

GLIDING

AUSTRALIA

Issue 41 April - May 2018

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GLIDING AUSTRALIA

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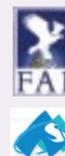
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Sean Young
Editor
sean@glidingaustralia.org

Adriene Hurst
Deputy Editor
adriene@glidingaustralia.org



EDITORIAL SUBMISSIONS
We invite editorial contributions and letters.
email sean@glidingaustralia.org
Other large files and photographs and can be uploaded at www.glidingaustralia.org/ga

DISPLAY ADVERTISING & MAGAZINE ENQUIRIES
sean@glidingaustralia.org

GLIDING AUSTRALIA
www.glidingaustralia.org
Tel 0490 502323
PO Box 246 Edgecliff NSW 2027



GLIDING FEDERATION OF AUSTRALIA

MEMBERSHIP & CLASSIFIED ADVERTISING
Cathy Cassar cathy@glidingaustralia.org

AIRCRAFT REGISTRATION & related
Tanya Lorient tanya@glidingaustralia.org

AIRWORTHINESS & GFA TRAVEL
Fiona Northey fiona@glidingaustralia.org

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9am-5pm Monday - Thursday 9am-3pm Friday
Tel: 03 9359 1613 Fax: 03 9359 9865
C4/ 1-13 The Gateway Broadmeadows VIC 3047

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FROM THE PRESIDENT

For this issue of the magazine, I would like to discuss some of the longer-term issues and items that are starting to change what we do. So here we go:

AGEING PILOTS

The nature of the large growth in gliding in the 1960s and '70s has led us, not unlike some other sports, to the fact that a large group of our members are now in the 'older pilot' demographic.

This situation has a number of ongoing aspects that I would like to consider.

As we age we can no longer do some of those things that we considered 'normal' in our younger lives, such as running marathons, mountain climbing and ironman events. I don't suggest that some cannot do these things, but most can't.

Generally, because we have aged we have accumulated or organized our finances, are relatively well sorted and understand our financial situation. In some cases, we have set ourselves up to be relatively well off in retirement, but understand that we cannot waste our resources.

Speaking of retirement, we may suddenly find ourselves with time on our hands. Deciding what to do with it in a meaningful way is a serious question.

So, when we consider 'older pilots', these factors become important not only to those pilots, but also to us as individuals and to our organization as a whole.

I recently read an FAA paper placed on the GFA Forum by Chris Thorpe called 'Living the Older Pilot Experience'. [See page38] It discusses the relevance of age as a predictor of performance. I suggest everyone read it.

The article mentions under 'Older Pilots and GA' that older pilots should fly more, not less, to keep skills current. This, I believe is prudent regardless of your age.

MEDICAL SYSTEMS

We have a relatively benign medical system for pilots that relies on honesty and integrity, with escalating requirements if we have

responsibilities for other people such as passengers or students.

It is interesting to note that we have had an alternative system using the 'Austroads' standards for some time, and CASA has just started allowing the use of these in some circumstances.

For higher levels of pilots, including charter and regular public transport etc, CASA has a medical system with increasing requirements for checks as pilots get older. We do hear occasional stories of pilots who, even under this stringent medical regime, really should not be flying. Alternatively, some pilots have been grounded for relatively trivial issues that, considering the medication surety in our country, should still be flying and pose no real risk to their passengers or other aviation users.

One size does not fit all.

Ageing in itself is not and should not be a barrier to flying. It is the physical and mental ability and acuity of the person that are the criteria. These abilities vary among people but eventually we are all affected.

We all grow older, and as we age a number of things generally deteriorate including eyesight and joint flexibility. We see many people around with glasses to correct some of the eyesight issues, and joint flexibility can sometimes inhibit our access to and egress from a glider.

I have recently heard from a small number of older pilots who are being victimized because of their age. Yes, victimized. Younger leaders in their clubs are saying things like, "You might be passing all the checks and not causing problems but you are old and should stop flying." This attitude is simply not acceptable.

Our entire system is based on a pilot's capability to do 'whatever' they can, and if they can do it safely, they should be allowed to. Our organization has a member protection policy. If you are treated in a similar way, this policy can be invoked. Available on the Gliding Australia website, it is designed to rectify a situation at the lowest level and then escalate if necessary.



On the other hand, for many and varied reasons, we have people who continue to fly, but cannot do so safely. However, we should and must not just kick these people out, for they have skills, knowledge and capabilities that are potentially the saving grace of our system. They can manage specific sections of clubs, serve as ground instructors, assist with aircraft or building maintenance, and help maintain safe environments. They have typically been doing these things already, over many years, both in their work and private life.

But it's a two-way street. Older pilots need to consider how they can best support the club, region and GFA, and offer their services accordingly.

Furthmore, it's in everyone's best interest if there is a system for self-checking that makes it clear when our physical and mental acuity is up to speed. We don't have one at this time, however, I believe if we look hard enough, we will find that someone has developed a suitable mental acuity test that we can potentially roll out to our members.

It's hard to say to yourself, "I can't fly any more" when you have been enjoying soaring flight for 30 years or more. Physically, if you do not have major physical issues such as heart problems, a good test is probably your ability to get into and out of a single seat glider with a parachute on. While I am not a doctor, that is a difficult thing with

some glider types and would seem to be a reasonable measure.

COUNCILS

I had another conversation recently about issues with Councils and charges associated with using Council maintained airfields. Councils are very careful about issues around airfields because they are afraid of the insurance implications as well as protecting these large assets called airports. Councils have very good insurance, but need to comply with their insurers' requirements. They regularly use the old standards from CASA as a 'quality' standard and, even when we know that these have been amended, some councils still refuse to change.

One thing that needs to happen for gliding clubs and their members to emphasise the positive economic aspects of the clubs to their local towns. For example, they might identify the number of dollars the club brings to the town, become visible by wearing club shirts, run scholarships, invite the local mayor or councilors for an occasional flight, have someone write an article for the local paper, and show that the club is a responsible citizen. Perhaps you can contact the Local Government Association and ask their policies on matters that the Council has raised.

Be visible, be needed or else your airfield may end up as a throw away item for your local Council.

STRATEGIC STRUCTURAL SAFETY

I have recently had some contacts regarding this initiative, most of which are positive, however, some disagreed or questioned the depth of the requirements. Some of the questions addressed areas that I had left a bit vague, and one targeted a particular subject.

These questions meant I had to review some of the items I had mentioned in previous correspondence, which was a good thing. Since I believe in transparency, the following are some clarifications I believe are appropriate to pass to all readers. The GFA Executive and Board have already been advised.

I believe the safety team needs to be self-directed, for without this they will not 'own' the process. I have found previously that it is generally better to allow particular groups to organize themselves after their discussions, present their findings and see if they if their suggestions pass the 'pub test', as it's called these days.

We need to be able to minimize personal biases and use real data to determine what the actual risks are. I do not believe that witch hunts, promoted by those with a biased perception, assist our safety and quality systems.

STRATEGIC PLAN

Don't turn off now, it's not that bad. The Executive and Board have been diligently working to update the strategic plan. It should be updated by the time this is printed, so do look on the website.

The aim of the plan is to ensure everything we do is focused on important aspects of the future of our sport. We have previously used the plan to develop and move to S2F, for example. Not a 'put on the shelf and leave there' plan, it's a working document and its five main objectives are:

Freedom to fly, maintain safety, promote and develop the sport, and encourage a culture of excellence and services.

These may not seem much, but by fleshing these out, we have a solid direction, tasks and aims. Take a look - it's pretty comprehensive. If your favourite project doesn't fit in there, it probably won't get much support. We have a lot of work to do, and many barriers to break down in doing it.

SMALLER REGATTAS AND COMPETITIONS

An interesting and, to my mind, good trend that seems to have been happening over the last few years is that more and smaller competitions and regattas are taking place. These have a number of benefits within the gliding movement. First, they get people flying. This is really important to support currency and competency in members' personal flying. Second, they give member clubs a group of enthusiastic guest pilots who can often enthuse local members by the sheer amount of flying that happens.

Third, and probably more important, they allow and encourage people to visit other sites and clubs to see what they have to offer. As pilots, we tend to fly from our own clubs and think that only our club knows how to carry out tasks. Cross fertilization of ideas and seeing a better way is one of the keys to the future of all of our clubs. S2F is showing that.

Smaller and more regattas also potentially involves more people outside the federation - trackers show the races and our friends watch what we do. I have people watching my recent racing and saying things like "it looked like a hard day". Wow, they are potential members and we are engaging them. Fly safe.

STRATEGIC PLAN PRIMARY OBJECTIVES FREEDOM TO FLY SAFETY PROMOTE & DEVELOP THE SPORT: PROMOTE A CULTURE OF EXCELLENCE AND SERVICES

PETER CESCO

PRESIDENT

president@glidingaustralia.org





FROM THE EO

SPORTS COMMUNITY

All clubs have been contacted to provide access to the Sports Community 'Club Spot' web page. This lists a broad range of tools and services that clubs can use to resolve issues and improve their management and services. The GFA Board has contracted Sports Community to provide direct support to clubs.

I encourage all clubs to carefully review the opportunities available and utilise those that will benefit members. The list of topics includes club management techniques, templates, training courses, risk management, legal information, grants, fundraising, webinars and so on.

AIRFIELDS AND AIRSPACE

The clubs at Bacchus Marsh have been having difficulty with their lease with their local council. Some news now indicates that their approach has had some success and an extended lease may be available. The clubs are looking at opportunities to improve their training organisation and are in discussion with Sports Community to facilitate this process. I look forward to hearing of their progress.

VSA NEW MOBILE FLIGHT SIMULATOR

VSA has taken delivery of a new mobile simulator using Virtual Reality that was designed and built by Tom Wilksch, from Adelaide who built the first mobile unit that clubs have seen across the country. The new unit will principally support pilot training at country clubs in Victoria as well as promotional activities. It is presently at Benalla for assessment by Instructors who are familiar with using the GCV simulator for pilot training.

GFA OFFICE PHONE

Due to a failure in one of the phone lines we have had to update our telephone system. This will increase options for messages and re-directing calls and, with the use of headsets, will improve the ergonomics for staff. When you call the GFA office you will be asked to

select from a short list of options that will connect you to the best person to respond to your question.

GFA STAFF UNIFORM

The staff in the GFA office requested support to introduce a staff uniform, in the form of a polo shirt with appropriate logos. The ladies sought input to design options and agreed on a shirt and the logos. Two shirts were purchased for each of our office-based and remote staff, and all are now keenly modelling the result.

WWGC 2020

The IGC meeting approved the change of dates for the Women's World Gliding Championships, to be held at Lake Keepit in 2020. The opening ceremony will be held on Friday 3 January and the closing ceremony on Saturday 18 January.

The Australian Club and Sports Class Nationals will be held at Lake Keepit in January 2019 and we are already receiving expressions of interest from international teams for their pilots to practice at this event.

We are under some international pressure to reduce the number of classes to two, but also have an agreement to seek expressions of interest later in 2018, thereby determining how many entries to expect and in which classes. We are hoping to attract sufficient entries to run three classes. A key factor will be our ability to offer sufficient competitive gliders in each class - Club, Standard and 18m - for hire to international pilots.

We successfully hired gliders to pilots at the Junior worlds at Narromine in 2015, and have received positive feedback from the pilots who hired their gliders for that event. If you are prepared to offer your glider, and maybe yourself as crew and a car, please contact Ian Downes who is coordinating this project. iandownes@optusnet.com.au. LKSC have established an organising committee to prepare the site and ensure a successful event, and work has started on seeking grants and sponsorship.



AEF FORM

We have introduced an online AEF form that six clubs are trialling. Based on their feedback so far, we have updated the process to handle passengers who just drop in at the airfield, and are keenly awaiting the results.

The clubs purchase memberships from the GFA shop and these are claimed online by the visitor, who receives a Boarding Pass to verify the purchase. The Boarding Pass can then be used to validate GFA introductory membership over the next 30 days as they use up the 10 flights enabled by this membership.

The benefits of this online membership is that clubs no longer need to pre-purchase quantities of paper forms, and the office does not need to assemble and post the forms. The clubs receive contact details for follow up with the member electronically, and finally, the cost of the AEF is reduced to \$35 from \$40.

If your club is interested in using this system, please contact me at eo@glidingaustralia.org

INSTRUCTOR TRAINING - S2F

As part of the S2F program we have finalised a training program on Principles and Methods of Instruction to improve the scope of Instructor training and also as a refresher for experienced Instructors. The GFA membership survey continues to uncover issues with inconsistent standards of instruction, which we aim to help resolve through this training program. The training will be rolled out to four S2F clubs starting

in late April. The program can then be made available for other instructors to complete online as a self-paced program or through face to face lessons.

FAMILY MEMBERSHIP

Family Membership is available to recognise and encourage the many family members who are currently supporting clubs and members, and to those who would like to be more involved. This new initiative to increase participation is gaining momentum, with 80 Family members already signed up and 18 Flying Family members actually learning to fly.

Any of your direct Family Members can improve their relationship and involvement with the sport by taking out a FREE Family Membership. This

provides BBL insurance when they are volunteering within the sport.

If your Family Member wishes to do some flying and receive instruction, they can join as a Flying Family Member. This costs \$60 and includes instruction for 12 months. No solo flying. To join, go to the web page and click Gliding Information, then hover over Membership.

WORLD GLIDING CHAMPIONSHIPS 2018

The entry fees have been paid and we have six pilots representing Australia this winter season.

OSTROW, POLAND

Allan Barnes (LS1f) and Jim Crowhurst (ASW19), will be flying Club class.

Matthew Scutter and Ray Stewart are flying Discus 2s in Standard.

Adam Woolley is flying a JS3 in 15m class.

PRBRAM, CZECH REPUBLIC

Matthew Scutter and Allan Barnes will fly an Arcus in 20m two-seat class.

Adam Woolley will fly a JS1 and John Buchanan a JS3 in 18m class.

Scott Percival will fly a Quintus in Open Class.

Terry Cubley is Team Captain for both events.

We will arrange regular reports via Facebook and also advise the tracking sites so you can watch the action, which will usually be around 9pm to 12am in the evening, Australian time.

TERRY CUBLEY EXECUTIVE OFFICER

eo@glidingaustralia.org

FAI GLIDING BADGES TO 23 MARCH 2018



BERYL HARTLEY
FAI CERTIFICATES OFFICER
faicertificates@glidingaustralia.org

A BADGE

HUSZAREK ADAM 12332
BRAITHWAITE MELODY 12345

CENTRAL COAST GC
LAKE KEEPIT SC

SALEMMEH HARVEY 12343
DRISCOLL RYAN L 12344

ALICE SPRINGS GC
G.C.V

B BADGE

RIDER ROBERT J 12275
HOLMIK GABOR D 12234
DRIESSEN ELIZABETH M 12308

QLD ATC 100
G.C.V
NARROGIN GC

SILVER C BADGE
SHURUPOV VLADISLAV 4940
HAMILTON RODERICK J 4941
BROWN JAMES 4942
SOBKOW TOMASZ 4943
FRANKLAND JOHN 4944

SOUTHERN CROSS GC
BALAKLAVA GC
SUNRAYSA GC
G.C WEST AUSTRALIA
SPORTAVIATION

A, B BADGE

OGIENKO VALERIY 12336
MILEDGER DANIEL 12286

CENTRAL COAST GC
MELBOURNE SC

GOLD C BADGE
SEJKA MILAN 1740
DAVIES LLEWELYN 1741
FLOOD ROBERT 1742

KINGAROY SC
LAKE KEEPIT SC
DARLING DOWNS SC

B, C BADGE

CREAM GREG 12298
POZORSKI-PASCOE ALEKSANDER 12301

NARROGIN GC
KINGAROY GC

DIAMOND GOAL
FRANKLAND JOHN

SPORTAVIATION

C BADGE

PSAILA JARROD J 12056
HOLZHAMMER DIETMAR 12276
LOFTUS PETER 12316
ASH JONATHAN 11115
MITCHELL CHRISTOPHER 11786

DARLING DOWNS SC
BYRON GLIDING
KINGAROY GC
BEVERLEY SC
CENTRAL COAST GC

DIAMOND DISTANCE
SKOTNICKI ANTEK
HELBIG DANIELA K

TEMORA GC
BATHURST SC

A, B, C BADGE

MCCOWAN THOMAS 12333
SWART BELEN A 12334
JENKINS-ELLIOT ELLIOT N 12335
DEALY PAUL 12337
SVENSON TIMOTHY D 12338
HERTEL PETER 12339
STEVENSON JAMES J 12340
FEDOROV EUGENY 12341
O'NEILL DAVID J 12342

BATHURST SC
ADELAIDE SC
LAKE KEEPIT SC
G.C.V
ADELAIDE SC
KINGAROY SC
G.C WA
QLD ATC 200
BEVERLEY SC

DIAMOND HEIGHT
DAVIES LLEWELYN

LAKE KEEPIT SC

DIAMOND C
SKOTNICKI ANTEK 246
DAVIES LLEWELYN 247

TEMORA GC
LAKE KEEPIT SC

DIAMOND 750 BADGE
MOSIEJEWSKI JAROSLAW 164
WROBLEWSKI ANDRZEJ 165

GEELONG GC
GEELONG GC

DIAMOND DIPLOMA
CLAFFEY KERRIE A 45

SOAR NARROMINE

GFA CALENDAR

Use the Contact GFA menu at www.glidingaustralia.org to send events to the GFA Secretariat for publishing online and in GA

20TH FAI EUROPEAN GLIDING CHAMPIONSHIPS

11 - 25 May 2018 in Turbia, Poland.
18m, Open and 20m Classes.

35TH FAI WORLD GLIDING CHAMPIONSHIPS

8 - 21 July 2018 in Ostrow Wielkopolski, Poland. Club, Standard and 15m Classes.

35TH FAI WORLD GLIDING CHAMPIONSHIPS

28 July - 11 August 2018 Pribram, Czech Republic
18m, 20m and Open Classes.

BUNYAN WAVE CAMP 2018

15 - 23 September 2018
Canberra Gliding Club - Bunyan NSW
Contact details - Club Captain David McIlroy
dmcilroy@me.com

WAIKERIE ORANGE WEEK

17 - 24 November 2018
Contact John Ridge at
johnridge16@gmail.com

MULTICLASS NATIONALS NARROMINE

26 November - 7 December 2018
Contact arnie.hartley@gmail.com

FORMULA 1.0 GRAND PRIX LEETON NSW

29 December 2018 - 6 January 2019
Contact Nick Gilbert on 0430 099 771

WOMENS PRE- WORLD GLIDING CHAMPIONSHIPS LAKE KEEPIT

31 Dec 2018 - 11 Jan 2019

Contact Ian Downes
iandownes@optusnet.com.au
for more information

NSW STATE CHAMPIONSHIPS NARROMINE

19-26 January 2019
Contact arnie.hartley@gmail.com

HORSHAM WEEK

2 - 9 February 2019
horshamweek.org.au
20M 2 SEAT CHAMPIONSHIPS NARROMINE
9 - 16 February 2019
arnie.hartley@gmail.com
narromineglidingclub.com.au

10TH WOMENS WORLD GLIDING CHAMPIONSHIPS LAKE KEEPIT

3 - 17 January 2020
Contact Wendy Medicott
wendymedicott@optusnet.com.au

BLANICK BY THE SEA



What are 100 glider pilots doing entering into a Sculptural arts event?

The Beverley Soaring Society (BSS) seems like an unlikely entrant into this year's prestigious Sculpture by the Sea exhibition in Perth. The event attracts artists from far and wide, and is a highlight on the Perth cultural calendar as well as a smash hit with the general public. It was estimated that over 200,000 people visited the exhibition.

The membership of BSS is diverse, ranging from 15 to 85 year olds, from doctors to tradies, airline captains to teachers, all with a single commonality - a passion for gliding. Still wondering what they were doing at Sculpture by the Sea? Enter Geoff Overheu, glider pilot and well known artist.

After spending 25 years farming in the WA wheatbelt, Overheu completed a Fine Arts degree and for the last 14 years has been a practising artist. He has exhibited nationally and internationally.

In 2011 Geoff joined the BSS and is now a very active cross-country glider pilot and instructor. Geoff's idea to collaborate with the Club was met with enthusiasm from the start. His artistic vision and the Club's pool of diverse skills in its 100-strong membership came together to produce a "big, bold and exciting" artwork that dominated Cottesloe Beach during this year's Sculpture by the Sea exhibition.

The basis of the sculpture is a Blanik. More Blaniks were produced than any

other type of glider in history and they dominated the sport for decades. It was the pinnacle of innovation and engineering of its time, only to be superseded and made obsolete by progress. Overheu sees this transfigured object as a symbol of the ending of modernism, and a victim of its own success.

For the BSS members it has been great fun to participate in and contribute to a project that, for many of them, was completely foreign - a project that combines sport and the visual arts. This exciting project, in itself, has challenging engineering and production aspects that have leaned heavily on the skills of the members. The sculpture is huge and needed to sustain high wind loads on the beach where it was displayed.

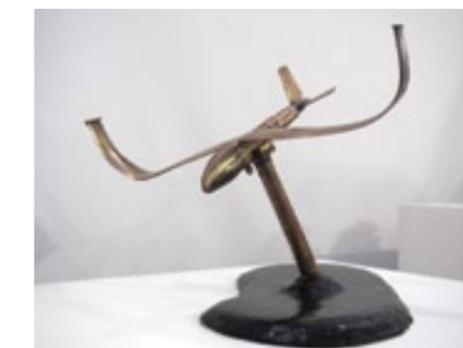
Suspended two metres above the sand, this metamorphosed object was a great segway into chatting to the public about our sport with Beverley Members rostered on to man the sculpture.

The BSS and Geoff Overheu have produced an exclusive limited run of ten Bronze gliders (pictured here) for general sale at \$1,250. The bronze makes a great ornament for any gliding enthusiast. To purchase one

contact the artist Geoff Overheu directly on 0407 575216.

Sculpture by the Sea was open to the public on Cottesloe beach from 1 to 20 March 2018.

ROGER SHEAD



SAFETY MANAGEMENT NEWS

In the last edition of Gliding Australia you will have read Peter Cesco's page where he presented his vision of an integrated Safety Management System across the GFA. What does this mean, and what are the implications for the average member?

In a nutshell I believe it will mean better coordination of safety related matters across all sections of the GFA, making life easier for our members. How we do this will be planned over the next few months and I plan to have the first stages of what will be a evolutionary process of change in place by the GFA AGM in August.

Phase Two of the 2017/2018 GFA Safety Seminars commenced during March and one of the areas we are addressing at the 2018 seminars is the recent run of fatal glider accidents. While there is still much we don't know, Chris Thorpe will take those attending through what we know, what we don't know and why you haven't heard many details to date. The final four seminars will follow the annual Operations and Airworthiness meetings where members can expect even more detail about how the GFA plans to manage related issues as they arise.

CURRENT PROGRAM

HUNTER VALLEY GLIDING CLUB 14 APRIL
Gliding NSW members have already received a copy of the program.

PERTH WA 30 JUNE

The venue is expected to be the RFDS Base at Jandakot. The program will include an inspection of a PC12.

WARRICK QLD 14 JULY

MURRAY BRIDGE SA 4 AUGUST

BACCHUS MARSH VIC 1 SEPTEMBER

Seminar Programs and details about any additional State Association activities over the same weekend will be advised to members of the host state association in the weeks prior to the seminars. We hope to meet you there.

STUART FERGUSON
NATIONAL SAFETY MANAGER

THINK
SAFETY IS NO ACCIDENT

IGC PLENEUM

The future of competition gliding was the key topic of discussion at the Annual Meeting of the FAI Gliding Commission (IGC), where the use of real time tracking in competitions was raised along with handicaps and developments in 13.5m Class.

Attendees also heard news about the World Air Games, and an announcement of the major Championships to be held in 2021.

Eric Mozer opened the meeting with recognition of absent friends, noting that Goran Ax had died recently in a car accident in Sweden. A previous world champion, Goran was known to many Australians.

With the FAI's report to the IGC Plenary came the news that the next World Air Games (WAG) will be held in September 2020 in Turkey, and gliding events will be overseen at Inonu. A group will monitor the number of participants and the type of event for gliding. Support was also shown for holding the Sailplane Grand Prix Final during the WAG, and possibly an e-concept event featuring electric powered sailplanes.

REAL-TIME TRACKING IN COMPETITION FLYING

A major point of discussion at the meeting was the impact of real-time tracking on our competitions, and the fact that pilots can now be directed from the ground regarding the location of the opposition, finding the best thermals and so on. This is leading to increased gagging pre-start with a very delayed start to each task. One dangerous aspect of tracking is that some pilots are turning their FLARM off to avoid being tracked which, when combined with increased gaggles, is not a good situation.

Action will be taken to monitor and control the use of FLARM to avoid this safety issue, but it was agreed that we also need to look at alternative tasks and scoring to reward pilots who fly more independently.

SUGGESTIONS INCLUDE

- Different task types for different classes
- Use of the SGP start and tasking at world comps
- Early bird bonus points to encourage pilots to start early

- Different scoring rules to provide benefits for individual performance.

FAI is also asking countries to trial some new rules and techniques. What would Australian pilots be prepared to trial in the next season?

HANDICAPS

A new handicap list was created last year for Club Class which aims to better support more modern gliders, moving away from the Libelle and Cirrus. An attempt to stop the use of this new handicap was made but gained little support. Countries support the concept that our World Competitions should not continue to focus on gliders from the 1960s and '70s. Interest in removing Club Class from World Comps is increasing and, unless some changes are made, the class may be lost altogether.

The handicap list will be reviewed after the World Comps in July and then be fixed for the next two years. Any changes must be approved by the Bureau before publishing.

13.5M CLASS

The future of the 13.5m class was also discussed at length, with many proposals and a strong defense of the current approach from those involved.

This class started as the World Class, comprising the PW5. A number of years ago the class was opened up to any glider. Its only limits are a wing span of 13.5m and a wing loading limit.

13.5m World Championships have been less than spectacular and have attracted very few entrants - fewer than 15 gliders in the last two events. The last events were dominated by cut-down 15m gliders like the Diana and Lak. The owners of these gliders are now demanding a higher wing loading limit so they can fly with their engines.

The greatest engineering change has been the introduction of electric engines including the nose-mounted FES engines. These newer designs are getting a lot of support, resulting in discussion of introducing an E-concept Class for electric self-launch gliders, with a 13.5m version and a 15m version. Having options to use the engine during the task is

gaining support and rules are currently being developed.

The battle appears to be between these newer, higher performance gliders and the original idea of lightweight micro-light gliders with lower certification requirements.

The outcome of all motions put forward at the meeting on this topic is that the 13.5m Class will continue with the next World Comps in Pavullo, Italy in 2019. Eligible gliders will have a wing loading limit of 35kg/m2. An E-concept event will be run in parallel at Pavullo.

The motion to combine 13.5m with Club, Standard and 15m classes, with a total of six pilots per country over the four classes was defeated, even though most votes were in favour, but the 19-vote absolute majority needed for it to pass was not achieved. There is currently no scheduled event post 2019.

FAI WEB SITE

The FAI web site (www.fai.org) received considerable criticism. It looks very pretty and covers the latest technology, but finding anything on the site is almost impossible. The best advice offered at the meeting was to scroll to the bottom of the home page and click on 'GLIDING' under the list of sports. From there, you are on your own.

Regarding IGC's finances, Treasurer Dick Bradley reported a surplus of €5,000, despite the budget predicting a deficit. A similar surplus budget is planned for 2018

ANNOUNCEMENT OF 2021 CHAMPIONSHIPS

37TH WGC 2021 (18M, 20M, OPEN) MATKÓPUSZTA, HUNGARY

11TH FAI WOMEN'S WGC 2021 HUSBANDS BOSWORTH, UK

12TH FAI JUNIOR WGC 2021 TABOR, CZECH REPUBLIC

21ST FAI EUROPEAN GC 2021 (CLUB, STD, 15M) POCIUNAI LITHUANIA

4TH FAI PAN-AMERICAN GC 2021 LUÍS EDUARDO MAGALHÃES BRAZIL

SAFETY AT INTERNATIONAL COMPETITIONS

At the IGC meeting, the Safety Group tabled a report on accidents and incidents at international competitions. The number of occurrences has been dropping in recent years. Here, Group member Terry Cubley presents some of the key points from the report.

Data analysis shown here includes 35 major championships. The statistics show that the average number of accidents and incidents is declining.

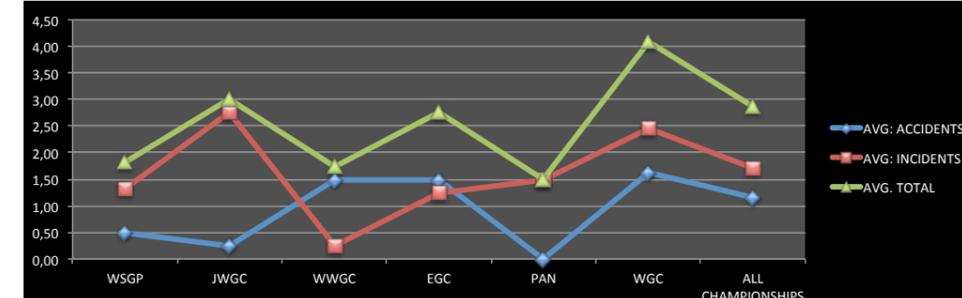
In 2017, software was introduced that carries out proximity analysis during championships. Although not widely used as yet, it has the potential to alert pilots to proximity issues and promote behaviour changes and increase safety and 'more gentlemanly' flying.

The report noted, 'In summary, reduction of accidents/incidents and the behaviour change, shows that our main goal of moving to a Safety Culture is on its way'.

STATISTICS

The report includes information from 35 major championships and the total

CHAMPIONSHIPS 2008 TO 2017+	TOTAL CHAMP.	ACCIDENTS	AVG. ACC.	INCIDENTS	AVG. INC.	TOTAL	AVG. TOT.
WSGP	6	3	0,50	8	1,33	11	1,83
JWGC	4	1	0,25	11	2,75	12	3,00
WWGC	4	6	1,50	1	0,25	7	1,75
EGC	8	12	1,50	10	1,25	22	2,75
PAN	2	0	0,00	3	1,50	3	1,50
WGC	11	18	1,64	27	2,45	45	4,09
ALL CHAMPIONSHIPS	35	40	1,14	60	1,71	100	2,86



average dropped slightly to 2.9. from 3.1 in 2017.

FATAL ACCIDENTS

There have been three fatal accidents in eight years across 35 major championships.

- 2010 WGC Prievidza. Alexander Martynov (RUS). Spin unrecovered.
- 2013 EGC Vinon, Alexander Nilles (ESP). Mountain collision.
- 2018 WSGP Vitacura, Tomas Reich (CHI). Mountain collision.

MAIN TYPES OF OCCURANCES

- Hard landings (outlandings and

field landings): 32 %

● Final stage (final glide, approaching etc): 14%

● Flying gaggles + mid air collision: 14%

These three groups of events represent 60% of ALL accident/incidents in 35 major competitions.

DECREASE IN OCCURANCES

From 2008 until early 2018, there has been a decrease of 60% in the average number of accidents and incidents. Taking a starting date of 2012, there has been a 73% reduction.

Type of championships:

- JWGC, WGC and EGCs are the highest rated in accidents/incidents.

- WSGP, WWGC and PANs are the lowest rated in accidents/incidents.

RECOMMENDATIONS

1. To continue gathering information from reports and flight analysis.
2. To establish strategies to reduce incidents and accidents, focused on most relevant issues (flying gaggles, mid air collision, hard landings).
3. To share statistics and proximity analysis with pilots.
4. To continue developing behaviour survey during

TERRY CUBLEY

CHAMPIONSHIPS 2008 TO 2017	ACCIDENTS	INCIDENTS	ACC+INC	TOTAL ALL CHAMP. (ACC+INC)	% ALL CHAMP.
LOW	1	24	25	100	25%
LANDING/LAUNCHING	Landing wheel up	6			6%
	Hard landing	9			9%
	Checking engine	1			1%
	Hard launching	1			1%
OTHERS		8			8%
MEDIUM	9	8	17	100	17%
ARRIVING / FINAL STAGE	Flying low arriving	3			3%
	Hard landing	5			8%
	lake outlanding	1			1%
FLYING	2				2%
LAUNCHING	Grib staff hit while launching		1		1%
	OTHERS	2			2%
HIGH	30	28	58	100	58%
FLYING	Mid air collision	3	2		5%
	Spin unrecovered	1			1%
	Flying pattern	2	2		4%
	Flying in clouds		1		1%
	Before starts		3		3%
	Dangerous flying gaggles		7		7%
ARRIVING / FINAL STAGE	Collided to mountain	3			3%
	Collided with house	1			1%
	Final turn		3		3%
	Hazardous approaching		3		3%
LANDING/LAUNCHING	Collided on final glide	4			4%
	Self launching problem	4	2		6%
	Hard landing	11	4		15%
OTHERS		1			2%



THE MURRAY, MOUNTAINS AND THE SEA

BY RICHARD TRAILL

A couple of years ago when I had a share in a Nimbus 2, I was sent a link to an article penned by Terry Cubley in about 2002. It was later published on Soaring Café soaringcafe.com/2012/10/750-kilometers-from-bacchus and describes the gliding exploits at the Victorian State Championships in 1975. Of particular interest were the Friday flights. By all accounts Friday was a cracking day with a 12-14,000ft cloud base and light northerly winds. Three pilots - Tony Tabart, Dave Ferguson and Laurie McKinlay - all in Nimbus 2 sailplanes, achieved a 750km task.

Tony Tabart set a new world record. Laurie McKinlay just made it back home after outlanding early, close to Bacchus, and getting an aerotow retrieve and relight. Terry Cubley suggested that, with the higher performance of modern gliders, 750kms should be possible on a couple of days each season, and concluded with the challenge to see if a 750 could be flown before 2005.

REPEATING HISTORY

Since Terry's article was written in 2002, an appreciable number of flights over 500km and a few of more than 600km have been achieved, but nothing like a 750. My then Nimbus syndicate partner and I had discussed the possibility of responding to the distance challenge. We hoped to repeat history and try to achieve a 750 from Bacchus in VH-GOG, the same glider flown by Laurie McKinlay on 'that day' in 1975.

Come 2017 and still no further 750km flights from Bacchus had been flown. I was no longer a shareholder of the Nimbus, but had access to some great equipment including the Melbourne Gliding Club's Duo Discus XT. The weather on 28 January looked pretty good over most of Victoria, not quite the 12-14,000ft of 1975, but still quite a respectable 9-10,000ft with a significant spread of cumulus and light northerly winds. After some correspondence and



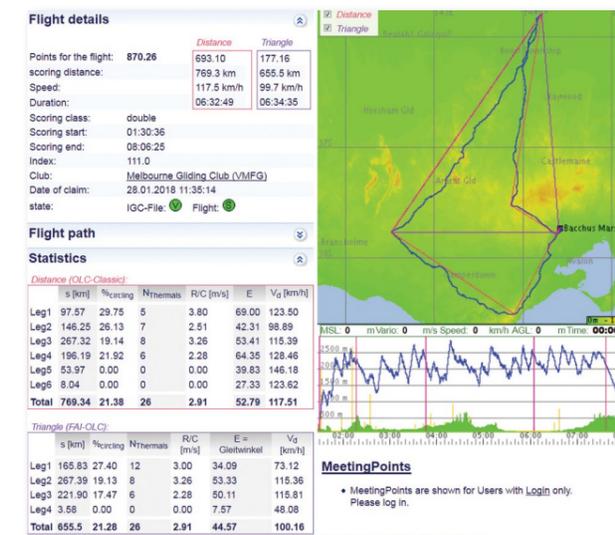
planning with Ben Loxton, we decided to try for a 'big' flight from the Marsh and see what we could do. The tentative plan was to head southwest and run along the coast, head towards the southern end of the Grampians, up to the NSW border and then, as late as we dared, head back towards Bacchus Marsh.

EXCEPTIONAL CLIMB

We launched at about 12.15pm when the cu had started popping south of the airfield. Getting out of Bacchus can sometime be a little tricky, but not today. Heading south from the airfield, we took a good climb up to airspace at 4,500ft and, taking a top climb 15km further south to get a bit more distance, soon cleared the airspace restriction. Just on the southern side of the airspace step, Ben found a 7kt climb up to 7,500ft and we were away. Running under the cu, energy lines were easy to find and we had a good run past Geelong and then along the coast.

At one point, Ben found an exceptional climb - briefly, 14kt on the 20s average - and within a couple of turns we were back at cloud base. The photos don't do justice to the view with the forest, beach and sea all looking postcard perfect. Gliding under the cu line along the coast soon had us over the Otway Ranges near Apollo Bay. The outlanding options in that part of the state aren't that great, so we tracked inland towards the southern end of the Grampians. Conditions became a bit softer in this phase of the flight as the cu thinned out.

By the time we'd flown to Glenthompson, we were in the middle of a blue hole, so the intended waypoint of Hamilton was revised. The sky to the north east had nicely filled in with a decent covering of clouds, so we turned and tracked northeast, parallel to the Grampians. Another good climb up to cloudbase near Ararat, followed by some extended runs under cu, soon saw us up near Cohuna on the Vic/NSW border.



HEADING HOME

The clouds still looked great, but it was time to head home. After a further good run under the clouds back to Ballarat, we were ready to return to the Marsh. After a comfortable final glide, we arrived back with enough margin to make sure that we closed the OLC triangle.

Final stats on the flight, courtesy of the OLC, were 769km at 117kph. Was it longer than the flights from that day in 1975? Probably, but not definitely sure. Was it a great day out, flying across Victoria, and the longest flight posted to the OLC from Bacchus? Yes. Let's hope this flight encourages more people to fly XC from this location, and that it's not another 43 years before another 750km+ flight is recorded from Bacchus Marsh.

You can see Richard's flight at onlinecontest.org/olc-2.0/gliding/flightinfo.html?dsld=6223354



TWO SEATS AT NARROMINE

BY BILL EDWARDS



Over the years I have crewed for my brother Brad on many occasions as he chased state and national titles. So, when the opportunity arose to be on the inside of the canopy when it closed at the start of the competition days soaring, I jumped at the chance to tick one more item off the bucket list and fly the 2018 National 20m Competition with him in his duo FBE at Narromine.

I have only flown a few comps over the years and, to be honest, the thought of flying in a national competition was a little daunting, but having the opportunity to fly it with one of the masters of our sport was amazing, giving me an incredible education and confidence. I would encourage anyone to do it with a flying buddy.

Brad is at the stage in his flying career when he very much wants to give something back to the sport he loves so much. Together, we discussed the possibilities for doing this, perhaps involving this particular comp and these high performance two-seaters. For example, GFA and our top guns might consider a contribution from Brad to make an aircraft and some time available to one of our best and

ABOVE: Brothers Bill and Brad Edwards sharing the experience at Narromine.

brightest young pilots each year to fly it as I have done, maybe as a prize for the winner of junior competitions.

What I will share in this article is actually covered in our training. However, though I promise not to give away too many of Brad's hard-earned secrets, simply being in the glider and watching all the decisions being made as they happen is much more beneficial than just watching a lecture.

LESSON 1 - STAY HYDRATED

Drinking plenty of water, even with a little sugar, can help towards the end of the task. We stocked up on cases of bottled water and some barley sugars for inflight refreshments.

LESSON 2 - BE PREPARED

Our comp did not start well, as the points reflect. To be prepared you must have all of the gliders, instruments and systems working well and know them backwards when the first day starts. We had a leaky tail tank and our navigation instruments had battery and update problems. Although in themselves these things were not dangerous or very taxing on our glide performance, the worst part I believe was that they distracted us from thinking about our tasks and planned route, and delayed us so we were in a rush on the ground to get under way. Not a good start!

LESSON 3 KNOW YOUR PADDOCKS

The first day was going to be a struggle to get around, and in the end almost everyone outlanded. Throughout the task, Brad made it a priority to keep landing sites well within reach. As we rounded the last turn and climbed to 3,000ft agl, we only proceeded on task when we knew we had red paddocks with a tinge of grey ahead. Brad explained that this colour meant they were last season's ploughed paddocks and should be flat and firm.

My brother has always been an extremely competitive person. Even a quiet Sunday arvo joy ride at Cluney can turn into a hotly contested 100km triangle if our buddy Bruce Taylor turns up. So it came as something of a surprise to me when, at 1,100ft agl, after not feeling a bump since our last climb, the announcement came from the front, "We're going to land in a paddock."

From that moment onward, Brad's focus shifted completely from trying to win the comp, to how we get this thing on the ground without incident. From the selection of paddocks, we picked the ones with furrows lined up by the wind, and then did some turns to inspect them for obstacles. Our final selection was a paddock with an alternative right next door that could be used right down to our final turn if we saw something we didn't like.

We had some trees to navigate and a fence to fly over, but in all we had a pretty standard circuit and landing roll, and I think any club would be happy with the surface we towed off from after a push back to the fence line. As we drove home after the comp I couldn't help inspecting paddocks for colour and surface and would think the time for that would be on the way to the comp next time.

LESSON 4 - SAFETY IS YOUR FIRST PRIORITY

Every decision we made the whole week was based on how safe the outcome would be. Sitting in the back, I noticed that, regardless of who was flying, every time a wing dipped Brad's head would instinctively turn in that direction and inspect the air we were about to fly into. He completed every check and then rechecked it several times before take off and landing, and his standard joke on final at 200ft was 'one green', meaning that the landing gear was down and locked. This remark comes from his jet flying days, for which the check is 'three greens'.

LESSON 5 - BE COMFORTABLE

We spent some time at the local hardware store buying foam to support various parts of our anatomy and as the week progressed and we started to sort our minor issues out and learn how to work as a team, we began to achieve much better results. However, you can't give these guys - with that level of expertise - a head start and expect to win.

LESSON 6 - PICK YOUR TRACK

We spent a lot of time discussing thermal sources, looking for dust devils on the blue days and selecting clouds and the parts that worked best on the cumulus days. Matthew Scutter gave a talk each morning on the features of his SkySight website, which we both found extremely useful and consider a credit to him as a tool for flying faster.

LESSON 7 - KNOW YOURSELF AND FLY TO YOUR ABILITY

Brad gave an excellent talk at briefing one morning on how important it is to fly within your capabilities. The thrill of the competition can push us all but at the end of the day, the consequences of poor judgement can last a lifetime. An example from his talk is "don't get back to the airfield with no speed, no height and no ideas".

We always had 1,000ft on a 40/1 glide slope for our final glide in case we encountered heavy sink, which we did on some days. This was easily converted into speed once we were sure we would make it home, and I often had to fight



the urge to push on once the computer said we had enough to get home. I was offered the front seat but declined, as I knew who the best and safest man for the job was. Maybe I could take that role after a bit more practise.

LESSON 8 - LEARN HOW TO THERMAL

No doubt one of the reasons for Brad's success is his incredible ability to find good air and then place the glider exactly where it needs to be to take advantage of it. My poor attempts at centring thermals would be met by shakes of the head from the front seat until finally on the last day I managed to get one right. "I did it!" was my call, and finally from Brad, a nod and a "yes, you did" made a very happy moment for me.

LESSON 9 - HAVE FUN

Isn't that why we were there? As competitions can be extremely stressful and taxing mentally, we both made an effort to encourage and joke with each other. "Good job, Brad. Good job, Bill" was the call at the end of every flight, regardless of the result, as we always got home safely. I'm sure it helped. It is much more fun inside the cockpit at comps and our ride home discussion centred on how we could make these events more enjoyable for crew.

A suggestion would be a daily task on the ground with cryptic and educational clues at each turn point, pointing to the next for teams to compete in - maybe even daily prizes and an overall winner. We took out our guitars and had a sing along when we could, as we both have fond memories of nights like that over the years. We sang 'Honey, I Need a New Glider', 'Sweet Narromine' and others that we hope made everyone laugh.

It is hard to express my gratitude to my brother for this wonderful experience and his generosity. It brought us closer together and I will never forget the fun we had. Our sport is truly blessed by his presence and dedication.

To Beryl and Arnie Hartley, John Rowe and all the people that worked so hard to make the comp the great success it was - thank you for making us feel so welcome.

Thanks also to our fellow competitors, even the ones who beat us. Thank you for keeping up the great sportsmanship and friendly nature of our competition. It was wonderful to see you all again. So look out, Lumpy, Jansen, Scutter and co. The Edwards boys are hot on your heels.

GA

NSW CHAMPIONSHIPS TEMORA

BY LUMPY PATTERSON PHOTOS BY SHARON DENNIS



The NSW State Comp attracted a great turn-out with four well-represented classes and a vast range of experience in attendance, ensuring that good fun and memorable lessons would be had by all.

On Day 1, a soft blue day was forecast with 4-5kts to 5,000ft, which turned out to be pretty close to the actual conditions. It was a completely blue day with scattered high level cu moving in from the south. The competition organisational team had prepared a detailed morning briefing with an in-depth explanation of the local area complimented with Google Earth pictures of the finish lines in each direction and the associated hazards. Safe areas to land were also highlighted, should anyone be caught short on the final glide or in case the tow rope broke on take-off.

The attention to detail during this safety briefing was excellent. Changes were included and consideration given due to the ground remaining saturated from the heavy rains a week ago and influencing the soaring conditions. All the tasks were set with preference to the north and then towards the west. Most pilots tip-toed around the first task scoping the conditions, conscious of not wanting to begin the competition with an outlanding. The speeds achieved were surprising considering the wet ground conditions.

IMPROVING CONDITIONS

Better conditions prevailed on Day 2 for all pilots. More consistent thermals enabled greater heights and some small cu's were right out east on task, but these seemed to tease more than they delivered. The blue air worked better than anticipated with the dark paddocks and rocky areas working very well. It was still very damp around the lake in the Cowal area north of Temora. The pilots told many different stories of their experiences after the return to the airfield, most with good results. The speeds achieved for the day were good. However, some pilots were second guessing decisions they had made in relation to the route chosen to navigate over the soggy ground on the track home.

By Day 3, weather conditions were improving and the tasks were longer. It was a good day and fun was had by all. The task setters set the field mostly to the northeast, then westerly and south heading home. Most pilots had benefited from the discussions referring to the lakes area to the north and used the knowledge wisely.

NEW SOUTH WALES STATE CHAMPIONSHIPS TEMORA

9 16 DECEMBER

CLUB

1	GVH	BERNIE SIZER	PIK20B	4,782
2	GME	TOM GILBERT	DG100	4,190
3	GCE	MARK BARNFIELD	SZD55	3,936

STANDARD

1	XJG	DON WOODWARD	ASW24E	4,780
2	PNL	PETER TROTTER	LS8	4,775
3	LSL	SCOTT LENNON	LS8	4,238

15 METER

1	WPP	JOHN BUCHANAN	VENTUS 2	5,000
2	XJT	MARK DALTON	ASW20 BL	4,019
3	GUG	BEN COLEMAN	LS6	3,764

18 METER

1	GQR	BRUCE TAYLOR	ASG 29/18M	4,967
2	GHS	ADAM WOOLLEY	ASG 29/18M	4,453
3	GAG	LUMPY PATERSON	JS 1C	4,272

OPEN

1	GQR	BRUCE TAYLOR	ASG 29/18M	4,965
2	GHS	ADAM WOOLLEY	ASG 29/18M	4,495
3	GAG	LUMPY PATERSON	JS 1C	4,299

soaringspot.com/en_gb/nsw-state-championships-temora-2017

In general it was lower risk day with the thermals reasonably close together and somewhat organised. We had some good-looking cu today, which seemed to work on most occasions, however it was the transition from the cu's to the blue that seemed to slow most people down. Some different air between the two air masses certainly required some forward planning to prevent getting bogged down.

The finish line was an action-packed place as 18 pilots finished and landed very close together, and the grass airstrip filled with gliders within a very short period of time. Good airmanship was displayed by all, assuring the gliders landed safely and quickly clear of the runway.

BEST HEIGHTS AND CLIMBS

Day 4 was forecast to be a ripper and the pilots were pumped and ready to go. Big tasks were set and the oxygen tanks were ready to match the expected heights. It was slow to get going as most pilots gradually climbed away from launch height. Large cu's were forming to the north at launch time, but quite a distance lay between us and them. The concern was that conditions would over-develop before we could use them.

The reports were mixed about the first leg of the flight. Some felt it was going to be hard to get around, others easy. Once around the first turn-point, the sky out to the west flattened out and appeared to soften. However, this is where most pilots made their best climbs and heights. On several occasions, heights of over 13,000ft were achieved, and 8 knots-plus for the climbs, followed by seemingly long glides. Some good speeds were achieved on the day.



TOP: Bernie Sizer the new Club Class Champion

ABOVE: Lumpy with Paul Mander.

Day 5 and Day 6 were cancelled, but the weather improved on Day 7, with heights to 10,000ft. An AAT task was set with 2.5 and 3 hours, and the distance was up to 524km for Open Class. The task went well to the southwest, then east to north and finished from the north in the afternoon. It was a fairly short and fast last day with some cu's providing some good climbs, but over-development later in the day slowed a few pilots down.

FAREWELL

The contest team did a great job looking after all the pilots and crews in trying conditions at the start. Because of the rain preceding the competition, the normal tie down areas turned into mud bowls. Nevertheless, a very well organised ground crew ensured that no gliders or cars got bogged. The daily briefings had a strong focus on safety and volunteer pilots offered their stories and experience to the group, which was well received and appreciated.

The final dinner was held at the Temora Ex-Serviceman's Club with the usual, regulation banter and congratulations to all for a safe competition.

GA



ABOVE: Lumpy Patterson landing his JS1C.

BELOW: Chris and Adam Woolley with Ian McCallum.

REDCLIFFE TO ULURU AYERS ROCK AND BACK

BY PETER STEPHENSON



My daughter Anna, who lives overseas, suggested that we fly to Ayers Rock for an adventure together. Timing was not the best as she always visits in December, so it had to be in the summer heat. As forecast temperatures in the Red Centre were in the low forties centigrade, we set off from Redcliffe Aerodrome in the early morning of 18 December 2017.

The weather was good and a tail wind blessed us to Roma, but on the way to Charleville, the low voltage light came on. Therefore, we switched off all non-essential electrical instruments and landed at Charleville as planned. There, we met Peter at the fuel pump, who kindly lent us his car, allowing us to tour Charleville to find a battery charger to use at our next overnight stop. This was to be Windorah, or hopefully Birdsville if the engine started each time. Luckily, I had purchased a new battery for the trip!

TAILWIND

A tailwind helped us on our way again and Anna's external battery chargers kept our iPad running OzRunways for secondary navigation. Windorah came

and went for a fuel stop and iconic Birdsville then came into view. We did not descend on approach as usual but switched off the engine at 6,000ft, feathered the propeller and glided down over the iconic racetrack. When an initial look at the windsock revealed no wind, we selected runway 14. However, the landing was hairy - another look at the windsock showed the wind was 10kt from the north.

The temperature on the ground was as expected, a very warm 33° C, and it stayed that way overnight, but the air conditioning inside was effective. We pulled out the battery, had an excellent meal of barramundi, put the battery on charge, and spent a very comfortable night in the Birdsville Pub.

The next day at 7am, we put the battery back in, refuelled and took off on runway 32 into a strong 10kt breeze. Though we were expecting a head wind component across the Simpson Desert as we flew west, we were very pleased to have another tailwind at 6,500ft - and was it ever beautifully smooth!

MT DARE STATION AND THE ROCK

Our next stop was Mt Dare Station on the edge of the Simpson desert. The station used to be a cattle station but has been taken over by National Parks and turned into a hotel, see www.mtdare.com.au. It is

owned by a great couple, Graham and Sandra Scott, who say they would like to have more fly-in visitors.

We landed on a hilltop runway 15/23 only to hear Graham tell us that they had another runway 06/24 that we had missed seeing from the air. He filled us up with Mogas 98 from a drum that he uses in his Jabiru 230, which he flies to Bond Springs at Alice Springs. After an early lunch, we set off for Ayers Rock, planning to refuel at the Kulgera Roadhouse, but Graham said that you had to carry fuel to the aircraft across the road - I was told that you could taxi up to the road bowser! Therefore, we gave the Roadhouse a miss and flew on to Ayers Rock.

As we approached, we thought we saw the Rock looming up in the distance, but it turned out to be Mt Conner, 2,819ft AMSL, a flat-topped mountain that erupted out of the ground. It was a most unusual structure, totally different to Ayers Rock at 2,832ft AMSL and the Olgas at 3,498ft AMSL. Ayers Rock Airfield is 1,626ft AMSL, so the Rock only sticks up about 1,200ft above the ground but is still so impressive and overwhelming. Its position among the Seven Natural Wonders of the World is well deserved.

TURBULENT AIR

We flew past Ayers Rock and on to the Olgas in very turbulent air, appreciating that we were securely strapped into our seats. We flew around the amazing rock formations of the Olgas, then back to the northeast and on to Ayers Rock Aerodrome. Approaching the aerodrome, I switched off the engine and did some soaring, only to hear that a Qantas jet was inbound on a straight in approach to RWY 31, my intended runway. I said that I would hold position till he landed,



which I did, but when I was about to land the jet back-tracked instead of taking a taxiway, so I had to restart the engine and wait a bit longer.

After landing, I was given direction to a bowser by the CA/GRS, a certified air/ground radio service, which is not exactly air traffic control but a service to the regular public transport aircraft. Tony Arbon, the officer on duty, came over from the tower and introduced himself and requested to take a photo of our Ximango with the wings folded. While I think she looks ugly in that configuration, the ground staff and ERSAs said that we had to fold the wings because they are 17m and too wide for the 15m wide parking

ABOVE: Peter arrives at Uluru / Ayers Rock from 4,500ft.

BELOW: Flying over the sand dunes of the Simpson Desert.

continued over page





bays! Not many other aircraft were parked there, but the staff still insisted.

Tony is an ex-flight service officer with a website at www.austairdata.com.au, living in Caboolture, and is a FIFO every two weeks. Not only that, he kindly gave us a lift to our hotel - carrying our battery, of course.

SUNSET, SUNRISE

We were in time for the sunset viewing of the Rock and also able to book for the 4am start in the morning for the dawn viewing by hop-on-hop-off bus. Both experiences were memorable and are preserved in multiple pictures. More enjoyable was the walk around the Rock after the dawn viewing, which we did in 2.5 hrs instead of the published 3.5 hrs since we both like to walk at a good pace. Even so, we visited all the hidden sites at the base and sat in amazing arm chairs built from naturally shaped limbs of trees - such skill!

The Rock has a magical presence about it, and is just too big to photograph in any meaningful way. You simply have to get up close and personal to it. No wonder the aborigines consider it a sacred site. We had planned to climb the Rock, but found the trail closed because the conditions were a bit windy, although it had been open the day before.

After our walk, we had breakfast at the Cultural Centre and returned to our hotel by the hop-on bus to check out and laze about by the pool. We were given a lift to the aerodrome by one of the hotel porters, who even carried the battery to the gate! We took off and headed back to the Rock, taking more pictures of it from the air for 30 minutes.

I had considered switching off the motor again to actually soar over the Rock, but the aerodrome is 11 nautical miles away from it and, being a true glider pilot, I don't ever trust my engine to restart. While flying back and forth in front of the northern face of the Rock while my co-pilot took pictures, I inspected the overgrown remains of a runway, running right beside the Rock. In the old days, soaring over it was the norm. The old resort to the east of the Rock, Munitulu, is now a no-fly zone as the local aborigines have taken it over, so flying around the Rock is not encouraged. Therefore, although they are such noisy creatures, helicopters were very active while we were there.

EARLY START

After we had taken enough pictures, we set off back to Mt Dare, passing Mt Conner again. After landing on their other strip, I took Graham up for his first glider flight but did not cancel my SAR time, as I could not get any reply from the Centre. We climbed to 4,000 AMSL (3,500ft agl) and were unable to contact anyone, even to give a relay. By the time we got back to the hotel, Canberra had already been notified and had rung the hotel with relief to hear that we had landed safely.

We had an excellent lasagna, homemade by Sandra, that night and retired early, having been up since 4am. We set the alarms on our phones for 5am as we wanted



a dawn start to get back to Redcliffe. For some reason, one of the phones rang at 4am, though it was showing 5am, as we were in the far north of South Australia and not Northern Territory.

It was still dark, so carrying the battery and our belongings, Graham kindly allowed us to use his ute to get to the aircraft. After the usual DI that included replacing the battery, we set off for Birdsville at 7,500ft. Would you believe it - we had another tail wind?! We flew directly over Poeppel Corner, where the boundaries of Queensland, South Australia and Northern Territory meet. It looked like a triangle of tracks from our height.

CAMEL PIE

After refuelling at Birdsville, we had breakfast at the local bakery, a short walk from the aerodrome. The local delicacy was Camel Pie, and it was delicious! On to Windorah for another hairy landing in a strong gusting cross wind. This time, the fuel bowser would not work but fortunately the local agent was passing and came to our rescue.

A challenging take-off followed and we were off to Charleville. Reaching 7,500ft took an age but was worth it as we picked up a 15kt tailwind that sadly allowed us to miss our good friend Pete in Charleville and go on to Roma. As we approached, we had to bypass a large storm, and on landing at Roma, the local agent said that the same

storm was now fast approaching.

So after a quick refuel, we were on our way for the last leg to get home, which we did uneventfully and well before last light, even though the tail wind had abated.

Soon after landing and while hangaring the trusty Ximango, a pilot came over to ask how we went. He had not been further west than Birdsville so I shared Graham's phone number with him.

What an excellent trip! We had left on Monday and arrived back on Thursday. My youngest son wants to do it, too, but in spring and autumn.

GA

OPPOSITE TOP: The legendary Birdsville Racetrack.

OPPOSITE BELOW: Mt Dare Airstrip, SA.

ABOVE: Salt pans of the Simpson Desert.



LEFT: Refueling at Mt Dare, SA.

JOEYGLIDE 2017/18 AT NARROMINE



BY ANDREW GRANDJA AND MICHAEL KELLER
PHOTOS BY BROOKE ANDERSON, AILSA MCMILLAN AND JOE O'DONNELL

Experienced veteran Andrew Grandja and WA newcomer Michael Keller tell of their experiences at JoeyGlide this year. Although their stories contrast, both pilots enjoyed great flying, learned a lot and now feel they are better competitors than they were before.

CRUCIAL COMPETITION

ANDREW GRANDJA

At 4am in Tocumwal, I hooked up a glider I'd never flown before and began another six hours of driving toward my destination of Narromine. Dreams of a

competitive result were looking slim and my goal shifted to having a good time catching up with friends from around the country.

After completing the journey - comparable to Christopher Columbus leaving Spain to discover the new world - I finally arrived in Narromine and started the dreaded task of assembling a club glider from a homebuilt trailer and setting up a tent. However, all this was to be worth the effort, as the ever-reliable online weather forecasting sites spoke of massive 14,000ft cloud bases and off-the-scale climbs.

A DAY TO SURVIVE

The competition began in the traditional fashion. Unfortunately, the heavenly gliding conditions forecast had not quite made their way to Narromine and instead, we would be dealing with overcast, weak conditions for the foreseeable future. As a Melbournian, my thoughts turned to why I had travelled so far only to experience these classical southern flying conditions.

Nevertheless, such conditions were not foreign to me and I could perhaps utilize the weather to see some pesky Queenslanders end up in fields while I cruised smugly overhead, updating the details of their failures to the entire frequency.

This first day started as a day to survive. I followed a major road on the way to the first turnpoint purely to have an easy retrieval for my inevitable outlanding. The radio began to light up with reports of outlandings very early into the task, and I started to think that I'd be joining them very shortly. Fortunately, I was able to chain up some small sun spots and bounce from low save to low save until I found myself on final glide, and while my speed was low, my spirits were high, as getting around on Day 1 was the first step to scoring well.

WORKING TOGETHER

Day 2 looked as if it would be better than the previous day with higher climbs, albeit into a blue sky. My task started with two other gliders, Chris Jesse in a Mosquito and Justin Ramsay in Cirrus 'W3'.



It quickly became apparent that our goals heading into the first sector were the same and we would end up working together through these tricky conditions. Each glider pulled their weight finding climbs and we pushed into the better conditions, which saw us all split up to get ahead.

The rest of the day was spent improving on my performance from Day 1, rejecting poor climbs and taking big ones. To my surprise, even though I didn't see him for over two hours, Justin and I happened to finish within 50 seconds of each other and I ended up in 3rd position and tied for 2nd overall.

AMAZING TO ABYSMAL

Day 3 started with the thought that a competitive overall result might actually be possible. Pre-start saw some bigger gaggles and after spending some time playing the waiting game I got fed up and coerced Justin to leave with me. To my surprise, the second I started another six gliders announced their starts, too. Justin and I managed to pick the same track and once again, the Geelong Gliding Club dream team was on the move. We happened to connect a with few good climbs to a top of 11,000ft almost 25km ahead of the main gaggle after the first hour.

Unfortunately, the next hour of the flight went from amazing to abysmal and saw us descend from 11,000ft to 7,000ft in just a few kilometres as we entered an area that was active with thunderstorms. The sled ride continued all the way down to 2,000ft at the base of a huge cumulonimbus. Of course, the turn point was right on the other side and we parked in some weak lift to observe the giant for the next 40 minutes.

Eventually it became apparent that the storm was not moving, and the conditions were becoming

increasingly powerful and dangerous. It was almost 6pm and the distance to Narromine was over 120km. A discussion on the radio ensued and the pilots collectively agreed to abandon the task and begin the long cruise home. It was unfortunate that the closer you flew to the centre of this storm, the more points you earned, with no provision to have the task cancelled. Nevertheless, it was amazing to see the professionalism and maturity in the young pilots, agreeing to abandon the task in favour of safety.

The next day was a rest day and, once the all-important juniors-style AGM and pilots' meeting was out of the way, everyone descended on the Macquarie River for a relaxing afternoon. The following day was also cancelled on the grid, so most took the opportunity to check out the sights and sounds of Dubbo.

A COUPLE OF TWISTS

Day 4 started after two rest days, which was fortunate given the long discussions at the pilots' meeting about safety vs sporting aspects of gliding. The task looked as if it had been set in the wrong direction, as cumulus lined the sky behind us. However, in typical junior fashion, most pilots decided to fly 25km in the wrong direction to play in these great conditions and climb to a reasonable start height.

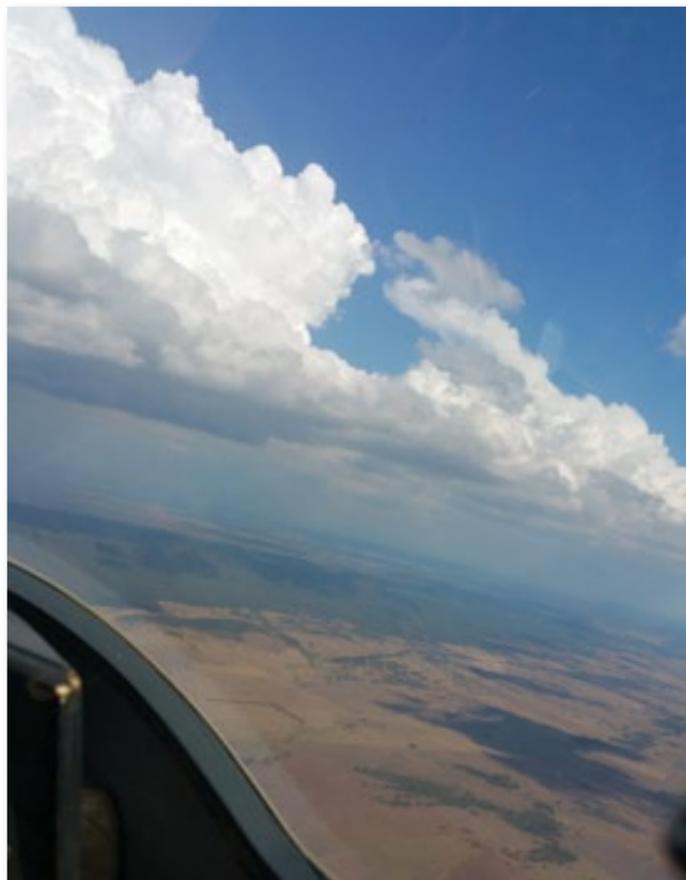
After well over an hour of absolute gliding pleasure, the pilots decided that an attempt should probably be made at racing today and grudgingly trudged their way into the weak blue conditions. Unfortunately, today's task had another challenge for me, as my glider's truly advanced Tasman vario had packed it in and I would be flying on the mechanical alone.

The task was hot and low and consisted of us bouncing around off the deck at a maximum height

OPPOSITE TOP: Joeyglide competitors prove that a Mosquito can fly.

BOTTOM: The view from the cockpit of Lachlan Brown.

ABOVE: David Collins, Club class winner, lands on Day 3.





of around 4,000ft. My lack of patience with the conditions led me to ignore slower climbs in an attempt to either outland at a house with a pool or make it around the task as quickly as possible. Unfortunately, I kept finding climbs and managed to bounce around the task at a considerable speed, finishing 2nd only to a glider that had started almost two hours before me. Another twist to the day was that David Collins, sitting in 1st place overall in Club Class, outlanded, leaving me to head into the final day only 16 points behind.

LUCKY THUNDERSTORM

Day 5, the final day of the comp, saw me in a potentially winning position. My goal for the day was to fly fast - not play it safe - and go for the win. I started right up at cloud base on the short, two-hour AAT to the north of Narromine and didn't take any measurable climbs on the first leg until I was ready to turn the first sector. I was more disciplined on my climb selection and left earlier than I had done previously if the strength began to die off.

Around 60km from the final control point, I was alerted to a thunderstorm brewing right near the finish. I decided to continue, monitor the conditions and hope for the best. Flying in to the control point, I was greeted by a large storm cell combined with an approaching gust front, which I was able to carefully



OPPOSITE TOP: Joe O'Donnell dumps his water after a cancelled day.

MIDDLE: Michael Keller, Lachlan Turlan push Michael's Libelle BV.

BOTTOM: Fleet tied down after Day 3.

LEFT: Lachlan Brown lands the AJGC Astir CS.

BELOW: Martin Rule observes the building storm.

BELOW: Martin Rule.

surf as I happily watched my final glide calculation increase from 300ft above to over 2,000ft above. This allowed for a 'leisurely' circuit in tricky conditions just after the gust front had passed through the airfield.

ALMOST

My performance on the last day was not quite enough to eclipse David Collins, with a 2nd place for the day and an overall 2nd place in Club Class. I felt surprisingly content with the result, as I knew that David had been flying on top of his game all week and only had a minor lapse in his performance that made it possible for me to get as close as I did.

This Joeyglide has been the largest in terms of attendance since the Pre-Worlds in 2014. It was extremely satisfying seeing the calibre of junior pilots coming through not only in terms of performance but also regarding to the maturity and airmanship displayed. Hopefully the number of competitors and coaches will continue to grow over the coming years as, in my experience, the knowledge gained competing at JoeyGlide has far surpassed any other program I've taken part in, and the competition is crucial for developing the sport for the years to come.

NEWCOMER'S PERSPECTIVE

MICHAEL KELLER

For those of us who live in WA, our remote location means that we often miss out on a lot of the gliding action that goes on over in the eastern states. My trip to JoeyGlide 2018 in Narromine meant more than 4,000kms of travel by



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plane and car over about 30 hours. Stepping out into the 40° C heat at the airfield was a bit of a shock at first, but we soon got used to it over the few days leading up to the competition as the tie-down area became busier with more gliders and people arriving each day. During these initial days, I got to know the local area a bit, along with my aircraft – Std. Libelle ‘BV’ belonging to the Narromine Gliding Club and kindly organised by James Nugent.

JOEYGLIDE ROUTINE

As everyone started to arrive, I got to know some of the regular JoeyGlide characters, all keenly looking forward to the next week or so. Every morning would follow a similar routine. I’d be up early to wash and DI BV before briefing, where I’d collect the daily task sheet and prepare for the day’s flying. This would be followed by the previous day’s fines for those who had somehow stuffed up or done anything else similar that deserved a ‘donation’ to the RFDS.

On the grid there would be the regular piecart banter about the discrepancy in how blisteringly good the day sounded in the met briefing compared to how it actually looked out there. About half an hour before launch I would commence turning on the many, varied trackers, loggers, instruments, displays and interfaces that were needed to make the glider fly. Once the fleet had been launched we’d often congregate in one or two gaggles before the start, exchanging excessive radio checks and cheap quips.

On the official practise day, I crossed the start line soon after it opened, keen to get out on track, before promptly chickening out of



the task halfway to the first turnpoint. Most of the fleet followed suit as we realised that lingering smoke haze from nearby bushfires meant that the thermals weren’t half as good as previously advertised. However, our good friend Nils in the other Libelle ‘BN’ was by that time already halfway around the task and so didn’t jump on the bandwagon, and ended up cruising home at 72kph with no worries.

CRUISING ALONE

Most days I found myself cruising alone with little evidence of the other guys on task except for the lively radio. The exception to this was on Day 3 when we were set a 367km racing task and I flew in the company of Cameron’s LS7 ‘XJY’ for a few good kilometres, searching desperately for climbs in between the rain showers and storms before he had to outland.

Somehow my Libelle managed to climb away on a sparrow’s fart to make it back onto final glide for home. Another testament to BV’s ability to climb in weak lift was on the second last comp day as we were tasked over an area of irrigation that only provided the odd little puff of a thermal. Still the Libelle climbed and, once I got into the streeting further south, I stopped turning and managed to win the day with 84kph.

MOTIVATED

On our two rest days, we also managed to establish quite a few items, including the correct pronunciation of the word ‘bistro’, the inconsistency of my bowling skills, along with which Discus is a Discus. All in all, JoeyGlide was a whole lot of fun and definitely worth the huge journey over. The flying was fantastic, and

spending time with other juniors motivated me for more competition flying and served as a reminder that there are indeed young, like-minded pilots with similar interests in gliding.

All of this, of course, wouldn’t have been possible without the hard work of our comps director Ailsa McMillan and the Narromine Gliding Club, along with all others who contributed. Also, special thanks go to Narrogin Gliding Club and the Western Australian Gliding Association for their sponsorship along with those who sponsored me privately. Thanks also to my dad for everything he has done to support me and his endless patience.

GA

OPPOSITE TOP: Andrew Grandja lands in DH
CENTRE: Chris Jesse and James Nugent 15m class winner.
BELOW: Josh Geerlings, Chris Jesse, Justin Ramsay, Reuben Lane

**JOEYGLIDE 2018
NARROMINE
21 - 27 JANUARY 2018**

CLUB

1 WUQ DAVID COLLINS	SUNRAYSLA	LS3A	3,508
2 DH ANDREW GRANDJA	GEE LONG	DG300	3,443
3 MF REUBEN LANE	LAKE KEEPIT	LS1F1	3,359

CLUB

1 QI JAMES NUGENT	MELBOURNE	LS3	3,735
2 G1 DYLAN LAMPARD	KINGAROY	VENTUS 2A	3,518
3 WUQ DAVID COLLINS	SUNRAYSLA	LS3A	3,341

www.soaringspot.com/en_gb/joeyglide-2018

NEVER GIVE UP SOARING THE CONVERGENCE AT BATHURST

BY CHARLES DURHAM



My friend Dominique Brassier and I had decided to go on a crosscountry flight out of Pipers Field, home of Bathurst Soaring Club, in the Duo Discus as, on this particular weekend, the weather had looked promising. Our best assessment was that the optimum time to take off was around midday and we got ready

ABOVE: After landing the club Duo Discus at Pipers Field Bathurst Soaring Club, Dominique Brassier looks toward the Blue Mountains, where sea air meets the inland airmass, setting up convergence lift.

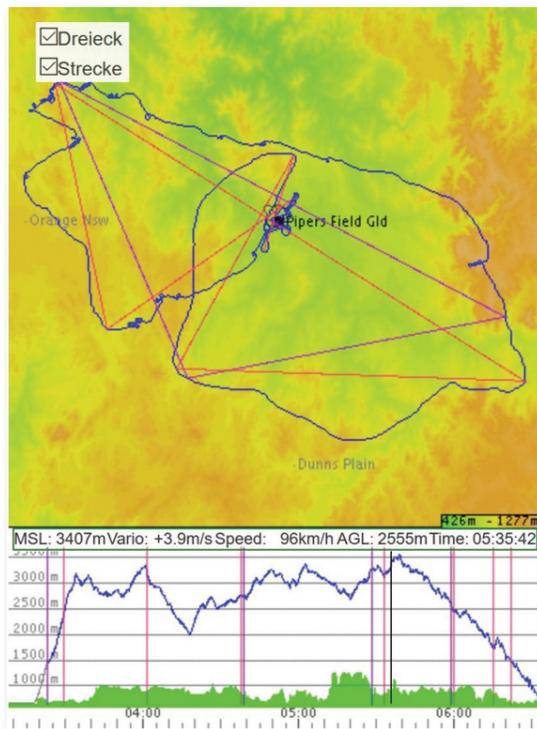
accordingly. Our spirits lifted as we watched John Jurotte take off ahead of us, thermal away and set out on track southwest towards the town of Blayney, 40km away. However, as John was getting away and we were climbing into the glider, a large dark cluster of overdeveloping cumulus cloud was ominously gathering overhead.

When we got into the air, the aerotow was very slow, going down at times rather than up, and we seemed to encounter sink everywhere we went. We took a high launch and scratched around at the edge of the overdevelopment, narrowly keeping within glide of the air field until we finally conceded defeat and landed back at Pipers Field. Shortly after us, many others landed only minutes after they took off. Not exactly an inspiring story so far... But we would not be that easily discouraged! Besides, Dominique was keen to go again.

So, we sat on the ground for about half an hour speculating if it was worthwhile to try again, and guess what - it was! The over development moved away to the north and turned into heavy rain, however, to the south the sky looked good. Dominique and I decided to give it one more try, so we climbed into the cockpit and took off. Shortly after we got off tow, we took a thermal straight to 10,000ft and headed off towards Blayney.

WAVE

Just north of Blayney we encountered wave that took us from 9,000ft up to 11,000ft and continued on for



ABOVE: Charles and Dominique soar the convergence along the ridges east of Bathurst.

quite an enjoyable crosscountry flight. We turned west towards Orange which is also 40km from Pipers, intending to track towards Parkes about 130km west. However, when we reached Orange, conditions did not look so good. So we decided to fly back east. Towards Pipers, we were getting strong thermals pushing us over 10,000ft.

CONVERGENCE

Near the end of our flight when we expected to be landing soon, we found ourselves near Bathurst Airport and the sea breeze had come across the Great Dividing Range from Sydney. The convergence of warm inland air and the cooler sea breeze is a common phenomenon around Bathurst in the late afternoon and makes for excellent soaring conditions in the path of the sea breeze.

Dominique was so excited from her first experience of the convergence, and what an experience it was! Not only did we fly all the way from Bathurst to Oberon 40km east, without turning and gaining height all the



way, but we were able to fly for over an hour for 135km without thermalling, pushing back to Blayney via Rockley, then north over the escarpment north of Bathurst towards Hill End and then back to Pipers. We arrived at the airfield with a margin of 3,000ft over final glide despite our attempts to lose height.

The lift was still amazingly strong over the field and, despite some side slipping practice for Dominique followed by full airbrakes and nose down, it still took some effort to make it to circuit height!

All in all, this was not a particularly long flight at only just over 200km. However, it was one of the most memorable flights I have had this season, especially as we had almost given up and had considered not taking the second launch at all. I also enjoyed the fact that I was able to share this experience with Dominique. If I had been flying solo, it would have been relegated to the ranks of many other tall stories told around the bar.

Have you enjoyed a great flight at your club? Our readers would love to share your experience. Please send your story to SEAN@GLIDINGAUSTRALIA.ORG

VINTAGE GLIDERS AUSTRALIA ANNUAL RALLY



BY LAURIE SIMPKINS

The idea of a vintage get-together in Queensland started last year when I completed my Foka 5 restoration. After quickly contacting a group of vintage gliding friends, fellow enthusiasts and other potentially interested parties, the date was set for Easter 2018. We completed a survey on a Cherokee as well, owned by Graeme Manietta, and I had my own BG12 and M200 online as well.

Aircraft that attended were the M200, my Foka 5 and a Ka6-CR that formerly operated with the Air Cadets, now beautifully restored by Nigel Arnot and owned by Tony Scarlett. An Italian-designed and French-built two-seater of medium performance, 30 to 1, also attended,

plus the Hall Cherokee, a home-built project completed in Victoria in the early 1960s.

Two BG12As were at the event - an American-designed, home-built one that I owned, and another belonging to Scot Johnson. Chris Kennedy brought his Slingsby Dart, originally built from a kit in Australia, and has also just completed a home-built BG12 BD, the first of its kind in Australia but unfortunately not quite ready in time for our event.

The first couple of days were very windy and tough for the older aircraft, particularly the Cherokee, but we all got some flights in when the weather settled for Easter Sunday. Good flights were posted on OLC by the

Dart and Foka 5. My BG12A made it to around 150km and the M200 made 110km.

A few pilots from the past attended and took joyflights in the M200 - one had travelled eight hours from Central Queensland to be there. The M200 was kept very busy throughout the event in the capable hands of Stewart Hamey and Phil Slocombe, who both normally drive around in a Libelle.

At the time of writing, we had one day left to fly with a promising forecast, and so are looking forward to another good day.

Hopefully, we can organise an event next year in Queensland and entice a few more of the vintage aircraft as well.

TOP LEFT: Laurie's M200 was busy throughout the event.

ABOVE: Take a closer look at one of two BG12As at the gathering.

BELOW LEFT: This home-built Hall Cherokee was completed by Graeme Manietta in the 1960s.

BELOW RIGHT: Chris Kennedy brought his Slingsby Dart, originally built from a kit in Australia.

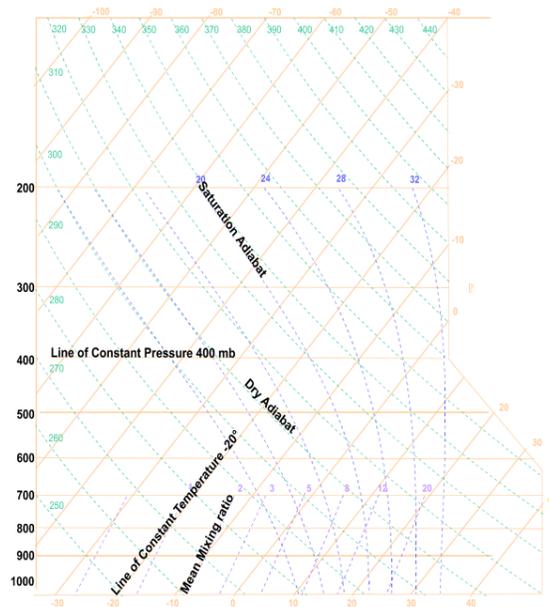


USING A TEMPERATURE TRACE

BY JAMES COOPER

Along with the weather chart, the temperature trace, known as an F160, is one of the most useful pieces of information that the weather bureau can give us, but many do not understand what it is and how it works. Due to some very nice computer programs that use information from the temperature trace to give us details on the day, we've become lazy and lost the ability to read this very useful document. So let's look at what it is and how it can help us.

First let us look at the basic chart that we will soon use to plot the data, and the various lines criss-crossing it.



LINE OF CONSTANT PRESSURE / HEIGHT

These lines are shown in millibars, which produces the first area of confusion. However, the calculation to measure height is easy. Zero ft is the air pressure at QNH, which varies a little depending on the day. You will notice on graphs, particularly up north, with low pressures that the start of the trace is a little up the chart, but minimally. In other words, if the pressure at sea level is 1008mb then the graph drawn will start at the point of 1008mb. As a guide, each 100mb is about 3,000ft, which is as accurate as we need to know.

LINE OF CONSTANT TEMPERATURE

You would expect lines of constant temperature on most graphs to go upwards vertically. The problem with orienting this particular chart in that way is that if the lines of constant temperature were vertical, the graph would lean back to the left with height variations to such a degree that the width of the complete graph would exceed the width of your computer monitor.

To reduce the width of the graph, the lines of constant temperature move to the right with height. Remember as a rule of thumb that air cools at 3° C per thousand feet, so the lines of constant temperature will lean to compensate for this.

DRY ADIABAT

These lines indicate the rate at which a bubble of air would cool as it gains height. To clarify, if a bubble of air, starting at 10° C, for example, rises as a thermal from the ground, it will dissect the 700mb line at -20° - a cooling rate of approximately 3° C/1,000ft.

SATURATED ADIABAT

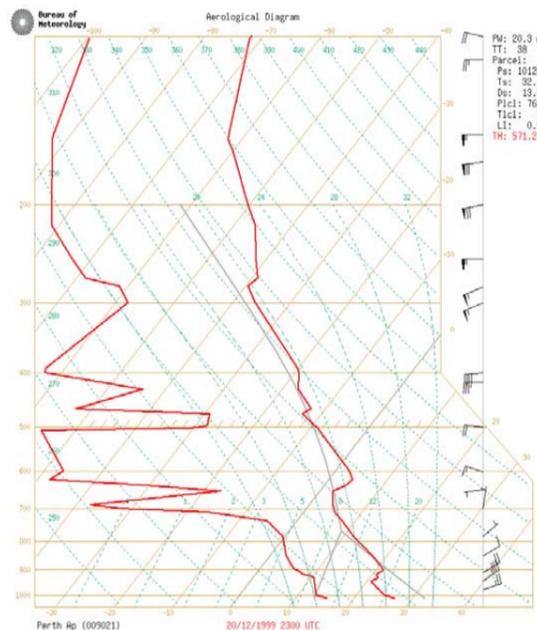
Should the bubble of air cool sufficiently to form into water droplets and form cloud, it gains latent heat. Latent heat can be described as follows. When boiling water, energy is needed to convert the water into steam. This energy is called latent heat. Because every action has an equal and opposite reaction, when the water vapour turns back into water droplets, latent heat is given back.

As the water droplets form, they will give off latent heat and, therefore, the cooling rate will be lower than the 3° C/1,000ft. A saturated bubble will cool at about 1.5° C/1,000ft, but this depends much on initial temperature and height.

MEAN MIXING RATIO

These lines are drawn to indicate at what temperature and height cloud will form. We will see their use in the next diagram.

Now let's look at a diagram where the temperature trace has been drawn in. Each day, two lines are drawn. The right line is the Environmental Lapse Rate, which is a plot the balloon takes giving the rate at which the air temperature changes with height. The left line is the Dew Point Line, the temperature at which the air would form cloud if it were cooled. If these lines approach each other at any point, cloud can be expected to form.



The Bureau draws in three grey lines for us as well. The right component of the bottom triangle is usually drawn from the maximum temperature for the day, 32°C in this case, and the line follows up the dry adiabat line. The other line on the left of the triangle starts at a point of the average dew point for the bottom 50mb, and follows the mixing lines until it intersects the right grey line mentioned.

Should these lines intersect to the right or close to the environmental lapse rate, then cumulus will form at that height. If, on the other hand, they intersect to the left of the environmental lapse rate, no cumulus will be formed.

Further study of this diagram would indicate that cloud would probably have a base at 780mb about 7,000ft provided 32° was reached, and certainly if a hot spot of 33° was found. In addition it is necessary to note that the start of this line should not only start at the temperature but also the height. S

o, if it reaches 32° in this case and you are flying over terrain 1,000ft above the place, the balloon was launched for the trace you can start your grey line at this point, in effect moving the grey line to the right and in the diagram above it will now appear to the right of the environmental adiabatic lapse rate. It will intersect with the grey mixing line to the right of the environmental lapse rate and thus form cumulus for certain.

A further grey line starts from the point where the two previous lines intersect, with 780mb in this case at about 7,000ft. This line follows the saturated adiabat. If this line is to the right of the environmental lapse rate, cumulus will continue until it crosses to the left of the environmental lapse rate, 650mb in this case, where there is a strong inversion. This will be the top of the cumulus.

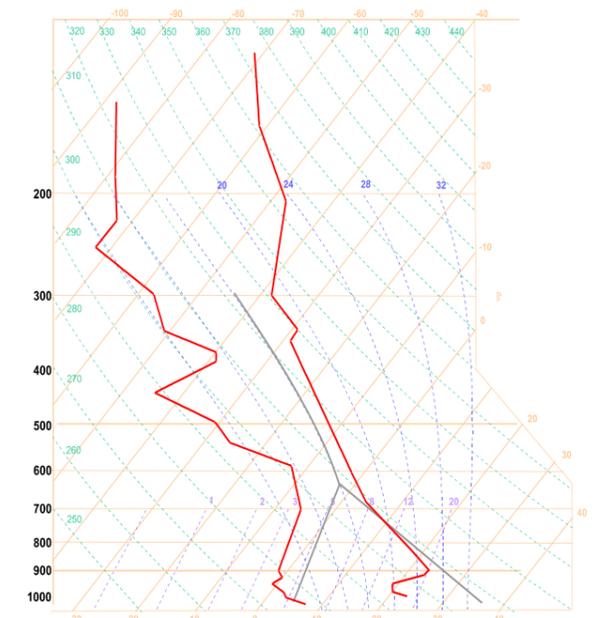
By studying the diagram, if we get a maximum of 32° it will probably be blue. If we get 34° we will get lovely Cu, if we are 1,000ft above Perth and it reaches 32° we will get Cu. Incidentally, this trace was for the first day that 1,000km was flown at one of the local Perth gliding clubs.

Note further that at the point of cumulus formation, assuming a 32° day, there is quite a gap between the dew point line and the environmental lapse rate, this will give nicely spaced out cumulus. If on the other hand, the dew point line and environmental lapse rate were closer, the cumulus would tend to over develop horizontally, and the cumulus would tend linger longer, often enticing the pilot to a non-existent thermal.

There are two pairs of lines drawn on the chart issued by the Bureau, not in the diagrams I have shown, the heavy one being the most recent trace and the light pair of lines being that of the balloon sent up 12 hours previously. At the bottom of the chart is the time that the traces were flown, but note they are Greenwich mean time 8 hours after West Australian Standard time.

SAMPLE CHARTS

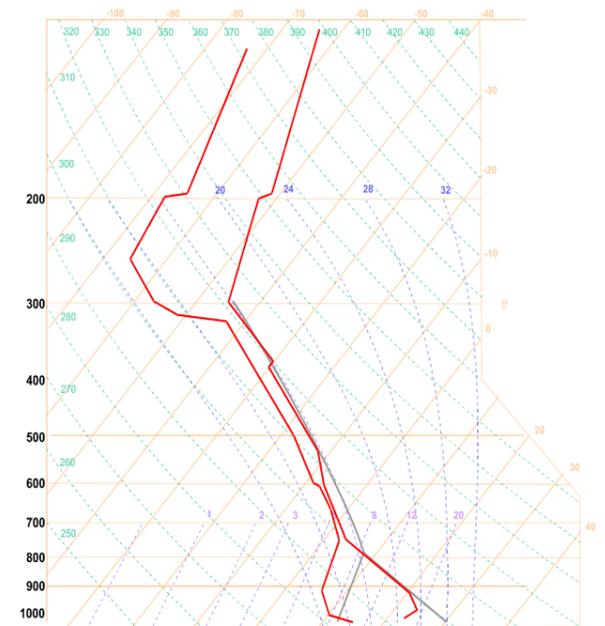
This chart is relatively unexciting for a glider pilot, marked by a strong inversion up to 900mb possibly from the previous night's sea breeze, and a late start for the day. If the overnight minimum were taken at the club and it was higher than the lowest temperature - in this case, 22° C - it would indicate that the inversion was not so strong where you would be flying, possibly giving higher temperatures and an earlier start than where the trace was produced. The chart indicates a maximum temperature of 38°C and no cloud formation, though there may be if the area were a little damper, perhaps over salt lakes, or if the temperature got a little higher.



Now for an exciting chart, not a day to be flying. This chart is of the night of 18 November 2001 with lightning as incredible as any I had seen before. You can see from the chart that at a temperature of 30°C the dry adiabat line will bisect the mixing line at 800mb (6,000ft), just to the right of the environmental lapse rate. The saturated air will continue to rise because it is still to the right of the saturated adiabat all the way to 300mb.

Furthermore, you will see that the dew point line is running virtually parallel and close to the environmental lapse rate, indicating that the air is very moist and will allow plenty of extra cloud to form and an exciting night watching lightning strikes. Should you wish to obtain the charts go to www.bom.gov.au. Click on 'Aviation Users', then 'Gliding and Hang gliding Vertical temperatures'. You will be asked for the User ID, mentioned on the page bomw0007 and the password is aviation. Now click on the map to select the trace you require and bingo, there it is.

GA



SO, YOU WANT TO BE CTO/A ? PART 4

Mike Burns' influence is worldwide and he has a high reputation. This is the fourth of six articles he has written, looking back at his experiences and GFA's history.



RIGHT: A Fletcher agricultural aircraft similar to the one brought down by a 2 cent, self tapping screw.

The first recorded fatal accident of a powered aircraft occurred in 1907, involving one of the Wright Brothers and a passenger. The passenger was killed. The first accident investigation of a powered aircraft accident was then carried out with two conclusions. First, the prime cause was the failure of one propeller blade, probably due to structural fatigue. Second, the Wright Brothers stated that they considered the Daily and Pre-Fight Inspection process had been compromised by peer pressure generated on the airfield that day.

SO, WHAT IS NEW?

Accident investigation is a very important part of GFA activities. The results have and can lead to significant changes to airworthiness and operational procedures. Proper, accurate investigation can prevent recurrence of the same scenarios. I had the benefit of having worked with the New Zealand Bureau, investigating aerial agricultural accidents. The NZ attitude was to second engineers from the local aviation industry to assist their investigators.

The first accident I attended taught me a lifelong lesson. A Fletcher agricultural aircraft with full fuel and a full hopper crashed and burnt on takeoff, which was fatal to the pilot. We drove up to the burnt-out wreckage and within two or three minutes we could see what had brought the Fletcher down. A 2 cent, 8-gauge, PK screw, 10mm long, embedded in the groove of a pulley, had severed an elevator cable, destroying a million-dollar aircraft and costing a pilot his life. It had clearly been a failure of basic inspection and cleaning procedures. Or was it sabotage?

I know of two cases of intentional sabotage to GFA sailplanes. During the 1980s, the Australian Bureau of Air Safety offered the GFA National Coach and myself the opportunity to complete the basic investigator's training

course in the belief that knowledge of how the Bureau worked would help whenever we were jointly involved in an investigation. That proved to be an excellent move, bringing the two organizations closer together - plus, we got a Certificate!

Many times, the following words from our senior lecturer were proven so true, 'You will attend an accident, there will be 43 witnesses and probably 44 different versions.'

THE NIMBUS IS MISSING

Another phone call came one evening, telling me, "Mike, the big Nimbus has gone missing. We are heading out at daylight to find it."

The wreckage was found early the next day, a massive accident, the bits spread out over several hundred meters. First, the outer wing tip panels were found, left and right, and then the next set of panels, left and right. Then, we saw that the impact of the fuselage with the centre section attached, still carrying water ballast, had carved a deep furrow in the ground, obviously a high-speed impact, but at a relatively shallow angle. The disposition of the debris suggested that the Nimbus had suffered catastrophic wing flutter, progressively shedding the bits.

We won't mention the pilot. It must have been horrific for the first observers arriving on site. The Nimbus type had experienced previous problems with wing flutter, which had been addressed and rectified by the manufacturer. We knew the sailplane had been returning to Tocumwal and pushing high and hard. The cloud base was around 14,000ft, with ground temperatures of about 40° C. Far from a standard day, the density altitude at the cruising flight level may have been 16,000ft ASL or more. The placarded Vne of 146kts IAS may have needed correction down close to 100kts. There was no oxygen on board.

Remember that once a flutter trigger exists on any sailplane, flutter may occur at ANY speed, even below stall speed. For this case, a number of possible scenarios were on the table. The Bureau eventually put out a finding which centered on the following:

- 1 Possible pilot incapacity due to use of prescription medication.
- 2 Other possible medical conditions - heart attack, lack of oxygen, etc.
- 3 Flutter ensued, perhaps speed and height assisted.

Eventually a report and a set of photos crossed my desk. Some of the photos showed the aileron system push rod end bearings. The lock nuts on about five of the bearings were undone, some two turns, some three or four turns. The report stated that the nuts had been induced to undo by the vibration of the wing flutter, which broke up the structure.

I could not accept that finding. I decided on my next trip to CASA in Canberra I would visit the CASA Laboratory and ask for an opinion. At the time, CASA ran possibly the best aviation research lab in the country and were responsible, for example, for helping Boeing sort out fatigue cracking in early model 747s and similar work. I did call in at the lab, leaving them all of the information I had available and only asking for their agreement or otherwise with the Bureau finding.

Sometime later, their report arrived, categorically rejecting the Bureau finding, and suggested that the flutter action would in fact have tightened the lock nuts. But it was more likely that because the flutter event would have been very, very, short, it probably had no effect on the nuts at all.

A bit more investigation suggested that the owner/pilot did the annual inspection immediately before the accident and apparently had fitted new rod end bearings to the aileron system. We will never know the real cause, but it is most likely that if the nuts were not tightened during the inspection, the loose bearings allowed flutter to develop at a lower speed than the placarded Vne, enhanced by pilots in the '80s not necessarily considering Vne reduction with height.

I took the report back to the Bureau who suggested there was no point in re-opening the investigation. A few reasons were given, the main one being concern about the widow gaining immediate access to the insurance.

Nothing has changed in our sport. That Nimbus accident could happen today, all of the ingredients still exist. GFA standards and education have to be constantly and consistently applied.

BALANCE

We lost a single seater in an outlanding accident. The Bureau wrapped it up, then made contact expressing some concern. The sailplane had come out of a professional workshop after repairs and re-finishing, going straight to the NSW State Competition. The accident occurred early in the comp and apparently was the result of a spin in off the turn from base to final, trying to outland in a paddock.

The Bureau had found that the weight and balance done at the workshop was totally wrong, which meant the pilot was flying outside the centre of gravity limits. While that may not have directly caused the accident, it



ABOVE: Sloppy airframe inspection and cleaning can allow a small item like this screw to seriously jeopardize safety.

would have been a significant contributor by making the sailplane pitch sensitive at low speed and difficult to recover from the spin.

"We do not want to take this further, preferring to avoid giving the insurers reason not to pay out, with possible legal action against the workshop. However, something has to be done about the workshop's standards. That is your problem."

Pulling on my hat and coat, I embarked on a long drive. Checking the workshop records showed a number of weight and balances had recently been completed, all in error. Of course, other problems with work quality also surfaced. Around 12 sailplanes had to be recalled and reprocessed.

Again, that problem had emerged - should GFA close a workshop? We negotiated a six-month program of work monitoring, by either myself or a nominated person, which is extremely difficult when you are questioning the capability of a very experienced engineer. Whoever checks work and standards at that level must be themselves of similar capability. Fortunately, that program worked.

continued over page

BELOW: If the lock nut is not tightened the rod end bearing will 'wobble around', allowing free play in the control system



A MYSTERY

On Day 1 of an Engineering Course at Leeton, we had just about got ourselves organized when the news came through that a Grob Twin Astir had crashed on takeoff at Waikerie with serious injuries to both occupants.

With the course set up, I headed off to Waikerie by car, spurred on by the prior problems Grob had experienced with cast component failures. The accident centred on the apparent failure of the elevator horn, a cast alloy component, resulting in total loss of elevator control just after lift-off.

A metallurgical examination of the broken casting by the CASA laboratory showed no prior fatigue cracking. It was a simple, straight fracture, presumably by a single overloading impact. But how do you overload an elevator horn with a single sharp impact? Nothing made sense, particularly as it happened on takeoff. Did it fail during the previous landing?

Following on from this incident, all of the elevator horns were replaced around the country and the original horns were sent to the GFA office for examination, but no cracking was found. In an effort to establish something we could work on, I sat out on the GFA office front steps with a large hammer, trying to break the castings, but I never could. They were simply too strong. So, what did happen at Waikerie?

CACTUS

An Australian Twin Astir, immediately after landing, turned sharply, running off the runway out of control. No one was injured. Subsequent investigation revealed a fractured casting in the rudder system controls under the rear pilot's seat.

A year or two earlier, I had read about a Twin Astir in the USA that exited the runway under similar conditions and hit a 2-ton cactus, which fell onto the cockpit, killing the pilot. I knew that the wreckage had been acquired by a maintenance workshop so I phoned up and asked them if there was a broken component in the rudder system under the rear seat. They did not know because they had never bothered to have a look. Apparently the cactus took all of the blame!

As promised, a day or two later they rang back to say that yes, the same cast component was broken.

BENT

Once again, I was sitting on the GFA office front steps, hammer in hand, belting the crap out of some alloy parts. A mental reminder ran through my mind, "Need to get the GFA office steps and hammer approved as a CASA test facility."

The maintenance and re-webbing of pilot harnesses had been a long term problem inside GFA. Some of this work was done by CASA-approved organizations, some by the local upholsterer and some by the lady down the road who could drive a sewing machine. Then, around the mid 1980s, a retired gentleman we will call George set himself up with a sewing machine and a small workshop offering GFA members a re-web service at very low cost. Although not a GFA member or qualified in any way, it worked well and the work was well done, based largely on automotive webbing and thread.

Two sailplanes had a midair close to Benalla. Both pilots bailed out. One got out cleanly, the other was held back by failure of the Gadringer centre 'peg in a hole'

buckle to release the harness lap straps. After riding the sailplane down, his struggles eventually paid off, leaving him just enough height to survive.

The Bureau investigated and came to the conclusion that the pilot's harness, which had been recently re-webbed by George, lacked the correct lap pads, which caused the centre buckle to jam. Case closed.

I had the two parts of the centre buckle on my desk and noted that the male part was bent. The Bureau advised that they considered the bending to have happened when the sailplane impacted the ground. Sitting on the steps, my hammer showed clearly that the ground impact would have had absolutely no effect on that component.

But, it was bent. What to do?

With my hat and coat on again, I prepared for a flight to Sydney to visit George, a retiree living off a pension, who engaged in the harness work to earn a small income. Upholding the Bureau's finding that incorrect lap pads were the cause of the accident meant a possible re-call of up to 300 harnesses, and placed the cost of rectification onto George. As he lacked the money for that, the family feared it could send him bankrupt and cause the loss of the family home.

I left George and the family with the understanding that a resolution had to be found to satisfy all parties. The problem was largely GFA's. Back in the GFA office, we decided to design a modification that duplicated the original lap pad's influence on the buckle, make a kit and, at \$5 a head, supply it to all affected harness owners. It worked well and, with Airworthiness Directive 364 to support it, all parties were happy.

However, it was merely a bandaid, of course, and the real cause had not been established. The bent component showed clear signs of having been held in a vice at some time. A suitable, long lever could have then created the change of angle. But why? As originally manufactured, the bend angle did present a problem to a seated pilot when doing up the harness. A tighter bend, as found, made it easier to assemble the lap and shoulder straps. That deformation / modification could have been introduced at any time, by anybody, from the date the sailplane entered service.

The 'secondary effects of a modification' is a critical part of airworthiness and, in this case, it could have cost a pilot his life.

FACTORS

Accidents rarely involve a single factor, which the examples in this article demonstrate. The scenarios in this article have all existed since we started to fly, they exist today, and will into the future. An accident report is like your doctor's medical diagnosis - never be afraid to get a second opinion. Be curious and ask questions, as someone's life in the future may depend on it.

Aviation is boring, in that the FUNDAMENTALS never change. What changes for us is the GFA membership, which is a continuous, revolving door, requiring neverending education, not just from GFA but also from experienced GFA members acting as mentors. Sometimes a few minutes of discussion gets across what multi-paged manuals cannot.

Mike Burns mike38burns@gmail.com

NEXT: "Is That Home built?"

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OPERATIONS

AIRSPACE INFRINGEMENTS

Some accident and incident types are real attention grabbers among other airspace users and regulators. Fatal accidents, mid-air collisions and air proximity events (near collisions) are at the top of the list. Airspace infringements (Violations of Controlled Airspace or VCAs) are next. These incidents are of concern to us, as they affect safety and also freedom to fly, our access to airspace and external pressures to expand controlled airspace.

Over the past four years we had 27 reported instances of gliders penetrating controlled or restricted airspace. In the first three months of this year, we have received another five reports. An airspace infringement is the unauthorised entry of an aircraft into airspace where a clearance is required, or to which entry is prohibited.



ABOVE: Bacchus Marsh, Vic

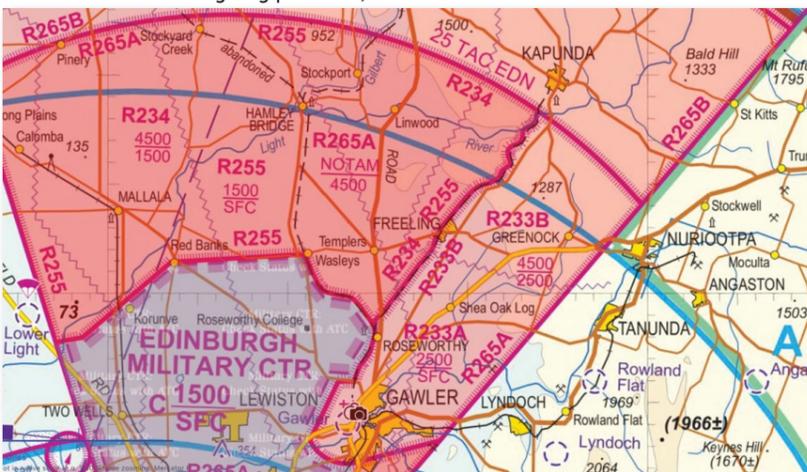
Pilots operating under VFR in Class G or E airspace, are required to apply appropriate tolerances to their flight path to ensure that controlled airspace or restricted areas are not infringed.

BELOW: Gawler, SA

REASONS FOR INFRINGEMENT

Reasons for infringing airspace are varied. Some examples follow.

The pilot was relying on a visual and aural warning from the flight logger that either did not happen (the logger was giving problems) or was missed.



OPPOSITE: McCaffrey Field, Jondaryan Qld

CHRISTOPHER THORPE
Executive Manager,
Operations
emo@glidingaustralia.org



The pilot carried appropriate maps and charts but became complacent.

The pilot failed to maintain situational awareness while thermalling.

The pilot did not maintain adequate tolerance to the airspace limits and vertically infringed controlled airspace.

The pilot was at low level and trying to stay airborne, and failed to pay sufficient attention to navigation.

The pilot reported no relevant airspace warnings of any kind were received from the flight computer, despite being correctly configured and using the competition airspace file.

A NOTAM from the day before was inadvertently used.

The pilot did not confirm the status of the restricted airspace prior to launch and proceeded in the mistaken belief that it was inactive.

The pilot inadvertently entered controlled airspace in the belief that it was uncontrolled at the time.

The pilot noted that the flight logger airspace file was outdated. The pilot was flying in the company of another glider that also infringed airspace while using outdated logger airspace files.

The pilot was using an 'Oudie' flight computer to assist maintaining separation from the airspace and believes that, at the critical time, the display had been inadvertently changed to a dialog box.

The pilot inadvertently entered controlled airspace for a period of 3.5 minutes after mistakenly believing the glider was in an area that had been released for the competition.

The pilot did not check NOTAM to confirm airspace availability.

During a cross-country flight the pilot's navigational instrument ceased working due to a flat battery. The pilot didn't carry approved charts and incorrectly judged their position.

The pilot landed at a Class D airport in a glider that was not equipped with the CTAF frequency to enable the pilot to radio intentions to ATC.

Many of the infringements involved thermalling close to known boundaries at aerodromes with complicated airspace. The pilots generally failed to maintain situational awareness and account for wind drift.

A number of incidents occurred due to pilots failing to read current NOTAMs, and there is evidence of over-reliance on flight computers to provide awareness of airspace boundaries, both laterally and vertically.

The type of navigational units found in gliders are not approved navigation systems and cannot legally be used as the primary means of navigation. Similarly, airspace files provided by competition organisers or downloadable from the internet are unapproved and

cannot be relied upon.

Non-approved portable electronic devices with Global Positioning System functionality can only be used as an aid to situational awareness. Pilots flying under VFR are required to use visual navigation techniques and apply appropriate tolerances, even when using GPS/GNSS. AirServices document 'Using GNSS as an Air Navigational Tool' states: "The use of a GNSS can significantly assist VFR pilots. However, it should only be used to supplement visual navigation techniques, not as a primary navigation source." When flying near airspace boundaries, pilots must ensure they use sensible tolerances to airspace. AIP ENR 1.1 -45, paragraph 4.1.12 states:

"Note 1: Aircraft within controlled airspace or a restricted area may be operating up to the boundary of the airspace.

Note 2: For aircraft operating in close proximity to an airspace boundary where there is a risk of an airspace infringement, the pilot in command should consider obtaining a clearance to enter the airspace or altering track to remain well clear."

So, what should we do to prevent airspace infringements?

Pilots should always navigate using CASA approved data and charts (Refer GFA Operational Regulations, paragraph 4.5.1). Paper charts do not need batteries.

Always accurately know your position by visual means as well as electronic, relative to the airspace steps and boundaries.

In flight, err on the side of caution. More frequent position checks and enhanced situational awareness are necessary close to airspace boundaries.

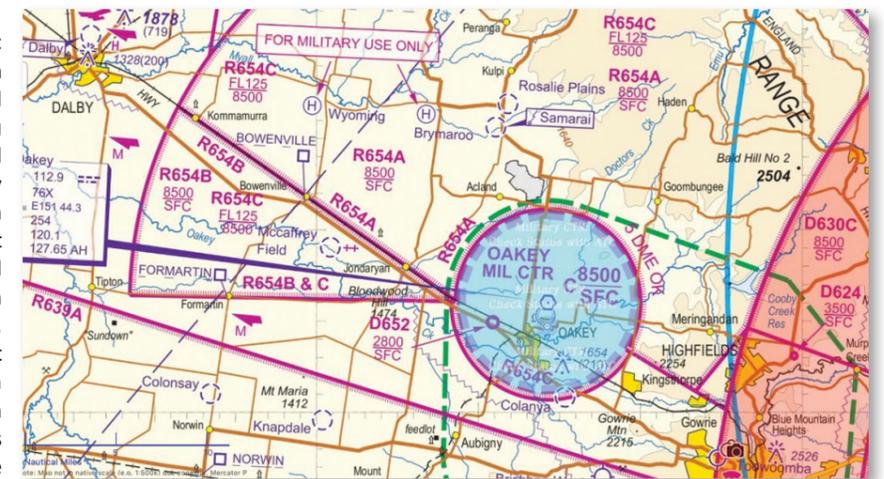
FORMALISING RESPONSIBLE SAFETY PRACTICES BY GLIDERS - RADIO USE IN CLASS E AIRSPACE

Radio communication requirements for gliding operations in Class E airspace have been updated in the AIP, which takes effect on 1 March, in order to more effectively support alerted see-and-avoid. Unless otherwise authorised, glider pilots in Class E9b3y airspace must maintain a listening watch on the appropriate air traffic control frequency.

Glider pilots should note that Class E airspace is at soaring altitudes in corridors between major cities, some above 8'500ft, some FL125 and some FL180. VFR aircraft do not need a clearance to enter Class E airspace but are required to listen out and be alert if potential for conflict exists. ATC provides IFR traffic including RPT flights with inflight separation services.

The amendment reflects current regulation and practice, and the GFA has been working closely with CASA to better define the circumstances under which glider pilots can operate off-frequency in Class E (Controlled) airspace.

CASA acknowledged that the risk of collision between gliders flying together is high and justifies the use of a discrete safety frequency so as not to interfere with ATC broadcasts. Accordingly, CASA and GFA have agreed some formal processes that allow glider pilots to use a discrete safety frequency while providing greater situational awareness to other airspace users.



Read and check local briefing notes and NOTAMS, and use mobile technology when available to confirm airspace limits prior to flight. A thorough pre-flight preparation including airspace briefing, solving potential problems on the ground is a good defence against an airspace infringement.

Check that you have the most accurate and up-to-date airspace and waypoint files loaded in display devices. Check battery condition prior to flight.

If using Tablets or Smartphones, inbuilt GPS may have low performance and few GPS satellite channels. Linking to an external GPS may be much more reliable.

HOTSPOTS FOR AIRSPACE INFRINGEMENTS BY GLIDER PILOTS INCLUDE:

- Bacchus Marsh, Vic
- Gawler, SA
- McCaffrey Field, Jondaryan Qld

SUMMARY OF THESE AGREED PROCESSES

When flying in groups, glider pilots can nominate one aircraft to monitor air traffic control and pass on traffic information to other gliders using a discrete glider frequency.

Special arrangements can also be made for gliding competitions or events, with authorisation to be provided through a NOTAM issued by Airservices Australia. For single glider operations in Class E airspace operations not in accordance with a published NOTAM, pilots will maintain a listening watch on the appropriate ATC frequency.

These practices are commonly used by glider pilots flying in Class E airspace already, and the updated AIP advice merely formalises the procedures. Compliance is in all of our interests, in preserving our freedom to fly and improving inflight situational awareness. Class E frequency listening watch can also be easily maintained with dual channel radios and handheld radios.

For further information, please contact:
Christopher Thorpe - Executive Manager Operations (tel 0414 476 151); or
Graham Brown - GFA Airfields, Airspace and Avionics Officer (tel 0412 155 117)

DREW MCKINNIE
CHAIR, OPERATIONS DEPARTMENT

LIVING THE OLDER PILOT EXPERIENCE

'Too old, too slow' is an epithet used against sports teams around the world. It has also been used against older drivers—and pilots.

But how relevant is age as a predictor of performance?

An FAA paper published in February 2015 entitled Predicting Accident Rates from General Aviation Pilot Total Flying Hours took into account total flying hours for about 10 per cent of GA pilots in the US. It found that 'accident rates seem to increase for GA pilots early in their post-certification careers, reaching a peak, and then declining with greater flight experience.'

The so-called 'killing zone' peaked at about 250 hours for non-instrument rated pilots and about 825 hours for instrument rated pilots.

THE STROOP EFFECT: DEALING WITH THE UNEXPECTED

We tend to react more slowly when we have to process something which has an unfamiliar meaning. There's a classic test which can show the nature of automatic processing against conscious visual control.

The Stroop test compares the time it takes to read aloud the colours of a series of words, rather than the words themselves. For most people, it takes longer to perform this task when there is a mismatch between the word and the colour in which it is printed—for example, when the word red is printed in yellow. Try it for yourself:

THE STROOP EFFECT

A study at Western Kentucky University, published in 2005, found that older adults (60+) were able to understand and adjust to the ambiguities in the Stroop text, but less able to filter out irrelevant information.

AGE VERSUS EXPERIENCE

A study by David Hardy and Raja Parasuraman, entitled 'Cognition and Flight Performance in Older Pilots', published in 1997 by the American Psychological Association, found age-related decline in perceptual motor skills and memory and, to a lesser extent, attention and problem-solving, with the most marked difference in ATC communications.

COGNITION AND FLIGHT PERFORMANCE IN OLDER PILOTS

With the possible exception of time-sharing skills, flight experience did not alter this decline. The authors pointed out that contemporary pilots require high-level cognitive skills, such as decision making, planning and workload management, rather than the physical and perceptual skills needed by early aviators.

'Such changes have created opportunities for different kinds of human error, and in fact 50 per cent to 75 per cent of fatal aircraft accidents (both civilian and military) are due to human error,' the authors said.

Hardy and Parasuraman describe several theories of cognitive ageing.

- Fluid intelligence, required for processing of new information, declines with age, but crystallised intelligence, or stored knowledge, does not. The net effect on performance will depend on the task being performed.

- Older pilots may experience a natural decline in inhibition, making them more likely to process irrelevant information and less adaptable. However, this theory does not take into account the mitigating factor of experience.

- Cognitive slowing theory predicts that older pilots will have more difficulty under time pressure, though this may only be where overt responses are required.

- Disuse theory suggests that older adults primarily experience a decline in performance in skills which they do not use frequently. Under this theory, military or airline pilots would be expected to be less prone to performance decline than GA pilots.

The authors make the following observation: 'Although flight experience does not reduce age-related decline in basic cognitive function as measured in laboratory tasks, the question is, are these the same cognitive skills that pilots use in flying?'

It's a good question. A study by Hyland (1993) of B727 pilots on a simulator showed that age did not correlate with an objective measure of flight-path deviation under various workload conditions, although those who were rating the pilots did report age-related differences.

Other studies have shown that older pilots are less accurate than younger pilots in reading back radio frequency and transponder commands. A possible explanation is that the older pilots in the studies were already near the limit of their processing capabilities.

This would appear to be supported by a Dutch study of older workers, published in 2015, which found that 'age-related changes in cognitive functioning among employees above the age of 65 years only affect productivity at work when the job demands are too high relative to the available job control.'

DUTCH STUDY OF OLDER WORKERS

Various US studies have looked at the correlation between age and performance in flight, and found that accident rates are a function of experience as well as age. In one study, for example, accident rates among pilots holding a class III certificate (equivalent to the Australian class 2) generally increased with age for low-time pilots, but actually declined up to the 60 to 64 years age group for those with more than 50 recent hours.

OLDER PILOTS AND GA

It's not hard to find stories of commercial pilots who are flying and instructing well into their 70s or even 80s. But is it safe? The answer appears to be yes - as long as the pilot is healthy and maintains their skills.

In 2014, in a story written after the death of an 80-year-old pilot in a private plane crash, a 75-year-old retired United Airlines pilot advised older pilots to keep two things in mind: First, they must make sure they are physically fit, not just at the time of their medical exams but in the two years between them. If they weren't feeling well they shouldn't fly.

Second, as they aged they should fly more, not less, to keep skills current and not simply fly cross country on autopilot. 'What you need to do is go out every so often and practice manoeuvres such as stalls, slow flight, approaches, take-offs and landings, in order to stay up on your flying,' he said.

The pilot said that his own reflexes and eyesight were not as keen as those of his 45-year-old son, who was also a pilot. Balancing that, however, were his 23,000 hours of flying experience. (From 'No mandatory retirement age, but pilots must pass FAA review every 2 years' Chicago Tribune, 30 Sept 2014)

GA

accidents & incidents

All clubs and GFA members are urged to report all accidents and incidents promptly using the GFA's occurrence reporting portal at glidingaustralia.org/Log-In/log-in-soar.html as and when they occur. This is always best done while all details are fresh in everyone's mind.

You can read the full SOAR report at tinyurl.com/lmko56

Reports noted 'Under investigation' are based on preliminary information received and may contain errors. Any errors in this summary will be corrected when the final report has been completed.



The Gliding Federation of Australia Inc
SOAR Accident and Incident Occurrences
General Statistics
Date From: 01/10/2017
Date to: 30/11/2017

Damage	VSA	NSWGA	SAGA	GQ	WAGA	Total
Nil	8	6	13	6	2	35
Minor	5	2		1	1	9
Write-off	2					2
Substantial	1	1			2	4
Total	16	9	13	7	5	50
Injury	VSA	NSWGA	SAGA	GQ	WAGA	Total
Nil	15	9	13	7	4	48
Fatal	1					1
Minor					1	1
Total	16	9	13	7	5	50

Phases	VSA	NSWGA	SAGA	GQ	WAGA	Total
In-Flight	3	4	7	1		15
Landing	6	2	3	3	2	16
Ground Ops	3	1	2			6
Thermalling	1			1	1	3
Launch	3	1	1	2		7
Outlanding			1		2	3

Type of Flight	VSA	NSWGA	SAGA	GQ	WAGA	Total
Cross-Country	2	3	4		1	10
Competition	2	1	1		2	6
Training/Coaching	3	1	3	4	1	12
Local	6	3	3	3	1	16
Ground Ops	3	1	2			6
Total	16	9	13	7	5	50

4-OCT-2017 NSWGA WILDLIFE DG-200/17 C

While in the cruise on a cross-country flight the pilot spotted an eagle approximately 1,000ft higher. The eagle dived towards the glider head first and wings folded, leading with its talons. The eagle passed over the canopy and wing but struck the fin. The pilot conducted a control check and found it to be normal, so flew back to the home airfield. Subsequent inspection revealed only minor damage, comprising a bent TE probe and a scratch down the fin and rudder. Breeding wedge-tailed eagles are particularly sensitive to aircraft approaching the nest, even if the aircraft remains many hundreds of metres away. To avoid collisions when flying over nesting habitat during the breeding season between August and January, pilots must learn to recognise aggressive behaviour and be on the lookout for warning signs while flying.g.s.

5-OCT-2017 NSWGA AIRSPACE INFRINGEMENT JS1 C

The pilot was flying in the 2017 Queensland State Gliding Competition. During the course of this flight the pilot briefly violated restricted airspace for 1min 38 seconds and a distance of not more than 1km. The pilot reported no relevant airspace warnings of any kind were received from the flight computer,

despite being correctly configured and using the competition airspace file. Post-flight analysis determined that the airspace file had been corrupted during conversion to a format used by the flight computer. This was a latent threat, not presenting itself until it had become an error.

9-OCT-2017 VSA AIRCRAFT CONTROL JS1 C 18/21

Under investigation The aircraft departed controlled flight shortly after release and above 1,000ft AGL, and was seen to spin into the ground.



21-OCT-2017 SAGA AIRCRAFT SEPARATION DG-500 ELAN ORION

A glider and Jabiru got close during the downwind leg of the circuit. While the glider was over the cross-strip conducting a midfield join of the circuit, the command pilot observed a Jabiru had just taken off from the operational runway and was maintaining the runway heading. The Jabiru then turned crosswind and halfway down the crosswind leg the pilot call entering downwind. The command pilot in the glider recognised the potential for both aircraft to arrive at the same point simultaneously and made a radio call advising the Jabiru pilot that the glider will be joining downwind shortly ahead of the Jabiru. The second pilot who was flying the glider, then gave a radio call on joining downwind. The command pilot noted the Jabiru pilot "still well behind us in what appears to be a climbing turn onto downwind". The glider was slightly high and wider than normal, so the pilot flying used some airbrake to descend 200ft. The command pilot then looks back over the right wing to the rear to get a visual on the Jabiru and noticed the Jabiru about 50ft lower and about 50 metres behind taken avoiding action by turning to the right. It is unclear why the Jabiru pilot did not

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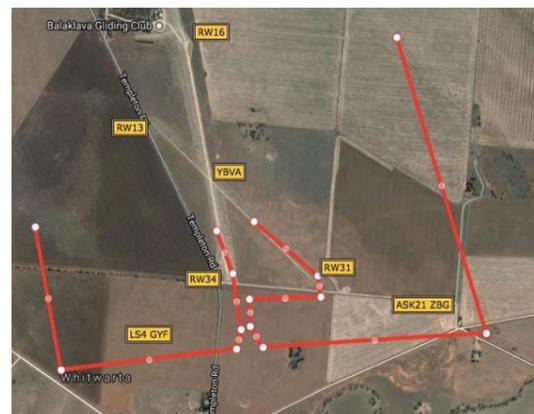
sight the glider. The command pilot of the glider later reflected: "I should have continued to assume we were unseen and/or the Jabiru pilot was unaware of us being there and used our extra height to extend further into the joining area and ensure we were behind the Jabiru." By itself, the concept of 'see-and-avoid' is far from reliable. It is important that pilots apply the principles of 'see-and-avoid' in conjunction with an active listening watch. Research has shown the effectiveness of a search for other traffic is eight times greater under alerted circumstances than when un-alerted. Pilots should be mindful that transmission of information by radio does not guarantee receipt and complete understanding of the information. Without understanding and confirmation of the transmitted information, the potential for alerted see-and-avoid is reduced to the less safe situation of un-alerted see-and-avoid. The club is looking at fitting Flarms to their light sport aircraft.

5-NOV-2017 GQ AIRCRAFT LOADING BLANIK L13 A1

While conducting the pre-boarding checklist the student pilot confirmed there was no ballast in the aircraft but did not consider the weights of the pilots. The instructor also did not consider the weights of the pilots and the aircraft subsequently flew 15 Kgs over the maximum cockpit load and with a forward centre of gravity (CoG). All gliders must be flown within carefully defined CoG limits. To achieve this, the pilot weights must lie within the margins specified on cockpit weight and balance placards. Pilots must know how much they weigh to ensure that the weight requirements are met. In some cases, it is necessary to carry extra weight (ballast) to ensure the aircraft is within the CoG limits. A 'ballast' check is part of the pre-boarding checklist and must be completed before the pilots enter the aircraft to confirm that the cockpit loading is within the placarded limitations. Ballast will be added or removed as necessary. Checklists are an essential part of aviation and are used prior to all critical aspects of flight, such as take-off and landing, to ensure that the aircraft is correctly configured for the next phase of the flight. They serve as a formal reminder to help prevent errors of omission and contribute to a safer flying environment. Instructors must ensure their student's complete the checklists diligently, and be satisfied they have been completed correctly. NOTE: It is not uncommon for pilots to conduct successive flights without the need to alight from the glider. In such circumstances the pilot may assume that the pre-boarding ABCD components of the checks conducted before the previous flight (or first flight) remain valid, if it is considered there is no likelihood that any changes will have occurred. In respect of two-seater successive flights, it is not uncommon for the pilot combination to change and if so the pilot in command must consider the cockpit loading requirements and must be satisfied that cockpit loading compliance remains valid.

12-NOV-2017 SAGA AIRCRAFT SEPARATION ASK-21

Under investigation. At around 1700 hours an ASK 21 on a training flight joined a right-hand circuit for a landing on the operational runway (RWY 36). At the same time, an LS4 returning from a cross-country flight joined a left-hand circuit for a landing on the operational runway. Both pilots assert that radio calls were made during the downwind leg but neither pilot heard the transmissions. Neither pilot had the other sighted as they turned onto base leg on a heading towards each. The Flarm in the ASK21 gave an audible alert and the command pilot, a new Level 1 instructor, turned onto final early to avoid a potential conflict. The pilot of the LS4 turned onto final at the same time and then got an alert on their Flarm. The command pilot of the ASK21 then observed the LS4 about 50ft below and to the left, and so immediately turned away to the right to provide more separation. The LS4 pilot continued the approach and landed safely on the operational runway. The command pilot of the ASK21 conducted a low-level manoeuvre to divert to runway 31 and conducted a safe landing.



17-NOV-2017 SAGA FLIGHT PREPARATION/NAVIGATION DG400

The pilot flew with a lapsed Annual Flight Review. Discussion with the pilots' CFI revealed the pilot had not flown in a two-seater for three years. The pilot was grounded pending a satisfactory flight review. While pilots need to have a valid flight review if they want to exercise the privileges of command flying, it is important to consider that the annual flight review is the only regular proficiency training experienced by many pilots. Consequently, the review should not be viewed as a check ride but rather the opportunity for an independent assessment of a pilot's knowledge and ability to perform safe flight operations, and to correct those areas in which a deficiency is identified. The Annual Flight Review should be considered as the aeronautical equivalent of a regular medical check-up and ongoing health improvement program.

19-NOV-2017 WAGA TERRAIN COLLISIONS JANTAR STANDARD 2

The experienced pilot had just returned to flying cross-country after a long absence, and was attempting a 300km flight when an outlanding became inevitable. With most of the paddocks containing unharvested crops or stock, the pilot elected to land in the clear side of a paddock containing sheep. Just after rounding out the pilot noticed two lambs 10 metres ahead. The pilot raised the nose of the glider and cleared the lambs, but as the airbrakes were not reduced or closed, the airspeed decayed rapidly. The pilot lowered the nose attitude to regain a suitable speed but over pitched, and the nose of the aircraft struck the ground followed by the mainwheel and the tailwheel. The aircraft rolled to a stop and subsequent inspection revealed only superficial damage to the bottom of the fuselage. A potential contributing factor is the effect of startle on the pilot. When people are startled, and a threat persists, then the startle reflex is likely to transition into a full surprise or a startle reaction. The pilot will react to the threat, but cognitive processes may be impaired. In this case the pilot reacted immediately by climbing the aircraft but did not consider the additional safeguards of closing the

airbrakes and recovering to a normal landing attitude.

21-NOV-2017 VSA TERRAIN COLLISIONS DISCUS 2C

Under investigation Fatal The pilot was flying in the New Zealand South Island Gliding Championships and the wreckage of the glider was observed by competitors, near the end of the task in the Hunter Range near Lake Hawea. The accident was not survivable.

22-NOV-2017 VSA AIRSPACE INFRINGEMENT DG-200/17

The pilot was thermalling near an airspace boundary while on a cross-country flight and drifted into Class C airspace. The pilot subsequently recognised the error and immediately vacated the area. The pilot self-reported the incident. Investigation revealed the pilot was carrying appropriate charts but was not using electronic navigation aids. The pilot's CFI noted causal factors as primarily pilot complacency while flying in good weather on a day of higher than normal convection. The pilot was counselled on the importance of constantly

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GFA APPROVED MAINTENANCE ORGANISATIONS



AEROSWIFT COMPOSITES	BALLARAT	JOE LUCIANI	0428 399 001	comcom2@bigpond.net.au
AUSTRALIAN AIRCRAFT KITS	TAREE	OLE HARTMANN	0429 165 498	aircraftkits@bigpond.com
AVIATION COMPOSITE ENGI	TOCUMWAL	PETER CORKERY	0439 842 255	corkerys@bigpond.com.au
AVTEC AVIATION	BOONAH	ROGER BOND	0409 763 164	avtecaviation@bigpond.com
CAMDEN SAILPLANES	CAMDEN	MIKE DUGAN	0418 681 145	camdensailplanes@bigpond.com
COMPLETE AVIATION MAINT	JANDAKOT	SIMON DAVIE	0423 275 570	mchadwick@casair.com.au
GVC WORKSHOP	BENALLA	GRAHAM GREED	0428 848 486	gcvworkshop@benalla.net.au
HOLMES HOLDINGS	BRISBANE	PETER HOLMES	07 5464 1506	holmbros@gmail.com
HUNTER AERO TRIM	TIGHES HILL	SANDY HUNTER	0407 073 202	sandy@hunteraerotrim.com.au
JONKER SAILPLANES	SOUTH AFRICA	MARISKA NORTJE	+27 82 879 8977	mariska.nortje@js1.co.za
KEEPIT GLIDER TECH	LAKE KEEPIT	GRANT NELSONO	417 843 444	keepitglider@outlook.com
MADDOG COMPOSITES	IPSWICH	ANDREW MADDOCKS	0439 535 630	andrew@maddogcomposites.com.au
MORGY'S GLIDER WORKS P	WAIKERIE	MARK MORGANO	427 860 992	morgans@sctelco.net.au
NORTH EAST AVIATION	LACEBY	DIANNE	0408 440 172	neaviation@optusnet.com.au
SL COMPOSITES	TEMORA	SCOTT LENNON	0438 773 717	scottl@internode.on.net
T & J SAILPLANES	TEMORA	TOM GILBERT	0427 557 079	tnjgilbert@internode.on.net
ULTIMATE AERO P/L	BOONAH	NIGEL ARNOT	0437 767 800	nigel@ultimateaero.com.au

Test Instruments

Conrod Bearing Clearance Tester (CGCT) required for 50 hour maintenance of 2 stroke engines

John Amor jbamor@optusnet.com.au 0408 178 719 03 9849 1997

Bert Flood Imports david@bertfloodimports.com.au 03 9735 5655



reviewing their location relative to airspace, especially when in close proximity to boundaries. The pilot also completed the UK CAA airspace infringement on-line training at: <http://infringements.caa.co.uk/>

27-NOV-2017 WAGA TERRAIN COLLISIONS JANTAR STANDARD 2 (SZD48-1)

During a short cross-country flight an outlanding became inevitable and the pilot elected to land in an uncropped paddock. The pilot flew a circuit and inspected the paddock but did not recognise it sloped downhill from the landing direction. Also, grass cover obscured a substantial drainage ditch about halfway along the paddock in the landing direction. The glider touched down normally but the downhill slope made the landing roll longer than anticipated. The glider was still travelling fast when the pilot noticed a sand embankment along the drainage ditch when only about about 20 metres ahead. The main wheel struck the sand bank and immediately collapsed, and the glider slid to a halt on its fuselage. Subsequent inspection revealed the undercarriage to be substantially damaged. The pilot was debriefed by their CFI, who reinforced that slope is difficult to detect but that the position of dams, streams and drainage ditches are good indicators of the direction of slope.



GFA CLUB LIST

Please send any corrections, updates, additions for inclusion in the club list to sean@glidingaustralia.org

716 FLIGHT GLIDING CLUB

Operations weekends, Public Holidays and school holidays. Club aircraft 1 two seater. Tel# 08 9571 7800

2 WING A AFC

Operations from Warwick airfield shared with Southern Down GC. E. Located 12km NW of Warwick on Warwick-Allora back Rd, L at hall. Aerotow on 1st Sunday and third weekend of every month plus first week of school holidays. Club fleet 2 x two seaters and single seat with Tug. Facilities include own hangar complex. Tel 07 3879 1980. www.2wg.aafc.org.au

ADELAIDE SOARING CLUB

Operations every day except Tuesday Hangars, Bar, Clubrooms, Bunkhouse, Caravan park, Camp sites, Workshop, Club leases airfield Easter Regatta (April), Gawler Week (December), Flinders Ranges camp (May) Gawler (YGAW) -Ward Belt Road Gawler P.O. Box 94, Gawler, SA 5118 Tel (08) 8522 1877, Fax: (08) 8522 3177 Aerotow, Piper Pawnee (BOT PIT) www.adelaidesoaring.org.net

ADELAIDE UNIVERSITY GLIDING CLUB

Operations from Stonefield with Barossa Valley Gliding Club. Winch launching weekends and public Holidays year round. Facilities include, Clubhouse, bunkhouse, toilets, showers, Kitchen, BBQ area and entertainment. The club owns 5 gliders including 2 x two seaters, 4 private gliders. Tel 0412 870 963. www.augc.on.net

AIR CADET GLIDING CLUB

Ward belt Road Gawler airfield. Facilities and operations shared with Adelaide Soaring Club. Located at: -34° 36' S, 138° 43' E. Operations weekend sand school holidays or by arrangement. Aerotow and self launch. 2 private two seater motor gliders. Clubhouse, Bunkhouse and briefing room. Tel 08 8522 1877.

ALICE SPRINGS GLIDING CLUB

Located at Bond Springs 20km's North of Alice Springs.- Winch launching Saturdays and public Holidays. 4 club aircraft including 2 x two seaters. Facilities include Club house, camp sites, Hangars, Tel 08 8952 6384.

AV8 FLIGHT TRAINING AV8 FLIGHT TRAINING SOUTH AUSTRALIA

0429 803 705 AV8.net.au

BALAKLAVA GLIDING CLUB

Weekend operations by winch 10km's NW of Balaklava on the Whitwarta Road. Tel 08 8864 5062. Located at. 4 Club aircraft including 2 x two seaters, 10 private gliders. Facilities include Bar, Canteen, clubhouse, caravan Park, camp sites, workshop, Hangar sites, Club owns Airfield. www.bgc.asn.au

BALLARAT GLIDING CLUB

15 members operating from the Ballarat airfield. Airport Road Ballarat. 47.5 E Tel

5339 2444. Aerotow operations most weekends or by arrangement. Single club two seater. Access to hangarage and airport facilities for Bar, showers and rooms.

BAROSSA VALLEY GLIDING CLUB

Stonefield, 16km East of Truro, L 5km, behind Stonefield church, Tel 08 8564 0240, Winch operations weekends and public holidays or by arrangement. 2 club Gliders including 1 x two seater, 5 private gliders. Facilities include canteen, clubhouse, caravan park, camp sites workshops, Hangarage and spare sites. Club owns airfield.

BATHURST SOARING CLUB

Pipers Field - (On Fremantle Rd, 1.5km from Eglinton) E. Tel: (02) 6337 1180. Aerotow operations weekends and public Holidays. Club has two tugs and 6 gliders including 3 two seaters. Private fleet is 34 aircraft. Club Facilities include: Clubhouse, ablation block, Caravan park with Power, Hangars, Full Kitchen, Dormitory. www.bathurstsoaring.org.au

BEAUFORT GLIDING CLUB

Shared facilities with VMFG and Geelong GC at Bacchus Marsh airfield. 26 members, Aerotow by arrangement with GGC and VMFG, operations on weekends and public Holidays. 4 club aircraft with 2 two seaters, 17 private gliders. www.beaufortgc.org.au Tel 03 9497 2048

BENDIGO GLIDING CLUB

Borough Rd, Raywood. Own airfield. Operates weekends and public holidays. Hangars, workshop and club house with cooking and ablation facilities. Aerotow with Eurofox tow plane. Club fleet a PW6 two seat trainer and a PW5. Approx 20 private gliders. Tel 0459 485 281. www.bendigogliding.org.au

BEVERLEY SOARING SOCIETY

Beverley Airfield 4 Bremner Rd Beverley WA 6385 - The closest gliding club to Perth. Flying Friday, Sat & Sunday Air Experience Flights on line booking www.beverley-soaring.org.au/aef.php Flight Bookings or questions 0407 385 361, bevsoar@beverley-soaring.org.au or Facebook Club Landline (08) 9646 0320, Operations mobile 0427 126 700, Airfield 126.7 Club facilities:- briefing Room, Kitchen, Ablutions, BBQ, 3 bunkrooms, Glider Maintenance workshop, Aerotow two Pawnees - 2xDG 1000s, Putschez and ASK 21 plus 3 Singles and large fleet of private gliders beverley-soaring.org.au

BOONAH GLIDING CLUB

The club is one hour south west of Brisbane and sits adjacent to the Great Dividing Range in the Scenic Rim. Thanks to our location and climate we have year round soaring, with thermal, ridge and wave conditions. We are a student friendly (ab-initio and intermediate students) club. Three single seat and two dual training aircraft are available to members. Aero and auto tow operations available. Our clubhouse has full amenities, hanger and bunk house.

Operations take place on weekend & public holidays. Boonah Airport, Degen Rd, Boonah QLD 4310 Boonahgliding.com.au 0407 770 213 info@boonahgliding.com.au

BORDERTOWN-KEITH GLIDING CLUB

Western Hwy 5kms west of Bordertown, Tel 08 8752 1321. Operations by winch every Saturday or all year by arrangement. 5 club aircraft including 2 x two seaters, 1 private glider. Bar canteen, clubhouse, bunkhouse, Caravan Site, Camp Sites.

BUNDABERG GLIDING INC

Elliott Gliding field, Childers Hwy Bundaberg, Tel 0417 071 157, Winch operations weekends and public Holidays. Club Fleet includes 1 single seat and 1 two seat glider, Private fleet 1 x 2 seat glider. Club Facilities: Clubhouse, Area available for camping & caravans, 2 hangars. Grass and sand runways. www.gliding.inbundy.com.au

BYRON GLIDING CLUB INC.

Tyagarah Airfield (council owned) - E side of Pacific Hwy, 5 kms N of Byron Bay. Entry off Gray's Lane then 2nd left into Old Brunswick Road passed the blue hangars to club white hangars at the eastern end of this dirt road. Telephone for bookings and info clubhouse 0256148650. Operations are 4 days a week, self launch only. The club Club fleet: 1 Motorfalke 1 Grob109A 2 Dimonas (some available for hire). Facilities include: Clubhouse with kitchen and bathroom, 2 hangars, with only basic camping on grounds. www.byrongliding.com

CABOOLTURE GLIDING CLUB

45 km's North of Brisbane on Bruce Hwy PO Box 920, Caboolture, Qld 4510 Tel 0418713903 Flying: Fridays, weekends, Public Holidays. Aerotow with Piper Pawnee (SPA) Licensed aerodrome, bar - canteen www.glidingcaboolture.org.au

CANBERRA GLIDING CLUB

Bunyan Airfield, 1297 Monaro Highway, Bunyan NSW 2630 (13km north of Cooma, Western side of highway), Located at: -36° 08' S, 149° 09' E. Tel# 0429 523 994. Aerotow operations weekends and public Holidays. The club has 4 aircraft including 2 tow seaters. Private fleet is 11 gliders. Facilities include: Clubhouse, bunkhouse, club and private hangars, Club own the airfield. www.canberragliding.org Wave flying centre for NSW

CENTRAL COAST SOARING CLUB

Bloodtree Road, Mangrove Mountain NSW 2250, Tel 02 4363 9111. Rope Winch operations Thursday, Saturday and Sundays. 5 club aircraft including 2 two seaters, one private glider. Club facilities, workshop, hanger and clubhouse. www.ozstuff.com.au/ccsoaring

CENTRAL QUEENSLAND GLIDING CLUB

Lot2, Gliding Club Rd, Dixalea. 90 km SSW of Rockhampton Tel 0488 781821 Winch operations Weekends and weekdays by arrangement. Club fleet: Grob 103 Twin II, Is28B2, Astir CS and Std Libelle. , 5 private gliders, Hangarage Clubhouse, bunks, lounge-

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briefing room, kitchen, showers, 12V solar power, 240V gen set
Club owns airfield 06/24, 1700m, grass/gravel www.cqgliding.org.au

CORANGAMITE SOARING CLUB

Kurweeton Pastoral Co, Kurweeton Derrinalum - Private strip. Tel 03 5593 9277. Winch and self Launch. Club Fleet 1 x two seater, 2 private aircraft.

DARLING DOWNS SOARING CLUB

McCaffrey Field (Warrego Hwy, at 8km W of Jondaryan, turn 5 down Mason Rd), Tel 0409 807 826. Aerotow operations weekends, public Holidays and by arrangement. There are 26 private gliders. Facilities include: Bar, Kitchen, Clubhouse, Bunkhouse, caravan park, camp sites, BBQ area, Showers, Wi-Fi, Lounge, Workshop, Hangarage, Club own the airfield. www.ddsc.org.au

GEELONG GLIDING CLUB EST. 1929

Bacchus Marsh Airfield. Operating Weekends and Public Holidays. Bunkhouse accommodation with toilets, & kitchen. Large workshop and hangers. Four two Seaters, five Single Seaters, Pawnee tug, three other tugs available, sixteen private gliders. www.gliding-in-melbourne.org or call 0409 212 527.

GLIDING CLUB OF VICTORIA

Samaria Road Benalla, Tel 03 5762 1058, State Gliding Centre of Victoria. Club rooms with Bar and large lounge dining, Office, Members kitchen and commercial Kitchen Toilets and briefing rooms with storage. Members Caravan Park with Ablution block and dormitory accommodation. Weekends from April-Sept, 7 day a week operations at other times. GFA approved workshop. 8 club aircraft including 4 two seaters, 41 private aircraft. Hangar space, Large private hangar complex. www.glidingclub.org.au

GLIDING CLUB OF WESTERN AUSTRALIA

GCWA is about 1.5 hours, 160 km's east of Perth, towards Kalgoorlie. The club operates weekends and public holidays, with sealed runways, hangar, club rooms and a fleet of 7 aircraft and Pawnee Tow plane. The club operates from the Cunderdin airfield and can be contacted on 0417 992 806 or see us at www.glidingwa.com.au

GLIDING TASMANIA (The Soaring Club of Tasmania)

is situated half way between Launceston and Hobart on the Midland highway (4km east of Woodbury). 28 members. Operations every Sunday and Saturdays by arrangement. Club owns ASK13, Club Libelle, Pawnee Tug. MotorFalke also available for dual flying. Private fleet includes Nimbus and Grob 103M. Ph. 0419992264 www.soaringtasmania.org.au

GOULBURN VALLEY SOARING

Lot 2, Tidboald Road Wahrung, Located at: -36.41S 145.14E. Winch operations Saturdays and Sundays by appointment. 4 club aircraft and 2 private. Clubhouse, Shower and toilets. Caravan Park, Private units, Hangars. 13 members. Private owned strip.

GRAFTON GLIDING CLUB

Waterview Heights (Eatonsville Rd, 8km W of South Grafton). Tel 02 6654 1638. Winch Operations Saturday or by arrangement mid week. The club has two aircraft including 1 two seater, with one single seater. Facilities include a hangar.

GRAMPIANS SOARING CLUB

Located at Ararat Airfield (Victoria) the club operates at weekends and public holidays with independent operator mid-week activities by arrangement. Launching is primarily by aerotow; winching also available. Fleet comprises basic trainer (Puchacz) and advanced trainer (Janus C) plus Jantar Std 3 and H201B Libelle; 8 private single-seaters. Hangar space often available for visiting pilots plus club-house and bunkroom accommodation. Locality offers excellent XC, ridge soaring and mountain wave opportunities. Camps at Jallukar (near Grampians) Easter and Queens Birthday. Well-deserved reputation as the Soaring Centre of Victoria. Clubhouse phone 0490 487 708 weekends or 03 5342 9946 weekdays. www.grampianssoaringclub.com

GYMPIE GLIDING CLUB

Located at Kybong 10 km south of Gympie, 26 degrees S, 152 degrees 42 E. on the Bruce Highway. Telephone 54851895/54477647. Winch operations. Operates Wednesdays and Saturdays and other days by arrangement. Facilities include Club House and Hangars. Gympie Airfield is a CTAF and hosts other power aviation and commercial operations. The Club has 2 Club two seaters, 2 single seaters and 10 private single. www.ggc.gympiegliding.org.au

HORSHAM FLYING CLUB

Horsham airport - Geodetic Road Horsham. Tel 03 5382 3491. Weekends and public holidays, aerotow. Clubhouse, Bar, canteen, Bunkhouse, campsites, Caravan Park, Workshop, hangar space. 5 club aircraft including 2 x two seaters. 8 private aircraft.

HUNTER VALLEY GLIDING CLUB

Warkworth - (10km W of Singleton. S along Putty Rd to Mt Thorley intersection, then W towards Denman. 1st turn right after crossing the river at Warkworth), Tel Airfield 02 65362992 Secretary 0413 828 790. Aerotow operations weekends, Public Holidays and one Friday/month. 1x Duo Discus, 2x Puchacz's, 1x Discus 2B and 1x Junior and the private fleet includes 21 gliders. Very family friendly club. Facilities: Modern clubhouse and bunkhouse, caravan park, camp sites, workshop, club owns airfield. www.hvgc.com.au

KINGAROI SOARING CLUB

Situated at Kingaroy Airfield, Club Gliders include Duo Discus X, Ask 21.2 Discus CS and Astir CS77. 30 Private gliders, Facilities include Club House with licenced bar, Bunk House accommodation for 35 in single and family rooms. New Club hangar was opened in February 2014. Operations every weekend, First Thursday of the month 4 day weekend and two after 3 day weekend i.e. Friday, Saturday and Sunday. Come and visit one of the

friendliest clubs around. Club House 61 7 4162 2191 Launch Point 0438 179 163

www.kingaroysoaring.com.au

LAKE KEEPIT SOARING CLUB

The Club lies within Lake Keepit State Park off the Oxley Highway between Gunnedah and Tamworth, Elev 1120ft AMSL. Tel: 02 6769 7514. Operates 365 days a year. Aerotow every day, winch every second Saturday, 9 Club Gliders including 4 two seaters, 40 private gliders. Facilities include Flight Centre; Clubhouse; kitchen/BBQ; double, single, twinshare accommodation; camp sites; workshop; hangarage. www.keepitsoaring.com

LATROBE VALLEY GLIDING CLUB

Latrobe Valley regional Airport - Airfield Road Morwell. Tel# 0407 839 238, Weekends, Public Holidays and mid week by appointment. 3 club gliders, 3 private gliders.

LEETON AVIATORS CLUB

Brobenah - (9km N of Leeton PO, on E of main canal at foot of Brobenah Hills). 26' 07" E. Tel 02 6953 6970. Winch operations Saturday and Sunday by arrangement. Club A/C 1 tow seater and one private motorglider. Facilities include Clubhouse showers toilets, Canteen, hangar with workshop, Camping.

MELBOURNE GLIDING CLUB (VMFG)

Bacchus Marsh Airfield 8 km's south of town on the Geelong Road. Operations weekends, Public Holidays and Fridays. Tel 0402 281928. 115 members, aerotow operations. Two tugs and 7 gliders in the fleet with 4 two seaters and a two seat motorglider.

MELBOURNE MOTORGLIDING CLUB

Moorabbin Airfield, Grange road Mentone. Tel 0418 511 557. Operates Motorglider AEF's around Melbourne anytime by booking. Royal Victorian Aero Bar and restaurant. Controlled airspace operations.

MILLICENT GLIDING CLUB

Mt Burr Road Millicent. Tel 0427 977 241. Winch launch operations Sundays or by arrangement. Two club aircraft one two seater, 3 private aircraft. Bar, Clubhouse, Workshop, Hangarage.

MORAWA GLIDING CLUB

We are a small club located in the best soaring weather of all WA clubs approximately 4 hours drive north of Perth. We operate on Sundays and for nominated blocks of time to cater for training courses and cross country events. Members participate in Club and private operations of winch, auto launching and motor glider flying. ph (08) 9971 1137 sites.google.com/site/glidingwesternaustralia/home

MOUNT BEAUTY GLIDING CLUB

Mount Beauty Airfield operations weekends and public holidays and by arrangement. Winch launching with a two seater and single seat fleet. 30 members with a range of private gliders and motorgliders. Tel 0418 591 351

www.mtbeauty.com/gliding

MOURA GLIDING CLUB

Location: On Moura-Theodore Rd, 5 mins from Moura, Tel 07 4997 1430. 3 members, operations Sunday by winch.

Facilities include Club House, hangar, 1 x two seater.

MURRAY BRIDGE GLIDING CLUB

operates motorgliders (4no. G109) on the light aircraft aerodrome at 484 Reedy Creek Rd., Pallamana (YMBD) north of Murray Bridge township. Flying arranged all days, including out landing training. phone 0411 354 361

www.murraybridgegc.com MBGCinc@gmail.com

MURRAY VALLEY SOARING CLUB

Redlands Road Corowa 3km's west of town. Tel 02 6033 5036. Seasonal professional operation, aerotow or self launch. www.australian-soaring-corowa.com Large hangar, clubhouse with office, internet, bar, Showers, BBQ, Swimming pool, Spa, water ballast, battery recharging services, Paved roads and runways, camping and caravan sites. Two tugs. We own and operate four unique 40ft sea containers to ship 6 gliders per container.

NARROGIN GLIDING CLUB

Located 8 km's west of Narrogin Township WA on Clayton Road This is about 200km's Sth East of Perth. The club features a powered Caravan Park, Ablution Block, kitchen, workshop, Licenced Bar, clean accommodation, Sealed Runways. The club fleet comprises three two seaters and three single seat A/C with Pawnee Tug. The club operates weekends and public Holidays and conducts 5/6 day beginner courses. The club conducts annual wave camps at the Stirlings, Fly-ins to local farms and Cross country courses. Contacts at Tel 08 9881 1795 or 0407088314, www.narroglingclub.org.au

NARROMINE GLIDING CLUB

The club Our club's current fleet comprises of: Four two seaters, Two single seaters, Two Piper Pawnee tow planes. Facilities include club house with licenced bar and kitchen. Private owned tourist park on site with En-suite rooms,airconditioning, kitchen, recreation room, laundry. Walking distance from town. The club operates full time November to April and Fri, Sat, Sun, Mon for the rest of the year. The club welcomes all visitors.

www.narromineglidingclub.com.au

NSW AUSTRALIAN AIR FORCE CADETS

Flight Commander (Pres) - FLTLT(AAFC) Bob Sheehan 0429 485 514 Chief Flying Instructor - SQNLDR(AAFC) Bill Gleeson-Barker 0408 443 009 Restricted full week courses, ADFC and ADF Personnel only - mainly during school holidays. Bathurst A/D

NORTHERN AUSTRALIAN GLIDING CLUB

Batchelow adjacent to the township. Tel 08 8941 2512. Operations Saturdays and public Holidays. Aerotow operations, 1 two seater, 3 private gliders. Club House, Hangarage available.

NORTH QUEENSLAND SOARING CENTRE

Corinda Avenue, Columbia, Charters Towers, Tel 0428 797 735, Operations by winch Sundays and public Holidays by

arrangement. 5 Private gliders. www.nqsoaring.org.au

RAAF RICHMOND GLIDING CLUB

We operate gliders mostly on the weekend using a tow plane (mainly Sunday), and our motor-glider flights are available 7 days a week. All our operations are subject to Air traffic control, weather and pilot availability. Main Phone: 02 4587 7618

www.richmondgliding.com

RAAF WILLIAMTOWN GLIDING CLUB

Williamtown airforce base 25 km's North of Newcastle on Nelsons Bay Road., Tel 02 4982 9334. Club fleet 2 Two seaters and 2 single seat gliders. Facilities include: workshop. 14 members. Operations weekends by appointment.

SCOUT GLIDING CLUB

Armstrong, (On Morgan Rd, 10km N of Blanchetown, W side of River Murray). Tel 0418 815 618. www.airactivities.sa. scouts.com.au Operations weekends and by arrangement. Self launching 2 x motorfaulks. Club House, Bunk house, Full kitchen and dining facilities, camp sites.

SOUTHERN RIVERINA GLIDING CLUB

Gate 3 Tocumwal Aerodrome 2km east Operations 7 days a week all year round. Launching by aerotow. 3 club operated gliders - 2x2 seaters and one single seater 76 members with a range of private gliders and motor gliders. BBQ and full kitchen facilities. CFI 0358 743 052. www.srgc.com.au

SOUTHERN CROSS GLIDING CLUB

Located at Camden Airport, approx 1 hour south west from the centre of Sydney, the club is one of the oldest and largest gliding clubs in Australia. It operates Saturday, Sunday, Monday, Wednesday and Friday all year round. The club offer 4 two seater and 4 single seater gliders supported by 3 Piper Pawnee tugs. A GFA approved workshop is located on the aerodrome. Postal address PO box 132 Camden NSW 2570 Ph (02) 4655 8882 email secretary@gliding.com.au.

www.gliding.com.au

SOUTHERN TABLELANDS GLIDING CLUB

Lockesyleigh" Carrick (11nm NE of Goulburn - N on Hume Hwy 12km, Left onto Carrick Rd, 8km, over railway on right). Tel 0408 647 671. Winch operations Saturdays or by arrangement. Facilities include hangarage. www.stgc.org.au The club has 2 two seaters and a single.

SOUTH GIPPSLAND GLIDING CLUB

Leongatha airfield 8km's south of Korumburra. Tel 0437 041 709. Operations weekend and public Holidays and by arrangement, Winch launching with rope. Aerotowing by arrangement. 4 club aircraft including 2 x two seaters. 2 Private gliders. 14 members. Camp sites, workshop, hangar

SOUTHWEST SLOPE SOARING P/L

Operations from Bendick Murrell airfield. Tel 0488 531 216. Winch and self launch by arrangement. Club own 1 two seater and has 3 private gliders. Facilities

include: Hangar, powered camping area.

SPORTAVIATION - TOCUMWAL

7 day a week all year round operations by Aerotow. Gate 10, Babbingtons Road Tocumwal airport. Tel 0427 534 122. 5 club aircraft including 2 two seaters, 9 private aircraft. Caravan Park, Kitchen, Bathroom, BBQ area reception/Office, Conference and briefing rooms, Wi/Fi Hangarage water, full time courses.

www.sportaviation.com.au

SUNRAYSA GLIDING CLUB

Winch launching Weekends and public Holidays. 3 km's West of Koorlong, Mildura. Tel 03 5025 7335. 22 members, 2 two seat and 2 single seat aircraft, 5 other private aircraft. Canteen

Clubhouse, camp sites. www.sunraysaiglidingclub.org.au

SYDNEY GLIDING INC.

Operations from Camden Airport.. Tel 0412 145 144. Self launch operations weekends and midweek by prior arrangement. Club has 2 self launching 2 seaters. www.sydneygliding.com.au

SOAR NARROMINE P/L

Operations from the Narromine airfield west outskirts of town. Tel 0419 992 396. 7 day a week aerotow operation 2 tugs. 10 club aircraft including 3 two seaters. Facilities include: Caravan park with En-suit rooms and showers and air-conditioning. Camp Kitchen self cooking, recreation room with TV and Laundry Facilities. www.soarnarromine.com.au

SCOUT ASSN OF AUSTRALIA NSW GLIDING WING

Operates from the Camden airfield. See Sydney gliding for location details. Tel 02 9773 5648. Operations with self launch motor glider and 1 two seater glider. Weekends and other sites by arrangement.

TEMORA GLIDING CLUB

Operations from Temora Airfield 2km's Nth of the township off airport Road.. Tel 02 6977 2733. Operations by aerotow weekends with full time camps in January and others by arrangement. Club owns a two seater, Private fleet, 7 single seaters. Facilities include: Bar, canteen, Clubhouse, camp sites,

WARWICK GLIDING CLUB

Warwick Gliding Club is a small, friendly gliding club located at the Warwick Airfield on the Darling Downs in South-East Queensland 2 hours drive from Brisbane.

Tel: 07 3077 6973 www.warwickgliding.org.au

WAIKERIE GLIDING CLUB

Operations weekends and by arrangement, 7 day operations December and January. Waikerie airfield 3 km's east of town. Tel 08 8541 2644. Aerotow operations. 4 club aircraft including 1 x two seater, 17 private gliders. Trailer park. 29 members. www.waikerieglidingclub.com.au

WHYALLA GLIDING CLUB

Tregalana (25km from Whyalla on the Whyalla to Port Augusta Highway on the Right) Tel 08 8645 0339. Winch launching operations Sundays. Two single seat club aircraft, 1 private. Club House, hangarage available.

CLASSIFIED ADVERTISING

glidingaustralia.org

For members' convenience, Classified Ads can be purchased from the Gliding Australia website at glidingaustralia.org. Go to Classifieds then click on the link and complete the online form where you will need to provide the text for the ad and any photos, if required. The cost for the ad will be determined by the number of words and any photos you wish to add. You will then be taken to a secure payment area to process your payment. Your ad will be placed on the GFA website for a month from the date of payment. Ads that are financial at magazine deadline (10th of every second month) will appear in the GA Magazine. For any enquiries please contact the GFA office on 03 9359 1613.

SINGLE SEAT

VH-GVF Pik20B LX9000 computer with remote stick, Becker AR6201 radio, winglets, factory trailer, tow-out gear, 3700 hrs, 10-year survey 2014 and Form2 Nov 2018. \$17,500 ONO. Contact Roger at rogerb_40@hotmail.com or **0427 678 142**



FLEET SALE: IS28B2 TTSN 8,614 hrs, front and back instruments – IS28B2 TTSN 684 hrs, front instruments only, trailer - ASW17/23 TTSN 2,107 hrs, basic instruments, trailer - HP10 TTSN 701 trailer - Caproni A15 (project) TTSN unknown, no instruments. Many parts for IS28B2 available. Universal trailer fits any glider. George mob **0434 413 963**



VH-OKN DISCUS CS

780hrs, 650 Landings, built 1994 and not flown for 7 years always stored in a hangar. Great performing glider, a perfect



club glider with V7 vario, Oudie 2, Becker radio, Winter Vario & altimeter, and a full service history with associated documentation. Comes with a Komet III QLD registered trailer. \$75,000 ONO Contact **Denis 0405 609 601**

VH - KYL LS6-b

Recent refurbishment and Form2, ASI, ALT, Cambridge LNav and Vario, Winter Vario, Dittel radio, Flarm. New mylars, main wheel bearings, tyre and tube, new Gadringer seat harness. Trailer and tow out gear, trailer rewired. TTIS 4683 \$55000 neg. Contact **Gary 0408 243348** or **Grant 0417 843 444.**



VH-UKD Ventus2a

Competition ready – Cobra Trailer (reg NSW) and basic instruments. Full tow gear. Empty weight 220kg, carries 220 litres water. \$80,000 Call **0407 459 581**



VH-CTG LS1D

3404hrs, 1318 Landings. Great performing LS1D with recently rewired electrical and repiped pitot static system. Includes a recently installed flarm Mouse (with certified flight logger) and Flarm-NAV readout, a



Winter Variometer, and a full service history with associated documentation. Comes with a good registered trailer. Will be sold with a fresh Form 2 Annual Inspection / Maintenance Release \$15,000 ONO Contact **Steve 0437 187 565**

VH-GML Mosquito

for sale, serial number #8, built 1977 in very good condition, the wings are in pristine condition. more info http://www.sailplanes.co/sailplanes/single-seat-sailplanes/mosquito-vh-gml_108 \$19,800 Contact **David 0439 734 646**

TWO SEAT

VH-UKH Schleicher ASK21

an excellent training aircraft with long serviceable life remaining. Cockpit and exterior GC, flight instruments include a B500 and Microair radio, good Trailer, Tow out gear, Spin kit, 6000 hr extension issued by factory, fully maintained, ready to fly, great Club asset. Available from March 2018. Price \$80,000 Negotiable. Contact **Greg Kolb 0407 696 351** or email gregkolb@bigpond.net.au



MOTOR GLIDERS AND TUGS

VH-XQK, DG500M

two seat, self launching motor glider, 60HP Rotax 535C. Has been syndicate owned since being imported new in 1992. Being sold with a recent Form 2 inspection. Always hangered. \$120,000 reduced to \$95,000 ONO. For more details contact **Bob Ph 02 6332 9235** or email: bobjmcd@gmail.com



Faeta by ATEC , Glider TOW, Touring

Factory built Glider Tow 100HP and touring LSA, 2013, 380 hrs TTIS, six pack plus EFIS, mode C, and GPS. Would suit new plane buyer. Economical cruise at 115 knots. \$85,000 ONO. Contact Ken on ken.flower747@gmail.com or **0457 811 627**



DG808B 18m self launch glider 2001

TT 411 Hrs Engine Solo 2625-01 TT 23 Hrs. Annual and ARA due may 2018. Fully equipped, Winter vario/ASI/Alt, Becker AR4101 radio, Trigg TT22 transponder. LXNAV V7 linked to Oudie 2/LXNAV Nano. Kanardia Horis mini EFIS - Horizon/ALT/IAS/TAS/Temp/HDG. Solar panels fitted with 2 x 12v 9AH additional batteries for endurance flying. One-man rigging equipment, Cobra trailer with new tyres, current rego and WOF. Located Auckland, New Zealand. All in excellent condition and ready to fly NZ\$145,000 plus GST if kept in NZ. www.sportsaircraftnz.com or call +64 9 423 9494, timhar@xtra.co.nz



VH - ZHX Distar Sundancer

13/15 2 seat motor glider, LSA approval by GFA, 1 year old, engine 80 hrs, form 2 just completed, had a terrific time flying the morning glory with Ian McPhee last September, have to sell because of health reason, suits new aircraft buyer \$125,000 ono call **Heinz after hours on 02 6649 2783** or email rzehnder@tpg.com.au



continued over page

VH - IPL DG 400, 4 -100

Excellent condition, 1927 hrs. airframe, 214 hrs. engine. BEA auto engine retract, EGT, PU refinish, Mountain High oxy, Cambridge 302/303, Tasman flight computer, DG service contract, Jaxida canopy cover, fresh Form 2, parachute, charger, spares etc, metal trailer inc. one man rig/de-rig. \$85,000 Contact **John 03 9876 2808**



VH-GFF, Nimbus 3T 25.5m

Total hours 2900. Engine hours 40. Tilt-up panel mod and full instrument panel rewire completed by Maddog Composites. Panel configured for Ixnav V7 + Oudie IGC + Flarm and Dittel Radio fitted. Cockpit fitted with Mountain High Oxygen system and bug wipers also available. Fully set up for competition or distance flying. Pfeiffer trailer has been fully refinished and reconfigured (by Maddog Composites) with Cobra style wing dollies stabilised with side bearing runners and hydraulic lift for the fuselage. Comes with full IMI one man rigging system and tow out gear, including tail lift. No heavy manual handling required with this setup. Glider also comes with full all-weather covers and wing and tail ballast tanks all fully operational. Also comes with 24.5m and 22.9m wingtips and various spares.

Sustainer is fitted and fully operational with min pilot weight 78kg and maximum weight with full fuel 100kg. Glider is fully sorted and in very good condition inside and out. Full PU refinish in 2012. Genuine 1:60 glide performance in a very elegant and capable package. Glider is currently hangered at Bathurst Soaring Club and a package with T-hanger is also possible. Price: \$85,000 negotiable Contact **Adam Gill, Phone 0417 770 084**



VH-GUE DG500M

1/5 SHARE. Based at Boonah. Built 1995 always hangered. Immaculate condition. New Solo engine factory fitted in Germany by Binder 2014. Equipped for solo independent operation. Australian Agent for Solo Engines is one of the syndicate members. Dual Mountain High oxygen system. Flarm and Mode C Transponder for safety and CTA transit Full avionics panel, flight and engine controls both cockpits, Low utilization. Price reduced \$32000. **Jim 07 3821 1246 hjrgrant@iprimus.com.au**



INSTRUMENTS AND EQUIPMENT

VHF RADIOS - Icom ICA-210, Becker AR3201 and AR4201, Funke ATR600.

Becker AR4201 - \$700

Becker AR3201 - \$400

ATR600 - \$500

All in working order - Great price

Call Arnie 0418 270 182

or email arnie.hartley@gmail.com

TRAILERS

Komet Eurolight Trailer for ASG 29 18m

Purchased August 2008. Double walled aluminium sides, fiberglass/Epoxy top. Lateral guides for wing dollies and outer wing panel holders modified to Cobra style. Stored mainly undercover and used infrequently. Selling due to an opportunity to change to a different trailer. \$17,000 Contact **Craig Vinall 0416 236 662**



Come and Fly
with US!

Lake Keepit Soaring Club is a great place to fly... A 7 day a week club operation with a relaxed, fun atmosphere. LKSC has a modern, well maintained fleet and launches are by aerotow and winch. The region's varied terrain from plains to mountains with plenty of safe out-landing opportunities and year-round good conditions make LKSC ideal for pilots wanting to fly further, faster... sooner.

If you want to learn to fly gliders, get cross-country training, fly badge flights, work towards a GPC, or be part of the best gliding club in the country, come to Lake Keepit.

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Why not share your story so that others can learn from it too? If we publish it, we'll give you **\$500**. Email us at fsa@casa.gov.au

Articles should be between 450 and 1000 words. If preferred, your identity will be kept confidential. If you have video footage, feel free to submit this with your close call.



Please do not submit articles regarding events that are the subject of a current official investigation. Submissions may be edited for clarity, length and reader focus.

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DG-1001 - the true multi-role glider for clubs and syndicates!

In one glider you can have

- 20 metre tips with winglets, water ballast and retractable landing gear*
- 18 metre tips with Neo winglets.
- 17.2 metre tips for the full range of aerobatics.

* standard configuration

Other options include three landing gear configurations...

- Electrically operated main gear (or manual on request) with tail wheel.
- Three wheel layout with retractable main gear, fixed nose and tail gear.
- Three wheel layout with fixed and faired main and nose gear.
- Other great features include tail and cockpit ballast blocks to optimise C of G for XC and spin training.

The DG-1001 is available in 4 versions...

- DG-1001 Club with fixed and faired landing gear and 18 metre tips with Neo winglets.
- DG-1001S with 20 metre tips and winglets, water ballast and retractable landing gear.
- DG-1001T with sustainer engine.
- DG-1001M self launcher.

Also Available :

LS8-sc neo Standard Class Racer



18m & turbo options available

DG-808C Competition 18m Self Launcher



outstanding self-launch performance