GLIDING AUSTRALIA

Issue 25 August - September 2015 www.glidingaustralia.org

NEW FROM AERO

JUNIORS GET READY FOR JWGC

HARRY SCHNEIDER FOR AAHOF - CROSS COUNTRY TIPS - DAILY INSPECTION - AIRWORTHINESS

GLIDING AUSTRALIA

No. 25 August - September 2015

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OF BILL TUGNETT AT BATHURST

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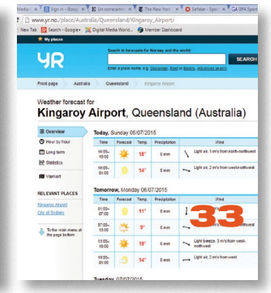

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FROM THE PRESIDENT

DEAR MEMBERS

It's hard to believe two months have passed already, but here I am at my desk again preparing to share with our members the work that has been done in the past couple of months and the vision that we are developing for the future of Australian Gliding.

I think it is commonly understood that human nature makes us suspicious of change. I know from member emails that I receive that some changes are unpopular. It is perhaps because members do not fully understood that the compliance burden on Self-Administering Sports has increased exponentially over the last decade.

Resistance to change is not a problem that is unique to gliding, and such has exercised great minds over many years. Former United States President Robert F Kennedy, in an address before the United States conference of mayors on 25 May 1964, said, "Progress is the nice word we like to use. But change is its motivator. And change has its enemies."

As I type this note, GFA representatives are enroute to a meeting with CASA to find out what the latest draft of CASR Part 149 contains. This document had its genesis back in 1998 and has been rewritten many times. It describes a new arrangement that changes the way Self-Administering Sports such as GFA interact with CASA. Within this framework it is expected that the GFA will enjoy a high degree of freedom and autonomy, commensurate with a demonstrable ability and willingness to do so responsibly. We believe this latest iteration is a win/win situation, but rest assured we will not sign off on it until we are certain that it is in our members' best interests.

I am often asked, "Why does MOSP keep changing?" The answer is because the world is changing and we have to change with it. However we do have plans in place to review the MOSP to separate out guidance material from the rules and regulations, thereby making it easier for everyone to understand what is required to comply with current legislation. This will be further developed in line with the proposed transition to CASR Part 149.

At the moment, as you know, certain exemptions from the provisions of the Civil Aviation Regulations 1988 have been granted to members of the GFA by way of Civil Aviation Orders 95.4 and 95.4.1. Where exemptions exist, the practices adopted by GFA are outlined in the GFA Operational Regulations approved by CASA. Under Part 149, what we currently do as an exemption will be enshrined in legislation and become the norm. We will need to produce an Exposition detailing what we undertake to do, similar to the current Deed but with more specific details. The Exposition will refer extensively to our MOSP, which is why we have been working hard to get them ready. You may have noticed that we have adopted a standard template for these MOSP Parts. Going forward it is intended to convert all of our documents to this new format to achieve a Standardised GFA look to our documents.

You will read elsewhere in the magazine about our meeting with the AAFC in May. They have managed to form a relationship with Qantas, and from 1 July 2015 on every Qantas flight a promo for gliding will follow immediately after the Safety briefing. That is an incredible achievement and will no doubt increase interest in gliding all around the country.

With all of the initiatives that we have in place and 150 solo AAFC cadets expected to feed into the club system every year we need to be ready. I have

asked the Operations panel to consider training for growth not just for replacement. If you have a lapsed rating or if you are considering instructor training, now is the time to put your hand up. Going forward as our membership grows we will have more capacity and funds to achieve great outcomes for our members.

The GFA SOAR reporting system is now integrated with our Salesforce Database and will allow us to track trends going forwards. I take this opportunity to urge all of you to embrace reporting on this new system to enhance safety for all of us and to reduce our accident and incident rate into the future. I know that we cannot prevent every accident but I believe it is a tragedy when the lessons are not learned and accidents are repeated. Let us use the tools we now have to reduce the occurrence of repeat accidents by fostering a No Blame reporting culture.

IN CLOSING

"To improve is to change, so to be perfect is to change often."

Winston Churchill

MANDY TEMPLE

PRESIDENT

President@glidingaustralia.org

AROUND THE CLUBS

Phoning around to the Club Presidents I have learned of some great initiatives I'd like to share. It seems that most clubs have at least one Really Good Idea that could be used by all clubs.

Kingaroy are working on a multiple choice questionnaire for pilots before they take off for an Annual Flight Review Flight. It covers Radio procedures, Airspace and Rules of the Air.

Two of our very successful clubs; Lake Keepit and Mount Beauty work to a 5 year Strategic plan with an Annual 2 day planning meeting.

FROM THE TREASURER

The GFA financial year is May to April. Our accounts have now been finalised and signed off by our auditor. Complete accounts will be filed on the GFA website for those who wish to peruse them.

At the end of our financial year the GFA remains in a sound financial position with assets attributable to GFA membership of $996,341. In addition the GFA holds funds on behalf of RANGA junior scholarship fund, the ITC International Teams fund, and the JWGC Junior Worlds fund. All up, we are managing around $1.4m of assets.

For the year we booked an operating deficit of $29,654, a loss, and cashflow from operating activities was negative $18,309.

Clearly, the GFA cannot continue incurring losses each year, but while the GFA is in a sound financial position, the GFA Board has resolved to spend some of the accumulated funds on rectifying shortcomings in our organisation, and delivering improved services to our members.

As noted last year, significant project expenditure continues, aiming to remedy the shortcomings in our Airworthiness System that resulted in CASA temporarily closing down our Airworthiness Operations in 2013. During last financial year, $109,160 was spent on the Airworthiness Development program. This program is expected to be completed by December 2015 with another $50,000 budgeted expenditure in 2015.

CASA funding for the organisation, just over 10% of our income, continues to cover only a small share of our costs. The GFA attempts to recover costs of providing airworthiness services to members and this income represents 13% of our income. The biggest contributor to income is membership fees, which comprise two thirds of the GFA income.

Apart from income, membership fees are also the secret to the long term viability of the gliding movement. A 10% increase in membership would realise another $60,000 income and help spread the running costs of the organisation. Membership growth is also required to maintain the health of the organisation, provide new students for instructors, new officebearers to run the organisation and provide buyers for gliders. This is the motivation behind the GFA commitment to the Beyond 3000 Membership Growth program for future years – a target of 10% annual growth each year.

Membership has grown by a small percentage this year, reversing a couple of decades of decline. The GFA Board has resolved to budget increased expenditure for Marketing and Development in the coming year, to capitalise on the two world competitions being staged in Australia in 2015-17 and to support the drive for increased membership – 'Beyond 3000'.

During the year GFA advertised to clubs a willingness to assist in financing new Club gliders, and lent the Darling Downs Club $80,000 for purchase of a new club glider. Another loan of $70,000 has been authorised for Hunter Valley Club, which took effect in May 2015. These loans provide clubs with better than bank interest, while earning GFA a reasonable rate of return.

Insurance rates have remained stable and we've been able to negotiate better terms for next year. The Broad Based Liability insurance policy is being renewed for 2015-16 at the same rates as for last year with the excess cover provided now increased from $250,000 to $1m. This should result in worthwhile savings to clubs and private owners on their individual policies. The group Hangar Keepers Liability (HKL) policy continues into its third year with 38 gliding clubs participating – this provides clubs with public liability cover at considerably reduced rates.

For the year ahead the Board is budgeting another deficit year, $47,000 deficit, with the completion of the Airworthiness Development Program and above average expenditure on Marketing and Development. With two world comps being staged in Australia we have an opportunity to maximise the exposure of gliding and we expect this Marketing and Development expenditure to boost membership and contribute to our Beyond 3000 declared goal of 10% annual membership growth.

Our GFA business is in a sound financial position, our systems are getting better, we are working on delivering improved services to members, and we are looking forward to growing our sport. Exciting times ahead.

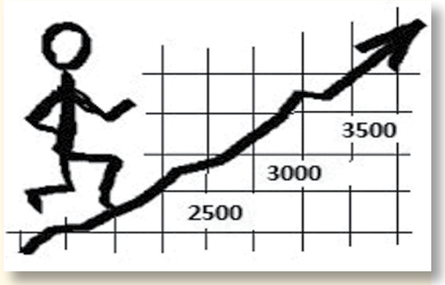
DAVE SHORTER

TREASURER

treasurer@glidingaustralia.org

BEYOND 3000 MEMBERSHIP

In the last issue of this magazine, we wrote about the GFA's declared goal of achieving 10% pa membership growth. Achieving this will be impossible without the enthusiastic adoption of this program by all clubs, regional associations and individual members. What have you done so far?



- Has your club set its own growth goal?
- Is your State Association getting behind this project?
- Can you organise manned glider displays in public venues?
- Does your club have a Membership Growth officer/director?
- Do you follow up with members who haven't been coming to the club lately?
- Do you have a mentoring program for new members?
- What procedures do you have for welcoming and induction of new members?
- Do you involve visitors and new members in the running of the club?
- Have you given a job to new members who arrive at the club?
- Is your club a friendly place - is it fun flying at your club?
- Do you sit down after flying and talk about the day's flying?
- Have you invited a friend or acquaintance to try gliding recently?
- Who are you going to invite to try gliding next?
- Other ideas?

DAVE SHORTER

AGM SYDNEY

The GFA Annual General Meeting will be held at the MERCURE SYDNEY INTERNATIONAL AIRPORT HOTEL, 20 Levey Street, Wolli Creek on Saturday 29 August from 2pm. A Presentation Dinner will take place in the evening.

All members are invited to attend.

EXECUTIVE OFFICER

VALE JOHN ASHFORD

We were saddened to hear of the sudden death of John Ashford from Bacchus Marsh. John has been active in gliding for some 50 years, with a major involvement in airworthiness. John was our previous deputy Chair of Airworthiness (DCAD), previous CTO Airworthiness, RTO for Victoria, our Current OSTIV representative, and took on many roles in VSA and his club, Geelong Gliding Club. He was a good friend who would do anything for anyone, and will be sorely missed.

WORLD GLIDING CHAMPIONSHIPS IN AUSTRALIA

Junior World Championships 2015. Our expectation is for 20 countries and 55 entries for the Junior Worlds, which runs from 23 November through to 13 December at Narromine NSW. Of the two classes, Standard and Club Class, club class is probably the largest due to greater availability of gliders for rent in Australia. Many teams will be shipping their own gliders to Australia, some of which will be staying for the Benalla Pre-worlds in January.

The town of Narromine is quickly filling up with about 250 people who will need accommodation for three to four weeks. One pilot plans to arrive in Narromine to start flying in early October. We are still looking for gliders and crew for some of the pilots. Questions should be addressed to jwgc@gidingaustralia.org

Benalla Flapped World Championships 2017. It is still early days for the World Championships, coming in January 2017, but the focus now is on the Pre-World competition to be held alongside the Australian Nationals in January 2016 www.ozglide.com. Eight foreign entries are already among the 41 local entries, with many others expected. I am currently looking for gliders for a large number of French pilots who wish to compete.

Women's World Gliding Championships 2019. The sports committee has decided to apply to host the 2019 Women's World Gliding championship to be held in 2019. The IGC rules require that the 2019 even is awarded outside of Europe in 2019, so we have a reasonable chance of success. This would be a smaller world championships, with expectation of 40 to 50 entries over three classes. I have sent an email to all club Presidents and Secretaries asking for clubs to express interest in hosting this event, and we have a selections committee ready to review the applications and make a decision before mid August.

MPP AND COMPLAINTS AND DISCIPLINE PROCEDURE

The GFA has had a Member Protection Policy (MPP) for a number of years and a few members have requested help to resolve issues covered by this policy. The policy basically says that members can expect to be treated fairly without fear of abuse or harassment, and provides advice on how you can best resolve these situations.

A significant element of MPP relates to child protection issues, which impact on GFA members in the 15 to 18 years age range. GFA members who have roles that involve regular unsupervised responsibility for youth have quite specific obligations and every State has very specific legislation about responsibilities of individuals and organisations such as gliding clubs, regional associations and GFA.

Each club has a responsibility to comply with the GFA policy as well as their State legislation. Clubs should review roles that meet the definition of Working With Children within their state legislation and ensure that impacted members complete the appropriate Working With Children checks. See the MPP and Google your state regulations. This information should be included in your club Safety Plan and risk assessment.

With this increased focus on member protection we have updated the Policy to create version 16. The major difference is that the sections on complaints and discipline procedures have been removed and added to the similar procedures for Operational and Airworthiness issue resolutions, and are now combined into a new Complaints and Discipline Procedure.

Both documents can be found on the GFA website, under docs/forms.

TERRY CUBLEY
EXECUTIVE OFICER
eo@glidingaustralia.org

ARTICLES OF ASSOCIATION

The GFA Objects and Articles of Association (Articles) are the core rules that we operate by. These are based on the model rules of the Victorian Incorporation Act which was updated in 2012. The Articles do not require much change as they are reasonably broad and the detail is spelled out in the Board Regulations. However, with the introduction of the 2012 version of the Act, the Board has taken the opportunity to update some of the Articles and will present these to the members at the GFA AGM this coming August in Sydney.

Changes to the Articles require a vote of members at the AGM, and the Articles themselves describe the voting procedure. The proposed changes to the Articles are available for viewing and comment by all members on the web page – we hope that you will review and offer improvement to the suggested changes, or suggest additional changes that could be included.

After a review period, the GFA Board will finalise the proposal and then call for members to vote, either by attending the AGM or by using a proxy form.

The major changes included, other than terminology and some new requirements due to changes to the Act, concern the following:

- A definition of the role and responsibilities of the Regional Association
- Changing the timing of the votes for all officers to the AGM or the Board meeting immediately after, usually held in August.

The AGM will be held in Sydney on 29 August. Full details are listed on p3 of this magazine.

AEF MEMBERSHIP FORMS

The wording of the Introductory Membership (AEF) Forms has been updated following legal advice to ensure that our introductory members are made fully aware of the risks inherent in flying gliders and agree to indemnify the members, clubs, regions and GFA against any liability. The complication is that each State has different legislation about exclusion of liability, so we end up with four different Introductory membership forms to cover each State. When you order the form from the GFA office you need to make sure that you get the form applicable to your state. The State refers to where you commence the flight – so a club that launches in NSW must have the NSW AEF form, irrespective of which GFA Region they belong to.

South Australia has the most extensive legislation so we have crammed the information onto the form with a slightly smaller font so it fills two sides of the page, same as all other States. The SA form also requires the introductory member to sign both sides of the form, and hence they will have to sign the copy on the second side also.

The form also includes the introductory member joining the Gliding Club, again based on legal advice. It is important that the club retains the duplicate copy for at least seven years to provide protection against future litigation.

SPORTING LICENCE

It is proposed to issue an FAI Sporting Licence to all members with a Glider Pilot Certificate but, of course, with an option to opt out if you do not want a sporting licence.

A Sporting Licence is required for pilots to compete in an international competition, and in order to claim a record. If you break a record but do not have a Sporting Licence registered with FAI at the time of the flight, then you miss out on the record.

CURRENT PROCESS

Currently, a Sporting Licence involves an application form and processes for renewal and registering them with FAI, plus a payment in the Shop. They must also be approved by the CFI. Automatically granting the licence removes most of this work, with the benefit that the member will not miss out on a flown record because of failing to register. The GPC is the agreed standard for 'proficiency' and is a common standard across all clubs.

OUTCOME

- The Sporting Licence number will be the same as the membership number.
- The licence is not valid if the person is no longer a member.
- The GPC/Membership card will show that the member has a Sporting Licence.
- If the member wants a hard copy of the Licence it is an easy process to print a licence with photo from Salesforce. This could even be a self-serve process.
- The Salesforce data of Sporting Licence holders can be downloaded as a report to ASAC so that the FAI record can be updated.
- Costs: The present cost of an original Sporting Licence is $20 for 2 years, after which renewals cost $10 for 2 years. By removing all of the admin processes, we can provide the licence at zero cost to members.

This change will be implemented by an email to impacted members, with explanation of any action required.

INGO RENNER HALL OF FAME SCHOLARSHIP

Ingo Renner is an inductee in the Sport Australia Hall of Fame, and the Sports Commission have advised that they will include gliding in the acceptable sports for their mentoring scholarship for 2016. Young glider pilots who are under the age of 21 and a member of the international team have been invited to apply for the scholarship, which is, of course, a fairly small group. This is the first time that this scholership has been offered to gliding and provides an opportunity for one of our junior team pilots.

Ingo will be the mentor and will support the selected junior over the next 12 months, if he or she submits a successful application.

The Sports Committee spoke to the two candidates, James Nugent and Dylan Lampard, to see if they would be available to make use of the support available. James is in year 12 next year and declared that he would not be able to devote the necessary time. Dylan is very enthusiastic and has agreed to submit an application.

This would be a great opportunity, and we wish Dylan well.

GA

FROM THE SPORTS COMMITTEE

The sports scene in gliding is healthy and active. Coaching and competition events are well attended and achieving results. At the international level our pilots have lifted our country ranking from 13th to 6th and we currently have six Australians in the top 100 in the IGC world pilot ranking list!

A recent online survey by Richard Frawley showed positive results from a number of aspects of coaching.

But we can do better. The coaches are taking a fresh look at how they go about their business and the international level pilots will have plenty of opportunity to improve their skills against the best with the junior worlds this coming season and the flapped worlds the following season. We also plan to bid for a Women's Worlds in 2019.

The National Competition Committee has made a number of decisions. The standard class competition this season will be held in conjunction with Lake Keepit Club and Sports Class nationals and the 20m competition will be held at Narromine. Check the GFA calendar on the website.

NATIONALS RULES

There are some modifications to the Nationals rules. The amended rules will be posted on the website soon.

The rule about rest days now says, "After 6 contest days, one of the next three days must be a rest day."

If an aircraft is damaged so that it is not able to be flown within 24 hours and it is deemed to be a safety issue the minimum penalty is 100 points.

The commencement of launch previously required convection to be at 3,000ft. This has been changed to 2,500ft with forecast of at least 3,000ft.

Team flying – decision as to whether pilots are team flying is determined by the Competition Director in consultation with the steward. If team flying is determined, the CD will issue a penalty. Foreign pilots competing will have to follow this same rule. ASW20b has been removed from Australian Club Class.

Posn	Pilot	Score	Comp
1	Barnes	40	Std
1	Claffey	40	Sports
1	Craigie	40	Open
1	Crowhurst	40	Club
1	Scutter	40	15m
1	Temple	40	18m
2	Georgeson	39.81	18m
3	Buchanan	39.5	18m
4	Jansen	39.51	Sports
5	S O'Donnell	39.41	Std
6	Bloch	39.29	Std
7	Taylor	39.27	Club
8	Gage	38.63	Std
9	Cubley	38.62	Club
10	Edwards	38.18	Open
11	Woodward	38.13	Club
12	Geiger	37.51	Std
13	Wooley	37.38	15m
14	Beecroft	37.32	Std
15	Vinall	37.11	18m

SPORTING LICENCE

All members with a GPC will be offered a Sporting Licence at no extra charge. A Sporting Licence is needed before you can set a record or before you can enter an international competition, so it is better to have a licence in case you set a record at some point in the future. The Sporting Licence is registered on the International Gliding Commission register. Any GPC holder has the option to opt out of a sporting licence if you so wish. The result is that most pilots will have fewer admin tasks and lower costs as we will no longer charge for the Sporting Licence.

TEAM SELECTION SCORES

The 40% selection scores for the 2014/15 soaring season are complete and can be found in Table 1. Each pilot score is the highest score from each of the National Championships listed in column 4. There are six pilots on a maximum score of 40 with very little between the next seven pilots. Selection for the Benalla World Championship Team will be very closely contested.

Sports Class Team selection scores: The ITC provided a recommendation to the Sports Committee to change the format of the Sport Class competition to better facilitate the ITC Team selection scores from that event.

Currently the ITC selection rules allow for the 40% selection score to be achieved from Sports Class but only if the pilot does not fly another qualifying National Championship. This particular rule produces anomalies and cannot be supported for the 2016/17 selection year.

The ITC recommended to the Sports Committee that the Sports Class be divided into Sports 15m and Sports Open class where any glider with a wing span greater than 15 m is scored in the Sports Open class. These two classes will be tasked, launched and on the grid together, which results in no difference to the manner in which the competition is currently managed.

The competition will be ballasted, applying the Multi-class handicaps and also be required to meet the minimum number of entries for selection scores to be allocated to the individual class event.

The 40% ITC selection score will be attributed to the position in either the Sports 15m class or Sports Open class and will not be affected by a pilot participating in another National Championships.

This change is expected to apply to the National Sports Class competition in the 2016/17 competition cycle.

PRE-WORLD PARTICIPATION

The ITC recommended changes to the current policy of allowing a pilot who was within the 90% selection score to be provided with the opportunity of a secured funded Team position if the pilot participates in the pre-worlds. This current policy gives a pilot the potential to secure a team position even though the pilot maybe well down on the selection list but within the 90% funding range.

It has been agreed to amend the policy to only allow either or both of the top two pilots on the selection list to secure a world team position if the pilot participates in the Pre-World event. This will take effect from the 2016/17 completion cycle.

International event participation:

Joe Davis and Kerrie Claffey will be flying in the Women's World Championships in Denmark.

Tobi Geiger will be flying in the Standard class Pre-World Championships in Lithuania.

Morgan Sandercock will be flying in the 13.5 World Championships in the US.

PETER TROTTER

CHAIR SPORT SCOMMITTEE

IGC RANKINGS

All of the 2014-15 sporting and summer season state and national championships have now been scored by the IGC.

If you competed in any State or National last season, you should now have a pilot ranking with the IGC which you can build on by attending further comps either here in Australia or around the world. You can check this by visiting igcrankings.fai.org.

There are a couple of points to note regarding Australian competitions:

1. Where competition classes were combined due to numbers, only the combined class is scored.

2. For the two-seater nationals, only the highest ranking pilot is allocated the points for the competition, or if neither pilot is ranked, the first named on the entry form.

IGC rankings are now used to rank pilots in the event that any Australian Nationals event is oversubscribed.

ALLAN BARNES

GFA ADVOCACY

GFA sends representatives to many industry associations and forums. A regular column will beproduced detailing these meetings and issues, which are currently under discussion.

ASTRA MEETING MARCH 2015

This meeting was attended by Graham Brown GFA Chair of the Airfield, Airspace and Avionics committee.

24TH ASTRA COUNCIL MEETING

This meeting was well attended by Industry, Airservices and CASA.

Mark Skidmore, CASA Director Aviation Safety, was sent a briefing on ASTRA and invited to attend the council meeting. He accepted and spent an hour or so with us.

Besides his distinguished RAAF career, he is a GA pilot and is very familiar with sports aviation. He endorsed self-administration as "the only way to go" and will do whatever it takes to assist us. He commented that recommendations from ASTRA are "gold" as they are a consensus from a broad section of Aviation.

Presentations were made from each of the working groups. The Surveillance report summarized below is notable to us.

18TH SURVEILLANCE TECHNOLOGIES WORKING GROUP MEETING.

Updates were given on the roll out of mandated ADSB fitment.

Note: GFAs exemption to this is likely to expire in 2020.

Apart from Gliders operating pursuant to Instrument number CASA 07/15, aircraft above 29,000ft must now have ADSB and from 2017, IFR aircraft must have ADSB to enter controlled airspace. VFR aircraft currently have no requirement for ADSB.

Some US companies are happy to sell UAT units into Australia, although they will not work here. A lot of the sales information from the US is confusing.

ROYAL FEDERATION OF AERO CLUBS OF AUSTRALIA (RFACA)

GFA were represented by Mike Close President of the Air Sport Australia Confederation (ASAC).

Angus Houston gave the keynote address and also talked about his involvement in MH370 and MH17 at the dinner. Mark Skidmore, Roger Weeks and Roger Crosthwaite gave CASA presentations, followed by the ATSB presentation, the Bureau of Meteorology and AMSA AusSAR. The latter said that 30% of their work involved checking on SAR times that were not cancelled. Mark Skidmore went through his vision the 'new' CASA. During this he said that he believed it made no sense for Self Administration to reside in the Office of the Director.

AUSTRALIAN OLYMPIC COMMITTEE

Mike Close also attended this function. He spoke to the President of the Australian Curling Federation, who is now also the Vice President of the International organisation, and very busy. Mike is originally a Canadian who captained Australia for 14 of the 16 years he played. They have 150 members but because Curling is an Olympic Games sport they get a grant of $25m, which covers all their costs. This seems incredible!

Mike also spoke to a couple of people from Sports and Media who handle all Australian Olympic Committee sponsorship. They confirmed what we already know - the advertising dollar is keenly sought after around the world and potential advertisers have to be sure that they get value for the money they spend. We talked about Red Bull as a prime example. They also said that many sports are trying to revamp their events to make them more attractive to the public, and in particular for all types of media, in much the same way as the FAI are attempting to do.

Mike spoke to Susan Ley, Minister for Sport, and asked her about the Parliamentary Friends of Aviation. He had met her with her on this topic when the Coalition was in opposition. Mike also spoke to the CEO of the Sports Commission and said that we were very pleased that air sports have been recognised as National Sporting Organisations sports.

AUSTRALIAN AIR FORCE CADETS (AAFC) BATHURST MAY

The AAFC invited GFA to attend their annual 3-day flying meeting at their facility at Bathurst at the end of May.

I attended along with VP Pete Cesco and Chair of Ops Drew McKinnie.

Chief of the Air Force and glider pilot Geoff Brown flew in to address the meeting and spent several hours with us. In the afternoon a Flight Instructor flew in in his PC 9 and outlined the training methods used by RAAF flight school. Much of it was relevant although his comment to "Go around" in one situation raised a laugh. He stressed the importance of not ghosting, that is, not touching the controls when someone else is flying. It has the potential to cause accidents and hinders student training.

The RAAF have made his presentation available to us to use as we see fit.

The AAFC have 19 gliders operational with a further three on order. The AAFC have also obtained funding to provide a simulator for each wing (club). They announced that they now have the go-ahead for Tri-services roll out - Army and Navy - which could result in a further increase to the fleet.

CONSISTENT THEMES OF THE MEETING WERE:

- Safety culture - improved reporting and a no blame culture.
- Aim for best practice and standardisation

The AAFC have a charter to expose 10,000 cadets per year to aviation. Most will do three PEX, or AEF, flights but there is an expectation that 150 cadets will solo in gliders.

CASA – JOHNATHAN ALECK - PART 149

Dr Jonathan Aleck, CASA's Associate Director of Aviation Safety, attended the meeting and outlined the impending implementation of Part 149, which has been on the table since 1996!

He confirmed that the document is now shorter and less prescriptive, with 18 pages instead of the previous 70 to 80.

GFA MEETING JUNE LONG WEEKEND

Over the June long weekend we had our combined panel meeting in Melbourne. Over 40 delegates attended and we completed a lot of business. We had a meeting of Operations, Airworthiness, Safety, Sports including Handicap, ITC and NCC, and World Gliding Competitions Working Group. There were some great synergies and a lot of time was saved by a few discussions over a beer.

Ray Pearson Executive Officer from ASAC attended and addressed the Sports committee meeting. Tim Shirley was in attendance and addressed several committees on IT issues current and future.

CASA SAFETY FORUM

GFA reps are travelling to the annual CASA Safety Forum where CASA are going to release the latest draft of Part 149. This will be a big change in the way Self-Administering Sports organisations such as GFA interact with CASA. We wait to see what this latest draft contains.

MANDY TEMPLE

CHANGES TO THE SPORTING CODE

EFFECTIVE 1ST OCTOBER 2015

COMPETITION RULES

1. The finish line must stay open until sunset.
2. Club class handicaps will be adjusted for very lightweight pilots
3. For scoring, the optimum and not necessarily the last start will be used.
4. The destinction between primary and backup flight recorders is deleted.

FOR BADGE AND RECORD RULES

1. Only the start line will be used - no more OZ starts.
2. Barographs will no longer be used.
3. The 10km turn point separation rule has been deleted.
4. A Silver Distance claim will require a fix at least 50km from home.
5. The World Class record category is replaced by the 13.5m class record category.

FAI GLIDING BADGES

TO 30 JUNE 2015

BERYL HARTLEY
FAI CERTIFICATES OFFICER
faicertificates@glidingaustralia.org

A.BADGE

LARSEN SAMUEL R	12032	ADELAIDE UNIVERSITY GC
WILLIAMS MATTHEW W	12038	G.C.V.
HARBER STEPHEN	12040	NARROGIN GC
CHAN AARON S	12044	LAKE KEEPIT SC
SZABO ANTON V	12046	CABOOLTURE GC

A & B BADGE

BEGUS ROBERT	12034	ADELAIDE UNIVERSITY GC
BODIAM JAMIE L	12035	HUNTER VALLEY GC
JESSE CHRISTOPHER J	12039	BOONAH GC
GAO QING	12041	SOUTHERN RIVERINA GC
BOOTHMAN PETER	12049	NARROGIN GC

B BADGE

WEDLAKE CHRISTIAN A	11966	NSW ATC 301
MCAVOY STEVEN P	12027	GEELONG GC
FIRKINS CONNOR	11970	NARROGIN GC
VAN STROE JACOB	11986	NARROGIN GC
HARBER STEPHEN	12040	NARROGIN GC

C BADGE

SNOOK LAURENCE P	11951	NARROGIN GC
WEDLAKE CHRISTIAN A	11966	NSW ATC 301
SIMPKINS ZACHARY	11960	DARLING DOWNS SC
JESSE CHRISTOPHER J	12039	BOONAH GC
FIRKINS CONNOR	11970	NARROGIN GC

A. B. C. BADGE

APON PETER	12033	BOONAH GC
DANIELS ETIENNE	12036	SPORTAVIATION
SPILSBURY FRANCIS J	12037	SOARING CLUB TASMANIA
SHANG YUCHENG	12042	SOUTHERN RIVERNINA GC
GILL VALLANCE		
CARRICK D	2043	MT. BEAUTY GC
CARLING ANTHONY D	12045	V.M.F.G.
FITZGERALD TODD G	12047	KINGAROY GC
MAZZOLETTI PAUL J	12048	BALAKLAVA GC
WILLIAMS NEIL A	12050	G.C.V

SILVER C

LOVELL BRENDON L	4877	GRAMPIANS GC
KERESTES ATILA	4883	MT. BEAUTY GC
LAMPARD DYLAN J	4884	KINGAROY GC
PARSONS JAMES W	4885	KINGAROY SC
STEPHENSON CLIFFORD J	4886	SOUTHERN CROSS GC

GOLD C

LOVELL BRENDON L	1720	GRAMPIANS GC
HERTLEIN ULRICH	1721	GEELONG GC

DIAMOND GOAL

LOVELL BRENDON L		GRAMPIANS GC

DIAMOND DISTANCE

LOVELL BRENDON L		GRAMPIANS GC

600 KM DISTANCE

JANSEN DAVID G	111	KINGAROY GC

700 KM DISTANCE

JANSEN DAVID G	28	KINGAROY GC

800 KM DISTANCE

JANSEN DAVID G	15	KINGAROY GC

900 KM DISTANCE

JANSEN DAVID G	14	KINGAROY GC
MADDOCKS ANDREW M	15	KINGAROY GC

1250 KM DISTANCE

JANSEN DAVID G	2	KINGAROY GC

54TH MULTICLASS NATIONALS BENALLA

The Multiclass Nationals at Benalla is the practice event for the World Gliding Championships in the Open, 18m and 15m classes, to be held in January 2017. At 30 June, 51 gliders had entered including nine international entries, and the event is shaping up well. Just to remind you, we have set a limit of 80, with 20 places reserved for international pilots, which means available places are starting to fill up.

We are starting to prepare for the event quite seriously now. Improvements have been made to our main grass runway, with an extension of 250m at the eastern end and significant regressing at the western end. The result will be a significantly longer runway, and it means that we will be able to accommodate the larger fleets we expect this year and, of course, for the Worlds.

We are preparing tie-down areas which will be reused at the Worlds, including extending our water ballast facilities into these areas so that ballast points will be readily available.

We have recently concluded a sponsorship deal with oxygen supplier Supagas. They will be supplying aviation oxygen for both the Nationals and for the Worlds, and we will have an experienced person on site to supply filling services. Exact prices are still to be worked out, but you can expect that oxygen filling will be available on site at both competitions. We are very grateful to Supagas – and to Geoff Vincent who was instrumental in closing the deal.

We have most of our organising team in place, and while there is always a need for more helpers, the team is experienced and enthusiastic. We look forward to a great competition and to enjoying your company next January.

We are getting quite a few enquiries from entrants looking for gliders to hire. If you can help, please let us know and we will set up contacts for you. Because the event is handicapped, older gliders can be quite competitive, so don't think your older 15M or Open Class glider is not eligible.

As a reminder, Benalla will be operating full time from late October until March. There is no need to wait until the competition starts, you can come any time to enjoy the conditions and to sample our hospitality.

You can find the competition website at www.ozglide.com, and the Gliding Club of Victoria at www.glidingclub.org.au

TIM SHIRLEY
CONTEST DIRECTOR
tshirley@internode.on.net.
www.ozglide.com

JUNIOR WORLD GLIDING CHAMPIONSHIPS

Entries for the JWGC close at the end of August. Most of the European countries will be waiting to see the results of the northern summer competitions to finalise their team selections.

The JWGC organisers estimate that the final entry list will include around 19 countries represented by approximately 55 pilots. Countries expected to participate include Germany, Holland, UK, Czech Republic, Norway, Sweden, Denmark, France, Canada, Poland, Italy, South Africa and Finland.

Due to the logistics of sending gliders to Australia, the international teams have been securing local gliders to fly in the contest. There is still a need for several standard class gliders. Some of the teams are sending gliders and a few of these will need trailers while they are here, so if you or your club has a suitable glider or trailer that you would consider renting for the championships, please contact Contest Director Adam Webb.

CROWDED NARROMINE

Visiting pilots and their support teams will be staying in hotels, caravan parks and private house around Narromine Trangie and Dubbo. The 55 pilots, around 200 team members, plus 100 organisers and helpers, will make Narromine a cosmopolitan centre for the practise week and the two weeks of the competition.

The opening ceremony takes place on the evening of Monday 30 November with special guests including national and state parliamentarians, business leaders, RAAF and local council.

Practice week is 23 to 29 November, followed by the competition from 1 to 12 December. The closing ceremony will be held on 13 December when the podium place winners receive their medals.

After JWGC, some of the gliders will head south to Benalla to compete in the pre-world event in preparation for January 2017 WGC.

SUPPORT THE AUSSIE TEAM

Join in the spirit and support the Australian team by making a tax deductible donation to the Australian Sports Foundation https://asf.org.au/make-donation/?pid=3281. It will make you a proud part of the Australian effort to stage the first Junior WGC in this country.

www.jwgc2017.com

GFA CALENDAR

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

AIRWORTHINESS COURSE BATHURST SOARING CLUB

23 – 29 August

NSW will hold the Basic Sailplane Engineering airworthiness course at Bathurst 23 to 29 August. This will include a 1 day Refresher course for everyone on the first day to cover new topics in the MOSP 3. The rest of the course will cover Replacement of Components or Annual Inspector depending on each candidate's level of experience. Please apply to Graeme Cant on email graemecant@internode.on.net so we can arrange numbers.

BUNYAN WAVE CAMP CANBERRA GC - BUNYAN

19 - 27 September

www.canberragliding.org

WOOD & FABRIC COURSES AUSTRALIAN GLIDING MUSEUM, BACCHUS MARSH

Fabric Course 10 - 13 October
Contact Jim Barton on 03 9309 4412 for details.
Minor Wood Repair 14 - 17 October
For details contact Leigh Snell on 03 9772 1810 or snelll@bigpond.net.au

The courses cost $400 each including all materials. Accommodation in the gliding clubrooms is available for $15 per night including continental breakfast.

WOMEN IN GLIDING LAKE KEEPIT

18 - 24 October 2015

Contact: Wendy Medlicott
wendymedlicott@optusnet.com.au

SPEEDWEEK 15

1 - 7 November 2015

Contact Paul Mander, 0417 447 974
paul@mander.net.au

CLUB AND SPORTS CLASS NATIONALS - LAKE KEEPIT

10 - 21 November 2015
www.keepitsoaring.com

Great comp site with diverse, interesting terrain. Great time of year for flying at Keepit. Enquiries to Chris Bowman.
chris.bowman@pcce.net www.keepitsoaring.comm

ORANGE WEEK - WAIKERIE

21 - 28 November 2015
www.waikerieglidingclub.com.au

JUNIOR WORLD GLIDING CHAMPIONSHIPS NARROMINE

1 - 12 December 2015
www.jwgc15.com

PRE-WORLDS AND MULTICLASS NATIONALS BENALLA

4 - 15 January 2016

The Multiclass Nationals will be conducted in the usual 4 classes - Open, 18M, 15M and Standard. There will be provision for an increased number of foreign entries to allow for those wishing to practice for the World Championships. at www.ozglide.com

50TH HORSHAM COMPETITION WEEK

6 – 13 February 2016.

Contact the Contest Director Ian Grant at ian.grant.gliding@gmail.com or see the website at www.horshamweek.org.au

TWO SEAT NATIONALS NARROMINE

14 February - 21 March 2016

The competition is ballasted and will be run in two classes, 2 Seat Open Class and 20m 2 Seat Class. National MultiClass Handicaps, Rules, except wingspan-related, and tasks will be identical for both classes. Each class will attract its own trophy and National Champion. ANY 2 SEAT Glider will be eligible to compete in the 2 Seat Open Class Championship. Only 2 Seat Gliders with a 20m wingspan will be eligible for the 20m 2 Seat Championships Winners will be eligible for selection to represent Australia at the World 20m Two Seat Championship.

NSW STATE CHAMPIONSHIPS LAKE KEEPIT

28 February - 5 March 2016

Friendly comp at a great soaring site. All welcome. Enquiries to Chris Bowman.
chris.bowman@pcce.net
www.keepitsoaring.com

JOHN NORTHEY ASHFORD

8 FEBRUARY 1942 - 19 JUNE 2015

On 20 June 2015, in the afternoon, the sad message was spread that John Ashford had passed away. Our thoughts are with his family and his friends, and our deepest sympathy is with them all. To write an article about John's achievements in gliding is a formidable task, not least because he did not dwell on his past achievements but put more thought and energy into his next. The following is mainly contributed by Alan Patching, Roger Druce, Helmut Fendt from Germany and Janice Armstrong from the USA.

John started his professional career working as a mechanical and electrical engineer, designing and developing large fans for ventilation in the mining industry both in Australia and overseas. But undoubtedly, John dedicated the biggest part of his life and passion to gliding.

In 1966, he joined the Geelong Gliding Club. After spending a period in Europe, in 1970 he returned to Australia and continued to be active in many positions of his club, including president for a number of terms, secretary, flying instructor, airworthiness, committee member, competition pilot and so on.

The Victorian Soaring Association saw him represent their activities as a councillor and as a representative for airworthiness and instructor training. He was also the current Regional Technical Officer Airworthiness for Vic/Tas.

At the Gliding Federation of Australia, he has held a number of responsibilities over the years including serving as GFA Secretary and Chief Technical Officer Airworthiness.

He was currently spending a second period as chairman of Bacchus Marsh Gliding Club, responsible for gliding club property and clubhouse management for the three clubs, and is his club's delegate on Bacchus Marsh Airfield Management, responsible for operations of the Bacchus Marsh Aerodrome. John made huge contributions to the gliding club's management group over decades and the development of the club's facilities and later with the lease of the aerodrome. John has held all of the positions at various times and driven all manner projects for the benefit of the clubs. The south hangar, a major project, initially to house 15 sailplanes, later expanded, and the southeast hangar for 20 sailplanes was crucial to substantially improving facilities.

John joined in the activities of the International Scientific and Technical Soaring Organisation (OSTIV) during the Congress in New Zealand in 1995. From his predecessor, Alan Patching, he took over the membership in the Sailplane Development Panel and joined the OSTIV Board in 2003, contributing with great dedication, especially to the improvement of safety in gliding.

John was also very much interested in aviation history. In 2000 he joined with Alan Patching to take the Golden Eagle to Elmira, upstate New York, to fly at the International Vintage Sailplane Meeting (IVSM). They shipped the glider in its trailer to Los Angeles and drove to Elmira. This involved a road trip of over 6,000 miles and included visiting over 13 museums, including the Smithsonian and the Experimental Aircraft Museum at Oshkosh, with an interest in both aeroplanes and gliders. Incidentally, the glider and the trailer were both 63 years old. Following that visit, the Australian Gliding Museum was formed, for which

John has been a very active committee member, particularly managing the museum's building program and assisting in airworthiness, training and administration.

A most remarkable achievement was the completion of the translation into English of 'Werkstattpraxis' by Hans Jacobs and Herbert Luck, along with compiling all illustrations and a section on modern glues.

John was working on the details of his annual trip to the OSTIV Sailplane Development Panel meeting at the Wasserkuppe and to Tehachapi, USA, where he had a second home at the Mountain Valley Airport. It is so sad that he will not make this trip, as he was looking forward to it so much. A remembrance was held for John on 4 July at Mountain Valley, attended by many of his friends.

Responses to the sad message reflect how much John was appreciated by his friends, both in Australia and overseas. John's great contribution to many facets of gliding over the years will be long remembered, as will his friendly smile and wonderful sense of humour. He was a highly skilled engineer and gave all his experience to our sport of gliding. He will be sorely missed.

DAVE GOLDSMITH

Photo: Detlev Rueff

NO SKIING AT MOUNT BEAUTY

Mt Beauty and Falls Creek had an impromptu visit from a bus load of Wagga Charles Sturt University students enjoying an end of semester break. With limited snow for skiing, gliding was a better option that they all enjoyed the experience immensely and hopefully some might be encouraged to do it again. They all went away with promises to encourage their uni mates, and to give us some PR when they go back next term.

MARK BLAND

THE SOARING ENGINE

THE SOARING ENGINE VOLUME ONE: RIDGE, THERMAL AND MOUNTAIN SOARING BY G DALE

This book is for anyone interested in soaring flight from pre-solo through to experienced world championship level competition pilots.

Although for many pilots in Australia, G Dale needs no introduction, Gavin Wills from Glide Omarama New Zealand provides an excellent summary of G's credentials in this excerpt from the book's Foreword.

"There is no-one more qualified to write up this body of knowledge than G Dale. As twice UK Club class champion, he is a successful racing pilot who has so far finished 10th, 6th and 5th in the World Championships. But more important than these accolades is the fact that G (just G) is one of a small group of instructors that teaches and coaches cross-country gliding on a year round, full time basis. In fact, for more than 25 years he has flown and worked in almost every soaring environment on Earth, including the hot deserts of Australia, Nevada and South Africa, the cool temperate lands of the UK, Europe and eastern US, and among the jagged mountains of Europe and New Zealand. In other words, after nearly fifty soaring seasons he really does know how the soaring engine works!"

This volume is the first of a three-part series: I) Ridge, thermal and mountain soaring, II) Wave and convergence soaring, and III) High performance flying.

The contents of Volume One include:

- Ridge soaring - Wind over ridges, How to soar on ridges, Wind
- Thermal soaring - Thermal formation, When thermals start to rise, The size and shape of a thermal, How to centre the thermal, Challenges, Reading clouds
- Flatland soaring - The basics, Models of thermal lift, Streeting, Unusual situations
- Mountain soaring - Mountain thermals, Wind and sun, Reading clouds in the mountains, Safe soaring in mountain thermals, Flying cross-country in the mountains, Difficult situations

The central idea of the book lies in the book title – the soaring engine. This is an ingenious way to get to the core, no pun intended, of what makes a good soaring flight – that is, finding the energy. G brings his entertaining and captivating personality to the pages of his book. He manages to communicate ideas quickly and clearly using a practical approach grounded in theory and informed by experience. He explains how the wind, sun and topographical features effect lift using simple diagrams to provide explanation for complex effects.

He also gives plenty of safety tips for the less and more experienced pilots. G reminds us of how unforgiving aviation is, especially when operating close to the ground. He articulates the key strategies for staying safe and goes back to first principles to explain why and how this is done. For example, he provides a neat description of 'how to turn the glider' as part of his explanation for why accurate flying is so important to safety in ridge and mountain flying.

G avoids getting bogged down with technical detail, which can be found elsewhere, and teases out the key principles of lift. For example, he uses a basic checklist

of Terrain, Sun and Wind to work out where to find lift. G shares numerous insights with us that are drawn from his many thousands of hours of observation in the air, such as knowing where to find lift on the basis of cloud shapes and patterns.

For any pilot serious about improving their soaring skill and having a whole lot more fun, this is compulsory reading!

LISA AND PETER TROTTER

Available in Australia from Pete Richie at Lake Keepit

info@thesoaringengine.co.uk

STATISTICS

The current membership trend over the last 8 months, shown in the table below, indicates an overall percentage decrease of membership of just under 1% - not a huge issue, but an increase from now is what we need to survive and thrive.

Currently we only have 133 female members, which represents 5% of the total membership. As a comparison, in motor sport, when female participation was at 18% they decided enough was enough and something needed to be done. Therefore the FIA, the motorsport equivalent of the FAI, set up the Women & Motor Sport Commission (WMC) to address this challenge on a global scale. Similar committees were established here in Australia and other countries and a number of programs initiated to grow female participation. Maybe the gliding community could learn from this concept.

Shortly we shall be releasing details of the Beyond 3000 membership project that our Treasurer wrote about in the last issue. If we can get everybody to focus on 10% growth per annum, which is achievable when you consider the additional exposure we will get from the two World Championships, the additional work needs to be done by the GFA, State Associations and YOU, to reach our target of over 3,000 full members.

So how old are all these members? If we look at the chart, we see what we already know - glider pilots are at the upper end of the age spectrum. The largest group are 56 to 65, closely followed by those aged 66 to 75. After 75 years, we lose a lot of members probably because they are no longer able to fly for a variety of reasons or they have had their final glide.

The 12 to 18 age group includes the AAFC cadets many of whom will only experience an AEF flight as a cadet. All clubs should look at what they can do to capture these cadets as members. To achieve this, the clubs need to be creative in providing flying at a cost that these young people can afford.

You will see that the number of members shown by age does not equal our total membership this is not important, it is the age distribution range that is the important issue here.

While we are at it, here are even more statistics. There are a number of Facebook pages associated with gliding in Australia. I have listed a few below to show the number of 'likes' for each page. For those who don't understand the social media jargon, a Facebook user 'likes' a page and then receives messages directly from that page, so that they can keep abreast of the latest information and gossip.

Facebook Page	No. of Likes
GFA	702
Australian Gliding Team	823
JoeyGlide	605
9th FAI Junior World Gliding Championships	600
Victorian Soaring Association	243

JOHN STYLES
CHAIR, DEVELOPMENT PANEL
cmd@glidingaustralia.org
www.facebook.com
theGlidingFederationofAustralia

Now, not all the people who have liked these Facebook pages are necessarily GFA members or even living in Australia, but it is reasonable to assume a good number are. It is interesting that the Australian Gliding Team page has the most likes, even though I often hear from people who say they have no interest in the sporting side of our sport.

As a comparison, the British Gliding Association Facebook page has 2,926 'likes' and the British Gliding Team 878 'likes'.

When we look at sailing, a sport with many similarities to soaring, we see that the Australian Sailing Team has 8,192 'likes'. Sailing as sport has put considerably more effort into its promotion and presentation to the public than gliding has ever done. But plans are afoot ...

Over the last year or so, through our magazine articles, Marketing and Development has offered a wide selection of ideas your club could use to improve its service to its membership, improve its profile in the community and improve its ability to attract and retain new members.

So now is maybe the time to stand back look around and see what your club has achieved using what we have offered. Has your club committee taken up some of the ideas presented and put 100% effort into making them work? If not, you should ask your committee why they are not taking advantage of the opportunities provided.

Let us know what you have tried, what was successful and what was not.

Now, in a shameless plug for the JWGC, we still have opportunities for sponsors and partners of this great event. So if you, your company or someone you know would like to be a part of this exciting event for our young pilots, we can offer packages from only $250. Our sponsorship / partner packages provide a range of options that will ensure great exposure and make you a part of this event. For information, please contact me.

Month	NSWGA	GQ	SAGA	VSA	WAGA	Total
November 2014	820	543	321	660	250	2594
June 2015	839	505	342	641	259	2586
Increase / Decrease	+19	-38	+21	-19	+9	-8

Update on Transponders, Flarm and ADSB

Since the last article there has been some movement in the technology but a replacement device for the FLARM is still a ways off.

BY GRAHAM BROWN
AAAO, GFA
AIRSPACE, ASAC

TABS

The LASE, Light Aircraft Surveillance Equipment, had a surprise in it when the TSO-C199 came out. They changed the name to TABS Traffic Awareness Beacon System! The target of the device is, however, what we expected. '*TABS devices are distinctly different from other transponders. TABS devices are intended for voluntary equipage on aircraft exempted from carrying a transponder or Automatic Dependent Surveillance - Broadcast (ADS-B) equipment, such as gliders, balloons and aircraft without electrical systems.*' So there is now a specification out there but currently no manufacturer has picked this up or been producing a unit.

There is some confusion on what the TABS will do, although the spec is clear. '*TABS equipment developed under this TSO are intended to make aircraft with an installed device visible to TAS, TCAS I, TCAS II and ADS-B IN equipped aircraft.*' This means airborne Traffic Advisory Systems, Traffic Collision Avoidance Systems and Automatic Dependant Surveillance Broadcast IN (receivers) can alert the pilot of the TABS. This is the minimum requirement. However, it also made it clear that if additional functionality is added, then the relevant specifications are referenced.

The TABS consists of four functions - the transponder function (mode S transponder), altitude source function, ADS-B OUT function, and position source function. To make the unit affordable, the TABS can use a commercial GPS of a minimum standard. It can optionally include an ADS-B IN receiver so you can see other equipped aircraft and feed the information to collision avoidance software as FLARM does. It is expected all these will be in one box for a glider with a rechargeable battery. The building blocks are all there today and cheap.

Why are no units on the market? What are manufacturers doing? They are probably waiting for it to be mandated in the USA, or are too busy building UAT (Universal Access Transceiver) devices for the USA market, which are mandated. By the way, the USA UAT devices will not work in Australia and cannot be converted. The TSO-C199 has not been out long either, so the labs and the marketing folk are probably still doing their work.

The FAA has also issued an Advance Notice Of Proposed Rulemaking (Anprm). '*The National Transportation Safety Board (NTSB) and two members of Congress requested rulemaking because of a midair collision between a glider and a private jet. The FAA notes that it is currently encouraging the voluntary equipage of Traffic Awareness Beacon System (TABS) devices on aircraft excepted from carrying a transponder, such as gliders. [1] The FAA is also considering the current and future implications of Automatic Dependent Surveillance-Broadcast (ADS-B) that may impact this potential rule change.*'

There seems to be political and other pressure on the 'voluntary equipage' of the TABS. This is understandable as we have been under the same pressure in this country. The debate will, in the end, come down to the actual risk, supported by numbers, and the cost to mitigate it if that is required. Our arguement has been that if the cost is small, the cost of a VHF radio, voluntary equipage will occur at a high participation rate. FLARM has shown this. Also, if the device provides a benefit to the user, then they will equip for the benefits. The TABS with ADS-B IN will provide the pilot with an aid to see and avoid, as FLARM does today but to all aircraft including high speed aircraft. Ground based ADS-B receivers are now ubiquitous, so gliders will appear on the internet tracking sites. This will provide added safety.

FLARM AND POWER FLARM?

So what do we do while we are still waiting and where does that leave FLARM and Power FLARM? FLARM and Power FLARM continue to provide an aid to see and avoid for low speed aircraft. Power FLARM has the added functionality of an ADS-B IN receiver so you can see the fast guys coming. They won't detect you but at least you can give a call on the appropriate radio frequency and give them your whereabouts. We have a good arrangement with the regional airlines now where they usually give a call on the gliding frequency on approach to regional aerodromes and we should be aware of their tracks. This also provides some procedural separation. I would like to think the manufacturers of FLARM and Power FLARM will morph their product to TABS with some dual capability for the transition. Their business cases will determine this. In any case, the FLARM will need to be retained until the end of the transition which is indeterminate and will be a function of the cost of the TABS.

SUMMARY

TABS is not here yet but the standards are. Fitment is voluntary but some see this as an opportunity to bring up old arguments for mandatory fitment. There are some advantages of TABS for gliders over FLARM. Price will determine the transition but equipping with a FLARM today will give you the benefits as an aid to see and avoid, and you will need it for the transition in any case. The USA UAT devices will not work in Australia - don't believe it if you are told otherwise.

GA

JWGC TEAM PROFILE
JAMES NUGENT

BY JAMES NUGENT

My journey to the Junior World Gliding Championships started with humble beginnings, as a 15 year old flying an Astir CS. However, almost two years on I find myself one of the six young junior pilots lining up for Australia, ready to take on the world this December.

It's been an incredible learning experience - from success at last year's Junior Nationals to missing an AAT wedge at the Multiclass nationals, I've had some fun! Luckily this December I will have the support of five of the very best teammates, all of whom are experienced, clever, talented and very competitive.

So far we have already gained lots of experience and shared laughs together. Although the fun and games of analysing each other's flights at night and friendly chatter on the radio aren't really short-lived, it all tends to stop when it's time to race.

Let's go back to the beginning. My name is James Nugent and I am 16 years old living in Mildura in NW Victoria. I study VCE, work casually in a golf shop, play footy during winter and I'm a glider pilot. I'm pretty undecided what I want to do for a career. I hope that my gliding experience will support my ambitions to maybe fly commercially, or lead to study in the aerospace sector.

Nevertheless, I'm super excited about my future after school and I still hope to be able to fly on weekends. I wouldn't be a junior if I didn't think it would be cool to own a Std Cirrus one day.

I've always loved flying. From a very young age I flew models and soon became involved in R/C aerobatics, which I pursued for many years when I flew for Australia in Indiana when I was 13. After starting hands-on flying in gliders, I felt at home and quickly became the typical glider pilot, watching the sky and weather for signs of a good day.

SOLO AT FIFTEEN

My gliding started with my first flight in a Blanik at the age of 5 while my dad was instructing. However it wasn't until almost 9 years later when I really began learning to fly, and I went on to go solo on my 15th birthday an hour after sitting an exam.

Five months later I flew the Australian Junior Gliding Club's prestigious Astir CS - 'Wuah' - at Joeyglide 2013.

At JoeyGlide, laughing until it hurt at Ops briefings and games of cricket on the grid were regular occurrences - it's great to be involved. I remember being tied down next to Joe O'Donnell, who is now my teammate in Club class. It was great reflecting on the day's flying with him, as we were both new to flying fast and very excited about each task that came our way.

Twelve months on I was back at JoeyGlide, the Junior Pre-Worlds, and I was on a mission - fly the best I can and see where I end up. I was flying an LS3a in club class. I flew a good flight on Day One but made a bad track decision on Day Two. The competition was awesome. I felt I was pushed by the tasksetters and by my fellow competitors to the point where, if I sneezed in a thermal, I would lose ground.

It was great to see how others approached their flights, and it was great to see how everyone was still laughing. By the end of the competition I finished 8th, and was stunned to get a text on Christmas Eve from Coach Bryan Hayhow stating that I had been selected for the Australian Junior Team.

MULTICLASS NATIONALS

Soon, I found myself lining up at the 53rd Australian Multiclass Nationals alongside my teammates Joe O'Donnell, Eric Stauss and Mathew Scutter. It was a huge learning experience to see how some of Australia's best go about it, and it was also a competition where I was tested.

I had little experience flying a ballasted glider and we were sent off on days that I hadn't really flown in before. I learned quickly that being low, slow, empty of water, 100Km downwind with the gaggle slipping overhead at cloudbase is a situation I will try to avoid in the future! No matter, that was a part of it and I was motivated to get the best out of my flying for the remainder of the season.

We are now some five months out from the World Championships and there is so much to do. At every opportunity the team members are taking launches at Balaklava, Bacchus Marsh, Benalla, Mildura, Bathurst and Kingaroy, hoping to get out there and push themselves in order to learn something useful which could make a critical difference in December this year. The lead-up to the competition will be intense, with a quick trip to Sydney to catch up with each other before as many days of competitive flying as we can fit in.

I've been very thankful for the support and generosity of the membership of the GFA so far, it is very humbling to visit a new gliding club and be greeted with warmth and well-wishes by the members. As one of six Australian team members for the Junior World Gliding Championships this year, thankyou for your support and we hope to do you proud.

DYLAN LAMPARD

BY DYLAN LAMPARD

Back in December 2011 I was a freshly solo, fresh-faced 15 year old who was just starting his journey to the 2015 Junior World Gliding Championships. It was then, during the 2011 Junior Nationals at Kingaroy, that the idea of Narromine hosting the 2015 Junior Worlds was just beginning be broadcast to all the juniors present in the room. As a coachee, I didn't think all that much of it at the time.

Fast forward three years and I found myself selected to represent Australia at the 2015 JWGC at Narromine in Standard Class. A lot has happened in those three years between flying as a coachee at the Junior Nationals and competing where I am today. It has been a great adventure so far and I am excited to see what comes in the future.

I am 19 years old and live in Brisbane. These days I call Kingaroy SC home but, initially, I spent my first few years flying out of Boonah GC. I am currently studying Mechanical Engineering at QUT and working as a supervisor at a local supermarket. Generally known as quite laid back and casual, once the canopy comes down, the race is on!

Like most junior pilots, I had always had a love for flying and aviation. Taking after my older brother I tried my hand at flying R/C models and mucking around on the flight simulator for a number of years. It was around this time that I got my first job and began putting money away for my future flying lessons.

Dad and my brother came home one day from flying R/C models and mentioned they had been talking to a guy about how gliding could be a good way for me to

satisfy my desire to get airborne! The next weekend my Dad and I were driving out to Boonah Gliding Club to take a look around, I effectively joined on the spot without even taking an Air Experience Flight.

It was quite a snap decision to join the club, but I thought it would be a good way to get some experience in the air before beginning my power training. Little did I know where that decision to join the gliding club would take me in the next few years.

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I can clearly remember the nerves that I experienced on my first 20 or so flights. It was just my 3rd flight when the instructor told me I would be doing the take-off. I was physically shaking from nerves! Before I knew it I was sent off in the ASK-21 with an empty back seat for the first time. I was at this time quite annoyed that I had yet to enjoy the nice long flights those single seater pilots seemed to be enjoying, I made it my personal mission to figure out how to keep a glider in the air longer than 15 minutes!

COACHING HELP

With the help of the coaching program offered at the Junior Nationals, I eventually did figure out how to keep a glider in a thermal, although if you ask some of the juniors they may tell you differently. It was without a doubt one of the best things I could have done for my flying at that particular stage. Every junior in the country should try and get involved with the program. Not only did I get to see just what gliders were capable of, but I got personal instruction from some of the best coaches in the country!

The relationships and contacts I made during that event have helped me get to where I am today. In fact the first ever cross country I flew was in a Twin Astir with the owner of the LS8 that I will be flying in at Narromine in December. I don't think either of us saw that coming at the time.

A year later I was flying in my first competition at the JoeyGlide at Lake Keepit. Back then I had next to no idea what was actually going on during a competition or cross country flight. I knew just enough to keep out of trouble. But this competition proved to be a vital stepping stone into the world of competition gliding. I was slowly beginning to really catch on to just how amazing our sport is and I couldn't get enough of it! I also started to think more seriously about the chance of being selected for the JWGC team for Narromine around this time.

Over the next couple of years I put a more conscious effort into flying fast and more consistently. With the help of many coaches and generous glider owners I was able to fly two Junior Nationals at Narromine and the Sports Class nationals at Goondiwindi. The results from these competitions did just enough for me to be selected for the Junior World Team.

Now here we are at midwinter, less than six months out from the Junior Worlds. The team is working hard to make sure we are all as prepared as possible for the event. Most of the team's gliders have been in the workshops getting some tender loving care to ensure they are ready and fitted out for the upcoming season. With winter soon passing, we are all starting to get back into our training and taking every chance we can get between work and school to take a launch and further our experience in a variety of weather and conditions.

By the time you read this I will more than likely be in Europe on my six week adventure, learning just how the Europeans fly and the tactics we can expect them to use in Australia later this year. On my return, the team will be hosting a training week to cement how we are going to approach the JWGC and focus on working together as a team.

We have a fantastic team for the Junior World Gliding Championships and great team behind us to make it all happen. I cannot thank them enough for all the help, assistance and guidance I have received and hopefully I can repay you all with a first class performance.

GA

WAVE OVER THE GRAMPIANS

BY GEOFF VINCENT & ANDRZEJ WROBLEWSKI

The Queen's Birthday long weekend at the Grampians produced a mixture of disappointments and elation, all weather related.

Friday afternoon saw the four GSC club gliders ferried to Noelhurst Airstrip and the tug return to Ararat to ferry a private single seater to the field the following morning. Unfortunately Noelhurst was cloud-bound almost all day on Saturday and it was no better at Ararat, where low cloud and intermittent drizzle obscured One Tree Hill range and prevented the tug leaving. However, Sunday produced a strong NW wind and clear conditions which allowed GAX to be towed to Moyston, and then to release and push 15 km SW to locate wave about 9km SE of Mt William. Then the scramble was on to launch the fleet, which had been patiently awaiting news at Noelhurst some 10 to 12km to the north.

In summary, four flights achieved 18,000+ ft with Rolf Beulter in the LS8 making 21,200ft, marginally short of achieving a diamond climb. Several others enjoyed their early wave experiences at lower altitudes. AX explored the downwind wave pattern off the Victoria Range where it flows over the Serra Range near Mt Nelson, but found nothing, and pushed forward into the 50kt wind to the primary wave, losing some 6,000ft in the process. The primary delivered an average 2 to 3kt climb along a beat of 10 to 12km to just short of 21,000ft. By then, the ever-thickening upper cloud was casting a heavy shadow over our play area and it was getting unpleasantly cold. After a round-about route home, AX returned to Ararat as planned. Many thanks to our Callair tug pilot Brian Trotter who successfully placed most of the gliders in areas of lift!

WAVE 'ON' - BUT NO FLYING

The 12-strong fleet, which beside GSC gliders, featured visitors from Geelong GC, Bendigo GC, Gliding Club of Victoria and Bordertown, returned to Noelhurst to tie down overnight. Stronger wave conditions were forecast for Monday with the wind backing W-WNW. It was definitely 'on', as evidenced in the BSCH morning satellite cloud photos, but persistent widespread, low-level clag made launching into the wave areas a potentially hazardous activity and the day was essentially abandoned by lunchtime. The local club gliders were safely ferried back to Ararat, albeit at fairly low altitude, with everyone except Andrzej de-rigging and preparing for the trip home.

All in all not a bad weekend with plenty of happy faces, particularly on Sunday evening, and convivial company. Our particular thanks go to the GSC team that was responsible for providing a 3-course meal on Saturday and Sunday evenings at the club-house - well done, guys, very much appreciated.

ANDRZEJ WROBLEWSKI

With great optimism on Sunday I opened the airfield gate early and completed preparation and DI of Jantar

VH-IUD. A strong NNW wind, not the best direction according to John Buchanan, didn't fill me with optimism. However the situation started to change about 10.30am when Geoff Vincent took off from Ararat and within half an hour was reporting that he was in wave and climbing at 4kts at 10,000 ft 10km SE of Mt William. It was like a scene from WWII fighter squadron movie - all pilots to their machines and a scramble to the take-off point. I guess I got distracted, which resulted in a delay placing me 5th in take-off queue. Eventually it was my turn and within 13 minutes of launch I was established in the wave. Brian practically towed me to the right spot and it was difficult not to realize that we were in it when the rate of climb changed from 5kt to 9kt and the air became silky smooth. I released in good lift. It was 6,000ft and the climb was steady at 2 to 3 knots. Smooth as a baby's bum. Not a single bump – as if you were parked stationary on the ground. Quite amazing really. I started to climb quite fast and steadily with lift topping 4 to 4.5kt at times.

Soon I had to switch on oxygen and continued climbing. Views were just incredible as the Grampians became small wrinkles below me. The only disturbance in flight was FLARM signaling that I have gliders below and above me. It was Martin Power and Jeff Farrow in Janus WQ, 1,000ft or so below and Rolf Buelter about the same distance above. Checking Rolf's position was quite easy, but I had to move around quite a bit to check where the Janus was. The Janus was probably just following me, thinking that I was in good lift and running away from it, trying not to lose sight of it. I guess it made the flight more interesting.

20,000ft

From 6,000ft to 20,000ft took about 1 hour and then a 30min flight back to the airfield - a great flight. The only regret I have is that I came back too soon instead of descending to a lowest possible point and trying to climb again. It is easier said than done. The wave was probably working about 10 km from the airfield and when I released at 6000ft I just had my final glide back to the airfield. Taking the risk and going lower than that, trying to reach the lowest point of wave, might possibly have ended up in outlanding. We will never know. The day ended in Ararat again in great company with good food and drink. The evening was entertaining, as several pilots had good flight stories that were shared in the debriefing. With high hopes for the next day, everyone retired to bed.

ANDRZEJ'S MONDAY

Monday turned out not to be a good day at all with almost full cloud cover and occasional small openings in the clouds above the airfield. I prepared the Jantar and towed it to the take-off point and offered the first go to Jenne Goldsmith, in the spirit of sharing. She was undecided, as the sky was not friendly, and our tow pilot said that he would not fly until things substantially improved. We waited for a long time before anything could fly anywhere.

At about 11am, almost everyone decided to call it a day due to weather conditions. Ararat towed their gliders under the low cloud base to the airfield and everyone else de-rigged. I was the stubborn one and an optimist again. I kept the Jantar at the take-off point all the time on my car, refusing to acknowledge that this was the end of the camp. I helped de-rig other gliders and delayed going for the Jantar trailer until last glider was in the box. It left almost time to go for the Jantar trailer when I looked at the sky above and noticed that local conditions had opened up and that there were some large open patches of sky to the east.

The Callair tug landed from its last ferry flight to Ararat Airfield and I approached Brian with the hope that he would agree to tow me up above the clouds through the ever-increasing openings. To my amazement, with the support of CFI John Rule, he agreed that we could launch. Brian mentioned that in the event that it closed in again, there were big holes to the east that could be used as an escape route. The aero-tow was one of the most challenging that I've ever had. With the tow-plane dancing in front of me I had to really concentrate to keep stationary. The airbrakes were in constant use. I managed OK and 15 minutes later everything became absolutely smooth - I was in the wave again. Conditions were weak, but still I climbed from 6,000 to 12,000ft with the strongest lift at about 2.5kts. I searched in several places, but with no success. The lift was just on the down-wind edge of the hole where the clouds were lifting up. It was well marked. The scenery was just amazing. The flight was a little unnerving as I had to constantly monitor my position in relation to the airfield and monitor openings in the clouds and where they were. But I managed all right and kept it safe.

At 12,000ft the lift stopped. I tried a few other places, but that was it. I could not find anything going past that height. By this time there were signs of the holes starting to close and I decided that it was time to land. On top of that I knew that everyone else was waiting for me on the ground and probably praying for my safe return. It would have been unfair to stay up there any longer. I selected a good-sized gap in the clouds and at 100kt, fighting against the wind, encountered rain just below the cloud cover. With 90kt on the clock and ground speed of 30kt progress was slow, but I managed to join the downwind leg with spare height and land safely, probably to the relief of everyone waiting for me on the ground. It was a great experience.

Huge thanks to Grampians Soaring Club for organizing the camp and for their great hospitality. Also thanks to all members of Geelong Gliding Club for the support and help that I received. It wouldn't have been possible without you. I hope we will all meet there again to enjoy the wave.

GA

GLIDERS AT AERO FRIEDRICHSHAFEN

BY BERNARD ECKEY

ABOVE: Hal 1 at AERO filled with new gliders.

Every other year the first stop on my annual trip to Germany is the AERO trade fair in Friedrichshafen - a Mecca for recreational aviators and a must for all glider pilots trying to stay up-to-date. The usual military hardware is totally absent and equipment for commercial aviation is also nowhere to be seen. That suits me just fine as my interest is mainly in the latest and greatest for gliding enthusiasts. As it turned out, three full days were hardly enough to become familiar with new developments and the latest trends in sports aviation.

SCHEMPP HIRTH - VENTUS 3

As usual, exhibition hall No.1 was reserved for gliding. Schempp-Hirth was dominating it by occupying the area right behind the main entrance. Two years ago the eyes of the visitors were drawn to the Quintus but this year this privilege was reserved for the **Ventus 3**. Again, it was suspended from the ceiling and therefore not available for a closer inspection. The wing is new and features a more swept back plan form but the fuselage borrows heavily from previous models. On display was the narrow fuselage version, which had to be slightly enlarged to make room for the installation of a sustainer engine or jet. A self-launching Arcus and an electric powered Discus fuselage with **FES system (Front Electric Sustainer)** were also on display.

ALEXANDER SCHLEICHER - ASG 32

Other glider manufacturers had more modest stands. Schleicher gave the prototype of the **ASG 32** with electric sustainer engine centre stage. This new flapped 20m two-seater features an innovative electric drive system with a range of 100km under power. The surprisingly small lithium battery is located in the engine bay and the engine's 25 kW (34 hp) power output allows a climb rate of 1.5 m/s (3 kt) even with two people on board.

Engine management could not be simpler. Moving the throttle lever a little extends the engine, which leaves the rest of the throttle movement for power adjustments. Closing the throttle retracts the engine fully automatically and turns this glider into a proper sailplane again. Pure simplicity! This power plant cannot overload even less experienced pilots. It might have taken a while but a motorized glider is finally available which is suitable for club use. Yes, you still need a tug or a winch to get into the air, but a 100 km range allows carefree cross-country flying. Even the mind of the most conservative pilots can be at ease.

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BELOW: The lithium battery of the electric sustainer engine housed in the fuselage of the new ASG 32.

ABOVE: The new electric drive system on display in the ASG 32.

The unprecedented success of the **ASG 29** did not stop Schleicher from developing and displaying their new and upgraded version. An electric starter motor and a 'Competition Package' are now available as optional extras. The new starter motor dramatically decreases the height loss for an engine start and reduces the pilot's workload to almost nothing. Putting a switch in the 'up' position extends and starts the engine automatically and when the switch is put in the 'down' position the starter motor puts the propeller into a vertical position and then retracts the engine without any further input from the pilot. The competition package includes a number of aerodynamic refinements that are said to further enhance the aircraft's leading position in 18m class.

BELOW: The on/off switch is for the optional extra starter motor for the ASG 29 fitted on the SOLO 2350 engine. You simply flip the switch up and the engine extends and starts, down and it stops and retracts.

DG FLUGZEUGBAU

Not a single glider manufacturer was missing. DG Flugzeugbau had a **DG 1000 Club** with winglets on display. The company's policy to diversify and move into other areas was confirmed by management but the DG 1000 remains the company's bread and butter line for the time being. An interesting feature of the aircraft on display was a flashlight, which is integrated into the nose of the aircraft. It is based on LED technology and activated by Flarm to provide an additional warning, especially in head-on situations.

JONKER SAILPLANES

JS was represented by M&D Flugzeugbau, Germany. In future M&D will put the finishing touches on the JS1 and market the aircraft in Europe. A jet-powered 21m version was on display but EASA certification is still outstanding.

STEMME

Stemme was showing their touring motor glider **S6** as well as their latest model, the **S12**, also called 'Twin Voyager'. It features an increased wingspan of 25 meter and winglets are said to improve the glide ratio to 53:1. An increased MTOW allows the carriage of water ballast and a wider undercarriage provides additional stability on the ground. Best of all, their latest design comes with foldable outer wing panels and a 20 kg baggage compartment in the tail boom right behind the wing. Even an autopilot is available on request – where is it all going to end?

ELECTRIC ENGINES

It was difficult not to notice a clear trend towards electrically powered gliders. All reputable manufacturers are taking advantage of the latest lithium batteries, which roughly provide double the power at half the weight when compared to older gel-cell technology. Still, most electrically powered gliders were of the sustainer variety but even a new self-launching single seater with 13.5 m wingspan was on display. The manufacturer claims that battery capacity is more than sufficient for a safe take off but adequate power reserves for self-retrieves after take off remain questionable. Still, the convenience of parking the glider next to a power point and recharging the batteries over night is appealing to many private owners. Also, engine management is simple enough to allow even less experienced pilots to operate such gliders in absolute safety.

RIGHT: The ASG 32 is available in a range of colours potentially increasing visability in the air and enhancing safety.

AKAFLIEGS

As in previous years various Akafliegs, university student groups, were also represented and were happily informing inquisitive visitors about their current research projects. In the past many of their ideas have found their way into series production but right now various electric drive systems seem to occupy the minds of the next generation of aeronautical engineers. Another research project worthy of a mention is a very interesting side-by-side cockpit design.

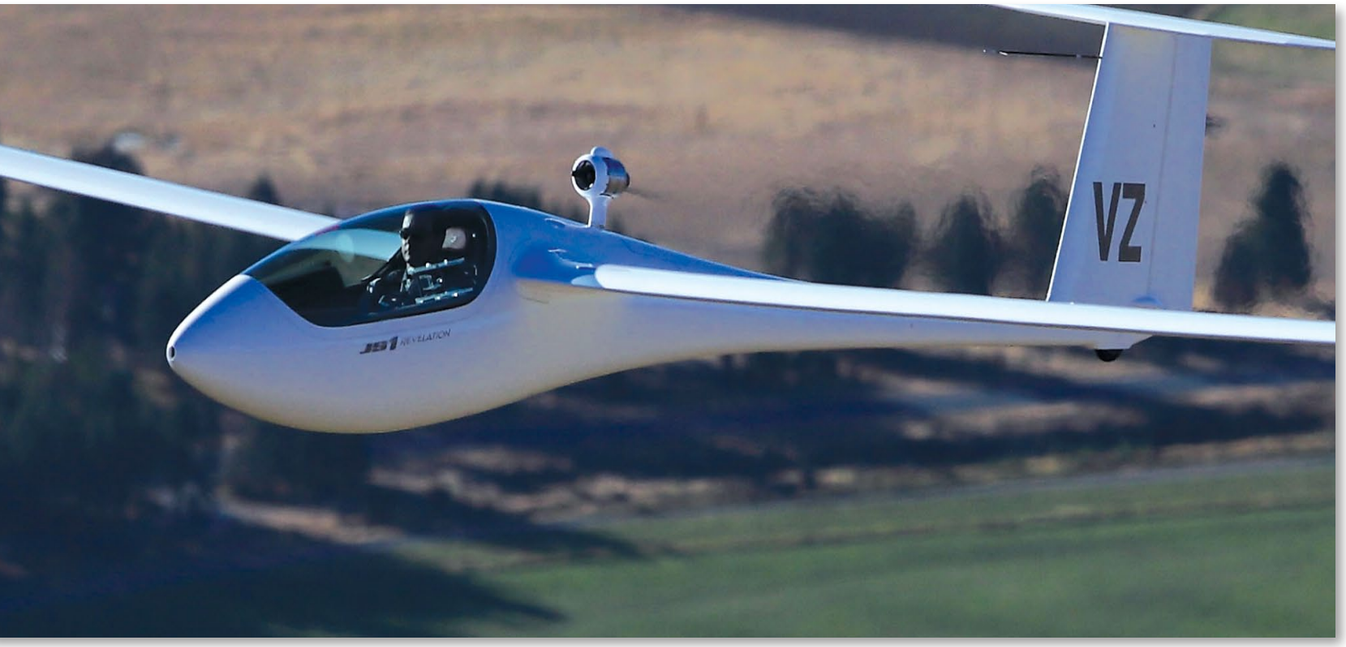
COLOURFUL GLIDERS

This report would be incomplete without mentioning that we can soon say 'goodbye' to predominantly white gliders. Customer of Schleicher's new ASG 32 two-seater can already have their new glider finished in a range of colours. Load testing during type certification was conducted at greatly elevated temperatures. This proved that the structure can easily withstand the high temperatures regularly experienced when darker surfaces are exposed to direct sunlight in the hottest parts of the globe. The advantages for the worldwide gliding movement are considerable. First of all, future owners can let their imagination run wild in terms of colour and decal design but more importantly, safety is greatly enhanced through vastly increased conspicuity in the air and on the ground.

Should you be in Europe in April of 2017 make sure you include a trip to Lake Constance and a visit to the Aero trade fair. Nothing can beat a look across the lake on a day with a clear view of the snow covered Swiss Alps. If that hasn't whetted your appetite, consider taking a ride in a Zeppelin over the border into Switzerland or a visit to the world famous Zeppelin museum right next to the town's jetty and marina.

GA

LEFT: DG's new LED flashlight in the nose of a DG 1000 is activated by Flarm to provide an additional warning, especially in head-on situations.
CENTRE: The new Stemme S12 on display.
ABOVE: The jet age has arrived.



THE JET AGE HAS ARRIVED

The proliferation of new power systems for gliders promises simpler and safer operating and outlanding procedures for new motor gliders. But how close are we to seeing the new jets and electric engines in our skies?

According to Australian JS representative Todd Clark, five new JS1s fitted with sustainer jets are due for delivery to customers in Australia this coming spring. There are seven jet equipped JS1s already in Australia. Three had their jets retro fitted in Australia. There is currently one Ventus 3 with an FES on order for Australia.

ABOVE: A JS1 with jet deployed.

JET OPERATION

I asked Todd about the operation of the jet and its operation. He said, "With our jet sustainer system we think we have three advantages.

"The first is the drag profile and glide angle of the JS1 with the engine extended. From a pilot's viewpoint I can't observe any reduced performance at 65kts. This allows the pilot facing an outlanding to fly a normal circuit. No extra height needs to be allowed for the performance decrease that some propeller system incur until the engine starts. The circuit is the same if the engine fails to start. There no need for a dramatic modification of the circuit due to a windmilling prop.

BELOW: The Jet Display Unit in the JS1.

"The second is ease of operation. To start the JS1 Jet Sustainer there are only three actions and they take about three seconds of the pilot's time. First is to check the fuel shut off lever is in the 'On' position. Second is to select the jet display unit (JDU) power switch to 'On'. This provides electrical power to the system, which for normal flight is de-powered to save battery life. Then the third is to select 'Run'. The JDU and engine control unit will automatically extend and start the engine. The pilot then uses the rotary knob on the JDU to adjust the thrust.

"The third advantage is the speed available to the pilot. The engine will provide thrust over a wide speed range so there is no need to fly close to the stall to increase performance. The ability to climb above 65 knots puts the pilot well above the stall speed, which is very important if at low level and in windy turbulent conditions. It also gives the pilot the ability to fly away from sink with the engine running, much as you would flying normal MacCready theory. This was demonstrated during the last WGC when the JS1 jet sustainers were able to fly home on a day of big storms by flying fast with the engine running, away from the storm. Most other motor gliders were not able to escape the storm due to the restricted speed range

FRONT ELECTRIC SUSTAINER

The Schempp-Hirth FES (Front Electric Sustainer) system is build built by LZ Design. Schempp say that the engine starts and stops very quickly without any noticeable additional drag.

Simple and easy to use, the engine is started by toggling a switch and adjusting the engine power with a rotary switch. There is reportedly little vibration and minimal engine noise.

For maximum endurance they recommend switching into a cruise after a short climb, up to 2m/s. In horizontal cruise, the batteries support up to 45 minutes of engine time at around 100 km/h. When the engine is switched off the propeller stops automatically and the blades fold onto the fuselage.

The foldable propeller is located at the tip of the fuselage. The blades fold tightly onto the fuselage when not in use. Two 16kg batteries are stowed in a compartment behind the wings in the fuselage and can be taken out from above for charging.

Not having to deploy and retract the engine saves complex components and valuable time when engine is needed.

ABOVE: The Ventus 3 on display, appropriately perhaps, in the air above the exhibition floor.

BELOW: A Discus 2c fitted with an FES.

VENTUS 3

Schempp Hirth displayed a Ventus 3 18m, tantalizingly out of reach. The wing design is unfinished and the fuselage was a mock-up. Schempp are aiming for a maiden flight this year and hope to begin production in time for the next northern competition season.

According to Schempp the multi-part wing of the Ventus 3 is a completely new design and has multiple, separately fillable and drainable water tanks to cover a wide wing load range. The safety cockpit will conform to the latest CS-22 standard. Self-launcher versions and those with Turbo and electrical FES sustainers will also be available.

AERODYNAMIC DESIGN PROCESS

Schempp concluded that current computer models of long distance or competition flights did not cover all conditions sufficiently. CEO Tilo Holighaus wrote, "Our goal was to cover the complete polar curve and all speed ranges. Together with Dr. Werner Würz from Stuttgart University's laminar wind tunnel, who developed the successful Arcus wing foil, we have managed to apply new computer models that are based on the detailed analysis of logger data collected from real flights. Analyzing countless flights from various areas all over the world, we have developed a new weather model that also covers cruise flight segments. Dr. Werner Würz' invaluable contribution to the aerodynamic design, along with the wing geometry optimized using Jan Himisch's (DLR Braunschweig) chain of algorithms and Mark Maughmer's (Pennsylvania State University) support not only for winglet layout has given our design team the confidence to expect a noticeable increase in cross-country cruise speeds within a variety of weather situations." GA

SEAN YOUNG

HARRY SCHNEIDER

BY ALAN KILLMIER
FIRST PUBLISHED BY THE SOUTH AUSTRALIAN AVIATION MUSEUM

Harry Schneider is to be inducted into the Australian Aviation Hall of Fame (AAHOF) in September 2015. Announcing the 2015 inductions on behalf of the Board, AAHOF Chairman Steve Padgett said, “The awards represent those who have not only achieved incredible feats personally, but have also made outstanding contributions to the development of aviation and the fabric of Australian life”.

LEFT: Harry Schneider in a K-13 c1965.

Harry was born in Grunau, Silesia on 26 October 1924, the son of Edmund Schneider, probably the most successful glider manufacturer before World War Two. Edmund’s story is integral to that of his son, so it is also necessary to briefly give his history.

Edmund Schneider, born on 28 July 1901, was one of the early pioneers of German Gliding. In 1928 he founded his business at Grunau in Germany and among other designs was famous for his 1930 design of the Grunau Baby, of which over 5,000 were produced. It was also built in many other countries by private builders and became the foundation aircraft for the world gliding movement. In addition to Schneider’s manufacturing activities, Grunau was the site of a major gliding centre equal to the famed Wasserkruppe site. It was there that Harry learned to fly gliders at the age of 15.

BELOW: Alan Patching and Harry Schneider (right) at the Schneider Sailplanes Display at Bacchus Marsh November 2014.

Immediately prior to WW11, the Olympic Games were to include gliding as a sport. The standardised aircraft for all participants to fly was the Hans Jacobs designed Olympia, at that time an advanced design. The Schneider Company built 30 of these aircraft in anticipation of the Games, which unfortunately were cancelled due to the onset of the war.

In 1945, the Schneider family left Grunau just ahead of the Russian advance into that area, which subsequently became part of Poland. After many vicissitudes in the tumultuous period immediately after the war, the family relocated to Lake Constance on the German-Swiss border and for some years built small boats for a living.

MOVE TO AUSTRALIA

In 1949, the Australian Gliding Association, later named the Gliding Federation of Australia, invited the Schneiders to migrate to Australia at the suggestion of Bill and Jack Iggulden. This was in recognition that the Gliding Movement in Australia could not progress without someone with their skills in this country.

Their immigration to Australia was aided by Lord Casey, a Minister in the Menzies Government and a pilot himself. The family landed in Australia and, with only some hand tools and few possessions, had to completely re-establish themselves.

Initially, the father and son worked for the Royal Aero Club of Victoria but some months later shifted to South Australia at the invitation of John Wotherspoon, then a member of the Adelaide Soaring Club, who provided some factory space and an order to build an E.S 49b Kangaroo. This aircraft was a very advanced two-seater. In fact, two of these aircraft were built and were capable of very high performance for the time. Each aircraft, manned by Harry Schneider and John Wotherspoon, made several distance flights, the longest of which was 208 miles from Gawler to Mildura.

GAWLER

In June 1957, the factory was transferred to Parafield Aerodrome for a number of years and then relocated adjacent to Gawler aerodrome, home of the Adelaide Soaring Club established in 1944, where the business remained for the rest of its life.

While there, the company built its own premises. During the life of the company, it manufactured 12 of its own designs. In total, 103 gliders of its own types were built plus 12 ES Ka6 under licence from Kaiser.

Post-war, Harry and his father worked as a partnership team in the design and manufacture of their aircraft but Edmund became ill and died on 5 July 1968. For some time before his father’s passing, Harry become solely responsible for design and production.

The Schneider philosophy was to design and build practical aircraft for Australian conditions and the Australian clubs. Factors to consider were hangarage, transport, maintenance and cost. In this they were successful and their work helped the many clubs in the country. It also enabled private owners to build their designs under licence. The Schneiders also built successful high performance aircraft for competition flying. At all times they worked with the Gliding Federation of Australia to meet the requirements of the local gliding movement.

KOOKABURRA

The company largely solved the early problems of the clubs through the creation of the E.S.52 Kookaburra trainer in both short wing and long wing versions. This aircraft was almost unique in its side by side seating that facilitated instruction. It was a sturdy aircraft with good controllability and reasonable performance and was an instant success. It was sold to the United States and also built under licence in Brazil. It would not be an overstatement to say that this is the aircraft that put Australian gliding on its feet.

The E.S. 60 Boomerang single seater high performance aircraft did a similar job for the advanced pilot and the competition area.

PLATYPUS

The final design was the ES 65 Platypus, a side-by-side, high performance two-seater suitable both for training and competition work. However, only the prototype was built because, notwithstanding strenuous efforts including those of the Gliding Federation, finance for production could not be obtained at a time when the economy was not good.

This was an ideal high performance aircraft, designed to be built in Glass Reinforced Plastic, and was of viceless controllability, maintenance and crew comfort. It would have solved the problem for Australian gliding as the E.S. 52 had done in an earlier era. The prototype is still flying very successfully some 40 years later.

In retrospect, it is evident that it was a great loss and would have been a very successful aircraft. Decades passed before a competitive or superior aircraft became available from overseas. Even contemporary German companies could not believe that the design was not put into production.

The Edmund Schneider Company was a small operation of considerable engineering capacity. In addition to developing state of the art designs and structures, it carried out its own drafting and construction. It even blew its own canopies, something almost unknown in the aircraft industry of its day, and was a pioneer of glass reinforced plastic construction in Australia. The only aspect of manufacture it contracted out was stress analysis calculations to satisfy Government airworthiness requirements.

Harry Schneider also did the test and development flying for all of the Australian built aircraft and was a joint holder of the Australian two seater record in 1968, flying an ASK-i3 aircraft for which he was agent, a distance of 395 miles.

The company also acted as agent for some European manufacturers importing and selling a considerable number of sailplanes and some motor gliders, complementing its own designs. It also built under licence from Schleicher (Germany) a number of then high performance Ka 6 sailpanes. A further agency was set up for Stark Turbulent light aircraft, manufactured in Germany.

ABOVE: Edmund and Harry (left) Schneider working on a Kookaburra with a Nymph in the background - 1965 . www.glidingcaboolture.org.au

For most of its life, the company was virtually the only major repair facility in Australia for badly damaged sailplanes, a most useful service to the clubs.

Throughout the entire career of his company, Harry Schneider worked in close collaboration with the Gliding Federation of Australia in helping give effect to its vision and policies, resulting in a significant contribution to the high regard in which that organisation is held. This was recognised as early as 1966, in which year Harry was awarded the prestigious Oswald Watt medal for his contribution to Australian aviation.

Harry Schneider married an Australian and in 1956 became a naturalised Australian citizen. GA

BELOW: Six Schneider gliders: the Platypus with other Edmund Schneider Pty Ltd gliders at the Schneider Sailplanes Display at Bacchus Marsh.

NYMPH RESCUE COMPLETED AN UNUSUAL RETRIEVE

PHOTOS AND WORDS BY JOHN MCCORQUODALE

Issue 24 of Gliding Australia reported on the plight of an Edmund Schneider ES-56 Nymph. Nymphs in Greek mythology were described as minor natural goddesses which populated the cosmos – a nice way to think about a small glider with precious memories of wandering the skies. The Nymph in question was facing doom in the shape of a bulldozer as it's habitat was scheduled for demolition, but saviours from the Central Coast Soaring Club responded, and with various chains, ropes and pulleys, were determined to save the damsel in distress. John McCorquodale reports:

The day was a complete success in recovering the Nymph from Barry Bowerman's Showroom. Peter Rundle, Arie van Spronssen, Michael Vince and Graeme Martin did a fantastic job. We were fortunate in having access to an 8m extension ladder, which reached right up to the girder supporting the Nymph. Pete went up and attached his 6:1 block to lower it down. The attached wires were cut, and with the aid of a rope under the tail, we gradually lowered it down to the floor.

After de-rigging, getting it out of the building was straightforward and then, with the modifications that Pete had made, the 12m wing sat up on supports in the open trailer. The fuselage was lifted in and sat in a cradle, with plenty of cushions, foam, ropes and cardboard. The Nymph was successfully towed back to the Club by Pete.

After a quick wash to clean off the accumulated dust, it looks to be in surprisingly good condition. The log book was in the cockpit, and it shows 844 hours with around 1,200 launches, last flown about 20 years ago. The next step is to inspect the wing internally. The 30 yearly survey had been done. There is a note from Mike Burns in the log book referring to a modification, which we think it is the wheel mount, so that will need to be addressed if we consider it potentially able to fly again. We think this may have been the reason that it was withdrawn from flying.

OPPOSITE: Peter Rundle and John McCorquodale with the Nymph back on a gliding field at last.

OPPOSITE BELOW: The first touchdown after many years in the rafters.

ABOVE: We need a wider door!

BELOW: Taking a closer look at the glider.

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ABOVE: Proof loading the wing

BELOW: Careful checking of the borrowed trailer's modifications.

Any information on the original skid would be helpful.

Peter, Arie and I have now done a proof loading of the wing. As you can see in the photos, we had a scaffold tower mounted with two chain blocks suspended from a beam supported on the scaffold tower. We took it up to 4.25G which was a weight of 600kg of sand bags on the wing. We had around 220mm of deflection in the wing, measured at both wing tips. We had a tape measure attached to a length of timber at each end, and used a 100mm nail attached with adhesive tape on each wing tip to act as a pointer. After removing all the weight, we allowed around an hour for the wing to relax and were pleasantly surprised to find that it resumed its pre-stressed position measured at each wing tip.

We feel confident that the spar and the glue holding the ribs in place are sound, so at this stage of our investigation, all the signs are looking positive. There is still a lot of work to be done, but this proof loading of the wing was the 'moment of truth' to decide to either proceed with our investigation, or to have it as a museum example of this type.

This Goddess is now safely in the CCSC hangar, awaiting the day when the cosmos can again be blessed by her presence. The cheated bulldozer will have to search for a less desirable object on which to practice its destructive talents.

GA

DAILY INSPECTION AND MAINTENANCE RELEASE

DENNIS STACEY
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Checking the contents of the maintenance release, together with ensuring a thorough daily inspection has been carried out, should ensure the airworthiness and operational state of the sailplane prior to flight.

THE DAILY INSPECTOR

There are many entities responsible for the airworthiness of a sailplane. The Daily Inspection is the final process required at the coal face which assures the airworthiness of the sailplane prior to flight. If the sailplane is airworthy, it is safe to fly. Being airworthy means all regulatory airworthiness requirements for safe flight are satisfied. This includes the Type Certificate, Type Acceptance Certificate if applicable, Certificate of Registration, Certificate of Airworthiness and Maintenance Release, which must be valid. Note that a sailplane may be safe, but not airworthy. The Daily Inspector has a big responsibility - the Daily Inspector's task must be performed in a professional, diligent manner as you are performing a maintenance function critical to assuring the continuing airworthiness of the sailplane.

The sailplane manufacturer, the National Airworthiness Authority (NAA) in the country of manufacture, for example, FAA or EASA, our CASA (through Civil Aviation Act and Regulations), the GFA (through Operational Regulations and our Manual of Standard Procedures), the Certificate of Registration Holder, the Annual Inspector issuing the Maintenance Release, the Replacement of Components Inspector performing flight line rectifications and lastly the DI inspector - all contribute in maintaining sailplane airworthiness and safety. Any one of the entities listed above not fulfilling their responsibility will compromise safety.

You as the Daily Inspector are the last chance to identify potential risk. The diligent DI inspector should be well trained, vigilant, disciplined and methodical. The Daily Inspection must not be rushed, and the inspector must not allow himself to be distracted while carrying out this task.

The first item to be performed when carrying out a daily Inspection is reviewing the sailplane's current Maintenance Release. Ensure it is the correct Maintenance Release for that sailplane. Sillier things have happened. An inspection of the Maintenance Release will tell the daily Inspector if the Maintenance Release is valid, if any maintenance is due, if the sailplane is carrying minor defects, or if a major defect has been entered. If the sailplane has just been rigged or it is just out of maintenance with a fresh Maintenance Release, there should be an Independent Inspection covering the rigging and connection of controls. Inspecting the sailplane prior to reviewing the Maintenance Release may be a total waste of time. The key to a sailplane's continued airworthiness lies within this document. It must be carefully reviewed to enable sound decision making.

To determine if the sailplane is fit to fly, the Daily Inspector must first ensure that:

- The Maintenance Release in force will remain valid for the day - check dates.
- The Maintenance Release is the correct Maintenance Release for that sailplane - check registration.
- No maintenance is due - check part 1.
- Note that any maintenance carried out on the day is recorded and certified by qualified inspectors in the MR.
- Any defects or endorsements contained in the Maintenance Release are deemed minor and will not have any impact on safety.
- The DI inspection is signed / time-dated.
- An Independent Inspection is performed after rigging or maintenance and certified in the appropriate place.
- Any defects or damage found during the DI are listed in the appropriate section of the MR.
- Any 'flight line' maintenance carried out on a sailplane must be recorded in the MR or log book. This certification may be required in the Maintenance Release Part 1 where all periodic maintenance due is listed. Certification or sign off may also be required in Part 2 in the minor or major defect section. A Daily Inspector may certify for limited maintenance tasks as listed in MOSP3. Please think of the Maintenance Release as part of or an extension to the aircraft's log book. All maintenance carried out must be certified by an appropriately qualified inspector. All Maintenance Releases must be kept with the aircraft records after they expire.

MINOR DEFECTS

A minor defect is defined as any defect which does not affect the safety of the aircraft, person or property. A sailplane may fly with Minor defect endorsements. The pilot will decide if the minor defect will operationally affect the flight and if it is acceptable.

The GFA MOSP and Civil Aviation Regulations state that any defect recorded in the Major Defect section of a Maintenance Release automatically suspends the Maintenance Release

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until cleared. Depending on the type of defect, it may be cleared by any Inspector holding the appropriate Annual Inspector rating. If the defect is entered by mistake in the Major Defect section in Part 2 of the Maintenance Release, it must be cleared by a member holding an Annual Inspector authorisation, and then transferred to the Minor defects section of the Maintenance Release.

NO SAILPLANE CAN FLY WITH AN UNCLEARED DEFECT ENTERED IN THE MAJOR DEFECT SECTION OF THE MAINTENANCE RELEASE - THE MAINTENANCE RELEASE CEASES TO BE IN FORCE.

The training of the Daily Inspector is under the umbrella of the club's CFI. The Daily Inspector examination and authorisation, however, can only be issued by a member holding an Annual Inspector Maintenance Authority or a member holding a Daily Inspector Examiner's Authority for that structure. With respect to powered sailplanes, each category - for example, pop-up engines, touring motor gliders - requires that member to be trained and endorsed on that type. If more than one type is held within pop-up or TMG categories, the Daily Inspector's authority covers all powered sailplanes of that type. The Daily Inspector must be log book endorsed for that type or structure to be able to perform and certify a Daily Inspection.

THE MAINTENANCE RELEASE

The Maintenance Release is in three parts and is referred to as Maintenance Release Part 1, Part 2 and Part 3.

Maintenance Release **Part 1** consists of the inside cover page and the Recurring Maintenance section. A Maintenance Release can be issued for any period up to one year and 250 hours. When maintenance becomes due or a Major Defect is entered, the Maintenance Release becomes suspended until it is carried out and certified, or cleared. This is why the Daily Inspection is SO important. Part 1 also contains the flight report for recording the sailplane's flight characteristics on the post maintenance evaluation or check flight, for low and high speed flight. Note that there is no requirement to fly the sailplane to Vne on the post annual maintenance flight. If the high speed evaluation is carried out to, say, 100kts and that is not Vne, record that speed against the high speed box and don't tick the box. All required maintenance expected for the forthcoming 12 months must be listed in Part 1.

MR **Part 2** is for unserviceability recording or snags. The GFA break it into a Minor and Major Defects section. Minor defects are allowed which do not affect safety but require monitoring by Daily Inspector or pilot. The Major Defects section of the Maintenance Release clearly states that these defects prevent further flight until cleared.

MR **Part 3** lists the date, the flight hours, the progressive total and total landings. Note that MOSP 3 requires flight time and landings to be transferred to the log book at least annually. Powered sailplane Maintenance Releases have an additional Part 3 section for the recording of engine hours and oil uptakes.

Also Part 3 contains provision for recording daily inspections and **Independent Control Checks.** The Regulations and MOSP require two certifications after annual maintenance and rigging. When completing airworthiness audits, it is now becoming very obvious that this safety function is not being 100% carried out. This Independent Control Check after maintenance and rigging may save someone's life; please ensure that the procedure is carried out.

Finally, the maintenance Release also contains a couple of Defect Reports. These Defect Reports may be used to submit defects by mail to the GFA instead of using SOAR reporting system.

Be aware that if there is any adjustments to the progressive total due to errors, the maintenance due times may need adjusting in Part 1.

SOAR REPORTING/ SDRS

Many occurrences submitted in the SOAR system are indicating the following:

- poor execution and standards in performing the Daily Inspection.
- poor understanding of the requirements, what to look for while performing the DI.
- poor training of the Daily Inspector. This may be due to the trainer not being up to the mark, resulting in a domino effect on standards.
- poor Daily Inspection examiner standards.

The following examples could be categorised as possibly caused by poor standards in Daily Inspections in the field:

- A touring motor glider catching fire in flight soon after take-off, about 4 hours out of maintenance, with oil from a pushrod shroud tube seal leaking onto an exhaust contributing to the loss. The pilot was very lucky to survive this one.
- Flight with a rear ASI not connected in a twin seat trainer, the front ASI under-reading by an estimated 80%.
- Control surface tapes coming off in flight causing handling problems, which may have been detected on the DI.
- Minor defects listed in the Major Defect section. Daily Inspections continually being signed out by various inspectors, despite the Major Defect entry
- Incorrect rigging of a Pilatus B4 elevator push rod. This pilot was also very lucky! This sailplane flew on many occasions when the incorrectly attached push rod was not identified by the Daily Inspector.
- A Jantar tailplane mounting pin was inserted but not locked, or rotated, into position.

There is a chance that the above examples may have been picked up sooner, before the occurrence, if the Daily Inspection had been a little more thorough.

Overall, the statistics suggest we need to take our Daily Inspections much more seriously. I would like all Daily Inspectors to reflect on this fact. Whether you are a club instructor, a club member with a fresh Daily Inspector authority, a touring motor glider pilot or a hot shot Nationals racing pilot, please consider how you carry out the Daily Inspection and whether you currently perform that inspection diligently and professionally. We need to improve our attitude and take that little bit more time and effort on the inspection and reviewing the Maintenance Release. Safety is a team effort! Remember, you are responsible for the day's flying if you sign the Daily Inspection and you may be required to answer to the coroner. GA

CROSS COUNTRY PRIMER

BY MATTHEW CAMERON

As the spring and summer approach, now is the time to start preparing for your cross country season. Matthew takes you through the planning and daily procedures for a successful season.

I know of pilots who fly cross country every day that is suitable, and some days that are not. They appear to be addicted, to say the least, and have a vast knowledge combined with very good piloting skills. They will complete a lazy 400km when the rest of the fleet is still in the circuit area! They are not interested in competitions and wouldn't know an FAI badge if they tripped over one. Unfortunately, what they know or have gleaned over the years is a big secret. There are many who harbour a great deal of information, but do not teach or commit themselves to print.

Many pilots would like to increase their knowledge and fly cross country but are simply afraid to do so. Certainly the fear of landing out is one reason, a fear that can be eliminated through adequate training. Secondly, lack of knowledge about meteorology, navigation and glider performance is also of concern.

WHERE TO START

A certain amount of knowledge has to be accumulated if you are to fly cross country successfully. As our American cousins are fond of saying, unless you have it in the head you will be unable to apply it in the air. You have to have knowledge of the basics - **meteorology, navigation, instruments and glider performance.** Many of the following suggestions are simply my slant on how certain items should be addressed.

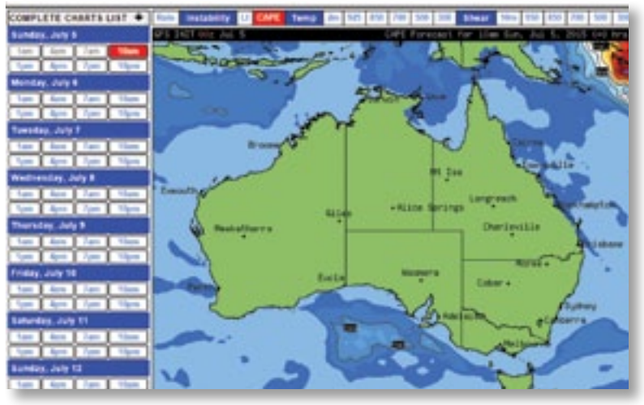
It goes without saying that successful cross country flights require reasonable thermal techniques. Notice the word 'reasonable', not 'highly skilled'. Acquiring these techniques is outside the scope of this article - all I will say is that it does require application, knowledge and above all, PRACTICE. Read what you can, ask those who know, and try to come up with some simple rules that will enable you to enter and then centre thermals with some authority and skill. It takes TIME to acquire this knowledge.

ALL cross country flights are a race against the clock. There are several reasons for this state of affairs. First, the conditions on the day may limit the distance you can travel, safely or otherwise. Second, the conditions will almost certainly change throughout the day, which may become a problem. Third, the distance involved may be at the limit of the glider's performance if flown correctly. In other words, a 500km flight in a particular glider may be marginal, whereas in another it may be much easier.

NO TWO DAYS ARE THE SAME

No two days that you fly cross country will ever be the same. Remember, the air we fly in is constantly changing and we have to cope with this factor.

According to Ingo Renner, to successfully complete any cross country flight requires, above all, intensive planning. It pays to heed the words of the master. Second, it demands meticulous preparation and finally, execution. The planning can actually start months ahead. For all pilots the most important factor has to be safety. So the first matter we need to consider is the route structure. Fortunately, we have several tools at our disposal that will provide almost instant assistance when choosing a suitable route.



ABOVE: Matthew uses his own mix of weather forcasting sites to plan for cross county fliying. Above is www.bsch.com.au

WAC CHARTS

First, you should look the WAC chart of the area you intend to fly over. Note that as a glider pilot you are required by law to carry such charts in the cockpit. The ability to read maps is a very useful backup when your electronic device fails in flight. You should also be aware that Australia is one of the few countries that AT PRESENT does not have a requirement for formal qualifications in meteorology or navigation. I wonder how long this will survive when we move to a formal Glider Pilot License. It is helpful to have route maps laminated in plastic to allow multiple uses - just ensure they are the latest issue.

GOOGLE EARTH

The very best assistance we have for route planning is Google Earth. This free download allows you to draw track lines and more importantly zoom into the proposed route to ascertain the actual terrain you hope to fly over. It has been suggested to me that the photographs of the terrain can be out of date. Maybe so, but if photographs taken in winter show a nice green countryside it takes little imagination to convert it in your mind to the browns of summer. Farm paddocks will still be farm paddocks and urban boundaries will not have changed.

You should know by now that the very best type of terrain to fly over is cereal crop paddocks after harvesting the grain. After all, they provide the best thermal sources AND provide the SAFEST areas for potential outlandings next to a recognized airfield. In addition, such paddocks tend to be large and normally flat. The type of terrain you DO NOT want to fly over is any irrigation areas, they simply do NOT provide good, consistent thermal production. In addition, strictly avoid those areas where the possibility of an outlanding will only end in disaster. Certainly more experienced pilots can and do operate over much more difficult terrain, but this is not for the budding cross country pilot.

With a bit of forethought, Google Earth can also show the very best navigational assistance, so that your time in

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the cockpit spent looking at an electronic device is kept to a minimum. Prominent roads and highways, together with creeks and tree lined rivers provide standout items against the brown backdrop of summer. Thus, you can easily navigate and keep your focus outside the cockpit, where it belongs. As an example, on one coaching cross country flight, the second leg was some 70km long and paralleled a straight county road, very easy, allowing you to look at the map once and keep your attention outside the cockpit for the rest of the leg.

In similar fashion, isolated patches of forest can provide valuable landmarks from some distance away. The exit track from one turn point that I use has a well-defined creek on one side and a major road on the other. The required track bisects them, very clearly. When planning, look for such easily identifiable land marks. They really do take a lot of the potential stress out of navigation. Using Google Earth, note the physical features that are stand out items on and on either side of your track line. Some of them will be visible at a considerable distance.

Another valuable point with Google Earth is that you can set your height at a particular value and then move along the track line, it is also possible to change the height and get a different point of view. This will show you exactly when checkpoints or other navigational items should show up, which is very useful. The most complex part of the preparation is the met information.

BE YOUR OWN MET OFFICER

Unless your Club provides a daily met briefing, you have to come up with your own forecast to see if the day is suitable to attempt a cross country flight. Obviously the conditions will have a huge bearing on the decisions you make and the length of any potential flight. Again, I stress that it will take time to accumulate this knowledge.

So what exactly do we have to look at to achieve this? You can start looking at the weather at least a week ahead of any proposed flight.

- **Meteorogram from NOAA**. This provides maximum temperature and dew point for any particular day. Enlarge if necessary for ease of use.
  www.ready.arl.noaa.gov/READYcmet.php
- Cross check the temperatures on the Elders website together with an overview of the general weather.
  www.eldersweather.com.au
- Cross check temperatures again at www.yr.no.
- Check sounding and stability from NOAA for 0300 Z and 0600 Z (1400 and 1700 AEST). The stability diagram may be used to work out the time of best lift, which may alter starting and stopping times. Use a 12-hour timeframe from 0000Z. Enlarge if necessary by 50% to make it easier to use.
- Check forecasts at **www.bsch.com.au** for Lifting Index (Li) predictions and other data (Cape fcst) Australia wide + states, like NOAA at 3 hourly intervals.
- Using bsch.com.au check soundings for departure point and other turn points. This is an excellent feature for predicting Cu.
- Check XC skies for the proposed route for Cu and other weather. **www.xcskies.com**

Learning how to use these sites will usefully occupy your winter non gliding months. All are free with the exception of XC skies, for which a 6 or 12 month subscription is available. Just be aware that all of the data presented is a FORECAST and will most likely change as the week progresses. I find all the information that these sites produce firms up in the last 48 hours preceding the flight.

Having said that, these sites will produce enough information to make some informed decisions as to whether the flight is likely to proceed or not within the bounds of your particular criteria. As an example, the data may show that on the day a 50km Silver C flight is almost certain while a 300 Km triangle is marginal at best. It helps if you have multiple choices available.

On the two days preceding the flight I would particularly look at both the Temp diagrams from bsch and the NOAA for your departure and turn points. I have had conditions collapse within this time frame. On the morning of the flight I would recheck the following:

- Aerological diagram from NOAA for 0300 Z and 0600 Z, enlarge to 150% for ease of use. Check departure and all turn points
- Plot dew point and max temp for both charts from Meteorogram or BOM site.
- Cross check Cu is forecast with bsch.
- If you multiply the difference between the max surface temp and the surface dew point by 400 it will provide Cu cloud base - PROVIDED the Cu form.
- For GOOD thermal conditions, there should be at least a 15° degree split between the surface temp and the temp at the 850mb level, nominal 5,000ft.
- Check the AREA forecast at the BOM web site, Aviation section. Check the Terminal forecast if available for your departure point or enroute points. This site will also provide winds at 2, 5, 7 and 10 thousand feet.
- XC skies again.
- Blip Maps.

PRACTISE FORECASTING

It is useful to have a single, self-generated sheet of paper to accumulate all of the necessary knowledge to make an informed decision. Outside of flying days you can also practice forecasting the weather and compare it with actual conditions on the day to see how accurate you are. I will stress again that it takes TIME to accumulate this knowledge but it can be done if you apply yourself.

A couple of points need noting. I have found that the 2,000ft winds from the BOM website are very close to ground winds if you have to land out and no other indications of wind direction are available. You MUST be able to read and interpret the atmospheric temperature diagram. There are multiple sites online with adequate instruction on how to do so.

The presentation of data relating to glider performance is another area of considerable variation. There are many different ideas! You can work out the figures off the glider's polar chart. You can also do so for head and tailwind conditions. Just be aware that these figures DO NOT account for local sink conditions. In addition, it is claimed that the performance figures are almost useless in the air due to the different heights and speed involved. I suggest it is possible to average figures out, but you must know, independently of any electronic help, just what your glider is capable of under a particular set of conditions. There are many ways to prepare and execute a cross country flight safely. This article merely provides the methods of a one, self-taught individual. Yours may differ with experience - plan and fly safely.

GA

AIRWORTHINESS

ROB HANBURY
Airworthiness Department Chair
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Sadly our old mate John Ashford has passed away as will be reported elsewhere in the magazine. We have lost an enthusiastic glider engineer who passed on his knowledge to anyone who was interested enough to ask. He was a wealth of information and had great contacts with the European manufacturing engineers which he gained through OSTIV. He was well respected in Europe and the USA.

John has been a stalwart of the GFA airworthiness system for decades, he was an RTO-A Victoria for years and was DCAD until a month ago. He had been CAD for years, and was a great, helpful friendly person who we will all miss.

We have two newly appointed Deputy CADs – normally we only have one but due to the amount of work, we grabbed two good aeronautical engineers when they volunteered, **Anthony Smith** and **Andrew Simpson**. They are assisting to resolve complex issues such as approvals for gelcoat replacement and the AD review. Also, they can pay more attention to resolving issues for the AMOs and other matters needing attention. Welcome guys, you have already been helping.

MOSP 3

New MOSP 3 version 7.0 has been rolled out. CASA is reviewing it and once the details are agreed they will approve it. After members noticed a few errors, these and the numbering gremlin have now been fixed. V7.1 is now the current MOSP 3 and is on the website for use. We will do a further update with CASA and make any further edits we find are needed.

Start by downloading and reading the RO Handbook. Then download and use MOSP 3 as a reference. Our other manuals are also there for guidance.

We also sent new Maintenance Authorities (MA) to everyone we think has one. Again there were gremlins which we have fixed. Please check your MA - this is what is in our records. If you have one, let us know we will fix the errors in the data and issue again. You should keep your old MA as a record but the new one shows you what ratings we have in the system for you.

We also created a few new ratings to try to define fabric repair and refinishing abilities better. Also, 'Weight and Balance, Advanced' was created for people who are more experienced and able to handle the modern complex and motorglider weight and balance. Ops asked us to assist in making the placard clearer and we will work with the advanced W&B inspectors to improve this. Please always make sure the placards are very clear. Ask an advanced inspector if you have a complex W&B issue, and always get your W&B checked. It is complex and critical errors are easily made.

TRAINING

Apologies that the general training schedule has not yet been set for this winter. We are working on it but it was hard to start up. Some courses are on the website and advertised in this edition of GA. The rest will be added and anyone who has expressed interest will be advised. Refresher training, which this year will focus on the new MOSP 3 changes, will be offered as a day of lectures at all major venues.

SOAR

The first public report on the new **Service Difficulty Reports** (SDR) in the SOAR (Safety Operations and Airworthiness Reports System) follows. We have all reports since 2013 entered and although it may be new and you not yet using it much, we have about 100 interesting reports. I have given a selection below and will publish and update a complete report on the website if you are interested in more cases. We will develop the system to serve our needs.

By law we have to report major defects but ***GFA is asking you to report any maintenance issue that may help others to learn from.*** We will report Major Defects to CASA and useful defects to the manufacturers. They are already responding to these. We will issue ADs or advice to owners

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AVTEC AVIATION	BOONAH	ROGER BOND	0409 763 164	avtecaviation@virginbroadband.com.au
CAMDEN SAILPLANES	CAMDEN	MIKE DUGAN	0418 681 145	camdensailplanes@bigpond.com
GCV WORKSHOP	BENALLA	GRAHAM GREED	0428 848 486	gcvworkshop@benalla.net.au
HOLMES HOLDINGS	BRISBANE	PETER HOLMES	07 5464 1506	holmbros@gmail.com
KEEPIT GLIDER TECH	LAKE KEEPIT	GRANT NELSON	0417 843 444	keepitglidertech@outlook.com
MADDOG COMPOSITES	BOONAH	MIKE MADDOCKS	0408 195 337	mike@maddogcomposites.com.au
MORGY'S GLIDER WORKS	WAIKERIE	MARK MORGAN	0427 860 992	morgans@sctelco.net.au
SL COMPOSITES	TEMORA	SCOTT LENNON	0438 773 717	scottl@internode.on.net
T & J SAILPLANES	TEMORA	TOM GILBERT	0427 557 079	tnjgilbert@internode.on.net
ULTIMATE AERO	BOONAH	NIGEL ARNOT	0437 767 800	nigel@ultimateaero.com.au
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and inspectors. Even the small issues will help us learn and see issues developing. For instance we saw a few cases of poor DI and so are pushing care and attention and second checks on all major systems.

Although the attached reports are organised by the glider type on which it was reported, we do notice that many are generic problems that could occur on many models. These need to be given attention in training and inspection. We have the detail but only publish this de-personalized, general-lessons-learnt type of report to let all of you know. The RTO-As have full access if they need details but will otherwise keep them confidential.

Please report all SDRs preferably online on SOAR, as that is quicker and saves us effort, otherwise via post or email. The RTOs investigate these and the CTO acts on them – promptly if required. We purposely set it up to be simple to file the basics and allow more detail if required. If needed your RTO-A will get back to you. Please use it – we need you to report so that we can all learn.

MANUFACTURERS AND SUPPLIERS

We maintain a list on the website but it needs updating. Please let us know of useful sources or errors in what is listed and we will fix it to be more useful. returns@glidingaustralia.org

SERVICE DIFFICULTY REPORTS

AMT-200 2014 1 - ENGINE
An inflight fire was caused by a mistake during installation of the cylinder head. This caused an O-ring to be cut and 1.5L of oil to leak onto the exhaust heat wrap. This caught fire in flight. The aircraft and pilot were very lucky to escape by ditching into a lake.

ASK 21 MI 2015 2 - RELEASE
Uncommanded release, release actuation control friction contributed. Due to over-tightened bolt. Poor design.

ASK 21 MI 2013 MANY - ENGINE
Various failures have occurred in Austro Rotary Engines. Manufacturer investigated. Manuals to be revised. Report all issues. Beware; operational restraints are critical. Cooling down etc.

ASW 15 2014 1 - WINGS
Material Failure Heavy controls - Aileron sealing tape came off and deduced the tape was acting as a spoiler. The tape was replaced at the last annual inspection. Beware and clean properly.

ASW 27-18 2015 1 - RELEASE
Tost E22 uncommanded release. Due to over-worn ring. Ongoing investigation and correction procedure. Do not use worn rings. New release may be more susceptable.

DG-1000M 2012 1 - ENGINE
Fatigue; Material Failure Fuel injector mounting bolt failure-Solo Engine fuel injection system failed in flight and pumped 30L of fuel over the engine and exhaust in flight . EASA AD resulted.

DG-1000S 2015 1 - FUSELAGE
Rear canopy pneumatic support arm support bracket fell off and the arm detached from the canopy. Manufacturing fault.

DG-303 ELAN ACRO 2013 1 - FUSELAGE
Incorrectly Fitted Bolt - Limited Elevator Travel.

GROB G 109 2013 2 - ENGINE
Material Failure Engine Failure After Take Off. Due to fuel valve failure. Made worse by poor maintenance practices. Widely used valve. Fails closed. UV damage of knob. Serious. Inspect and replace old valves. 5 yr lifed item.

H 301B LIBELLE2014 1 - UNDERCARRIAGE
Poor maintenance practices. Various.

HORNET 2012 1 - TAIL SECTION FATIGUE
Cracked tail plane mounting bracket. No history of failures in the past of this tailplane forward mount bracket. The failure may be a result of a flight over stress or poor ground handling.

HPH GLASFLUGEL 304 C 2015 2 - TAIL SECTION
Fatigue Suspect lifting by tailplane caused elevator bracket failure on two sailplanes. Serious. Don't lift by tailplane.

K 7 2015 1 - PAPERWORK
Error in Logbook hours of 2100 hrs resulted due to arithmetic/ transposition of digit errors in the MR. This is a very common occurrence and shows fatigue at the end of a days flying. Incorrect maintenance then results.

LS 8-SB 2013 1 - INSTRUMENTS
Radio intermittent. Was Mic element.

LITHIUM-ION BATTERY 2014 1 - FUSELAGE
Portable lithium-ion battery pack.Not in the glider. New in storage - had not been charged. The pack expanded and burst the case.

NIMBUS 3T 2012 1 - MATERIAL FAILURE
Gelcoat failure continuing under 'Polyurethane' refinish. Please report all cases.

NIMBUS-4DM 2009 1 - ENGINE AGE ACCIDENT
Material Failure Gushing fuel leak - heat degradation of the Teflon line inside the wire shield. Routing and hose problem. Check all.

PILATUS B4-PC11AF 2015 1 - TAIL SECTION
Incorrect location of safety 'terry pin' on elevator to pushrod lock pin. Incorrect assembly. Beware. Critical.

STANDARD CIRRUS 2012 1 - UNDERCARRIAGE
Corrosion Undercarriage operating lever failure at base of handle due to corrosion damage. Protect from sweat. Maintain to prevent failure.

SZD-48 JANTAR STANDARD 2 2014 1 - TAIL SECTION
Tailpin needs to be locked horizontally - it was vertical and so not locked. Possibly turned in error during DI or by untrained person. Critical. Now taped.

SZD-50-3 PUCHACZ 2014 1 - CONTROLS
Material Failure Control column cheek plates found broken and cracked. Probable cause - over-tightening of bolts.

WHISPER 2015 1 - ENGINE
Material Failure Firewall rubber grommet cut allowing fuel line to wear. Potential hazardous/ catastrophic situation due to poor maintenance practices. Very lucky this defect was found and rectified before it escalated.

VARIOUS 2014 1 - FUSELAGE
Common occurance that open canopy can act as a magnifying glass so causing a local heat concentration within the cockpit. Can damage components or cause a fire.

This is a selection of entries. Refer to the full report on the webpage for more cases. In future we will catagorize to make more sense once we have more reports.

ATTENTION, VIGILANCE AND DISTRACTION

THEIR IMPACTS UPON PILOT SITUATIONAL AWARENESS AND WORKLOAD MANAGEMENT

DREW MCKINNIEE
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This article provides insights for glider pilots into some human factors that affect gliding safety:

- Attention and how we manage information in the cockpit
- Vigilance or sustained attention
- Distraction and loss of focu
- Situational awareness through perception, understanding and thinking ahead
- Workload management, our ability to manage the flow of tasks and information in the cockpit to achieve a safe flight.

Some of these cognitive human factors have not been covered in depth in our GFA Human Factors materials. ATSB has been putting greater emphasis on understanding these issues in transport safety investigations, and I acknowledge their expertise and training resources. Analysis of GFA SOAR operations occurrence reports has highlighted how these factors have contributed to many incidents and accidents.

I believe that improved training methods and awareness of these factors may improve our safety. I have particular concerns about poor practices involving In-Flight Distraction Devices (IFDDs) that can markedly degrade situational awareness and safety when used incorrectly, or at the wrong time.

ATTENTION

What do we mean by attention? Most of us think of it as a conscious process of focusing on something important. Yet how often do we find ourselves unconsciously monitoring many inputs, discerning important aspects from a barrage of sensory information?

Attention may be described as the capacity for our minds to acquire information in a sequence or form that allows it to be interpreted. Attention may be both conscious (deliberate) and unconscious (intuitive).

Attention may be thought of as a continuous manager of information that allows you to make sense of the sensory environment. When working properly, this information manager also helps to prevent overload, and ensure mental resources are available to respond to particular stimuli.

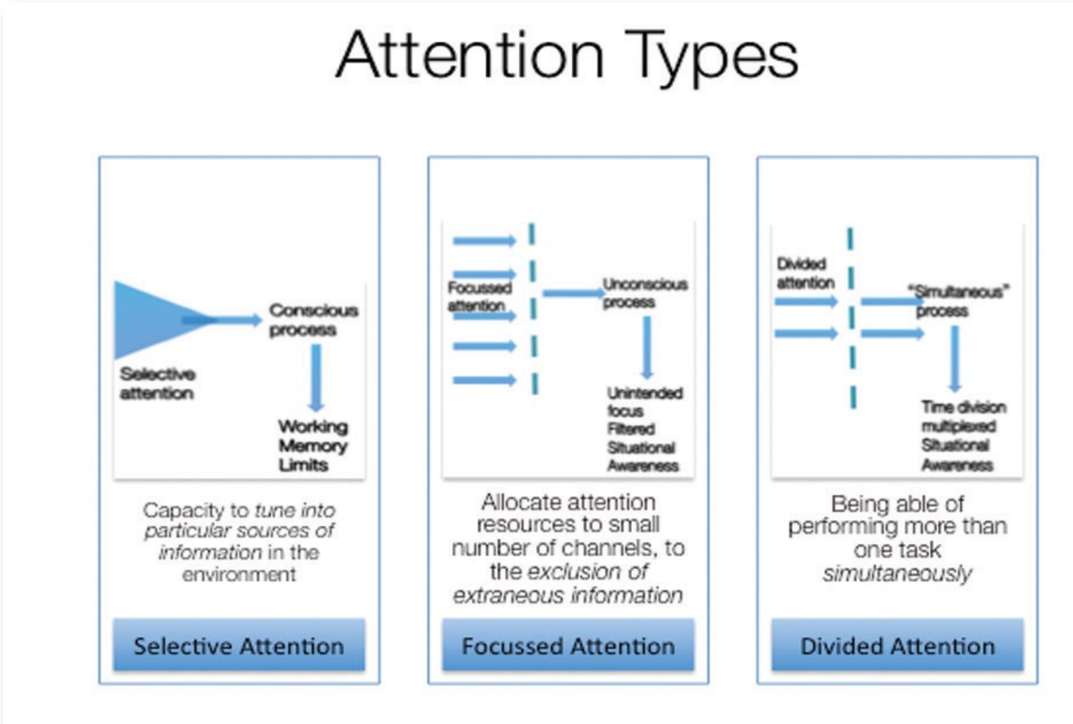
THERE ARE THREE KEY TYPES OF ATTENTION:

- Selective attention, our conscious capacity to tune into particular information sources in the environment;
- Focussed attention, our unconscious allocation of attention resources to limited channels, to the exclusion of extraneous information;
- Divided attention, unconsciously dealing with multiple tasks and information sources simultaneously, with limited capacity, simple inputs.

Selective attention, consciously applied, can be improved through training, repetition, procedures and checks, and by conscious prioritisation. For example, we train pilots on safe speed near the ground and emergency procedures, pre-landing checks, monitoring of attitude and energy, and to prioritise via 'aviate, navigate and communicate'. We consciously apply these to direct our attention to the most important aspects of managing information and workload after a rope break, or in a low modified circuit.

Focussed attention, by definition, is where we unconsciously filter inputs, and this may degrade our situational awareness. All the sensory inputs are competing for attention and some may be discarded or ignored. A high workload will increase this processing pressure and the chances of important inputs not being seen, heard or felt. Radio calls or undercarriage alarms may go unheard until too late.

Divided attention allows us to multiplex or perform simultaneous tasks, but this also requires some time division of attention. With a minimal number of information sources, low difficulty level and dissimilar tasks, we can unconsciously juggle multiple activities. For example, we might monitor



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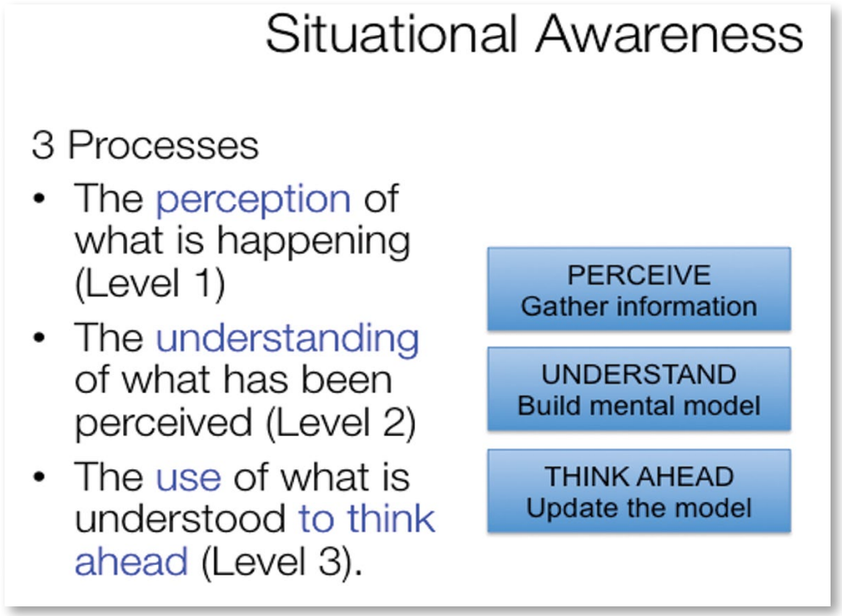

position of another glider and reply to a radio call, while rolling out of a thermal. Done well, it can assist in situational awareness. Again, training, experience and prioritization can improve our skill in doing this unconsciously.

How do we apply these types of attention? That depends in part on your motivation and experience. Your goal at a given time, your motivation to complete something, will primarily affect your selective attention.

Your experience will be a major factor in how you unconsciously apply focused or divided attention, particularly in high workload situations or when fatigued. High awareness of the effects of fatigue, and critical actions at various phases of flight, will help you to consciously elevate inputs and tasks to selective attention.

So, you're a competent, well-trained, experienced glider pilot. You're current in the type and familiar with flying in a certain environment. You're well rested and in good health. How hard can it be to apply appropriate attention to the right things, at the right time?

VIGILANCE

Being attentive to the right things at the right time takes work. You know this from your experience. It might be much harder to give things required attention after a long period of time, when you are fatigued, lose concentration, or allow your mind to wander. You have done this kind of flight a thousand times before, and everything will be all right! Complacency can cause you to drop your guard.

Vigilance is the capacity to sustain attention to a particular task. Fatigue, complacency, boredom, task monotony, poor workload management or poor foresight can erode vigilance.

Vigilance may be improved through training of conditioned responses, checklists, deliberate regular changes in tasking, refreshment and rehydration, self-discipline, improved planning and foresight.

Cockpit design, layout, clutter, instrument design, placard design and position, data displays, pilot self-organisation, audio alerts and so on, may all affect their effectiveness for pilot momentary attention and sustained vigilance over a period.

Improved vigilance may be achieved from prioritising tasks at different phases of flight, a deliberate discipline to reduce or limit the enemy of attention - distraction.

DISTRACTION

Distraction is the reduction of capacity to provide required attention to tasks through diversion by extraneous inputs, saturation by excessive sensory inputs, or loss of cognitive focus.

Like attention, you might be consciously and deliberately distracted, or unconsciously distracted or saturated in your attentive capacity. It might arise from doing certain tasks at inappropriate times.

For example, distraction might arise from anxiety about a full bladder late in a flight, or your mind wandering on work worries or social commitments, or by messing around with entering navigation data into your cockpit devices inflight.

Battery failure inflight might cause both distraction and a higher workload, detracting from your capacity to manage other priority tasks.

Heightened self-awareness about your susceptibility to distraction is important. Coaches and instructors can provide valuable feedback here. Honest post-flight analysis might also focus on how you can better manage workloads, maintain attention and vigilance, set aside distractions at key phases of the flight.

Later, in another article I will discuss some specific operations, airworthiness, training and self-discipline issues associated with In-Flight Distraction Devices (IFDDs). IFDDs can detract from gliding safety!

First, we should look at how attention, vigilance and distraction are interrelated with pilot workload management and situational awareness.

SITUATIONAL AWARENESS

Many definitions of situational awareness exist; for example, "a means of monitoring information at a level sufficient to ensure that threats to the system are identified", which in pilot's English means "what is happening now, what has happened previously, and what is expected to occur in the future".

Situational awareness is not just about perception! It is also about how we process information, build a mental model, and foresee the implications of sensory inputs.

Imagine you are in the cockpit of your glider, airborne and soaring cross-country to a destination. There is other air traffic, some visible, some heard on a busy radio. Weather conditions are changing ahead. You have to make judgments as to what you must do next, decide what priorities should apply.

Situational awareness actually involves three processes:

- The perception of what is happening. Level 1 – gather information.
- The understanding of what has been perceived. Level 2 – build mental model.
- The use of what is understood to think ahead. Level 3 – update the model, prioritise, decide, adapt.

This 3 level model is also described as perception, comprehension, projection.

So in this situation you might use targeted scan to visually search for an unseen glider you have heard on radio, make a radio call to alert others of your intentions, look at the approaching overdeveloping clouds, set off on track without delay to beat the incoming weather, and set your final glide display mode on your computer. Your mental model includes other traffic, weather, time, speed and distance.

You decide to head home, and then attune yourself to thinking about factors that might affect your final glide and safe arrival home. This means not just focusing on looking into the distance for your home airfield. It also requires building an awareness of other traffic and hazards. Poor situational awareness may arise from:

- task underload, boredom
- task overload, saturation
- uncertainty
- fatigue and stress
- frustration
- macho attitudes
- cognitive tunneling, fixation
- ambiguous information
- poor procedures

IMPROVING SITUATIONAL AWARENESS MIGHT INVOLVE DELIBERATE STRATEGIES

- Regular changes in cockpit tasks to keep up attention and arousal
- Active workload management, get tasks done early to reduce future workload
- Inflight planning and self-briefing
- Regular shifts from cruising scan to full scan or targeted scan
- Declutter the cockpit, turn off or stow unnecessary distractions
- Refresh and rehydrate before high workload phases of flight
- If in doubt about others' intentions, use radio to resolve ambiguity, advise intentions
- Avoid fixation and preoccupation with single issues
- Learn and use simplest modes in cockpit displays
- Use checklists and standard procedures, call actions and then checks out loud.

Many of these strategies for improving situational awareness are based upon effective workload management.

WORKLOAD MANAGEMENT

In any flight, there will be peaks and troughs in tasks and sensory inputs. There will be a limited time budget for you to manage all these inputs, make sense of them and carry out all tasks to achieve a safe flight outcome.

Effective workload management should be applied to avoid underload and overload. It sounds simple, doesn't it? It's harder in practice. Why? Why do good pilots get overwhelmed or fixated and 'lose the bubble'?

To understand this, it is important to realize how we are individually affected by the combination of physical workload and mental workload. A hot, tired pilot suffering acute discomfort from a full bladder, for example, will have less capacity for high mental workload.

Now consider the different types of workload - qualitative workload, the complexity of the work, versus quantitative workload, the amount of work. Consider also how these workloads change with different phases of flight or emergency.

Now think about the element of time, or duration. Consider how you might react to momentary workload, perhaps of very high magnitude, and then react to cumulative workload over a long flight. How high a workload can you sustain over a long period without overload?

Every pilot is different, has different levels and reactions to workload, and these may change day to day, or during a day.

Strategies that are commonly applied to reducing overload and managing workload include chunking and segmentation. Chunking may involve grouping pieces of information together to aid recall and understanding, or performing a planned sequence of tasks using a checklist. Segmentation may involve deliberately setting aside some tasks or data.

Let's think in more practical terms. How might we improve a pilot's workload management practices and situational awareness performance?

First, reflect post-flight on your experience. Experience is of limited use if you do not reflect on it. Post flight analysis and debriefs should include assessing when, why and how the pilot was no longer ahead of the glider, unaware, rushing or overloaded. Then the key question is, what might we do differently next time?

Second is to train for, and practice, efficient and effective cockpit procedures. Rather than meandering along, purposeful actions done at the right time make a better and safer pilot. Instructors and coaches can help here, cultivating a more

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disciplined, less hasty and less haphazard approach.

Third, develop a deliberate focus on foresight and anticipation, along with an awareness of your limited time budget. This mindset also helps you to adapt better to changing circumstances, to reprioritise tasks. In anticipation of high workload later, you might get low or medium priority tasks done early.

An effective fourth approach is to deliberately simplify, declutter and focus. Professional pilots set up a sterile cockpit at key flight phases. We can do similarly, for example, prior to joining circuit put away oxygen gear, water bottles and paper charts. Turn down audio vario volume, turn off or disregard navigation displays, check for other traffic, check radio settings, confirm glider is configured correctly for landing. This is a deliberate process to minimise distractions and focus on the right things at the right time.

INSTRUCTING AND TRAINING IMPLICATIONS

Instructors and coaches should be attuned to some training and airmanship implications. These include:

- Primacy of pre-flight preparation and pre-flight configuration of data-intensive equipment
- Use and learn the manuals!
- In early training, turning unnecessary devices off, introducing later
- No cameras during training flights
- Emphasise scanning techniques, verbalise lookout, verbalise occasional reference to other data
- Cultivating self-discipline and prioritisation of tasks
- Deliberate interventions when situational awareness degraded
- Reflective post flight debriefing, including situational awareness and workload management aspects, focussing on what the pilot should do differently next time!

I hope these insights are useful for pilots, coaches and instructors. ATSB Human Factors resources have been drawn upon in this article. I am grateful for their assistance. A future article will assess the challenges of In-Flight Distraction Devices (IFDDs). GA

ANNUAL FLIGHT REVIEWS

In the July/August 2014 edition of Gliding Australia magazine was an article titled 'Flight Reviews Minimise Mid-Air Surprise and its Costly Consequences'. At the foreword to this article I mentioned that GFA Operational Regulations (paragraph 3.3.5) requires all solo pilots to undergo an annual competency check, or Annual Flight Review (AFR). I explained that this meant a pilot must not fly a sailplane in-command if the pilot has not, within the period of 12 months immediately before the day of the proposed flight, satisfactorily completed an AFR.

I have since had a number of pilots ask me to clarify this requirement.

GFA adopts the same philosophy as CASA for how long an AFR remains valid. To this end, an AFR is valid to the end of the month in which it is done, 12 months later. For example, if you had your Annual Flight Review in January 2015, it will remain valid until the end of January 2016. However, if you complete a flight review any time in the three months before it is due, your original renewal month remains unchanged. This means your review remains valid, even if you do it early. For example, if your AFR is due to expire at the end of August 2015 but you undertake it in June 2015, your next AFR will be due at the end of August 2016.

A pilot can defer their review beyond the 12 month period but cannot exercise command privileges until they have completed their AFR.

Current guidance on the AFR is in Operations Advice Notice 02/12:

www.glidingaustralia.org/documents/all-documents/documents/operations-1/operations-advice-notices/481-oan-02-12-annual-flight-reviews

CHRISTOPHER THORPE
Executive Manager, Operations
emo@glidingaustralia.org

AIRWORTHINESS DIRECTIVE

AD No.: 2015-0116
24 June 2015

GROB sailplanes

Flight Controls – Speed Brake Control System – Inspection / Replacement
TWIN ASTIR, TWIN ASTIR TRAINER, GROB G 103 TWIN II and GROB G 103 A TWIN II ACRO sailplanes, all manufacturer serial numbers.

A report was received concerning a broken bell-crank, installed in the air brake control circuit approximately 1.4 m outside the wing root rib of a GROB G 103 Twin II sailplane. Preliminary investigation results revealed additional cases of cracks on the same part, installed in the air brake control systems of the early Twin II type design.

The same bell-cranks are also installed at the same location in the control systems of other models belonging to the same type design. See list of affected models under Applicability.

This condition, if not detected and corrected, could lead to failure of the air brake system, possibly resulting in reduced control of the sailplane.

Required as indicated, unless accomplished previously:

(1) Within 30 days after the effective date of this AD and, thereafter, during each annual inspection, check the locking forces of the air brake control unit and, if any discrepancy is found, before next flight, correct the locking forces in accordance with the instructions of Fiberglas-Technik TM-G08/SB-G08 and A/I-G08.

(2) Within 2 months after the effective date of this AD, inspect the bell crank installed in the air brake control circuit and, if any cracks are found, before next flight, replace the bell crank with a serviceable part in accordance with the instructions of Fiberglas-Technik TM-G08/SB-G08 and A/I-G08.

(3) Within 30 days after replacing a bell crank as required by paragraph (2) of this AD, report the inspection results of the removed bell crank to Fiberglas-Technik.

http://ad.easa.europa.eu.
ADs@easa.europa.eu.

SAFETY PAYS **Recognising that education is more important than documentation, the Safety Committe is offering a cash prize of $50 for the best safety story submitted to the magazine. On top of this, there is a $300 cash prize for the best story of the year.**

Sharing information of incidents and occurrences is a great way to raise awareness of safety issues so please help your fellow pilots learn from your experiences. Details of how to write and submit your stories are on the Safety home page of the GFA website. www.glidingaustralia.org/GFA-Ops/Safety

DON'T DO WHAT I DID

I damaged a glider, injured myself and put a student at risk, all of which could have been avoided had I known better.

IThe situation was that while coaching a student through the circuit and toward the latter part of final, the glider was overshooting significantly despite full airbrake. I took control with the intention of reducing the height and handing back to the student. Having assessed the decent rate as being insufficient, I felt it necessary to add some side slip. This proved to be effective so much so that the aircraft descended faster and further than I was expecting. While I was taking off the side slip it heavily impacted the ground in a slightly nose down, wing down attitude.

Conditions prevailing at the time were not difficult except for some manageable tail wind. This was my fourth flight on the day and my second (consecutive) flight with this student.

Other factors which may have influenced the outcome were:

- A distraction caused by an aircraft backtracking nearby on the starboard parallel main runway.
- Other activity to the port side of the runway I was using.
- A front cockpit load 50Kg heavier than the previous student.
- It was the first time I had used the controls with this heavier student. At no time did I sense that any of these factors were unmanageable.
- I had commenced the day fully rested, feeling well and alert.

Evidence provided by some reliable witnesses and the distance that the glider travelled along the ground despite a collapsed undercarriage, strongly supports a belief that the aircraft was not stalled prior to impact.

On the subject of what better, safer options were available, it is without a doubt that by maintaining full airbrake and lowering the nose and diving toward an aiming point further into the field, I could easily have managed a safe landing though perhaps denying the student the experience of being in control.

Using side slip on final is far from a rare occurrence. My peers who I have discussed this with, including my witnesses, have, without exception, said that they did not view my action as unusual and some have said that they do it.

However, I suspect that it is rare enough for most people not to appreciate the difference between the performance characteristics of the relatively new glass-fibre gliders and that of old world technology, especially that of rag and tube. Discussion with my peers has also revealed that with the former, the descent rate is markedly greater and uses much more height for full recovery. Add to this other factors such as those listed above, and it may be enough to tip the scales such that any buffer one may have may well be exhausted leaving the pilot with nothing up his/her sleeve. Sure, slamming away airbrakes could have helped arrest the descent rate but reaction time here is a factor particularly when close to the ground and descending upward to 20 feet/second.

The owners of the aircraft have had the matter thoroughly investigated and debated and have resolved to prohibit any side slip on final below 300 feet AGL unless at the discretion of the PIC, a side slip could prevent a more disastrous outcome. I endorse that resolution where these new technology high performance gliders are concerned regardless of who owns the aircraft.

OBSERVATIONS FROM THE EM/O

Deliberately sideslipping a glider is a technique sometimes employed by glider pilots to reduce the performance of the glider in order to lose height as a means of controlling the descent rate during the approach phase prior to landing. While sideslipping is required pilot training, it is employed less as a landing approach technique now than it was in the past as most modern gliders have adequate glide path control (i.e. effective airbrakes) removing the need to use other techniques in most circumstances. The Flight manual for the aircraft in this story states that: "The very effective Schempp-Hirth dive brakes make a short landing possible. So a slip is not necessary as a landing technique". Pilots who have been trained for and are experienced with sideslipping should first explore the sideslipping characteristics of gliders they fly in safe circumstances before using it as a landing approach control technique. When sideslipping a heavy glider pilots should also commence the recovery at a height sufficient to overcome the effect of inertia before the ground intervenes.

CHRISTOPHER THORPE

ACCIDENTS & INCIDENTS APRIL / MAY 2015

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

3/04/2015 WAGA
GROUND OPERATIONS AMT-200

Under investigation. As the pilot turned into wind for take-off, the glider's port wingtip struck a windsock.

3/04/2015 WAGA
RUNWAY EVENTS AUSTER AIRCRAFT LTD J5G/A2

With the intention of taxying to the fuel bowser, the tow plane pilot made a radio broadcast of his intentions and entered the operational runway. Shortly after lining up and commencing to take-off the tow pilot noticed the radio master switch was in the off position and turned it on. The tow pilot then heard a radio call from a glider in flight and observed it lining up on final approach to the operational runway. The tow pilot aborted the take-off after briefly becoming airborne and vacated the runway. The glider landed normally and well clear of the tow plane. This incident highlights the importance of completing cockpit checks, even when only taxying around the aerodrome. Since good radio discipline is the key to preventing runway incursions at uncontrolled airports, it is important to ensure the radio is switched on and operating before starting to taxi.

5/04/2015 WAGA
SYSTEMS ASW 27-18

At 300 ft AGL during an aerotow launch of this fully ballasted glider the towing rings pulled out of the release. The glider pilot completed a 135

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The latest incident and accident reports. The complete list can be seen at www.glidingaustralia.org/GFA-Ops/accidents-incidents.html

degree turn and landed safely onto the receiprocal runway. Initial investigation indicates the rope released because the Tost rings were worn. Tost advises ring pairs that deviate from the standard dimensions must be replaced.

5/04/2015 WAGA
MISCELLANEOUS KR-03A PUCHATEK

Just prior to launch the command pilot in the glider noticed the aerotow rope had been connected to the towplane in reverse fashion; i.e. with the weak link at the glider end. The command pilot stopped the launch and had the tow rope re-attached correctly. The tow plane had just returned to the flight line from refuelling and the ground crew had not paid sufficient attention to the task of re-attaching the rope. A weak link must be fitted to the tug end of the rope so that if it snags on landing it will not subsequently pull the tug into the ground or cause damage to the tail.

5/04/2015 VSA
SYSTEMS LS 4-A

During launch the pilot noticed the airspeed indicator to be flickering wildly +/- 20 knots. The pilot remained on tow and released at a safe height. The ASI continued to provide erroneous readings, so the pilot aborted the flight and landed without incident. Post- flight inspection revealed water had entered the pilot system - the aircraft had been parked outside overnight with the pitot and static vents uncovered. An instrument function check during the Daily Inspection did not identify the problem. This incident highlights the benefit of sealing the pitot and static ports against water ingress when the aircraft is parked outside (Note: use tape of a contrasting colour to the fuselage).

12/04/2015 NSWGA
AIRCRAFT CONTROL DG-1000S

The flight was a standard training sequence and was the second consecutive sortie with the same aircrew. The command pilot was an experienced instructor who was current and familiar on type. The aircraft was established high on final approach, and the command pilot opted to use side-slip in conjunction with the airbrakes to increase the rate of descent to prevent landing long. The command pilot did not recognise the high rate of descent and left the recovery from the side-slip late and too close to the ground. Just as the pilot levelled the wings the aircraft struck the ground heavily and the undercarriage collapsed. The occupants suffered minor injury and the aircraft was substantially damaged. Both aircrew were admitted to hospital for treatment and observation and later released. Post-accident investigation confirmed that airbrakes were deployed during the landing, and marks on the airfield and witness observations confirmed that yaw and bank were present on impact.
Deliberately sideslipping a glider is a technique sometimes employed by glider pilots to reduce the performance of the glider in order to lose height as a means of controlling the descent rate during the approach phase prior to landing. While sideslipping is required pilot training, it is employed less as a landing approach technique now than it was in the past as most modern gliders have adequate glide path control (i.e. effective airbrakes) removing the need to use other techniques in most circumstances. The Flight manual for the DG 1000 states "The very effective Schempp-Hirth dive brakes make a short landing possible. So a slip is not necessary as a landing technique". Pilots who have been trained for and are experienced with sideslipping should first explore the sideslipping characteristics of gliders they fly in safe circumstances before using it as a landing approach control technique. When sideslipping a heavy glider pilots should commence the recovery at a height sufficient to overcome the effect of inertia before the ground intervenes.

12/04/2015 VSA
AIRFRAMEDG-1000S

During flight the Trim Ballast cover fell from the fin and was lost. After landing and during the next pre-boarding walk-around inspection, it was noticed that the trim ballast weights were half-way out and unsecured. It was determined that the Perspex cover for the trim ballast box had not been properly locked and fresh tape had not been applied as required by the Aircraft Flight Manual. Investigation revealed that when the two smaller 1.2 KG weights at the top are added it becomes more difficult to lock the cover in place. The cover can be securely attached by ensuring the Perspex cover is properly aligned, that the locking tool is pressed firmly in place to allow the visco-elastic rubber rings around the light sensors to compress, and to then push the locking mechanism upward until it is fully engaged. Fresh tape should always be used to cover the perimeter of the cover and the pilot must confirm correct operation to the indicator lights in the cockpit.

13/04/2015 QSA
MISCELLANEOUS ASK 21MI

During aerotow launch and when at a height of about 700 ft AGL the rings disconnected from the nose release without activation of the release knob. The incident occurred as the rope became taut following a small bow developing. The aircraft had experienced similar disconnections on the ground that were attributed to incorrect insertion into the release. Investigation revealed a bolt attaching the pulley system to the Tost lever was too tight causing binding just prior to the fully closed position. Loosening the nut slightly allowed normal operation. The matter has been referred to the airworthiness department for action.

14/04/2015 SAGA
GROUND OPERATIONS ASK 21MI

While towing the glider back to the tie-down area at end of days flying activity, the rudder came into contact with the rear of the towing vehicle during a turn causing minor damage. The vehicle had previoulsy been identified as unsuitable for towing this glider because its tow bar was too short. Driver fatigue was assessed as a contributing factor in deciding to use this vehicle.

18/04/2015 VSA
AIRCRAFT CONTROL

Twin AstirDuring the landing flare and while at a height of about three feet above the ground the pilot under training pushed the stick hard forward resulting in the aircraft flying into the ground heavily on the nose and main wheel. The aircraft suffered minor damage, limited to broken undercarriage doors, some minor gelcoat cracking near the undercarriage, and scratches to the lower front fuselage. While the Instructor had adopted a defensive posture, the trainee pilot's actions occurred too quickly for the Instructor to react. The pilot under training could offer no explanation for his reactions. He had only recently came back to gliding after a long hiatus and, while his upper air work was good, he was finding it difficult to achieve the level of skill required for the landing. Unfortunately, motor skills that are not practiced regularly will deteriorate as we age and can be difficult to regain in later life. The pilot has indicated he may cease training but will continue to fly with competent pilots.

26/04/2015 QSA
LOW CIRCUIT ARCUS M

The pilot conducted a 'low-level finish' manoeuvre below the minimum safe height of 50ft. The pilot was counselled by his CFI.

7/05/2015 SAGA
AIRCRAFT CONTROL DG-500 ELAN ORION

The pilot flying was undertaking a check flight behind a Pawnee tow plane. The launch progressed normally and the glider released from tow at about 2,000ft AGL. Immediately following release the glider's descent rate increased dramatically and the command pilot (Instructor) suggested the handling pilot divert towards cloud where it was expected to find lift or reduced sink. Despite the diversion the sink rate remained high and at a height of about 1500ft AGL and some 2 kilometres from the airfield the decision was made to return and land. The glider continued to experience a high rate of sink and the pilot flying planned for a downwind landing on the operational runway. Due to the high descent rate it became obvious to the command pilot that the glider would not make the airfield. At 500ft AGL the command pilot took control and positioned for an outlanding. The command pilot did not recall a post- release check being completed and the undercarriage was still down and locked. The aircraft landed heavily in a paddock resulting is substantial damage to the lower front fuselage. The command pilot asserted the airbrakes were closed and locked and that the sink rate was caused by meteorological events, possibly wave related. Review of the flight log reveals the rate of descent commenced immediately post-release following a normal launch profile and adverse meteorological conditions could not be confirmed. The handling pilot has a history of poor decision making, and an alternate possibility for the high sink rate was that he deployed the airbrakes rather than raising the undercarriage post release, as the airbrake and undercarriage levers are in close proximity. The command pilot may not have noticed this because a post-release check was not undertaken, and he may have been convinced that the sink rate was weather related. Towards the latter stages of the flight the command pilot's concentration and focus was on landing the glider safely, and use of the airbrakes may not have been considered due to the high descent rate.

16/05/2015 QSA
AIRCRAFT SEPARATION ASK 21

Under Investigation: A glider undertaking a training flight with a pre-solo student entered circuit around the same time as a tow plane. The tow plane pilot gave a radio call advising he had the glider sighted and would follow, and then just prior to the base turn the tow pilot informed the glider pilot that he would turn inside and land first. The glider had just entered the base leg of its circuit when the tow pilot gave a further radio call that he was passing beneath the glider and 100ft lower. Simultaneously the command pilot in the glider saw the tow plane for the first time in close proximity beneath him. Both aircraft landed uneventfully.

16/05/2015 SAGA
AIRFRAME MINI-NIMBUS B

Following a successful landing, the pilot inadvertently activated the canopy jettison lever while opening the mini nimbus canopy that resulted in damage to the forward hinge. Investigation identified the pilot experienced a lapse in concentration and used the canopy release technique relevant to the Club's ASK21, which requires the pilot to pull back both levers to open the canopy. In the ASK 21 the canopy opens upwards, whereas the mini nimbus canopy opens to the side. This incident is a good example of recency and primacy bias effects.

17/05/2015
NSWGA WILDLIFE ASW 20F

The pilot identified a kangaroo as an obstacle during late finals. After assessing his options and arresting his rate of descent, the pilot diverted to a cross-strip where he landed safely. Kangaroos have become an increasing hazard at this airfield due to their large numbers in adjacent farmland and scrub. The club has taken measures to clear land and patrol the perimeters to discourage Kangaroos from accessing the airfield.

23/05/2015 SAGA
MISCELLANEOUS ASK 21

During a winch launch and at about 800ft AGL the 'weak link' broke. The pilot completed his launch failure checks, and completed a safe circuit and landing. Inspection of the cable and trace identified a 'weak link' of a lower strength than recommended for the glider was used. The error occurred when an inexperienced member of the launch crew did not fully understand how the 'weak link' system was operated. This incident was dealt with under the club's SMS and improved training practices have been adopted to ensure launch crew are aware and understand how the 'weak links' are fitted.

23/05/2015 QSA
FUEL RELATED CESSNA 150E

During the initial climb under aerotow and at about 300ft AGL, the tow plane momentarily lost power and the glider pilot, noticing something amiss, released. Both aircraft completed modified circuits with no further incident. The tow pilot, who had only recently obtained his towing endorsement, had conducted the tow plane's Daily Inspection in the morning and noted that the tanks were not full - about 65 litres of fuel was present. The aircraft was not refuelled as the pilot assessed that, due to the poor weather conditions, this fuel quantity would be sufficient for the small operation that had been planned for the day. However, as the morning progressed more gliders lined up on the grid and the pilot may have felt under pressure to continue to launch the gliders until refuelling became inevitable. Immediately prior to the final launch the tow pilot, who had been estimating his fuel burn rate, advised the ground crew that he would need to refuel after this flight. Unfortunately, the tow pilot had miscalculated his fuel burn rate and the aircraft had insufficient fuel on board. During launch the low fuel rate resulted in fuel flow being interrupted causing the engine to lose power until the nose was lowered, at which time fuel flow was restored. The glider pilot noticed something was amiss, released from tow and landed safely off a modified circuit. The tow pilot completed a 180 degree turn under power and landed on the reciprocal runway. The Club's tugmaster has raised awareness among the tow pilots of the need for proper fuel management, including fuel burn rates, and the tow pilot concerned will undergo further training. This is how many fuel related accidents develop. Through a combination of circumstances and a few non-optimal decisions, otherwise prudent pilots put themselves in harm's way. Tow pilots must remain acutely aware of the high rate of fuel consumption during aerotowing with the engine operating at full or very high power settings during the climb. A pilot used to a moderate fuel consumption at cruise settings may need some time to become accustomed to this. Pilots should keep track of how many tows they have done and refuel early rather than late. Trying to run the tank down as dry as you can before refuelling is the very opposite of good airmanship. GFA recommends pilots maintain a 30 minute fuel reserve.

23/05/2015 SAGA
AIRCRAFT CONTROL ASTIR CS 77

Under Investigation. During winch launch at approximately 800', the airbrakes opened. Pilot lowered the aircraft's nose, pulled the release, closed the airbrakes, and conducted a circuit for an uneventful landing.

23/05/2015 WAGA
FUEL RELATED PIPER PA25-235

During an aerotow launch and at a height of about 1,000ft AGL, the tow plane engine stopped. The glider released and conducted an uneventful landing on the duty runway. The tow pilot attempted an engine restart without success and made a forced landing into a paddock without further incident. Investigation revealed the engine stopped due to fuel starvation when the pilot forgot to change tanks. The elderly pilot had a lapse in judgement and has signalled his intention to retire from power flying.

24/05/2015 QSA
AIRCRAFT CONTROL DUO DISCUS

During the take-off roll the glider's airbrakes deployed. The experienced command pilot locked the airbrakes and the flight continued without further incident. Investigation determined that the command pilot did not check the airbrakes were closed and locked. When conducting the pre-flight checklist it is important that pilots physically determine the airbrakes are locked by cycling the controls and ensuring the over-centre lock has engaged.

24/05/2015 VSA
AIRCRAFT CONTROL TWIN ASTIR

The aircraft was undergoing an evaluation flight following repairs consequent of an earlier heavy landing. During flight a vibration was felt through the control column, which remained constant throughout the speed range. A limited in-flight visual check of the wings and tailplane did not identify any issues. Apart from the vibration, the aircraft handled well and an uneventful landing weas made. Post flight inspection determined the the control surfaces and sealing tapes were satisfactory, and control circuit free play was within tolerances. During inspection dried bird droppings were found on the starboard wing, midway along and about 15cms from the aileron. It was determined that the bird droppings created a turbulent airflow over part of the aileron; thereby transmitting the vibration through the aileron circuit to the control column. The wing surface was cleaned and another flight was conducted without incident. This incident highlights how foreign objects on wings, no matter how insignificant they may seem, can negatively affect the flight characteristics of an aircraft.

24/05/2015 VSA
POWERPLANT/PROPULSION
PIPER PA25-260

At about 500ft AGL with a glider on tow, the tow plane's engine began to run roughly. The tow pilot waved the glider off and the glider pilot responded promptly. The tow pilot executed a 180 degree left-hand turn and landed on the operational runway on a reciprocal heading. The engine continued to develop power and the pilot was able to taxi clear of the runways. The gliding Instructor took control from the student flying the glider and also turned left to position for a landing on the cross runway, completing a safe landing without infringing the operational runway. The tow pilot advised he had experienced difficulty starting the engine earlier in the day but that the engine had since worked satisfactorily. He found no visible evidence of a problem and started the aircraft without difficulty. He made short test flight and experienced no further problems. A subsequent check by a LAME determined one spark plug had fouled, which probably led to the rough running engine. ***GA***

GFA CLUB LIST

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

716 FLIGHT GLIDING CLUB
JOperations weekends, Public Holidays and school holidays. Club aircraft 1 two seater. Tel# 08 9571 7800

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

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

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 Junior. Approx 20 private gliders. Tel 03 5436 1518 or 0459 485 281. www.bendigogliding.org.au

BEVERLEY SOARING SOCIETY
Beverley Airfield, Bremner Rd Beverley WA, Tel 08 96460320 Clubhouse, Bunkhouse, Fully equipped Kitchen and Briefing room.
Members Caravan Park with Ablution block.Large workshop. Operations Friday to Sunday and by arrangement on Public Holidays. 3 Pawnee tow planes, 8 club aircraft including 4 two seaters Private fleet of 40 single seat gliders.

www.beverley-soaring.org.au

BOONAH GLIDING CLUB
is in South-East Queensland about 25 minutes south of Ipswich. Contact the Boonah Gliding Club via Email infomail@boonahgliding.com.au for any queries 7 days a week. If you wish to speak to someone about bookings, call our mobile 0407 770 213. www.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 (02) 66847627. Operations are 4 days a week, self launch only. The club owns 1 Jabiru Falke and there are 4 private motorgliders - Falke 2000, 2 Dimonas and Grob 109A (some available for hire). Facilities include: Clubhouse with kitchen and bathroom, 2 hangars, with only basic camping on grounds. www.byrongliding.com

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

www.glidingcaboolture.org.au

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

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

CENTRAL QUEENSLAND GLIDING CLUB
Lot2, Gliding Club Rd, Dixalea.
90 km SSW of Rockhampton
Tel 0488 781821 Winch operations
Weekends and weekdays by arrangement. Club fleet: Grob103 twin, Astir CS, 5 private gliders, Hangarage Clubhouse, bunks, lounge-briefing room, kitchen, showers, 12V solar power, 240V gen set Club owns airfield 06/24, 1700m, grass/gravel www.cqgliding.org.au

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. Flying by arrangement.

CUDGEGONG SOARING P/L
Gulgong - (199 Stubbo Road, North from Gulgong. Leave on Medley St., road becomes "Barney Reef Road" after level crossing. At 7km, turn right onto Stubbo Rd. Airfield 2km on left). Tel 0418 286 033. Winch operations weekends and by arrangement. All aircraft are privately owned. The club owns the airfield, has a clubhouse, caravan Park, camp sites, workshop and hangars.

DARLING DOWNS SOARING CLUB
McCaffrey Field (Warrego Hwy, at 8km W of Jondaryan, turn S down Mason Rd), Tel 0409 807 826. Aerotow operations weekends, public Holidays and by arrangement. There are 26 private gliders. Facilities include: Bar, Kitchen, Cluhouse, Bunkhouse, caravan park, camp sites, BBQ area, Showers, Wi-Fi, Lounge, Workshop, Hangarage, Club own the airfield. 100 members. www.ddsc.org.au

GEELONG GLIDING CLUB
Shared facilities with VMFG and Beaufort GC at Bacchus Marsh Airfield. Tel 0409 212 527. Operations by aero tow weekends and public Holidays and by arrangement. Monthly winching also available. 3 Tugs, 6 club gliders including 2 x two seaters, 16 private gliders,

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

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

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

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

www.grampianssoaringclub.com

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 02 6574 4556. Aerotow operations weekends, Public Holidays and one friday/month. Club owns 2 two seaters and 2 singles and the private fleet includes 16 gliders. Facilities: Clubhouse, bunkhouse, caravan park, camp sites, workshop, club owns airfield. www.hvgc.com.au

KINGAROY 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 to be completed by late 2013. 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 workship, 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. 34 private gliders.

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.
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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

https://sites.google.com/site/glidingwesternaustralia/home

MOUNT BEAUTY GLIDING CLUB
Mount Beauty Airfield operations weekends and public holidays and by arrangement. Winch launching with a two seater and single seat fleet. 30 members with a range of private gliders and motorgliders. Tel 0417 565 514. www.mtbeauty.com/gliding

MOURA GLIDING CLUB
Location: On Moura-Theodore Rd , 5 mins from Moura, Tel 07 4997 1430. 3 members, operations Sunday by winch. Facilities include Club House, hangar, 1 x two seater.

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MURRAY BRIDGE GLIDING CLUB
Pallamana (7km from Murray Bridge on Palmer Rd). Tel 0403 318 277 www.murraybridgegc.com Operations are self launching and by arrangement. 1 club 2 seater motorised and 3 private motorgliders. Club House, Hangarage. www.murraybridgegc.com

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

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

NARROMINE GLIDING CLUB
The club owns and operates Twin Astir, Duo Discus, LS4, Libelle, Discus B. Tugs: club owned Pawnee 260 and private owned C-180.14 private owned gliders. Facilities include club house with licenced bar and kitchen. Private owned tourist park on site with En-suite rooms,airconditioning, kitchen, recreation room, laundry. Walking distance from town. The club operates full time November to April and Fri, Sat, Sun, Mon for the rest of the year. The club welcomes all visitors.
www.narromineglidingclub.com.au

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

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

NORTH QUEENSLAND SOARING CENTRE
Corinda Avenue, Columbia, Charters Towers, Tel 0428 797 735, Operations by winch Sundays and public Holidays by arrangement. 5 Private gliders. www.nqsoaring.org.au

RAAF 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.

RENMARK GC - RIVERLAND SPORT AVIATION
Renmark airfield, Turn off 6km on Renmark to Berri Rd, Tel 0417 890 215. Operations weekends, public Holidays and by arrangement. Two club aircraft, 1 private, Bar, canteen, Club house, bunkhouse, workshop, hangar sites. www.sportaviation.riverland.net.au. Aerotow operations.

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 Sydney Metro Airport Camden, a licensed General Aviation airport, hosting operations in the commercial, private, sports and recreational aviation areas. It has a reputation as Australia's leading sports/recreational aviation airport. Hangar sites available, GFA approved workshop on the aerodrome. Aerotow Piper Pawnee (CPU, FBI, SMS) Flying Friday, Saturday, Sunday, Monday and Wednesday. P.O. Box 132, Camden, NSW 2570
0425 281 450 or airfield on 0402 055 093
www.gliding.com.au

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

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

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

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

SUNRAYSIA GLIDING CLUB
Winch launching Weekends and public Holidays. 3 km's West of Koorlong, Mildura. Tel 03 5025 7335. 22 members, 2 two seat and 2 single seat aircraft, 5 other private aircraft. Canteen Clubhouse, camp sites. www.sunraysiaglidingclub.org.au

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

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

SCOUT ASSN OF AUSTRALIA NSW GLIDING WING
Operates from the Camden airfield. See Sydney gliding for location details. Tel 02 9773 5648. Operations with self launch motor glider and 1 two seater glider. Weekends and other sites by arrangement. Membership restricted to youth scout Assn members.

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
www.glidingaustralia.org

For members convenience, Classified Ads can be purchased through the GFA shop at www.glidingaustralia.org. Go to GFA Shop then select the category 'Classifieds'. The cost will be determined by the number of words. Please email the ad text and any photos to returns@glidingaustralia.org. Your ad will be placed on the GFA website for a month from the date of payment. Ads that are financial at magazine deadline (10th of every second month) will appear in the GA Magazine. For any enquiries please contact the GFA office on 03 9359 1613.

GLIDERS FOR SALE
SINGLE SEAT

Mosquito B VH-FQR
Winglets, refinished wings, good panel, tow out gear and enclosed metal trailer. Only 1250 launches from new. Form 2 until 2016. $28750. **Daryl 0447 574 700.** Full details at http://tinyurl.com/puxvd29

Nimbus 3 VH-XQE 22.9m
or 25.5m config, 2129 hrs, best L/d 1:60 at 52 knts,refinished in Ferro gelcoat – exc. condition, rudder extension, fin tank, LXNAV V7 vario/FG computer with Bluetooth adaptor, Nano flight recorder, Borgelt B40 vario back-up, Microair M-760 radio with boom mike, USB power supply,MH oxy, turbulators, full competition sealing, parachute, tow out gear, wing covers. Trailer, fibreglass, clamshell type, single axle, roll-out fittings, in exc. condition. Current Form 2 provided. Located in WA but will deliver to anywhere in Australia. Price: $59,000 neg. Contact Folker email fkryk015@bigpond.com **M 0438 888 505**

TWO SEAT
VH-VHI, Grob 103 Acro II
(not a Twin Astir). Fresh Form 2. X-Com radio front and rear, boom mics.Tasman vario and all flight instruments. Excellent condition inside and out. 4,600 hours, 9980 launches. Enclosed registered trailer. Reluctant sale due to fleet upgrade. **Bob 0427 977 127 or Mike 02 4655 7079.**

Duo DiscusT VH-GKX 1750hrs Engine 55hrs good instruments, Cambridge 302/303,Flarm in excellent condition. Fully enclosed trailer with tow out gear $165k includes GST available to test fly at Boonah QLD. Ph **Barry 0407 770 213 or Brian 0427 320 912**

VH-GCI ASK21 560hrs 800 landings Only flown 90HRS since refinish in 2001. Dittel FSG2T radio, Cambridge Vario Full set of Jaxida covers (aircraft is always hangered) Factory spin kit. Aircraft in great condition. $110,000. Contact **Brad Edwards Ph:0427 202 535** Email: brad@edwardsaviation.com.au

MOTOR GLIDERS - POWERED AIRCRAFT - TUG

Alpin DM2 VH-GVW, two seat motor glider, 50hp Rotax 503, short T/O and good climb.All paper work up to date, sold with new form 2. Very low hrs , good condition. 32-1 solo, 28-1 at MTOW. $39,900.00 NSW
PH 0418 253 466

continued

VH-OZT Taifun 17E II Touring Motorglider. Airframe TT 1660 hrs. Engine TT 260 hrs. Flaps -8 to +30. Retractable tricycle undercarriage, constant speed prop just serviced. Comprehensive panel. Roomy cockpit and luggage area, 226 kg payload. Glide 32:1, cruise 100 kts. Overall condition very good. Price $90000. **John Callahan 0408 529 838**

Super Ximango VH-XNO 100 hp Rotax 912. 17 metres wings folds easily to 10 metres. airframe:500hrs engine:400hrs Prop.SMOH:50 hrs superb for flying the Morning Glory. Fresh Form 2 inc. comprehensive 15 yrly by Nigel Arnot. Icom radio, LX Zeus flight computer, transponder, Powerflarm. Magic aircraft to fly. Instruction from ab initio/hangarage available at Redcliffe, north Brisbane. $135,000.00 + GST. or syndication. http://glidingredcliffe.com.au/html/gallery.html contact Peter Stephenson GJS2@internode.on.net **0403 151 602**

INSTRUMENTS AND EQUIPMENT

Glider storage hoist will fit single seat glider. chain block for lifting on wheels. $1250.00 **ph 0418 253 466 or 0429 301 289**