

# GLIDING

## AUSTRALIA

Issue 42 June - July 2018

[www.glidingaustralia.org](http://www.glidingaustralia.org)

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VISION - SAFETY FOAM - DIAMOND HEIGHT  
THE WEATHER FACTORY - PLUS RECORDS 2018**





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# GLIDING AUSTRALIA

No. 42 June - July 2018

COVER: ADAM WOOLLEY, VENTUS 2A OVER THE SKIES OF KINGAROOY QLD TAKEN BY MARK CHAMBERS

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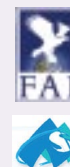
Every flight we take has a possibility of an outlanding as unexpected conditions take their toll on your flight plans. Make sure you are prepared before you fly.

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Sean Young  
Editor  
[sean@glidingaustralia.org](mailto:sean@glidingaustralia.org)

Adriene Hurst  
Deputy Editor  
[adriene@glidingaustralia.org](mailto:adriene@glidingaustralia.org)



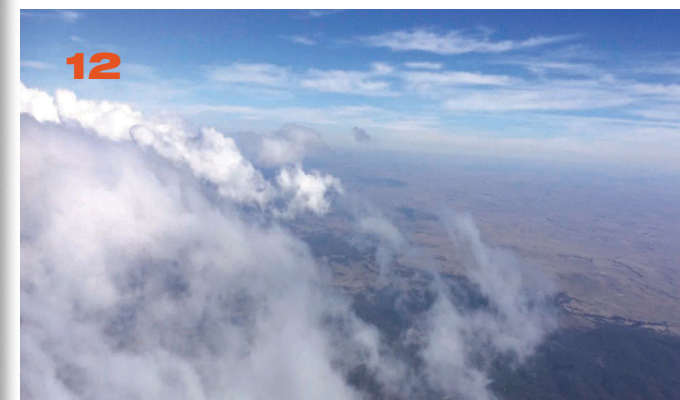
### EDITORIAL SUBMISSIONS

We invite editorial contributions and letters.  
email [sean@glidingaustralia.org](mailto:sean@glidingaustralia.org)  
Other large files and photographs and can be uploaded at [www.glidingaustralia.org/ga](http://www.glidingaustralia.org/ga)

DISPLAY ADVERTISING & MAGAZINE ENQUIRIES  
[sean@glidingaustralia.org](mailto:sean@glidingaustralia.org)

GLIDING AUSTRALIA  
[www.glidingaustralia.org](http://www.glidingaustralia.org)  
Tel 0490 502323  
PO Box 246 Edgecliff  
NSW 2027

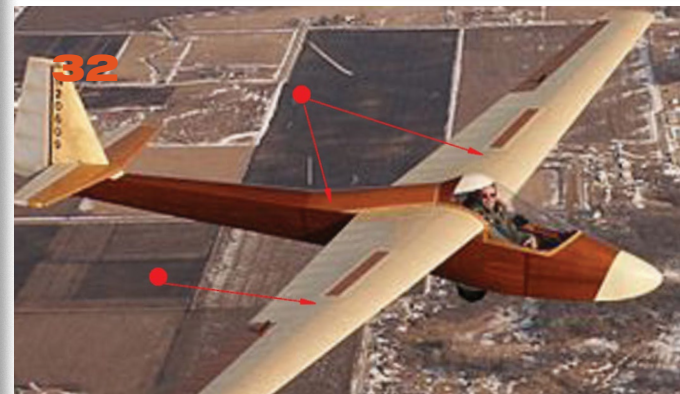
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### GLIDING FEDERATION OF AUSTRALIA

#### MEMBERSHIP & CLASSIFIED ADVERTISING

Cathy Cassar [cathy@glidingaustralia.org](mailto:cathy@glidingaustralia.org)

#### AIRCRAFT REGISTRATION & related

Tanya Lorient [tanya@glidingaustralia.org](mailto:tanya@glidingaustralia.org)

#### AIRWORTHINESS & GFA TRAVEL

Fiona Northey [fiona@glidingaustralia.org](mailto:fiona@glidingaustralia.org)

#### RETURNS

If you are sending documents they must be emailed to [returns@glidingaustralia.org](mailto:returns@glidingaustralia.org)

**SHOP** The GFA Online shop has a range of useful products including a Form 2 kit, [www.store.glidingaustralia.org](http://www.store.glidingaustralia.org)

#### GFA OFFICE

Before calling the GFA office, please check out our website [www.glidingaustralia.org](http://www.glidingaustralia.org) to buy items, find documents and other information, and renew your membership.

**9am-5pm Monday - Thursday 9am-3pm Friday**

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**C4/ 1-13 The Gateway  
Broadmeadows VIC 3047**

#### SUBSCRIPTIONS

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# FROM THE PRESIDENT

## CHANGE

I was rereading a book called 'Who Moved My Cheese' the other day. The story is about four characters, two mice and two 'little people', who all exist in a maze and are looking for cheese. In essence, it's about how the cheese is running out and what the four do about it. It is a short story, with big printing and drawings, and takes about an hour to read. It has changed many lives as the reader views himself or herself as one of the characters and understands the meaning behind it.

The book became a worldwide best seller. I was given a copy when I was about to be retrenched many years ago. The secret of how to deal with change and the ability to see yourself in the characters have assisted many who have interpreted the story into their own lives and gained by it.

But what has this got to do with glider pilots? Well, it's not only those who have benefitted from the book, but also the critics that interest me. Many critics say it is too simple, it insults our intelligence, and that it is just common sense, all of which is true. But the people who say this are often, in my opinion, the ones who are most unwilling to even consider change, and often need most to embrace change.

I don't mean physical change. I mean emotional and thought-provoking change, change that brings positives for the greater good, not self-centered, power-hungry change.

It's very sad, but sometimes I hear of people who 'control' some small part of our vast GFA network of support, who make sure that others don't share in the benefits they received in the form of ratings or approvals or even participation - often for nefarious, unclear and incorrect reasons. What is it that these people have in common? I don't pretend to know. Good glider pilots have always sought out new lands, moved to discover the unknown or simply fought to understand and beat mother nature. If you know of someone or a small group hindering our progress forward, please say something.

You will see discussions about change scattered throughout this article that I believe affect each and every one of us.

## EXECUTIVE AND BOARD

At the recent Board and Executive meeting, where we thrashed out the details of next year and allocated the budget and finances, we set out the strategic plan as a guide and support, especially for the long term items. We agreed to a deficit for next year of around \$60,000.

## CASA FUNDING

Directly after this meeting, I received a phone call from the CASA Sports Aviation group suggesting that they were going to change the funding model to better distribute the fixed amount of money they have. Using their formula we would lose about \$48,000 a year.

This change to the funding model affects all the Sports Aviation Organisations (SAOs). Other Organisations received similar phone calls, and some have had gains. The funding model CASA proposed is to "better reflect the levels of participation, function and size of the organization". It would be easy to simply fight this move by delegitimizing other sports aviation groups, but this hasn't happened.

We all started it by asking for the funding to be increased and indexed at least to CPI. After all, we have done the numbers and found that we do a minimum of \$240,000 in work directly that CASA would otherwise have to do themselves, receiving around \$138,000 (including GST) in return annually.

In the CASA 2013-2014 funding year, all funding increases were stopped, meaning that we, and all other groups, have had a real decrease in funding by the CPI each year. 'Be careful of what you ask for' is an old saying. We have successfully worked with ASAC (the Australian Sports Aviation Confederation) to counter the initial thrust of this change and there will be more meetings coming up. I am the agreed head of the GFA discussions.

Whatever the outcome - and I have no real understanding of what will come from this - hopefully it will be fair, equitable and not disadvantage any of the groups. Indeed, the outcome may even result in the situation staying as it currently is. We will, of course, be fighting to ensure that GFA gets what it is due.



## AIRWORTHINESS, OPERATIONS AND SPORTS PANELS/ COMMITTEES

Over the weekend of 26-27 May we had the annual Operations Panel and Airworthiness Panel meetings and, as a bonus, the annual Sports committee meeting was held as well. The total cost of these meetings was around \$10,000.

I am told it's not the first time this has happened, when all the key leadership groups have got together, but I don't know of one in the recent past. The groups each met separately after an initial briefing and goal setting from GFA Safety Manager Stuart Ferguson and me, based on recent history and how we can best integrate the Strategic Structural Safety initiative. I would guess that probably over 1,000 years of corporate knowledge, skill and acumen are present at those meetings.

This is a large and expensive group of meetings but I think most members would agree that face to face discussions are useful and, provided the members of those groups were prepared and had done their 'homework', very useful.

Most groups in GFA, including the Executive and Board have web-based 'GoTo' meetings during the year, to have those discussions about items that need more than emails. For example the Executive and Board historically had five face to face meetings every year, now we have three. Online meetings are held to replace the other two, and at any time that serious discussions are needed.

But before I go any further, let's look again at the future of our sport:

The number of members in our sport has been steadily decreasing for many years and was continuing on a downward trajectory. We started to look at this some years ago and identified that if the trend continued we would have about 400 members by the year 2040 (in 22 years). This was simply not acceptable if we wanted to survive as a sport and an organization.

So the board of the day decided to do something about it, to be bold, to do things that were considered to be expensive and difficult, to attempt to do the unthinkable, and grow our sport.

We started a number of projects, with the board itself initiating many small and appropriate initiatives to minimize the burden of administration related to GFA, making it simpler and easier for our members.

This is a two-pronged approach, and it is working. The first part is specific projects and initiatives such as simulators and Soaring to the Future (S2F). The second is the Executive and Board initiative aspects such as family membership, loans to clubs, videos for airworthiness, support for airworthiness courses, and potential support for AMO training.

These are all progressing and I am happy to advise that over the last two years, instead of the predicted loss of 400 members, we have gained more than 200 members - a small gain I admit, but it is effectively a solid reversal of the previous trend. Another positive part in all of the above is that we have more juniors and female members than ever. But we need to continue to reducing the burden of administration, the old ways are not always the best.

If we could simply stop the loss of current members before their second and third year in the sport, we would gain more than 3,000 members in 5 years.

Therefore, a lot of the initiatives are to minimize the churn in membership, and make it easier to do what we all want to do - fly. Our S2F (Soaring To the Future) project is directly about that - Standardise, Modernise, Prioritise - while the board initiatives are largely about Minimise - minimising the effort of finding information, tasks to do simple things, the pain of finding

information - to basically make things easier for our members.

None of this is easy or as simple as we would like, but we are doing it. For example, I was tasked at the last Board meeting with reviewing our IT systems. This was previously done a number of years ago and was successful to a large degree, but the world has moved on and our systems are not always coping, nor are they as easy to use as we want. But in the next two months or so I will form a small committee and identify what we want in that area as an organisation, and then set out to achieve it.

It won't necessarily be cheap, but it is necessary. Our Treasurer was also tasked with reviewing how best to manage our money. We have been successful in this area for a long time, but with interest rates low and our wish to avoid slugging the membership with extra fees, we have to think outside the box, minimize risk and increase income. Not an easy task but, again, necessary.

We are continually attempting to do this at the GFA level, but the real story is at club level. It has been suggested that our clubs are really training schools. Perhaps we should call them that, since training schools are where the rubber hits the road, where we can increase our membership, be proactive and attract more junior and female members.

I have run airworthiness courses recently and allowed anyone who wanted to learn to attend. I have a person who keeps telling me that one of the people who received a rating on one of my courses has the wrong attitude and doesn't do it right. That may be correct, but most of the faults we find with our system are caused by people who have been 'trained right' and have a history. So, please don't tell me that (young) people who want to know, try hard and are willing to put in and learn, should not get ratings.

We need to remember these members have chosen gliding from many other aviation choices and I believe that they should not be unnecessarily held back. Clearly, if they don't meet the necessary standards, they cannot be given ratings or authorities, for ours is an unforgiving activity. However if they do meet the standards, they should simply be allowed to do what they are capable of.

## STRATEGIC STRUCTURAL SAFETY

I don't pretend to know all that SSS will bring, though I have tried to clarify it with many people. A clear start is to minimize and remove unnecessary rules, for the regulatory burden is continually increasing and incurs a real cost in time, money and effort.

Currently, a lot of our time and effort is managed through our volunteers, and just about everyone in gliding volunteers to help at something. But as the rules become more intense, more descriptive, more onerous, people will remove themselves. Who will then do that work? Have you looked at your regional committee recently, and are all officer positions filled?

What happens when our more senior volunteers start removing themselves, when our average age goes from 55 to 65? That time is not far off.

Perhaps I am turning into that grumpy old man in a terry towelling hat. I hope not. But change is all around us, and one of the constants we have that ground us - that's an intentional pun! - is our love of gliding. Hang on to that, be safe and fly well

PETER CESCO, PRESIDENT  
[president@glidingaustralia.org](mailto:president@glidingaustralia.org)

## NSW GLIDING - SEASON OPENING PRESENTATIONS AND AGM

**Saturday 1 September 2018  
Club York, 99 York Street  
Sydney NSW**

The New South Wales Gliding Association (NSWGA) invites all members and interested parties to attend a series of presentations covering preparations for the Gliding Season ahead followed by our AGM then drinks and dinner. Speakers include Gavin Wills, Bruce Taylor, Brad Edwards and Alan Barnes with the event MC'd by Mick Webster RTO Sports.

Presentations from 9.30am to 5.00pm, AGM from 5.00pm to 6.00pm then drinks and dinner from 6.00pm. Please RSVP to **Beryl Hartley**

**NSWGA Secretary** at [arnie.hartley@gmail.com](mailto:arnie.hartley@gmail.com) or **Mick Webster** at [mick260649@gmail.com](mailto:mick260649@gmail.com) to ensure a space.

IAN CALDWELL  
NSWGA PRESIDENT





# FROM THE EO

## AUSTRALIAN WORLD GLIDING TEAM

The Australian Team for the **Club, Standard and 15m World Championships** in Poland comprises Allan Barnes, Jim Crowhurst, Matthew Scutter, Ray Stewart and Adam Woolley. This will be Jim and Ray's first world comp, although both are experienced Nationals pilots. The Championships runs from 8 to 21 July and you can watch tracking of each competition day via the website

[www.wgc2018.pl](http://www.wgc2018.pl).

The team for the **18m, 20m 2-seat and Open Class Championships** includes some of the same pilots - Matthew Scutter, Allan Barnes, Adam Woolley - with two additional competitors, John Buchanan and Scott Percival. The comp runs from 28 July though to 11 August at Hosin in Czech Republic. The website with links can be seen at [www.wgc2018.cz](http://www.wgc2018.cz).

You will be able to see how the team prepares for and progresses in both competitions via the Australian Gliding Team Facebook page. Just google Australian Gliding Team Facebook.

## WGC VENUE CHANGE

Czech organisers announced that they have had some problems with the operators at Pribram and needed to move the championships to Hosin, which is over 100km further south towards Austria - a major undertaking at such short notice. The Australian team have all arranged accommodation at the new site.

## FEE CHANGES

The GFA financial year runs from May through to April, and the GFA Board meets April to review the past year, set the budget for the next year and to set the GFA fees.

The 2017/18 finances showed a reasonable surplus but the budget for 2018/19 indicates a significant loss through planned expenditure on member promotion and other improvement activities. The Board agreed that the planned loss was outside of normal operations and therefore there was no need for

significant fee increases. All fees were increased by 2% except the Form 2 fee which was increased by a little more to support the new airworthiness video series. The full list of fees can be found on the web page under Docs/Forms/Admin docs.

## GFA POLO TOPS

We have designed a GFA polo shirt, which all of our staff are now wearing. The photos (see shop photo) show the shirts' new design, and they are produced in a nice material as well. If any members wish to purchase a GFA polo shirt, they are available through the GFA shop.

## AEF FORM

Some clubs have been trialling the online AEF form rather than purchasing a book of paper forms. You can order the online forms in small numbers. The cost is only \$35 each rather than the normal \$40. The club also keeps the contact details of the visitor electronically for follow-ups regarding future activities.

It still requires pre-purchase of AEFs, but instead of a paper form you will receive a membership number and activation code. Once the visitor fills in his or her details, the number is activated on the spot, and the visitor and the club receive electronic confirmation.

If your club is interested in moving to this arrangement, email me at [eo@glidingaustralia.org](mailto:eo@glidingaustralia.org) and I will send you an information pack.

## GFA STRATEGIC PLAN

The Board has finalised the GFA strategic plan, which has identified many opportunities to support the achievement of our 5 Primary Objectives. The following lists the five objectives with examples of action items for each one -

## FREEDOM TO FLY

Grant greater GFA autonomy to manage and regulate gliding via Part 149 Negotiations.

## SAFETY

Provide better trend analysis within incident reporting in the magazine and seminars.



## PROMOTE & DEVELOP SOARING AS A SPORT AND RECREATION

Support clubs and regions to acquire and use Virtual Reality portable simulator.

## DEVELOP A CULTURE OF PERFORMANCE EXCELLENCE

Actively support a successful Women's World Gliding Championships, with members engaged in the opportunity.

Update training syllabus in conjunction with AAFC and support cadets to fly with gliding clubs.

## SERVICES

Website Review - website philosophy to be determined; functionality and ease of use to be improved.

Have a look on the web page under Docs/Forms/Admin docs and let us know if you have other suggestions for improvement.

## BOARD REGULATIONS - IMPACT OF A SUSPENDED CLUB

The Board Regulations are list of decisions from the Board that support the rules contained in the Articles of Association and the Manual of Standard Procedure. In the latest update we have clarified the impact on GFA members should their club become inactive. Basically, if you want to fly you must be a member of an Active Affiliated Gliding Club.

## DAILY INSPECTION (DI) VIDEO SERIES 2018 - NOW AVAILABLE

To access the series via the GFA web page, click on the VIDEOS menu at the top of the home page at [www.glidingaustralia.org](http://www.glidingaustralia.org).

This series will be great for new pilots working to earn their DI rating, but also experienced DI rated pilots wanting to refresh their knowledge.

## NEW GFA BOARD MEMBER

Mitch Turner has been nominated as the Australian Junior Gliding Club (AJGC) representative to the GFA Board. The AJGC represents junior members of the GFA and pilots under 25 years old, and also runs the Joeyglide competition and coaching event. See the Junior Gliding Club facebook page for details.

## SOAR REPORTS

SOAR is the GFA accident and incident reporting system. It is proven that reporting of incidents provides valuable information to help reduce major accidents, so we encourage members to report all incidents no matter how small.

This request applies to all incidents, including operational,

airworthiness and even issues around the airfield and equipment. So a member who gets tangled in a winch wire and injures his or her back is as important as the pilot who ground loops or damages a tailwheel. Air space infringement or proximity incidents with powered aircraft are also critical. These are issues that will impact on future restrictions and limitations and it is important to identify when they happen so we can look for ways to reduce occurrences.

Some people complain about completing the online report - no one likes 'paperwork' - but since you don't need to complete every item for a simple issue, the detail in the report can reflect the seriousness of the incident. If we need more information we can ask for it. So, make the effort and treat completion of SOAR reports seriously.

## VSA PORTABLE SIMULATOR

The VSA has commissioned a new portable simulator from Tom Wilksch. This version uses a Virtual Reality (VR) headset rather than a screen, although a television screen is present to show what the 'pilot' is seeing.

The simulator features a nice cockpit look-alike set-up and easy access to the controls. The software is limited - because Condor does not yet have VR capability, the new simulator cannot access it. The current compatible software does not have aerotow or winch options, and only has European scenery.

Nevertheless, the simulator gives a convincing feeling of flying. It is obvious that the pilot is looking out, and coordination and so on is good. Once Condor catches up with the 21st Century, it will be an excellent tool for promotion and also training.

## GFA AGM - 25 AUGUST

GFA Annual General Meeting will be held in Brisbane on 25 August. There will be a members' forum in the late afternoon where you can hear details of the Board's plans, and also hear answers to any questions you may have from the people involved. The Saturday evening will be the awards and presentation dinner. Why not join us for the dinner - or better still, why not nominate someone for one of the awards?

**TERRY CUBLEY**  
**EXECUTIVE OFFICER**  
[eo@glidingaustralia.org](mailto:eo@glidingaustralia.org)

# CATHERINE CONWAY MEDAL (OAM) OF THE ORDER OF AUSTRALIA

The GFA is delighted to congratulate Cathy Conway on being awarded OAM in the 2018 Honours list. She has been given the award for service to gliding.

Service includes:  
Adelaide University Gliding Club: President, since 2017, (and on several previous occasions).  
Chief Flying Instructor, since 2014.  
Flying Instructor, since 1989.  
Member, since 1986.  
Past Secretary and Treasurer.  
Team Captain, Australian Gliding Team, 34th FAI World Gliding Championships, Lithuania, 2016.  
Team Captain, Women's World Gliding Championship, Klix, Germany, 2005.  
Joint Regional Technician Officer, Airworthiness (South Australia and Northern Territory), Gliding Federation of Australia, since 2017.  
Donator, Schneider ES54 Gnome Glider and ES60 Boomerang Glider,

Australian Gliding Museum.  
Australian Air Force Cadets (AAFC): Former Flight Commander, 607 Training Flight.  
Staff Officer, Gliding National Aviation Operations Wing, current.  
Director and Chief Executive Officer, AV8 Flight Training, since 2016.  
Aviation Operations and Maintenance Manager, Airborne Research Australia (engineering and telecommunications consultancy), since 2014.  
Director, Auscom Systems, since 1993.  
Mentor, Australian Women Pilot's Association, current.  
Co-Founder and General Manager, Agile, 1997 - 2012.  
Senior Manager JORN, Telstra, 1991 - 1997.  
Regular competition pilot at

Nationals level, ongoing.  
Former State Gliding Coach, South Australia and Northern Territory.





## GFA CALENDAR

Use the Contact GFA menu at [www.glidingaustralia.org](http://www.glidingaustralia.org) to send events to the GFA Secretariat for publishing online and in GA

### 35TH FAI WORLD GLIDING CHAMPIONSHIPS

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

### GLOUCESTER RIDGE CAMP GLOUCESTER NSW

4 - 14 August 2018  
[info@ccsoaring.com.au](mailto:info@ccsoaring.com.au) or call Julio Moraes 0431113960

### 35TH FAI WORLD GLIDING CHAMPIONSHIPS

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

### GFA AGM, PRESENTATION DINNER AND BOARD MEETING

25 - 26 August 2018 Brisbane  
AGM and Presentation dinner to be held on the 25 August and Board meeting to be held over both days.

### BUNYAN WAVE CAMP 2018

15 - 23 September 2018 Canberra Gliding Club - Bunyan

## LENA EARNS HER WINGS BOOK REVIEW

There are plenty of classic 'girl's books' out there, but almost none about gliding for young people. Air traffic controller and glider pilot Judith Spörl sets out to enthuse potential

future women pilots with the joy of flight with her book 'Lena Earns Her Wings'.

The author contends that girls from 10 to 15 will take to activities portrayed in literature if they can see their own daily lives and concerns reflected in the story.

NSW Contact details - Club Captain David McIlroy

### QLD STATE COMPS

29 September - 6 October 2018

### WOMEN IN GLIDING WEEK NARROGIN

3 - 9 November 2018

For more information contact Jenny Shearer on

[jsh53303@bigpond.net.au](mailto:jsh53303@bigpond.net.au)

mob 0417 934 052

### WAIKERIE ORANGE WEEK

17 - 24 November 2018

Contact John Ridge at

[johnridge16@gmail.com](mailto:johnridge16@gmail.com)

### NARROMINE CUP

18 - 24 November 2018

Contact [arnie.hartley@gmail.com](mailto:arnie.hartley@gmail.com)

### MULTICLASS NATIONALS NARROMINE

26 November - 7 December 2018

Contact [arnie.hartley@gmail.com](mailto:arnie.hartley@gmail.com)

### WOMEN IN GLIDING WEEK TEMORA

8 - 16 December 2018

For more information contact Leonie Furze on

[ozglidergal@hotmail.com](mailto:ozglidergal@hotmail.com)

### FORMULA 1.0 GRAND PRIX LEETON NSW

29 December 2018 -

6 January 2019

Contact Nick Gilbert

on 0430 099 771

## CLUB CLASS NATIONALS AND WOMENS PRE-WORLD GLIDING CHAMPIONSHIPS LAKE KEEPIT

31 Dec 2018 - 11 Jan 2019

Contact Ian Downes

[iandownes@optusnet.com.au](mailto:iandownes@optusnet.com.au)

for more information

### JOEY GLIDE-AUSTRALIAN JUNIOR NATIONALS WAIKERIE

12 -19 January 2019

Information: Aust Junior Gliding

Facebook group Entries Opening

Soon! [christopher.jesse97@gmail.com](mailto:christopher.jesse97@gmail.com)

### NSW STATE CHAMPIONSHIPS NARROMINE

19-26 January 2019

Contact [arnie.hartley@gmail.com](mailto:arnie.hartley@gmail.com)

### HORSHAM WEEK

2 - 9 February 2019

[horshamweek.org.au](http://horshamweek.org.au)

### 20M 2 SEAT CHAMPIONSHIPS NARROMINE

9 - 16 February 2019

[arnie.hartley@gmail.com](mailto:arnie.hartley@gmail.com)

[narromineglidingclub.com.au](http://narromineglidingclub.com.au)

### 10TH WOMENS WORLD GLIDING CHAMPIONSHIPS LAKE KEEPIT

3 - 17 January 2020

Contact Wendy Medlicott

[wendymedlicott@optusnet.com.au](mailto:wendymedlicott@optusnet.com.au)

## FAI GLIDING BADGES TO 13 MAY 2018

### A BADGE

MOODIE TATE R	12348	STH GIPPSLAND
KERN MARKUS	12349	NARROGIN
PAINE ADRIAN R	12355	CENTRAL QLD
MORRIS LUKE	12358	NSW ATC 300

### B BADGE

MILLER PETER J	12278	BEVERLEY SC
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### A, B BADGE

LEE CRAIG A	12350	MELBOURNE
BARNES BRANDON J	12356	CENTRAL QLD

### C BADGE

MILEDGER DANIEL	12296	MELBOURNE
DODD PHILIP J	12225	NARROGIN

### A, B, C BADGE

EDWARDS BRETT W	12346	STH RIVERINA
EDWARDS RUSSELL O	12347	STH RIVERINA
PHELAN RANJIT J	12351	LAKE KEEPIT SC
DUNK BENJAMIN	12352	ATC 600 SAN
EVERTON JASON K	12353	CENTRAL QLD
HAVE PHILIPPE	12355	GC WEST AUSTRALIAN



BERYL HARTLEY  
FAI CERTIFICATES  
OFFICER  
[faicertificates@glidingaustralia.org](mailto:faicertificates@glidingaustralia.org)

WILLIAMS EDWIN	12357	KINGAROY
WOOLFENDEN MICHAEL	12359	BEVERLEY
ELLIS STEVE	12360	DARLING DOWNS

### SILVER C BADGE

KALUSHKOV IVELIN A	4945	LAKE KEEPIT SC
PHELAN RANJIT J	4946	LAKE KEEPIT SC
EVERTON JASON K	4947	CENTRAL QLD

### GOLD C BADGE

LANE RUBEN A	1743	LAKE KEEPIT SC
KALUSHKOV IVELIN A	1744	LAKE KEEPIT SC
STEPHENSON CLIFFORD	1745	STH CROSS
SIMPSON ANDREW	1746	STH CROSS
CARLING ANTHONY	1747	MELBOURNE

### DIAMOND GOAL

KALUSHKOV IVELIN A		LAKE KEEPIT SC
STEPHENSON CLIFFORD		STH CROSS

### DIAMOND DISTANCE

KALUSHKOV IVELIN A		LAKE KEEPIT SC
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### 1000 KM DIPLOMA

CLAFFEY KERRIE A	45	SOAR NARROMINE
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GFA has produced a series of videos to help you learn about the daily inspection. In these videos, as well as the accompanying training material and instruction at your club, you will learn how to perform one of the most basic aspects of safety and maintenance in your gliding career.

There are 5 videos currently, with more to come:

- Introduction
- Cockpit
- Wings
- Fuselage
- Other responsibilities

Please enjoy and share them around!

You can find a link to the GFA Youtube Channel on the menu bar of the home page - Videos - or use this link to straight to the channel

[tinyurl.com/ybvnp5t](http://tinyurl.com/ybvnp5t)



## NATIONAL COMPETITION RULE CHANGES



One of the less glamorous of the GFA committees is the NCC, or National Competitions Committee. Our job, among other tasks, is to define the rules for National Competitions. You might think that this would not take up much time. After all, once the rules are set they should hardly need modifying every year, right? Well it turns out that the Nationals Rules are quite a fluid document. One of the reasons is that they are based on the rules set by the IGC (International Gliding Committee). Now, we are not obliged in any way to follow these, but in general we choose to, unless we feel that there is a compelling reason for us to differ - in other words, if we think we know better!

Another reason is that we often get feedback from the Pilots Meetings held at each Nationals event. It's here that pilots air their grievances at the current state of the Rules. Where possible we try to amend the Rules to accommodate these issues, but sometimes the same issue may be viewed differently at a Club Class Nationals, for example, and a Multi-class Nationals. We have to try to accommodate everyone as far as possible.

The third main reason is technology. Every new advance brings issues which affect the old rules in unforeseen ways. We have to ensure that the rules keep up with the outside world.

Last season there were no changes, but this year there are quite a few - mostly minor, but a few that might trip up a competition pilot who doesn't diligently read their way through before each National competition. Here's a summary of what's changed:

1. Overseas pilots are no longer required to fly Hors Concours. They will score with all other pilots and can win the competition but can not be declared National Champion.
2. Club Class gliders are now

based on the list issued each year by the IGC. So if your glider is on that list, you can fly in the Club Class Nationals. And if it's not, you can make a special request to the NCC, who will allow it unless you're being silly. However the handicaps are not necessarily those decided by the IGC - we maintain our own handicap list which is published on the GFA website.

3. Two-seater gliders - A pilot can only win a class if they compete every day, and are not flying with an overseas pilot with a higher IGC ranking than their own ranking. This is to stop you getting Sebastian Kawa to fly with you and then claiming the trophy. If however you fly with a lower-ranked overseas pilot, it's no problem.

4. You no longer need to wear a parachute, as long as your glider is equipped with a certified aircraft recovery chute.

5. Motor gliders must now descend to the release height immediately after shutting down their engine.

6. Instead of landing first, motor gliders may now relaunch by an airborne engine start, but must do so within the circuit area and must proceed to the normal release area and height immediately following.

7. If you have a rope-break or premature release that forces you to outland, you are allowed to relaunch. But if a relaunch is impossible - For example, if getting the glider back to the airfield is impractical in time to launch and complete the task) then you can apply for a 'Samaritan Score' which will give you your average points for the day.

8. Organisers will normally set a maximum start height and speed limit. After the start gate opens, you must log a point below this height and speed but may then proceed at any height.

9. Anyone whose trace descends below 500ft above airfield reference height will have their trace reviewed, whether or not an outlanding resulted. If the manoeuvring was deemed unsafe then you will be penalised for dangerous flying. This won't catch all examples of unsafe low saves but it will at least discourage them.

10. The rules about internet access during flight have been clarified. You are allowed to access any publicly available websites (for example, weather, OGN etc but not private or hidden sites).

11. Ballast penalties have been simplified. If you are overweight on a random weighing, you are penalised 20 points per full kg over the outdoor weighing allowance.

12. Handicapping for unballasted classes has also been simplified to eliminate the need to try and present for scrutineering as heavy as possible within your chosen weight band. The handicaps are now calculated on a 1kg increment.

13. Task distances used to ignore the start and finish circle radii. So speeds always looked better than they really were, because you were credited with the distance from the start point rather than the start radius. Same with finish circles. This has now been corrected to match IGC rules.

14. Finally, we have bitten the bullet and created a rule to allow for underset AAT tasks. Despite best intentions, task setters still set tasks that are not big enough to cope with unexpectedly good conditions. From now on, if you exceed 95% of the maximum AAT distance and still come home under time, the scorer will rescore the whole day with your elapsed task time as the official task time. This won't significantly affect anybody who came in over time, but it will avoid the unfairness to pilots who had no option but to come in early.

So that's it. Hopefully all these changes will be improvements, but if there's anything in the rules that you really hate, raise it at a Pilots Meeting and if the others agree with you, you'll have a good chance of seeing it reflected in next year's rules!

ALLAN BARNES  
CHAIR NATIONAL  
COMPETITIONS COMMITTEE

## GLOUCESTER RIDGE CAMP

**Central Coast Soaring Club is again organising its popular ridge soaring camp at the beautiful NSW country site, Gloucester 4 - 14 August.**

The camp has been a feature of the NSW gliding calendar for more than 30 years with only a single break, last year. Clubs from around NSW are invited although all glider pilots are welcome, including those who have not experienced ridge soaring.

The camp is based at the Gloucester Aero Club, a north-south strip in dairy farmland in the centre of the Avon valley. Ridge soaring takes place during the winter westerly winds along the Mogranis, a

12km range of hills parallel to the Buckets. The area is one of the most scenic in NSW with the Gloucester and Barrington Tops to the west and the ocean visible in the distant east.

Westerlies flowing at a only few knots permit soaring along the ridge. Fast runs below the ridge and thermals and wave allowing flights to more than 10,000 ft are not



unknown. Throughout winter, midday temperatures of more than 20C are common and thermal flights are the norm.

Numerous accommodation options are available in Gloucester - the town is welcoming to the annual visits from glider pilots. Gloucester Aero Club has full facilities including a bunkhouse and camping area.

**Further details are available from the secretary, Central Coast Soaring Club,**

[info@ccsoaring.com.au](mailto:info@ccsoaring.com.au) or call  
Julio Moraes 0431113960



## WOMEN IN GLIDING WA

### Narrogin Gliding Club 3 - 9 November 2018

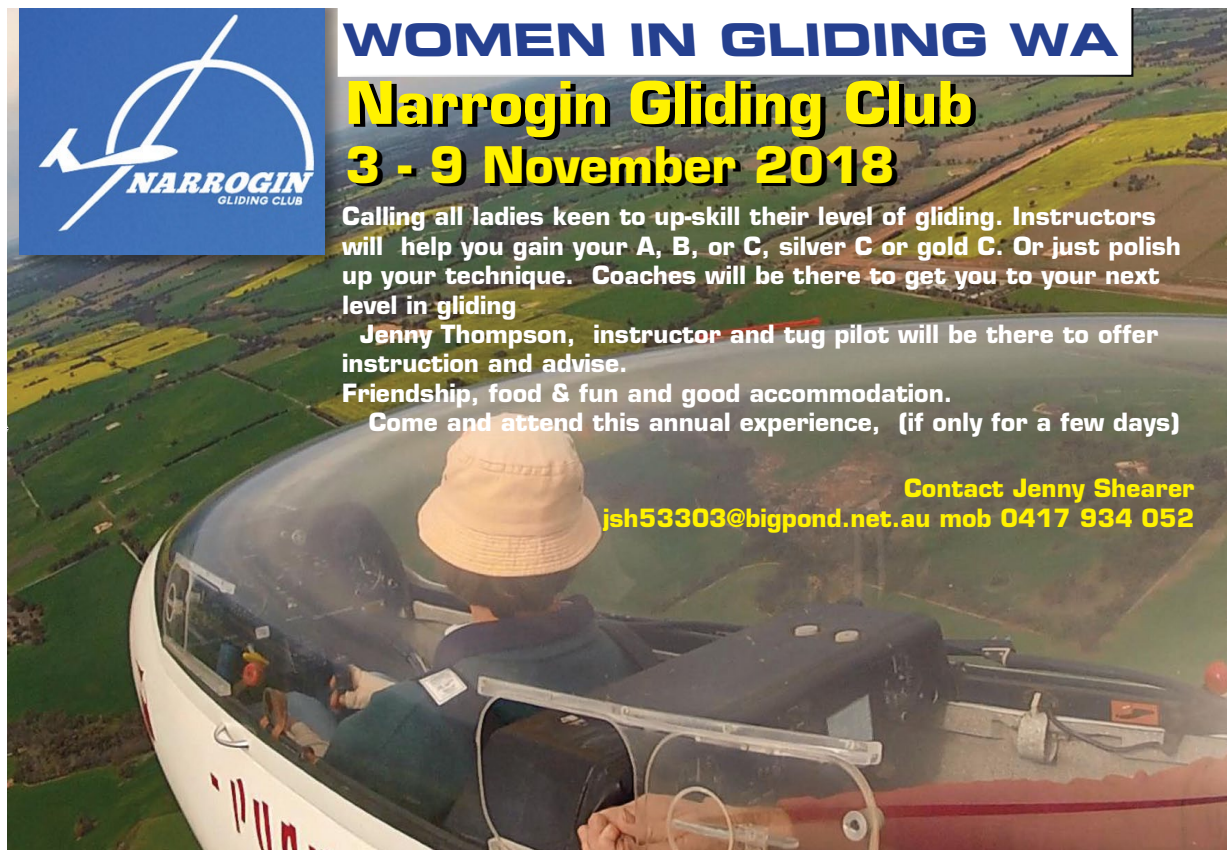
Calling all ladies keen to up-skill their level of gliding. Instructors will help you gain your A, B, or C, silver C or gold C. Or just polish up your technique. Coaches will be there to get you to your next level in gliding

Jenny Thompson, instructor and tug pilot will be there to offer instruction and advise.

Friendship, food & fun and good accommodation.

Come and attend this annual experience, (if only for a few days)

Contact Jenny Shearer  
[jsh53303@bigpond.net.au](mailto:jsh53303@bigpond.net.au) mob 0417 934 052





## SOARING TO THE FUTURE (S2F) FOR DUMMIES

- What is Soaring to the Future all about?
- Where can I find out more information?
- What is the timeline?
- What does it mean for me?
- How can I help?

These are questions I am often asked when I speak to GFA members, particularly new members.

### WHAT IS SOARING TO THE FUTURE (S2F) ALL ABOUT?

Soaring to the future is a GFA initiative to grow our membership by modernising how we do things to better suit current times. Our membership churn rate is high - over 25%. This suggests that people are attracted to gliding but leave because they are dissatisfied with what is on offer. Member surveys in 2015 and 2017 indicated strongly that a major issue for members is lack of free time.

In 2017 GFA formed a partnership with Sports Community to investigate how to improve the situation. Sports Community had previously worked with Sailing in Australia to address similar issues. The report produced was released at the 2017 AGM in Melbourne and I was appointed as Chair of the Soaring to the Future initiative.

The first step was to identify areas that members were telling us could be improved. This included facilities, launch point comfort, standardisation of training and the time needed to make progress as a new member.

The three key actions were distilled into Standardise, Modernise, Prioritise.

**Standardise** training so that all clubs and all instructors teach the same syllabus in a consistent way. The Glider Pilot Training Record is now being used by many clubs and this is an example of how we will move this forwards. Over time it will be required that all clubs use this document. I think we have moved on from the launch of the document when CFIs were calling me and saying, "We can't use this book - that is not what we teach at our club." The syllabus in this book is the only CASA approved syllabus and must be taught at all clubs. The advantage to members is that they can go to any club and progress in a consistent way.

**Modernise** the way we do business. Looking at payWave/PayPass options, paperless flight logging, and efficiencies at club level such as GoTo or Skype meetings. Produce electronic online training modules and online quizzes/ tests such as the ABC questions to reduce instructor workload. Training videos to reduce duplication of effort and reinforce standardisation such as the new Daily Inspector training videos. Modernise facilities by providing support for clubs to apply for grants. Online instructor training modules to upskill instructors in modern training methods.

**Prioritise** flying and reduce member time spent on administration, meetings, and maintenance. Prioritise fun by encouraging more club regattas, Grand Prix events and inter club social events.

### WHERE CAN I FIND OUT MORE INFORMATION?

The Discover Soaring website is a work in progress. It contains information

for clubs that are transitioning to become S2F clubs. In the future it will evolve into a more outward facing website to provide information for new members. First we have to prepare the clubs.

### WHAT IS THE TIMELINE?

Shortly after the launch we asked clubs to submit Expressions of Interest in becoming Trial Clubs. 11 Clubs applied. We selected 4 clubs - Gliding Club of Victoria, Darling Downs, Hunter Valley and Sunraysia. These clubs are now in Stage I of S2F transition. Once this is completed, Stage I will be rolled out to more clubs. There are three stages of transition and details are on the Discover Soaring site, at the bottom of the page.

[discoversoaring.com.au/index.php/for-club-committees/](http://discoversoaring.com.au/index.php/for-club-committees/)

### WHAT DOES IT MEAN FOR ME?

If you are a trainee pilot hopefully you will see a move towards more modern training techniques, better standardisation of training and options to do one-week courses to accelerate your progress. As a longstanding member you will see improved retention and a growth in membership due to a reduction in churn.

### HOW CAN I HELP?

Contact me Mandy Temple at [s2f@glidingaustralia.org](mailto:s2f@glidingaustralia.org) if you would like to contribute, or have any suggestions for other initiatives that we could implement.

**MANDY TEMPLE**  
**CHAIR S2F**

## RANGA SCHOLARSHIP 2018/19 OPEN FOR APPLICATIONS

The Royal Australian Navy Gliding Association (RANGA) has established a scholarship valued at up to \$1,500 annually to be awarded to a person who can demonstrate a strong commitment to aviation but who is not yet at solo standard in any form of flying. The money is a grant to assist in training in gliding, and will be paid to the club which provides that training.

Applications for the RANGA Scholarship for 2018/19 are now

open. The scholarship provides \$1,500 towards training in gliders, and is open to any GFA member who has not gone solo in any form of aviation.

Download Rules and Application forms at [glidingaustralia.org](http://glidingaustralia.org) or use [tinyurl.com/yb4a4oty](http://tinyurl.com/yb4a4oty)

**RIGHT: 2014 RANGA Scholarship recipient James Snowball.**



## SAFETY MANAGEMENT NEWS

### SAFETY SEMINAR FEEDBACK

Members who have been attending the current series of GFA Safety Seminars will know that at the end of the day I ask everyone attending to fill in a brief survey form that gives you an opportunity to tell us what you think about the seminar and recommendations you may have for improvements. All replies are anonymous.

I'm pleased that most members are providing feedback and saying that they believe it has been worthwhile. Many also provided us with valuable feedback. We put a lot of effort and resources into bringing you these seminars. However not all feedback is positive and one member recently told us that he learned nothing and it was a waste of time. I'm not sure why because both Chris and I as presenters always learn something from you, our members. The seminars are a sharing environment, and we know that a lot of experience and knowledge are in the room. Every time we stand in front of you, we try to draw on your knowledge.

One of the things that a large number of members are telling us is that they enjoy Chris's operational case studies in which Chris examines a specific incident, what happened, what went well, what didn't go well and lessons learned. You can expect more of that. However,

one thing that does frustrate us is that all of the case studies you enjoy are based SOAR reports, and we also know that not every incident is being reported. Reporting incidents is your responsibility and your reports provide us with a better picture about where the threats and errors really are. For example, I'm aware of several trailering incidents over the past years where cars, trailers and gliders have been damaged and in some cases written off, but only one has been reported through the GFA SOAR system.

Why? I suspect this is because the incident didn't happen on the flight line or in flight.

A common request from the survey has been about making PowerPoint Presentations available on the GFA web site. To date, the answer has been no. Why? Because most of the slides currently used do not stand alone, they are focus points to promote discussion and only form part of the session. We are trying to avoid 'Death by PowerPoint' - no one enjoys those.

Some members have suggested filming and online streaming. These are new, rapidly emerging technologies. Being a bit old school and with a Human Factors hat on, I think that the networking benefits of bringing people together to share has benefits that cannot be qualified or

duplicated using online methods. Furthermore, apart from the lost networking opportunities, how can you participate in our Human Factors exercise online? That does not mean we will not explore TEDx style delivery in the future.

Once again, thanks to all the members who have provided feedback at the seminars, and to those planning to attend the upcoming seminars. Your opportunity is coming, and the takeaway message for everyone is that if you have an incident involving any aspect of your gliding, please submit a SOAR report. It may seem insignificant in isolation but may be a key to a bigger picture and it may save someone's life.

### CURRENT PROGRAM

**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.

**STUART FERGUSON**  
**NATIONAL SAFETY MANAGER**





## THE PSEUDO SEA BREEZE



ABOVE: The Pseudo below the cumulus.

BY COLIN VASSAROTTI

'Pseudo' applied to anything raises questions about quality and authenticity. But there is nothing fake about the brilliant soaring generated by the meeting and mixing of cool easterly maritime air flowing from the New South Wales south coast with the warm westerly wind over the Southern Tablelands.

World renowned and much-loved gliding meteorologist, the late Charles 'Wally' Wallington, observed the phenomenon near Cooma in southern New South Wales in the late 1960s. In his seminal book 'Meteorology for Glider Pilots' he wrote:

**The pseudo sea-breeze that moves over the high ground from the edge of the high ground is practically identical in character to a genuine sea-breeze front. It is almost as though the lowland plain were filled with water up to the level of the**

**plateau with the temperature of the surface of this imaginary sea being less than the ground-level temperature by three degrees C per 1000ft (one degree C per 100 m) height of the plateau above the lowland plain. Where a plateau or tableland borders on a coastal plain, as in eastern Australia, the pseudo sea-breeze effect is particularly likely when cold air from the sea or higher latitudes flows over the coastal plain.**

[Page 201 *Meteorology for Glider Pilots* third edition 1977 John Murray Publishers Ltd London UK]

### THE ESCARPMENT AND THE CONVERGENCE

The Far South Coast Escarpment lies about 40km east of Bunyan. With the coast a further 60km east, the topography is a perfect fit for the Wallington pseudo sea breeze geographical and terrain model.

Soaring the sea breeze is a regular privilege for pilots flying from Bunyan, the home airfield of the Canberra Gliding Club. The convergence provides useful and sometimes spectacular lift on many days from late spring to mid-autumn.

### THE COMPLETE PACKAGE: THERMALS, WAVE AND CONVERGENCE

On some days, the pseudo sea breeze looks and behaves just like a typical ordinary sea breeze. The cool maritime air appears initially as a staggered line of small scrappy isolated cumulus-like clouds. Gradually these form up into a loosely defined front. Pilots working the lift zone on the western face of these clouds can, with skill and patience, climb well above them. The photos taken by David Pietsch from his JS1 'Zulu Zulu' over Numeralla on 12 March 2018 are a good example of the appearance of this type of convergence.

At times, a remarkable variation arises when a relatively strong westerly air flow combines with good thermals over the high ground. The convergence still occurs but the cool maritime air does not push rapidly inland as it normally does in lighter winds. On these days, it is possible to soar east of the Far South Coast Escarpment in the air being pushed up by the intruding maritime air mass, and fly at cloud base several thousand feet higher than the cloud in the cooler sea breeze.

So, some lucky pilots occasionally start out in thermals, do a spot of wave soaring and then track east and soar the pseudo sea breeze. This happened on 2 March 2018 when Canberra pilots enjoyed excellent thermals to 10,000ft, weak wave lift over the Monaro valley and then climbs east of Numeralla to a 12,000ft cloud base. The tops of pseudo sea breeze cloud were well below at about 8,000ft stretching to the coast. I took photos from my LS1-f 'Echo Bravo'. John Thomson photographed wave cloud over Bunyan on the same day,

Flight in the convergence can be exhilarating and challenging. The first priority is to maintain good lookout for other pilots enjoying the experience. Keeping clear of cloud is vital but part of the fun. Good distances can be flown in the luxury of reliable lift at comfortable altitude along the updraft zone while tracking south to Nimmitabel and north to near Michelago. The view is magnificent - taking in the panorama of the escarpment, the view east



ABOVE: A hint of lenticular.

to the distant Pacific coast and west to the Snowy Mountains, the broad and beautifully patterned sweep of the Monaro valley and the cloud-layered skyscape. The photos give some idea of the beauty of it all.

### AND THERE IS ALWAYS THE RIDGE

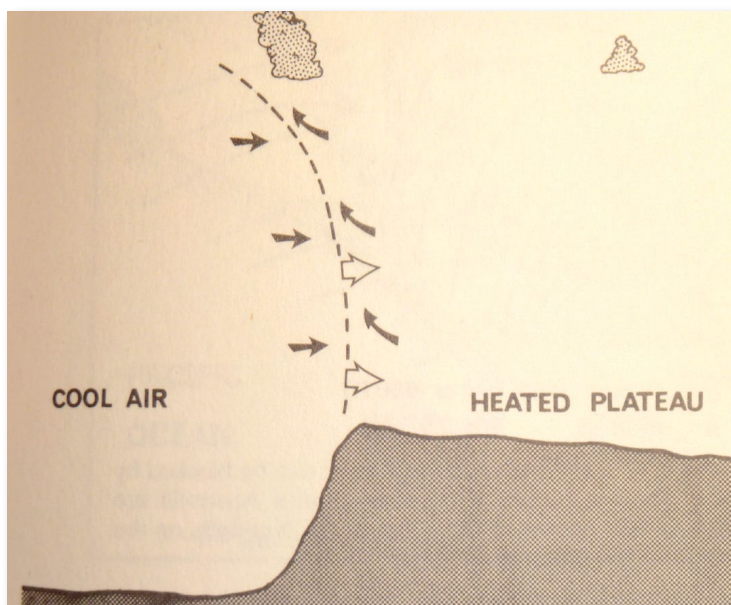
Of course, if you don't manage to contact the sea breeze, when the easterly comes in, there is still fun to be had soaring the ridges conveniently close to the airfield.

Ah ...The Weather Factory – how good it is!

BELOW: Pseudo Sea Breeze cloud is east and lower down, high base is cumulus above.



The Pseudo Sea Breeze Fig 16.16 *Meteorology for Glider Pilots*





# FLIGHT CHALLENGE CUP

BY ADAM WOOLLEY



I was fortunate enough to crew for the British Gliding Team at the 2010 Slovakian World Gliding Championships, Prievidza. Since then, it has been one of my dreams to fly here for myself. The Flight Challenge Cup, held from 8 to 19 April 2018, is known as one of the best organised competitions in the world and is also among the biggest.

This year, the Cup attracted 110 competitors, 47 in Club Class alone - that's one less than all the gliders flying at the recent Waikerie Nationals, across four classes. I flew a Cirrus 75, going back to my roots, and what fun it was, finishing in 5th place!

## SETTING GOALS

Considering that Prievidza is a somewhat mountainous site, and recalling my experiences

retrieving Jay Anderson from some exciting paddocks in 2010, I set myself an achievable goal. My aim was to fly safe, be professional, represent Australia proudly and return the glider to the owner in one piece. On Day 1, however, it was quickly evident that I could compete here at the top level and I was excited by the thought of what I could both achieve and learn.

The FCC was run in very early spring conditions, which is a very reliable time of the year - in fact, I flew 9 tasks in 41 hours, which is quite often more than what you can do at an Australian Nationals. Another primary reason for flying here was to be surrounded by high class racing pilots with a view to setting my learning level to a maximum. It was also to be the start of my European practice before the two World Championships that I'll fly this year.

## VARIABLE CONDITIONS

The flying was exciting and varied. Tasking varied from two-hour AATs up to a 500km racing task over a wide range of terrain - easy valleys, vast areas of unlandable ground over the Polish border and some huge snow capped mountains. We could add in airspace for some additional challenge. Like all such situations, though, prior preparations prevent poor performance, and also made conditions safer. Sebastian Kawa and Piotr Jarysz, coaching me in effect, often looked out for me with weather interpretations and areas of concern regarding the terrain. So - thank you, guys.

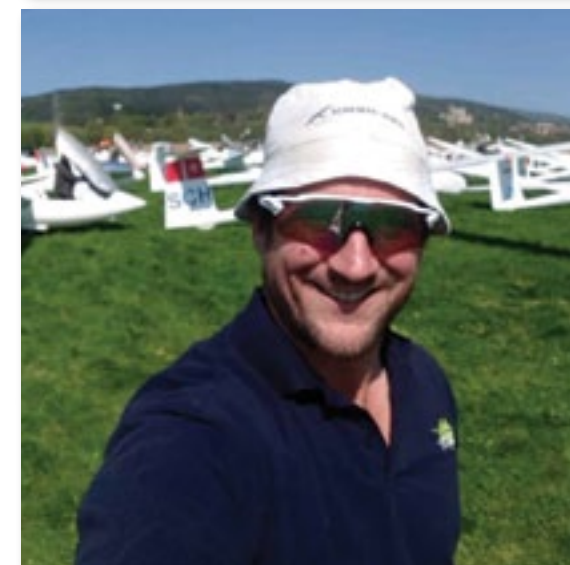
One of my more memorable flights was on the day that was eventually cancelled, as not enough people made it past 100km. The conditions were effectively blue, featuring thick high cirrus overhead with weak climbs. I left the flight as long as I could, as it was near impossible to climb to a safe height in order to depart. Once going, it was just slowly slowly, both in the climbs and with the terrain selection. I led the pack we were with to the north over some nice mountains, then finished the flight through the foothills with the eventual winner, Tim Milner. Climbing onto final glide and being one of only five finishers in 47 was a great feeling, though all for zero points!

## A CHANCE TO LEARN

Other highlights were racing at high speed up the slopes of the high mountains. It would've been so nice to stop and smell the roses, so to speak, or enjoy the hikers as we effortlessly passed by. Team flying with Tim and Sven Oliver was also great, a skill that is forbidden in Australia, but is allowed everywhere in Europe. Sharing the flight and success with unofficial team mates was super fun, and great for learning opportunities, too, both in the sky and for post-flight analysis, bar talk...

I learned so much from this competition. My knowledge of tactics and my own confidence grew immensely. My knowledge of wind, the sun, hills and mountains is far greater now, which I think will help me all over the globe. I highly recommend that you take your gliding to different site. It's also very rewarding and you have the chance to meet so many wonderful new people with the same passion as you.

My next competition is the 52nd Hahnweide in Germany, where I'll fly in 18m class against 43 others, a number of whom are current or past world champions. The total field size is 125!







# WGC TEAM AUSTRALIA 2018

BY TERRY CUBLEY

Getting into the Australian Gliding Team is quite simple really. You just need to place high - in the top three places is typical - at the National Championships for two years immediately prior to the world championships. Selection is based on your numerical results accumulated in those two Championships, so if you have more points than other aspiring participants you will be invited to represent Australia.

Once selected you now need to do some preparation - things like finding a glider to fly. For example, should you ship one to Europe, or hire one there? The pilots this year are paying \$6,000 to \$15,000 for four weeks' glider hire, or a little more for shipping their own glider. Finding a glider to hire is also difficult. It took a while for our pilots to find suitable Open Class and 20m 2-seat Class gliders.

Next, book your airfare and accommodation, hire or borrow a car with a towball and convince someone to come and crew for you. Get a licence to fly the glider you are hiring. A few of our pilots this year have managed to get a British licence - thanks to great help from the BGA office staff - which was then converted to a European EASA licence following a quick trip to New Zealand to find a doctor who can issue an EASA class 2 medical. The Australian one doesn't work.

Although the World Championships take place in the middle of winter, you need to somehow remain current with your flying. Three members of our team this year have been practicing in Europe, flying a number of championships in Czech Republic and Germany.

Those stuck in Australia due to work and family commitments all attended a squad coaching week at Kingaroy in early May and were able to share ideas on the best approach to the Championships, as well as flying in some fairly challenging and weak conditions. All have flown 200 hours or more in each of the last few years, and will also get a week of practice at the Championship site prior to the start of the competition.

## TIME AND MONEY

So, you need a good mix of time and money to support your desire to represent your country. The situation is the same with any sport, I guess. The estimate is that the pilots will be investing \$20,000 to \$30,000 for their participation this year. GFA members are providing some support for most of the pilots, with the International Teams Fund paying \$4,635 to each pilot - as well as providing a Team Uniform Shirt so that we all look the part.

The Standard Class and the 20m 2-seat Class team members are not receiving any funding at all due to International Team policy regarding selection and classes, so they have to self-fund all of their participation. Some crowd funding at Lake Keepit is helping the 20m team - thanks, folks.



## TEAM MEMBERS

The Australian Team for the Club, Standard and 15m World Championships in Poland comprises Allan Barnes (NSW) and Jim Crowhurst (Qld) who will fly Club Class. Matthew Scutter (SA) and Ray Stewart (Qld) will fly Standard Class, and Adam Woolley (Qld) will fly 15m Class. John Buchanan also qualified for 15m Class but decided to focus on the 18m World Championships and withdrew from 15m. This will be Jim and Ray's first world comps although both are experienced Nationals pilots. The Team members will arrive in Poland from 1 July and the comp runs from 8 to 21 July. You can watch tracking of each competition day via the website [www.wgc2018.pl](http://www.wgc2018.pl)

The Australian Team for the 18m, 20m 2 seat and Open Class in the Czech Republic (now officially called Czechia in English) has some names in common with the team listed above. Matthew Scutter and Allan Barnes will fly together in an Arcus in the 20m 2-seat class. Adam Woolley and John Buchanan (Qld) will compete in the 18m Class. Scott Percival (Vic) will be our only competitor in the Open Class, flying a Quintus.

All pilots have flown world championships previously and constitute quite a strong team. John and Scott will arrive in Czech Republic in mid-July, whereas the others will be travelling straight from the Polish World Championships and will arrive around 25 July. The comp runs from 28 July though to 11 August, and the web site can be found at [www.wgc2018.cz](http://www.wgc2018.cz).

## TEAM CAPTAIN

Team Captain for both World Championships is Terry Cubley. Terry is an experienced World Championships pilot and Championships Director (Gawler and Benalla) and International Steward and is keen to help the team members fly a successful event.

## CHANGE OF VENUE

The interesting news is that the Czech organisers have been having trouble with the owners of the airfield at Pribram, which originally was the nominated site. They have now thrown their hands in the air and moved the event to an airfield 100km south at Hosin, near to České Budejovice. This is a huge decision and one not taken lightly. Participants have been forced to cancel their accommodation at Pribram and find new accommodation at Hosin. I am sure the townspeople of Pribram won't be very happy about losing so much business.

The Australian team members have had no issues with this change and are all booked into their new location

## MEDIA

You will be able to see how the team prepares and progresses via the Australian Gliding Team Facebook page. Just google Australian Gliding Team Facebook. There will be regular reports and stories from these two great venues, and we welcome words of support and



ABOVE: The airfield at Hosin, Czechia, site of the 20m 2 Seat, 18m and Open Class WGC.

encouragement as the competition progresses. Whatever happens, you can be assured that the pilots will be doing all that is possible to represent you well.

## POLAND

[www.wgc2018.pl](http://www.wgc2018.pl)

### CLUB CLASS

ALLAN BARNES WORLD RANKING 98

JIM CROWHURST WORLD RANKING 177

### STANDARD CLASS

MATTHEW SCUTTER WORLD RANKING 35

RAY STEWART WORLD RANKING 395

### 15M

ADAM WOOLLEY WORLD RANKING 174

## CZECH REPUBLIC

[www.wgc2018.cz](http://www.wgc2018.cz)

### 20M 2 SEAT

MATTHEW SCUTTER

ALLAN BARNES

### 18M

ADAM WOOLLEY

JOHN BUCHANAN WORLD RANKING 149

### OPEN

SCOTT PERCIVAL WORLD RANKING 292

Australian Gliding Team  
[facebook.com/AusGlidingTeam](https://facebook.com/AusGlidingTeam)

## CURRENT WORLD CHAMPIONS CLUB - STANDARD - 15M

15M SEBASTIAN KAWA POLAND

CLUB JAN ROTHARDT GERMANY

STANDARD LOUIS BOUDERLIQUE FRANCE

## CURRENT WORLD CHAMPIONS 18M - 20M 2 SEAT - OPEN CLASSES

18M KILLIAN WALBROUILL FRANCE

OPEN CLASS RUSSELL CHEETHAM GREAT BRITAIN

20M 2 SEAT LAURENT ABOULIN / JULIEN DUBOC FRANCE





# RECORDS 2017-18 SEASON



Harry Medicott and Allan Barnes prepare to launch for their new speed Out and Return 500km record flight.

## 20M 2 SEATER CLASS ADDITIONS

The 20m records have only relatively recently been introduced, so there were a lot of gaps in the table of records that needed filling in! The first flight was with Ian in the Duo Discus. Ian was doing a week's coaching with me and on 13 December 2017, the weather looked good enough for a 500km triangle speed attempt, so we decided to give it a go. We set a task to Goondiwindi and Pilliga and managed to complete it in 4:25 for 118 kph. We considered filling in the paperwork but, since 118 is hardly blistering, when the forecast for the 15th looked just as good, we decided to have another go.

This time the weather suggested a run down to Coolah, then west to Coonamble - a place I hadn't used as a turnpoint before. Ian and I shared the flying. The task was far from straightforward. Aided by a high start, we flew southwest to Coolah, with bases around 11,000ft. As the forecast convergence line had already overdeveloped, the second leg was under massive shade until just short of Coonabarabran when, at a low-feeling 4,000ft, we hit the sunshine and the climb of the day, 12kts back to 11,000ft.

This one climb pretty much gave us the speed we needed. From there, it was a long glide in the blue to another overdeveloped convergence line, which gave us very little. Coonamble provided a weak climb, then it was back under the dead convergence toward the back of the Pilliga forest.

I knew at this point that if we didn't get another climb to base, we would have to start the engine, or attempt a massive detour around the forest. Fortunately we got our climb. At 11,000ft we always had glide out of the Pilliga, and good energy as well. I thought we might have been on final glide, but with the high start, we had to take another 2,000ft on the Carol Range, just short of home, to finish within the regulation 1,000m height loss. Our final speed was 125 kph and Ian was delighted.

The second record flight was with Harry Medicott, in his Arcus. Harry already has a couple of the 20m records and was eager to add to his collection. On 1 March, a good line of energy was forecast into the NW, but conditions were average elsewhere including at Keepit. We decided to have a go at the 500km out and return

record, but using a remote start so that the entire flight would be in the better conditions. This worked well, as we struggled away from Keepit 30km or so to Middlebrook airfield between Gunnedah and Tamworth. Another high start at about 12.30 and 7,000ft gave us the benefit of a higher true airspeed, but our first glide took us low and we had to satisfy ourselves with a 3kt climb, much too poor for the record speed required. At this stage we probably should have gone back for another start, but we persisted, and conditions gradually improved the further NW towards Collarembri we went. We turned at about 14.45 having picked up to 120kph, and conditions stayed pretty good on the homeward leg. We eventually crossed the finish line at 16:30, for a speed of 124kph. In hindsight, a later start would almost certainly have been better as conditions were still booming at the finish. Harry was reluctant

to put in a claim, as it didn't meet his personal minimum standard of 125kph, but he eventually relented with a bit of arm-twisting from Wendy!

ALLAN BARNES

## HARRY RACKS UP MORE RECORDS

Napoleon Bonaparte commented that every private carries in his backpack a field marshal's baton. I was inspired to take up gliding at the ripe age of 49 after reading of the world record flight by three New Zealand pilots from the South Island to the North Island of something over 1,200km.

We all need our private dreams of what we might achieve. Otherwise life would be pretty dull. Bearing in mind that I had no flying experience and that most people taking up gliding are considerably younger, my dream was to fly a flight of 1,000km, preferably in more than one class.

Well, perhaps surprisingly, I achieved my 1,000km FAI Diploma no. 166 in a 15m Ventus. Since then I have achieved 1,000km flights in Standard, 18m and several in Open Class. When Wendy and I obtained a 20m 2-seater Arcus, the aim was to achieve a 1,000km flight in it as well. So far, no joy. Wendy and I flew a 948 km triangle and with Allan Barnes flew 960 km in a goal attempt and about the same in an O/R flight.

Lately have been flying with Allan to give him more practice flying the Arcus as he and Matthew Scutter will be representing Australia in the World 20m titles later this year. We had a try at a 500km Out and Return flight on 1 March. Our starting point was Middlebrook Airfield about 20km south of Lake Keepit and the turning point was to the north. This course was chosen to allow us to follow the ranges for about 110km if conditions there were better than over the plains. Our first leg was rather slow, averaging 110 kph to the turn. The return flight was much better and we achieved a bit over 140 kph on this leg. The average of 124.83 kph was not very fast but was claimed to fill an empty place in the record list.

HARRY MEDICOTT

## TWO FEMININE RECORDS FROM KERRIE

While Jenny Ganderton and I were at Narromine last summer for the primary purpose of doing 1,000km flights,

## AUSTRALIAN RECORDS FLOWN IN AUSTRALIA

### 20M 2 SEATER CLASS

SPEED TRIANGULAR 500KM	ALLAN BARNES/ IAN VAN SCHALKWYK	15/12/17	DUO DISCUS	124.65KPH
SPEED OUT & RETURN 500KM	HARRY MEDLICOTT/ ALLAN BARNES	1/03/18	ARCUS M	124.83 KPH
SPEED OUT & RETURN 300KM	H. & W. MEDLICOTT	27/12/13	ARCUS M	136.35 KMH
SPEED TRIANGULAR 300KM	H. & W. MEDLICOTT	16/01/14	ARCUS M	140.77 KMH
FREE THREE TURN POINT DIST	H. & W. MEDLICOTT	16/01/16	ARCUS M	948.50 KM

### FEMININE 18M CLASS

SPEED OUT & RETURN 750 KM	KERRIE CLAFFEY	5/1/18	ASG 29-18	129.62 KPH
SPEED TRIANGULAR 750 KM	KERRIE CLAFFEY	6/1/18	ASG 29-18	120.21 KPH
FREE THREE TURN POINT DISTANCE	LISA TROTTER	20/12/13	LS8/15M	1036.01 KM
FREE TRIANGLE DISTANCE	LISA TROTTER	20/12/13	LS8/15M	1027.66 KM
THREE TURN POINT DISTANCE	LISA TROTTER	20/12/13	LS8/15M	1026.78 KM
TRIANGLE DISTANCE	LISA TROTTER	20/12/13	LS8/15M	1026.78 KM
SPEED OUT & RETURN 300 KM	LISA TROTTER	11/1/07	LS8	138.38 KM/H
SPEED OUT & RETURN 300 KM	LISA TROTTER	11/1/07	LS8	138.38 KM/H
SPEED OUT & RETURN 500 KM	JENNY THOMPSON	4/2/07	ASW 27	133.97 KM/H
SPEED TRIANGULAR 200 KM	LISA TROTTER	10/01/14	LS8/15M	132.01 KM/H
SPEED TRIANGULAR 300 KM	JENNY THOMPSON	26/11/12	ASW 27B	144.34 KM/H
SPEED TRIANGULAR 1000 KM	LISA TROTTER	20/12/13	LS8/15M	102.73 KM/H

## JAPANESE RECORDS FLOWN IN AUSTRALIA

### 18M CLASS

SPEED OUT & RETURN 1000 KM	MAKATO ICHIKAWA	23/12/17	VENTUS 2CXA	124.63 KPH
FREE OUT AND RETURN DIS	MAKATO ICHIKAWA	24/12/17	VENTUS 2CXA	1005.21 KM

on the days that were not up to 1,000km I thought I'd give the feminine 750km speed records a nudge. I'd set the original records in the Discus 15-plus years ago but they weren't automatically transferred to 18m Class and they were ridiculously slow so I figured it shouldn't be too hard to beat them in the '29.

On 5 January, the weather was good in a band to the north, so an Out and Return to the north seemed appropriate. The Narromine record database has a point '750NNE' near Burren Junction, making task setting easy. The '29 had been task ready since before Christmas, and the pilot is always slow but persistent. With Jenny in the '26 and Tom in the '28 I started at 12.30, climbing initially to 6,000ft but after an hour to about 8,000ft with a light westerly. With different aircraft (and pilot!) performance, we soon split up, but Tom and I both had (separate) slow spots over the western Pilliga where the clouds looked awesome - go figure!

After the turn, climbs gradually increased to 9,000ft and just a couple to 10,000ft with a light north-easterly. Then the decision - I considered the streets far left of track over the Pilliga proper but decided the good-looking individual clouds on track would be more efficient. Tom considered the direct cu's but decided the Pilliga streets were worth the detour. He was right (of course), overtaking and beating me home at 18.20. Note to self, take the detour!

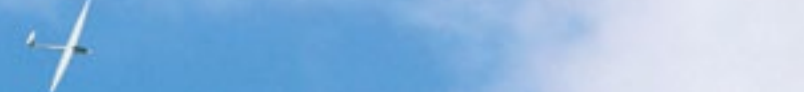
For the nerds: 35 thermals, 21% circling, avg climb 5.2 kts, avg glide 22.6 km, mean I/d 65, speed 129.04 kph

Next day, 6 January, after dropping Tom at Dubbo airport and with a strong northwesterly, another 750km seemed more feasible than a 1,000km attempt, so better make it a triangle this time. I'd had one up my sleeve for

Kerrie Claffey has two new Feminine records to add to the three 15m and four Standard class records she holds.







a while - Nrm-Wirrinya-Nymagee-Coonamble-Nrm - but my previous attempt had been too slow and I didn't want to claim anything less than 120kph. I started at 12.26, climbing to 7,000ft and quickly to 10,000ft – and shared a few climbs with William and Evelyn in the Duo.

Round Wirrinya, I kept climbing to 11,000ft and 12,000ft but battling the 10kt-plus headwind reduced my speed to just over 100kph. I didn't see the Duo again and learned later they'd aborted. Round Nymagee, I kept the height and with the wind less on the nose, the speed went up to 133kph. Round Coonamble, it all turned to worms - heights down to 9,000ft, 7,000ft, 6,000ft and wind up to 15kts more from the west now - speed disappearing out the window - I finally scraped in at 18.45.

For the nerds: 37 thermals, 27% circling, avg climb 4.8 kts, avg glide 21.4 km, mean l/d 52, speed 120 kph - phew!

KERRIE CLAFFEY

#### JAPANESE RECORDS FLOWN IN AUSTRALIA

I had flown many 1,000km flights over four continents in the past, but had not yet succeeded with a declared 1,000km Out and Return task. Long enough periods of good soaring weather are unusual without major complications and for this reason, I had found achieving this task much more difficult than completing an FAI triangle.

My 1,000km badge flight, for example, was an FAI triangle from Narromine in Jan 2009. I had flown Narromine to Tocumwal and back in Dec 1998 in a Discus 2b. Also, I once had to abandon a 1,000km Out and Return task flying northwest from Narromine in January 2010 in a V2cx after doing about 910km free out-and-return flying.

I also had to watch from home when Gerritt Kurstjens flew a 1,054km Out and Return distance record in Narromine in February 2015. On numerous occasions, I tried to declare Out and Return distances even in the days when FAI triangles were the way to go, but weather and/or terrain always blocked me.

Record flying was also much more difficult in the days when we did not have such accurate weather forecasts. Now, with better gliders and much better weather forecasting, we have far fewer excuses to fail.

For me, Saturday 23 December 2017 looked like it was shaping up with 1,000km Out and Return potential, with a trough system running N-S from Narromine with cumulus all the way to Queensland on SkySight forecast. To be ready for that Saturday, the first thing I did was to talk to my boss on Thursday morning to organise leave on Friday, one day ahead of our company's two-week Christmas closure.

I rigged Rodd's Ventus 2cxa on Friday, had my first flight and landed early to go to Dubbo to pick up my wife. She also wanted to try a major task on Saturday, so we had to prepare two gliders in the morning with one car, which left very little time to set a task.

We managed to grid one LS8 glider before briefing, and quickly organised a tow pilot and towed out the Ventus. We were running late, as usual, but managed to take off by 10.30am. By then, the cu was well developed, so it was a pure racing task from the beginning. I had to do better than 103kph to beat the existing record by Reiko in wave in Argentina. The first climb averaged 3.4kt to 4,500ft, second climb was 4kt to 6,000ft.



During take off, I immediately noticed I had problem with the under-carriage door. The noise was terrible. But knowing how rare the opportunity to fly a 1,000km Out and Return is, I decided to just go on the task rather than land and fix the problem. The noise was too loud above 90kts, so I had to cruise at speeds below that - otherwise I thought I would go deaf. But maybe this was not entirely a bad thing. At least it kept me high all day although it slowed me down by at least 10kph.

Fortunately, the wind was light. Interestingly, there were several air masses to cross and at one point I climbed above cloud base in a convergence and cruised for a while in a wave type of lift over the cloudbase. In general, however, this was a good cu day with lots of streeting but, as it was cycling, not always straightforward. Still, I managed to fly the task in 8:03:57 for 124.63kph. My Oudie IGC was warning me of a low battery for the last 30 minutes of the flight with 10% left, so I decided to land at 18.49, nearly 90 minutes before sunset.

Kerrie Claffey proved it was possible to fly until sunset, so the quality of the day was 1,150km-plus. The longest flight I have ever done at Narromine was 1,203km. Maybe it was a longer day than this day, which was late to start but very strong once it got going with very distinct, single, high-based cloud street highways.

So what next? I would like to do a 1,200km declared Out and Return in Australia to beat Reiko's 1,187km Out and Return record in wave. I definitely want to do 1,250km badge flight in eastern Australia where we normally fly, preferably finishing at my home airfield, but a long straight distance also interests me, like Chris and David. Hans-Werner did a 1,379km triangle from Alice Springs in the 1980s, so a 1,500km triangle must be possible in modern gliders in this area.

MAKOTO ICHIKAWA

**The full list of Records flown by Australians in Australia and Overseas can be found on the GFA website.** For continental records, go the IGC website where you can download a table of minimum performances, but beware this table may contain errors and may not be up to date. Be sure to cross check pending and ratified continental records in the Oceania region on the Records search page. For more information

and claims contact JENNY THOMPSON  
RECORDS OFFICER, GFA  
[fairecords@glidingaustralia.org](mailto:fairecords@glidingaustralia.org)

## DO YOU HAVE YOUR DIAMOND HEIGHT?

BY STUART FERGUSON



Most experienced glider pilots in Australia have successfully claimed two of the three flight requirements to claim their Diamond C but many retire from gliding without their treasured Diamond Height. Why? It's mainly because of lack of opportunity. Here in Australia, it can be done in thermal conditions but mostly they have been flown at one of Australia's three established wave soaring areas, The Sterlings in WA, The Grampians in Victoria and Bunyan in NSW. Some people go overseas, which would be a wonderful experience, but it is also expensive.

At Bunyan in NSW, approximately 15km north of Cooma, the site can experience mountain wave conditions year round, however, better and more reliable conditions occur during the winter months when the pre-cold frontal and post cold frontal activity that bring snow to the Australian snowfields also produces mountain wave conditions reasonably reliably. In fact, the late Geoff Vincent, who put a lot of work into promoting and managing The Grampians wave site, conceded that Bunyan was a more reliable site.

Each year the Canberra Gliding Club hosts the Bunyan Wave Camp during this core period and, in most years, members and visitors experience mountain wave. This year the camp is scheduled for the week 15 - 23 September, which is also during the spring off-peak NSW ski season. Skiing can be a great activity on non flying days.

Over the opening weekend of wave flying and flying, the Monaro briefings are conducted by Dave Pietsch. Dave's briefings are a must for those who haven't been to Bunyan before. The briefings covers topics from local airspace to managing high altitude physiology in flight, plus a few tips on where the best conditions many be found. A fair about of pre camp reading is available on the club's website [canberragliding.org](http://canberragliding.org) Go to the Mountain Wave tab.

In addition to the pre camp reading, the pilot and aircraft need to be prepared. The pilot must be crosscountry qualified and current. Every wave flight has to be planned as a cross country flight. We have had a glider, with an experienced crew at 17,000ft, outland just 12km from the airfield. While the wave itself is normally smooth, the rotor under it can be challenging at times. You may depart in reasonable conditions only to return during very challenging conditions.

If required, coaching and instruction in wave is available. Both the Canberra club two-seat aircraft have oxygen equipment suitable for flight to 25,000ft. If you bring your own or a club aircraft, it will need to be fitted with oxygen. It's rare to find people with loaner equipment.

You will need cold weather clothes, too. For the skiers, your best thermals work well with duck down outers that do not inhibit your movement in flight, plus light weight gloves. Ski gloves are too bulky to allow good aircraft feel. I'd also advise you to practice putting on the O2 mask on the ground, and then in the air. It may sound simple but in the cockpit with bulky clothing and other distractions, the simplest of tasks sometimes become complicated.

By now, I'm thinking that some of you are saying 'why?' It's because the rewards are worth it. The experience of taking a glider to altitudes that are normally the territory of airlines in silk smooth conditions and on a blue day with views stretching from Victoria to the NSW snow fields, the Sapphire Coast, Canberra and beyond in one snapshot view is for many a once in a lifetime experience. You also have bragging rights while everyone wants to know how you did it.

Are you ready for the Challenge?

RIGHT: Mac Ichikawa  
flew two new  
Japanese records.



## RESTORATION OF HALL CHEROKEE II VH-GNR



BY GRAEME MANIETTA

### RESTORATION OF HALL CHEROKEE II VH-GNR

I bought GNR, a 1962 build Hall Cherokee II from Mr Heath on 20 Oct 2013. It came complete with an enclosed trailer. The trailer was 1960s vintage and needed a lot of work to bring it back to good condition, I'm sure it had the original tyres! The glider was built by

Fletcher Smith in Melbourne in 1962. When we bought it, the wings and elevator were stripped of fabric so she was in poor condition but it was a great opportunity to do a good inspection and restoration of the wings.

First port of call was Bert Persson and Bernard 'Speedie' Gonsalves, and they very kindly gave up quite a bit of time to repair and recover the wings and elevator. The condition wasn't too bad and after a lot of preparation work the wings look absolutely brilliant. This work was done over a period of a year or so as Bert and Speedie are in high demand for the excellent quality work they do.

After this, the C of A and airworthiness work required was carried out by Laurie Simpkins at what I call the unofficial Queensland Vintage Gliding Museum. He has a lot of vintage gliders! After all the upgrades using lighter components, we achieved a lighter overall weight and better cockpit load. The paperwork took a while and all was good. In Feb 2018, it was off to Boonah where Stewart Hamish gave it its first flight in about 20



years. All was good, and it passed with a report that the glider flew very well. After a few more flights that day, all was ready for the Easter Vintage Gliding Rally at Warwick.

We want to display the aircraft at many rallies around Australia as time affords it and we are looking forward to meeting many other vintage glider owners.

### WARWICK VINTAGE GLIDER RALLY

The first vintage glider rally for Queensland was held over the 2018 Easter four-day break. The venue was the Warwick airfield, kindly hosted by the Warwick Gliding Club. We had three flights in NR in some challenging air, but the Cherokee performed well.

We were very warmly welcomed and plenty of hands helped with rigging and moving the gliders. Some were offered hangar space, which was very much appreciated.

Most gliders arrived on the Thursday and Friday. We stayed in a nice motel in Warwick, while others enjoyed the camping area and bunk house. The regular pilots had set courses to fly on the rally days, and morning briefings were held for the information of all pilots.

Vintage gliders in attendance were a Morelli M200 2 seater, a Slingsby Dart, BG12a, Foka 5, K6 and a Hall Cherokee II. All were flown quite a bit over the four days and a lot of interest was shown in these restored aircraft. We had visitors from as far as Mt Isa who came to see some of these aircraft again that they had seen as younger pilots. The long weekend was very much about socialising, comparing and appreciating the aircraft and learning about the early days of gliding.

Warwick flying conditions are GREAT once you gain altitude away from the strip. Taking off and landing can be a lot of work for a newbie to this airfield, like me, as it has conditions of turbulence that can be challenging.

Big thanks to Laurie Simpkins for arranging a top weekend trip. I hope to arrange more of these events at other fields in the future, so hopefully we'll get more gliders dusted off and out on show.

LEFT: Graeme Manetta with his Hall Cherokee II.

ABOVE AND BELOW: More scenes from the VGA Rally.







## WARKWORTH EASTER VINTAGE RALLY 2018



BY PETER RAPHAEL

The Hunter Valley Gliding Club, situated at Warkworth in the Northern Hunter Valley region of New South Wales, has hosted the Easter Vintage Glider Rally. Nestled among the open cut coalmines of the valley, and at the northern end of the mountainous Wollemi National Park, the region affords very diverse landscape to fly over. It provided those with a reasonable L/D and a little added courage the opportunities open up to explore even further afield. This year we were also gifted with four days of reasonable weather with cumulus cloud and while convection heights limited the scope of cross-country activity, many good and long flights were had.

As is usual, this vibrant club turned on an excellent show, providing tasty evening meals for the main days

with the highlight of a Trivia night hosted by club CFI, Paul Dickson. This was designed to test the historical aviation knowledge of those present. Of course, there were unsubstantiated rumours of some subversive 'googling' among some less ethical teams! However, both winning and losing teams were treated to rewards for their efforts. Of course, the Hunter Valley is also known for its wineries and I suspect that this fact played no small part in the poorer performance of some teams!

This year's highlights included the presence of the ES56 Schneider Nymph prototype with its beautiful translucent Oratex covering and a recently refurbished Hall Cherokee II GLU, resplendent in its original 1960s livery. Two K7s, Ka6cr, K6e, SF27m and Pilatus B4 rounded out an eclectic selection of vintage gliders and provided a colourful distraction among the club's usual active fleet of white fibreglass.

With two Pawnees towing, little time was lost in launching the gridded gliders, and on one of the days, 42 launches were achieved in what is believed to be a record for the club.

The presence and enthusiasm for these older gliders is not lost on the unconverted and several club pilots took the opportunity to experience vintage flight, some even going as far as enquiring about available aircraft. Circumstances and a conflicting event this year conspired against a bigger attendance at the rally, but all those attending agreed it was a well organised and friendly event and well worth coming back for next year.



## YOUR MOST IMPORTANT SOARING INSTRUMENT? YOUR EYES

BY DAVID M WILSON

The most important soaring instrument in your cockpit is not a variometer or a final glide computer. It is your eyes! Yes, you do need your eyes to read the instruments. However, our eyes are far more important than that.

A soaring pilot needs to see wedge-tailed eagles, willy willy cores, wisps of newly forming cumulus clouds and other gliders marking thermals, and pick out ground features marking potential sources of thermals. These essential clues are often the difference between an outlanding and getting home, or between just competing in a race and getting home first. You need to see those things from several kilometres away if you are to adjust your flight path to meet them.

If you are near the ground, you need keen eyesight to read the features of potential landing paddocks, find potential hazards such as single wire earth return power lines, rocks, stumps, star pickets, tall crops, slopes and gullies. You also need to be able to see these details from about 1km away.

All pilots, even those with an engine to sustain their flights, need their eyes to work overtime to maintain a good lookout to avoid mid-air collisions. Fortunately, we are blessed with two eyes, both connected to a powerful multi-tasking computer with excellent built-in image processing capability.

It is likely, although I am not aware of any study to prove it, that the eyesight of soaring pilots is much better than the average eyesight of the population as a whole, because those with poor eyesight will gravitate to sports where the deficiencies in their eyesight are less significant. However, I am sure that even among our ranks, not all of us have perfect vision.

### HOW THE EYE WORKS

Today, we have developed a close approximation to the eye in the modern digital camera. The eye, or at least the computer behind it, even has high-powered features seen only on expensive cameras, such as digital anti shake imaging, auto focusing, and auto exposure control. The eyeball is roughly spherical, and normally about 23mm diameter. A group of muscles called the orbital muscles is capable of pointing the eyeball's axis in different directions. The brain automatically directs the muscles of the two eyes so that both eyes point to the same object at once.

### RETINA

The light sensing part of the eye is called the retina, which covers the back and wraps around the sides of the eyeball, unlike the light sensing part of the camera, which is only on a plane at the back. The wrap-around



design of the retina gives the eye a very wide angle of view, so that even when you are looking straight ahead, the eye can still sense movement and shapes out to the side 90° from where you look.

In the vertical plane, the eye has wide-angle vision below to about 80°, but upwards only to about 45° above the direction the eye is pointing. If you wear a baseball cap, the upward vision will be dramatically reduced.

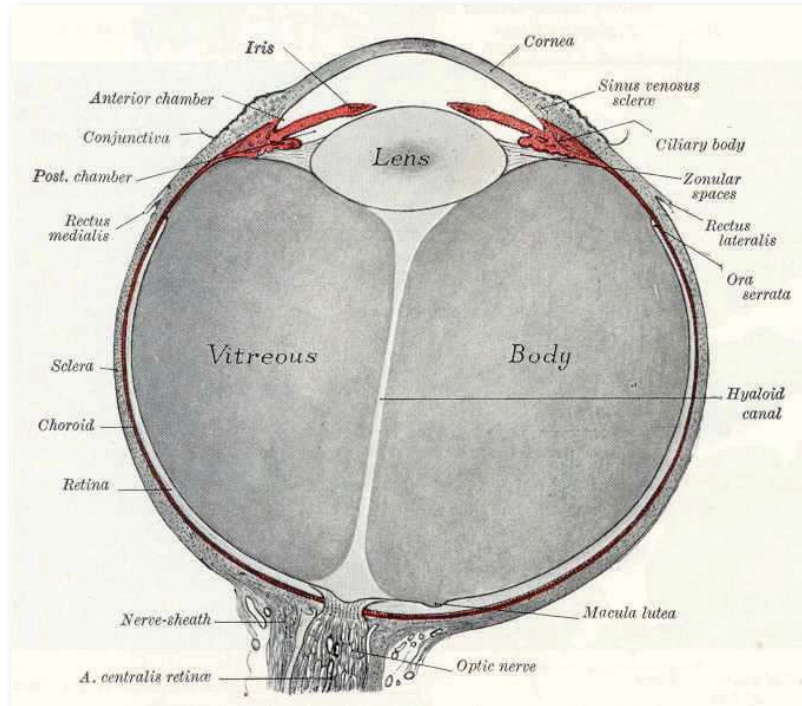
Two different kinds of cells in the retina react to light. The rods react to relatively low light intensity, but do not detect colour. The cones, on the other hand, can differentiate between different colours but need a higher light intensity.

On the axis of the eyeball at the back is a small region called the macula lutea. In camera terms, this region has a very high number of pixels per square millimetre, and about 20% of the optic nerve fibres terminate in this small region. In the centre of this region is an even smaller area called the fovea, which contains very tightly spaced cones and almost no rods. In that area, each light-sensing cell is connected to one nerve.

The fovea is only about 1.5mm in diameter. This is the part of the retina on which your eyes will focus best on the image of what you are looking directly at. In that region, you should be able to resolve fine details such as reading fine print, or detecting what sort of crop is in the paddock below. The visual field accessed in fine detail is only about 2m wide! For the rest of the retina, there are both rods and cones, and each nerve fibre branches to integrate the signals from a number of adjacent cells, so that the resolution power is much lower.

continued over page





## OPTIC NERVE AND ARTERIES AFFECTING THE IMAGE

The optic nerve pierces the retina in a spot about 6mm across, a little to the nose side of the macula lutea. In this region there are no light sensing cells so that, using only the right eye, there is a blind spot in the field of view at about 15° to the right of straight ahead. This blind spot is quite large enough to hide an oncoming glider or power plane when scanning with one eye. For the left eye, the blind spot is about 15° to the left of straight ahead.

Fortunately, the blind spots in our eyes do not overlap. The brain's image processing software seamlessly merges the images seen by the two eyes, so that normally all areas in the field of view are covered by light detecting cells in one eye or the other.

## BODY OF THE EYE

The body of the eye consists of a transparent jelly like substance with a refractive index not very different from water. The space between the lens and the cornea is filled with a transparent fluid.

object is achieved by moving the lens closer or further from the film plane, in the eye, focusing is achieved by varying the shape of the lens.

In a perfect eye, totally relaxed, the combination of the curvature of the cornea and the natural shape of the lens suspended inside will focus a distant object onto the retina in the region of the macula lutea. An eye with perfect focus on the retina when relaxed is called emmetropic.

The lens consists of transparent fibrous tissue, with a different refractive index to the liquid in front and the jelly-like substance behind. The lens is suspended by a great number of fine fibres called the ciliary fibres, which are normally in tension so that they hold the lens precisely in position, and also hold the lens in a stretched out or flattened state. The lens has natural elasticity, and the curvature of the front and back surfaces changes if the ciliary muscle operates.

Contraction of the ciliary muscle compresses the ring of fibrous material holding the outer end of the ciliary fibres, reducing the tension in those fibres and allowing the lens to adopt a more rounded shape. This is the way the eye focuses on near objects, such as when reading. In a very young person, the accommodating power available is about 10 dioptres, so that an emmetropic eye can focus on an object as close as about 100mm from the nose.

As people get older, the lens becomes less elastic, so that by the age of about 45 to 55 years, most people with normal eyes cannot focus objects closer than the length of their arms, and they find they need glasses for reading.

Focusing is almost automatic, although one can voluntarily contract the ciliary muscles with a bit of practice.

## EXPOSURE CONTROL

In a camera, the exposure is controlled by a combination of the size of the aperture and the length of time the shutter is opened. The aperture is formed by a diaphragm that can change the diameter of a small hole through which the light must pass. In bright light conditions, photographers can use a smaller aperture, which results in a greater latitude in the focusing - more depth of focus.

An eye cannot adjust the exposure time, although we can blink if the light is too bright. The eye's aperture is the pupil, the black hole in the centre of the iris. The iris is the coloured part of the eye, and is an opaque diaphragm of contractile tissue. In bright light, the muscle fibres of the iris contract, reducing the pupil to a minimum of about 2mm diameter, equivalent to about f/16. In very dull light, the iris relaxes and allows the pupil to expand up to about 6mm diameter, equivalent to about f/5).

Adjustment of the size of the pupil is automatic and involuntary. Note that the iris will automatically compensate for very dark sunglasses by opening to let more light through. Since a larger aperture inhibits the eye's ability to focus, dark sunglasses have a detrimental effect on vision. This is particularly true for those persons with defects in their lens systems.

This is not to say we should avoid wearing sunglasses all together when flying. Properly chosen sunglasses eliminate glare, which is mostly polarized light, and filter out the blue light reflected by dust particles in the air, allowing light with longer wave lengths from more distant objects to be perceived. Most important, glasses protect the cornea and lens of the eye from the effects of ultra-

violet light, known to be a cause of cataracts. However, avoid using very dark sunglasses, or those with a partially reflective mirror coating, which merely open the pupil and degrade your vision.

## IMAGE PROCESSING

The way in which the brain can merge the images from the two eyes has already been mentioned. The brain automatically detects if the image is not focused on the retinal plane, and will adjust the ciliary muscles to achieve the sharpest image possible in the fovea. Furthermore, the brain has image enhancing software better than our most powerful computers. Provided that the brain sees something, it will try to improve the image. Amongst other techniques, it will compare adjacent frames taken of the same thing, and fill in the blurs. If you watch some one reading a book, you can observe that the eye moves in a series of little jumps, pointing first at one point until the brain has absorbed the words that fall within the fovea, then moving very quickly to a new point to take in the next group of words. The eyes are used in this way for all sight, including scanning the sky. During the period while the eyes are actually moving, the brain switches off the image reception in the macula lutea region, though not in the remaining peripheral vision. It is as if the brain takes a series of still shots, perhaps a bit like the conventional movie camera that takes 24 frames a second. You cannot see things when scanning if you sweep your eyes over the area without pausing.

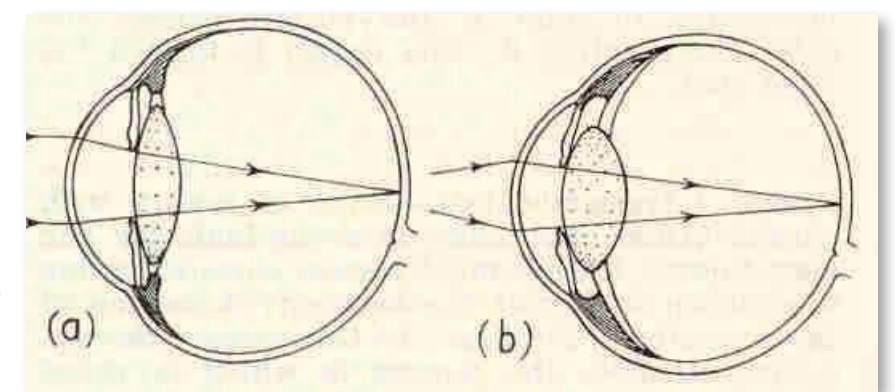
During the periods while the eye is stationary, and processing is occurring, the brain is programmed to detect any movement. Anything that moves relative to the rest of the picture, or changes brightness is detected, - in the whole field of view, not just in the small region covered by the fovea - and the brain will probably choose to direct the eyes at the point where movement was detected for the next frame, so as to see the detail. Objects that do not move relative to the background are quite likely to be missed, so if you are on a collision course with another aircraft, and both of you are moving in a straight line, you are likely to miss seeing it. Similarly, you are more likely to spot a circling glider when the sun glints on the wings than you are to see one which is flying straight. Scanning while circling, when your course is not a straight line, is much more likely to detect other objects in the sky. Even so, you will not see every object every time you look. Fortunately, the brain is a multitasking computer, and we can learn to build in our head a 3D picture of where the other object(s) are, and compute where they are likely to be next time you look for them. This skill is not one of the built-in programs in the computer's system like the programs for vision.

## DEFECTS OF THE EYE

There are four common refractile defects, from minor to major, that can be corrected by wearing prescription glasses. The major defects usually result in the person affected seeking help and getting glasses.

## PRESBYOPIA

Presbyopia is the loss of accommodating power that develops with age, so that you need glasses for reading. It



ABOVE: The Eye relaxed (a) and focusing on a close object (b)

is also sometimes incorrectly called long sightedness, which is described below. Most elderly people end up with glasses for this defect. If you cannot read the map in the cockpit or see the instruments, but have perfect distant vision, you would need either bi-focal or multifocal glasses in which the bottom section of the glasses lens has a magnifying effect, while the top part of the glasses is plain for looking at objects far away. For flying, we need to remember that such glasses reduce the amount of sky that one processes at each frame of the scan, since light coming through the reading part of the glasses will be out of focus. I have had glasses specially made with only a small section magnifying rather than the usual standard of 50% of the lens area.

## SHORT SIGHT AND LONG SIGHT

These conditions involve the lens not focusing properly on the retina when the ciliary muscles are relaxed. About 25% of the population have one of these defects sufficiently severely that an optometrist would prescribe glasses for normal living. About another 40% have less severe defects that do not affect normal living, but would affect safety and soaring ability in pilots. These defects can be present from birth and become more common with age.

## SHORTSIGHTEDNESS OR MYOPIA

In a myopic eye, light rays from a distant object focus in front of the retinal plane instead of on its surface, when the eye muscles are at rest. Contracting the ciliary muscles moves the image even further away from the retina, so that for such people, distant objects are nearly always blurred. Myopic eyes can focus on close objects.

Experienced photographers will know that a camera has a 'depth of field'. An object being photographed will not come out blurred in the photo if it is within a given range of distances, either in front of or behind the nominal point on which the lens is focused. The depth of field depends on the size of the aperture, or f-stop.

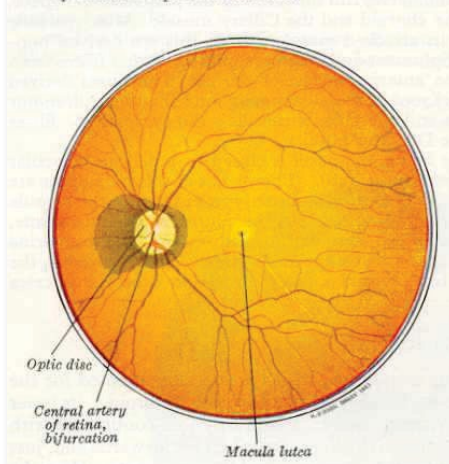
In a bright light equal to f/16, when focused on a 5m distance, all objects from 2.5m to infinity will be in acceptable focus. In a duller light of f/8, the depth of field might be reduced so that only objects between 4m to 10m are acceptably clear. When a person with only mild myopia is in broad daylight, so that their pupils are contracted to a small aperture, this depth of field may be enough that distant objects will not be blurred, even though their eyes focus on 5m distance when the ciliary muscle is totally relaxed. Putting on dark glasses without optical correction will blur the distant objects for these persons. Shortsightedness is corrected by fitting a concave lens of the required power in front of the eye.

continued over page

ABOVE: The eye in horizontal cross-section Gray's anatomy

BELOW: Optic Nerve and arteries affecting the image. Gray's anatomy

FIG. 1020.—The macula lutea, the optic disc and the retinal blood-vessels of the left eye as seen on ophthalmoscopic examination.

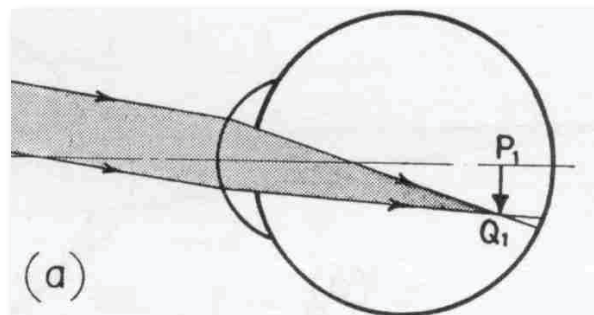


## THE LENS

The lens shown in the diagram is actually only a part of the lens system of the eye, since most of the refraction of light occurs at the front spherical surface of the cornea.

The lens in the eye would, on its own, have a focal length far longer than the 23 mm required to focus distant objects on the retina. Whereas in a camera the accommodation of different distances of the





### LONG-SIGHTEDNESS OR HYPERMETROPIA

In a hypermetropic eye with the ciliary muscles relaxed, the image forms behind the retinal plane. In this case, tensing the ciliary muscles slightly will provide a correction, so that such a person can focus on distant objects by using up some of their accommodating power. The depth of field can also help persons with hypermetropic eyes in bright light.

An optometrist would not normally prescribe glasses for hypermetropic eyes unless the condition was severe, since a person can live a normal life using their accommodating power to correct for the defect. They might prescribe glasses for reading only. As such persons get older, their accommodating power is reduced, and they need glasses for reading sooner than those with emmetropic eyes or myopic eyes.

When you scan the blue sky, there is nothing in the background on which the eye can focus, so it will automatically relax. Hypermetropic eyes can easily miss objects while scanning above the horizon because the eye has relaxed and the distant objects are blurred to the extent that wedge-tailed eagles, other gliders and powered planes in the distance are not detected.

Some people have advocated that you can fix this by looking at something on the ground first, and then doing the scan. This is unlikely to work because the relaxation of the eye when one looks at the blank sky is automatic and rapid. Obtaining convex glasses with the appropriate power is the correct way to overcome this deficiency.

### ASTIGMATISM

The fourth type of defect of the lens system causing blurred vision is not able to be improved by movement of the ciliary muscles. In a perfect eye, the surface of the cornea and the front and back surfaces of the lens are all spherical – at least in the area used to focus on the macula lutea. In an astigmatic eye, one or more of the surfaces is not spherical, usually having a different radius of curvature in the horizontal section compared with the vertical, or possibly at some angle to those directions.

For such a person, the light refracted from the sides of the eye will focus on a different plane to the light, impinging on the eye above and below the centre. Everything appears blurred, at all distances, although if such a person looks at a diagram with radial lines, lines in one direction may appear sharp. To correct for this defect with glasses, the glasses need to be non-spherical, and shaped specifically to correct the defect in the eyes lens system.

### EYE TESTS

Standard eye tests involving reading a chart on the wall of the doctor's office from about 2m away do not test whether the eyes are focused on infinity when resting. A mildly shortsighted person would be able to read the chart at that distance. A person with hypermetropia would be able to focus on the chart by use of their ciliary muscles.

An optometrist will test the eye by putting test lenses of different power in front of the eye while the subject is looking at a distant chart. By shining a light into the lens while the eye is relaxed, and observing the light reflected off the retina, they can determine whether the eye is myopic or hypermetropic. The optometrist can put drops in the eye, causing the eye muscles, both the ciliary muscles and the muscles of the iris, to relax. This is of great help to properly identify hypermetropia.

Normally an optometrist or ophthalmologist would pass as normal eyes which are mildly hypermetropic, but with sufficient accommodating power for the person to live a normal life. You need to tell the person testing your eyes that you are a pilot and ask them to take extra care in measuring your eyesight and, if necessary, prescribe lenses to achieve emmetropic corrected eyesight. Unless the tester is briefed, it is likely that the focus of the testing will be on ensuring ability to read.

### DISEASES OF THE EYE AFFECTING VISION

Space does not permit much discussion on diseases of the eye, and I do not claim any expertise. However some diseases cause effects that should be mentioned.

### OPACITY OF THE LENS - CATARACTS

If the lens loses its normally transparency, the result is blindness. This usually affects the elderly, and is known to be aggravated by smoking. Damage to the lens is also caused by prolonged exposure to ultraviolet radiation. In cases of partial opacity, the effect is a bit like looking through a pair of glasses that are very dirty or spotty.

### RETINAL BLIND SPOTS FROM BURNS

It is possible to damage a spot on the fovea by looking at very bright object like the sun. This can cause a permanent scar on a small spot on the fovea, and if you used both eyes, both would be scarred so that the brain's image processor could not overcome the blind spot. The result would be a small spot that annoyingly obscurs the point you were looking at. In time the brain may learn to compensate by pointing the eyes so that a different part of the fovea becomes the central spot.

### MACULAR DEGENERATION

Macular degeneration is a term used to describe a condition where the whole area of the macula lutea loses its ability to see, while the rest of the retina continues to function. The eyes lose their ability to see fine details, and vision appears to have a black area over the central area of the field of view. The causes of macular degeneration are not fully understood, but one known cause is diabetes. Once again, smoking and old age are definitely things to avoid.

### RETINAL DETACHMENT

Part of the retina of an eye can become detached from the layers beneath it, so that connection between the light detecting cells and the nerves is lost. This results in a blind area in the field of view of that eye. The size and location of the blind patch depends on the size of the detached retinal area. It may affect the central macula lutea, or only part of the peripheral vision. The condition can occur spontaneously, or may be induced by trauma such as a blow to the head.

### GLAUCOMA

Glaucoma is a build up of internal pressure in the fluids of the eye. The pressure does not cause immediate loss of vision, but the pressure damages the cells in the retina and if untreated, permanent loss of all vision will eventually occur. Ophthalmologists and optometrists will look for these diseases during any eye examination.

### CAN YOU TEST YOUR OWN EYES?

It is quite instructive to get together a group of your friends in bright daylight on a straight stretch of road.

## FLOATERS

On first glance, this article might appear to be about those pilots or gliders able to remain aloft in even the lightest of conditions. It's actually about a health aspect that can interfere with our all-important vision when flying. Eye floaters are those strangely shaped, dark spots, specks or strings that may randomly appear and remain in our vision. They are most noticeable when looking at a light background. While regularly scanning the sky during a flight, we are often searching for other aircraft against a lighter coloured sky, which makes eye floaters most noticeable and most distracting. After all, we are looking for specks in the sky to assess any potential collision hazard. However, eye floaters are most commonly found in our peripheral vision, which is also the most useful part of our vision in identifying movement as we scan.

### INSIDE EYES

As we age, the jelly-like substance that fills our eyeballs, called the vitreous, tends to lose its viscosity and becomes more watery. Tiny fibres within the jelly can stick together and cast a shadow on the retina, the light sensitive lining at the back of our eye. We see these as floaters that follow our eye movements, sometimes with a slight lag.

At 62 years of age, I have been aware of the occasional eye floater in my eyesight over the years and most have eventually disappeared. More recently I noticed a sudden rise in the number of them and also the occasional white flash. The white flashes mainly occurred of an evening and can best be described as appearing like a shooting star.

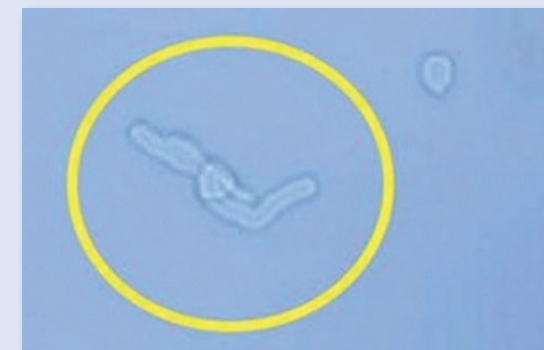
On conferring with that well know medical specialist Dr Google, the advice was that any sudden increase in the occurrence of eye floaters and especially when they are accompanied with white flashes, should be investigated by a medical practitioner as soon as possible. Such symptoms can indicate eye damage primarily relating to the vitreous pulling away from and tearing the retina, or even causing the retina to become detached from its correct position. Serious stuff!

Choose some distant sign like a street name or number-plate on a parked car, too far away to read clearly at that distance, and all walk towards the sign, each person stopping when they can clearly read the writing. You will be surprised by the differences in the ability of people to see distant objects clearly. Such a test will not detect the condition of mild or moderate hypermetropia, but will show quite a lot of people that their vision could be improved.

### CONCLUSION

Your eyes are critical for your safety when flying, and you depend on them to pick up the visual clues to help find thermals to stay airborne, to avoid mid-air collisions, and to choose a safe place to land when the thermals stop. Knowing how the eyes work and understanding the brain's image processing program should help you improve your ability to scan the sky and see critical things. My main message is to get your eyes tested and use glasses for flying if your eyes do not focus on infinity when at rest.

GA

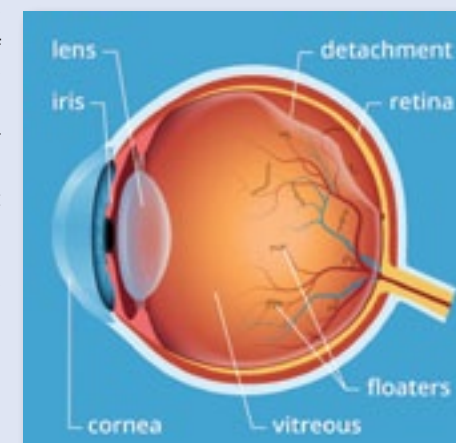


### CHECKING IT OUT

An appointment with my ophthalmologist fortunately showed no eye damage, however, he did point out that it is essential to seek treatment as soon as possible, because any damage mainly occurs during the first two weeks of the appearance of the symptoms. At a follow up appointment with my optometrist shortly afterwards I learned that optometrists can just as capably asses the health of our eyes and their services are usually free through Medicare bulk billing.

Eye floaters are something that most of us will experience during our lives and although generally harmless, they can impact on the effectiveness of our scanning. With time, they become less noticeable and distracting and their peculiar movements make them easier to distinguish from other aircraft during scanning. Regular eye health check ups are free and don't take long. If you notice any sudden change in your eyesight, get it checked out the first chance you have.

LAURIE HOFFMAN





## SO, YOU WANT TO BE CTO/A ? PART 6

*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.*



When GFA came into being in 1949, the sailplane fleet had a very high level of home built content, including kit-built, plans-built and locally designed and built. That situation has gradually changed until in 2018, we have possibly only one or two ongoing, home building projects. That is a reflection of society and it will not change anytime soon. What we lose are the skills and knowledge that can be acquired and, most important, the feeling of pride and satisfaction when that handcrafted bird first takes to the air. The therapeutic value of home building cannot be underestimated.

As a teenager, I had helped a builder finish a Cherokee home-built. When he reached the fabric covering stage, he could not afford aircraft-grade linen fabric, so he bought a roll of light green shirting material. With red acetate dope, salvaged from WW2 disposals, the covering was completed - you would never have known the difference!

### LEARN?

You're never too old to learn. During my term as CTO/A, I completed the construction and flight testing

of VH GYG, a BG12B built from a kit produced by Gus Breigleb in the USA. A number of BG12As had been built in Australia, all overweight and all dubbed 'Lead Sleds' due to their noticeable high approach speeds and long landing distances. That intrigued me because the 70-odd degree landing flaps should have provided just the opposite effect - no dive brakes.

I fitted GYG with a trailing drogue and measured the Position Error of the airspeed indicating system, both with flaps up and at varying down settings, to full down. This was an exercise I had completed on a number of powered aircraft but not a sailplane.

The results had me sucking my pencil. The static ports were in the sides of the fuselage close to the nose and the test results showed that as the flap came down, the air pressure at the static ports changed dramatically. This meant adopting a totally different procedure during landing to maintain a constant, true airspeed on approach.

So - turn final, speed 50kts indicated, as the flap came down reduce the IAS to 48, 46, 44 possibly 42 with full down flap - all the time the TRUE airspeed

remained at 50kts. The BG12B simply walked onto the ground, nice and slow with a short ground roll.

Up to 1981, CASA stage-inspected all GFA home building projects and issued Permits to Fly, but that changed when the delegation was passed to GFA.

### PERMIT

I watched the Monerai single-seat self-launcher lift off the runway, heading away from me and climbing to around 300ft, and slowly turn left.

My mind went back to why I was there. The Monerai, all metal, built from an imported kit, had been stage inspected by CASA. The two builders then requested a final inspection and a Permit to Fly from GFA. This was the first project to be processed by GFA under the new delegation. I did the final inspection for them, finding it to be very well-built with only a small list of minor things to do. We agreed that if they completed the list, I would meet them at the airfield and hand a permit over so that test flying could get underway. On the agreed day, on my arrival at the airfield, I was surprised to see quite an event underway with a large number of people and picnic tables - it wasn't the way I was used to conducting flight test programs.

The Monerai continued going left, then turned left again on to what should have been a downwind leg, eventually turning onto the base leg, then final. "He must have a problem and is coming back," I thought. But no, the pilot had elected to do a fast, full power, low-level beat up of the crowd.

The glider climbed away and repeated the low level circuit process, turning again onto final. The pilot elected to land this time. Because the Monerai only has flaps for landing, and this final was the first time the pilot had ever handled the flaps, the approach was all over the place, ending up in a round out perhaps 2m too high. The glider stalled, mushing into the ground with such force that both wing tips flexed down, touching the grass. The main wheel and adjacent area were damaged.

Nevertheless, as the aircraft rolled to a stop, a cheer rang out and numerous people ran over to congratulate the pilot. I waited for a while until the crowd cleared, then walked over as the pilot was unstrapping. He said, "Can you please give me the Permit to Fly? It is in the side pocket."

The pilot handed me the document, which I tore into small pieces, and walked away, heading back to the office. We were not off to a good start.

### LEGAL LIABILITY

Several years after the first Monerai flight, I met with the designer and kit manufacturer in the USA. The meeting was several days before he was due in court to face civil

charges over the death of a Monerai builder. It was charged that he had omitted an instruction on one of the assembly drawings, which caused the airframe to fail in flight, killing the builder. The family was seeking damages based on his 'negligence'. The court found in the family's favour for \$10,000,000, which sent him bankrupt and the business closed.

The instruction he had omitted from the drawing was, 'The leading edge skins must be glued to the top and bottom of the main spar.' What he said to me was, "Anyone building an aircraft should have automatically known that had to be done."

### BURN IT

An RTO/A contacted me, concerned about a home building project he had been asked to inspect. The builder was well into his eighties with significant health issues following a stroke. The quality of his work was highly questionable. The RTO/A did not want to do or say anything without the help of a second opinion.

Some weeks later I met the RTO/A and by arrangement had a look at the project with both the builder and his son. The project was a French AV-222 two-seat self-launching sailplane, built from plans and intended to be fitted with a Limbach or similar engine.

The quality of the timber construction was bad, very bad. Discussing the project with the builder's son it was very clear that the project gave his father reason to get out of bed every morning and spend most of his time in the workshop. Without that he would have nothing to do, mentally or physically.

The three of us came to an agreement. Firstly, as it was, it could never fly. Secondly, in the event of the builder passing away, the airframe was to be disposed of, preferably burnt.

The RTO/A and I did a thorough inspection raising a significant list of items to be attended to, at the same time not making any criticism at all of the work quality. We complimented him where possible.

OPPOSITE: The points in the original Woodstock airframe considered to lack stiffness, leaving the sailplane open to flutter events.

BELOW: AV-222, similar to the sailplane that was being built in South Australia.

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The rectification list gave the builder more work to do, which was the purpose of the exercise. The builder continued working on the project until he finally left on that long final glide, hopefully happy with what he had achieved.

### TWISTED

When the American-designed Woodstock sailplane became available for home construction it created a lot of interest. The first one to be built in Australia was started by a very skilled member of the Lake Keepit Club - all timber, classic construction, small, light, a bit of a throwback to the days of Grunau and Kingfishers. The project progressed up to the final inspection and weighing stages. I offered to carry out the inspection for the builder at Keepit and if all was well, issue a Permit to Fly. The builder also requested that I might consider doing the first few test flights.

We met at Keepit and after a good inspection with nothing to fix we started the weighing process. The weighing scales were in the boot of my car so I left the builder to set up the tail on a stand, while I went to get them. As I walked passed the nose of the Woody as the builder lifted the tail up, out of the corner of my eye I saw the fuselage twist, just behind the wing.

### WHOA! SOMETHING WAS NOT RIGHT

Inspection showed a significant lack of stiffness in the fuselage in the first bay aft of the wing trailing edge. Checking the drawings, the structure was correct to the drawings, but it was obvious that stiffening material was needed. The builder had glue and Spruce with him, so stiffening was added and cured overnight, allowing test flying to start, as planned, the following day.

The aerotow went to 5,000ft in lovely, early morning conditions with the lake full, a beautiful sight. The Woody proved to be very enjoyable to fly, responsive, comfortable, one of the nicest aircraft I have flown. We worked our way down to circuit height electing to enter a high downwind leg.

About halfway along I was suddenly overwhelmed by the massive roar of a Rolls-Royce Merlin engine. My head snapped around, where was it? I banked left, right, with nothing in sight. I had pictures in my mind of that massive propeller converting Woody into wood chips. Then it was gone, nothing. Base and Final went OK and landing was a breeze. The ground crew arrived and my first question was, "What flew through the circuit fitted with a Merlin engine?"

With big grins, they replied, "Oh, that was one of the speedboats on the lake getting ready for racing."

We sent the details of the stiffening to Jim Maupin, the designer, who acknowledged that in the process of getting the prototype structure into useable drawings, he had seen a mistake, with stiffening left out. Then a strange thing happened. When the American home building fraternity were advised of the need for a modification based on what was found in Australia, we received some fairly abusive comments, mainly about our lack of competency to find such things.

### WRONG COLOUR

The same home builder became involved in another project a few years later, which I felt was very significant. The designers of the PIK series of sailplanes designed the PIK-15 'Hinui', a dedicated all-timber, two-seat, glider tug, intended to allow gliding clubs to build their own tugs with obvious benefits. After one PIK 15 was completed in Auckland, NZ and had proved to be an effective tug, another was started at Keepit based on that.

My concept of the project was that GFA should be able to supervise the construction and add the aircraft to our fleet. Maintenance was to be done by GFA inspectors, and GFA pilots were to be endorsed without a GA licence. Being a two-seater, we could also train our own pilots. Considering it a win all round, I took the initiative and put a proposal together, lodging it with CASA. The response was immediate.

"Yes, GFA can supervise and process the PIK-15 as a home built and the other items will be subject to acceptable procedures being put in place." Armed with CASA's response, I then briefed the GFA Executive on the project. That response was also immediate. 'NO, GFA does NOT want to be involved in a project like that. You are to cease providing any assistance to the project.'

Well, I don't always do as I am told, so several months later saw me in the workshop at Uralla just south of Armidale NSW, looking over the airframe parts so far manufactured. The builder had made as many individual parts as he could and was about to start assembly. Inspection showed a very high degree of quality and accuracy, tooled and jigged in such a way that more airframes might have been built.

Then I asked a fateful question, 'Where are the glue samples?' The builder dragged out a large container with two clearly identified samples of every batch of glue mixed. 'Let's break one each of a number of samples, just as a precaution.'

Sample 1 easily broke through the glue line. Sample 2 broke, sample 3 broke... We ended up breaking every sample in the container. All failed under light loading through the glue line. Obviously, the glue, or the mixing of the glue was seriously inadequate. This meant ALL of the parts so far made were unusable.

I had used the same glue many times. It was an aircraft glue made in Melbourne and came with a Release Note. I noticed that the glue in the samples

was a lighter shade of red than I remembered. I collected two partly used cans and took them back to Melbourne with me.

I rang the company concerned and outlined the problem, emphasising that I felt the mixing had been strictly to the instructions on each can, Parts A and B. The company representative asked me to read out the instructions on the Part A glue can. A silence followed. "We have sent that glue out with the wrong instructions." That was the end of the PIK-15 project.

### MODIFICATIONS

Homebuilding has been largely replaced by taking a standard sailplane and modifying it, which makes sense and requires a much shorter time to implement. Since January 2015 GFA has processed the Design Approval of nearly 50 modifications, ranging from small to quite large. Typical modifications include winglets, improved wheel brakes, engine replacements, engine improved cooling, mods to improve inspection and operational safety, manufacture of unobtainable spare parts. This work is encouraged, adding a significant element to our sport.

### MANY THANKS FOR THE OPPORTUNITY

This is the last of my series of six articles for the magazine. The intention has been to provide some idea about what goes on behind the scenes in our sport - the good decisions, the bad decisions and more importantly, the human factors. How, over time, we have been able to create a much safer operating environment is something that started when GFA was born in 1949 and will continue into the future, provided we are ever vigilant and steer our own ship. My thanks go to the many GFA members I have had the privilege to work with.

**Mike Burns**  
mike38burns@gmail.com

GA

OPPOSITE: The PIK-15. Gliding clubs building and maintaining their own tugs may have changed the economics of gliding.

BELOW: Mike Burns ready for first test flight at Tocumwal.





## ENERGY ABSORBING SAFETY CUSHIONS

A recent discussion on the GFA forum concerns the physics and benefits of fitting safety cushions in your gliders. [Follow the link on [glidingaustralia.org](http://glidingaustralia.org) to join the forum.] This article from The **British Gliding Association** explains why installing energy-absorbing foam is a practical safety measure. Just like a parachute, never fly without it and do your best to make sure you never need it.

### THE REAL FORCES INVOLVED IN A HARD LANDING AND IN A CRASH

Self-evidently, every hard landing and crash inflicts very different forces and decelerations on a pilot. When you make a hard landing, you will typically be exposed to a series of short-duration pulses in the range of 5g to 15g. By comparison, a crash that results in severe structural damage to the glider is likely to produce a small number of relatively sustained decelerations that could well be in the range 20 to 100g.

There is no absolute certainty about what decelerations will inflict injury or be fatal. Depending on your posture, 40g lasting for about 5 milliseconds is likely to result in injury. 100g for the same amount of time is likely to be fatal.

### WHAT DOES A SAFETY CUSHION REALLY DO? MYTHS REMOVED, LIMITS EXPLAINED

Simple physics dictates that if you free fall for a distance H and then uniformly decelerate to rest in a distance h, you must experience a constant deceleration of H/h measured in g. For example, if you fall 1m and are decelerated in 2cm (0.02m) you will experience a constant 50g.

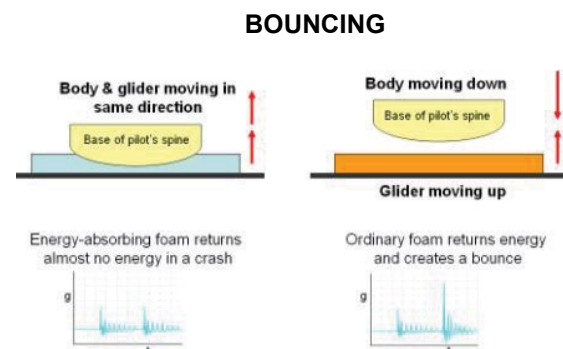
In practice, decelerations produced in real-life are not perfectly uniform. Over the decelerating period, any deceleration less than this perfect result **MUST** be compensated by higher decelerations to bring you to rest in the available distance. These higher decelerations produce peaks that might even be three or four times that of a uniform deceleration.

There is a further complication - bouncing. Unless you remain firmly locked in step with whatever is decelerating you, you may bounce away from it. Some materials like rubber or furniture foam are renowned for such behaviour. As you then descend in free fall from your bounce, you may well then meet, travelling in the opposite direction, the rebounding glider structure as it jumps back up as the result of its first impact with the ground. When you and the rebounding structure meet, you may well experience an even more rapid deceleration than would have been the case if you had stayed in step with the decelerating glider.

Energy absorbing cushions are made of what is termed viscoelastic foam. This has the property that if it is compressed slowly, it will yield. However, if compressed rapidly it acts almost as if it is rigid and will strongly resist giving way. Two commercially available materials, Confor (CF45/CF47) and Dynafoam, are known to be effective in glider cockpits.

In light of all this, what does an energy-absorbing safety cushion do and what can't it do?

- First, it tries to conform as much as possible to the shape



Recognised energy-absorbing foams return almost no energy in a crash. Ordinary foams and many other materials do the opposite. The returned energy separates the pilot's bottom from the seat. This means the pilot can end up descending and meeting the glider structure coming the other way as it, in turn, bounces off the ground. The gs experienced in such circumstances might be greater than the initial impact. This is illustrated in the graphs in the figure.

of your buttocks. This means that the decelerating forces are spread over a large area and that the pressures experienced are minimised.

- Second, energy absorbing cushions become virtually rigid on impact and couple you to the decelerating glider.
- Third, given the limited energy that they do absorb, they give very little back – some foams absorb 97% or more. This means that almost no energy is returned to you in the form of a bounce.
- Fourth, as they transition into this rigid state and absorb limited energy, they remove some of the transient high g spikes and reduce the jolts (rates of rise of g) that the breaking glider structure may inflict on you as it, too, absorbs energy in a crash.

- Last, consider what it cannot do. From the first section it is obvious that around 1 inch (about 2.5cm) cannot possibly provide a sufficient decelerating distance to provide a guaranteed low deceleration in a crash – think H/h! In other words, it is physically impossible for it to absorb all the energy in a major crash.

Luckily, the undercarriage, cockpit, nose section and wings can absorb energy if they have been designed to do so safely.

### OTHER PRECAUTIONS: THE SAFETY CUSHION IN CONTEXT WITH OTHER GLIDER STRUCTURES

During a crash deceleration, the forces can be so large that your body, in particular your lower spine, will be overwhelmingly unable to resist. This means that your lower spine may be forced into bending angles that may damage vertebrae and even the nerves carried within them. It is thus very important that the seat back cannot collapse under the shock loads experienced. This is down to glider designers.

However, you may well have a space between your lower back and the seat back. In a severe crash load, your spine may be forced into this area. To prevent this, any large void can be filled with a safety lumbar support made out of the same energy absorbing foam. Being viscoelastic, it will become rigid on impact and minimise the distance that your lower spine displaces and so reduce the potentially catastrophic bending that might otherwise occur.

For identical reasons, if there is a void behind the seat back, there is a safety benefit from filling the void with energy absorbing foam. This is permitted if the foam is personal, carry-on equipment.

### HOW THIS PARTICULARLY BENEFITS INSTRUCTORS

If you are an instructor, you are at a higher risk than most of having a hard landing inflicted on you – perhaps several times during your career.

These may not result in any structural damage to the glider but, if you are sitting on a normal glider seat, your lower spine will receive a short series of unpleasant jolts. This was described at the beginning of this document.

Such lumbar vertebral axial shock loads are also experienced regularly by ski jumpers. It is known that such shocks are associated with an increased risk of microtrauma to the vertebral column. Over time these microtrauma can accumulate to give you a 'bad back' and an x-ray may show degeneration.

However, thinking H/h again, such landings are one of the few cases where energy absorbing safety cushions can absorb most of the energy involved – and thus remove the risk to your back. If you are an instructor, you should be sitting on an energy absorbing cushion.

### THE COMFORT - SAFETY PROBLEM

Some safety cushions can be hard to sit on. You'll only realise this about 40 minutes into a flight. This is because a hard seat cuts off the blood flow in the capillaries in the buttock tissue and it takes about this long for the resulting pain to become noticeable.

As a result, some pilots do not fit safety cushions, preferring to remain comfortable during a long flight and assuming that they will never have a heavy landing.

Surprisingly, some modern energy-absorbing foams provide a very high degree of comfort and allow capillary blood flow in the buttock region to continue during a glider flight. A combination of Confor foams (CF45 on CF47) has been shown to be comfortable for 85% of pilots. They also provide superior energy absorbing properties. Thus a safety cushion with such materials can make you very comfortable in normal flight and also minimise distractions due to discomfort at the end of a long flight. This can lead to greater safety in this phase of flight.

### HOW TO FIT A SAFETY CUSHION

In some gliders installing a safety cushion can be straightforward. Sometimes, however, placing a slab of energy absorbing foam into a cockpit may not be compatible with the required whole body posture. There may be many reasons for this. The extra thickness can push up a pilot's head too near to the canopy, or the legs can be canted up to an uncomfortable angle with respect

to the cockpit floor. The repositioned feet may be set at an uncomfortable angle on the rudder pedals, the raised seating can generate an uncomfortable back position and so on.

As a result, fitting a safety cushion may, for example, involve removing part of or all existing standard seat cushions, readjusting the seatback at the base and perhaps its angle of inclination, or readjusting the rudder pedals.

In some cases, it may be better to remove the filling of standard cushions and replace it with energy absorbing foam.

Try to avoid installing an energy absorbing cushion on top of existing material that is not viscoelastic or that does not remain fully compressed in flight. In a crash loading, the original material will not go rigid immediately and may produce an effect similar to a bounce. This is because you and your energy absorbing cushion may initially move on without decelerating as you compress the material while the underlying glider structure starts to decelerate immediately in the crash – possibly bouncing back up.

Many of these potential problems can be overcome by viewing existing installations or seeking advice from pilots with experience of installing safety cushions.

Safety cushions need to be secured so that they remain located in a safe position and cannot accidentally slide into obstructing positions before or during flight. Where manufacturers' standard shaped cockpit cushions are replaced by safety cushions of an identical shape and secured by the manufacturers' location methods, there will be no problems. Where a separate cushion is inserted into the cockpit, it should be secured by either Velcro or other loops of material to preclude such slipping movements.

Where safety cushions are in close proximity to the base of the stick and the fixing mechanisms are sufficiently slack to permit the cushions to move and interfere with it, a u-shaped portion of the forward part of the cushion should be cut out to remove such a possibility.

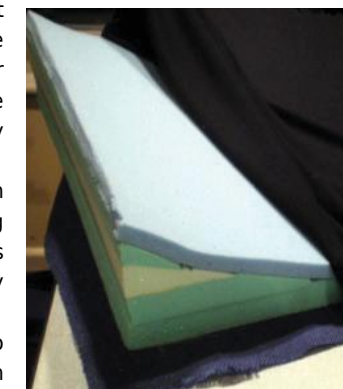
Reprinted with the kind permission of the BGA [gliding.co.uk](http://gliding.co.uk)



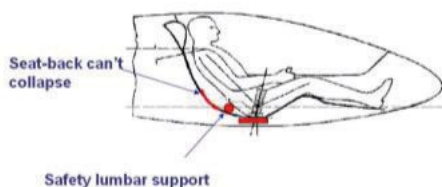
This shows a lumbar support on the right-hand side made of energy absorbing foam sitting on top of the back of a fitted energy absorbing safety cushion.



This particular safety cushion insert shows how the energy absorbing foam layers have had to be built up to match the cockpit space available and also to maintain a comfortable body posture for the pilot when seated. In use, the foams are contained within a protective cloth cover.



This shows the energy absorbing foam layers used in the makeup of a particular safety lumbar support. It is important that such a support is not oversized so that it generates discomfort. The lower back should rest comfortably on this during flight so that, in the event of a crash, the lower back immediately starts to decelerate with the aircraft as opposed to first passing through a void and bending significantly in the process.



Other precautions, which count as personal removable equipment, are a lumbar support made from a recognised energy absorbing foam and a removable insert made out of the same material to place in any large void behind the seat back. Under the overwhelming forces that can be involved in a crash, these measures should help stop the lower spine from being bent and forced into the space that would otherwise exist.





# ARE YOU PREPARED TO OUTLAND?

BY JAMES COOPER

Every flight we take has a possibility of an outlanding. Even if it is our intention only to fly locally, there are times when thunderstorms, micro blasts, loss of lift on a hill site may alter our plans for a nice pleasant flight. Are you prepared?

I knew of a pilot who went for a ridge flight during a wave camp. The ridge was in gliding range of the air field, and it was winter but a nice day. Off he went in short sleeves for a pleasant flight. While he was on the ridge, the front came in and prevented him getting back home. He landed out and soon heavy rain, strong wind and dark arrived. It was not till nearly midnight he was found holding the glider down to prevent it blowing away - and suffering from hypothermia. He was obviously not prepared.

## ESSENTIAL EQUIPMENT

Of course, we first of all think of the mandatory tie down kit, however, this will not protect us from the weather or help us get to the nearest telephone. I would suggest a basic outlanding kit that could be kept in a sandwich container and perhaps wrapped up with some bulkier items that would consist of the following:

**Torch, notepaper, pen, signalling mirror, compass, emergency food, money, strobe light (can be obtained from shops like Dick Smith and fitted with a plug to connect straight to the battery), list of emergency telephone numbers and radio frequencies, and a checklist of procedures. I have 1:250K maps of the area I fly, a light-coloured sweat shirt visible on a dark road, lightweight waterproof, space blanket, aspirins. For those who can afford it, a hand held radio is very useful. Above all, have PLENTY OF WATER.**

**Assuming you have been flying all day, will you have enough in reserve? Are you prepared if the glider has a flat battery at the end of the day? Perhaps the glider should have a second smaller reserve battery.**

This may seem a long list but I can assure you that all the above items take up little space, weigh little and are very useful.

Trailer Rego PL 4175  
My Phone 042 999 2468  
Jenny's 9307 6481  
Sophie 0411 145663  
To select reverse lift up ring under gear knob  
GPS between seats  
Country road map in back of passenger seat  
If fuel gauge shows empty, tap.

## RETRIEVE VEHICLE

Is your car or your crew car suitably equipped, full of fuel? I have a permanent note in the car, Blu Tacked to the dashboard, giving essential information. [See inset lower left]. List the car's peculiarities, and include a road map and or easy to use Satnav with instructions on how to use it. Naturally, the trailer should be in good working order - it's your glider you are going to put in it, and you should inform the duty pilot the course you intend to take. It is also advisable to make a radio broadcast at each turning point you round saying where you are going next.

## THE LANDOUT

What is the procedure when landing out? Consider when reading this article all the things that could go wrong. Once you get to a height when you think it is probable that you will land out, give a call on the radio. A call when you are on finals may not be heard, particularly early or late in the day as other gliders that were on air earlier in the day could be low or even have a landed already. Anyway, your workload will probably be too high. Giving a GPS position, nearest landmark, and track and distance to the next turnpoint or home can be very useful. If you manage to get away give a call to say so.

If you do commit to landing, calling "[callsign] landing out" should be enough. Remember, aviation before communication. You have enough to do, so make sure you follow procedures and concentrate on landing safely.

Once you are safely on the ground, make the usual and often unsuccessful effort to contact another aircraft. If you are lucky enough to make contact, give exact details. If you are not sure, say so. Wait to see if the message gets through. Now make your intentions clear as to what you intend to do. If you cannot get through on the radio or phone, try to send a text message. This can go when the conditions are just right, and when otherwise verbal contact is not working. It also is more accurate than the verbal, taken and sent in a rush. See information about beacons, spots and satellite phones on page opposite.

## WAITING

You may now be in a position to wait for the crew, or you could be on your own without having made contact. Do not rush into making decisions. Australia is a hostile

country and can bite those who make the wrong decision. It is not possible to give all the alternatives but you have to consider factors such as landing in the morning in 40°C heat, landing on a winter evening with changing weather and inadequate clothing. One of the safest decisions may be to stay with the glider and maybe even wait till the morning. You could always call up the commercial traffic on the international distress frequency.

## IF YOU LEAVE YOUR AIRCRAFT

If the decision is made to leave the glider, go through your checklist you keep in the glider permanently. A copy of the one I use is shown. [See right] Put the strobe light on top of the glider - it can be attached with a piece of blue tack you have stuck on the bottom of it. Leave a note, firmly fixed and adjacent to the strobe, saying that you are OK and when and where you are heading, leaving a phone number to ring. Note of your location and as you walk, draw out a mud map. It is highly probable that after a long walk you may forget where you have come from and who you want to ring, so write it down. You may arrive dehydrated.

Don't rush off, a farmhouse may be just over the next hill. I have on a number of occasions found one after getting back to the glider after a long walk in the opposite direction. Look over your 1:250K maps for homesteads if you have them. Don't head off without your water and kit even if the farm house looks close. It may turn out that the farm is empty or derelict and you will have to carry on walking. So always leave the glider fully equipped.

## COME AND GET ME!

For decades pilots have juggled these risks and fortunately very few critical situations have ended badly. But in any club you will hear stories from glider pilots of amazing good fortune resulting in lucky retrieves. Since the development of GPS and satellite telephony services, we need no longer take such risks.

## 406 BEACON

Many pilots consider a 406 Beacon to be an essential safety item for cross country pilots, properly registered with [www.beacons.amsa.gov.au](http://www.beacons.amsa.gov.au). There is no charge for registration. This will ensure that the rescue authorities will not need any third party to inform them that you are in an emergency. When you push the SOS button, they will be on the way. There are many small Personal 406 beacons. Popular ones can be bought at boating supply stores.



## SATELLITE TELEPHONE

A satellite phone using the Iridium satellite system enables you to voice call anyone including your club, crew or emergency services no matter where you are. This is the most expensive option, but some pilots say it is the best for retrieves as you have full voice and text communication. There are many units for sale or rent, and you can buy a connection package and only use it in the main gliding season.

Do not leave the glider in the middle of the day in hot conditions unless you can see where you intend to go. You could run out of water very quickly and die. Better to walk in the dark, at least then you can see farm houses from a greater distance if anybody is in with lights on. Stick to roads and lanes, as they usually lead somewhere. Be prepared for a long walk or, if you are not prepared, don't leave the glider. If you are in doubt and have no definite town or road to head for, be prepared to go back to the glider.

## RETRIEVE CREW

If you are lucky you may have exact details where to go, however don't rush off. If the pilot has given his position and says he is going to a farm house, wait till he calls having arrived there. Otherwise you may well get to the glider, and then have to find the pilot. In addition, he may not be 100% sure of his location. Once you have made the decision to go, be sure you have suitable maps. The country road map should be in the car and if not grab one from someone else. If you can't find the glider immediately, study the map to find the most suitable way of viewing the area with the roads available. Be prepared to ring the club if the search is proving useless.

If you get to the glider and the pilot is not there, do not start to de-rig unless you are fully familiar with the glider and trailer. You could cause more damage than you expected and the pilot may turn feral!

## SPOT

SPOT has been used for the last decade to send outlanding and emergency messages. Many pilots report that the system works well and I have used it successfully several times. Club members and family can keep track of your location on a web page. If the glider stops moving, they can see where you are, even if you are unable to press the button and send a message.

## INREACH

InReach uses the Iridium satellite network and provides you with two way messaging communication as well as emergency, position and pre-set retrieve messages. The advantage over SPOT is that you can receive messages so that you will know that your retrieve message got through. It will also enable you to coordinate with your crew so you can remind them to stop at the servo on the way and bring you a cold drink.

Evaluate the systems available, but be sure to select at least one. Not only will it make cross country soaring much safer for you, it will also make it more convenient and enjoyable as you will not be left wondering if anyone is coming to get you.



James Cooper  
TEXT MESSAGE LAT & LONG  
BATTERY OFF  
RADIO OFF  
O2 OFF  
GPS OUT  
GPS FIX AND NOTE LOCATION  
TIE DOWN  
LOCK CONTROLS  
STROBE  
NOTE BY STROBE  
MONEY  
PENCIL & PAPER  
WATER  
FOOD  
COMPASS  
MIRROR  
SWEAT SHIRT  
NOTE LOCATION  
WRITE LOCATION  
TORCH



## 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](http://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/ltmko56](http://tinyurl.com/ltmko56)

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: 01/12/2017  
Date to: 31/01/2018

Damage	VSA	SAGA	NSWGA	GQ	WAGA	Total
Nil	5	6	9	7	1	28
Substantial	2	1	1			4
Minor	6	1	6	6	1	20
Write-off			2			2
<b>Total</b>	<b>13</b>	<b>8</b>	<b>18</b>	<b>13</b>	<b>2</b>	<b>54</b>

Injury	VSA	SAGA	NSWGA	GQ	WAGA	Total
Nil	12	8	16	13	2	51
Minor	1		1			2
Fatal			1			1
<b>Total</b>	<b>13</b>	<b>8</b>	<b>18</b>	<b>13</b>	<b>2</b>	<b>54</b>

Phases	VSA	SAGA	NSWGA	GQ	WAGA	Total
Landing	5	2	3	8		18
In-Flight	4	1	7	3	1	16
Launch	1	4	5	1		11
Thermalling	1					1
Ground Ops	1	1	2	1		5
Outlanding	1		1		1	3

Type of Flight	VSA	SAGA	NSWGA	GQ	WAGA	Total
Local	6	4	6	5		21
AEF	1			1		2
Ground Ops	1	1	1	1		4
Training/Coac	1	2	5	3		11
Cross-Country	3	1	4		2	10
Competition	1		1	3		5
On Ground			1			1

Level 1	WAGA	VSA	SAGA	SWG	GQ	Total
				1		1
Airspace	1	3	1	3	2	10
Consequential Events					1	1
Environment				1		1
Operational	1	10	7	12	10	40
Technical				1		1
Total	2	13	8	18	13	54

### 9-DEC-2017 NSWGA MISCELLANEOUS SZD-9 BIS 1E BOCIAN

A cable break occurred during a winch launch at approx. 800' AGL. The cable rebounded and struck the upper surface of the starboard tailplane, punching two small holes in the ply-wood surface. The rope broke about 2 metres from the trace when the glider was in full climb attitude at about 55kts with no layoff. At this point there would be a significant load on the rope. Immediately after

the rope broke, and before the cable was released from the tow hook, the trace pivoted about the release under the influence of the airstream and possibly the elastic reaction of the rope break. When the release was activated the trace fell away but the weak link unit had sufficient upward rotation to rise just above the tail plane and was collected by the leading edge causing the weak link assembly to pivot down and impact the upper surface. The club uses 9mm Supa-Dan polypropylene rope fitted with a 5m trace (no drogue chute). The trace set up is in general conformance with the GFA Winch Launching Manual, although there was some elasticity in the system. The club has been using this trace configuration for several years and has not suffered a glider strike by a weak link unit after a cable break before this incident. Following their investigation of this incident, the club has decided to replace all rope traces with an inelastic material (steel or dyneema) encased in a stiffer tube. Consideration will also be given to changing the length of the trace to keep the weak link unit clear of the tailplane in similar circumstances.

### 10-DEC-2017 WAGA AIRCRAFT CONTROL ASTIR CS

Under investigation. The pilot conducted a straight-in approach to outland in a paddock and forgot to complete the pre-landing checks. The aircraft landed with the undercarriage retracted.

### 14-DEC-2017 GQ AIRCRAFT SEPARATION LS 8-18

The pilot of a Zodiac was conducting circuits onto the operational runway and observed three to four gliders operating from the airfield. On the Zodiac pilot's third circuit, and while transiting from crosswind to the downwind leg at a height of about 1200ft, a glider as observed thermalling in the circuit area at the same height. The Zodiac pilot made a broadcast of the CTAF advising they were entering downwind, while maintaining a visual on the glider. Just as the Zodiac pilot was about to conduct the pre-landing check list, the glider pilot turned out of the thermal and proceeded to cross in front of the powered aircraft at a similar height and passed within 100 metres. The Zodiac pilot did not need to take avoiding action and, upon landing, spoke with the gliding operation Duty Instructor and the glider pilot concerned. The glider pilot, who is very experienced, said they heard the Zodiac pilot's radio call but did not see the aircraft at any stage. It was also noted that the glider pilot was a visitor to the airfield and had not flown there in many months. The glider pilot stated: "I did not see him at all. I am quite

disappointed with myself with this incident as I feel like I was keeping a very good lookout. I have spent the last day trying to understand how I missed it and it has been a big wake up call." The gliding CFI noted that the glider pilot, who was conducting the postmaintenance evaluation flight of a newly imported glider, may also have been distracted while using new and unfamiliar instrumentation. This near miss highlights the dangers of gliders operating in the vicinity of the live side of the circuit.

### 17-DEC-2017 NSWGA AIRCRAFT SEPARATION PA-25-235

The glider towing combination was positioned on the glider runway to the left of the main runway. The glider pilot was conducting a solo flight. As the tow plane moved forward to take-up the slack in the tow rope, a Piper Warrior on a training flight was conducting a glide approach for a touch-and-go onto the main runway. The tow pilot was unaware of the position of the Piper Warrior, and the forward signaller had not sighted it on approach. Once the slack had been taken-up the forward signaller signalled "all out" to the tow pilot, who opened the throttle to commence the launch. The forward signaller sighted the Piper Warrior on short final just before the tow plane went passed and signalled the tow pilot to stop. Although the tow pilot saw the 'stop' signal, they elected to continue the launch due to the speed of the combination and his belief that he had identified the reason for the stop signal. The glider pilot reported not seeing the stop signal. The CFIs from the Gliding and powered operations reviewed the incident and concluded:

Aircraft on powered glide approaches can be difficult to spot due to the low altitude profile and non-standard pattern. These aspects make it more difficult to visually identify traffic leading to a scheduled gliding combination departure; Radio transmission density was high, and it is possible that the ground crew and pilots missed the Piper Warrior pilot's radio call.

The decision of the tow pilot to continue the take-off was reasonable. It was assessed that the risk of the combination infringing the main runway during take-off was low when compared to the risk of the glider running into the back of the tow plane. The CFI of the powered operation noted: "It is not for us to utilise the safety management system to second guess (the tow pilot's) decision as the Pilot in Command using hindsight rather than supporting his command decision that resulted in a safer outcome based on his personal risk assessment for which he had seconds to make."

### 18-DEC-2017 NSWGA AIRFRAME DG-1000S

During the pre-flight inspection, the student pilot noticed excessive play in the tailplane mounting (the play at the tailplane tip was measured to be 10mm). The Flight Instructor confirmed this and grounded the

aircraft. Investigation identified that the Inspector who conducted the daily inspection earlier that morning had detected a small amount of play in the tailplane but considered it to be within limits. Upon removal of the tailplane, it was noted that the right-hand locating pin was loose and could be partially rotated with fingers. The nuts on both locating pins were tightened and the aircraft was returned to service. The cause of the nut becoming loose was not determined but may have occurred due to flight loading or an error in maintenance. It is important that aircraft are not flown with excessive play in the horizontal stabiliser, as this can lead to flutter and possible structural failure.

### 6-JAN-2018 GQ MISCELLANEOUS HK 36 TC

The pilot conducted an Air Experience Flight but did not hold a valid Medical Certificate as required by GFA Operational Regulation 3.2.3. Investigation revealed the pilot, who had previously held a Level 1 Instructor endorsement, had recently been issued with an AEI endorsement but mistakenly believed the GFA's Medical requirements only applied to Level 1 or higher rated instructors. The CFI, who was new to the role, did not confirm the pilot's medical status prior to issuing the endorsement. The pilot was counselled.

### 6-JAN-2018 NSWGA TERRAIN COLLISIONS JANTAR STANDARD 2

The glider crashed into a paddock at around 19:15 hours on 6 January 2018, approximately 12 kilometres NNE from Temora Aerodrome. The aircraft was severely damaged and has subsequently been written off by the insurer. The pilot sustained minor injuries and was very fortunate to not have been more severely injured or killed, given the nature of the crash. The pilot had launched from Narromine NSW not long before 3:00pm with the aim of returning to Temora NSW, from where the pilot departed the previous day. The pilot experienced some good climbs, but overall progress was relatively slow. The pilot achieved a high point of about 12,000ft AMSL at 17:33 hours, but this height was lost in straight glides where the pilot adopted airspeeds generally around 70 to 80 knots. According to the logger file, the glider was below 2,000ft AMSL at 18:09 and the pilot struggled to get above 3,000' from that time on. The pilot stated that they had selected an outlanding paddock when around 35 km from Temora (approximately 40 minutes before the crash), but was able to gain some height to continue the flight. Based on the pilot's account of the flight, they did not appear to give any further consideration to outlanding until about 30 seconds before the crash. This is despite the fact that the pilot had flown at a height of less than 800 feet above ground for the final 7 to 8 minutes of the flight. When later questioned about their understanding of the height at which they





were flying at several points late in the flight, the pilot consistently over-estimated the height by up to 1,000ft. It was identified that during the final 3 minutes of the flight the glider was flying over paddocks that were unsuitable for landing due their surface condition and/or small size. More than 3 minutes prior to the crash, the glider was within reach of paddocks where a successful outlanding could have been achieved. However, the pilot did not make a decision to land at an appropriate time, nor did they realise the gravity of the situation until the final seconds. The pilot stated that they had taken several litres of drink and some snacks with them for the flight but had no recollection of how much was eaten/drunk during the flight.

The pilot also stated that supplemental oxygen has been used at heights above 5000ft. After consideration of the pilot's statements and other available information, it was concluded that the pilot:

- continued to hold an overly optimistic view of the weather conditions late in the afternoon and the likelihood that they would find lift that would carry the aircraft to Temora Aerodrome;
- over-estimated their own abilities;

- admitted that they felt an urge to "press on" to the home airfield;
- suffered from poor situational awareness, exacerbated by poor judgement of height above ground; and
- exercised poor decision-making processes, or more likely simply failed to make required decisions until the last 30 seconds of the flight (at which time their ability to influence the outcome was severely restricted). A primary cause of the accident was the pilot's decision to continue the flight at low altitude over unsuitable terrain, rather than plan and execute a controlled outlanding. Alternatively, the primary cause of the crash was the failure of the pilot to make the necessary decisions. Pilot impairment due to fatigue and/or nutrition is a possible contributing factor, but neither cause was suggested by the pilot themselves. Weather is not considered to be a contributing factor. As the pilot had a history of overconfidence, regression in flying skills and a degree of resistance to training, their flying privileges were withdrawn.

## 13-JAN-2018 VSA AIRFRAME SZD-50-3 "PUCHACZ"

**Under investigation.** The pilot was conducting a private passenger flight that included some basic aerobatics. During the fourth aerobatic manoeuvre, at about 110 knots just as the nose came above the horizon, the canopy opened and the perspex shattered. The pilot regained level flight, declared an emergency, and simultaneously headed back to the airfield. Due to the increased drag and speed at which the aircraft was flying, a high sink rate ensued and it became obvious to the pilot that a landing on the airfield was not possible. A safe outlanding was conducted in a paddock parallel to and about about 500 metres from the operational runway. No injuries were sustained.



## 21-JAN-2018 NSWGA FIRE FUMES AND SMOKE ASH - 25 M JET

**Under investigation Fatal** Under investigation. It was reported that the glider was launched by Aerotow and released in a thermal around 800ft AGL. Shortly afterwards the glider was observed on the downwind leg of the circuit. Witnesses described seeing water-like vapour pouring from the rear of the fuselage. As the glider got closer, witnesses observed flames coming from the rear of the fuselage behind the cockpit and the undercarriage well and the 'vapour' was identified as smoke. Witnesses stated the pilot ejected the front canopy and continued to fly the circuit. The aircraft was then observed to turn towards the operational runway with a steep nose down attitude. The glider flew into the ground at high speed while still in the turn. There was no effort by the pilot to correct the turn, which suggests the pilot was incapacitated. A grass fire started that consumed the wreckage. The glider was fitted with two jet turbine engines used to sustain flight. It was known that the pilot had been troubleshooting a fuel leak in the days prior to the accident. It is believed the pilot attempted to start the engine to climb away from low height.



## GFA APPROVED MAINTENANCE ORGANISATIONS

PROSWIFT 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
TEC 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
C 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
HUNTER 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
MADDOCK COMPOSITES	IPSWICH	ANDREW MADDOCKS	0439 535 630	andrew@maddockcomposites.com.au
MORGAN'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
COMPOSITES	TEMORA	SCOTT LENNON	0438 773 717	scottl@internode.on.net
UJ 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

### Instrument

Aerotow 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





**GFA CLUB LIST**

Please send any corrections, updates, additions for inclusion in the club list to

[sean@glidingaustralia.org](mailto:sean@glidingaustralia.org)

**716 FLIGHT GLIDING CLUB**

JOperations 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](http://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.on.net](http://www.adelaidesoaring.on.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](http://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](http://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](http://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](http://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](http://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](http://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](http://www.beverley-soaring.org.au/aef.php)

Flight Bookings or questions 0407 385 361, [bevsoar@beverley-soaring.org.au](mailto: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, Putchecz and ASK 21 plus 3 Singles and large fleet of private gliders [beverley-soaring.org.au](http://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](http://Boonahgliding.com.au) 0407 770 213 [info@boonahgliding.com.au](mailto: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](http://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](http://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](http://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](http://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, hangar and clubhouse. [www.ozstuff.com.au/ccsoaring](http://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-briefing room, kitchen, showers, 12V solar

power, 240V gen set. Club owns airfield 06/24, 1700m, grass/gravel [www.cqgliding.org.au](http://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 S down Mason Rd), Tel 0409 807 826. Aerotow operations weekends, public Holidays and by arrangement. There are 26 private gliders. Facilities include: Bar, Kitchen, Cluhouse, Bunkhouse, caravan park, camp sites, BBQ area, Showers, Wi-Fi, Lounge, Workshop, Hangarage, Club own the airfield. [www.ddsc.org.au](http://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 hangars. Four two Seaters, five Single Seaters, Pawnee tug, three other tugs available, sixteen private gliders. [www.gliding-in-melbourne.org](http://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 dinning, 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](http://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](http://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](http://www.soaringtasmania.org.au)

**GOULBURN VALLEY SOARING INC**

Lot 2, Tidboald Road Wahring, 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](http://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](http://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](http://www.hvgc.com.au)

**KINGAROEY 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](http://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](http://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/glidingwesteraustralia/home](http://sites.google.com/site/glidingwesteraustralia/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](http://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](http://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](http://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](http://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](http://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](http://www.nqsoaring.org.au)

[www.nqsoaring.org.au](http://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](http://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](http://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](http://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](http://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](http://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](http://www.sportaviation.com.au)

## SUNRAYSIA 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.sunraysiaglidingclub.org.au](http://www.sunraysiaglidingclub.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](http://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.

[www.soarnarromine.com.au](http://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](http://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](http://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](http://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 (1st 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-GNS CIRRUS** 1790 hrs and for its age in GC. built in 1977, Trailer in VGC. Tow out gear. \$20,000 ONO **Ph Judy 0447 612 342** OR email [gregkolb@bigpond.net.au](mailto:gregkolb@bigpond.net.au)



## VH-GDS ASW20F

Total hours less than 600! ASI, Alt, new S100 vario, Borgelt vario, Flarm, XCom radio. PA Parachute. Thompson trailer with all tow out gear. \$50K ono. **Contact Paul Wiggins 0422 138 891** or [libelle@internode.on.net](mailto:libelle@internode.on.net)



## VH-GSV, KESTREL 19 (T.59D)

Open class machine, genuine two-person rigging with C.G. type assistant included. Microair radio, current form 2 expiring April 2019. **Caleb 0414 902 196** or [gliderdriver@gmail.com](mailto:gliderdriver@gmail.com) please see [sailplanes.co/sailplanes/single-seat-sailplanes/kestrel-19-t59-d\\_169](http://sailplanes.co/sailplanes/single-seat-sailplanes/kestrel-19-t59-d_169)



## VH-GOS -JANTAR 2B (SZD 42-2)

Open class 20.5 M. Polyurethane paint (original). L/D 49:1. 1760 hours/750 launches. One man rig trailer. Current Form 2. 2011 Parachutes Australia chute. X-COM radio, Oudie II, flarm, Colibri logger and Borgelt stuff. Very good condition. Great performance at \$24,000. Based at Benalla. **Contact Peter 0418 327 629 sarpet@bigpond.com.**



**VH-XJR, NIMBUS 3** Basic instruments and trailer. \$50,000 or near offer. **Phone Beryl on 0407 459 581**

**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](mailto:rogerb_40@hotmail.com) or **0427 678 142**



## 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**



[continued over page](#)





## TWO SEAT

### VH-WQX SZD-50 PUCHACZ

2 Seat Trainer .Darling Downs Soaring Club. The "puch" has been the workhorse of our fleet – a great trainer and has done a number of 300km XC flights. She'll be an asset to any club as reliable 2 seat trainer.

Details:

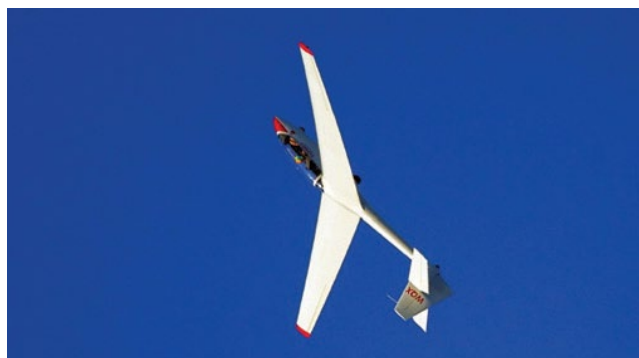
- Excellent condition
- Purchased brand new by DDSC in August 1999
- Recent interior refurbishment
- Functional open trailer
- 3725 hours, 7503 landings (as at April 2018)
- Instruments include: Flarm, Altimeter, Borgelt B50, G-Meter, Becker radio.Repeaters in back seat
- Form 2 Due: September 2018

Availability:

Glider will be available late June on arrival of new glider but sale can be finalized with back hire to DDSC.

Price: \$60,000 with trailer (ono)

Please contact [president@ddsc.org.au](mailto:president@ddsc.org.au) for any queries and offers.



### PUCHACZ VH-XQD

Purchased new by BSS, it's now for sale due to a fleet upgrade. An excellent aircraft for training and spins. Includes basic instruments, radio, flarm and open trailer. 6388 hours, a current F2, no major repairs. Life extension to 12,000 hours required at 6750 hours. Can be performed by major repairer. Manufacturer's charges for life extension certification and parts are available. \$35,000 **Contact Greg Beecroft 0437 377 744**



## MOTOR GLIDERS AND TUGS

### 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](mailto:rzehnder@tpg.com.au)



### VH-NUF TAURUS 503

3 year Taurus M powered by an air cooled two stroke two cylinder 50 hp Rotax 503 engine. Two seat side by side spacious self-launching glider. Only 125 Total hours and only 30 Engine hours. Comes with Pipistrel 5 year extended Warranty. Fitted with every possible extra including a Galaxy Ballistic parachute and a full set of instruments including an LX9000 with ProStick control. Even has an E22 Tost nose release. Beautifully finished with acrylic paint and a very high build quality. Spacious cockpit with leather seats and trim and maximum cockpit load is a generous 190 kg. Large blue tinted canopy with excellent visibility. Includes a dedicated Cobra trailer for long distance travel. Price \$ AU 165,000 negotiable. **Contact Grant Rookes on 0407 998 959** or email [grantliz@sekoor.co](mailto:grantliz@sekoor.co)



### VH-KVB, HK36R SUPER DIMONA

excellent condition, always hangared, never damaged, TT 801hrs, Eng 633hrs, MT constant speed prop, long range fuel tank, elec. hangar trolley, located Warwick, Qld.\$95,000. **Contact Bill 0427 221 041** or email [danderoo836@gmail.com](mailto:danderoo836@gmail.com)



### 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 hangared. \$120,000 reduced to \$95,000 ONO. For more details contact **Bob Ph 02 6332 9235** or email: [bobjmcdo@gmail.com](mailto:bobjmcdo@gmail.com)



### 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 hangared at Bathurst Soaring Club and a package with T-hanger is also possible. Price: \$85,000 negotiable **Contact Adam Gill, Phone 0417 770 084**

## INSTRUMENTS AND EQUIPMENT

### PAWNEE PROPELLER

Borer 84/44 - 500 hours only - excellent condition - suit Pawnee, Super cub, etc - \$3500 - **Ph - 0437 969 364**



## 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](mailto:arnie.hartley@gmail.com)

## TRAILERS

### GLIDER TRAILER

Completely Refurbished Glider trailer suitable for a 15-meter glider. The trailer has been completely refurbished and is completely waterproof, Fitted with LED interior lamps and indicators a bargain to the right person. The trailer is located at the Beverley Soaring Society comes complete with existing tow out gear that would need modification to suit your own glider. The trailer is registered and fitted with good tyres and fit for purpose,\$5000 ono **Contact Grant Rookes 0407 998 959** or [grantliz@sekoor.co](mailto:grantliz@sekoor.co)



### 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**

**OTHER  
WINCH- FORD V8 POWERED**

needs some work to be fully operational. Located at Caboolture Airfield. \$4000 ono. **Call Jim 0407 590 636** for details and more pictures



## OPERATIONS COMPENDIUM

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## WINGTIP WHEELS AND SKIDS

**THESE TOUGH WINGTIP WHEELS AND SKIDS ARE MADE IN AUSTRALIA**

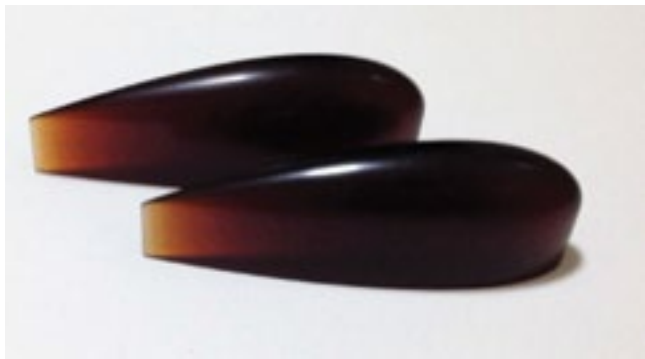


Skids provide 50mm ground clearance. They are made from industrial polyurethane formulated for high abrasion and impact resistance for use in industry with a Shore D hardness of 65.

Wheels and skids can be shaped to suit any wing profile and attached with Sikaflex.

**Wheels \$260 per pair,  
Skids \$75 per pair + postage.**

Wheels provide excellent wingtip protection with 57mm ground clearance, an aerodynamic profile, low drag for safer wing-drops and negligible wear. The 88A Shore hardness wheel, sealed bearings and strong axle are easily replaced if necessary.



Contact **Greg Beecroft 0437 377 744**  
**greg.beecroft@gliderwheels.net**  
**www.gliderwheels.net**

## 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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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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and a docile, safe Trainer

Exceptional Short Take-off and Landing

Chrome Moly Fuselage Frame (all sealed)

Glider Tow variants operating in Australia since 2008  
and recently in New Zealand

Two new Glider Tow variants on the way  
(one sold, one available)

A large photograph of a EuroFox aircraft in flight, soaring over a vast, rugged mountain landscape. The peaks are covered in snow and partially shrouded in mist. The sky is a clear, deep blue.

  
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