

GLIDING

AUSTRALIA

Issue 44 October - November 2018

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BUNYAN WAVE

QUEENSLAND STATE CHAMPIONSHIPS
TOWARDS 100:1 GLIDE RATIO
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GLIDING

AUSTRALIA

No. 44 October - November 2018

COVER: DAVID MCILROY ABOVE LAKE EUCUMBENE IN WAVE ON 19 SEP IN IAN STEVENTON'S DUO DISCUS.

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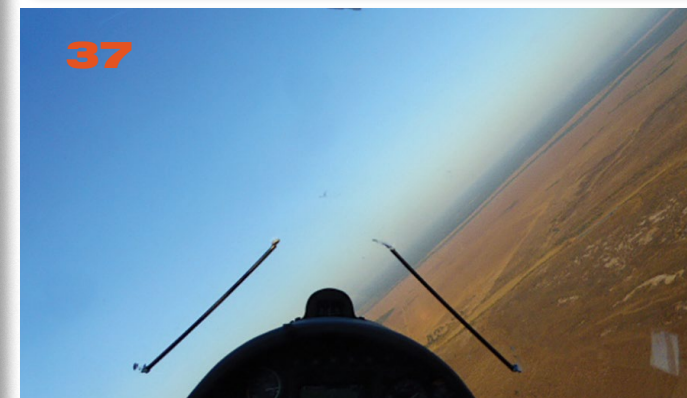
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www.store.glidingaustralia.org

GFA OFFICE
Before calling the GFA office, please check out our website
www.glidingaustralia.org to buy items, find documents and other information, and renew your membership.

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FROM THE PRESIDENT

IT AND OUR CURRENT WORLD

What is IT? IT stands for 'Information Technology'. We often hear complaints about kids and their addiction to social media, which is also part of IT. Sometimes adults are afflicted as well. We glider pilots have an affliction called 'look at the ASI and altimeter', which is fast becoming a problem as new distraction devices have been added to our equipment - think mostly phones here. Ask any instructor.

The road crash investigators have also identified the fact that drivers distracted by their phones are causing accidents. Some are even texting while driving. I guess there are probably pilots who do the same. On the other hand, I know some use their phones linked with FLARM and vario/navigation systems, which I believe to be a good use of the technology.

The point is that we have some devices that are useful while we are flying, and others that become distractions. But when we are not in the cockpit and want to find out something, then social media, the internet and websites become important.

Historically, GFA's website and IT systems have been relatively efficient and cost effective in what they are intended to do, but the world moves on and we have to move with it. The systems are managed by a group of volunteers and part-time paid members. Those in paid positions often do more than they are paid for, as is the way in a predominantly volunteer organisation. So please don't think this is criticism of the past and how the system has been structured.

However, technology is advancing, and we all want access to easier, more functional and more easily identified processes. We also have nearly 3,000 members, each with an opinion about what is important in this area and how it should be done.

IT SYSTEMS REVIEW

Your elected officials - that is, your GFA - use your thoughts and ideas on what is important in various ways. GFA has conducted a number of member surveys and then structured the strategic plan totally around your answers. We have just completed some surveys of instructing outcomes and specific issues in that space, which will bring some

changes in the near future, and we have now instigated an IT Systems Review.

The IT Systems Review is designed to allow any member to have a say on fixing issues they perceive in any of our IT areas, be it the website, communications, forums, forms, documents or any aspect of those areas. Please have your say. The outcome of the survey will identify fixes for the problems that are reported.

The issues may be simple or complex. We simply need to know and have a small team ready to address those concerns. The timeframe for your input is limited. When the time for input is over we will identify and clarify the issues and fix them. Nothing will happen without your input. We ask your name so that we can get back to you to clarify exactly what you meant.

To have your say, go to the RED rectangle on the front page of the Gliding Australia website

MEMBER ISSUES

Many issues involve groups of members who all aspire to different things in the same space. Consequently, we are starting to see a problem looming in GFA. The reason I am writing about it is simple. I would prefer to 'head it off at the pass' and stop it from happening, or at least minimise it.

We currently have a number of members who are questioning new support manuals, club committee reasoning and items they see on personal electronic media. Questioning is good and causes no problems in itself. But when it becomes enraged and threatening, it does become a problem.

I suggest it may be happening as a product of our ageing membership. Members who have been around for many years and 'seen it all', feel at this stage that they know exactly how to fix certain issues. Unfortunately, at times their misguided enthusiasm borders on or exceeds bullying and intimidation.

For all of those members who feel strongly about a particular topic, I simply ask that you remember that we are largely a volunteer organisation and many people are involved in each decision, often at many different levels, for example, GFA, state association, clubs and others. Yes, have your say, but remember - Rome wasn't built in a day. We are moving through significant change with more to come, not only in



GFA but in the world around us. We want and need changes that will benefit us all, not tear us apart.

I remember being told once, "When you think you are the most qualified in the room, when you think you know more than anyone else there, you are almost certainly wrong." I have remembered that and found that it is a maxim that is true in many instances.

The difference between the 'old' ways and the 'new' ways is not necessarily about being right or wrong, just different.

CASA FUNDING

In February 2017 the President at that time sent a letter to the Acting CEO of CASA, Shane Carmody, indicating GFA's concern that funding was set at a fixed amount, was unstructured and was not based on the outcomes delivered. This letter identified that we received a grant of \$136,031.70 annually but actually did \$221,650 worth of work that would have to be done by CASA if we did not do it. The letter also recommended a framework that GFA believed would work for both CASA and GFA.

The CASA CEO wrote back advising that GFA received the most funding of all the Sports Aviation Organisations (SAOs), and that CASA was not going to review this funding.

Nothing happened until April 2018 when the GFA President received a phone call with a follow up email from CASA advising, with no prior warning, that CASA was changing the way their support funding was distributed to Sport Aviation Organisations (SAOs). The phone conversation indicated that a formula was to be used that reduced GFA

funding by \$48,000 out of a total of \$136,032, a significant figure equivalent to the loss of 171 members.

A consultation survey was conducted asking if restructuring of the funding was supported and seeking feedback on the principles used in that re-distribution. The change followed a 'take from Peter to pay Paul' model in which some of the SAOs increased their funding while others lost out, and most of us concluded that it had been designed to ensure each group would fight the others, leaving CASA with a divided opposition to their proposal. My understanding was that disagreement with it was unanimous.

As a result of the consultation survey, CASA invited one representative from each of the nine SAOs to their Canberra office on 5 June for a discussion, and covered the travel costs for each participant. Patrick S Murray took the position of independent chair.

The meeting itself was separated into an explanation from CASA in which they stated no further funding was available. The amount to be distributed was fixed, and the payments were effectively not structured in a manner in line with modern society's expectations of a government body.

CASA followed a three-pillar approach for their various functions. The first is registrations, permits, certificates and so on that clearly meet section 9.1 of the Civil Aviation Act. The second comes loosely under the safety assurance section of the Civil Aviation Act part 9.2, regarded as education, training and safety advice. The third pillar comprises activities that are not covered by the Civil Aviation Act. This 'social good' section included specialist education and training and sharing knowledge and experience through networks.

We were left to conduct deliberations in a closed session between the SAOs, when we agreed on the following:

The funding distribution should remain unchanged for FY2018-2019.

The SAOs were to work together to devise an alternative funding model for presentation to CASA by 14 November 2018.

The activities under the three pillars should be used as the basis for funding discussions.

If an alternative model had not been decided by 14 November, the default CASA model would be in place.

If SAOs believed increased funding was necessary, we would develop a formal proposal to government for this. Some further work was discussed

including agreeing to a three year review under which new entries were to be 'proven' for three years before receiving funding.

Every SAO deserves the funding they receive, and more, for the work they do for CASA and aviation safety, which is why we are trying to stay cohesive. But it is difficult as the final date gets closer. We need to ensure funding isn't tied to ridiculous outcomes that do not assist aviation safety.

All the groups have been working through these issues - there is no perfect outcome. We are lucky that we are a member of the Australian Sports Aviation Confederation (ASAC), which is assisting us in this matter. We have also joined the Australian General Aviation Alliance (AGAA) which has been instrumental in allowing GFA to address a senate hearing recently, as well as been another supporter.

Despite all this, however, I recently received a letter from the head of CASA, without any correspondence from us, extending the timeline for the alternate model to be addressed. I have sent a reply asking that we be treated with respect and allowed to work through this.

My understanding at the moment is that eight of the nine groups have agreed that the starting position is the current funding model as a base funding, with top up funding potentially to be structured differently and placed after the first base funding.

Back to the current position,

unsurprisingly, the one group that disagrees is the one that receives the highest increase under the CASA model. But I need to advise there are no guarantees on the eventual outcome.

We are all also attempting to work out an economic contribution model to present to the Federal Government. The latest I have on this project is that GFA adds \$31,350,000 annually to the Australian economy. These figures are based on the request I sent to Presidents, but unfortunately not all replied. This figure may be low due to some extremely low rates for aircraft and tows.

What do we do if this loss of funding comes to pass? What programs do we remove, what services do we stop offering for the safety of our members? Perhaps it will force greater efficiency and better practices. I don't pretend to know. I will continue to support the creation of a model that is similar to the Federal Government's recent GST process, in which "no SAO will be worse off".

SOARING SEASON START

Let's look at the positives. It looks like a great season is on the way, and I am looking forward to some quality soaring. Forget the negatives, fly, fly well and be safe.

PETER CESCO, PRESIDENT
president@glidingaustralia.org

NEW SOUTH WALES GLIDING SPRING SEMINAR



On the first day of Spring, 70 pilots gathered in the York Club for a day seminar. An easy venue, great food and the company of fellow pilots made for a successful day, considered to be excellent preparation for the coming soaring season. Speakers Bruce Taylor, Brad Edwards, Gavin Wills and Makoto

Ichikawa make a range of presentations with excellent visual displays.

The MC of the day Mick Webster is to be congratulated on a successful event. The NSW Gliding annual general meeting was held following the seminar, and welcomed the attendance of many of the seminar participants.

FROM THE EO

WORLD CHAMPIONSHIPS 2022

The International Gliding Commission will select a site in March 2019 to host the Club, Standard and 15m World Gliding Championships in 2022. The rules stipulate that they will give preference to a country outside of Europe for this event. The Sports Development Panel and GFA board have agreed that we should nominate. We have received one nomination from Narromine and another club has expressed interest but nothing has been confirmed yet. The final bid must be completed by December.

FLYING START-UPS

GFA supports clubs wanting to run Flying Start and Flying Further courses.

The Flying Start course aims to accelerate new members though the first half of their GPC to, potentially, fly solo. Many clubs and commercial organisations have provided this opportunity in the past but many no longer do. A course is more effective for the member and does not require the club to provide basic instruction every week, trying to get members though their solo training, which often takes many months or even a year.

We can support clubs prepared to offer these courses, giving assistance with program details, finding instructors, equipment and even promotion. South Gippsland GC have started work to run two to three courses starting in the new year.

The Flying Further course is for members aiming to achieve the GPC with a focus on the soaring skills in the GPC Syllabus. GCV ran this program last year very successfully using their ASK21s and Twin Astir, and will run additional courses this year. It is a good syllabus and focuses on developing core soaring skills.

If your club would like assistance to run either of these two programs please talk to your regional association, or send details to me at

eo@glidingaustralia.org.

APPROVED MAINTENANCE ORGANISATIONS

It appears to be getting harder to find commercial organisations to

perform maintenance and repair work on gliders and motor gliders. The AMOs are all very busy and as they slowly retire we don't see too many new people coming forward.

Some AMOs are training their own replacement staff and the GFA Board is keen to support them and to encourage others to take on a trainee. The Board will provide up to three grants per year of \$10,000 to AMOs who are training staff towards the key qualifications needed in the future.

ON-LINE AEF

Clubs are welcome to use the new Online AEF process which results in a \$5 discount for the introductory membership forms and removes the need to purchase large quantities of the forms. Read through the AEF PROCEDURE online and see the forms on the GFA web page under Docs/Forms – FORMS – Admin Forms

A B AND C CERTIFICATES - ONLINE ASSESSMENT

These certificates are your first qualifications as a glider pilot and are recognised worldwide. They require achievement of flying skills [first solo, a number of flights and soaring performance] and then completion of an assessment on basic theory, rules of the air and so on. This theory assessment must now be completed online. Verbal assessment by your instructor is no longer permitted.

Once the Instructor has determined completion of the skills section, he or she can now approve the student to complete the theory assessment. The instructor should go to MyGFA on the GFA web page and click on 'Services Required' and then 'ABC Certificate Application' (instructor use only) and select the member's name from the drop down box. The member will then receive an email with a link to the assessment which can be completed online. Once successfully completed, the member will receive a certificate of completion. There is no charge for completing these certificates.

We recommend that you apply for each certificate separately, as you complete them, so that you can benefit from what that certificate entitles.

You can then purchase an A,B and/ or C badge if you wish from the GFA shop.



The Green Certificate book will now be issued with your Silver C qualification.

MEMBER SURVEY - BARRIERS TO INSTRUCTOR TRAINING?

In line with the Board's decision to actively recruit more female and younger instructors we are keen to find out more about your experience and barriers that members have faced or are facing under the current system. We have had good responses to the members survey on this topic and the Board is reviewing any changes that should take place.

INSTRUCTOR COURSE (JUNIOR MEMBERS)

Being under 25 doesn't mean you don't have a lot of gliding experience. The Junior Gliding Club is organising an instructors course for up to six junior members, and which is likely to be held in Queensland in late November. If you are under 26 years old with sufficient experience and the desire to become an instructor, please advise eo@glidingaustralia.org.

ROUND 2 S2F ROLL-OUT

Applications for clubs to become S2F member clubs are now open. Club committees have received the details and a link to the application. We have a number of applications so far and are expecting quite a few more. Have a look at the documents on the Discover Soaring website (at the bottom of the page) to get an idea of the requirements for clubs.

GFA OFFICERS APPOINTED FOR 2018/19

The GFA Board re-elected **Peter Cesco as President, Lindsay Mitchell as VP and Dave Shorter as Treasurer.**

The AGM approved the appointment of all other officers including regional Board members, Department heads and the Regional officers for Operations, Sports, Airworthiness and Safety. see GFA web page and look under Contacts for all positions and contact information.

PUSH THE RED BUTTON [INFORMATION TECHNOLOGY (IT) REVIEW]

Tell us how we can improve our IT systems and web page and communications. A bright red button located on the web page takes you to a feedback form allowing you to provide feedback on specific issues, warts and all. The form will be available for two months. Please tell us your thoughts, and be specific. Saying the web page needs improving doesn't help unless you tell us what item on the web page needs to be improved.

AUSTRALIAN GLIDING MAGAZINE COMPLETE SETS AVAILABLE

In about mid-1995, I needed some copies of old Australian Gliding magazines from Dec 1951 to Dec 1959 to add to my collection. I already had all editions from 1960 to the present.

Emilis Prelgauskas gave me permission to visit his library at his home to look for the issues that I required. On arrival, I could not believe the number of magazines he had on hand. Over 10,000 magazines were scattered everywhere and stored in 20 to 25 cartons.

This visit started a job of over 20 years, sorting and filing all the AGs he owned. During those years, another 15,000 arrived from estates, donations and other sources.

In March 2018, at last I finally finished sorting and filing the 25,000 AGs. They are all in dust proof boxes and labelled by month, year and so on. Over the years, I have probably spent 20 to 30 hours per year at Emilis' house – which is around 500 hours spent in total.

Over that time we have sorted 23 sets of AGs and have sent out 14 sets to individuals all over Australia, including NT and Tasmania.

SPORTS COMMITTEE CHANGED TO SOARING DEVELOPMENT PANEL

We were getting feedback from some members saying that the Sports Committee was only involved with competitions. However, this is far from true. The main activity of the SDP relates to coaching and achievement of the GPC, helping all members to improve their soaring skills and get enjoyment from their flying. It also manages Badges and Official Observers so that members can achieve these international qualifications. The On-Line Contest (OLC) is now used by virtually all cross country pilots to record and compare their flights each day and to gain points for their club.

Only then do we get involved with competitions – regional events, state, national and international championships, and the international Sailplane Grand Prix. To ensure that all clubs and members are more closely involved we have now made the State Soaring Development Managers (previously RTO Sports) core members of the SDP. Hopefully this will improve communication about what soaring opportunities are available to members.

WOMEN'S WORLD GLIDING CHAMPIONSHIPS AT LAKE KEEPIT

Interest in attending this championships is quite high, despite the distance from Europe and the USA. A recent survey of countries reveals 49 pilots planning to attend, with another four pilots possible depending on funding. This means we can run all three classes as planned – Club, Standard and 18m.

Some of these pilots will also attend the Club and Sports Nationals in January 2019 as practice for the main event in January 2020. The Australian pilots aiming for this championships will be competing at the Nationals this year as qualification for the Australian team.

HAVING TROUBLE WITH ABBREVIATIONS AND ACRONYMS?

See the list on the GFA web page [Docs/Forms-Documents-Administration-admin docs](#)

TERRY CUBLEY
EXECUTIVE OFFICER
eo@glidingaustralia.org

I also have over 2,000 editions of NZ, US Soaring, English and Gliding International magazines at home.

Another interesting project emerged when Emilis came across the missing films from the 1974 World Comps at Waikerie in his library, amounting to about 22 reels. I took two of them and, at my own expense, had them converted to DVD format to check quality and colour, as these films are over 40 years old.

Very happy with the results, I contacted SAGA and GFA for finance and had all 22 reels converted. This process took nearly two years, as the films were in poor condition from being cut into over 100 portions. This had been done when editing sections to make a DVD of GOOD LANDING VR.

KEITH WILLIS

**IT FEEDBACK?
SUGGESTIONS?
LET US KNOW**

www.glidingaustralia.org



GFA CALENDAR

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

VINTAGE GLIDERS AUSTRALIA MELBOURNE CUP RALLY BACCHUS MARSH AIRPORT 3 - 6 November 2018

All welcome. For further Details please contact **Dave Goldsmith, 0428 450 475** or email

daveandjenne@gmail.com

WOMEN IN GLIDING WEEK NARROGIN

3 - 9 November 2018
For more information contact **Jenny Shearer** on jsh53303@bigpond.net.au mob 0417 934 052

WAIKERIE ORANGE WEEK 17 - 24 November 2018

Contact **John Ridge** at johnridge16@gmail.com

NARROMINE CUP 18 - 24 November 2018

Contact **arnie.hartley@gmail.com**

MULTICLASS NATIONALS NARROMINE
26 November - 7 December 2018
Contact **arnie.hartley@gmail.com**

WOMEN IN GLIDING WEEK TEMORA

8 - 16 December 2018
For more information contact **Leonie Furze** on ozglidergal@hotmail.com

VSA STATE COMPS AT BENALLA

9 - 15 December
For further information contact - Matt Gage. matt@knightschallenge.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
for more information

JOEY GLIDE-AUSTRALIAN JUNIOR NATIONALS WAIKERIE

12 -19 January 2019
Visit: www.joeyglide.juniorsoaring.org/
Contact: admin@juniorsoaring.org

SAGA COACHING WEEK WAIKERIE

6 - 11 January 2019
see opposite page

NSW STATE CHAMPIONSHIPS NARROMINE

19 - 26 January 2019
Contact **Mick Webster** on email mick260649@gmail.com Contact **Mic I.com**

HORSHAM WEEK 2 - 9 February 2019

horshamweek.org.au

20M 2 SEAT CHAMPIONSHIPS NARROMINE

9 - 16 February 2019
arnie.hartley@gmail.com
narromineglidingclub.com.au

KEEPIT REGATTA LAKE KEEPIT

23 February - 2 March 2019
All pilots are invited to the Lake Keepit Regatta for a week of fun, friendly competition and coaching. This event is ideal for beginner and intermediate cross country pilots who want to start competition or improve their XC skills as well as for seasoned pilots that want to take it easy and share their knowledge.
● Daily talks and briefings by experienced coaches and seasoned competitors on topics of interest.
● We have 8 new cabins and lots of camping sites but be sure to register early as the cabins get booked very quickly. Additional accommodation available at the nearby Reflections Holiday Park.
● Bring your own glider, borrow your club dual seater or rent one of ours

(limited availability) and come have fun at Australia's gliding paradise.
● Entry fee only \$180 per glider and \$50 per additional passenger.
● Evening meals available at a modest additional cost.
More information and registrations soaringstuff.net/KeepitRegatta or email [Jay Anderson jayoa@bigpond.com](mailto:Jay.Anderson.jayoa@bigpond.com)

WAGA/ GCWA STATE COMPS CUNDERDIN

23 February - 2 March 2019
For further details contact **Rob Hanbury 0429 082 520**

VSA ALPINE COURSE COACH THE COACHES WITH G DALE - MT BEAUTY 9 - 11 March 2019

This course will be led by G Dale, renowned alpine coach, focussing the first three days on development of VSA Coaches.
Over the next 6 days, G Dale will lead coaching sessions for all pilots interested in developing their mountain flying skills.
Further details will be made available on the VSA website at gliding.asn.au
Contact organiser: **Philip Volk philip.volk@horizonswealth.com.au 0418 349 257**

10TH WOMENS WORLD GLIDING CHAMPIONSHIPS LAKE KEEPIT

3 - 17 January 2020
Contact **Wendy Medlicott**
wendymedlicott@optusnet.com.au

BADGE DECLARATION

Click the [BADGE DECLARATION](#) button on glidingaustralia.org to go straight to the form. Or use this address inyurl.com/hsp4h7p

BADGE CLAIMS ALL BADGE FLIGHTS WITH THE EXCEPTION OF HEIGHT CLAIMS MUST BE PREDECLARED AND OVERSEEN BY AN OFFICIAL OBSERVER PRIOR TO THE COMMENCEMENT OF FLIGHT. ALL BADGE FLIGHTS MUST BE FLOWN SOLO (NO PASSENGER, NO SAFETY PILOT). ALL BADGE FLIGHTS CLAIMS MUST BE SUPPORTED BY AN IGC FILE..

FAI GLIDING BADGES TO 24 SEPTEMBER 2018



A BADGE

SPEIGHT DARYL R 12362
STRAUSS WERNER F 12363
BOYLE DANNY 12371
TU CHI YAN 12372
LEWIS KEVIN F 12374
TAYLOR BRENDON J 12378

B BADGE

BRAITHWAITE MELODY 12345
KERN MARKUS H 12349

A, B BADGE

QUIRK DAMIEN T 12364
JAMIESON THOMAS 12368
SHUM TSUN Y 12370
MCVEY LACHLAN J 12373
ALLEN SCOTT 12375

C BADGE

BARRINGTON GREG 12320
MILLER PETER J 12278

A, B, C BADGE

PASSMORE BENJAMIN 12365
SKONECZNY PRZEMYSŁAW 12366
HUJDUR EMIR 12367
HUSEBY RONNY 12369
GAUGHWIN CHRISTOPHER 12376
BROOKS PETER C 12377
SANDER CRAIG 12379
ROESING ANDARAS 12380
DICKSON ANDREW R 12361

SILVER C BADGE

STEVENSON JAMES J 4948
KERL BRUCE 4949

DIAMOND GOAL

STEVENSON JAMES J

DARLING DOWNS SC
GYMPIE GC
DARLING DOWNS SC
LAKE KEEPIT SC
NARROGIN GC
BATHURST SC

LAKE KEEPIT SC
NARROGIN G

NARROGIN GC
NSW ATC 300
BALAKLAVA GC
BEVERLEY SC
CABOOLTURE GC

BUNDABERG GC
BEVERLEY SC

NARROGIN GC
G.C. WEST AUSTRALIA
HUNTER VALLEY GC
G.C.V.
ADELAIDE SC
ADELAIDE SC
BEVERLEY SC
BYRON BAY GC
HUNTER VALLEY GC

G. G. WEST AUSTRALIA
SPORTAVIATION

G.C WEST AUSTRALIA

BERYL HARTLEY
FAI CERTIFICATES
OFFICER
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GREEN FAI CERTIFICATES GOODBYE, FAREWELL, ADIEU

This is the last list of issue of Green FAI Gliding Certificate Books for A, B and C Badges

I have been waiting to be replaced by a computer and now it has happened for the issue of A, B and C gliding badges. The role for issue of A, B and C gliding certificates has been moved to the GFA office online website. Notice to all instructors and students is to check out the new system at glidingaustralia.org.

To the 2,489 pilots to whom I have personally issued the Green Certificate Book, I hope that you will continue to send me your claims for Silver C, Gold C and Diamond Badges. I am looking forward to a rush of distance claims in the coming season for flights up to 1,000km.

OFFICIAL OBSERVERS - HAVE YOU UPDATED YOUR RATING?

To the official observers who did not renew their ratings from October last year, now is the time to get ready for this season. Log onto the GFA web site and renew now. The renewal is good for two years and the GFA office will contact you in plenty of time to keep your rating current.

If I can be of any assistance don't hesitate to contact me.

arnie.hartley@gmail.com

or **0407 459 581**

BERYL HARTLEY

MOUNT BEAUTY WINTER BEAUTY

The last week in August produced some excellent flying conditions at Mt Beauty. The nights were very cold with frost most mornings, maximum temperatures of around 12 to 14°C and not much wind. The air mass was very unstable with thermals to 8,000ft. Keeping your feet warm is the only issue! The photograph (right) is of snow capped Razorback Ridge between Mt Feathertop and Mt Hotham.

MARK BLAND





S2F

THE FIRST 12 MONTHS OF SOARING TO THE FUTURE (S2F)

It's now 12 months since Soaring to the Future (S2F) was launched at the GFA AGM in August 2017. I thought it would be useful to review what we have achieved in that time and what is planned for the next 12 months.

In preparation for the upcoming AGM and in order to have some up-to-date information to present, I sent out a survey to all members to establish the effect that S2F was having on them directly in their clubs and what changes they may or may not have seen as a result.

SUMMARY OF RESULTS

80% of members have heard of S2F
52% understand what S2F is trying to achieve (21% maybe, 26% no)
55% say that their club is making changes as a result of S2F (26% no, 19% maybe)
23% say that they personally are making changes as a result of S2F (55% maybe, 22% no)

So it's clear that most members have at least heard of S2F and a majority have some idea of what we are trying to do.

It was also useful to gather information about future direction and priorities going forward. To this end, one of the questions I asked members in the survey was what they felt that their clubs did well, and what they felt that clubs could do better.

It was quite sad to read one response that said, "I don't think my club does anything particularly well." So, I guess there's always room for improvement.

Some standout favourites among the comments received are listed below.

- About what clubs do well:
Enthusiastic committees
Early starts
Good IT to reduce member workload
Flying and fun as priorities

- About what clubs could improve on:
Late start to flying
Poor or inefficient logging and book keeping
Poor use of member time

-About what we can improve through standardisation:
Instructing, instructing and instructing
Checks
Documentation – particularly notice and clarity regarding document updates
Layout, search tools and look of GFA website
Requests for online resources, tests and ratings -
Booking, logging and bookkeeping materials
Radio procedures
Airspace quiz
Online logbooks

This is great feedback and we will act on it.

Will your club act on the feedback about late starts being a significant area of discontent for members?
Initiatives such as free flying for members and friends before 9am or 10am have been used at some clubs to address such issues.

In the survey, I also took the opportunity to ask members to nominate their preferred methods of communication. Most participants selected three options.

64% Magazine
62% Mande-news
58% Bulk email to target group
39% Website
21% GFA Forum
12% Facebook
5% Snail mail
3% Other social media (Twitter, Snapchat, Instagram combined)
47 Single responses - tailored personal emails, emails re document changes, e-magazine, GFA App, texts etc

As I type, Round 2 is open for clubs applying for SF2 membership, which we launched in September. In the second round, we anticipate adding another 10 clubs as S2F member clubs.

Next year we plan to expand SF2 further still. Obviously with each club roll-out we learn what we could do better and are more able to refine what we do.

Terry Cubley has been very active writing out the syllabus for the Principles and Methods of Instructing for S2F member instructors to complete.

In Phase 1, this syllabus has been presented face to face at the member clubs to allow feedback and to help us to fine-tune the syllabus content. Going forward, the intention is to present the

syllabus online for students to complete in their own time.

In parallel with this, we are also considering some one week Ab Initio and Post Solo training courses at smaller clubs using S2F member instructors. A sort of fly in, fly out (F.I.F.O.) style team will come in and show the club how to run a course and, in the process, grow the club membership. If you are a member of a small club and you are interested, please contact us.

Recently, I have been happy to assist clubs with requests to support grant applications for a significant number of clubs who are not yet members of S2F. I'm particularly interested in clubs who are planning to use mobile homes as facilities at their launch points. This has the great advantage of providing air conditioning, water, electricity, toilets and an area for briefing and de-briefing. To me this seems like a great idea and I know of at least two clubs that have applied for grants to pay for these facilities.

There is a false belief in the community that 5% female membership is a hard ceiling that cannot be breached. This is not true. In other countries such as France that have made a deliberate effort to increase female participation, the numbers are as high as 20%. Last week I saw an article in the Easy Jet in-Flight magazine explaining the company's aim to increase their female pilot numbers from 6% to 20% by 2020. I believe that through open-mindedness and a modern approach, member diversity will automatically follow.

We feel that it is important to recognise gliding clubs that support and encourage diversity. To that end, at affiliation this year GFA will be recognising clubs who have more than 10% female members and more than 20% junior members. There will be a basic Bronze category for those who achieved neither of these benchmarks, and Silver for clubs achieving one benchmark. The clubs that have achieved both will be Gold clubs.

It is my great hope that going forwards more and more clubs will embrace the S2F model as follows:

Standardise by reducing the number of local rules and use the basic minimum GFA rule set, meanwhile understanding that certain minimal local or site-specific rules will always be needed.

Standardise the training to closely follow the approved GFA syllabus using the Glider Pilot Training Record to allow the members to move freely between clubs.

Modernise by upgrading facilities and offering training in a one week format to align with member requests as to how they wish to receive their training, rather than training ad hoc on weekends.

Prioritise flying and fun. One comment that stuck with me from the survey was "abolish the drudgery of the launch point". Our members want to be able to turn up at the airfield to go flying and have fun. In my experience the clubs that have the most fun are those with a good mix of members. Younger members are particularly good at having fun and their approach is infectious and of benefit to all.

Going forward, we will continue to monitor churn because, to me, this is a good measure of how successful these new policies are or are not. We've known for a long time that members love gliding but are not prepared to put up with the way that gliding is currently offered.

On that topic and as a closing note - when I visited my GP last month for a check-up, she commented that her son, a neurologist, had recently started gliding at our club but had had to give it away. He was now flying RAAus because he was unable to make the time commitment necessary to learn to glide.

She explained that he really loved gliding and would have preferred to learn to glide but was unable to make the commitment that we currently require. To me, this is a small but important reinforcement that we are on the right track but that, in order to grow, we must offer training to suit the students - not the current members.

So, as I said earlier, it is my great hope that more and more members and clubs will embrace the S2F model, approach and standards. I am told that

DARLING DOWNS S2F

DDSC started on the S2F program around a year ago. We are now 12 months down the track and are progressing well with a lot of optimism for the future.

The first stage of S2F gave us the opportunity to analyse our club and facilities and see where we were lacking. We are fortunate as we have spent the past few years working hard on improving our club fleet and facilities, however we were able to evaluate and use some of the S2F funding on standardising equipment in our club gliders.

We have now been working on phase 2 which includes working with the Sports Community on again analyzing and seeing what we can do better, as well as reflecting on how we operate as a club. They are currently assisting us with a few procedural documents,

this type of cultural change is likely to take 5 to 7 years, but it seems to me that we have made a good start. Thanks to everyone who has supported the initiative and provided input, ideas, suggestions and resources along the way.

MANDY TEMPLE
CHAIR S2
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including a committee manual, as well as a new member handbook, which we are very keen to have!

The other exciting part we have been involved in is the standardisation of gliding instructors. Terry Cubley visited the club and provided a day of the theory of instructing. This was great for a number of reasons. For example, one of the obstacles students find is inconsistency between instructors. Also, a lot of the theory was new to some attending, and a good reminder for instructors whose training took place some time ago. Standardisation is the first step toward improving such situation, and toward improving the training we offer.

We are excited and optimistic for the future as we all love our club and want to continue to grow and improve for our members and for the gliding community.

and yourself to follow these rules and procedures, and this applies both on the ground and in the air.

Another area that comes up continually at seminars is thermal entry etiquette when sharing thermals with a larger number of gliders than you may encounter during your club operations. If you are new to the sport or need a refresher, I'd recommend you have a chat with one of your club's instructors or coaches.

So, to summarise -
Ensure you are current and prepared for your planned summer flying activities.
Follow the rules and procedures.
Take responsibility for your own actions.
Enjoy the upcoming soaring season.

STUART FERGUSON
NATIONAL SAFETY MANAGER

SAFETY MANAGEMENT NEWS

WELCOME SUMMER SOARING SEASON

At last the days are getting warmer and longer and many of you will be coming out of your winter gliding hibernation in preparation for the summer crosscountry and competition season. It's also been a cold and hard winter, particularly in the southeastern corner of the country, and I know that many clubs have lost days over winter due to poor weather conditions. As a result, many of us are not as current as we were six months ago.

I am also aware that at this time of the year we see an increase in mostly minor accidents and incidents, often the result of members trying to pick up where they left off last season without spending time preparing themselves for the season

ahead. Furthermore, aircraft can suffer damage that is not just expensive to repair, but also impacts on your pre-season preparation and your enjoyment of our sport.

I'd recommend that everyone take a little time to get back up to speed, plan your target cross country goals for the peak of the season and enjoy yourselves, too.

It is also time to remind everyone that most of our rules and procedures are not there to make your life difficult - quite the opposite. Most are built upon lessons learned and are there to help you avoid errors made by those who have been there before you. For example, we have recently read in an ATSB report just how important it is to use checklists. You have a responsibility to your family, your club

SOARING THE STRATOSPHERE



On 26 August 2018, Perlan 2, flown by Jim Payne and Morgan Sandercock, achieved a new unconfirmed altitude record of approximately 63,100ft. This is 9,000ft above their recently confirmed record of 54,000ft, also achieved at El Calafate, Argentina in September 2017. Two days later, Jim Payne flying with Miguel Iturmendi exceeded the new record by nearly 3,000 ft flying to 65,600 ft. Just a few days later on 2 September Perlan 2 broke the record again when Jim Payne and Tim Gardner achieved an astonishing altitude of 76,124ft.

These amazing new records validate the theories, engineering and dedication of the the Perlan team. They have worked hard over many years to achieve their goals aided in no small way by Morgan Sandercock of Hunter Valley GC.

MOST EXPENSIVE AEROTOW IN HISTORY

Airbus Perlan Mission II has 'always been focused on the high stratospheric wave' in the atmosphere above 40,000ft. On this



PERLAN'S HISTORIC FLIGHTS

26 AUG 2018

JIM PAYNE AND MORGAN SANDERCOCK SOAR TO 63,100FT, EXCEEDING THE RECORD OF 54,000 FT SET ON 3 SEPT 2017

28 AUG 2018

JIM PAYNE AND MIGUEL ITURMENDI REACH 65,600 FT

2 SEPT 2018

JIM PAYNE AND TIM GARDNER CLIMB TO 76,124 FT

expedition for the first time they were towed to altitude by an Grob G 520 'Egret' high-altitude reconnaissance aircraft. The specially modified tow plane pulled Perlan 2 to over 40,000 ft for Morgan and Jim's record-breaking flight. On the last flight of the expedition, Perlan 2 was towed to 45,000ft. Using the Egret enabled the Perlan 2 team to concentrate on their goal of flying high into the stratosphere and clearly helped bring about their success this year.

MORGAN'S HISTORIC FLIGHT

Just weeks after the altitude record Jim and Morgan set in 2017 was confirmed, Perlan 2 set the first of its new records.

After two weeks of practice flying and a further two days of waiting for the weather, conditions were right for stratospheric wave and Perlan 2 was launched. They were towed to 42,000 ft

During the 5.6 hour flight they explored and eventually climbed to their record altitude in wave. You can see the altitude trace on the page opposite or replay their full flight at the Online Contest.



BEYOND 76,000 FT

On 2 September, the tow took over an hour to reach 44,000ft. Eventually they surpassed the 65,600ft record set a few days earlier and climbed to an indicated 76,000 ft. The FAI uses GPS altitude and the exact altitude that the record will be set at will be revealed over the coming months.

What is sure is that the altitude record for soaring flight has been exceeded by a large margin. Jim Payne said, 'We believe that this is the highest sustained flight by a winged, manned, subsonic aircraft.'

However, the team philosophy states 'records are fun and they grab headlines, but for us they document the altitudes safely achieved without an engine when the stratospheric wave is working. Records are not the primary goal of Perlan Project, more like the icing on the cake'.

Perlan's ambitions have not yet been satisfied. They intend to return to El Calafate next August hunting for their stated objective of flight well above 80,000 ft.

You can read about Perlan Mission II's achievements in their own words following the links below.

Perlan Project perlanproject.org/blogs

Morgan's flight tinyurl.com/y8a5l98u

Egret perlanproject.org/blog/first-ever-tow-egrett



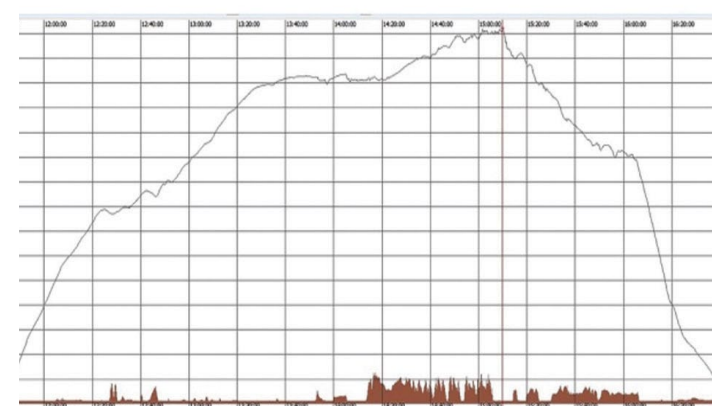
LEFT TOP: Perlan Mission II soaring to over 76,00ft indicated on 2 September 2018.
LEFT BOTTOM: Morgan Sandercock's flight computer indicating an altitude of 63,029ft and climbing.

ABOVE TOP: Jim Payne and Morgan Sandercock after landing having smashed the altitude record on 26 August.

ABOVE: Grob G 520 'Egret' used to break the altitude record for aerotows climbing to over 45,000ft.

BELOW LEFT: Perlan's trace showing over 76,000ft.

BELOW RIGHT: Perlan's flight trace showing 63,000ft.



DIAMONDS ARE FOREVER

WORDS AND PHOTOS BY DAVID MCILROY, CLUB CAPTAIN, CANBERRA GC



RIGHT: David and Ian Steventon above Lake Eucumbene at FL165 in wave, on 19 September in Ian's Duo Discus

BELOW: Climbing in yet another rough thermal before contacting the wave on 19 September.



Canberra Gliding Club's 2018 wave camp was highly successful, with a number of visiting and club pilots gaining Gold and Diamond Height climbs.

The camp ran from Saturday 15 September to Sunday 23 September. Visiting pilots came from the Adelaide Soaring Club and Balaklava (SA), and from Southern Cross, Hunter Valley and the Central Coast gliding clubs in NSW. All of those clubs had also visited us in 2017 when, unfortunately, we had severely cold weather and no contactable wave conditions.

We chose to hold the 2018 camp a couple of weeks later in the year than in 2017 and this paid off handsomely with distinctly better temperatures, and wave that occurred on about four days of the camp.

The addition of Southern Cross GC's Pawnee VH-CPU proved its worth with tuggie Don Palmer, a long-term supporter of our annual wave camp. Our own tuggies also provided sterling service with Pawnee VH-MLS. Provision of the second tug gave us the necessary insurance against one tug going U/S and of course enabled better launch rates when the wave was overhead.

WEATHER FACTORY

On the 15th, the Bunyan 'Weather Factory' lived up to its name. The first day of the camp was not flyable due to extremely strong westerly winds that nevertheless were predicted to be capable of producing extreme wave height possibilities. We used the time productively with several hours of briefings on high altitude physiology, Bunyan and Snowy Mountains, Wave Soaring Area airspace, legal requirements and obligations for gliders entering Class A airspace, and local topography and wave formation areas and conditions.

16 September was a great thermal day and many gliders operated up around 10,000ft altitude. Check flights were conducted for first-time Bunyan visitors.

By far the best day of the camp was 18 September, when the wind was blowing strongly from the NW. Gliders launching in late morning and early afternoon were contacting the wave easily, either through releases at 2,000 to 3,000ft AGL or by taking higher climbs directly into the wave, setting up on a N-S axis from our usual contact area just south of Bredbo down to Bunyan.

Many gliders achieved altitudes in the low 20s and the day produced four Diamond Height and three Gold Height claims. Many other pilots already in receipt of Diamond Height also achieved Diamond climbs. James Graves took the Canberra Puchacz to FL200 and declared it one of his most enjoyable flights in 35 years of professional flying! Ian Steventon (Hunter Valley) and Boris Jovanovic (Central Coast) took out the camp Allan Armistead Trophy with a height gain of 20,208ft in Duo Discus 'GIE', reaching FL265 near Jindabyne. They obtained a clearance from Melbourne Centre who had been pre-briefed by telephone in the morning that we might be seeking access into the Snowy Mountains

BUNYAN WAVE CAMP



LEFT: Coastal convergence clouds off to our east as we descended through about 10,000 ft altitude on 19 September.

Wave Soaring Area 'High' Class A airspace.

19 September was another wonderful wave flying day, if not quite as stellar as the day before. Many got to 18,000ft, although in a mutual flight I took in the Duo of Ian Steventon, contacting the wave took about 2.5 hrs of struggling in rough thermals. We eventually reached FL165 over by Lake Eucumbene.

Others found the day much more straightforward, with height gains of over 10,000ft. Steve Andrews of Southern Cross gained Gold Height in their club's DG303. Canberra member Christopher Thorne had a Gold Height climb with a flight to FL160 in LS6 GST. Unfortunately, GST's Flarm SD card proved to be corrupt and the flight is unclaimable. David Pietsch and Geoff Brown flew their JS-1s and David covered a distance of 335km in wave.

Later in the week several Canberra GC instructors were converted by Frank Johann onto the Adelaide Soaring Club's DG-1000S. Frank is a 20-year veteran of Canberra Wave Camps and he brought Brian Rau, also a multi-year visitor, and Tony Lewis over for this year's camp. Brian and Tony had some great wave flights and resolved to seek solo wave climbs in 2019. Frank also achieved a Diamond Height gain on 18th in his ASW27, however, like many, he already has claimed this.

SW Wave was evident on the final Saturday, with Stewart May (ASW20) and Boris Jovanovic (Pilatus B4) reporting thermal and wave around 10,000ft.

SUMMARY AND ACKNOWLEDGEMENTS

We flew for 160 hours, from 97 launches, with 16 visiting pilots and nine visiting gliders. Eight Canberra GC aircraft and 14 club members also participated.

Four Diamond Height claims and four Gold Heights were achieved, not all of which have been claimed at



LEFT: Ian Steventon (left) of Hunter Valley GC with Boris Jovanovic of Central Coast GC. Ian was pilot in command of his Duo Discus and Boris was P2. Together they won the Allan Armistead Trophy this year for highest flight gain, achieving 20,208ft climbing up to FL265 on 18 September.

the time of writing. Many more significant height gains were also flown, with those pilots already in receipt of Diamond Height. Many hundreds of kilometres were also flown in wave.

I would like to thank my fellow members of the organising team from Canberra GC, tuggies, instructors, duty pilots, and other Committee members for their support and provision of automated flightsheet and charging systems. Thanks also to visiting pilots who assisted with launchpoint duties. Last but not least a special thanks to Scott Anderson who once again provided a superb camp-oven meal of beef, venison and accompaniments.

So, who will join us again next year for what we hope will be similar conditions?

ARE YOU CONTEST READY?

BY DAVID PIETSCH



Responding to concern over accidents at competitions and the level of preparation by pilots early in the contest season, at the recent National Competition Committee (NCC) meeting we discussed whether rules could be introduced to ensure pilot currency before competing.

In the last issue of Gliding Australia our President discussed prescriptive vs outcome based rules and regulations. At the NCC meeting we struggled to come up with something prescriptive that was sensible, effective and covered most pilots' circumstances.

The outcome of our discussion was that we would leave the existing rule requiring pilots to be in 'Current flying practice in competition and/or cross-country gliding as defined by GFA'. Finally I was volunteered to write a short article in this magazine to promote some thought and guidance on the subject.

In examining GFA documentation, it is apparent that the issue of currency with respect to contest flying is underdeveloped. However, all is not lost and it would be wise to review the Competition Safety Briefing Pack on the GFA website at Docs & Forms/Sports/Competitions/Competition Safety Briefing Pack.

Additionally, Gliding Australia (GA) has recently published some useful articles including Garry Speight's 'Outlanding not Outcrashing'. Further, a review of the GA accident reports over recent years is a salient reminder to us all regarding the game that we are in. Some outlanding accidents, involving major glider damage or write-offs, could have had far worse consequences for the pilots.

PERSONAL PREPARATION

Returning to personal preparation, this is not an article about maximising contest results, rather about reducing stress and minimising safety risks at the beginning of the contest season. If we are to adopt the principle of outcome rather than process, we need to think about those aspects of competition flying that give rise to those stresses and risks and a strategy to minimise them.

I have extracted five major aspects of contest flying that can give rise to disappointing or unpleasant outcomes if executed badly.

1. Logistic Preparation Am I logistically prepared for the contest or will I arrive with no maps, an unreliable trailer, poorly prepared aircraft etc, giving rise to distractions, frustrations and little piece of mind?

2. Launching Am I organised so that for the first contest launch

I am comfortably established in the cockpit, confident that I know my real options, and able to confidently handle my heavily loaded glider should the launch fail at the worst possible moment?

3. Gaggle Flying Am I prepared and confident that I can operate safely and collegiately in a big gaggle, at not particularly high altitude aiming to stay there to avoid a relight or outlanding?

4. Outlanding Am I mentally prepared for an outlanding? When I am getting low will I be carefully assessing outlanding options, expecting to have to use them should a hoped for climb or engine start not eventuate?

5. Finish Line Congestion

Am I prepared and do I have the skill and situational awareness to manage a multiple aircraft arrival with the person in front doing the unexpected?

These are but a few of the issues that we face as glider pilots and are exacerbated in a competitive environment. So back to the question – am I prepared?

OUTCOME-BASED APPROACH

It would be possible to apply draconian prescriptive rules to ensure a reasonable level of preparation for all pilots, but these rules would necessarily try to address a perceived lowest common denominator pilot and be untenable for the majority. Instead, let us look at an outcome-based approach and expect that pilots are able to make some reasonable self-assessment of their level of readiness and necessary strategies for the first contest day.

READINESS

Not all of us will be as prepared as we would like to be at the beginning of a contest. Yes, we might be fully prepared logistically with everything in tip-top order but we might not have flown a lot in the preceding period and our last contest might have been last season or even before. Here we need to honestly look at our recent flying history to make some realistic determinations.

You need to be in current gliding practice, and what constitutes 'current' will be determined by the combination of both non-gliding and gliding recent experience. If I am honestly ready for the launch failure described above, then that is a good indication, but if I am thinking 'I reckon that I could cope', then maybe I am not as ready as I might be. Here we must be brutally honest with ourselves.

Strategy - Being in current gliding practice makes all of the other contest issues very much easier to deal with. Having recently flown on tricky, non-benign days is great training with both sporting and safety benefits. Our instincts and 'muscle memory' can kick in when we are faced with a tricky situation requiring immediate attention and confident application.

Attitude and Decision Making How prepared am I when everything seems to be going wrong? Let me present two quotes here:

"The more I practice the luckier I get," Arnold Palmer - Golfer
"Soaring is a game of Chance and Skill....." Chris Rollings from G Dale's Book The Soaring Engine Vol 1.)

Putting the above two thoughts together - at the beginning of the season when unpractised, with unhone skills and adverse luck, we can get pretty frustrated. It is here that mental preparation for the contest is so important. We must be prepared for our 'luck' to be absent, for everyone else seeming to 'have a good run'. If we are prepared for this (and of course it may not happen) it is much easier to take it in our stride and simply look ahead to the next day.

Most importantly we must not let a 'bad run' overwhelm us airborne so that we start doing desperate things trying to catch up, which almost always will end up in tears at best and a tragedy at worst. If I might loosely quote two competition greats:

Hans Werner-Grosse: "There is nothing that you can do to make up time that you have lost – the time is lost".

Brad Edwards: "Plan on making the best flight that you can on the day and if the result is not high on the score list and it was the best you could do, that is reward in itself."

IN COMPETITION

For most of us – except, of course, our colleagues who did Australia proud on the European contest circuit over the last couple of months - at our first contest we will be a bit rusty, so let's look at the five example points above and have a think about strategies to minimise their associated risks.

Logistic Preparation No words of wisdom here – write out a checklist and just get organised!

Launching Be organised so as to avoid rushed launching. Be strapped in, settled and ready to go, with all avionics running, a couple of rows behind the launching row. Ensure that you can competently fly your glider at maximum take-off weight and be confident in dealing with the lowest powered tug being used. Have prepared your escape plans in the event of a launch failure at any altitude. This may involve a controlled crash.

Strategy: Recent heavy weight launches prior to the contest will help provide the necessary preparation here.

Gaggle Flying There's a good chance that your last gaggle experience was some time ago.

Strategy: Prior to the contest aim to fly with other gliders in the same thermal to at least refresh yourself on manoeuvring at the same altitude and the relative aircraft motions in the thermal. Review any notes that you might have on gaggle flying. Pay particular attention during the safety brief on the art of gaggle flying. Aim to minimise your involvement with congested gaggles until you are fully refreshed and competent. The person that you don't see will be the person that you hit.

Outlanding With the advent of superb sailplane performance and motors, outlandings are less likely, and can come as a bit of a surprise. Early in the season maybe the likelihood of outlanding is higher than later on when we are more in the 'swing of things'. Anecdotally, contest outlandings have a fairly high incident rate. The feeling of intense disappointment at the prospect of outlanding, particularly if it appears everyone else is way up high racing away, can be extreme.

Strategy: Do not succumb to desperate measures, or safety will be compromised. Always assume a cross-country flight will end up in an outlanding. We don't need the stress of worrying in the cockpit that we are not prepared. Car and trailer ready. Communications and survival gear in the cockpit. Clear decision point decided. Engine procedure clear and ready. Assume the engine will not start.

Where there's no unnecessary stress then we will feel the air better, we will fly more accurately, we will have more chance of effectively using any lift that we might find above our decision point. Once we commit to land, put gear down and safely land the glider into wind.

Finish Line Congestion This can get a little tricky depending upon the particular airfield. Pilots are expected to follow landing protocol provided at the morning brief. Sometimes this doesn't happen. How prepared am I for the unexpected?

Strategy: Practice a few straight in approaches at various energy levels before coming to the contest. Ensure that you are familiar with the zoom and manoeuvring potential of your aircraft from various speeds and how it should 'look'. Be able to convert from an intended straight in approach to an alternative runway, energy permitting. For the first few days carry extra energy early in the final glide to allow more flexibility upon arrival, noting that generally an orderly straight-in approach is the preferred option and lowest risk.

UNAVOIDABLE ODDS

Finally, a couple of other thoughts -

Risk appetite What is my appetite for risk? There are risks associated with contest flying, both safety and sporting. Fill your boots regarding sporting risk ("I am sure the next cloud will be better than this one") and if you get away with it and pull a screamer from the bottom of the working band - great.

However, if you think you are taking a sporting risk and haven't thought through the consequence clearly, then you might be exposing yourself to a safety risk, which could come up pretty quickly and be a nasty surprise. Accordingly, if that hoped for screamer is over rough country but didn't eventuate, and an outlanding results in a busted glider, then the risk wasn't worth it. You are out of the contest and might even be in hospital!

Age The old chestnut - excuse the pun. Many of us are getting older, and older pilots are certainly not immune from the accident statistics. For us older pilots our faculties may be starting to show signs of wear. Sorry, but it's true. The degree of wear and mental processing slow-down is hard to measure and not tied to any particular age.

Some pilots fly quite competently into their eighties, but ageing is inevitable. We are likely not as good as we were. Our situation awareness is possibly not as good as it used to be, we get tired more easily and our time in the sun might be behind us. Perhaps we need to accept contest results that are not as high as they used to be, take a few days to settle into the contest, and simply enjoy flying safely?

PREPAREDNESS EQUALS COMPETENCE

The information above is simply a brief look at some of the issues associated with contest flying and aims to stimulate thought. The idea is that we all honestly ask ourselves what is our level of preparedness and our competence to undertake glider racing on the first contest day. If we skip over self analysis and say to ourselves, "It'll be OK, it'll all come back on the day..." then we are likely doing ourselves and our racing colleges a great disservice and endangering both ourselves and our friends.

Take any opportunity to get some preparatory flying under your belt. If opportunities have been limited, take maximum advantage of any pre-contest flying that might be available at the contest site.

If you are in serious practice then you can go full out on day one. If, like most of us, you aren't in red-hot practice, you need to recognise that you are likely not as good as you think you are and your situational awareness may not be anywhere as good as you think. Visualisation of the first contest day and its likely challenges will help preparation and decision-making processes as those challenges present themselves on the day and subsequent days.

This brief discussion does not aim to provide a formula to determine readiness for contest flying, rather it aims to promote thought and self-examination for those of us attending competitions early in the season, or for that matter, just going cross-country.

Finally, how many of us are as ready and as good as we think we are?

GA

BEARHAWK PATROL GLIDER TUG CALLED 'LUCY'

BY ALAN ARTHUR
NARROGIN GC



The gliding fraternity has been talking about auto engine powered tugs for decades and despite the efforts of many, they haven't become a reality - yet. [GCV eTug is a notable exception ED.] However, recent changes to CASA regulations have made them a far more practical proposition.

A casual conversation around the bar led to the formation of a syndicate to look at a private venture to install a Mazda 13B Rotary engine in a PA 25-150, a small Pawnee. The syndicate members Alan Arthur, Doug Harrington and Avon Furphy conducted an extensive search for a suitable aircraft and finally dismissed the idea as too expensive, too much work, too many ADs and too many owners that had an inflated idea of the true value of their aircraft.

The idea changed to building a kit aircraft similar to a Piper Super Cub, also with a Mazda Rotary engine.

The Bob Burroughs-designed Bearhawk Patrol was selected and after some consideration, an order was placed for a Bearhawk Patrol quick-build kit with Bearhawk Aircraft in Austin, Texas. The kit was ordered in July 2016 and, after a couple of months of sorting out options, arrived in Perth WA on 29 December 2016.

A couple of days later after it had cleared quarantine and customs, a trailer ride to Narrogin saw it installed in the new hangar at the Narrogin Gliding Club for the build. The kit consisted of a steel tube frame and other welded steel tubes and fittings and lots of raw material. The instruction manual was quite basic but I purchased CDs of the build details compiled by other builders, and the kit manufacturer provided

hundreds of photographs of other builders' projects. The basic airframe went together quite quickly and by the end of January 2017 we had the first visit from the SAAA (Sport Aircraft Association of Australia) Technical Counsellor Geoff Danes and the AP (Airframe and Powerplant) mechanic for the project Bill Keehner.

Avon already had a Mazda 13B engine sitting in his shed waiting for a racing car project, so he donated it to the project. As it hadn't run

for many years, it was shipped to Rotormotion in Perth for a complete overhaul and conversion for aircraft use. Rotormotion's brief included a target horsepower between 210 and 240 hp.

The auto engine installation consumed enormous amounts of time as our glider towing goal meant that we could not have any problems with engine cooling at relatively low airspeeds and high power settings. Consequently we selected a twin radiator system and a double-sized oil cooler. Experience during the test flying program indicates that we may have got it right.

Avon's Mazda rotary engine was a fuel injected and electronic ignition version from a Mazda RX7. The entire Mazda fuel injection and ignition system was discarded and instead, twin aftermarket EMS Stinger systems were installed driving the standard injectors and twin spark plugs. Also discarded were the heavy exhaust manifold and all the environmental systems. After initial engine runs the custom exhaust was modified to include two straight-through mufflers and ceramic coatings on the engine pipes.

PSRU (Propeller Reduction Unit) selection proved to be a bit of a problem because all of the toothed belt systems seem to



have disappeared. The only system we could find with good reports was a geared system from Autoflite in NZ. This PSRU is available in two- or three-gear versions and we chose the three-gear one to keep the direction of rotation the same as Lycomings. It also moved the engine thrust line up closer to the original design position. After selecting the PSRU we were able to order a prop to match. We ordered an IVOPROP Corp Magnum three-bladed ground adjustable prop of 76" diameter.

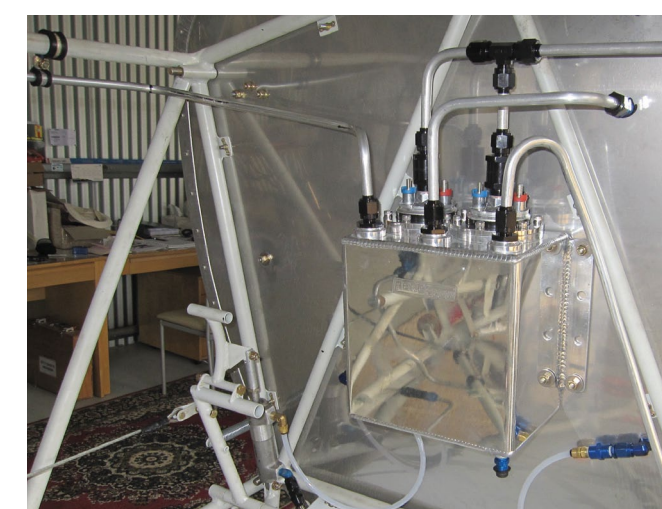
The fuel system needed to be modified to incorporate dual high-pressure injection pumps. Initially I was going to build a header tank with dual submerged pumps but in the end found exactly the set-up I had planned in an auto supply catalogue at a much cheaper price. The system is now a gravity feed to the header tank and high pressure to the injectors, and return fuel comes back to the header tank.

The aircraft relies on electrical power for engine operation so it was quite critical that everything was duplicated - not only is everything selectable, from the dual batteries to the ignition boxes, but we have incorporated a panic switch that can change all selections to the opposite selection with the flick of one switch. At higher altitudes you can do some fault diagnosis but when towing a glider at 100ft you don't have time to play around with systems.

The airframe is partly covered with aluminium alloy and partly with fabric. We chose to use the Oratex pre-painted fabric. The Oratex fabric is quite easy to use and, being pre-painted, has no hazardous solvents to use. The glue is a water-based hot melt glue. The fabric is about 80% the weight of other fabric systems, which resulted in the aircraft C of G being well forward, requiring lead ballast in the tail. If I were to build another Bearhawk I would plan to fit the dual batteries in the rear fuselage and not on the firewall.

Instrumentation did not need to be very complex and, other than the engine monitor, all are round steam gauges. For the engine management system we used the MGL Extreme EMS display, which has the advantage of being mainly programmable.

After 19 months, 4,450 hours and a lot of engine runs and taxi



tests, the big day arrived. Word had spread and instead of having a quiet first flight, dozens of spectators attended on Saturday 15 September 2018.

The SAAA team arrived early for the final inspection. Geoff Danes and Bill Keehner did their inspections and Bill issued the Phase 1 C of A.

The aircraft flies really well and took to the air as if it were made to fly.

GA

First published in Narrogin Gliding Club magazine GliChat





life. Thank you to all my friends, whom I haven't seen for some time, for letting me get away with it.

BELIEF IN YOURSELF

The key is to believe in yourself. This is simply all that matters. It is a key life skill that my parents gave me, and that George Lee engrained in me later during 2003 and 2004. This skill has helped me on many occasions, but what started it all more recently was winning the pre-Worlds. I knew it was going to happen, and finally I was able to shift my primary goal from being a pilot in Europe wanting to learn, to being someone who can actually do it – who can win!

I had two special days during the six-week campaign overseas, I was a day winner at both the 15m and 18m World Championships, both in new Ventus 3T gliders.

How did it happen? Clearly the preparation for this event was critical but more specifically, I believed in myself and when all the ducks lined up, I was able to take the opportunity and run with it!

LUCK - WHEN PREPARATION MEETS OPPORTUNITY

When I made the 15m day win in Poland, I had spent the whole competition playing my cards carefully each day – namely, which team to go with in the gaggle. I picked the team that I thought would do best on the day in terms of my placing, their glider types, the weather expected, personal abilities and the number of gliders I wanted around me.

On this day, I had been in catch-up all day after simply being dropped off at the bottom. Just at the opportune moment, I was at the top and found myself in front with Sebastian Kawa and the gaggle behind me. It felt uncomfortable and I realised that I didn't actually want to beat Kawa. I wanted to slow up and re-join the followers. I suspect 90% of the competition felt this way, as part of what I call the Kawa effect.

'THAT IS INSANE - ADAM'

I looked ahead, saw the path I was looking for – Standard Class converging but not yet in sight. The ducks are lining up – I can do this! The hammer went down, I chose an upwind street and the Kawa gaggle went downwind. I immediately started bouncing climbs, feeling the sky the way I can and do, always feeling that they were chasing me down. Keep rolling!

The clouds ended and I found myself heading for some lone wisps. After that came a long glide to a forest and a growing CU. While Ray and Matty were inbound to the weak climb, I had climbed enough to make the next jump as they flew just over the top. Matty with his positive tone effectively said, "You can do what you like, but I'm going for it!" That's what we did, and all three of us were rewarded with a strong climb to base and great results for the day.

A glide ratio of 39:1 was required to get home as I faced a headwind and a dead sky. I made it and was one of two finishes for the day. It sounds simple and easy, but everyone else's struggle behind me was very real. I certainly won't forget either this day – or the beer I enjoyed as my personal prize – for many moons!

For the Czech 18m day win, my new found confidence made it hard to hold back. There certainly was some luck in this day, plus team work and personal skill. The luck came when I couldn't get to altitude on what was feeling like a distance day as the sky started to fill in with rain. John Buchanan was in shear wave with the top dogs and I gave him my blessing to leave with 40 others. There was no better opportunity to make such a good start.

The team work happened when I finally found my climb and was able to make my start. John was awesome in calling the climb strengths, the distance to turn points, how the rain was developing and so on. Armed with the above knowledge, I just trusted myself and my personal skill, simple as that. Thank you, John, for being a part of that day win!

THANK YOU

I couldn't have represented Australia as proudly, confidently and with the same success without the help of many key people, namely, my parents Chris and Nerida. They were so reliable, with plenty of love and support. It was lovely introducing them to my friends and the international circus that I am a part of.

Dylan Lampard was extraordinary in Poland, always looking out for me, lending his ear and giving race advice. Terry Cubley, our magnificent team captain, was easy to trust and brought great leadership, great organisation, quality personal flight debriefs and good fun, Thanks for your time and company, mate. Thanks are also owed to John Buchanan for four years of laughs, camaraderie, great coaching and flying. I also thank all my supporters at home and around the globe for the constant messages of encouragement.

Last but not least, thank you to Schempp-Hirth for the hire of the 15m Ventus 3T, and to Jaap and Olfert of the Netherlands for hiring out their two-week old 18m Ventus 3T. It's an incredible glider, but that's another story!

GA

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8 - 21 JULY 2018

15 METRE

1 PC SEBASTIAN KAWA	POL	ASG 29	6,047
2 RP ŁUKASZ GRABOWSKI	POL	DIANA 2	5,961
3 FM CHRISTOPHE RUCH	FR	JS 3	5,837
8 3V ADAM WOOLLEY	AUS	VENTUS 3T	5,67

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35TH FAI WGC HOSIN, CZECHIA

28 JULY - 11 AUGUST 2018

18 METRE

1 WO WOLFGANG JANOWITSCH	AUST	VENTUS 3T	10,236
2 I MARIO KIESSLING	GER	VENTUS 3T	10,097
3 FM JEAN-DENIS BARROIS	FR	JS 3	9,915
12 BB JOHN BUCHANAN	AUS	JS 3	9,440
21 HC ADAM WOOLLEY	AUS	VENTUS 3T	9,07

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QUEENSLAND STATE COMP GRAND PRIX FORMAT

BY MARK DALTON
PHOTOS BY JOHN ABSOLON

The 2018 Queensland State Competition was conducted in two classes, Standard/15m and Open/18m, at Kingaroy Soaring Club from 29 September to 6 October. A Club Class had been planned, but unfortunately, there were not enough entries to make this viable. The competitors had four scoring days, and the whole event was wisely presided over by that inimitable competition director, Greg Schmidt.

Other articles have been written on the subject of Grand Prix format glider racing. The likes of Mandy Temple, Peter Cisco and Dave Shorter have all praised the format for bringing fun back into gliding. They go on about the lack of start games, the excitement of

racing wing to wing with your friends and shooting across the line within seconds of each other. They emphasise the simplicity of the scoring system and how (at last) family and friends can actually watch the race, understand what is going on and join in the excitement of the finish as competitors stream low across the finish line on the airfield boundary, water pouring out behind like jet fighters.

But do we really believe them? Or is this just another gimmick, a brief flicker of light from a guttering candle struggling to stay alive against a wind of activities with more immediate gratification?

Absolutely not! It's fantastic fun!

They did it at the qualifiers at Horsham, they did it in the Formula 1 Grand Prix at Leeton, which was called Formula 1 because it limited the entries to gliders with a handicap of 1.0 or less – that is, Club Class. Now, ladies and gentlemen, for the first time at a State competition in Australia, we have done it at the 2018 Queensland State Competition at Kingaroy.

For the uninitiated, Grand Prix racing is like nothing you have ever tried before. A maximum of 20 gliders in each class - in this case, 19 for the Standard/15m and 10 for the Open/18m - are launched in the normal way. The



LEFT: Mark Dalton landing his ASW 20.

LEFT BELOW: Kreg Kolb relaxing on the flight line.

RIGHT: Brian DuRieu and team O'Donnell

BELOW: Brad Edwards on approach in his JS3-18m.

gliders in each class are given enough time to reach the designated start line at the correct start height, usually 2/3 the height of convection, and a start time is given with subsequent count down. The pilots are given warnings at 10 minutes, 5 minutes, then every minute until the last 10 seconds, which are counted down to zero.

During this time, the excitement mounts as you try to position your glider in exactly the right place at the right height and at the right time. Incidentally, this does appear to expose a glitch in the XCSOAR programme. It points you in the direction of the 'optimal' place on the line - which may be several kilometres away - instead of the closest point to the line, which is what you want. This makes it more complicated to time your start accurately. A speed limit of 90kts over the line discourages the kamikaze dive at VNE to get under the height limit. The gate is then opened, the race is on and if everyone has timed it correctly, the gliders cross the line abreast, in line and all at the same height.

There have been criticisms that this sort of start would increase risk. All I can say is that on none of the five racing days, including the practice day, did I feel it was anything but totally safe. Interestingly, while one would suppose that there would be a mad scramble to be first over the start line, this did not turn out to be the case. The advantage of starting a few seconds

QLD STATE CHAMPIONSHIPS



COMMENTS BY THE COMPETITORS:

Have you enjoyed this competition?

Brian DuRieu: 'I love the format because it's the closest thing to match racing out of all the existing formats we use in state comps and nationals. You are always benchmarking your own performance against your competitors. I'm pretty pumped. This is the best comp I've ever been to in terms of concepts really coming together'.

Lisa Trotter: 'I've noticed a lot of energy and people are RELAXED. I think it's because you don't have to think about it so much and there is really good camaraderie.

It's more of a pure race and really good for improving your own skills'

Al Sim: 'Yes absolutely. Wonderful fun. For me it's all about personal bests. I'm not an experienced competition pilot. I've really, really enjoyed the GP'

[continued over page](#)



[continued over page](#)



TOP: Andrew Georgeson on approach.

ABOVE: Morning briefing at Kingaroy.

RIGHT TOP: Jo Davis in her ASW 19.

RIGHT: Justin Sinclair keeping his cool pre-launch.

Greg Schmidt: 'We are breaking new ground here. I first thought of this GP format at the State comp at Warwick last year. Not many people are going to States any more. So we took the F1 GP model, first tried at Leeton and modified that. They had a ball.'

Peter Trotter: 'I really like the relaxed friendliness coupled with the hard racing here at Kingaroy'. No start game. Head to head racing, which we all enjoy. Flying with others is great fun. You see the impact of every decision you make and the finish line is great fun.'

Jo Davis: 'GP format is great because it focuses on the racing. This GP has been excellent fun'.

before your competition is soon negated by the fact that by doing this, you end up being the first thermal marker for the rest of the fleet and the gaggle soon catches you up! So actually it held no advantage in the long run. Indeed, particularly on a blue day, it proved better to start with the crowd and take advantage of a wider search area.

Here's the clever bit - within each class, each glider is handicapped, not in the usual way by means of a percentage reduction in speeds, but by placing circles of varying radiuses around each turnpoint.

Consequently, a lower performance glider will have a larger circle, allowing the pilot to turn earlier so that the size of his or her task is reduced accordingly. Clearly, this radius will vary from day to day, depending on the size of the task, the number of turnpoints and their particular angles.

This makes for complicated mathematics, but luckily, a number of readily available computer programmes are able to sort all of this out for you. To give you some idea, the circles for the ASW20 and LS8s, for example, varied between 1 km and 3.7km radius from the turnpoint, depending on the task for the day.

The finish was arranged in such a way that the gliders were all brought in from the same direction using a northern control point about 13km from the finish line. Final glides were often very exciting in terms of actually being able to see your competitors ahead as you struggled to overtake them - or prevent them from overtaking you. The line itself was 4km long on the outskirts of Kingaroy town with a minimum height restriction usually of 500ft agl, below which you were penalised.

The landing was then either straight ahead or up into a normal circuit for other runway directions. It was



all very orderly, airmanship was exemplary and there were no reports of any pilots feeling unsafe at any time. Indeed, at the pilots meeting, overwhelming support was expressed for competition finishes at the airfield boundary with a minimum height of 50ft. This will make for a more visually exciting finish for competitors and spectators alike.

This means that, unlike the usual competition format, if you see someone in front of you, he is beating you! As a result, the first person over the finish line at the end of the race is the winner and receives 10 points, the second person gets 8, then 7, 6, 5 ... all the way down to zero for those at 10th place and below. It doesn't matter whether you are 10th or 19th across the line or, indeed, whether you land out - you will still score a big, fat, zero. Grand Prix is an unforgiving mistress.

Incidentally, at the pilots meeting/briefing at the end

Do you think GP will attract younger members to the sport?

Brian DuRieu: 'Certainly... Expectations of the younger generation are different. They want more immediate gratification over a shorter period of time and the GP format suits that perfectly. You only need to look at the Formula 1 at Leeton to see what the younger demographic are interested in. We need to adapt and change, update and move with the times.'

Claire Scutter: 'Definitely. More exciting. More adrenaline. You are actually racing each other instead of the theoretical racing, which is happening when you land.'

Andy Maddox: 'Two big problems are facing the newcomer - lack of time and lack of instant gratification. With GP format, it's short sharp racing and it really IS like a video game. This will definitely attract the younger generation.'



**Can you think of any improvements you would make?**

Andy Maddox: 'Gliding has become a solo sport. Wives and girlfriends have nothing to watch. It needs to be interactive with live tracking and air to air commentary with cameras and earpieces. It about seeing what's happening when it's happening. If someone makes a big detour - why? People can watch at home... make it a family friendly event... things for the kids... seeing the race for the finish is all a part of the sport.'

Brian DuRieu: 'Briefing material should be standardised and passed on to the other clubs as they organise these events. Part of the package should include pre-start, moment of start and the critical aspects of how to enter the first thermal in order to mitigate risk.'

Kerrie Claffey: 'The problem with the existing scoring system is that there's no reward for the bottom half of the fleet in a GP.'

Pete O'Donnell: 'You could start the two lines closer to each other to make it more fun. The big wings start should be delayed so that the two starts are closer together'.

Lisa Trotter: 'A proper GP finish would be good. I feel it is safer. Head out of the cockpit. Flight computers are formatted that way'.

of the competition, there was much discussion as to the fairness of this particular aspect of the scoring. A large body of opinion expressed the view that the scoring should extend right down the field. In other words, if there were 20 gliders, first place would score 20, or perhaps 21 if you wanted to give more incentive to win, second place 19, then 18, 17 and so on, all the way

down to one. At least this way, the pilots habitually in the bottom half of the leader board would have some points at the end of the contest and be able to compare themselves with other pilots of similar performance. This seemed logical to me.

However, whichever way you score it, the results are immediately obvious as soon as you land. You just have to count the gliders already on the ground. Added to this, we were supplied with loggers that in the future should be able to supply the pilot with his position in the race in real time and send this information back to base for the viewing pleasure of family and friends. To make it even more interesting to the public, family and friends, perhaps each pilot could also be equipped with an ear piece and microphone to transmit in real time back down to the ground.

TOP: Steve McMahon in his Mosquito lining up with three LS8s.

ABOVE: Greg Kolb relaxed about hooking up.

RIGHT: Lumpy Paterson took first place in Open/18m Class in his JS3-18m.

**SUMMARY OF THE FOUR COMPETITION DAYS**

Day 1 Blue with occasional scrappy CU on the downs. Changing gear was important. Over 300km.

Day 2 Blue, low, windy. Tricky first glide. Little wings up and down the valley for 158km in around 2.5 hrs. Big wings had a quick foray onto the downs before scrabbling back to the safety of the valley.

Day 3 Mostly blue. Out on the downs again for about 300km for little wings. 7 to 8,000ft cloudbase. Fast.

Day 4 Up the valley to Biggenden via Ban Ban. Around 250 km for Standard/15m Class and 291km for Open/18. Highlight of the comp was the spectacular scenery, particularly at Biggenden, and blisteringly fast return down heavy cloud streets under a convergence back to Kingaroy with 80km final glides. The Kingaroy valley is so much more interesting than the Darling Downs!

GA

QUEENSLAND STATE CHAMPIONSHIPS 2018**29 SEPTEMBER - 6 OCTOBER 2018****STANDARD/15M CLASS**

1	G1 ADAM WOOLLEY	VENTUS 2	40 PTS
2	P1 LT PETER TROTTER	LS-8	26 PTS
3	LISA TROTTER	LS-8	21 PTS

OPEN/18M CLASS

1	LP LUMPY PATTERSON	JS-3 18M	36 PTS
2	XGK GREG KOLB	VENTUS 2CX	27 PTS
3	AG ANDREW GEORGESON	JS-1 18M	26 PTS

f1gp.com.au

Do you think GP is the future of all competitions?

Lisa Trotter: 'Classes need to be small due to safety, so no. Not on a world level, but possibly at Nationals.'

Chris Woolley: 'There will be a mix. GP is more exciting, so targeting the media. I also suspect we will get better at real-time and that this will attract more public attention in the future.'

Greg Schmidt: 'Everyone's having more fun, so maybe it is. In an AAT, you see your mates before the start and then again in the bar afterwards, so it's not as friendly as the GP format... I'd like to see it as an annual thing.'

Adam Woolley: 'GP won't take over in the Nationals, but perhaps State Comps.'

Claire Scutter: 'There's a place for both. For the smaller, friendly comps, the GP format is the way to go, but for Nationals and Worlds, they're probably going to stick with more conventional racing.'

Mark Dalton: 'In my view, all State Comp organisers should seriously consider GP as their next comp format. It is fast, it is fun, it is fabulous!'

FIFTY YEARS AGO

BY DAVE GOLDSMITH



26 November 2018 will mark the 50th anniversary of a flight that I will never forget. It was at Warwick Airfield in Queensland, home of the Warwick Gliding Club, during a visit my club, the New England Soaring Club from Armidale NSW, was making there for crosscountry flying. Although only a bike-ride away from town, Armidale Airport at 3,540ft does not get the best of the weather, and furthermore we had to stop operations while East-West Airlines Fokker Friendships came and went.

On the day, I had earlier smoked an alfoil sheet, inserted it in the barograph and wound up the clockwork motor. As I prepared our club's one year old Bergfalke 3 two-seater (similar to an ASK-13) a Warwick member, Murray Knight, approached and said he was off to Jimbour and back in the Warwick Club's Boomerang for his Gold C and Diamond Goal attempt. I said, "I'm coming too!" I grabbed the blackboard, chalked and photographed the declaration and got ready to go.

The following is from the New England Soaring Club's Newsletter -

"After gaining Gold C height the previous day with a flight to 12,200ft in wave, I anxiously watched the weather at Warwick on Tuesday morning. A hot day was forecast, winds 15 to 20kts westerly and dust restricting visibility to 3 miles. As I was new to flying in the Warwick area, this information was rather worrying with regard to navigation. As it turned out my uneasiness was justified.

"I was stowed in the Bergfalke with some water, maps, two cameras and a borrowed car compass. The cable was attached for takeoff at 11.05 am. The declared task was Jimbour, a little township 96 miles to the northwest, and return. The winch launch to 1,700ft put me in weak lift to 3,000ft while drifting back down the strip. I headed northwest at a conservative speed, soon running into a nice 3m thermal back to 3,000ft. Visibility was terrible in the dust and after a few miles, the airstrip was completely hidden.

The next thermal took me from 1,200 to 3,600. On reaching the top I was unsure in which direction to head, so I held the compass up to the canopy and - drip, drip, drip! Out ran the fluid. What a mean trick - not a clue which way to head. Twelve o'clock - sun straight above - a very small portion of the ground visible below. I blundered off, finding it easy to maintain height in plentiful thermals to about 3,600ft, trying to pinpoint my position.

Soon, through the haze a fair sized town appeared



and I flew over to it. The Bergfalke climbed itself slowly to 7,500ft while I tried to identify the town. This turned out to be quite hard, there being few distinguishing features visible. I thought it was Oakey but luckily changed my mind or I would have followed the railway line to Goondiwindi to the southwest.

I left this town of Pittsworth at 1.15pm, - let's see, that's 35 miles in 2 hrs 10 minutes. Cripes, only 16 mph! Not fast enough for this trip.

The haze was clearing well as I set off flat out for Jondaryan. The strong thermals were well spaced, and I twice lost 4,000ft before finding another. Jondaryan soon appeared, uncomfortably close at only 1,400ft below, and my spirits were again down. However, a tractor produced a good 3m thermal to 9,500ft - much better.

I headed off on course and noticed a line of wispy cirrus parallel to track about 5 miles to the right. I headed off under the small cu straight towards it, thinking about wave, and sure enough, in the clear air immediately in front of the cirrus, the vario swung smoothly round to 1 metre up. I eased speed and turned parallel to the cirrus again. Here the wind had a more southerly component than below, but was perhaps not as strong. I was now climbing on course at 3m per second in the dead smooth air. This really is fun; you should try it some time!

Soon the altimeter was showing 12,000ft so I turned on the pace. The altimeter finally stopped rising at 13,400ft.

On my right about 2,500ft below was a line of cu, and still above me was the line of cirrus. Strong lift was still available and I believe diamond height would have been possible.

A breathtaking view in the crystal clear air confronted me as I set course to the right of Dalby towards Jimbour. The flat plains with their patchwork quilt of cultivation spread as far as the distant horizon.

I arrived at Jimbour at exactly 4pm, 6,000ft and half heartedly took my turning point photos, thinking of the long retrieve to come, there being perhaps an hour's

thermal conditions left. About 5 miles from Dalby I found a nice thermal that put me back to 7,000ft and I headed off, hoping to reach Oakey, home of the Darling Downs Soaring Club. With the help of another weakening thermal and a tailwind (would you believe?) I reached Oakey at 5.30 pm at 2,000ft. Well, this is it. But I wasn't real happy about landing at Oakey, especially when I noticed a seabreeze moving in from the east, so I headed off towards it, committing myself unable to land at Oakey.

Smoke in the seabreeze gave it a textbook wedge shape with a rounded leading edge and, with the sun sinking slowly in the sky, I still had 53 miles to go. Fortunately the line of the front headed to the south, and I hardly dared breath as the Berg swung in silently over the clearly defined leading edge. The vario needle slowly lifted to no sink. Whacko, theory really works!. Soon it was indicating 1 metre of rise as I turned parallel not far over the leading edge and eased speed to 33kts. Slowly the Berg rose with barely a tremble as I hopefully pointed for home in the settling dusk.

Soon I had attained 4,000ft and still had a slight up reading at 45kts. Many questions were flashing in my mind - would daylight last, can I hold the area of lift, how close does it go? Greenmount, Nobby and Clifton slipped by in eerie silence and I eased speed, hoping the seabreeze would travel further inland. This resulted in a slow climb and at 6,000ft I watched the last of the sun sink below the western horizon.

The front now turned back east and I had to leave it, knowing that if I reached Allora at 4,000ft I was home. 'No sink' ahead of the front helped me there at 5,500ft, so I increased speed in the dead calm conditions. I crossed the field at 2,000ft and in the last of the twilight gently eased back to the earth I had left almost 8 hours earlier."

Footnote - Murray was successful in the Boomerang using thermals and had arrived back some hours before me. At the celebrations kindly hosted by Ivan and Beryl Watt at their home that evening, as a non-drinker I was introduced to a 'harmless' soft-drink called vodka and orange - but that's another story!

LEFT TOP:
Members with the Bergfalke 3. On the left in white overalls, President Syd Mulvey. From the right, a young Bradley Edwards, then Dave Goldsmith and CFI Wally Stott.

LEFT BELOW:
Blackboard with the official flight declaration and Bergfalke.

ABOVE: The Bergfalke 3



46TH VGC RALLY STENDAL-BORSTEL AIRFIELD

PHOTOS BY VINCENZO PEDRIELLI



The 46th VGC Rally was held at Stendal-Borstel airfield 120km northwest of Berlin from 30 July-10 August 2018.

Over 207 pilots and crew from 20 countries brought 82 vintage gliders to the rally.

During the event, 54 club members were on duty and carried out 535 winch launches and 200 airtows.

The weather was good with no rain and temperatures over 30°C. The event was a great success!

ABOVE: The Minimoa still looks great although it first entered production under Wolf Hirth and Martin Schempp in 1936. With a 17m wingspan, swept gull wing and a load factor of 10, it was designed for cloud flying. David Adams, Richard Brown and Francis Russell brought this one to the rally from the UK.

BELOW: The Slingsby Falcon Type1 Replica. Originally built to a design by Alexander Lippisch, the Falcon Type 1 had its first flight in England in 1931. Fred Slingsby went on to build nine more, one of which was modified and called the Type 2.

RIGHT: Stendal town from the H28. Stendal-Borstel is a military airfield with plenty of room for winch launching on one side and airtow on the other.



ABOVE: This privately owned Scheibe Bergfalke II was built in 1954. Stendal is a picturesque town of approximately 40,000 inhabitants.

RIGHT MIDDLE: The large hangar at Stendal-Borstel had concrete domes at each end. Tilting doors along the sides allow aircraft access.

RIGHT BELOW: Werner gives Vincenzo final advice before launch.



ON THE WAY TO GLIDE RATIO 100:1

BY MURRAY STIMSON

Keen soaring pilots now need to add the name Nixus Project to their vocabulary as the first of a new class of extreme performance gliders.



uncompromising new FAI Open Class design capable of a calculated glide ratio of 76:1. This exceeds the 70:1 claimed for the 31m span Eta first flown in 2000.

Dick Butler first competed the Concordia glider in 2012 US Open Class Nationals at Minden with some success. Concordia had remarkable design features but still fully conformed to the rules that define Open Class gliders. With a wingspan of 28m, aspect ratio of 57.4 and maximum mass of 850kg, the wing loading was over 62kg/m² compared to 44kg/m² reported for Eta. Important in complying with current rules, it has no boundary layer suction.

But Concordia does have 'blowing', in which the laminar layer next to the skin is tripped to turbulent by tiny jets of air exhausted from a line of small holes in the flap and aileron lower surfaces at 95% of the chord. With the clear intention of winning races, the Concordia design was optimised for flight at 200km/h (108kn), significantly faster than earlier commercial designs. At this relatively high speed for gliders, it achieves a very low sink rate of

1m/s and an impressive glide ratio of 50.

Achieving this extreme performance means paying detailed scientific attention to understanding all of the air flows around the whole glider at different flight conditions and creating new ways to reduce drag by tiny but significant amounts. Loek gave particular credit for the Concordia wing design to one of his Masters students at the time, Johannes Dillinger, who graduated Cum Laude from Technical University Delft. The design involved a huge effort with 13 different airfoils across each semi-span, each optimised for the different chord lengths.

Approaching the fuselage junction, the airfoils seamlessly transition from those with highly laminar to mostly turbulent boundary layer on top and bottom surfaces. Along with changing inner wing twist, this controls induced and interference drag and local flow separation phenomena. For the wing, zero twist was achieved at 200km/h by aero-elastic tailoring using both NASTRAN and Morpheus software packages, resulting in lower drag at high-speed.

HISTORY OF AIRFOILS

Most glider pilots are familiar with the basic aerodynamic requirements for reducing drag. A wing must have high aspect ratio to reduce drag induced by creating lift that varies elliptically along the span and winglets, bent down to the horizontal plane. But at higher speeds the profile (skin friction and pressure) drag dominates, so wings must also be as thin as possible and have a thin, laminar boundary layer for as much of the chord as possible. The 'laminar drag bucket' should thus be deep and span a wide range of Angle of Attack (AoA). If not shaped correctly to control increasing pressure towards the trailing edge, in some flight conditions this laminar boundary layer (BL) can separate from the surface causing a large

increase in drag.

As Loek explained, 1967 airfoils such as the Wortmann FX-67-K-150 and FX-67-K-170 were able to delay the BL transition to half of the upper surface up to the maximum lift AoA at the cost of early separation due to rain or bugs. Consequently they suffered high drag pre- and post-stall, so those shapes were abandoned.

The Horstmann-Quast HQ-17 airfoil of 1980 was used to good effect on legendary gliders like the ASW-22 and ASH-25. In using designs by Loek – such as the DU89-134/14 airfoil for later gliders from ASH-26 to the ASH-31 and ASG-29 – some were afraid the BL would not remain laminar across the gap on the lower surface between aileron or flap, but it did. His thinner DU97-127/15M was used on the Antares, but several years later many of the top racing gliders like the ASH-30, ASG-32 and EB-29R were using the DU08-130/15 type of airfoils that allowed for better climb performance in turbulent thermals.

NIXUS DESCRIPTION

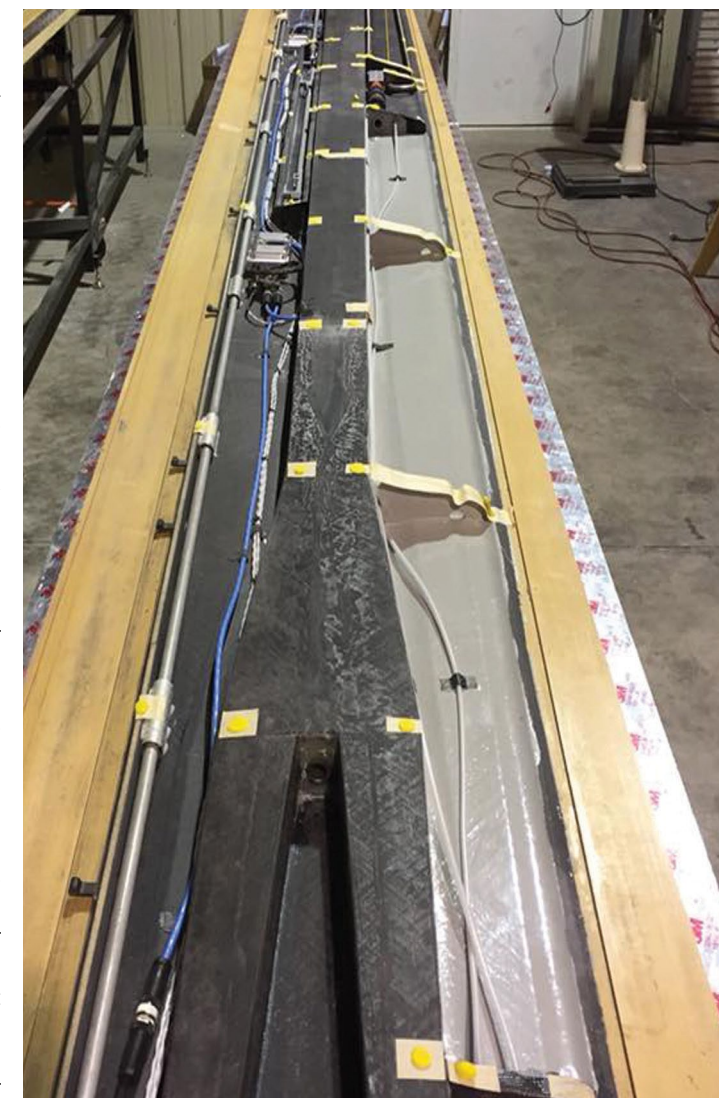
The Nixus Project, focussed on developing a glider for research purposes, matches a new wing of 28m span with an ASH-30 two-seat fuselage for a wing loading of 50.1 - 66.7kg/m². With an aspect ratio of 53.5 the wing is incredibly narrow in the chordwise direction, like the Concordia. Autoclave cured spar caps and new carbon fibre systems offer the required level of structural strength and stiffness. Of the six flaps per side, five will be fly-by-wire servo-controlled to provide optimal flap deflections for minimum drag in straight flight, turns and roll control. The outboard flaperons are still controlled by rods for safety reasons. Both the maximum mass of 980kg and the fly by wire flaperons take the Nixus beyond the current Open Class limits, but first flight is not far in the future.

The Nixus incorporates the latest type of airfoil family, which stretches the laminar BL up to 75% on the upper surface and 95% on the lower. Professor Boermans considers that to go further merely with airfoil shaping would create separation problems and unacceptable penalties. For that reason he looked for the best alternative, and that turned out to be boundary layer suction. But that development will have to await a future project as Nixus does not use suction.

BOUNDARY LAYER SUCTION

Boundary layer suction has been a goal for many aircraft designers over many years but has arguably not been successfully used to achieve the promise it offers mainly due to a lack of suitable porous materials. It isn't currently accepted in Open Class because the air sucked inwards has to be blown out backwards, which can be interpreted as thrust, in other words, a means of propulsion. The goal is to ensure laminar BL flow on the upper surface right back to the trailing edge. This reduces airfoil drag by 50% at low speed to 70% at high or speed.

In practice, a BL suction system requires a slightly (1%) porous surface across much of the rear half of the airfoil upper surface across the whole span. A lower pressure must be maintained inside the surface compared to just outside and the resulting internal airflow blown backwards over board at a speed not faster than free stream, to avoid a net thrust. This can be achieved with millions of tiny laser drilled holes of diameter 0.1mm spaced every millimeter in the carbon upper skin. Stuttgart University has contributed to the project an innovative internal structure of a folded core with holes between the structural sandwich and outer skins that acts to



throttle the correct amount of suction at all flight speeds. The flow is channelled into the fuselage and through the pump/compressor to exhaust out the rear of the fuselage.

INTO THE FUTURE

Performance analysis quoted by Professor Boermans indicates an ASW-24 with suction would improve its glide ratio by 35%. For the Concordia, such an improvement should bring the goal of glide ratio 100 within our grasp. The power required for BL suction is much less than the equivalent energy input by a propeller. Unfortunately, about 80% of the power required goes to bringing the sucked air back from the internal pressure and zero speed to ambient pressure and flight speed. Only 20% is needed for creating suction through the skin. As a final challenge to the audience, Loek asked if anyone had bright ideas regarding how to practically exhaust the BL suction flow immediately to flight speed and ambient pressure, without collecting it first in the wing, as that might reduce that power requirement substantially.

The gliding community is witnessing the development and birth of a potential new class of soaring super ships. As Loek asked rhetorically, "Why not create a new class in which each competitor has a certain amount of energy that can be used during a competition flight and the goal is to make the best use of it."

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NEWS FROM THE SCHLEICHER FACTORY

BY BERNARD ECKEY



Fans and friends of Schleicher gliders are celebrating the release of two new models. First out of the starting blocks came the substantial upgrade of Schleicher's well-known ASK 21 trainer, now called ASK 21 B. Almost simultaneously followed the release of the AS 33 - the successor of the popular ASG 29.

Who would have thought that after winning seven world championships and after a production run of 350 aircraft over 13 years, the ASG 29 is still a highly competitive model at championships around the world. Still, Schleicher decided on a new design and the reason is very simple indeed! Investigations based on Computational Fluid Dynamics (CFD) combined with the latest aerodynamic research pointed to decisive performance improvements. In countless hours of intense teamwork quite a lot of hidden performance potential was discovered and in the process a completely new standard in the 15/18m Class was created.

Among the many design refinements, the 3D airflow was optimised, in particular around the fuselage/wing intersection. The noticeable reduction in interference drag alone creates a performance boost but a new wingtip design also benefits from the CFD review process. New winglets are a clearly visible sign of it. Numerous other design changes will be kept under wraps for the time being but they all add up to quite sizeable drag reductions resulting in significant performance improvements.

The wing profiles were also changed based on the very latest research and extensive wind tunnel testing. Making them slightly thinner, progressing to a 7-fold trapezoid plan form and reducing the wing area not only reduces

drag over the entire speed range but also boosts the maximum wing loadings to 60 kg/m² in 18m configuration and to 62.5 kg/m² in 15m configuration.

The resulting performance gain is especially noticeable in the mid to high-speed range but an equally important design goal was to retain the ASG 29's ability to handle high wing loadings in turbulent and narrow lift. After all, competition results are often determined on weak days and the main reason for the unprecedented competition success of the AS 33's predecessor is its legendary ability to carry large amounts of water ballast while effortlessly climbing in even the weakest and narrowest of thermals. This truly excellent climb performance, combined with remarkable manoeuvrability and unrivalled control, is in part due to the integrated control mixer. Even to this day it is still unique to flapped gliders from the Schleicher stable.

Naturally, the award winning roomy Schleicher safety cockpit was retained and bug wiper garages are just as much standard as winglets with clip-on fittings. Other refinements such as a fully retractable tail wheel are available as optional extras. The same applies to a PU finish, flashlights integrated into the fin and a host of other options.

To ensure that the AS 33 redefines performance benchmarks, it will be available either as a pure sailplane or with an integrated sustainer engine ('Turbo' with electric starter motor). Its recently upgraded and automated control system reduces engine management to the activation of a single switch.

This lightweight 24hp 2-cylinder engine provides a climb rate of 1.2 m/s (2.5 knots) and is equipped with a directly driven and purpose designed Schleicher propeller. Gone are the days when windmilling the propeller was used to start the engine. Thanks to the electric starter motor full climb power is available in as little as 12 seconds. It minimises the height loss for an engine start to just a few meters and the later propeller retraction is also fully automated. Reliability and ease of use are

TECHNICAL DATA:	18 m	15 m
Wing area	10 m ² ; 107.6 sqft	8.8 m ² ; 94.7 sqft
Aspect ratio	32.4	25.6
Empty mass (sailplane)	285 kg ; 628 lbs	275 kg ; 606 lbs
Empty mass (motor glider)	330 kg ; 728 lbs	320 kg ; 705 lbs
Max. mass	600 kg ; 1322 lbs	550 kg ; 1213 lbs
Min. wing loading	36 kg/m ² ; 7.4 lb/sqft	40 kg/m ² ; 8.2 lb/sqft
Max. wing loading	60 kg/m ² ; 12.3 lb/sqft	62.5 kg/m ² ; 12.8 lb/sqft

GLIDER DEVELOPMENTS

the hallmarks of this modern drive unit.

Of course, it will also be possible to fly the new glider in the 15 m FAI racing class with optionally available 15m wingtips. Due to the new wing plan form, equally low drag values can be expected with the smaller wingspan version.

It seems that Schleicher engineers have again managed to pull another rabbit from their hat. Previously unheard of wing loadings combined with a thinner and more slender wing make for unprecedented high-speed performance and are bound to make the AS 33 another world beating competition model. Elegance is another strong point of the new glider. Due to the 7-fold trapezoid wing, the leading edge appears to be almost rounded and a total absence of kinks in the wing make the AS 33 an eye catcher at gliding fields around the world.



New ventilation outlets are easier to adjust and feature a reduced noise level.

A larger main wheel, as fitted to the motorized version of the glider, offers better energy absorption and provides additional pilot comfort.

A flexible seal around the main wheel prevents dust and dirt from entering the fuselage.

The brake system has been redesigned to prevent the ingress of air bubbles during extended inverted flying.

A tail wheel instead of a skid has become factory standard.

Both aileron and elevator gaps are now equipped with Mylar seals. The improved roll rate as a result of higher aileron effectiveness will be of particular interest to aerobatic pilots.

A new pitot tube in the nose makes the previously required extension for aerobatic flying unnecessary.

New fittings just ahead of the front seat pan will simplify the installation of trim weights for lightweight front seat pilots.

Two (2) battery fittings located in the wings are now factory standard.

A transponder antenna will now be integrated as a matter of standard procedure.

In other words, more safety, more convenience and more space in both front and rear cockpits.

But the list of improvements doesn't stop here! Spin ballast in the fin has long been on the wish list of clubs and this feature is now available as an optional extra. It means that spin weights need no longer be attached externally. In future the brick shaped brass weights can be placed in a purpose built container, which has been fully integrated into the aircraft's fin.

Of course, all of the above refinements detract nothing from the ASK 21's aerobatic capabilities. It remains the world's most sought after trainer for almost the entire range of aerobatic manoeuvres, and glider pilots with a keen interest in aerobatics regularly enjoy the additional capabilities of this aircraft. No wonder production is fast approaching four digit figures and the self-launching version (ASK 21 Mi) is also enjoying strong demand as the only trainer allowing fully independent gliding operations.

No other fibreglass trainer has turned more pedestrians into pilots than the ASK 21. Usually this glider is the most flown aircraft of the entire club fleet and has therefore become the most valuable cash cow of most clubs. Its outstanding reliability combined with its low maintenance requirements, its legendary value retention and a fully certified lifespan of 18,000 hours make it unique among trainers. In other words, it is an investment clubs make and then forget about for many decades to come. The first ASK 21 B model in Australia will soon enter active service at the Darling Downs Soaring Club in Queensland.

FROM THE ASK 21 TO THE ASK 21 B

It speaks for itself when a glider remains the favourite of gliding instructors over several decades and firmly establishes itself as the worldwide standard for training two-seaters. No doubt, this first class reputation can be attributed to the ASK 21's extremely robust structure, its very pleasant handling on the ground and in the air and a worldwide enviable service history.

But nothing is so good that it can't be improved upon – enough reason for Schleicher to introduce the ASK 21 B!

Without changing the basic character of this much-loved evergreen, some new ideas and additional features have been integrated. The change to automatic control connections for the wings is perhaps the most noteworthy improvement, but the 'B' model now also includes the following factory standards:

New seat pans for the front and rear cockpits provide additional room for large pilots and make for far more comfortable seating.

The rear instrument support was moved further back, which has resulted in a larger front cockpit and both control sticks were moved further forward which has proven to be more comfortable for larger pilots.

Important elements of a safety cockpit, such as thigh supports, have been integrated. They not only improve pilot comfort but also serve as new anchor points for seatbelts and aid entry and exit from the cockpit.

Easily adjustable backrests provide additional seating flexibility for both cockpits.

The front rudder pedals have a greater range of adjustment and a design change simplifies maintenance and the exchange of rudder cables.

The front instrument panel offers more room for instruments without affecting the available legroom.

Underside covers for the instrument pedestal are now provided as factory standard.

The forward canopy emergency jettison lever has been replaced by a push-pull system.

The carrier for the rear instrument panel has been re-designed to improve visibility on both sides of the panel. This has provided additional room for the rear pilot around the knee area. Handlebars for ease of entry and exit to the rear cockpit have also been integrated and the rear canopy can be opened further to allow a more comfortable entry and exit to and from the rear seat.

An adjustable headrest for the rear pilot has also been integrated.

The removable seat cushions are now provided with energy absorbing foam. They offer a high degree of comfort and they will be colour coordinated with the exterior paintwork.

Storage pockets on both sides of the cockpit have become factory standard.

VFR ADS-B

In September, CASA published the summary of an industry consultation into 'Voluntary fitment of ADS-B in VFR Aircraft'. The feedback from the industry was supportive and consequently CASA will move forward to make the necessary rule changes.

When implemented, this move will allow equipment meeting the performance standards of the USA's TSO-C199 or the UK's CAP1391 to be used in Australia for VFR operations. This will mean the cost of ADS-B (automatic dependent surveillance - broadcast) for VFR will be considerably cheaper than the current specifications, which are mainly for IFR operations.

SEE AND AVOID

The interest in ADS-B for glider pilots is as an aid for see and avoid, similar to our use of FLARM. The main difference from FLARM will be that all aircraft will have the same system so that all traffic will be visible to each other and it will work at greater distances.

So, do we migrate from FLARM to ADS-B, stay on FLARM or have both? As CASA has made this voluntary, and FLARM is also voluntary, it's up to us to weigh up the costs and the benefits and make sensible decisions. CASA has made its intentions known, although the rule changes may take some time, I would expect the manufacturers will start to produce lower cost products for our market and more will come on the market in time.

There are already products that receive ADS-B signals and combine them with FLARM so that the displays show all the targets. Power Flarm and TRX1000 are examples of this. There are also standalone receivers and home made kits such as ADS-B Pi and others that make ADS-B receivers practical for us now. All IFR aircraft in Australia now transmit ADS-B signals, so receivers will now pick up the regional airlines and others.

ADS-B Out is required for other aircraft to see us. This requires GPS position and altitude encoding. The only ADS-B Out equipment (ADS-B transponders and GPS sources) available



BY GRAHAM BROWN

at the moment in Australia are those fully qualified for IFR aircraft like the Garmin GTX345, which are not cost effective.

FROM FLARM TO ADS-B

The ideal device for gliders would be a fully self-contained ADS-B In and Out with GPS and rechargeable battery where the display could be integrated with the FLARM on a tablet device. The uAvionix SkyEcho ATT-20B is such a device now approved for English airspace (CAP 1391) and currently costs £419.

We could continue to use the FLARM until everyone has ADS-B and then discard the FLARM. The ADS-B units would need to be affordable, otherwise migration would be slow and we would have to keep the FLARMS for longer than we want to. There will also be many other upgrade paths depending on what you have now. If you have a Power Flarm then you will need a GPS source, an S mode transponder and ADS-B Out, which most S mode transponders have built in now. Maybe Power Flarm will produce an upgrade kit in the future.

IN TRANSITION

CASA's next steps will be to publish a notice of proposed rulemaking (NPRM) and then to make the rules law after any issues and objections are dealt with. When implemented, CASA will maintain a list of approved devices that you can install and I would imagine that this list will continue to grow.

GFA will need to develop installation standards for gliders, however, the English have been here before us so we can presumably borrow from them.

We can see ADS-B is coming but it is not here yet and there is a lot to think about. Airservices have built an extensive ground receiving network and since many ADS-B receivers are feeding web pages, keeping track of all aircraft will be easy.

Competitions will need to consider how this technology might affect the rules, as gliders will be visible over the entire course. The devices will need to be registered and documentation fixed to airframes, calling for processes to be developed. Installation standards will need to be written, as CASA has made it clear that the self-administering bodies will be doing that.

NOTES

FLARM: Glider to Glider aid to collision avoidance. Limited range. Discrete frequency. Not visible to ADS-B fitted aircraft nor to AirServices Australia ground receiving network.

ADS-B: Automatic Dependent Surveillance - Broadcast. Networked aircraft surveillance system and aid to collision avoidance and air traffic management. Broadcast requires ADS-B Out, with broadcast of encoded position, heading and altitude data, each aircraft having a unique identifier. Receive requires ADS-B In. Integrated ADS-B In is normal fit in IFR aircraft. Stand-alone ADS-B In receivers can be used and integrated with display devices. ADS-B does not see FLARM.

VFR ADS-B: Lower cost, lower complexity, small size and weight, low power consumption version of ADS-B with integrated GPS, encoder and battery, intended for use by all general aviation aircraft, gliders and recreational aircraft operating under Visual Flight Rules.

BY JAMES COOPER

THERMAL CENTRING

I heard a conversation many years ago when the issue under discussion was which direction a novice pilot should fly on the first leg of their first flight. Upwind, downwind or crosswind? Brian Spreckley, who at the time was the British Gliding Association coach and later world 15m champion, commented, "It does not matter which way they fly if they cannot thermal properly."

So I will try in this article to give the basics on how to thermal properly. I will not go into thermal sources or the subtleties of different thermals, other than to say that when flying cross country, from the moment you take off from the ground your job is to continually look for the best part of a thermal and where the next thermals on track will be.



PART 1 MAINTAINING POSITION

Going up in an elevator is easy. Get in the elevator, just stay on the floor in one spot and don't move, press the button and up we go.

The problem in an aircraft is that we have to consciously keep moving. If we were driving a car in a car park and wanted to keep driving around a witch's hat, we would put a given amount of lock on the steering wheel and, provided we maintain that exact lock, we will go round and round the same track with the witch's hat in the centre of the circle. All very easy. But now consider flying in a glider. We can put on an angle of bank and fly at a constant speed and we will fly around the same spot in the envelope of air that we are rising in. Simple.

Well, not so simple. First, not only do we not have a witch's hat as visual reference, but many people also fail to maintain a constant speed and bank angle. I first need to point out that most modern gliders are designed to be able to fly in a thermal by maintaining an angle of bank of 45° with a speed a few knots above stall speed, and thus be able to fly in the strongest part of the thermal that is going up. Any higher speed or lower angle of bank will make the glider fly away from the strongest part of the thermal and possibly in sinking air. If the glider did not perform to these requirements it would not thermal efficiently.

So, provided we fly an accurate circle, we will usually stay in the thermal, as is stated in an article by Greg Beecroft that I read many years ago. But I asked myself how accurate the circle would have to be.

ACCURATE TURNING

I drew up a chart with the diameter of a turn at different speeds and angles of bank, and considered a glider flying half a turn at 45° degrees at a speed of 50 knots, in which case the radius would be 67.5m. Now if the pilot, due to their low skills, reduced the angle of bank by only 5° and increased their speed by only 5 knots the radius would become 97.3m. So, flying half the turn at 67.5m and the

second half at 97.3m, the circle will have shifted 56.9m.

Going back to our first two scenarios of being in an elevator or car where we can maintain our own position, we can see that by flying a glider inaccurately we can wander around the sky oblivious regarding our location relative to the centre of the thermal. So, to answer my question about Greg's comment to fly accurately, the answer is to fly VERY ACCURATELEY.

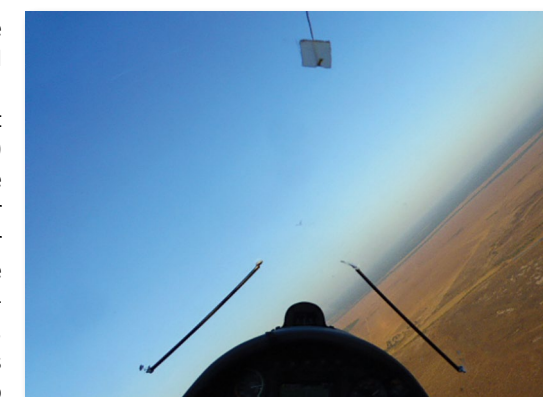
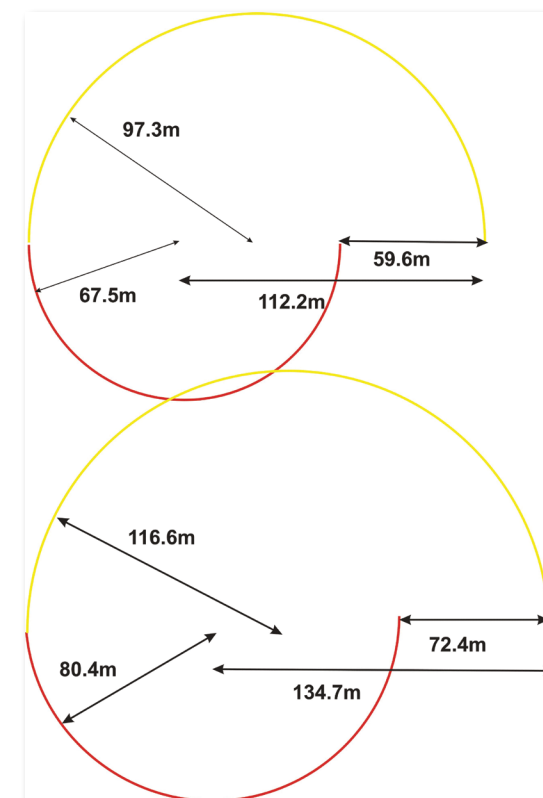
For a pilot who cannot bank in the first place at 45° but flies at 40° and 50kts (80.4m radius) and changes to 35° and 55kts (116m radius), their circle will shift 72 meters!

So how do we learn to fly very accurately? First by practice and not being satisfied with anything better than a 45° angle of bank, plus or minus nothing, and second, a speed that we can maintain, plus or minus nothing.

This is all very good in theory so let's look at the two variables.

ANGLE OF BANK

During a coaching week run by John Buchanan, we were drilled into flying accurately. To help us maintain our angle of bank we would put two straws on the inside of the canopy, attached by a little bit of blue tack. These were positioned at 45° and well up the front of the canopy, in our relative long distance focus. When we rolled into a turn the straws would sit parallel to the horizon and measure our bank, spot on. After over 3,000 hours of flying I still use these straws to monitor my exact flying. Other pilots continually tell me of other easier ways - little rabbit's ears, screws on the compass and so on. But these do





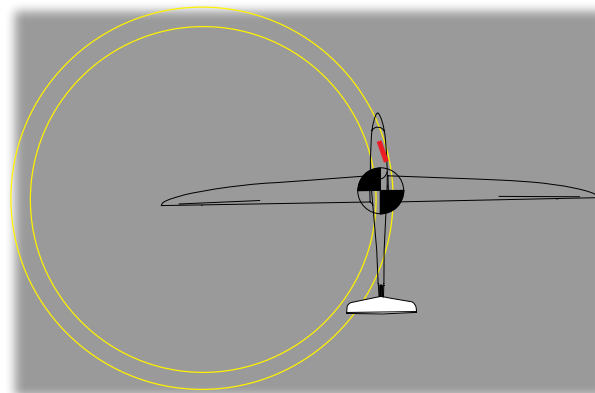
not shout at me, and the pilots who have the other ideas generally don't fly faster than I do.

SPEED

My comment about maintaining speed needs clarification. When flying in a thermal we are being buffeted by horizontal wind gusts that will vary the speed shown on the ASI. What we need to do is fly a very accurate speed, based on our angle of attack. Thus we need to position the nose of the glider accurately relative to the horizon. So, while looking ahead we can not only see our straws sitting on the horizon, we can also monitor and maintain our angle of attack – accurately, very accurately.

WHAT SPEED?

Many students are still instructed to fly as near to stall speed as possible when thermalling, to reduce their sink rate. In addition it is drummed into them that the yaw string should sit down the centre line of the glider. Unfortunately both of these ideas are wrong. Most gliders' minimum sink rate is not just above stall speed but perhaps 10 knots faster. Although this is worth noting it is far less relevant than the ability to feel and control the glider. At very slow speeds, the glider feels mushy and does not respond to control inputs. Adding a little extra



speed allows the pilot to enter corrections inputs and the glider responds, without battling the gusts that the glider is subject to.

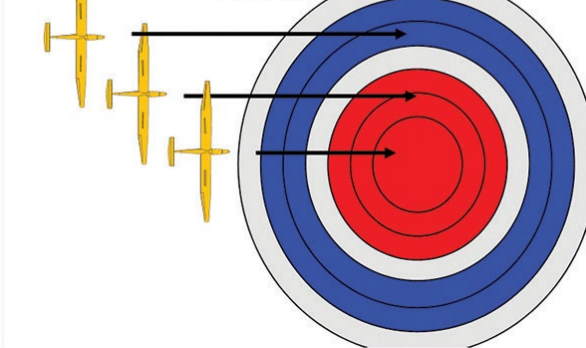
YAW STRING

As stated a little earlier we have it drummed into us to have the yaw string down the middle of the aircraft. Let me first say that when flying straight and level, this is the case, but as soon as we go into a turn the yaw string starts telling us all sorts of lies. The diagram indicates that when turning in a circle, if flown accurately, the yaw string will hang out to the outside of the circle, and although the diagram is not drawn to scale, it shows the yaw string about 5° to 10° out of centre. In reality the wind over the canopy exaggerates this angle, thus making the diagram relatively true. The problem is that if you fly the glider with the yaw string down the middle when thermalling, in reality the nose is pointing to the ground more than you think and you will have a battle maintaining bank and speed. So next time you are battling with the glider in a thermal put in a bit of top rudder - and Bingo! You will find life so much easier.

So now, after much discussion, I hope that you know

how to fly a glider in one spot in the air and not wander around the sky like a drunken sailor. We still have to find the centre of the thermal and core it, but without being able to go back to a constant turn, we are wasting our time.

Three possible ways to approach a thermal.



Practice these skills and don't be satisfied with anything better than 45° at about 10knots above stall - accurately, very accurately.

PART 2 FINDING THE CORE

Before I start I need to state that the techniques assume that a glider can go from straight and level to 45° instantly. This is, as we all know not to be correct. However the principles of the diagram hold good for the basics. To compensate for the rate of roll of the glider we need to pre-empt what is going to happen to the air in front, and start the control inputs earlier than my explanations. This skill comes with experience.

John Williamson, I think the first BGA coach, who visited GCV for some years as resident instructor and the initiator of Lead and Follow coaching, would describe approaching a thermal with the use of a witch's cone where the peak of the cone indicated the strongest part of the thermal.

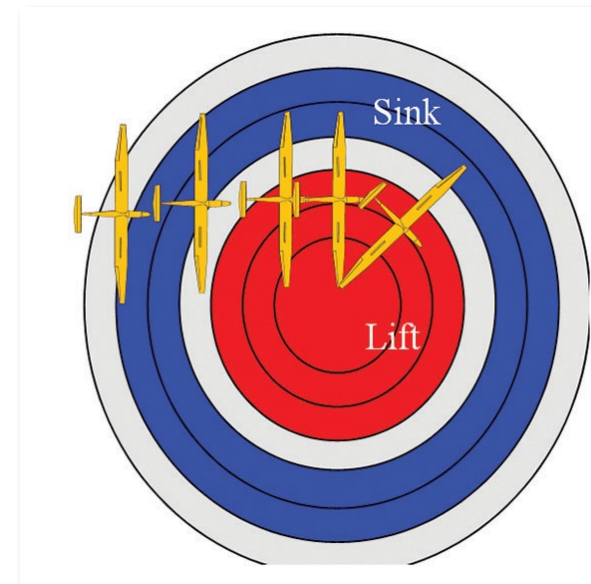
The following diagrams illustrate the cross section of a thermal, the Red indicating the rising air, the Blue showing the sinking air around the outside of the thermal and the Grey showing the turbulent air, between the rising and sinking air.

APPROACHING THE THERMAL

I will now suggest the way to core the thermal on the first turn, depending on where you approach the thermal - on the edge, in the middle or just right, like Goldilocks.

In all cases it is important to be aware that the higher the speed you approach the thermal the more likely you are to miss it. We all have a reaction time. In athletics if an athlete starts sooner than 0.1 of a second after the gun, they are considered to have jump started as the brain cannot react that fast. As glider pilots, we have to react to a considerable number of inputs to decide when to turn and, by how much. So, to give yourself time to make the decision as you approach the thermal and feel the pre thermal buffet, slow down. You are better to spend a bit more time in the sink and get the core right, rather than blast through and miss the thermal completely.

With a thermal diameter of 150m, it will take a glider travelling at 120kts 2.5 seconds to pass through the

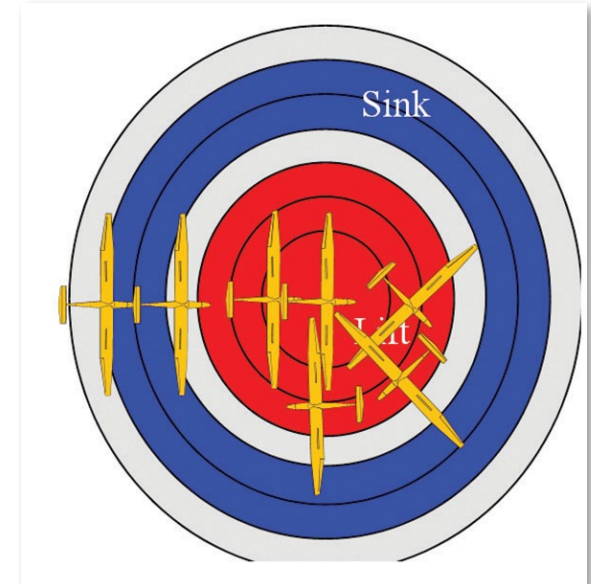
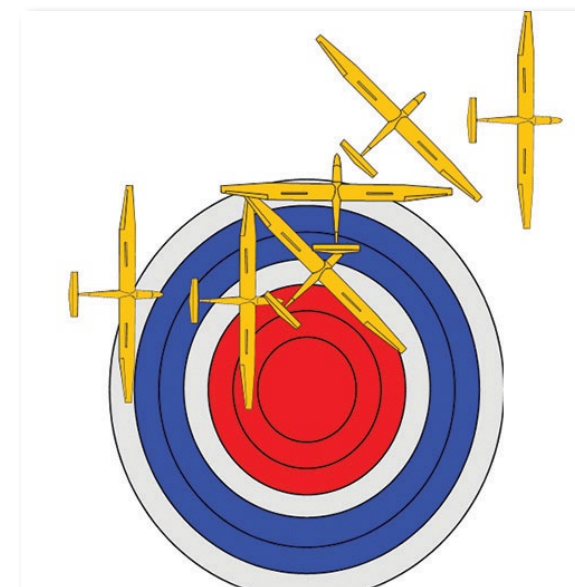


thermal, 3.5 seconds at 85kts and 5 seconds 60kts.

Furthermore, as you slow down, start to get your mind in sync with the glider's feel that is telling you about the thermal. You will also be able to feel the thermal better when you are flying slower. At high speeds you will feel virtually nothing.

Let's start with the Goldilocks approach, if by chance we get things 'just right'.

- 1) As we approach the thermal we begin to feel the pre thermal turbulence with a little buffeting (the first grey ring).
- 2) We switch on our brains to monitor what the thermal is telling us.
- 3) As we hit the sink, we slow down a bit.
- 4) As we hit the stronger turbulence, we should be getting the speed back to 60 to 70kts to allow the reaction time.
- 5) You will notice that the right wing in our case is lifting. We keep flying straight, but are ready to turn.
- 6) As we fly into the rising air we feel it accelerate the glider upwards. Monitor this vertical acceleration and at the point that the vertical acceleration drops off, feed in maximum rudder and balance the turn with the ailerons into standard thermalling turn, 45° bank and about 10kts



above stall.

7) Bingo - you are in the core of the thermal.

Before we look at other means of approaching the thermal, let's consider the vertical accelerations that we feel and understand what they are telling us.

If we go into an elevator, the doors shut and someone presses the button, we know immediately if we are going up or down by the push on our legs. What is vital to understand is that the vertical push will continue until we reach maximum vertical speed, at which point there is no vertical push other than the 1G load we are subject to when standing on the Earth. So get this concept solidly in your mind.

The thermal push means that you are approaching the core, but are not there yet. It is not time to turn.

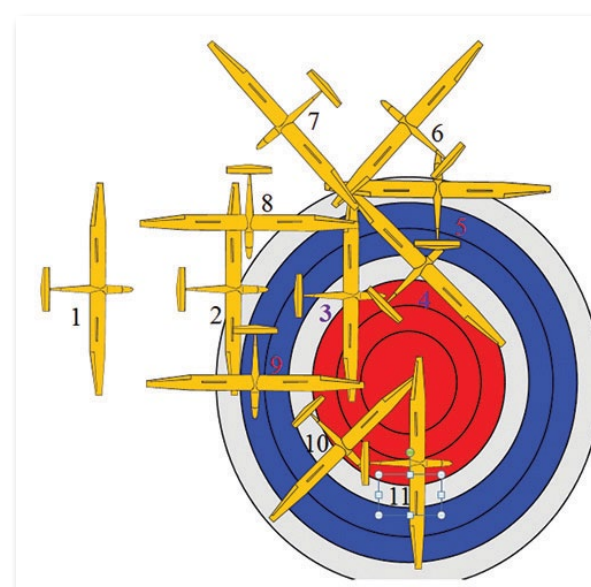
When the vertical acceleration has stopped you are going up at maximum speed. No time to wait - give full controls and get the glider into thermalling mode.

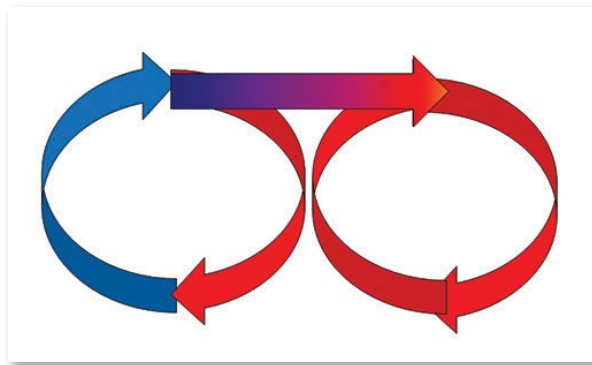
In Approach Option Two, we approach the thermal along one edge.

1) As we approach the thermal we begin to feel the pre thermal turbulence with a little buffeting (the first grey ring).

2) We switch on our brains to monitor what the thermal

continued over page





is telling us.

- 3) As we hit the sink, slow down a bit.
- 4) As you hit the stronger turbulence you should be getting the speed back to 60 to 70 kts so you have the reaction time.
- 5) You will notice that in our case, the right wing is lifting, BUT you are not feeling any vertical acceleration.
- 6) Make a distinct turn towards the lifting wing, then fly straight.
- 7) As you fly into the rising air you will feel it accelerate the glider upwards. Monitor this vertical acceleration and at the point that the vertical acceleration drops off, feed in maximum rudder and balance the turn with the ailerons into your standard thermalling turn, 45° bank and about 10kts above stall.
- 7) Bingo - you are in the core of the thermal.

Finally we will look at hitting the thermal straight up the middle.

- 1) As we approach the thermal we begin to feel the pre thermal turbulence with a little buffeting (the first grey ring).
- 2) We switch on our brains to monitor what the thermal is telling us.
- 3) As we hit the sink slow down a bit.
- 4) As you hit the stronger turbulence you should be getting the speed back to 60 to 70 kts so you have the reaction time.
- 5) You will not notice either of the wings lifting. Keep flying straight, but be ready to turn.
- 6) As you fly into the rising air you will feel it accelerate the glider upwards. Monitor this vertical acceleration and at the point that the vertical acceleration drops off make a decision to turn one way, feed in maximum rudder and balance the turn with the ailerons. Be prepared for 180° of the turn to have a little more than 45° of bank.
- 7) Once you have completed the half steep turn, open out your turn to standard thermalling turn, 45° bank and about 10kts above stall.
- 6) Bingo - you are in the core of the thermal.

GETTING THE THERMAL ENTRY TURN WRONG

We are not always perfect when finding a thermal. So, what happens if we turn the wrong way, or even turn in a thermal that proves to be unsatisfactory. The purpose of slowing down and sampling the thermal is that it allows you to make a decision to take the thermal or leave it. If it is not satisfactory, move on. Don't hang about in something that is not going to make you climb at an acceptable rate. Know your acceptable rate and stick to it.

Alternatively you may have got all the inputs and made

a turn say to the left, and then run into sink half way through the turn. The first option is to roll back out of the turn and head on track, and find another thermal.

The second option is to find the thermal's core that you missed. I have heard of alternatives to what I suggest, but I believe the technique I will explain takes into account the glider's existing bank, requires minimal changes in direction and will lead you to the core quicker and more accurately. It is also more predictable if flying with other gliders.

You are quite likely to have turned the wrong way - let's say left rather than to the right. See 1 to 5 in the diagram.

Once you have turned 90° and you start to run into sink it is quite clear you have gone the wrong way. You are already flying at 45° to the left, expecting it is the core you are in, but very quickly you know you are wrong. Tighten up the turn a bit more, to get out of the sink as soon as possible and continue doing so until you have completed a 270° degree turn (6 to 8 in the diagram). Then straighten out with full control movements of the rudder and balance the turn with the aileron. Now fly straight, feeling the air as in the previous diagrams.

Generally you will be entering the thermal in the Goldilocks position.

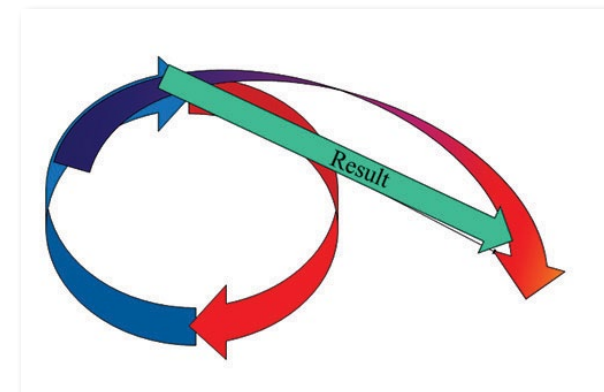
- 1) You will notice that the left wing in our case is lifting (8 to 9 in the diagram). Keep flying straight but be ready to turn.
- 2) As you fly into the rising air you will feel it accelerate the glider upwards. Monitor this vertical acceleration and at the point that the vertical acceleration drops off, feed in maximum rudder and balance the turn with the ailerons into your standard thermalling turn, 45° about 10kts above stall. (9 to 10 in the diagram).
- 7) Bingo - you are in the core of the thermal (11).

RE-CENTRING YOUR TURN

I think that we all know that once you have found the core of the thermal, you need to keep making inputs into the turn to correct it. I will assume that you are flying by yourself rather than with another glider, which I will come to later.

As we turn in the thermal at our standard 45° bank and about 10kts faster than stall, you will start to notice that part of the turn is going up stronger than the other half. You will need to shift the turn towards the better part of the thermal. In the diagram, we are in the left circle and need to move to the one on the right.

As you start to exit the area of sink and begin to feel the surge of the core, give full control inputs and move



towards the lift. Keep flying straight until you feel that you are at maximum rate of climb. Monitor this vertical acceleration and at the point that the vertical acceleration drops off, feed in maximum rudder and balance the turn with the ailerons into your standard thermalling turn, 45° degrees of bank and about 10kts above stall.

Now it is time to resample the thermal. Do a few turns and prepare for the next adjustment.

I have suggested aggressive control inputs to move the glider from the off centre turn to the new core. You could consider reducing the angle of bank to get to the core of the thermal, but look at the consequences of doing this.

If you roll out slowly, reduce your angle of bank and wait till you feel the peak of the vertical acceleration. You will no longer start a new turn in the core of the thermal but rather some degrees off centre and will then have to start re-centring again.

However, as you get more experienced, you can pre-empt the correction and start opening out the turn earlier. You will then have re-centred with less aggressive control inputs.

TO NIBBLE OR NOT TO NIBBLE

With regard to re-centring I have suggested feeding in aggressive inputs and, in effect, trying to move your thermal to the core in one move. It may be wise to make a number of small corrections rather than one big one with the risk of losing the core completely. In effect, nibble towards the core. That's what Ingo told me, anyway.

FLYING WITH OTHER GLIDERS

Please be highly aware that flying with other gliders requires making safety paramount at all times. In this article, I will only say -

Fly predictably.

Fly considerably.

Fly so that you can see the other gliders and they can see you, in other words, on the opposite side of the turn.

Fly a similar circle as the other gliders. If you can't fly 45° at about 10kts above stall speed and they can, then keep out their way.

When we are flying, three indicators will give us the rate of climb of the thermal we are in.

The vario - this shows us history.

Our body's inner ear - this shows us what is happening now.

Other gliders and eagles - they tell us the future, or what is going to happen..

So to fly in a thermal with another competent pilot who is flying in a thermal on the opposite side of the turn - if you see them rising relative to you, you know that in the next 90° you will start rising at a better rate. You need to move towards their position. Equally, if they start sinking relative to you, you know that in 90° you will start sinking and you need do your best not to fly into that sinking air.

In the case of the diagram, the glider at the top of the page is in sinking air, and the one at the bottom is in rising air.

The glider in sink will open out their turn to extend beyond the rising glider.

The glider in rising air will tighten their turn to prevent them entering the sinking air. Once each of the gliders has made their correction move they will go back into the standard thermal of 45° bank and about 10kts above stall speed.

Hopefully by now you will notice that I never refer to the vario. The vario tells us history, our bum tells us what is happening now. A vario tells us our rate of climb, and is not a tool for centring.

STREETS

One final matter in the entry of thermals. Whenever much of a wind is blowing, streets form. Without going into detail on the structure of streets - I have an article on my web page, mentioned at the end of the article, that gives far more detail - in principle the thermal will have a core with a tail like a comet or key hole, going downwind. I estimate this tail to be about 30m across.

The technique is that, on a windy day, when you find lift - Turn directly into wind.

Follow the street by carefully feeling the lift under either wing, moving maybe 10° towards the lifting wing.

You will notice that although the lift may be constant it tends to be a little turbulent.

If there is a good core, the air will become smoother and the lift stronger.


It is only then that you turn in the thermal.

How many times at the end of the day have you heard some people saying that the day was rubbish? "I kept falling out the side of the I-shaped thermals."

The more experienced pilots were saying it was a good day - it was streeting.

For future reference, this article is on my web page

jamescooper.com.au. Go to Gliding, then Articles, Thermal Centring. james@jamescooper.com.au



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.

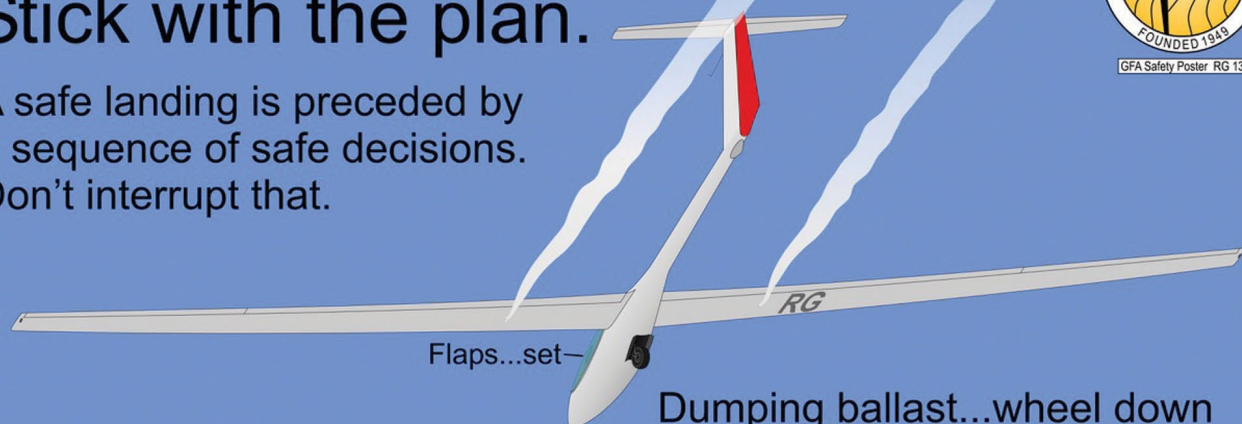
Friendship, food & fun and good accommodation.

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

Contact Jenny Shearer
jsh53303@bigpond.net.au mob 0417 934 052

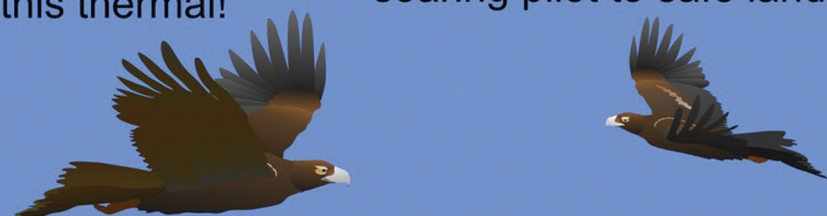
Decided to land? Stick with the plan.

A safe landing is preceded by a sequence of safe decisions. Don't interrupt that.



That pilot's flying straight through this thermal!

Dumping ballast...wheel down
...starting pre landing checks.
She's just switched from safe soaring pilot to safe landing pilot.



GFA CLUB LIST

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

sean@glidingaustralia.org

716 FLIGHT GLIDING CLUB

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

2 WING AAFIC

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

ADELAIDE SOARING CLUB

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

www.adelaidesoaring.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

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 and school holidays or by arrangement. Aerotow and self launch. 2 private two seater motor gliders. Clubhouse, Bunkhouse and briefing room. Tel 08 8522 1877.

ALICE SPRINGS GLIDING CLUB

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

AV8 FLIGHT TRAINING AV8 FLIGHT TRAINING

SOUTH AUSTRALIA 0429 803 705 AV8.net.au

BALAKLAVA GLIDING CLUB

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

BALLARAT GLIDING CLUB

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

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

BAROSSA VALLEY GLIDING CLUB

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

BATHURST SOARING CLUB

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

www.bathurstsoaring.org.au

BEAUFORT GLIDING CLUB

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

BENDIGO GLIDING CLUB

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

BEVERLEY SOARING SOCIETY

Beverley Airfield 4 Bremner Rd Beverley WA 6385 - The closest gliding club to Perth. Flying Friday, Sat & Sunday Air Experience Flights on line booking www.beverley-soaring.org.au/aef.php

Flight Bookings or questions 0407 385 361, bevsoar@beverley-soaring.org.au or Facebook Club Landline (08) 9646 0320, Operations mobile 0427 126 700, Airfield 126.7 Club facilities:- briefing Room, Kitchen, Ablutions, BBQ, 3 bunkrooms, Glider Maintenance workshop, Aerotow two Pawnees - 2x DG 1000s, Putschcz and ASK 21 plus 3 Singles and large fleet of private gliders beverley-soaring.org.au

BOONAH GLIDING CLUB

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

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

BORDERTOWN-KEITH GLIDING CLUB

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

BUNDABERG GLIDING INC

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

BYRON GLIDING CLUB INC.

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

CABOOLTURE GLIDING CLUB

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

CANBERRA GLIDING CLUB

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

CENTRAL COAST SOARING CLUB

Bloodtree Road, Mangrove Mountain NSW 2250, Tel (02)43741288. Rope Winch operations Thursday, Saturday and Sundays. 5 club aircraft including 3 two seaters, two private glider. Club facilities, workshop, hangar and clubhouse. Gloucester Ridge Camp (August). www.ccssoaring.com.au

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-

continued over page

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

CORANGAMITE SOARING CLUB

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

DARLING DOWNS SOARING CLUB

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

GEELONG GLIDING CLUB EST. 1929

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

GLIDING CLUB OF VICTORIA

Samaria Road Benalla, Tel 03 5762 1058, State Gliding Centre of Victoria. Club rooms with Bar and large lounge 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. Hangar space, Large private hangar complex. www.glidingclub.org.au

GLIDING CLUB OF WESTERN AUSTRALIA

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

GLIDING TASMANIA (The Soaring Club of Tasmania)

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

www.soaringtasmania.org.au

GOULBURN VALLEY SOARINGIN

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

now located at South Grafton Aerodrome, 150 Vere St, South Grafton NSW. We conduct winch launch operations on Tuesdays and every second Saturday. The Club owns two K7 two-seaters and a Club Libelle single-seater. Come and soar with us over the magnificent Clarence Valley. Aerodrome facilities include Grafton Aero Club's clubhouse which has a bar, kitchen, dining area, toilets and shower and a bunk room. The Aerodrome is right in town and close to all facilities including hotels, motels and caravan parks. Contact Club Secretary Bob on 0403088551 or CFI Gray on 0447280167.

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. 0490 487 708 weekends or 03 5342 9946 weekdays. www.grampianssoaringclub.com

GYMPIE GLIDING CLUB

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

HORSHAM FLYING CLUB

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

HUNTER VALLEY GLIDING CLUB

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

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

LAKE KEEPIT SOARING CLUB

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

LATROBE VALLEY GLIDING CLUB

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

LEETON AVIATORS CLUB

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

MELBOURNE GLIDING CLUB (VMFG)

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

MELBOURNE MOTORGLIDING CLUB

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

MILLICENT GLIDING CLUB

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

MORAWA GLIDING CLUB

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

MOUNT BEAUTY GLIDING CLUB

Mount Beauty Airfield operations weekends and public holidays and by arrangement. Winch launching with a two seater and single seat fleet. 30 members

ith a range of private gliders and otorgliders. Tel 0418 591 351

www.mtbeauty.com/gliding

DURA GLIDING CLUB

ocation: On Moura-Theodore Rd , 5 mins om Moura, Tel 07 4997 1430. 3 embers, operations Sunday by winch. icilities include Club House, hangar, 1 x o seater.

JRRAY BRIDGE GLIDING CLUB

erates motorgliders (4no. G109) on the jht aircraft aerodrome at 484 Reedy eek Rd., Pallamana (YMBD) north of urray Bridge township. Flying arranged l days, including out landing training. rone 0411 354 361

www.murraybridgegc.com MBGCinc@gmail.com

JRRAY VALLEY SOARING CLUB

edlands Road Corowa 3km's west of wn. Tel 02 6033 5036. Seasonal ofessional operation, aerotow or self unch. www.australian-soaring-corowa.com Large ngar, clubhouse with office, internet, ar, Showers, BBQ, Swimming pool, Spa, ater ballast, battery recharging services, ived roads and runways, camping and ravan sites. Two tugs. We own and erate four unique 40ft sea containers to ip 6 gliders per container.

JRRIGIN GLIDING CLUB

icated 8 kms West of Narrogin township 'A on Clayton Road. About 200 kms outh East of Perth. The Club has a owered Caravan Park, ablution blocks, ean accommodation with a bunkhouse us two family rooms, a kitchen/dining ubhouse, licenced bar, briefing room, orkshop, main plus tee hangars. Sealed inways. The fleet comprises four modern o seaters and two single seaters plus o Pawnee 235 Tugs. The Club operates ery weekend plus holidays and nducts ab intio (beginner)and cross untry courses and also the training of AFC. Contacts 08 9881 1795 or 0407 38 314.

www.narroglinglidingclub.org.au

JRRROMINE GLIDING CLUB

re club Our club's current fleet mprises of: Four two seaters, Two single eaters, Two Piper Pawnee tow planes. icilities include club house with licenced ar and kitchen. Private owned tourist ark on site with En-suite oms,airconditioning, kitchen, recreation om, laundry. Walking distance from wn. The club operates full time umber to April and Fri, Sat, Sun, Mon r the rest of the year.

www.narromineglidingclub.com.au

JW AUSTRALIAN AIR FORCE CADETS

ight Commander (Pres) - FLTLT(AAFC) ob Sheehan 0429 485 514 rief Flying Instructor - SQNLDR(AAFC) ll Gleeson-Barker 0408 443 009 istricted full week courses, ADFC and JF Personnel only - mainly during school lidays. Bathurst A/D.

JRTH QUEENSLAND SOARING CENTRE

orinda Avenue, Columbia, Charters ivers, Tel 0428 797 735, Operations by inch Sundays and public Holidays by rangement. 5 Private gliders. www.

nqsoaring.org.au

RAAF RICHMOND GLIDING CLUB

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

RAAF WILLIAMTOWN GLIDING CLUB

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

SCOUT GLIDING CLUB

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

SOUTHERN RIVERINA GLIDING CLUB

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

SOUTHERN CROSS GLIDING CLUB

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

www.gliding.com.au

SOUTHERN TABLELANDS GLIDING CLUB

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

SOUTH GIPPSLAND GLIDING CLUB

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

SOUTHWEST SLOPE SOARING P/L

Operations from Bendick Murrell airfield. Tel 0488 531 216. Winch and self launch by arrangement. Club own 1 two seater and has 3 private gliders. Facilities include: Hangar, powered camping area.

SPORTAVIATION – TOCUMWAL

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

SUNRAYSA GLIDING CLUB

Winch launching Weekends and public Holidays. 364 Sheoak Avenue Koorlong, 2 miles south west of Mildura aerodrome. Tel 0428121282. 22 members, 2 two seat and 2 single seat aircraft, 5 other private aircraft. Canteen Clubhouse, camp sites. www.sunrasiaglidingclub.org

SYDNEY GLIDING INC.

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

SOAR NARROMINE P/L

Operations from the Narromine airfield west outskirts of town. Tel 0419 992 396. 7 day a week aerotow operation 2 tugs. 10 club aircraft including 3 two seaters. www.soarnarromine.com.au

SCOUT ASSN OF AUSTRALIA NSW GLIDING WING

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

TEMORA GLIDING CLUB

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

WARWICK GLIDING CLUB

Warwick Gliding Club is a small, friendly gliding club located at the Warwick Airfield on the Darling Downs in South-East Queensland 2 hours drive from Brisbane. Tel: 07 3077 6973 www.warwickgliding.org.au

WAIKERIE GLIDING CLUB

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

WHYALLA GLIDING CLUB

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

CLASSIFIED ADVERTISING

glidingaustralia.org

For members' convenience, Classified Ads can be purchased from the Gliding Australia website at glidingaustralia.org. Go to Classifieds then click on the link and complete the online form where you will need to provide the text for the ad and any photos, if required. The cost for the ad will be determined by the number of words and any photos you wish to add. You will then be taken to a secure payment area to process your payment. Your ad will be placed on the GFA website for a month from the date of payment. Ads that are financial at magazine deadline (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-PII PEGASE

A great performing and handling glider. Renowned in Europe as a great club glider with no vices. Climbs well in strong lift and one of the best gliders in weaker thermals too. 40/1 glide, 120 Litre ballast bags (new), spacious ASW style cockpit. Very flexible wings provide excellent handling and feedback. This glider has a number of features that make it not only a joy to fly but to ground handle too: Instruments lift with canopy, wingtip wheels, tail wheel (not skid), strong undercarriage with positive locking. Reliable instruments including Vertica V2 running XCSOAR. The Pegase is handicapped just behind the LS4 but this one will cost you less than 1/2 the price (without the \$500 per year manufacturers charges). Comes with fresh form 2, all tow out gear & tube trailer. A bargain at \$21,000! **Contact Greg on 0400 438 038**



VH-CTG. LS1D 3404hrs, 1318 Landings With one owner fully moved overseas I have therefore decided to put up for sale part or all of this glider. Looking to obtain Expressions of Interest to purchase the whole glider or half (possibly a third if there is more than one interested party). All offers will be considered, and therefore you are encouraged to make an offer. Comes with a good registered trailer, instruments include flarm mouse (with



certified flight logger) and flarm nav readout, Winter variometer, plus full servicing history documentation (with all associated paperwork). Has a current Form 2 annual inspection which expires in January 2019. Part ownership is available at any club that may operate in SE Queensland as I am happy to move it further afield under the right circumstances. Currently based at Boonah. Comes with a good registered trailer. Will be sold with a fresh Form 2 Annual Inspection / Maintenance Release. Full purchase: Around \$10,000 ONO. Part purchase: Negotiable. Contact **Steve 0437 187 565**

VH-UKU SZD-48-1 Jantar Stadart 2

Hangar and Caravan at Lake Keepit. **Contact 0428 300 370 Gerhard.**



VH-UKB ASW24E

Self launcher excellent condition poly finish. Full instrumentation, tow out gear, alloy Cobra trailer with new poly finish New prop with old prop as spare, 21 hrs on motor. 1780 hrs on airframe. \$85,000. Contact: **Hank 0427 427 448**



VH-UKP STD JANTAR2

Great Condition - Approx 2300hrs - Tow Out Gear, Trailer, Reprofiled Wings. For more info sailplanes.co/sailplanes/single-seat-sailplanes/standard-jantar-2_217 \$14,500 **Neil 0435 210 321 neiky@optusnet.com.au**
VH - KYL LS6-B



Recent refurbishment and Form2, ASI, ALT, Cambridge LNav and Vario, Winter Vario, Dittel radio, Flarm. New mylars, main wheel bearings, tyre and tube, new Gadringer seat harness. Trailer and tow out gear, trailer rewired. TTIS 4683 \$55,000 neg. **Contact Gary 0408 243348 or Grant 0417 843 444**



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.**



TWO SEAT

VH-GVW TeST Alpin DM8

A czech built ultralight two seater self launcher built in 2004. Budget designed to fulfill aspirations to be happily flying economically. Wooden construction, major components upgraded, new fabric and repaint, at \$45k it can fulfill a dream. **David 0428 716 807**



VH-GSI ASH25Mi

Two sear self launcher. 60 HP rotary fuel injected engine 70 hrs. Same syndicate since new; always hangered. Imported new 1998 'ex-mould'

re-profiled a year later and finished in polyurethane. 26m wingspan with winglets. One-man ground handling and rigging gear. Instruments include CNav and X-com radio with rear seat repeaters. Two chutes; trailer and T-hangar sold separately. 2735 hours. Contact Ian at **ianbarra777@gmail.com**



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 \$ 120,000, call **Heinz 02 6649 2783**



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

continued over page

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

VH-XQK, DG500M

two seat, self launching motor glider, 60HP Rotax 535C. Has been syndicate owned since being imported new in 1992. Being sold with a recent Form 2 inspection. Always hangered. \$120,000 reduced to



\$95,000 ONO. For more details contact **Bob Ph 02 6332 9235** or email: bobjmcd@gmail.com

VH-GFF, Nimbus 3T 25.5m

Total hours 2900. Engine hours 40. Tilt-up panel mod and full instrument panel rewire completed by Maddog Composites. Panel configured for Ixnav V7 + Oudie IGC + Flarm and Dittel Radio fitted. Cockpit fitted with Mountain High Oxygen system and bug wipers also available. Fully set up for competition or distance flying.

Pfeiffer trailer has been fully refinished and reconfigured (by Maddog Composites) with Cobra style wing dollies stabilised with side bearing runners and hydraulic lift for the fuselage. Comes with full IMI one man rigging system and tow out gear, including tail lift. No heavy manual handling required with this setup. Glider also comes with full all-weather covers and wing and tail ballast tanks all fully operational. Also comes with 24.5m and 22.9m wingtips and various spares.

Sustainer is fitted and fully operational with min pilot weight 78kg and maximum weight with full fuel 100kg. Glider is fully sorted and in very good condition inside and out. Full PU refinish in 2012. Genuine 1:60 glide performance in a very elegant and capable package. Glider



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

INSTRUMENTS AND EQUIPMENT

VHF RADIOS - ICOM ICA-210, BECKER AR3201 AND AR4201, FUNKE ATR600.

Becker AR4201 - \$700

Becker AR3201 - \$400

ATR600 - \$500

All in working order - Great price **Call Arnie 0418 270 182**

or email arnie.hartley@gmail.com

TRAILERS

KOMET EUROLIGHT TRAILER FOR ASG 29 18M

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



WANTED TO BUY

Touring Motorglider or similar. Must have recent Form2 and be priced to sell now. Please provide all available details to Kingsley. Email: 247jetstream@gmail.com or phone **0412 673 028**

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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.

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



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

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