley View Summer Concert & Air Display
Aerobatics and Fly Pasts
Saturday, 11th of March
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The Moresby RAAF
Shane Dickson
Tickets: \$50
Queens Park Theatre
Bennett's on Theatre
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At The Gate
Valley View Farm, Northern Gully
www.valleyviewvintage.com.au
More information-0417 945 668
11th Battalion AIF
100th Anniversary of Gallipoli
2015



2-6 APRIL

Starke Field Fly-in

Starke Field Woodstock at Townsville North Queensland. Underwing camping, hangar band featuring local RA-Aus board member Sat night. BBQ food, BYO drinks, the best of company with North Queensland's finest aviators. For more information, rossm3370@optusnet.com.au.

12 APRIL

Barossa Airshow

The airshow / fly-in, now in its 11th year, is a family fun day with rides, amusements, static displays, stalls, food and wine. 10am-5pm. Includes aerobatic displays and helicopter joy flights. All pilots are welcome to fly in for the day or stay overnight. Anyone not familiar with the 600m strip at Rowland Flat should contact Steve Ahrens for a briefing. For more information <http://www.barossaairshow.com.au>.



18 APRIL

Loxton Aero Club Fly-In

The theme this year is Women in Aviation. Guest speaker for the hangar dinner will be iconic pilot, poet and performer, Marion McCall. The club's oldest member, Howard Hendrick (Lancaster Pilot WW2) will present an afternoon session on his experiences. A trio of DH82s will be on display Saturday. TIFs. Accommodation. Food and refreshment. Electronic registration on the website <http://loxtonaero.com/dinner.html> (click on Biennial Fly-in). This year we will again support Angel Flight (last fly-in we were able to give them almost \$1,000). For more information, Kerrie Palamountain palark@tpg.com.au or <http://loxtonaero.com>.

4-5 APRIL

Back to Holbrook Fly-In

Holbrook Ultralight Club invites aircraft owners and pilots to Holbrook Airfield for the annual fly-in, now at Easter. This will be the 25th anniversary of the first AUF (RA-Aus) national fly-in held at Holbrook Airfield. So help us celebrate. Forums on Saturday afternoon and local fly-out Sunday morning. Fly-in dinner Saturday night and hot breakfast Sunday morning. Fly-in trophies awarded at the dinner. Underwing camping. Transport to and from Holbrook township for accommodation and fuel available. For more information, Bryan Gabriel (02) 6036 2601 or www.holbrookultralightclub.asn.au.



25-26 APRIL

Lake Barambah Fly-In Splash-In

The Burnett Flyers will celebrate Anzac weekend again at Lake Barambah. Last year was a big hit because of the fishing, watersports, aviation quizzes and the relaxation. Cost of \$70 includes three meals and camping. For more information, DebPercy@burnettflyers.org and facebook.

12 SEPTEMBER

Wings over Warwick

Queensland Recreational Aircraft Assn incorporating Warwick Aero Club (www.qraa.info) invites pilots and enthusiasts to Warwick Aerodrome (YWCK). The strip is 1600m all bitumen with no landing fees (www.warwickaerodrome.com). Includes model plane display. Food and drinks available. For more information, Events co-ordinator Graham Hawthorne 0427 377 603, President Kelvin Hutchinson 0407 733 836 or Secretary Phil Goyno 0417 761 584. 🇺🇸

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LETTERS TO THE EDITOR

CASA's big feet

CASA's management of the Jabiru issue has been appalling. CASA has generated a huge amount of negative coverage of recreational aircraft and of Jabiru in particular through its 1950's style, bloody minded, bureaucratic stupidity. In any other sphere of endeavour or business, courtesy would dictate that CASA - at the barest minimum - discuss the matter with Jabiru BEFORE making public such a document as this proposal.

The proposal is a lazy, ill-considered, one-size-fits-all solution. CASA should be thoroughly ashamed that such a response was even entertained, let alone released. This is an indictment on the culture of CASA and its management and should trigger a thorough internal management review of how CASA operates.

This latest flat-footed effort by CASA signals it is now time to review CASA's guiding principles. The original proposed Charter for CASA included words to the effect that CASA, in its dealings, should promote and advance civil aviation. These words were deleted at the 11th hour. I would like to see the words inserted into the Charter. CASA's mode of operation and management style is stuck in the 1950's. Even CASA has admitted it needs to find better ways to achieve its goals. With it's Gestapo style ramp checks, it has all but closed down publicly organised fly-ins. Ordinary law abiding pilots don't want to be hassled by Big Brother in their leisure time.

Fly-ins are alive and well and are being organised every single week by thousands of pilots quietly by email in closed by-invitation-only groups. Not because they are cowboys trying to avoid detection, but because the regulatory environment is such that it is near impossible to fly legally and pilots are simply not interested in chancing CASA's SS style inspections. And yes, we have all heard the wonderful publicity around how helpful CASA inspectors are during ramp checks but it's still the Gestapo knocking on the window asking to see your papers and pilots are still avoiding publicly organised fly-ins.

I am certain CASA is well aware of the Jabiru failure modes that are of concern. I am equally certain that the engines at risk can be readily identified and described. There is absolutely no need to place any limitations on aircraft that fall outside this description. May I suggest the at-risk engines be managed by simply amending existing Jabiru service bulletins. The advantage with this approach would be that disruption to non-affected aircraft would be minimised and the response would be targeted to where action was required.

Name withheld by request

Frequency views

Regarding CASA's requirement to use the area frequency for non-charted strips (*Sport Pilot* November 2014). I am fully in agreement it is a bad idea and have told CASA so on several occasions.

To cover myself flying out of Rodd's Bay I use the area frequency. This means I have to wait for a break in the airline's traffic, so it isn't really working.

The statement made by the Ops Dept was incorrect. They omitted that CASA says any chart, not only the WAC. That means strips shown on the VNC also use 126.7.

They may also mean strips mentioned on PCA also use 126.7. That includes strips which haven't been in use for ten years or more.

Re: Bad medicine (Flying taught me this today' *Sport Pilot* December 2014). It was a good article and points up the need to always discuss with your doctor what effect any prescribed drug will have on your ability to fly.

My doctor has occasionally given me strict warnings when drug taking and flying will not mix, even though she thought it would be OK to drive a car.

Ian Borg

From the Ops Dept - CAAP 166-1(3) notes in section 7.3.1 that

- When at or in the vicinity of non-controlled aerodromes marked on charts that have not been assigned a discrete frequency, use Multicom 126.7.
- When operating at aerodromes not depicted on aeronautical charts, pilots should monitor and broadcast their intentions on the relevant area frequency.

Discussion and consultation is ongoing through RAPAC in relation to these requirements.

2014 highlights

Sitting down to read my backlog of *Sport Pilot* magazines was one of the highlights of Christmas Day 2014.

It was a great year, having achieved my Pilot Certificate, so reflecting on Kirsten Nixon's 'Solo Sunday' (*Sport Pilot* December 2014) brought back fond memories.

Now reading Part Three of Rick Firth's "Going Remote" (*Sport Pilot* February 2015) is a terrific reminder of why we fly in the first place.

More like this, and with this kind of detail, makes me want to fly around our huge and barely trafficked Australian airspace even more.

Andrew Peel

Not welcome

This is the first time I have felt the need to write a letter to the editor. First of all, I would like to thank RA-Aus for processing my registration renewal in less than a week.

However, I feel I must say something about the increasing injustice I am finding on a regular basis.

I fly a powered parachute and I seem to come up against a brick wall every time I contact an airfield to get permission to fly.

It seems that, more and more, I am being looked down upon because of the type of aircraft I fly. As an example, earlier this year I contacted two airfields close to where I live (Lethbridge and Colac).

On both occasions I was told my aircraft was not welcome. One said I would be too slow and noisy (there are aircraft flying at the same field with the same engine and similar airspeed to me).

The other asked me what a powered parachute was, then told me I was not welcome.

Both of these airfields have just received large amounts of taxpayer funding and, as a taxpayer, I feel I should be given an opportunity to use the facilities to which I have contributed.

I have used both of these airfields when flying fixed wing, but as soon as you mention powered parachutes, the noses go up and I become some sort of irresponsible whack job who is not welcome.

As powered parachutes are one of the fastest growing areas within the RA-Aus I would have thought I would be given the same opportunities as any other type.

Russell Nash

From the Ops Dept - We are very aware of potential issues such as this for operators of slower aircraft, including powered parachutes, 3 axis aircraft like Thrusters and weight shift aircraft. As a result of the reduced speeds of these aircraft, noise concerns can become a problem and some council operated and privately owned airfields have applied restricted access policies to pilots operating these aircraft.

Members can assist by continuing to operate slower aircraft safely, compliantly and with good airmanship and consideration of other airspace users, providing us with a safety case to present to these airports and hopefully change the restrictions.

From the CEO - We are currently working with the Australian Airports Association on a range of issues and hope that by building better relationships we can improve the situation for all of our members.

Controlled frustration

Recently I obtained my RA-Aus Pilot Certificate and passenger carrying endorsement. I'm now getting into my NAVs, which is very exciting. I've had the absolute pleasure of taking each of my three boys and my wife for a flight and look forward to flying as much as possible. Alas, there's one thing stopping me from flying and I wondered if you could help me with it?

It's not the aircraft - I fly a SportStar from West Sale, the aircraft and engine are meticulously maintained and very enjoyable to fly. I have permission and a flying budget from my wife, so it's not that aspect either. It's the radio! The device itself is good as gold and works tremendously well. The problem exists when I change frequency. If I leave it on 118.3, I can fly to my heart's content, but switching to 133.6, means I'm not allowed to fly at all.

What's changed? It's the same airport, same runway. I'm flying over the same areas at the same altitudes and my piloting abilities are improving. Heck, it's even the same windsock which I look down on from 2,000ft while overflying and deciding which runway to land on.

So why can't I fly on 133.6? It's because that frequency is used when the same airspace becomes active and is then called 'controlled airspace'.

The West Sale (YWSL) airfield is about 15km away from East Sale RAAF Base. During the week, the RAAF is often active, which transforms our airspace into controlled airspace and grounds most RA-Aus Pilots including myself.

I've done a bit of GA flying in the past and know the RAAF personnel are professional and easy to deal with. My gripe is not with these guys - it's simply the fact that I can't fly when it becomes controlled airspace.

In my day job, I'm considered a professional so conversing with air traffic controllers in a concise and professional manner simply isn't an issue. So I'm wondering what is the actual issue? I was excited to receive in the mail my RA-Aus Ops Manual. Section 3.04-37 "Controlled Airspace Endorsement" appeared well thought out and complied to all aspects of our air rules and, more importantly, common sense. So I was perplexed when I found out it had not been approved.

Many years ago, I flew down to Tassie to watch pylon races. One person who stood out to me was a pilot in a red biplane by the name of Chris Sperou.

Chris was able to cut tape stretched over the runway with the tail of his plane, while inverted, about two metres above the ground. If Chris can cut tape while strapped into his seat in the pre-mentioned conditions, I have total faith the RA-Aus team can cut this red tape from the comforts of their offices with a fresh coffee on the desk.

Your assistance in this matter would be very much appreciated. I feel the essence of flight pertains somewhat to freedom and this freedom has been significantly curved. I just want to fly.

Shannon Shumski

P.S Love the magazine



Chris Sperou in action

From Ops Dept - *We recognise the inequities involved when operating from airfields which change from accessible to inaccessible simply because of airspace changes overhead and we are in the process of seeking CTA privileges for our members.*

From the CEO - *The board has recently decided to pursue this matter, together with other privileges, with the regulator. We look forward to addressing the highlighted issues over the coming year.*

The other bloke

Re: a recent article called 'That Guy' (*Sport Pilot* September 2014). I am at this stage that guy; not back flying but I want to know what's going on, so I venture into the newsagent to find out about learning to fly, the cost of aircraft ownership, how to get into flying, what is expected of me to fly etc. But *Sport Pilot* is not there anymore. Maybe a double sized *Sport Pilot* could be on the shelf twice a year for pilots interested to look at recreational aviation. It could bring you more learners, more pilots, more magazine subscriptions. Anyway, I believe there is a lack of such awakening to maybe kick up more interest.

Yes, I understand someone has to cover costs, but at the moment to a degree *Sport Pilot* is preaching to the converted (great articles, yes) but now it is not in the newsstands, how does the other guy get interested? *Sport Pilot* got me thinking about flying again, as it did many years back and I even joined the local flying club.

Maybe it will be off the shelves for a three month trial. Maybe 'the other guy' can buy it to stir up his interest, rather than pay unnecessary

subs to RA-Aus which he doesn't need until he gets into recreational aviation and it's cheaper. Maybe then I can go on and enjoy *Sport Pilot* again.

Roy Taylor

From the Ed and CEO - *Sport Pilot on newsstands was losing money. The CEO and Editor will review when and if Sport Pilot goes back on the newsstands after all the other changes coming for the magazine (see News page this edition) are bedded down. Stay tuned.*

Preaching to converts

Please suspend all my future Sky Sports Flying School advertising in *Sport Pilot* immediately. I will not pay for flying school advertising in any issue not being sold on newsstands. I fail to see how advertising the services of a flying school to existing members is of any benefit to me at all - it will be like preaching to the converted. I only chose to advertise the school in *Sport Pilot* because the magazine was on sale at newsagents, thereby giving me access to potential clients.

The RA-Aus should have a bloody good look at itself, have a look at the history and what has caused its success (and recent pathetic failures).

No calendar? Don't they like you Brian? I think you do a great job. No Pilot Notes? What are we really trying to hide? Don't we want the membership to be educated through other people's experiences?

There was an article in the magazine several years ago written by either the then President or CEO talking about the reasons behind the growth/success rate of RA-Aus.

Two things stood out—

1. We changed the name from Ultralight Federation to Recreational Aviation (Ultralights crash but recreational aircraft must not);
2. "We put the magazine on the newsstands and the rest is history" - a comment on the huge growth from 3,000 members to over 6,000 at the time of print.

Gordon Marshall

From the CEO. *Gordon, the magazine was removed from newsstands because it was losing Brian money each month and not offering any real improvement to membership numbers. The calendar was my decision as CEO and again was based on generating financial savings during tough fiscal times. Pilot Notes is still available, in more detail, online in the member's section under the heading Accident and Incidents. This change will marry with our development of an Occurrence Management System this year to provide members greater insights into incidents and accidents.*

Hidden stresses

I say bullshit to the Ops team's 'Weighty matters' article (*Sport Pilot* December 2014). Firstly though, let me say that I agree with the basic tenet of the article - that aircraft must be operated in accordance with the flight manual. There is (almost) no excuse for flying an aircraft over MTOW or out of C of G limits. I say almost because, in life, there are few absolutes.

But the article lists several occurrences the author somehow feels add up to structural damage or hidden stresses which may 'suddenly' lead to airframe failure. The hidden stresses given include turbulence, aerobatic and semi-aerobatic manoeuvres (whatever they are), heavy landings and continued operations over MTOW. To this arrant nonsense, I say bullshit.

Let's deal in facts. An airworthy aircraft airframe will be capable of withstanding all of these forces without sustaining any damage, hidden or otherwise, with the possible exception of flying over MTOW at elevated speeds in turbulence. As long as the forces applied to the airframe are within the elastic range of the airframe material the only damage to the airframe will be the reduction in the fatigue life of the airframe - except, of course, for timber airframe members. So to be absolutely clear there is no cumulative damage effect from using an airframe under normal circumstances which includes turbulence, aerobatic and semi-aerobatic manoeuvres (I'm assuming here that an untrained pilot unused to elevated g forces will stop pulling on the stick before about 3g), heavy landings and (without condoning it) probably flight over MTOW as well.

While I'm at it - bullshit also to the footnote regarding low level flight. I am heartily sick of being told that low level flight is a serious issue and requires specialist training. Just a few years ago we were not allowed to fly above 300ft and that was without any training at all. Now, all of a sudden it's too dangerous for a trained pilot to fly below 500ft? It is difficult to accept this new 500ft minimum with any seriousness. I do not condone undisciplined low level flight by pilots without adequate training but still this whole issue is just a heap of hypocrisy.

Name withheld by request

Jabiru issue

I would like to congratulate the President of RA-Aus on his letter to CASA (*Sport Pilot* November 2014). I just hope CASA can think outside of the box because they have no idea what is inside it.

It is a straight case of mishandling a delicate issue and shows very limited foresight in the outcome, which then shows a lack of experience in these matters.

Keith G. Baker

New Year's wishes

My wish list for the New Year was simple:

1. I hope all the hard work put in by RA-Aus Board Members and staff to provide us with hassle free flying continues through 2015 and that they all get due recognition from all of us for their great efforts in the past. Well done!
2. That RA-Aus looks at a bulk Avgas discount card system for those of us who prefer to use Avgas - I am a member of SAAA solely to take advantage of their card service.
3. That the non-aerobatic prohibition be lifted for aircraft designed for the stresses - my Sonex is +6g -3 g stressed and is used in the US for 'gentlemen aerobatics', but I am prohibited - another Sonex at our airfield (Bunbury WA) has just been GA registered and because of the letters they can.

Jay Pienaar

From the CEO - I can assure you, the hard work will continue. Regarding point 2, watch this space. We are currently exploring this option for our members. And re point 3, we will look into this issue.

Get out and do it

What a pleasant surprise it was to see a picture of my Heath Parasol 'Miss Sandgate' on the front cover of the December 2014 *Sport Pilot* with the caption 'Safe, Accessible, Enjoyable Aviation'.

Indeed 'Miss Sandgate' has, for me, admirably filled the criteria, having logged 290 hours and 603 landings since completing her five year restoration in 1995. Her original creator in 1932 could never have dreamed that she could still be flying so safely and enjoyably some 82 years later. (See the story in *Sport Pilot* magazines August to November 2013 or on capricornplanespotting.com.au).

I learned so much from the original craftsmanship while conducting the thorough rebuild and what a privilege it was to have her registered by AUF under 95.10 to fly legally. This is what recreational aviation is all about and as the caption goes on to say - 'get out and do it'.

The same euphoria cannot extend at the moment however, to my other aircraft, a J6 Karatoo powered by a 2200 Jabiru engine. I spent seven long years scratch building it and I stick by my decision to use the Jabiru engine as a locally built, economical, un-complicated, light and powerful means of propulsion.

True, I have also learned much about the workings of this engine. However with help from Jabiru and some good friends, I believe I now have it in as safe and reliable a condition as is possible. Indeed, many international visitors, as well as some locals, would attest to this after flying with me around our local area.

The fact that a number of these engines may not have proven to be as reliable, must in part be borne by the RA-Aus board. As with all engines (whether Jabiru, Rotax, Continental or Lycoming etc.), it is prudent to remember that is not a matter of 'if' it will stop, but 'when'. In recreational flying we should always bear this in mind. Indeed, a similar warning was written on the shipping box for the Rotax 503 engine I installed in the Heath Parasol. I believe, however, that a program of encouragement, education, training and recognition on how to maintain and repair recreational aircraft engines at all levels, if it had been implemented by RA-Aus, would have gone a long way to mitigating many of the failures which have occurred in multiple engine types. The immense resource of wisdom and experience contained within our membership, assisted by suppliers and manufacturers, could have supported this system. Who will now maintain all our engines into the future?

Over eighteen months ago I offered to RA-Aus for a third time (via the General Manager) to help set up a maintenance system based on the now forgotten National Aviation Industry Competency Standards. But the offer was rejected by the indecision and disunity of the RA-Aus board. I

believe this has taken us from a position where we could have been a shining light to CASA on light aircraft maintenance practices, to the present situation in which we find ourselves.

The monetary value of my Jabiru powered aircraft may have been lessened, however I will continue to take those passengers who are willing to sign a declaration. I really feel, though, for the people with training schools whose livelihoods may be affected. I feel also for the Jabiru

manufacturers who have had the courage to produce a local, economical, un-complicated, light and powerful engine. Let's hope they don't go the way of the Victa Airtourer, an excellent locally manufactured product which disappeared.

Who will now take up the challenge to 'get out and do it' and implement a comprehensive repair and maintenance training and recognition program so we can all continue to have the privilege of Safe Accessible Enjoyable Aviation?

Len Neale



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The safety word

Why does CASA continually hide behind the word 'safety' for its unprofessional, poorly thought out, poorly researched, irresponsible policy impositions?

Perhaps the Federal Government should take a look at the rate of Fords and Holdens involved in car accidents and their fatality rates. If the CASA approach was taken to the road toll, there would be no cars driven at night, carrying any passengers, or in built up areas! Yet this is the latest nonsensical policy emanating from CASA to be imposed on the safest LSA aircraft in the US - the Australian Jabiru. This is significant as the Americans have almost every aircraft ever produced by the world's manufacturers now domiciled in their country and the FAA actually keeps detailed statistics on them. That seems to be beyond the capability of our regulator.

Clearly CASA (Civil Aviation Silly Authority) hasn't heard of the ALARP (As Low As Reasonably Practicable) principle, either. This is accepted worldwide, as well as here, by the courts as a legitimate legal position. It measures cost against safety gain. If 0.03% of take-offs in a Jabiru result in a failure of some kind, the risk is negligible. Using of this principle is academic because CASA admits, quite astonishingly, that it has no statistics for misuse, pilot error or breakdown into any other causal factor, to back up its allegations. As for a detailed analysis on the impact on the aviation community? Forget it! Another 'wet finger in the air' rule.

There is a risk to your life by simply getting out of bed in the morning. Contained in Figure 1* is a table depicting the various risk factors associated with every day activities. As can be seen, the risk of being killed as the result of a car accident in NSW is more than 14 times that of being killed in an aircraft. I'd rather be travelling in a Jabiru than a sedan! Just for the record, I don't own a car. My daily drive is a Jabiru, for reasons which include safety.

This woeful latest blunder from the Authority reminds me of when they last managed this section of the aviation spectrum. In 1983, 18 pilots with a PPL or better lost their lives trying to fly our class of aircraft. At the time there was only a flying base of around 800 pilots involved in the activity.

Restrictive rules imposed by the regulator on flying these types of aircraft back then proved deadly. Following the establishment of the AUF, fatalities plunged. (*Probably not the best word to use Mark-Ed*) 30 years later we now have over 10,000 members but still nowhere near the deaths the regulator caused in those dark days. Now, here they come again. What's next? Those that fail to learn from the past are doomed to relive it.

Sadly, even if the government does grasp the stupidity of this latest imposition and directs CASA to drop it - it's too late. Major financial damage has now been done to the thousands of Jabiru owners around the world, to the manufacturer, to the many aircraft associations, their flying schools, etc. It would not surprise

me to see a class action in the US initiated by Jabiru owners there against the Australian government. I suspect they would be successful. The flow on to Australian stakeholders would naturally follow. Refusing to then acknowledge affected Australians similarly would bring UN involvement. This could become massive. All mostly at the taxpayer's expense but it could have been avoided altogether had the regulator acted professionally in the first place.

One way or another, it is clear relations between CASA and our section of the aviation industry will never be the same again.

Mark Pearce



Got something to say?

The state of the organisation is reflected in the Letters to the Editor columns.

The more letters - the healthier the organisation. So don't just sit there - get involved.

Your contributions are always welcome, even if no one else agrees with your opinion.

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

editor@sportpilot.net.au

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

Table 5: Risks to Individuals in NSW¹

	Chances of Fatality per million person years
Voluntary Risks (average to those who take the risk)	
Smoking (20 cigarettes/day)	
• all effects	5000
• all cancers	2000
• lung cancers	1000
Drinking alcohol (average for all drinkers)	
• all effects	380
• alcoholism and alcoholic cirrhosis	115
Swimming	50
Playing rugby football	30
Owning firearms	30
Transportation Risks (average to travellers)	
Travelling by motor vehicle	145
Travelling by train	30
Travelling by aeroplane	
• Accidents	10
Risks Averaged over the Whole Population	
Cancers from all causes	
• Total	1800
• Lung	380
Air pollution from burning coal to generate electricity	0.07-300
Being at home	
• accidents in the home	110
Accidental falls	60
Pedestrians being struck by motor vehicles	35
Homicide	20
Accidental poisoning	
• total	18
• venomous animals and plants	0.1
Fires and accidental burns	10
Electrocution (non-industrial)	3
Falling objects	3
Therapeutic use of drugs	2
Cataclysmic storms and storm floods	0.2
Lightning strikes	0.1
Meteorite Strikes	0.001

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NEW CONSTITUTION

Recreational Aviation Australia has invited written submissions from members concerning the redrafting of the RA-Aus constitution.

For many years members, staff, stakeholders and board members have raised a range of issues associated with the constitution. During 2015, we will undertake a comprehensive review of the document and we want to know which are the critical issues that affect you.

Many members have suggested a board size of five to seven members would be ideal. Others have called for a skills-based board instead of a geographic representational board. Still others believe more regular board meetings are required.

What do you think?

RA-Aus has evolved from a club to a professional association of 10,000 members and we need a foundation document which allows us to employ contemporary governance practices, create uniform policy and protect the rights and interests of the members.

This is your chance to have your say. Email written submissions to CEO@raa.asn.au before April 30.

SPORT PILOT GOES DIGITAL

BY MICHAEL LINKE, CEO

As you may be aware, the Board of RA-Aus took a decision in October to look at options to deliver *Sport Pilot* in different formats.

The decision was centred on two key areas. Offering a digital alternative to members will help reduce some costs of production and allow *Sport Pilot* to be made available on a variety of electronic platforms. At the same time, rather than increasing membership fees for all members, those who prefer to continue to receive *Sport Pilot* in a printed format (delivered to their letter boxes) will pay a subscription fee.

It is important to point out a couple of things:

Recognising the important role Flight Training Facilities play with RA-Aus, printed copies of *Sport Pilot* will be delivered to every FTF each month as a marketing and promotion tool to students and potential new members.

All members, whether they subscribe to a printed copy or not, will enjoy free access to the digital copy of *Sport Pilot*.

Non-flying members who receive *Sport Pilot* will be able to choose to receive the magazine either digitally or delivered to their letter box. For these members, a small fee will apply for digital access. This access will also open up other online areas of RA-Aus, including electronic copies of key corporate documents and manuals.

It is planned these changes will occur in the next couple of months, with the first edition of a digital copy of *Sport Pilot* becoming available in June. Members who do not subscribe to *Sport Pilot* (the printed version) by June 30 will no longer receive it in their letter box from that time.

To aid with the transition we want to hear from you. We have created a short survey online at <https://www.surveymonkey.com/s/8VWMM2Q> and ask that you complete the survey by April 30. If you don't have digital access, the survey is repeated on Page 63 of this edition of *Sport Pilot*. Please complete it and return it to RA-Aus.



RA-AUS SPREADS ITS WINGS

Instead of hosting NATFLY this year, RA-Aus staff and officials will attend a number of fly-ins across the country to engage with members and like-minded enthusiasts to talk all things aviation.

2015 is a busy year for pilots who like to go to gatherings. There is the Avalon Airshow in March, Holbrook and Narromine both have fly-ins over Easter, Wings over Illawarra will be staged in May, AusFly and Wings over Warwick will happen in September and the Jamestown Airshow in October.

RA-Aus will have a presence at most of these and both board members and staff will get out as much as we can to meet everyone.

Attending these events, we believe, will allow us to engage with, and listen to, more members to find out your thoughts about everything to do with recreational aviation.

We are also keen to talk to you about our plans for the year as well as what is in the book for next year and beyond. If you'd like representatives from RA-Aus to attend your club, show or meeting, just drop us a line. We will do our best to attend. And when we have news about the next NATFLY, we will be sure to let everyone know.

MODERNISING RA-AUS

At its October meeting the board endorsed a project to explore how to modernise many of the activities of the RA-Aus office.

This project has, at its centre, making the experience of members more seamless in their dealings with the office. The strategy embraces one of our central strategic themes - placing members at the centre of everything we do.

The project has three goals. The first is an overhaul of PULSE. PULSE is the database that contains all member data, endorsements, flying hours etc. It also houses all of our aircraft data. It has been a very robust and stable platform and has provided good service to RA-Aus over the years. However it is now starting to show its age and is constraining our activities, impacting members, not to mention making the job of office staff complex, repetitive and resource intensive. So the plan is to take the best parts of PULSE and build on them to create a better system - or as we have called it - PULSE2.

We are reimagining how we interact with members using PULSE2. As part of this process, which began in November and continues today, we are exploring the following options:

- A new member's portal, which will allow members to manage their own data, renewals and aircraft registration;
- Eliminating unnecessary printing and mailing of paperwork to members and replacing that, where possible, with digital and email based communication;
- Revamped user interface to allow users (members, CFIs and staff) ease of access;
- A CFI portal to allow our CFIs access to data to assist with their operations;
- Fully featured banking and credit card processing facility to allow instant membership renewal and aircraft registration.

The second goal of the project is the development of an Occurrence Management System (OMS). The OMS will allow us to capture, record, review, report on and analyse occurrences within our fleet. An occurrence is an accident, incident or hazard which has been identified or reported to us. In keeping with our no blame culture, the prime function of the OMS will be to educate members and improve safety across our fleet. The OMS forms part of our Safety Management System (SMS) and is a key component in our second strategic theme, which is an overarching commitment to safety for all of our members. The OMS will also include a companion mobile web interface, which will eliminate the need for filling in incident forms etc.

Incident reporting will be done via the internet for any member with a appropriate device.

This will offer us a timely and more accurate way of capturing occurrence data. The current system where occurrence data is copied by hand from forms to an Excel spreadsheet is cumbersome and does not offer us any real way to analyse data in a sophisticated manner. The current system also exposes us to errors and duplicates the reporting requirements we have with ATSB and CASA.

The third goal of the modernisation project is our website. As many members will know, our website does not always offer a user friendly experience. It can be difficult to navigate, carries outdated content, is not very attractive and lacks a clear structure. So we are rebuilding the website from the ground up.

We will adopt a modern interface and split the site into two components.

The first will be a public facing site which promotes and markets RA-Aus to potential new members and the broader public.

The second will be a member's only site which will contain all of the information our members need at their fingertips. Additionally, once logged into the website, there will be a seamless connection to PULSE2. The website will also offer a mobile platform for handheld devices and tablets.

The project is still at the consultation phase with the CEO, senior staff and the board working through the costs and complexities of such a large project.

It is planned to roll the project out during 2015 with user testing expected in spring. The total investment of the project will be recouped in three years through savings in resources, including staff resources, printing, stationery, mailing and other office based costs.

It is anticipated an investment of some \$250,000 will be made over the coming 12 months to finalise the project.

This represents a gross cost of \$25 per member, a small price to pay when we analyse the benefits that will flow to everyone and the real lifelong savings we will make into the future, which will assist in decreasing the budget pressure we face every year.

This is an exciting project and one that will place our members at the forefront of sport aviation in Australia.

To assist in further development, your input is invited. If you have any ideas about how we can make PULSE better or improve how you interact with the office or areas you believe are needed on our website, email CEO@raa.asn.au. As the project progresses we will also share, via our electronic newsletter, further information about the project.

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CWF TO REP BRM



CWF owner and Chief Flying Instructor, Chris Stott (left), with Czech Republic's Head of Trade & Investment, Vojtech Helikar

Central West Flying School of Bathurst has signed up to represent BRM Aero in NSW.

Australian importer / distributor for BRM, Brett Anderson says CWF will offer test flights for potential buyers where Bathurst is a more convenient location, or where pilots require training or endorsements.

"CWF already operates the most popular aircraft manufactured by BRM, the Bristell, and has ordered a second Bristell for use in training its students," says Brett.

Brett says there is significant synergy between the operations of CWF as a flying school and Anderson Aviation which represents the aircraft in Australia, New Zealand, Greater Asia Pacific and Dubai.

"We already have a Bristell operating out of the Bendigo Flying Club and one at Whakatane in New Zealand.

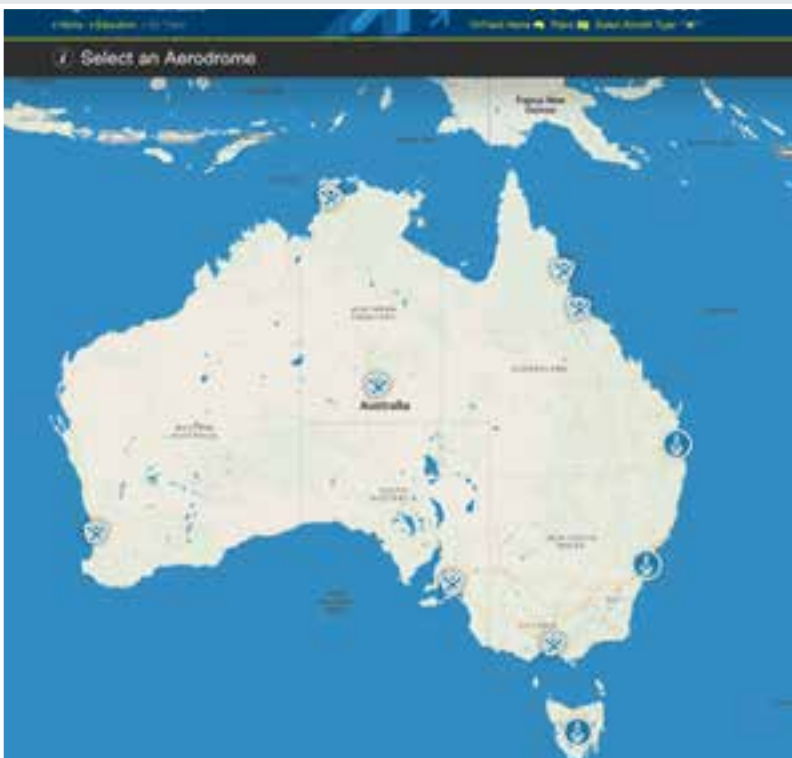
The arrangement with CWF broadens our coverage", says Brett.

CFI and owner of CWF, Chris Stott, added "We train pilots under both RA-Aus and CASA and

already find the Bristell is attractive to both because it can be registered either RA-Aus or GA."

The relationship between Anderson Aviation and BRM Aero is supported by the Czech Republic Head of Trade & Investment, Vojtech Helikar, who visited Bathurst recently.

"We hosted a visit by Mr Helikar and, of course, took him for a fly in our new Bristell, so he could enjoy a flight in one of his homeland products over the picturesque Bathurst district", reports Chris.



NEW VFR GUIDE

CASA has released a new version of its popular online guide for visual flight rules operations in and around controlled airspace.

The pre-flight planning guide for pilots – OnTrack – now covers 13 locations. They are the aerodromes at Cairns, Townsville, Sunshine Coast, Archerfield, Bankstown, Camden, Moorabbin, Launceston, Cambridge, Parafield, Alice Springs, Jandakot and Darwin.

The guide covers inbound and outbound routes at each location, as well as a number of scenic routes. Features include visual terminal chart information interactively overlaid on Google Maps, a video for each location explaining key issues, airspace infringement hotspots, runway hotspots and printable flight notes. There are aerial photographs at key points on the routes so pilots clearly understand what they should be seeing when flying the approaches and departures. The flight notes for each route include radio frequencies, altitudes, restricted airspace, parachute drop zones and other essential information.

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

FLY-INS



An Air Creation trike



Spectators getting close to the local Westpac Rescue Helicopter



Great Eastern was great again

BY GAI TAYLOR

It was good, it was great, it was fun and lots of people flew in! Another Great Eastern enjoyed by everyone - pilots, the public, volunteers and operators.

Feeling very pleased about a really good weekend, we were now sitting in the quiet and still of the evening, meeting for our final ritual relaxing in the shade of the hangar, as we had done for the past four days.

With a cool breeze blowing, nibbles and lots of conversation about how it all went, chat was all about what it was that 'made' it for everyone, how they'll be back for next year and wouldn't miss it for anything.

For us, the organising committee, this is always the best thing we can hear - what went well, how happy people were and hearing that next year will see the GEFI family return and, of course, increase in numbers.

This year was the 75th Anniversary celebration of the aerodrome as part of RAAF Station Evans Head. A number of veterans from the station attended with engineer, Frank Johns, entertaining us in the mess tent after dinner with great music and singing along with Joy Siverston, a steward from the original officer's mess, navigator Jack Bell and Danny Langveld. Wonderful people.

We saw many old and new friends fly in - RA-Aus, GA, warbirds, helicopters, motorgliders and a large group from the Seaplane Association, including a Petrel. Two of their aircraft did an impromptu landing on the Richmond River at Woodburn on Saturday afternoon, to check out the river for a possible Splash-In as an add-on to GEFI 2016.

It caused quite a stir, with locals and travellers rushing over to see what was happening with the aircraft and pleased to see them pulled up on the beach, lots of questions and interest. There were many other flying highlights, as well as all the other weekend activities, markets, car clubs, model boats and aircraft, museum displays and more.

It was great to see RA-Aus represented by President, Michael Monck and CEO, Michael Linke, who made a special trip up for the weekend, along with Assistant Ops Manager and regular at GEFI, Neil Schaefer. They were very keen to chat with pilots about what was happening with RA-Aus, NATFLY and to get feedback from members about these and future directions of RA-Aus. They ran a very popular information and feedback session.

Support for the fly-in continues to grow, from participants, visitors and volunteers. To all we give a huge thank you and we look forward to seeing you next year. I do get asked a lot about volunteers. Our local ones are the best and continue to work every year. We couldn't do it without them.

This year we decided we needed more to spread the load so we went national and advertised, because we thought there must be some people who liked the noise of aircraft, working with a great group of people, have their own travelling home and were within cooee of Evans Head. The result was 14 wonderful people - they were great, worked so well, had fun, enjoyed themselves and are keen to come back again - so we would call that a success. Yes, we'll be back too and hope you can join us.



A 400 horsepower Wolf Pitts flown by Paul Bennet ahead of an S1 with the Sky Aces Team



A Lake Buccaneer



Photos by Halden Boyd

A Skyfox tail dragger

selling your plane Can't be too careful

You can find these on the websites of RA-Aus, the manufacturer and CASA. Don't forget to take a good look through the aircraft logbooks to ensure the ANs have been acted on by the owner.

Get someone who knows the model to make a thorough inspection of the aircraft and its logbooks. They should investigate any modification which has been made to ensure it is compliant.

Amateur built aircraft can be modified provided they stay within the design requirements of CAO 95.10 for single seat or CAO 95.55 for two seat aircraft and the RA-Aus Technical Manual.

Ensuring a Factory Built aircraft is compliant with its Type Certificate or Special Certificate of Airworthiness (for Light Sport and Experimental Light Sport Aircraft) will become your responsibility at the point of sale so it is important you determine before that moment, the aircraft is actually compliant regarding its airworthiness and registration.

The paperwork

Once you have ticked all these boxes and decided that you can meet the ongoing demands of maintaining a compliant aircraft, it is time to begin the boring bit -the paperwork needed to change the aircraft ownership. RA-Aus has three documents related to this process.

They are:

- Change or Transfer of Registration Form;
- Aircraft Condition Report – 95.10 registered aircraft; and
- Aircraft Condition Report – 95.32 and 95.55 registered aircraft.

The documents can be found under 'Forms' on the website. So you only need to fill out two documents to transfer the registration – the transfer of ownership form and the relevant aircraft condition report.

Change or Transfer of Registration

This form serves a number of important purposes. Firstly, it confirms that both parties have agreed to transfer the registration. It also confirms the seller has passed on the aircraft's logbooks and associated documents to the new owner.

Also that the buyer acknowledges they understand CASA, RA-Aus and the seller do not guarantee the airworthiness of the aircraft. The form also serves as a means of updating any aircraft details which may have changed since the last renewal.

And remember. Before you sign the form you should also request a copy of the current Registration Certificate to confirm that the aircraft you are buying is actually registered. Can't be too careful.

Aircraft Condition Report

The Aircraft Condition Report must be completed by a Level 2 maintainer who has no financial interest in the aircraft.

This means if the buyer or seller is themselves an L2 or higher they must get someone else to fill it out.

This regulation is obviously there to make sure an independent party verifies the aircraft is compliant with the RA-Aus Technical Manual and that the aircraft changing hands is the same aircraft recorded in the RA-Aus database.


Don't forget, though, that the ACR is only a record of the condition of the aircraft at the time of the sale and is not a statement of its airworthiness.

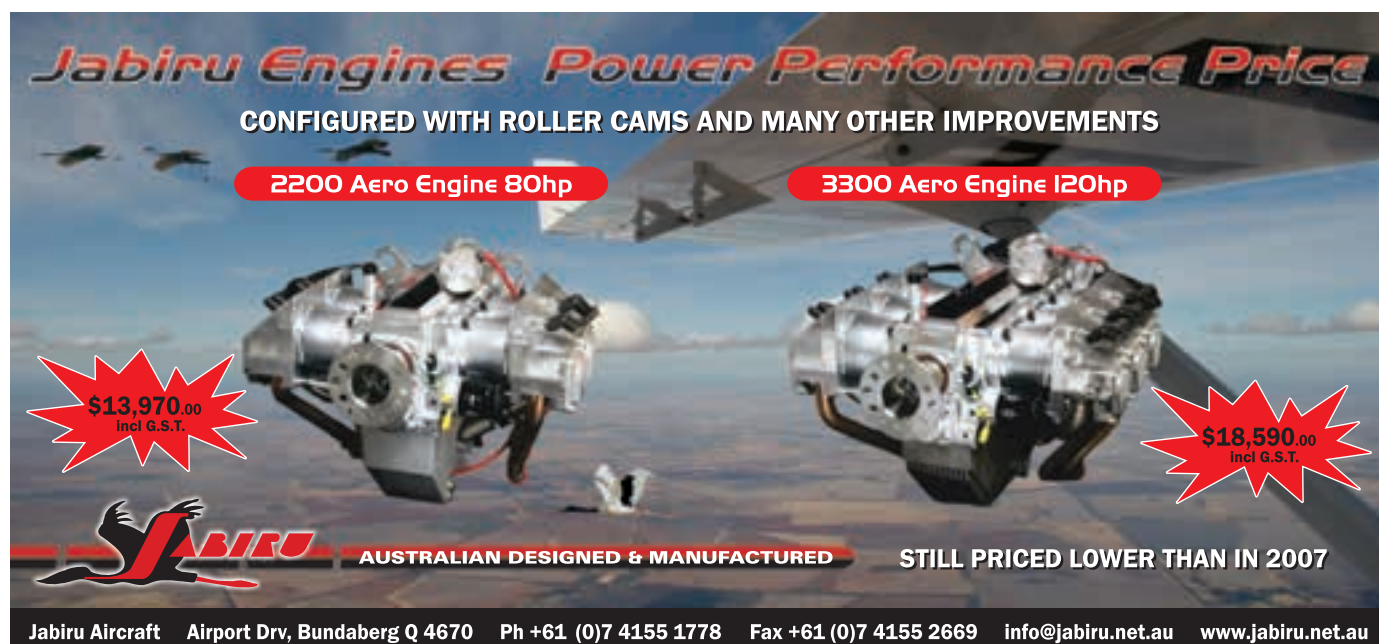
Along with the application form, you will also have to provide pictures of the registration markings on both sides of the fuselage.

These, too, have to be verified by the maintainer.

It all helps to confirm the identity of the aircraft being transferred and keeps RA-Aus records up to date.

Can't be too careful

Further information about all the things you need to know about buying and selling an RA-Aus aircraft can be found in Section 7 of the RA-Aus Technical Manual. 



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Hey...I've got a great idea!

BY JACK DONSEN, CFI TOPFUN AVIATION

It always starts as an idea. It grows in your mind, becoming a want and then with the right fertilizer, an obsession.

That's what happened to me when one of my airfield buddies decided to purchase a 1946 Aeronca Champ. He remembered with nostalgia learning to fly in one in Canada when he was a young lad, a time when the aircraft was fairly new.

Once he had found the right one, he bought it and it arrived at our field. It was only then I understood what he had desired. A gentle and forgiving aircraft with some character that you just don't get with today's modern plastic fantastics. As well, even though it's a tandem layout, you fly it from the front seat even when you are solo, making it easier for pilots when the instructor gets out.

I surmised that, because it had its '24' registration, I could propose to my wife that I to buy a similar aircraft on the premise it would be a fine training machine and one of the few tail draggers around our parts for training and conversions. Less of a toy and more of an investment. Armed with that argument, I approached my wife with the opening line "Hey... I've got a great idea!"

Once approval had been granted, I started looking on Barnstormers.com for a suitable candidate.

I hate Barnstormers! So many aircraft and so few dollars available to buy them all.

After several weeks searching all the categories for the right aircraft, I noticed an advertisement for a Taylorcraft L2M. For those who don't know me, I am an ex-airforce (not RAAF but RN-ZAF) Mech Tech, with a strong interest in WW2. So the L2M ticked a lot of my boxes.

The L2M was a WW2 artillery spotter / trainer used by the USAAF between 1943-45 and resembles a Piper Cub J2 (In fact Mr Piper collaborated with Mr Taylor to design the aircraft). Flying solo is from the front seat, just like the Champ. Powered by a Continental 65hp engine, it might be a bit under powered, but an STC is

available to give the airplane more horses if needed. It has a MTOW of 601kg, so by limiting MTOW to 600, I could register it with RA-Aus. Perfect. There were also 100 of the aircraft flying in the US, so parts and support are readily available.

I decided to ring the owner of the aircraft and was told it had sold that very morning. I had missed out. Buzzer!

Just as I was losing hope, I received an email from a bloke in Oklahoma who had an

L2M he might consider selling if the price was right. He said his name was Claudius. This had to be real. No one in their right mind would make up a name like that (The FAA register also confirmed it).

About 100 emails later I had pics of the aircraft including close ups of critical systems, log book records, aircraft history, copies of STCs, weight and balance, copies of FAA registration and so on.

It looked like everything I wanted.



L2M arriving



L2M and Champ



Runups

Skype is a great tool when buying remotely. It lets you talk to people and see and hear what they are saying. After a short discussion we agreed on a price, subject to an inspection by me to verify that what had been presented was factual. Claudius agreed, but was somewhat surprised when I told him I would be there in a fortnight and asked if he could put me up to save me some dollars. Once his wife's approval had been given, I booked flights to Dallas Fort Worth, where Claudius would collect me from the airport.

You know when things are meant to be, when all the little things line up and work. That's how this deal went down. Easy, simple and friendly.

Even organising a container to bring it home was no hassle because I used Supply Chain Logistics in Perth, which had done it for me before.

So, in January, I met Claudius at the airport and two hours later I was in Ardmore, Oklahoma, looking at my L2M. I had goose bumps – it was everything I had been told.

The following day, rested from my travels, Claudius and I went up for a fly. I was expecting a sluggish aircraft because 65hp doesn't exactly make an airplane go like a scared rabbit when you are at or near MTOW. That said, I was pleasantly surprised at the climb rate - but it was cold and the air was thick.

The L2M flies with just gentle pressure on the stick, has little adverse yaw, be-

cause of its frise ailerons. It cruises along at a steady 83mph (75kts). The scenery was also pleasing to the eye, as we flew over lakes, rivers, forests and the Oklahoma plains. Very flat, just like WA, only prettier because we don't have many rivers and lakes, just lots of wheat farms.

The following day we had a meeting with the mechanic who maintained the aircraft and did the annuals etc.

I received a few pointers about servicing the Continental A65 engine, made arrangements to disassemble the aircraft to fit in the container and then we went for another flight.

It took us a day to take off both wings and one half of the stabiliser so it would all fit into the container. Everything was labelled as we took it apart and we bagged all the small bits. Before I knew it, the truck had picked up my dreams to go from Ardmore to Texas, then California, Singapore and finally Perth.

The trip took four months because US Customs wanted to check on what was being shipped out. The Bill of Lading said it was an ex-military aircraft. I even got a call about the insignia painted on the sides and had to make a declaration it was historic

and no longer used by the USAAF.

In late May it arrived in Perth. After Customs and AQIS lightened my wallet, it was mine at long last.

I organised my L2 to put my L2 together, (a standard joke now) and together we put her back to flying status, got her registered with RA-Aus which was a pleasant and simple process (compared to experiences with SAAA and CASA registering an imported Starduster Too).

Interestingly, mine appears to be the only L2M flying in Australia. There was one on the VH register in Queensland some time ago, but apparently it crashed and I believe is at Caboolture awaiting someone to repair it. If anyone knows of another, I would love to chat and compare notes.

We have now gone through the flying testing and familiarisation period and I am very pleased with her. She is my pride and joy, but as agreed with my wife, I have to let others train and fly in her. I guess I have to meet that condition of ownership.

So if you are ever in Perth and want to fly a vintage warbird which saw service in WW2 or get a tail wheel endorsement, give me a call.

You can find my contact information at www.topfun.net.au.

“Less of a toy and more of an investment.”



The L2M flying



Astore gets you grinning

BY GRANT BENNS **PRESIDENT NZ AEROBATIC CLUB**

It's hard to ignore the aesthetics of the Tecnam Astore as you first approach it – especially the spinner, prop and cowls.

Flowing lines blend together to say 'speed'. Of course, no LSA can truly be a speed demon, but having your ride looking like it is doing 200kts standing still never hurts. However, some fast planes can be quite unpleasant to fly and a few pleasant-to-fly planes can be, um, unpleasant to look at. So can the Astore be both pleasant to look at and pleasant to fly? I went to find out.

Without much LSA time under my belt – does a 1944 J3 Cub count? – my reference points for this comparison are such honeys as the Extra 300L, Falco F8L and it's close Kiwi cousin, the beautiful Falco composite Furio. Despite quite different configurations and horsepower, these three planes are my personal darlings upon which I judge all others, at least in terms of handling prowess.

Being just 600kg at max take-off weight, you could and should expect the Astore to be light handling. However, carving through the air at 105kts could produce undesirably heavy control feel unless the designer pays attention to the needs and expectations of the pilot. Planes can actually be too light on the controls as well – strange but true! – and this can result in twitchiness and/or a lack of control centering, feedback and feel. I have flown a few planes like that, which can become tiring to fly, depending on the mission. When the mission for a plane reads 'relatively low-time pilot having fun flying from one cool place to another, banking occasionally to enjoy the view', a degree of stability is nice to have and the Astore has surprisingly good pitch stability. But control responsiveness, particularly in roll when banking to soak up a great view below, is akin to having lively and talkative steering in your sports car.

It's what defines a plane's ability to bring a grin to your face.

The Astore's ailerons are delightfully light and have feel. I grinned many times.

Professor Luigi Pascale, the 90 year old designer of the Tecnam range and others for the past 60-plus years, has produced a sweet handling plane that belies its weight. I didn't get bounced around the sky and in fact felt like I was in a much larger plane, perhaps a Cherokee.

But when I wanted to bank and turn I was flying a sports car again, more like the Falco. The rudders were firm but nicely weighted and very infrequently used.

The elevator loaded up progressively in manoeuvring flight, but not so much that I grew new muscles, or so little that I transitioned straight to a snap roll. All very conventional, well-sorted and quite sporty.

With 97 Rotax-horsepower smoothly, quietly



“A sweet handling plane that belies its weight”

and very economically pulling us along through a swanky fixed-blade prop, 105kts was an easy and comfortable cruise. Lower the nose a bit, or forget to set the throttle friction firm enough (beginners mistakes for me – Rotax carbs are spring loaded to full throttle) and up went the speed to 110kts or more, but still well inside the generous Vne of 150kts. Quite obviously the plane has been perfectly propped for its power available, drag profile and structural integrity. A climb-out of greater than 1,000fpm was further evidence of the sweet-spot the professor has achieved.

Slowing down to land seems a perfect way to end this brief overview of the Tecnam Astore. But this is easier said than done, such is the low drag of the prop and airframe combination. The book says carry out final approach at 55kts to touch down at 42kts. Believe me, 55kts is way too fast. With effective electric flaps and the right speed, landings would be in the ‘indecently short’ category and I look forward to another chance to get the Astore stopping in the length of the keyboard marker paint, which it should be quite capable of doing, pilot notwithstanding. And the said pilot will be grinning from ear-to-ear! 🤩



Surprisingly good pitch stability

FEATURE



Just has installed a new landing gear system



The tail wheel incorporates a hydraulic shock



Just a super STOL

BY BRIAN BIGG EDITOR

Recreational pilots in Australia who take off and land on very short strips now have a new choice of steed in which to do it.

Just Aircraft of the US has started selling kits for its new SuperSTOL here.

Brett Patton of Quirindi is the new Australian distributor for the aircraft.

"I bought a kit for my own use," says Brett. "Before I started the build I wanted to do more research and get some hands-on experience about the build process.

"So I travelled to Walhalla in South Carolina to the factory where I spent a couple weeks with the owners, Troy and Garry.

"They are very down-to-earth practical people and we hit it off right away. I had a great time, not just in the factory but socially too.

"I think after flying with me and teaching me to fly the STOL to its full potential, they could see they now knew someone in Australia capable of building and demonstrating their aircraft.

"So I became the Australasian agent for them".

Just Aircraft was founded in 2002 when designer, Troy Woodland left his position at Flying

K Enterprises, the maker of the Sky Raider kit. Troy wanted to design a plane of his own. He met Gary Schmitt at an air show. Gary wanted a bush aircraft and was prepared to pour resources into achieving his dream.

The two men collaborated on a design they called the Escapade. It has a number of features which distinguish it from other aircraft of similar size - a huge luggage compartment, a roomier cabin and a simplified wing-folding mechanism which avoids the need to remove control linkages.

After the Escapade came the Highlander, a more rugged plane which emerged as a best seller for Just Aircraft.

This was the bush airplane they wanted all along. The Highlander debuted at Arlington in 2004 and now dominates the company's sales.

The new SuperSTOL has an all metal wing, aerodynamically designed to enhance slow flight while also increasing cruise speed. The wing also incorporates self-deploying leading edge slats and long span fowler flaps to further improve the stall range.

To complement the new wing Just has installed a new landing gear system which takes

full advantage of a hydraulic strut with a long distance of travel. The tail wheel also incorporates a hydraulic shock to lessen aggressive off airport landings.

The wing slats, when combined with the large Fowler flaps, allow the aircraft to be flown at extremely high angles of attack, permitting it to drop into small or inclined clearings. This provides access to considerably more off-airport landing sites, making the SuperSTOL one of the most versatile backcountry machines out there.

With the new wing configuration, the SuperSTOL will cruise at 95kts, land at 27kts and take off or land with as little as 150 feet of runway.

To date more than 200 kits have been shipped worldwide: including Australia, England, France, Spain, New Zealand, Canada and Ecuador. In addition to selling kits, Just Aircraft has begun selling factory built aircraft and kit owners can take advantage of a factory build program where they can construct their own plane in the US factory.

The kit price will set you back USD\$39,800 (firewall back) plus the import costs.

For more information, justaircraft.com.au.



"Designed to enhance slow flight"

The wing slats allow the aircraft to drop into inclined clearings

DAVE DANIEL

A final word on stability

In his most recent columns, Dave has been explaining the importance of stability to an aircraft design ('Making sure you are stable' December 2014 and 'Perfect pitch' February 2015). Here is his final word on the subject.

Now we have longitudinal stability under our belt it's time to tackle lateral and directional stability.

For most aircraft, yaw induces roll and roll induces yaw - meaning lateral and directional stability behaviours are both intertwined and highly complex. Fortunately for us however, the usual design treatments are separate, allowing us consider them in isolation, starting with the vertical tail and directional stability.

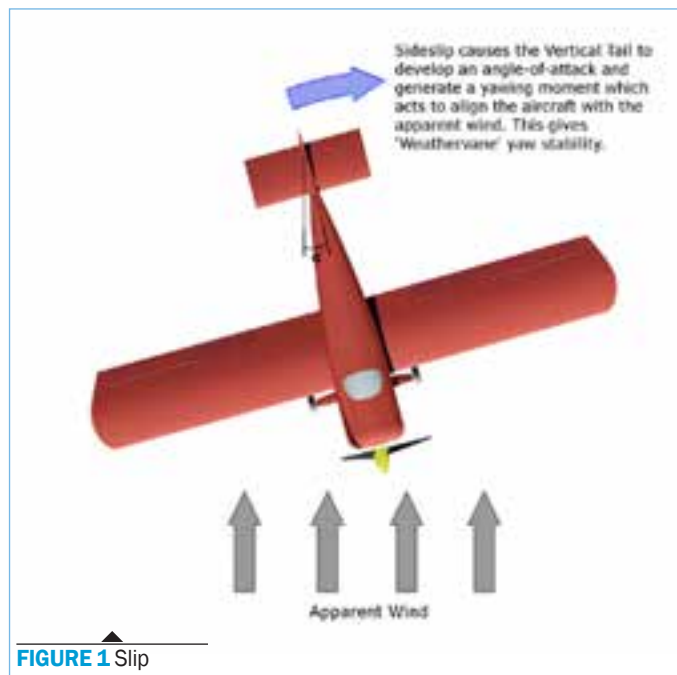
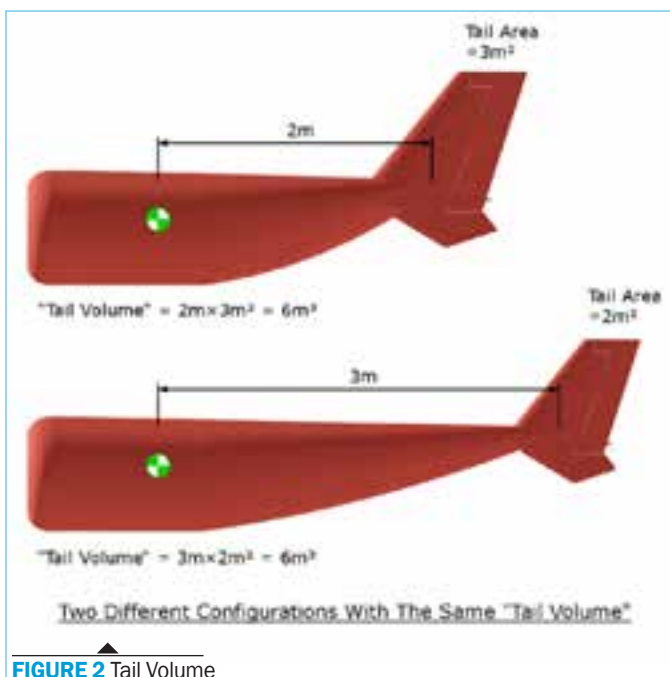


Figure 1 is a diagram of a plane which is slipping.

The airflow is not aligned with the fuselage so it arrives at the vertical tail at an angle which produces a horizontal lift force. This lift force acts to yaw the plane into the slip, aligning it with the oncoming airflow and providing weathervane stability. This basic principle is simple and intuitive, but unfortunately this is not the whole story. When designing the tail for a real aircraft there are many other influences to account for. Fuselage lift, swept wings, dihedral and prop placement will all interact with a slip and either enhance or decrease stability. Plus, there are other more subtle secondary effects to consider. Prop wash over the rudder for example, will render it more effective, but conversely will make the vertical tail less effective as a stabiliser (by masking the tail from seeing any changes in angle-of-attack). These problems and many more, such as ensuring adequate spin resistance, make a rational analysis of the tail an extremely challenging task and one which has a high risk of producing incorrect or misleading results.

Fortunately engineers are a pragmatic bunch, so when the analytical solution to tail sizing proved to be impractical they neatly sidestepped the problem by developing an empirical solution which allows the tail size for new designs to be derived purely by comparison with similar successful aircraft using 'Tail Volume Coefficients'.

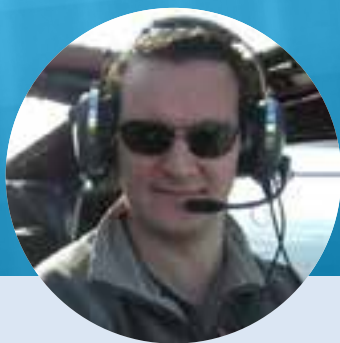


Because the tail functions like a lever, a trade-off can be made between the distance the tail is mounted from the aircraft centre-of-gravity and the tail's area. Multiplying the tail's area by the length of its lever arm yields the Tail Volume, so called because it has units of metres cubed, the same units as volume (and nothing to do with the actual volume of the tail!).

The important point to grasp here is that, for a given aircraft, a small tail with a long lever arm will produce the same yawing moment as a large tail with a short lever arm, providing they have equal Tail Volumes (see Figure 2).

This concept can be further extended to allow broader comparisons between different aircraft, by converting the Tail Volume into a dimensionless coefficient (dividing it by the wing area and span in the case of the vertical tail volume coefficient, or wing area and mean chord for the horizontal tail volume coefficient). The results when compared with existing similar aircraft can thus provide a useful benchmark for estimating the size of tail required for the new aircraft.

Tail volume coefficients will get you in to the ballpark, but there is one final catch... damping. The two tails shown in Figure 2 have the same volume coefficient but a longer smaller tail will have better damping. A short aeroplane can be made to be stable by adding a large tail area, but the damping will still be poor, making small aircraft twitchy and prone to pilot induced oscillation.



Fortunately engineers are a pragmatic bunch

Rollin' Rollin' Rollin'

Lateral stability is not straightforward to achieve. While longitudinal and directional stability act to maintain the aircraft orientation relative to the oncoming airflow, lateral stability is concerned with keeping you the right way up, or to put it another way, maintaining the aircraft orientation relative to gravity. The simple way to achieve this is to have the aircraft C of G well below the centre of lift and rely on the pendulum effect for stability. This is great for a paraglider, but for a low wing plane this method is clearly not going to work, so instead we use dihedral, angling the wings upwards to place the tips higher than the root.

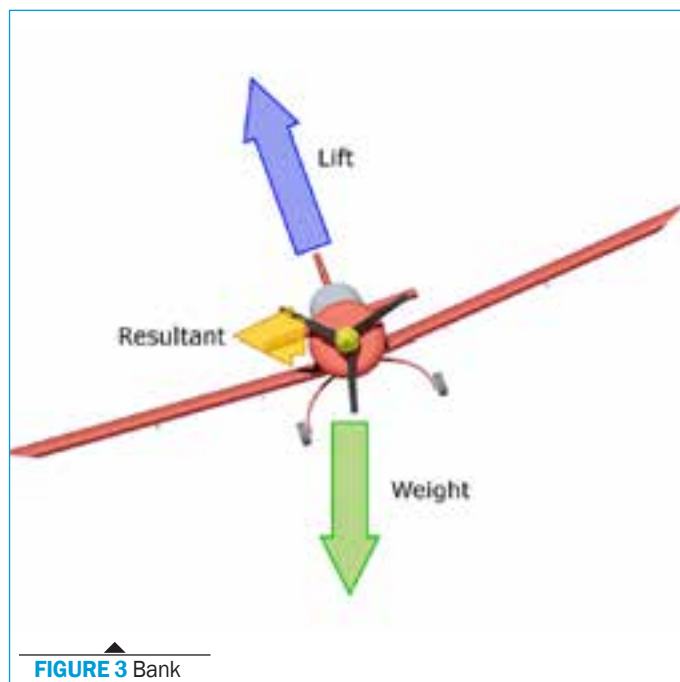


FIGURE 3 Bank

Here's how it works, Figure 3 shows an aeroplane which is rolled to the right. As we all learned in ground school, rolling tips the lift vector over while gravity continues to act downwards. The result is an unbalanced side force which turns the plane... or does it? Actually no, or at least not directly, unless of course you have banked to 90° and pulled some elevator. In a shallow bank with no rudder input, the force imbalance will actually result in the plane slipping rather than turning. With this in mind look at Figure 4, which shows two views aligned with the airflow (imagine you are looking directly downwind).

Comparing the top and bottom view it is apparent that, in a sideslip, the dihedral means you can see slightly more of the bottom surface of the leading wing and slightly more of the top surface of the trailing wing. In other words the angle-of-attack of the leading wing has increased and of the trailing wing has decreased. This results in a lift imbalance between the two wings which acts to roll the plane level.

Now before I get deluged with letters pointing out that the vast majority of aeroplanes don't automatically roll themselves wings level in the way I just described; let's look at what happens when lateral and directional stability behaviours are combined.

Aircraft designers usually opt for good directional stability and weaker lateral stability in their aircraft to avoid, among other things, the Dutch Roll problem I mentioned a couple of articles back.

What this means is that in all but the smallest slip, the weathervaning directional stability overrides the dihedral effect. So in reality, when our banked plane in Figure 2 starts to slip, it yaws into the bank and the plane does actually turn as originally predicted.

Of course if the bank forms part of a deliberate turn, some rudder input is deliberately used to help the yaw establish, and elevator is applied to keep the nose up. However if the plane is banked by a gust and the controls are left untouched, the resulting yaw quickly takes the nose below the horizon and a rapidly worsening spiral dive develops - the classic VFR pilot flying into IMC accident scenario.

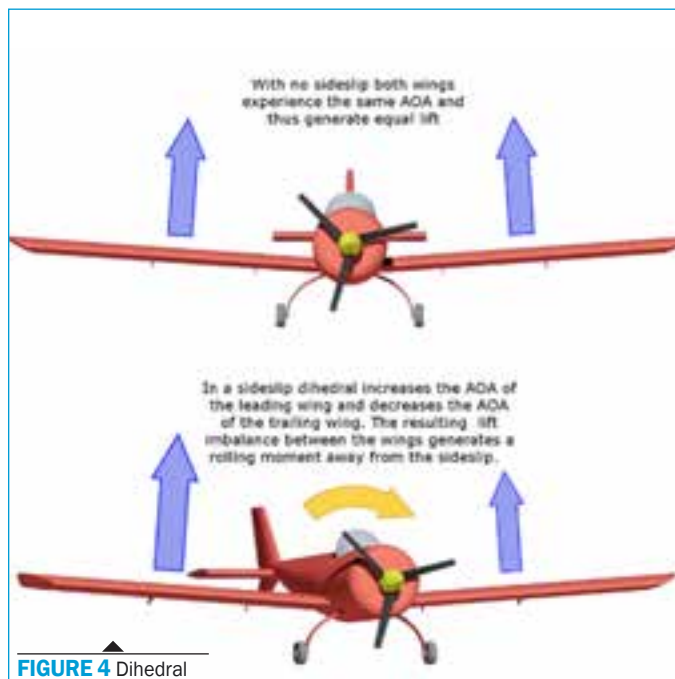


FIGURE 4 Dihedral

There are some applications where large amounts of dihedral are used and the resulting strong roll stability means you can do away with ailerons all together (as demonstrated by paper aeroplanes and some free flight toy gliders). Controlled flight can still be achieved with this configuration by relying on rudder alone to turn. This works because any rudder input will induce a slip which the dihedral effect then converts to bank.

While workable, this approach is quite limiting and as such is rare in full scale aircraft, but the Weedhopper springs to mind as an example.

As a final thought, despite the naming convention 'lateral stability' is really the wrong name for the phenomenon just discussed. We should probably just call it 'dihedral effect' instead.

After all, both directional and longitudinal stability act to align the aircraft with the oncoming airflow, but dihedral effect actually causes the aircraft to roll away from the airflow in a slip.

Next Month: Fuelling and Cooling

FLIGHT INSTRUCTOR'S FORUM



Facilitated by the aviation guru Professor Avius

Calling all ducks!

What's in a name? Would a rose by any other name smell as sweet? Perhaps in romantic plays or on Valentine's Day cards, but in aviation, the words we use and the way we use them is crucially important.

In the aeroplane, we rely on information coming to us from several sources; what we see, hear and feel. Our brain uses this information to paint a picture of what's happening around us. As a pilot gains experience, this ability to paint an accurate picture and make decisions based on that mental map increases markedly. One of the most useful tools to aid the situational awareness of all pilots is good use of the radio. Good radio procedures should be something all instructors strive for when teaching pilots to fly. Its one of those topics which probably falls under the Airmanship banner more than a specific teachable sequence or learning outcome. Right from the first flight, the instructor should demonstrate clear and concise radio calls, while encouraging the student to maintain a listening watch and to build up a mind map of the situation around them; situational awareness! However, a strong emphasis needs to be placed on the fact that the radio is quite fallible. It's easy to select the wrong frequency, have the volume turned down or even have a fault of some description. It is for this reason the pilot should never rely on the radio as a sole means of discerning traffic, but rather treat it as another tool.

So what makes a good radio call?

It's still quite surprising to hear experienced pilots making long, unnecessary radio calls, or using long extinct phraseology. In fact one can often tell in which era the pilot making the calls received his training. Calls which begin with "All stations in the CTAF, this is XYZ", for example, are a dead give away to the pilot being of the long-in-the-tooth variety.

Another common mistake is to clip the beginning of the transmission by not allowing a slight pause before commencing the radio call, once the PTT button is pushed. A good tip is to remember Push-Pause-Talk.

So what are we teaching these days? What is the format for a standard radio call? And when should we be giving it?

CAAP 166 has good tips for the correct phraseology, as does the AIP. The CAAP spells out the recommended format for radio calls on the

CTAF in the vicinity of non towered aerodromes.

Location Traffic (e.g. Parkes Traffic)

Aircraft Type (e.g. Jabiru)

Call sign (e.g. 7046)

Position/Intentions (e.g. One-zero miles north inbound, on descent through four thousand, two hundred, estimating the circuit at three-six)

Repeat Location (e.g. Parkes).

Simple, to the point and no superfluous words. The introduction "Parkes Traffic" as opposed to "All stations in the Parkes CTAF" used two words instead of seven. There's no rabbiting on and the call should be spoken at a normal rate, not rushed.

Note the position report was given relative to the airfield, and not a local feature.

The CAAPS state an inbound call should be made by 10 miles, but don't forget, RPT kero burners and small jets are travelling quite quickly and will be giving inbound calls from as far as 30 miles away with their ETAs. In this modern age we need to teach pilots to monitor the local CTAF and the area frequency, which will help improve the situational awareness of both the RPT crew and the recreational flyer out for a Sunday stooge.

While the regs state 'by 10 miles' the actual size of the CTAF area should be considered to be much larger than that.

Once in the circuit the CAAPs recommend circuit calls be made while the aeroplane is turning because it's much more visible when banked or banking. The adage 'Check-Talk-Turn' can be useful patter to reinforce the concept. The same format of phraseology used in the previous example can also be used in the circuit calls:

"Wollongong Traffic, Jabiru 7046 turning base 16, touch and go, Wollongong."

A good instructor should always be encouraging and correct the radio calls given by the students, with constant patter such as "Did you hear that last call? What was the call sign? Where are they in relation to us? What would you suggest we say back?"

It will help build the pilot's situational awareness and decision-making skills.

The use of the radio should not be taken lightly; the rose may still smell as sweet, but the power of the spoken word can help avert a tragedy. CAAP 166 (2) sums it up perfectly.

Pilots should be mindful that transmission of information by radio does not guarantee receipt and complete understanding of that information. Many of the worst aviation accidents in history have their genesis in misunderstanding of radio calls, over transmissions, or poor language/phraseology which undermined the value of the information being transmitted.

References :

CAAP 166(1) CAAP 166(2)

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OzRunways goes Android



Electronic Flight Bags are definitely now part of a recreational pilot's accessories.

At any airport, in any cockpit, you'd be hard pressed to find a pilot not consulting an iPad with an EFB.

Away from the airport though, more people are using Android devices and so the EFB makers have had to respond.

Just before Christmas, the much anticipated Android EFB product by OzRunways was released. To differentiate the two, the Android product was simply named RWY by OzRunways.

OzRunways co-founder and lead on the Android project, Bas Scheffers, says the company's previous experience with the iPad application gave it a great insight into what it could do in create a product for other platforms.

"OzRunways has five years of development behind it and we learned a lot about what pilots need, what works and what could be done better", says Bas. So while RWY has many similarities, it is a different product.

"We didn't want to confuse people into thinking it would be the same product, just on Android. It is a full EFB to which we will be continually adding".

In the current release, pilots have access to all the same data as in OzRunways: all Airservices IFR and VFR maps, ERSA, DAP, AIP, AOPA Airfield Directory, Pilot's Touring Guide, flight planning, NAIPS weather and NOTAM and, of course, moving map GPS.

RWY works on all Android phones and tablets which run Android 4.2 or newer and subscriptions are the same as for OzRunways, making it possible to run RWY on a phone and OzRunways on an iPad, or vice versa, at no additional cost.

Many pilots have both Android and Apple platforms. Bas said he expects some existing users will crossover to the new platform, but the initiative is more about looking to the future.

"Many of our customers already have an Android phone and kept the iPad around for OzRunways.

"RWY has already enjoyed a great reception but we see this as a long-term play. When OzRunways came out on iOS, Android tablets didn't even exist. So pilots bought the device to run OzRunways. Over the next few years we'll see the next generation coming to aviation and they already have both tablets and phones, with many of those being Android. So we're ready to welcome those pilots with a great, no-compromise product", says Bas

RWY is available from the Google Play Store with a 30 day free trial, or visit <http://www.ozrunways.com>



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Delightful D-Motor

BY BRIAN LYFORD AND BRIAN HOPE

Reprinted courtesy LAA UK Light Aviation

The D-Motor came about because a kit helicopter manufacturer needed a suitable engine to power its products.

The Masquito Aircraft Company was established in Diksmuide, Belgium in 1994 to design and produce an ultralight helicopter.

The first example, the M58 prototype, was completed in May 1996 powered by a 65hp two-stroke Rotax 582. It carried out around 25 hours of testing over the following year, after which it was decided to switch to Jabiru 2200 power and re-designate the type as the M80.

A variety of upgrades were made to the Jabiru, including replacing the magneto ignition and carburettor with electronically controlled ignition and fuel injection but eventually, in 2002, seeking yet more power, the company developed its own engine, based on the Jabiru. This unit, the Masquito M2.6, was rated at 120hp and, when the helicopter side of the business folded, it became the 95hp ULPower UL260i.

Brothers Stefaan and Paul Masschelein were involved in both the Masquito helicopter and the M2.6 engine but decided in 2004 to go their

own way and develop a new engine of their own, so with Stefaan, Marc and Freddy Deschrevel, they established Masschi Motors to develop the Masschi 105. The goal was a compact, lightweight power unit producing 105hp.

The engine's compactness was achieved by using a side-valve configuration, thus eliminating the width required to accommodate overhead rockers and/or camshafts. But the major difference from contemporary engines was that it was fully liquid cooled (the Rotax 912 only has liquid cooled cylinder heads), and there was not a cooling fin to be seen.

Masschi launched the engine at AERO Friedrichshafen in 2005 and, at that time, it had a very over-square bore of 103.6mm and stroke of 74mm for a capacity of 2,500cc and was rated at 80hp @ 2,850.

It used a Bing carburettor for fuelling, featured twin DCI ignition and major components like the crankcase and cylinder blocks were machined from billet. It certainly met the compact criteria being 382mm wide and deep, and 608mm long (a 912UL is 576mm wide, 445mm deep and 561mm long) and it was commendably light at 48kg dry.

It certainly raised eyebrows by being a side valve, a configuration that had long since been discarded in the automotive industry. The company argued that for the power requirements of a low revving, high capacity direct drive aero engine, overhead valve technology was unnecessary. The company had a connection with Rand-Kar, the French XAir agents from early on and the engine's early flight experience was gained in an XAir microlight and an XAir Hanuman.

D-MOTOR IS BORN

In 2008 a new owner, M&M, took over the project and development continued. Fuel injection and electronic ignition replaced the carburettor and DCI systems and crankcase and cylinder block production moved to sand casting. In 2010 Belgian government funding was received to develop a six cylinder engine and the company was reconstituted as D-Motor, thus the Masschi 105 became the D-Motor LF26.

An initial batch of ten engines was offered to beta buyers for test purposes on the understanding that they would receive updated replacement units should changes in specification be required.



A-The six cylinder D-Motor

Delightful D-Motor cont.

In August 2011 the first OEM (original equipment manufacturer) agreement was signed with German aircraft manufacturer BOT which offered the engine as an option to the Rotax 912 in their Sport Cruiser SC07. Work also commenced on a 120hp six cylinder version of the engine, the L39, but this was held up when the company decided to incorporate improvements learned from that engine into the four cylinder unit.

The stroke was increased from 74mm to 80mm which upped the capacity to 2,700cc and better access was provided to the now individually adjustable tappets.

This work entailed the production of new crankcases and cylinder blocks, which were introduced in mid-2012. Work has also been ongoing in improving the ECU unit. The LF26 is now rated at 88.8hp continuous @2,800rpm and 91.8hp max@3,000rpm and it has an installed weight with liquids of 60kg which, the company claims, is 15kg lighter than the Rotax 912.

FLYING THE 'D'

I looked at the engine installation in a BOT Speed Cruiser SC07. The SC07 is an all composite design not too dissimilar to the Flight Design CT with its 'tadpole' look of a large cockpit and rapidly reducing rear fuselage. Like so many aircraft of its type it is produced as a 472.5kg microlight or a 600kg US-style LSA, the example I flew was a microlight.

I was impressed with the installation. It looked very neat, uncluttered and tidy. I very much liked the simplicity of the engine and ancillary equipment and the KISS principle is certainly the order of the day. The one exception is the twin ECUs. I'm not really convinced that two are necessary but they are considerably less complex than those even in a small

car (nowhere near the number of sensors and functions) and are reasonably compact.

The engine doesn't come fitted with either water or oil thermostats, which have to be fitted externally if required, and I think they are. The oil tank does have a sight glass as standard though, a nice touch (like the 912 the 'D' is dry sumped).

From a maintenance perspective pretty much everything is accessible once the cowlings are removed. All the service parts are automotive and therefore multi-sourced and inexpensive. I'd have to give the D-Motor eight out of ten for accessibility.

Noise is an aircraft issue whether we like it or not and despite the 'D' being a big(ish) bore direct drive engine, the manufacturer has taken the responsibility of silencing seriously and on the BOT has provided nicely made stainless steel two-into-one silencers on each side of the engine.

Other arrangements can be made available. I have also seen an across the lower rear of the engine single silencer arrangement on a display engine.

Witnessing both aircraft land and take-off, I was impressed with the low noise level, especially when the BOT passed within 50m of me and was announced only by the whistle of the wings. I thought the engine had been cut for my benefit but no, it revved up to back-track and even then was comparable to a well muffled Rotax.

Some of you might, like me, have an interest in motorbikes where a Harley Davidson V-twin is a thump, thump, thumper, and a Kawasaki or other sporty Japanese four cylinder machine is a high revving howler; even if you don't ride you will have heard them. They all take the specific energy from the fuel and convert it to forward motion with pretty much the same result.



B-D Motor electrics

The same rule applies with aeroplanes; a faster revving engine, like the 912, will make rather more than two bangs to the one bang of the slower revving D albeit they are smaller bangs and, as reciprocating mechanisms, cannot be perfectly rotationally balanced over a complete speed range.

There are discernible differences between the D's vibration characteristics and those of the 912. The latter is more a sense of buzziness, while the former is a discernable thump, thump, thump, especially when at high power in a climb, but that is certainly reassuring to some. And as for the actual climb rate, the BOT managed 700 to 750fpm two up against my Pioneer's fully loaded 880fpm at its last annual. Bear in mind though that the BOT is a heavier and possibly draggier machine than the P200.

Cruise operation was fine, the engine is smooth and no noisier inside the aircraft than a Rotax but with the advantage of single throttle operation – no carb heat required because of the fuel injection.



C-The D Motor left hand side

To all intents and purposes this is undoubtedly a good engine, a sensible concept and a well-executed design; it certainly meets the operational demands of today's typical owner of the class of aircraft that are the realm of it and the 912.

Its cost is competitive, falling between the older (traditional?) VW technology of the Sauer and the 'modern' Jabiru 2200 and lower capacity but higher revving geared Rotax. Spares prices should be competitive as a number of the internal components – pistons, valves etc, are sourced from the automotive industry rather than being purpose made.

MORE THAN A GOOD ENGINE

The problems any new engine has to establish itself are many and it comes down to more than it being a well-engineered product at a competitive price. Factory and distributor back up is a key issue, not just in the availability of spares but in terms of installation solutions. The D-Motor website suggests this is something in which they are actively engaged and the fact that the engine fits straight onto a Jabiru engine mount is a plus in terms of retrofit ability and mount design.

Then there is the question of longevity; firstly of the unit itself – TBO is reliant on service history and early buyers will always be taking a bit of a step into the unknown; and secondly of the manufacturer – will they still be around in five or ten years' time when the engine I buy today may need major components?

Certainly as the Masschi 105 and latterly the L26, this power unit has had extensive testing and development over ten years. It is simple and robust and there is nothing to suggest the current factory TBO of 1,500 hours is not perfectly reasonable, or indeed that in the

light of experience will not be extended.

And D-Motor has signed a major partnership deal with a Chinese company which, the company says, will enable it to offer extended warranty on its products and expand into the Asian market. This, it hopes, will be another incentive for aircraft manufacturers to offer the engine as an option because undoubtedly OEM is the fastest road to growth.

Adam Nagorski has taken over representation for the D-Motor in Australia. He reports being really happy and privileged to represent the product here. "At this stage we have two engines in Australia, one on the static display stand and the other is being installed into my demo aircraft. It runs incredibly smoothly."

Adam says the demo plane still has work to finish it off before he starts taking it around to aviation events.

For more information, www.d-motor.com.au or info@d-motor.com.au.



E- Induction manifold



D- The German made BOT

A-The six cylinder D-Motor -Shown at AERO Friedrichshafen in 2013 but was not run until later in the year. It is giving 125hp @ 3,000rpm and is development flying in a COAX two seat helicopter and a XAir Hawk.

B-D Motor electrics – Top view shows the ECU and ignition packs mounted on the firewall. The lack of baffles and carburetors helps greatly in reducing clutter and aiding accessibility.

C-D Motor LHS – The left side of the motor shows the quite small oil radiator mounted at the front, nice clean sand castings without a fin in sight and the air filter mounted on the firewall.

D-The German made BOT Speed Cruiser offers either Rotax 912 or D-Motor power as a factory fit. Brian Lyford found the overall performance of the D-Motor to be impressive and considers the engine to be an excellent alternative to the 912.

E- Induction manifold – The inlet manifold with throttle body and injectors. Fuel injection does away with the requirement for carb heat and the ECU takes care of the mixture.

The CAMit Aero Engine

BY ARTHUR MARCEL

Attendance at NATFLY 2014 was down on previous years. But for those of us who were there, life was easy because it meant no queuing – well mostly.

There was a queue at the entrance to the dining hall at the Services Club on Saturday night. There was also a rather long queue for most of the weekend in front of the CAMit (Computer Assisted Manufacturing Information Technology) Aero Engine display.

Although CAMit owner, Ian Bent went to Narromine on occasion with Jabiru, this was his company's first ever appearance at Australia's premiere recreational aviation event in its own right. The enthusiastic reception Ian and his helpers received from the recreational flying public would almost certainly guarantee another appearance, if and when the next NATFLY is staged.

From its inception, CAMit has been closely connected with Jabiru. Until about six years ago, when, in the face of perceived competition from ASTM scheme imports, Jabiru decided to source engine parts from overseas, CAMit was their main supplier. Since then, CAMit has still been assembling Jabiru motors, but has been left with plenty of unused capacity.

Not an idle man by any means, Ian Bent has been using these past six years to develop the CAMit Aero Engine. In this enterprise he has had the assistance of Toowoomba based aeronautical engineer, Dafydd Llewellyn. Dafydd, retired from a 46 year career in aviation engineering, 37 years of it as a CAR 35 engineer, in June 2011 when the CAR 35 qualification was superseded. He now runs Pilton Engineering Enterprises in partnership with his son, Bruce, also a highly qualified engineer.

The CAMit Aero Engine is supplied as a series of upgrades for a Jabiru engine. A fully optioned CAE engine, however, in terms of component design, lubrication, valve train operation and metallurgy, is a different motor to a Jab. The only similarities are the number of spark plugs, the engine mounting requirements and not much else.

The CAE motor is only available with solid lifters, so the monitoring of valve clearances can provide the earliest indication of stress creep in the alloy heads. This is an important point. All aluminium alloys have a stress creep threshold temperature, above which distortion loading starts to change their shape and cause migration of the metallic elements. Distortion loading above the thermal threshold temperature can lead to cylinder head leakage and valve seat liberation.

CAMit has invested a lot of time and effort researching not just head design, but particularly the properties of the various alloys from which they can be made. Australia does not have the economies of scale necessary for the production of cast alloy heads; however, the performance, for example, of the 242 alloy in US manufactured Lycoming

sand cast cylinder heads has provided CAMit with a handy benchmark for the metallurgical optimisation of their CNC billet-milled heads. Overall, the expected serviceable life of CAMit milled heads is excellent and the possibility of valve seat liberation is greatly reduced, if not eliminated.

Apart from head deformation and valve seat creep, other issues addressed by the CAE motor include cylinder design, crankcase fretting, top end lubrication, through-bolt design, an engine shut down corrosion inhibiting system, even matters as mundane as dipstick design. CAMit upgrade and overhaul packages use mostly parts made in-house, which give known results. Outsourced parts include Honda coils, lifters and Bendix starters.

Ian's goal is total reliability, so he has been careful not to introduce new unknowns into any engine system, keeping within the bounds of proven technology and only making alterations where issues are fully understood and remedial strategies confidently identified.

At the end of 2011, prior to CAMit opening its doors to the public, Ian began a very rigorous testing program for his motor. Test flying was done in several 20 hour blocks, running the motor at temperatures far in excess of those normally experienced. Continuous cruise CHTs were above 170°C, and takeoff CHTs were frequently taken to 210°C. EGT's were regularly running at over 780°C with 793°C on climb! Head bolt tension remained unchanged throughout the test, indicating zero head deformation.

This particular motor now has over 200 hours on it and the heads are still performing well.

Ian has set his sights on certification, both CASA and ASTM. To this end, Pilton Enterprises has recently constructed



an engine test cell at the Llewellyn property near Toowoomba.

This is a sophisticated facility which will allow the CAE motor to be run for extended periods (200 hours or more) at performance stress levels well in excess of those it might be expected to meet in normal operations.

The control room is fitted with an elaborate array of calibrated engine performance instruments and there is even a rooftop supercharger for controlling density altitude. The performance of the engine will be gauged in a variety of simulated flight conditions. Ian and Dafydd are both confident the motor will perform to expectations.

As previously mentioned, the CAMit Aero Engine is being offered as a series of upgrades. This is possible because all components remain fully interchangeable with standard Jabiru engines. Replacement of all major components is a good option in place of a normal overhaul as all 'lived' parts, including crankshaft, crankcase, barrels, heads etc. are CAMit designed.

Two friends of mine bought CAE motors for their Jabiru aircraft last year. I asked for their opinions.

Firstly, Clive Ryan from Heck Field:

G'day Arthur. Re the CAMit engine, I must say that so far we are very happy with it! It is a very smooth motor and starts instantly. The only problem that we have had, and it's not directly related to the engine itself, was a faulty oil pressure sender unit. Once that was replaced our oil pressure reading was fine. We have now put 123 hours flight time up on the engine. We have CHT probes on each cylinder to monitor the temps and all are within a few degrees of each other. It's a WOW engine! Kind regards, Clive.

Secondly, Glenn Bruggeman from Clifton:

Hi Arthur. I am happy with the performance of my motor. My cruising speed has increased by about 5kts. The motor runs very cool. Cylinder head temps remain cool even on take-off, I think due to more oil being delivered to the cylinder heads. My oil temp rises during takeoff and settles down during cruise. I have only done 14hrs so far. CAMit have been very helpful, and Ian answers any questions that may arise. I feel confident in this motor as I know I have good backup and service when required. I would recommend this motor for anyone looking for a safe aero engine and it is Australian designed. Cheers, Glenn.

Last year, CAMit began also been selling motors into the US market. David Amsler, who flies out of Buffalo, New York State, sent me this photo of the CAE motor in his Pepsi Can Blue Sonex (below). The left hand baffles have been removed to show the shutdown activated corrosion inhibitor system (the red tubing at the bottom of the photo). David says that Buffalo airport is a tiny island in an ocean of forest; not the place to have an engine failure. However, he also says he is quietly optimistic about his new engine.



Finally, with regard to factory built aircraft, it may be the case that:

1. With type certified aircraft, fitting a CAE motor or even just CAMit upgraded parts as a replacement for an original Jabiru engine or parts requires the approval of a CASA approved engineer, either as a one-off installation or as a modification to the Type Certificate. Neither of these options would be cheap or easy to obtain.
2. Fitting a CAE motor or CAMit parts to a factory built LSA can only be done with the approval of the original manufacturer of that LSA. Fitting a CAE motor to an LSA without approval from the manufacturer would see the aircraft having an "E" attached to its registration number and it would therefore no longer be able to be used for hire or reward (i.e., no flight training).

CASA has recently confirmed the CAMIT engine is not subject to the Jabiru operational limitations described in 292/14, because the engine is not manufactured by a person under licence from, or under a contract with, Jabiru.



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Born Ready

BY JULIE HANDS

Our friends said “Next time, we’re coming too”. So when we felt the need to stretch our wings again on a trip to the WA coast and back we asked “Are you guys ready?” The reply was “We were born ready.”

The team included Ian and I in our Savannah ‘Cab Sav’; John in his Kitfox ‘The Fox’ (later called the Pink Skunk); Rogin and Jim in the Zenair 701 ‘Eagle’; Ross in his LightWing ‘Miss Adventure’; Barrie with his Jabiru 230; Rob in ‘The Bush Boar’ and joined by Troy in his Cessna 150 for the first leg.

The happy flight planning get-togethers took several months.

Day one of the journey was a short jaunt over the range from the Whitsundays to Bowen River Hotel then on to Charters Towers. We had five aircraft, seven people and a lot of banter.

Next, a friend’s farm ‘Olga Downs’ near Richmond. It’s always a party at Peter’s place. Peter also joined us the next day when we flew to Esmeralda Station.

Three planes and five people carried on to Croydon and Normanton where Oliver took us in for the night and showed us the big croc replica in the main street. Eight metres!

At dawn we flew over the Gulf towards Burketown, thinking there could be the big croc’s mates down there! Then we turned to Adele’s Grove. What an oasis. No wonder people come here.

Hell’s Gate roadhouse was good for fuel and brekky then up to King Ash Bay, where we collected Rob and The Bush Boar.

We found the lost city (a mini Bungalies) at Cape Crawford /Heartbreak Hotel as we flew to Daly Waters. This place is loaded with history and has a great pub.

Every flight has its great view but this day’s got better than usual as we flew via Victoria River Downs, close to Timber Creek and Newry Station homestead. The flat topped plateaus and deep escarpments really impressed us. Tom from Newry let us in on his secret landing area on the banks of Lake Argyle and we flew the short distance in late afternoon and established camp for the night as the sun set surrounded by abundant birds and other wildlife.

This place was too good to leave, so the next day we flew into Kununurra to buy supplies and returned to the lake. Here we met Kim who owns Zebra Rock mine and runs wetland safaris; he took us on a tour of his resort and mine (the only one in the world) then returned us to our tranquil camp by the water’s edge.



“Tempting to stay but we had to keep moving”

The flight to Home Valley Resort was spectacular - this is the real Kimberlys with all its colours on show and we had the best view for sure. We were glad the resort gave us a lift with all our camping gear because it was quite a long way from the big dirt strip. Our stuff and six people filled the land cruiser to its max. We had a look around the El Questro /Emma Gorge valley then on to Mt Barnett community and roadhouse. I had made contact with the elders of the community prior to our arrival and we were made welcome by the manager of the roadhouse who picked us up. Food, fuel and on we went to Windjana Gorge.

The country had changed its clothes completely now. The King Leopold ranges are huge smooth slabs of red rock and the Windjana gorge rocks are spiky upright and black. We were met as planned by the ranger who took us into the camping area which is at the base of the huge rock face and an easy walk into the gorge. The stroll through the gorge at sunset revealed many colours and several fresh water crocs in the pools.

It was an exciting day when we reached the WA coast at Derby with its vast estuarine mud flats. We followed the eastern side of the peninsular to Cape Leveque.

What a wonderful flight, full of pure white sandy beaches and sparkling blue water. Not what we expected at all after the murky waters of Derby. We did see several big sharks though.

Cape Leveque requires permission to land and sells no alcohol, however you can bring in your own. Somehow our arrival was a surprise to them, despite several emails and phone calls but this was quickly sorted and we were loaded into the resort 4x4 and transported to our campsite a whole 100m away! Sunset among the red rock cliffs, white sand and blue sea, with whales surfacing close to the shore, was unforgettable.

Tempting to stay but we had to keep moving and so we headed down the west side of the peninsular. We were able to see numerous pods of whales but then encountered quite thick smoke from bushfires (Cape Leveque was evacuated several days later).

We skirted Broome airspace and continued to Port Smith. Here we finally caught up with Bazz with the Jazz who had set off before us. What a place. Not only is it naturally beautiful with its white cliffs, sandy lagoon and great fishing, but the people almost adopted us, presenting us with a huge plate of fish fillets for our supper, an ice cold beer each and a car.

>>>Continue page 42



Bowen River pub L-R Rogin, Jim, Ross, Julie, Ian, John



Walking back to the planes at Esmeralda Station



Adele's Grove Lawn Hill Gorge

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



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Born Ready cont.

We reciprocated by flying several of our new friends over the area.

Then we hit a problem. A 30kt headwind and blowing offshore, so flying became as bumpy as hell.

Jim hopped in with Bazza in the jazz, leaving The Eagle a bit lighter to deal with the weather.

However The Eagle returned to Port Smith when, after take off, Rogin found himself almost stationary in the air. The others tried various heights and slugged on to Derby for a refuel before heading on to Fitzroy Crossing.

Next day, Rogin and The Eagle, still at Port Smith, made tracks as the wind dropped a bit and landed at a mustering station called GO GO, then on to Halls Creek, to meet up with the rest of us.

It was still very windy and rough at low altitudes and we all got beaten up for hours, arriving travel weary and ready for a cuppa and cake at the excellent bakery.

Ian and I had found by climbing, we had been more comfortable and the headwind at 9,700ft was much lower. We decided to track direct to Turkey Creek.

This route took us over the Mueller Ranges. This is remote, awe inspiring country and, although we followed the O'Donnell River, we never saw any sign of life, or a track, for well over an hour until we reached the road to Warmun. We had a character building crosswind landing with strong thermals and valley effect. We tied down to a concrete roller and a fence post and had a cuppa.

It was still windy next morning and we considered an across-the-strip take-off from the tie down area but opted for a diagonal aim down the strip, followed by a fast feathering into the wind. Then we turned to enjoy the Bungles which were, of course, fantastic. We landed at Halls Creek and met up with the gang later that morning.

Then it was time for a maintenance day because it was still blowing a gale. What a sight! Five planes all with their cowls off. It looked like there had been some sort of disaster.

Cold and blustery conditions met us when we set off along the Tanami Track to overfly Woolfe Creek meteor crater. The crater was not up to what we had hoped, though worth a low circuit and a wave to the campers there. Then we flew on to Billiluna for the night. Landing permission is required there.

Early the next day we set off following the Tanami Track with a brief stop for comfort at the derelict Rabbit Flat strip. I had heard the Macdonnell ranges were good, but had not realised how good until we flew over them. Mind blowing huge ridges and valleys which just went on and on.

In Missionary Plain we flew over Gosses Bluff. It's a meteor crater and what we had expected of Woolfe Creek crater. The impact could have been yesterday - it's a perfect circle, no vegetation surrounded it and the rocks are angled up in several rows like badly formed or broken teeth.

The James Ranges took us to King's Canyon, where was just another wonderful red

rock feature, to Kings Creek station. We had camel burgers (when in Rome) and fuelled up, then flew the edge of Lake Amadeus to Curtin Springs station ready for an early morning flight next day to The Rock and The Olgas.

Ice on the wing the next morning. Oh yeah, it was cold alright, but the flight around the Aussie icons was spectacular. We were earlier than the Unicom control and the sightseeing tours, so we had the place to ourselves and just followed the designated flight path at leisure.

On to Kulgera Roadhouse where we borrowed the ute to fuel up (thanks Clinton) and enjoyed a great meal in the Mulga Bar.

Mount Dare next for supplies, then an abandoned strip as close to the first dune of the Simpson Desert as we could get (there are 1,200 of them). We wanted an early start in case of any problems - this is a seriously remote place. It takes 4-5 days to drive over it. It took us three hours to fly over it.

We were in constant contact with each other as we flew this leg. Two of our planes spotted a small hard strip close to Poppel's Corner and very briefly alighted, then met up with us in Birdsville.

Birdsville was in full preparation mode for the races, which would be fun, but I was glad we had the attention of the locals to ourselves.

We followed the road to Betoota and onto Windorah, enjoying the channel country. Rob and Bazza left us here and headed south to Gympie and Bundaberg. The rest of us arrived at Longreach for the night and a look through the QANTAS museum.



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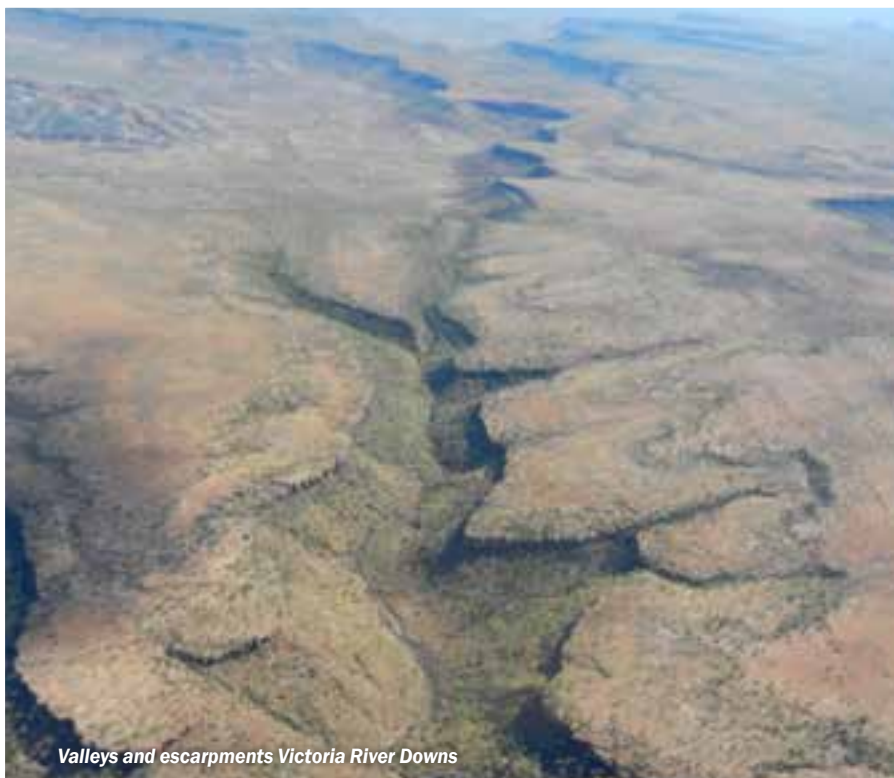
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The next morning we headed to Jinbar Downs Sorghum farm near Moranbah.

Phil and Rob met us there and put on a huge feast. Property owners, Graham and Von, allowed us to camp in one of the farm's disused houses.

Then it was back over the range at St Lawrence and to a friend's beach house property. We camped on the verandah and cooked on a driftwood fire. On the way down our own coast, we called in to see a friend who'd bought a kit plane while we were away. We had lunch in the pub with fellow aviators and friends. We finally arrived home at our beloved Heathrow Whit-sunday. Phew. What a great trip. Now, where shall we go next? 📍



Valleys and escarpments Victoria River Downs



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What is LSA?

In 2006 CASA introduced a category of aircraft called Light Sport Aircraft (LSA). The amendments to the regulations were developed by a project team consisting of a CASA specialist, representatives from each of the sporting organisations, Australian manufacturers and CASA Authorised Persons.

LSA is the result of other National Airworthiness Authorities (NAA) adopting similar rules to address advances in sport and recreational aviation technology. LSA aims to allow the manufacture of safe and economical light sport aircraft, to be operated for the purpose of sport and recreation, to carry a passenger, to be used for hire and to conduct flight training and glider towing.

The LSA category does not replace any existing category. It is not intended for existing aircraft already operating under a different airworthiness category. It is a small, simple to operate aircraft. It can be a ready-to-fly production aircraft or it can be a kit built aircraft of the same make and model as the production aircraft.

A light sport aircraft has:

- A MTOW of 600kg (or 650kg for an aircraft configured for operations on water) or 560kg for a lighter-than-air aircraft;
- A maximum stall speed in the landing configuration (V_{SO}) of 45kts;
- Maximum two occupants, including the pilot;
- A fixed landing gear (a glider may have retractable) or for an aircraft intended for operation on water, a fixed or repositionable landing gear;
- A single, non-turbine engine fitted with a propeller;
- A non-pressurised cabin;
- A variable pitch, fixed pitch or ground adjustable propeller (ASTM F2506-13 came into effect 2013);
- If the aircraft is a glider, a maximum never exceed speed (V_{NE}) of 135kts.

The types of aircraft which may satisfy these criteria are 3-axis aeroplanes, powered parachutes, weight-shift control aeroplanes (trikes), gliders, balloons, airships and gyroplanes.

An LSA may operate under either a sport and recreational aviation organisation such as RA-Aus or under CASA.

The types of aircraft that do not fit in this category are hang gliders, paragliders, multi-engine aircraft, helicopters or complex aeroplanes with retractable undercarriages or turbine engines.

The FAA LSA rule

The US FAA introduced an LSA rule in September 2004. CASA intended to harmonise with this rule however because of the extensive experience with operating similar types of aircraft in Australia, it was decided minor differences in defining LSA were warranted.

CASA allows a stall speed of 45kts in the landing configuration (V_{SO}) whereas the FAA allows a stall speed of 45kts in clean configuration (V_{S1}). CASA has no requirements for a propeller, whereas the FAA requires the propeller to be fixed pitch or ground adjustable. CASA allows a never exceed speed (V_{NE}) for glider of 135kts, whereas the FAA allows 120kts. CASA allows a gross maximum weight of 560kgs for a lighter-than-air, whereas the FAA allows only 300kgs. CASA has no maximum airspeed requirement for a powered aircraft, whereas the FAA stipulates maximum airspeed in

level flight with maximum continuous power (VH) of not more than 120 kts.

Manufacturer responsibilities

The manufacturer is responsible to certify the aircraft and the continuing airworthiness. This means that the manufacturer certifies each aircraft complies with LSA standards by signing a statement of compliance. The statement must indicate the aircraft was manufactured by a qualified manufacturer, complies with the design and performance, quality assurance, production testing (not required for a kit aircraft) and continued operational safety monitoring standards.

If the aircraft is manufactured overseas, the manufacturer will also need to provide evidence the aircraft is manufactured in a Contracting State and the aircraft is eligible for a Certificate of Airworthiness, or another document of similar effect, in the country of manufacture.

The manufacturer is required to continually monitor the airworthiness of its aircraft in accordance with the LSA Continued Operational Safety Monitoring standard. This requires the manufacturer to manage a database of all owners of aircraft in Australia and overseas, investigate service defects and address safety critical defects with corrective action in the form of safety directives issued to all affected owners. The manufacturer is also responsible for approving all modifications to production aircraft (not kit built aircraft) even if the modification has been approved by a CAR 35 engineer. The reason for this is that the manufacturer is responsible for the continuing airworthiness of these aircraft which includes modifications.

The manufacturer will also need to provide product information in accordance with the LSA standards. This will include data plate, conformity details of the aircraft, warning decals, operating instructions, aircraft flight training supplement and the maintenance and inspection procedures.

In the event a manufacturer no longer exists, or can no longer provide continuing airworthiness support to owners of their aircraft, CASA can appoint a competent person to carry out the manufacturer's continuing airworthiness requirements. If no-one satisfies CASA approval criteria or no person applies to CASA for appointment, the existing production LSA can no longer operate under a Special Certificate of Airworthiness. In such situations, these aircraft can be operated under an experimental certificate for LSA.

CASA responsibilities

The LSA regulations do not require CASA to issue Type Certificates or Production Certificates, nor issue safety of flight Airworthiness Directives, except in cases of significant public interest. However, if the manufacturer decides to include a type certificated product, such as an engine or propeller in its aircraft, these components can be subject to applicable ADs.

CASA will participate with industry in periodically reviewing LSA standards and approving these standards. CASA will also be responsible for overseeing the Authorised Persons performing initial airworthiness entry control. It is expected this should significantly reduce CASA's role with recreational and sport aircraft.

CASA authorised persons

CASA authorised persons may issue a Special Certificate of Airworthiness for LSA (production ready-to-fly aircraft) or an Experimental Certificate

for LSA (kit built aircraft or production aircraft that no longer satisfy LSA standards).

Before the Certificate of Airworthiness or Experimental Certificate is issued, the Authorised Person must verify the manufacturer's statement of compliance satisfies the LSA requirements and the owner has available the operating instructions, flight training supplement and maintenance and inspection manuals. The Authorised Person must determine the aircraft is in a condition for safe operation. If the aircraft was manufactured overseas, the Authorised Person must also ensure the aircraft was manufactured and is eligible for a Certificate of Airworthiness in an ICAO Contracting State.

LSA standards

If a manufacturer selects a design standard for an aircraft, compliance with the entire standard must be shown. A list of the CASA approved LSA standards is defined by the Advisory Circular 21-42 V2.0, Light Sport Aircraft Manufacturer's Requirements. This list will be updated as more ASTM standards are developed and become available.

Current CASA alternative standards for design and performance (ASTM Standard F2245) are:

- BCAR Section S (Britain)
- CS VLA (EASA)
- CS LSA (EASA)
- CAO 101.55 (Australia)
- LTF-UL (Germany)
- UL/2 PT2 (Czech Republic)
- DS 10141E (Canada)

Historical LSA standards

- BFU-95 (Germany)
- PICA26 (Australia)
- JAR VLA (Joint Aviation Authorities)

Certificates of Airworthiness

There are two types of Certificates of Airworthiness for LSA. These are Special Certificate of Airworthiness and Experimental.

The Special Certificate of Airworthiness is for production ready-to-fly aircraft. These aircraft may be used for hire, flying training and towing gliders. The Special Certificate of Airworthiness remains valid provided the aircraft is maintained in accordance with the requirements of the manufacturer and the aircraft has not been modified (unless approved by the manufacturer).

If the aircraft is not maintained in accordance with the manufacturer, or the manufacturer can no longer provide the continuing airworthiness, or if the aircraft is modified without the manufacturer's approval, the Special Certificate of Airworthiness will no longer be in force and the owner will need to apply for an Experimental Certificate.

An Experimental Certificate is available for kit built LSA and for aircraft which no longer satisfy the requirements of the Special Certificate of Airworthiness. Before an Experimental Certificate can be issued to a kit built aircraft, the manufacturer should have produced a production aircraft of the same model issued with a Special Certificate of Airworthiness. Unlike the amateur built aircraft, there is no requirement that the owner must build 51% of the aircraft.

The Experimental Certificate also provides an avenue for operating aircraft which no longer comply with the requirements of the Special Certificate of Airworthiness. There are a number of circumstances where this could arise, such as when the aircraft has been modified without the manufacturer's approval or if it has not been maintained in accordance with the manufacturer's requirements. Another circumstance may be that the manufacturer has gone out of business and no suitable person or organisation has taken over the continuing airworthiness functions for the aircraft.

For more information see Advisory Circular 21-41(0), Light Sport Aircraft Certificate of Airworthiness.

Operating limitations

If the aircraft is used for flying training, glider towing or hire, it must be

inspected every 100 hours Time in Service or every year, whichever occurs first. If the aircraft is used for private purposes only, the aircraft is required to be inspected every 12 months. If an aircraft has been idle for an extended period of two years or more, the inspection and maintenance is required only once during the period but within 12 months of the next flight.

Because the manufacturer is responsible for the continuing airworthiness of its aircraft in accordance with the Continued Operational Safety Monitoring standard, the manufacturer must evaluate all significant defects and correct any unsafe condition which may exist in the remaining fleet. Therefore the aircraft owner should notify the manufacturer of any safety of flight issues or significant defects. After assessing such defects, the manufacturer can then issue to all affected owners a Safety Direction (SD) to correct an unsafe condition. It is therefore very important and is a requirement that all registered operators provide the manufacturer with current contact information.

It is mandatory that the owner comply with the requirements of the SD. The owner can apply to the manufacturer for a variation or exemption against the SD provided suitable safety justification is included in the application. The manufacturer will assess the application and, if the safety justification satisfactorily addresses the safety issue, the manufacturer can approve an alternative means of compliance or grant an exemption against the SD. However, if the manufacturer does not approve an application, the owner must comply with the requirements of the SD.

In the interests of safety, CASA may include additional operating limitations to an aircraft. This would only occur if CASA considered that other requirements by the manufacturer were inappropriate or did not address a safety critical issue.

The manufacturer must approve all modifications to an LSA aircraft issued with Special Certificate of Airworthiness. This is different to other aircraft where CASA or a person authorised under CAR 35 can approve modifications without notifying the manufacturer. The owner should be aware that unapproved modification of the aircraft will result in the Special Certificate of Airworthiness no longer being in force. The owner will be required to apply for an Experimental Certificate resulting in reduced operational privileges.

Prior to flying the aircraft, the pilot must inform the passenger that the aircraft does not meet the same airworthiness requirements as an aircraft with a Standard Certificate of Airworthiness. Also an information placard must also be displayed in the cabin or cockpit at a location in full view of the passenger and the pilot, with the wording:

THIS AIRCRAFT HAS BEEN DESIGNED AND MANUFACTURED IN ACCORDANCE WITH THE LIGHT SPORT AIRCRAFT AIRWORTHINESS STANDARDS AND DOES NOT CONFORM TO STANDARD AIRWORTHINESS REQUIREMENTS.

Experimental LSA

The operating limitations for experimental LSA are the same as other experimental aircraft, such as amateur built aircraft. Experimental LSA cannot be used for flying training (unless training the owner). These aircraft are limited to day flying under Visual Flight Rules and cannot be operated over built-up areas unless authorised by CASA or an authorised person.

For further information see AC 21-42V2.0 LSA Manufacturer's Requirements [pdf document 92 KB] and AC 21-41(0) LSA Certificate of Airworthiness [pdf document 65 KB].

A few pointers about LSA

Factory built aircraft:

- The factory needs to be an approved manufacturer (via a production certificate of approval or by approved statement of competency);
- The factory needs a Quality Assurance system in place;
- The factory needs to have its aircraft certified as an LSA and meet the appropriate design rules;
- The factory needs to sign a statement of compliance indicating that the aircraft meets the appropriate design rules; only ASTM standard for the US but Australia has numerous acceptable standards including CAO 101.55, PICA26, JAR VLA, UL2/1 etc. The list is found in Advisory Circular 21-42 V2.0;
- The factory needs to supply all the manuals with the aircraft;

- The factory needs to keep a list of registered owners of their aircraft;
- The factory is responsible for all airworthiness issues of their aircraft and their information to their owners (ANs, ADs etc).

When you have purchased an LSA, you will need:

- All documentation and manuals;
- A statement of LSA compliance from the manufacturer on CASA form 681;
- A Special Certificate of Airworthiness completed by a CASA approved Authorised Person;
- Noise Exemption certificate from Airservices Australia.

Actions to take

- Request a registration number allocation from the RA-Aus office. This can be done before the aircraft arrives;
- Once the aircraft has arrived, send a copy of the factory flight test report, weight and balance and statement of compliance to the office to receive provisional registration. This does not allow you to fly, but will indicate that the aircraft has been registered. This is important (and differs from the amateur built procedures at the moment);
- Only after your aircraft is registered, should you submit an application to CASA to have your aircraft inspected by an Authorised Person. Be sure to fill out the application form precisely and completely and register the activities you wish to accomplish with your aircraft (flight training, glider towing). You must have the appropriate manuals for each activity you request;
- If the aircraft does not conform to the design standard under which it is being accepted (as decided by the inspector), or the paperwork is not complete, or the aircraft has no conformity statement or is not registered, your application for a Special Certificate of Airworthiness will be rejected. The inspector must give you the reasons why and the application will be closed. Once you have all the faults sorted, you can re-apply;
- Once you have a Special C of A, send a copy to the RA-Aus office and the registration will be upgraded to 'full'.

Warnings

If you make any unapproved modifications to your factory built aircraft, you will be required to contact a CASA Authorised Person and have an Experimental Certificate of Airworthiness issued. If you reverse the modification, the aircraft will need to be re-inspected by an Authorised Person. A sub Part 21M engineer cannot approve modifications for LSA aircraft, unless the modifications are accepted by the factory and the factory approves it. If you maintain your aircraft and use a different oil filter, get it approved by the manufacturer, to cover yourself.

Be aware that every piece of your aircraft has to conform to the design standard to which it was built and which is acceptable for the LSA category - even the seat covers.

It is easy to fall out of the Special LSA and into Experimental but very hard and time consuming to get back to Special LSA.

For factory built, the owners should be in constant contact with the manufacturer or importer.

For Experimental, the manufacturer may conform to the same guidelines as factory built, but its responsibility stops when you take delivery of the kit. It is up to the homebuilder to make sure they follow the building guidelines and conform to the LSA design standards. If you decide to modify the aircraft during building, you need to make certain your aircraft still complies to the standard. If you spend 500 hours designing retracts for your aircraft, the inspector will knock it back. Same goes if you put in a turbine.

An Experimental aircraft must also be registered before it will be inspected. If the CASA Authorised Person is happy with it, you will receive an Experimental Certificate of Airworthiness, a copy of which is sent to the RA-Aus office to get full registration. RA-Aus will not issue C of As. The Authorised Persons are CASA instrument holders.

Can you bring your existing factory built aircraft into the LSA category? Yes, with a few restrictions, providing you get a statement of conformity from the manufacturer, then follow the steps outlined above.

Contact the RA-Aus Technical Manager to discuss this further.

Note - Updated information for CASA Authorised Persons and Importers was received 26-11-14.

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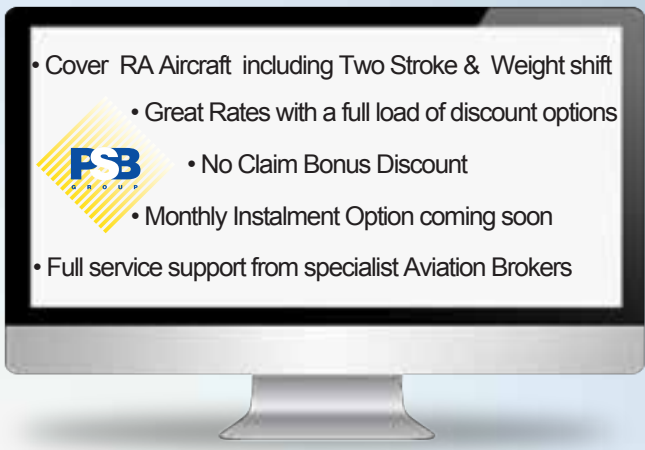


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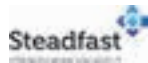
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Submissions may be edited for clarity, length and reader focus.



SAFETY MATTERS



New hazard reports

BY KATIE JENKINS NATIONAL SAFETY MANAGER

RA-Aus members truly took the issue of improving safety seriously last year. There was a marked increase in reports throughout the year.

This year we are looking forward to even more progress as we begin promoting proactive reporting to identify hazards, risks and other safety related issues within the organisation. Through the use of all this reactive and proactive data we anticipate being able to better prevent accidents and manage safety risks.

Since 1998, the FAA has partnered with the US airline industry to identify the factors and hazards which cause accidents. Its goal has always been to ensure its safety efforts focus on the most prevalent categories of accidents. This plan has allowed the FAA to successfully create intervention strategies to reduce recurrences. It has now also shifted to a proactive approach when analysing data to identify and mitigate risks before those risks become accidents.

RA-Aus has started down the same path. We have begun implementing systems and processes to capture accurate and com-

plete data. This is crucial to work out how big a safety issue might be, assess its potential impact, identify its root causes and effectively address and mitigate the problem.

In a workplace, hazards can only be controlled if their existence is known. Being able to identify a hazard is obviously crucial to prevent it causing an incident. For many people, past experience in the workplace helps identify some hazards, but the skills and knowledge of everyone is required.

Identifying hazards and controlling risks must be done continuously, especially when new operating processes, tasks, equipment, staff members and students come into the workplace.

Some ways to identify hazards and control risks:

- 1. Talk with staff members (including contractors) who will perform tasks. Discuss with them to identify potential hazards and the best ways to reduce risk;**
- 2. Make sure you are aware of any high risk activities - new machinery or new work processes - before they become**

a problem;

- 3. Understand the hazards associated with tasks you supervise and have risk controls in place before work starts. This could mean not allowing work to begin until a safety issue is resolved;**
- 4. Take action to resolve health and safety issues as soon as possible. This includes kicking the issue up to more senior management if necessary. Once agreement is reached on how to fix a problem, implement it as soon as possible.**

The most common and simple way to look for hazards is to go on regular walk-through inspections of the environment in which you operate.

If you witness an event or identify a hazard, you are responsible for ensuring it is reported. Over time these reports will allow RA-Aus to identify hot spots. We will also be able to conduct trend analysis.

We recently designed a new form to report the hazards and risks you identify.

The Hazard Report can be found at <https://www.raa.asn.au/contact/forms/>

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LEARNING TO FLY

ANTHONY SIBARY

Testing Times

I don't think I was nervous. I felt ready and my instructor, John, believed I was too. No, this was a feeling of excitement.

I had completed the RA-Aus exams and had just over 30 hours of left seat time in my logbook.

It was practical flight test day and the temperature was in the high twenties, with a slight breeze out of the north. The CFI, Dave Rolfe, explained what he expected of me during the flight, where we would be flying and he told me he was going to be doing plenty of writing and observing.

I always take my time when I do my pre-flight checks and today I had the CFI closely noting my every move. The early signs were good. I taxied the Jabiru to the run-up bay for 36L at YOAS and, once I completed all I needed to, it was time to get airborne.

As we climbed away from the circuit area I noticed that at 2,500ft a pair of wedge tail eagles was happily riding the thermals with us. I hoped they were impressed with my flying abilities and happy I was keeping out of their way.

Dave, meanwhile, was busy assessing me, giving me various tasks and manoeuvres to complete. I will not list them all here; suffice it to say if it's in the RA-Aus syllabus we covered it. It was the hardest I had worked in the cockpit so far. I felt good about the way it was going and Dave hadn't ordered me back to YOAS, so that was a good thing.

In hindsight, taking a bottle of water with me would have been a good idea, given the temperature.

A couple of sips during the flight may have helped. I had drunk a fair amount of water before our departure, but I did not want to take on too much fluid...if you know what I mean.

We had been in the air for a little over one and a half hours when I noticed Dave had stopped writing. "If you could make this next landing a full stop please," he told me. I was aiming for a nice solid landing and I am proud to say I achieved just that. Having announced via radio that we were clear of the runway, I taxied back to parking and shut down the Jabiru. The trusty Hobbs meter showed we had done 1.7 hours and Dave said "So Anthony, well done. You did well."

I waited until I climbed out of the cockpit then shouted out "Oh yeah!" as loud as I could. John was there to greet me. "Well done Tony" he said. "Now you are one of us". It was an outstanding feeling.

That's John with me in the photo. Dave was too shy and did not have a comb, so he isn't in the shot. I did not think I could top the feeling I had after my first solo, but this was an even greater high. Completing the entry in my logbook and watching the CFI stamp and sign it just confirmed it.

Dave sent off my paperwork to RA-Aus and, just under a week later, my Pilot Certificate arrived in the post.

It now has pride of place in my wallet and sometimes, if my day is not working out, just looking at that card makes me feel better.

I really love the way just thinking about flying does that for me.

There are a few people I really need to thank. To my instructor, John Taru, and CFI, Dave Rolfe, thank you for teaching me how to be a safe pilot and for making the journey a fun one. Thank you *Sport Pilot* Editor, Brian Bigg, for giving me the opportunity to contribute to what I believe is Australia's premier aviation publication.

To my wife and kids, I promise to always be safe and clear away all the charts and aviation books from the kitchen table...soon. And to Jabiru, thanks for building a great little aircraft I could learn to fly in.

So where to now?

A passenger endorsement so I can take my son flying with me. I would love to include my wife and daughter but they get airsick - what are the odds? As the saying goes, when you are through learning, you are through and it is fair to say that I learn something every time I fly.

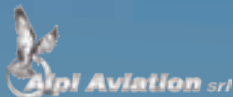
I hope you have found this month's column interesting, with a little fun included. It is just the way flying should be.

See you in the pilot's lounge for cocktails and debriefing. 🍷

"Now you are one of us"



Anthony (left) and John Taru



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HOME BUILDER

DAVE EDMUNDS

Building your own

There is a belief, which I share, that it is necessary for a homebuilder to build at least two aircraft.

You build the first one to learn how to build an aircraft and then knowing that, you build another.

If you approach homebuilding from this point of view, it determines to some extent what you choose for your first attempt.

Before going any further, it is important to point out that homebuilding is unlikely to save you any money. If you wish to home build, do it because you want the challenge or experience.

I have done some work in fiberglass and built an aluminium aircraft but have no experience at all in wood, except for building a deck out of Merbau, which I don't think counts. Steel frame and fabric is also a surprisingly good option.

I love the finish you can get from fiberglass and composites, but hate working with it. I find the sanding interminable and the dust irritating. You don't have to sand aluminium nor do you have to wait for it to cure.

Your next decision is whether to build from plans or a kit. My strong advice for your first build is to go for a partial kit at least. There is little saving for the inexperienced builder in buying your own bits and pieces and it takes a vast amount of time to source material. The postage cost for parts imported from the US is also a surprising impost. You also have to add in the not insignificant amount of time and money required to build jigs. Most kits now come with matched-hole drilled components. This means if you assemble things carefully the components will automatically align and probably more accurately than you can do otherwise.

Scratch building is attractive, because it allows you to spend as you need to and as your finances allow, but it is not usually enough to compensate for all the other pitfalls and costs.

Tools are another issue. Both timber and aluminium aircraft building from scratch require large expensive tools. For aluminium, you will need a bending brake and guillotine, both ideally with an 2.5 metre capacity. These require a lot of space. I did hand cut a lot of aluminium, but it does show. There is some bending you can do without a bending brake, but it is tricky and far from optimal. I used a fabrication shop for some bending and cutting jobs, but this was not their core business and they did it more as a favour to me.

You only require a few hundred dollars' worth of tools to build an aircraft from an aluminium kit. Typically, you will need a drill, riveter, files, shears, measures and clecos.

Wiring will require a few cheap electrical fabrication tools. Other more elaborate tools will help a bit but are not really essential. I am a great believer in compressed air pop riveters. You can buy one together with the compressor for under \$300, and they make a very satisfying noise.

The big question is whether you want to build a two-seat or single-seat aircraft, but the decision may be a bit counterintuitive.

Sonex is a good place to start looking. They have been around for many years and produce a range of aircraft kits in a range of different stages of completion.

The two-seat Sonex airframe kit costs US\$16,495 and the one-seat Onex is US\$14,495 (What a pity you didn't buy last year). You will roughly double these costs to get the aircraft into the air.

The problem here is that the resale value of the Onex is way less than the Sonex. There is much more demand for two-seat aircraft. And given that the Onex is basically a scaled down Sonex, the build difficulty is pretty much the same. Both aircraft are designed to use the company's VW derived Aeroconversions engine, so the performance of the Onex is better than the Sonex.


For some comparison, have a look at the Rans Coyote. This is a steel-framed fabric-covered aircraft.

It is more expensive than the Sonex, but possibly may go together more quickly. I have a soft spot for these, having flown briefly in one belonging to a friend.

I fly a factory-built Jabiru and am very happy with it. If I was attracted to building in composites I would look first to Jabiru.

You are vastly better off if you can build your aircraft at home. It saves travelling time and therefore money. You do not have to duplicate tools you might need at home and you always have the chance to sneak in a couple of hours when the travel time to a workshop elsewhere is not worthwhile. And one more issue. I found it takes considerable concentration to do even simple things right the first time. After a long day at work, perhaps a few bedtime stories and a bit more work, I was not able to do justice to my aircraft building.

I guess this is why so many builders have grey hair. Their thirty-year old children no longer want bedtime stories. However, the time is never right to start building, you really just have to bite the bullet and get going. Buying a kit in sections is one way to do this. Just build the tail, for example, then do more as time and money allow.

In a previous article I suggested any would-be builder go to Oshkosh first. This remains my number one recommendation to any homebuilder. 



A beautiful Sonex

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3551 JABIRU 230D



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Advertisers index

Adelaide Biplanes	33
Aerochute Industries	64
AeroKits	42
Air Creation	60
Alpine Aircraft	52
Anderson Aviation Australia	5
Asia Pacific Light Flying	64
Atec Aircraft Sales - Zephyr	34
Australian Commercial Credit	50, 52
Australian Lightwing	62
Australian Pacific Aviation	44
Bert Flood Imports (Rotax)	67
Bolly Props	60
C & H Freight	66
Caboolture Recreational	48
CASA	6, 48
Central West Flying	34
Coominya Flight Training	50
D-MOTOR Australia	60
Fly Synthesis	39
Foxbat Australia	6
Gatton Airpark	43
Gofly Aviation	44
Gostner Aviation	52
Horsham Aviation	56, 63
Jabiru Aircraft	22, 23
Just Aircraft	58
Kelmac Aviation	58
Leading Edge Aviation	44
Lowe Flight	50
Mendelssohn Pilot supplies	68
OMEGA Propellers	56
Oz Runways	14
PSB	48
Quicksilver	34
Recreational Flying Co Gympie	32
River Glen	56
ROTEC	41
SEQFTA	50
Silent Wings Aviation	10
Skysports Innovation	61
Sling Aircraft Australia	16
Soar Aviation	47
Sport Aviation Tocumwal	58
Stawell Aviation Services	58
Sunshine Coast Flight Training	58
TAFE NSW	18
Tecnam	2
Tucano	44
Wilmington Airpark	49
Yarrowonga Flight Training	50
Yarrowonga Pilot Shop	50

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BY MARIUS NESER

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She passed at the top of her intake group and was offered a three year degree at the Australian Defence Force Academy in Canberra and pilot training. She is one of only three female candidates to have received a nomination.

Jorgia began recreational flying as a 15 year old at Coffs Harbour Aero Club. She was a star student from onset and also won a GYFTS scholarship from RA-Aus.

Jorgia says the GYFTS scholarship catapulted her training and was a major contributor to her success at flight screening – something for which she is very grateful.

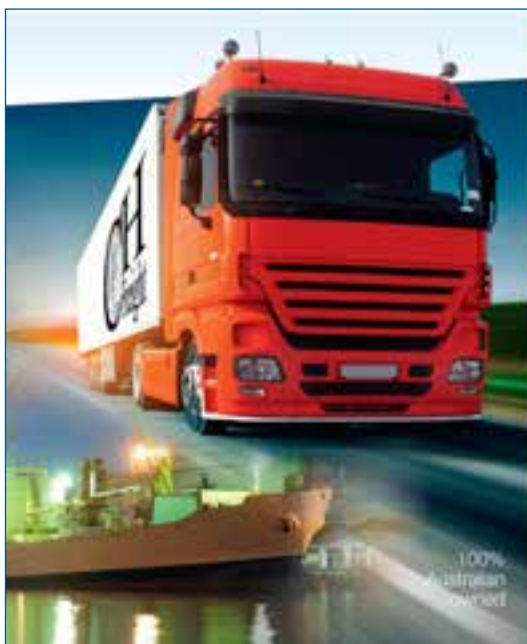
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