



Soaring AUSTRALIA

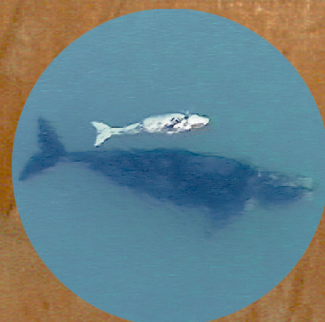
January 2004



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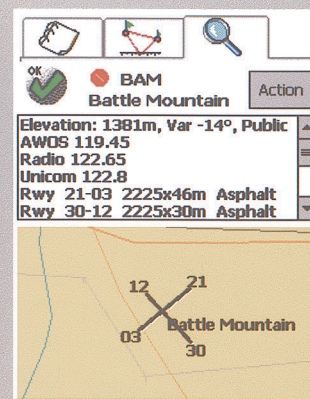
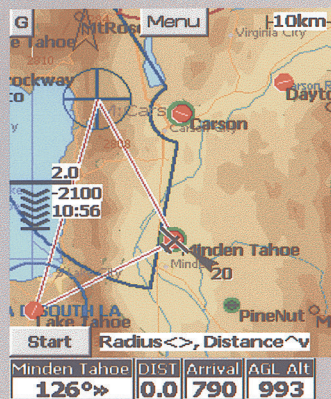
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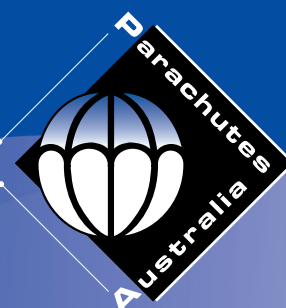
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Soaring AUSTRALIA



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Photo: Godfrey Wenness

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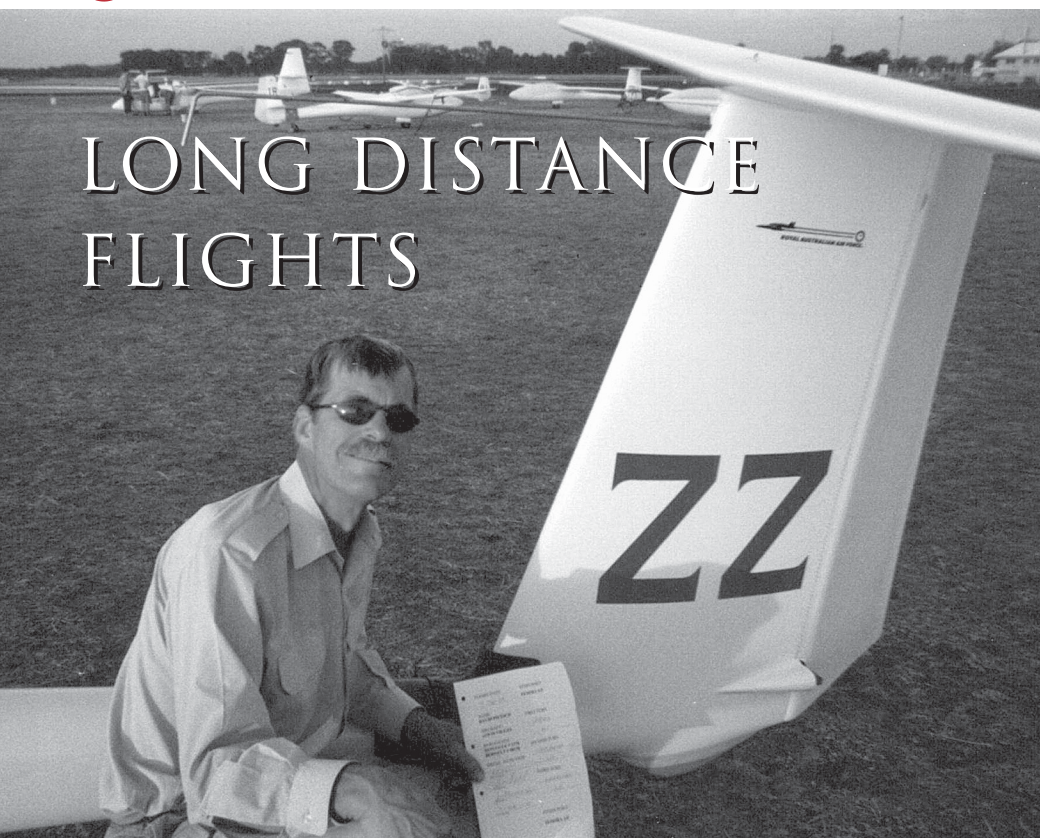
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Articles, advertisements	skysail@ozemail.com.au	Soaring Australia only content and other content



David pictured after his long flight

Firstly, I make no claims about being the expert in long distance flights as there are other more competent exponents than I – but I do claim to like it. Of the 30-odd 500km-plus flights that I have made over the years, about 15 have been attempts at 1,000km with about 10 of them having distinct possibilities but in the end simply were not successful. Some were close, being over 900km whilst others were a little less, some tough, some easier.

They were all fun.

My general philosophy has been to get home rather than push on with an increasing likelihood of outlanding, often using multiple turnpoints in order to use the whole day. This is perhaps not in accordance with the purist long distance pilot, but without a dedicated crew and relying on the good graces of friends, as well as often wanting to be ready for 'another go' tomorrow, discretion usually won over valour.

My first really long distance attempt was in company with Andy Pybus and Brad Edwards who went on to complete 1,000km, with me chickening out after briefly falling into a hole on the second leg. Having no crew and having to drive 400km next day to pack up our house in order to move to the United Kingdom for a year was a bit of incentive to get home! The reason I mention this is that I think one of the better articles on 1,000km flights in Australia was subsequently written by Andy in the May 1988 issue of Australian Gliding. Andy provides

some very good advice and I recommend the article to those contemplating long flights, particularly those pilots flying in NSW.

Now, please allow me to comment on three ingredients for success for long flights, including the FAI 1,000km Diploma. Equipment, weather and flight preparation

Firstly – equipment. Any good 15m span glider (LS4 and better?) should be capable of flying the distance given a good day with a long thermal period. The glider should be well prepared with no niggling problems that will either slow down your pre-flight preparation or distract you during the flight. Tapes should be secure, water ballast watertight, cockpit comfortable and quiet, etc, etc.

I have never felt the need for extensive instrumentation – provided that what I have is a well compensated variometer, with audio. I find a GPS very helpful for keeping track of progress and a data logger extremely useful for post-flight analysis. I use a Borgelt B10 with a Garmin 89 feeding a Joey logger. This set-up does not provide an IGC data logger capability. Having to use cameras, with their reduced tasking flexibility and increased pre-flight preparation time, has its limitations but is manageable. An IGC approved logger would certainly be a useful improvement but this is not essential if adequate allowances for cameras are made.

I cannot really comment on any advantage that more advanced instrumentation might be able to provide but from my cur-

David Pietsch

WHEN FRED FOORD ASKED IF I WOULD WRITE AN ARTICLE IN RESPONSE TO BEING AWARDED THE WALLY WOODS' TROPHY, RATHER THAN JUST A THERMAL BY THERMAL DESCRIPTION WHICH CAN BE A BUT TURGID, I THOUGHT THAT I MIGHT TAKE THE OPPORTUNITY TO SHARE SOME THOUGHTS AND IDEAS ON LONG DISTANCE FLYING, BEFORE DESCRIBING THE FLIGHT.

sory knowledge of these systems, suggest that it is important that the system management requirements don't exceed their benefit. I am of the view that looking outside to see what is happening ahead is more valuable than a lot of electronically-generated data presented inside the cockpit. Others may have different views.

I carry oxygen and a cannula which has proven useful on a number of big days. For flight when regularly cruising above 8,000ft, oxygen will not only improve cerebral performance, but will reduce fatigue and keep you fresher for the next day.

Secondly – weather. We are indeed blessed in this country with the weather. At most regular inland sites I suspect that there are at least two or three days most summers that will support a 1,000km flight in a 15m span machine. The trick is to pick the day and select the appropriate route.

Access to the internet is really useful to track the weather and the forecasts. I have found the four-day forecast and satellite images on the Bureau of Meteorology site very useful for predicting likely good days. Then combining local knowledge, the synoptic forecast for the day and the pilot briefing weather forecast on the Air Services Australia site a reasonable estimate of the day

can be made. Searching the weather links on the GFA website will reveal quite a wealth of weather data.

Temperature traces are a bit more problematic since most weather stations fly their balloons too late for early starts. Tracking the most recent temp traces of stations to upwind of your location can be useful since this may be the air mass that you will be flying in during the day.

When flying from Temora I have started to keep track of the Cobar trace from the day before. If a morning temp trace can be flown at your airfield all the better since it will give you a good idea of the start of convection and what to expect early in the flight.

The shape of the low level trace will give you an idea of what to expect. For example, if one is going to be flying initially under an early inversion then beware the thermal 'pause' as the inversion breaks. Struggling to stay airborne at around 1,000ft after an hour's flying in the low band, with later starters already at 7,000ft blasting overhead, can be character building! For the best weather during the summer, I have always been a fan of the day before the 'cool change', particularly if the weather has been on a steadily improving trend.

Finally – flight preparation. Preparation is an ongoing affair. Reading about other people's flights, post-flight analysis of your own flights, picking up ideas whilst hangar flying at the bar have all been useful ways of expanding my knowledge. Learning as much as I can about the weather by both reading and observation has been a help. Past issues of Australian Gliding are a surprisingly rich source of information. (My Australian Gliding collection goes back to 1964!)

Notwithstanding, I certainly do not consider myself an expert in weather prediction. I use the StrePla flight planning program to 'what-if' a range of routes as well as having a bunch of pre-prepared routes ready to go. Last winter I developed a 'howgosit' chart to carry in the cockpit, which makes it easier to speculate on flight potential by comparing time with distance to go against expected average speed, including an allowance for slowing down towards the end of the day. An occasional plot on the chart is all that is needed to see how one is going, with trends being easy to see.

However, the best preparation is flying – not flying in just the middle of the day, but early starts and late finishes. Tip-toeing away in the early part of the day and whispering home late in the evening is not only satisfying, but is excellent preparation for those big flights when the days are strong and long.

The early starts are more than just flying practise. The process of checking the weather, preparing the glider, having breakfast, selecting the task, co-opting an official observer, scaring up a tug pilot, getting the glider to the launch point, ensuring a wing runner, etc, all takes time.

In order to be ready to start the take-off roll at 10:30, I need to get up at about 6:30. I find early preparation can be a bit lonely since often there is no one else about, but it is a beautiful part of the day and preparation can be completed with little distraction.

Having a regular sequence of preparation, using checklists as necessary, is helpful. Being ready with time to spare is excellent for peace of mind and good decision-making. Regularly practicing the pre-flight process for an early start will ensure that when the big day is 'on' there will be every chance of being ready in the right frame of mind.

Regarding wing loading, again the early part of the day is the driver. With practice, you will get to know your sailplane and how much weight it can carry early in the flight. For me, it is really a no-brainer since my ASW20 has a maximum loading of around 43kg/m² and I find this weight fine. (Another 100kg of water in the middle of the day would be nice, however!) More modern sailplanes carry weight well, so Standard Class sailplanes such as the Discus seem okay up to about 46 and I would guess that the latest 15m flapped machines might be okay up near 50. Experimentation is the key.

I have made a bit of a fuss of the early part of the day. If we want to fly long distances flying in the early part of the day can add zero kilometres or so which doesn't seem a lot, but at the end of the day can be very useful. Also, since many pilots wait for the day to get better, waiting for a tow is kept to a minimum.

Picking the earliest time to launch is a bit of an art, something that I certainly

haven't perfected. With good temp trace information it is easier. Without a local temp trace, local knowledge is useful along with watching the temperature steadily increase. Indications of the breaking of the surface inversion can be the slight pause in temperature rise as the additional mass of air needs to be heated, the general stirring of the air mass and the initiation of the first little willy-willys.

For a long flight I like to take-off around 10:30 if I think there is a reasonable possibility of sustaining soaring flight. Having briefed the tug pilot accordingly I take a tow to 3,200ft and release just short of the departure point on the first leg heading. (Mustn't forget to make a barograph notch immediately after release, particularly if one releases in lift.) On tow I am particularly interested in the height of turbulence. If it turns smooth before 2,000ft then I know things are likely to be tough but if it is above 2,500ft then I breathe easier.

If the turbulence has been promising I will head off on track aiming to use every little bubble of lift in order to stay at the top of the convection layer which will be slowly rising. If the first glide is smooth and there is no activity by the time I have sunk to 1,800-2,000ft I will usually turn around and head back, often to scrape around the airfield until things improve or I have to land.

Okay, so how did I put some of the above into practice?

On 7 January last year, Col Vasarotti in his Discus A, and myself in my ASW20 declared Temora, Corowa A/F, Tottenham A/F, Narrandera A/F, Temora. 1011.2km.

The reason for the task selection was that Col wanted to go to Corowa first and then we selected Tottenham as the second turn to stay away from the predicted thunderstorm area to the east (bounded by Moree/Coonamble/Condobolin/West

Omarama

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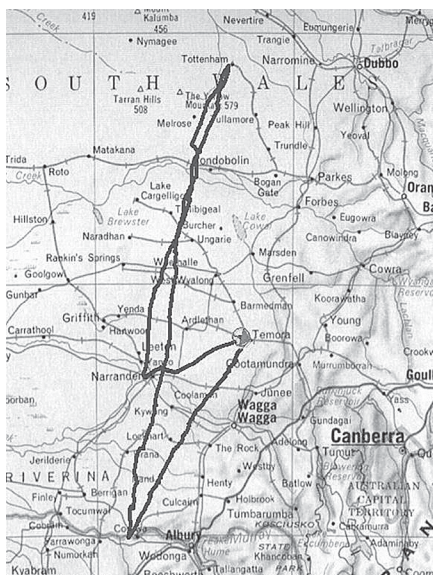
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Flight track

Wyalong/Young) thence back to Narrandera and finally across to Temora.

The temp trace kindly flown by one of the ultralight guys at Temora suggested that we needed 35°C for the thermals to start. Col and myself were ready to go at 10:20-ish with the temperature at 34°C, but there was no movement in the air so we waited a bit. When the air started to move the thermometer was at 35.5°C and the time was about 10:40.

Single tug, Col took the first launch, and I followed immediately the tug got back. Col reckons that he took off at around the right time since his first climb was bit 'iffy'. When I got off tow I joined Col in his second thermal and we got away quite well to 4,000ft agl.

Each climb got significantly better and by the time we were 35km south-south-west out of Temora, approaching Coolamon, I was amazed to climb to 8,800ft agl in a strong blue thermal. Col had climbed to a little less.

However, around about the Murrumbidgee, now 70km out, the thermals collapsed and Col had a mighty struggle simply staying airborne whilst I was steadily working my way lower in weaker stuff, eventually getting down to 3,000ft agl. At this stage I was talking to John Buchanan who had taken off from Corowa in his ASW22 and was reporting climbs only up to 4-5,000ft.

Having climbed high, north of the river, I was rueing our selection of Corowa as a turn because we were now flying into poorer conditions. Hope lay in very high-based cumulus which seemed to following us as we tracked south, with the nearest cumulus following us by about 15 or more miles. The guys flying north out of Temora were reporting wonderful conditions. I made the comment to Col that we could still get back on

the time-line if we could hammer along once we turned north and got to the cumulus.

The blue thermals recovered a little as time went on and I turned Corowa at 13:10 at 5,500ft agl, with 807km to go, worked one more blue thermal and then got under the first of the cumulus and I was away!

Passing 10,000ft I went to turn on my oxygen and couldn't budge the tap. Blast! Since there was nothing else for it, I undid the bottle at the mount, slid it forward into the cockpit and managed to get a better grip on the tap and got it undone. Phew! (The bottle is quite big when you bring it into the cockpit in flight!)

The flight now got pretty fast. Climbs averaging in the seven to nine knot range, going to over 13,000ft with the base rising. Passing Leeton, I noticed that the clouds were not as numerous, or as well formed, in the Griffith, Leeton, Narrandera area but I figured that there were enough clouds and, with additional heating, all would be well for the leg back to Narrandera.

By the time I was abeam West Wyalong, going north, I realised that enough time had been recovered so that that we were 'in' with a fighting chance if the weather held out. (Col was a few minutes or so behind me.) What was of concern was that the clouds were getting bigger and there was increasing spread out. Along track I could see ominous signs of over-development.

A little later I heard Miles Gore-Brown, who was flying out of Narramine, talking about storms in his vicinity. He reported a line of storms all along the Newell Highway, whipping up dust and producing rain. The bad news was that, when I asked him the extent of the storms, he said there was one right over Tottenham. Nevertheless, I needed to look for myself so I pushed north under clouds that were getting bigger and somewhat foreboding.

At about 60km out I could see the big silver shed at Tottenham. I figured that the really bad stormy bits were still a little to the north of Tottenham and if I could sneak in and out before the clouds above and ahead of me 'let go' then I had a chance.

I took my last climb to 13,500ft agl under a big cloud 41km short of Tottenham and then tiptoed along in the clear, reaching a cloud area just before Tottenham which had virga coming out of it a couple of places but which still a fairly flat base. A great wall of dust was being whipped up just to the north-west of the turn by a couple of miles, but appeared to be associated with the next cloud. Anyway, apart from a bit of rain I managed a smooth slow glide into the turn, took my pictures, held my breath back

through a bit more rain and then into the clear. So far, so good.

I reconnected with weak lift 25km out of the turn at 6,000ft agl and worked my way to the cloud under which I had previously climbed (which was now even bigger and was throwing a smattering of hail down at me). I was heartened to see some big willy-wilys building under its south-west corner, so I connected with these willy-wilys and got out of there as quickly as I could! When I looked back from a few miles further south the big cloud had 'let go' with rain and had cloud hanging out the bottom of it. I had been lucky.

Col was not so fortunate and had to turn around because of the weather. Things improved again as I headed south and I eventually got a climb which took me to 15,200ft agl (16,200 amsl)! Thank goodness for oxygen. I took one more climb to 14,000ft agl, 75km from Narrandera, and then headed out into the Griffith Leeton area mentioned earlier which, except for a few straggly wisps, was now devoid of any cloud and any lift.

Turning at Narrandera at just above 5,000ft agl, I ran into the first lift, scratched up a thousand feet which then quit, and headed off for Temora looking for any bit of lift. Initially I only found the odd bubble which I could not climb in, and occasional areas of strong sink. The 10kt tailwind was helping but I needed a climb.

At 20km around the turn, I found some weak stuff so dumped all the water and spent 34 minutes, steadily averaging 1.3kt, climbing up as high as it would go to make sure of getting home. I was delighted to have been able to take extra height because on leaving the thermal I flew into heavy sink yet again (there must have been a good thermal somewhere in that area with all the sink, but I never did find it). Eventually sink returned to normal and, without running into any more lift, I got back to Temora at 7:45pm. Truly an exceptional day.

Again – it was fun.

Thanks to all those who contributed to this flight. Col, John and Miles for their help whilst airborne, the Temora ultralight pilots for the temp trace, Brian Acke the tug pilot from Bathurst Soaring Club, John Thompson my official observer and wing runner, and to Paul Wiggins who, whilst not there on the day, has helped on so many other occasions. Of course there are many others over the years who have helped me and contributed to the success of so many others. To you all, thank you.



Recommendations for Changes to World Gliding Championships – Post 2006

The IGC Bureau received and discussed the recommendations of the Championship Structure Working Group (CSWG) at the autumn Bureau meeting in Paris. The recommendations of the Bureau are as follows:

1. Entrants per National Aero Club (NAC) per World Gliding Championship

- i) *Each NAC may enter no more than two pilots per class in all WGCs held after the year 2006, unless that NAC has a reigning World Champion in that class.*
- ii) *A reigning World Champion will be an additional pilot for an NAC in that class. (Note: The Annex A sub-committee may develop for use in WGC's alternative disciplines to the ones that are currently available including a team-flying event and an individual event. The availability for use of either of these disciplines in a WGC will be subject to the approval of the Plenum. If a class is specified in a bid by a WGC bidder as a team-flying event or an individual event, a reigning World Champion team or individual will not be permitted to be an additional entrant in that class.)*
- iii) *The IGC Ranking List will determine the priority for entries if the number of applications for a WGC exceeds the maximum number specified in the accepted WGC bid.*

2. Maximum number of entrants at a World Gliding Championship

The prospective bidder will state in their bid the maximum number of competitors that can be handled at the proposed venue. Annex A will no longer reflect a maximum of 120 entrants or a maximum of 50 pilots per class.

3. IGC Classes for World Gliding Championships

Club Class – There is no recommended change to the definition of the Club Class. It will be part of the World Gliding Championships for the Standard, Club and World Classes.

World Class – The IGC is committed to hosting a WGC for the World Class for a period of time to at least 2009. It will be part of the World Gliding Championships for the Standard, Club and World Classes.

Standard Class – The Standard Class will be part of the World Gliding Championships for the Standard, Club and World Classes.

15-Metre Class – The 15-Metre Class will be part of the World Gliding Championships for the 15-Metre, 18-Metre and Open Classes.

18-Metre Class – The 18-Metre Class will be part of the World Gliding Championships for the 15-Metre, 18-Metre and Open Classes.

Open Class – The Open Class will be part of the World Gliding Championships for the 15-Metre, 18-Metre, and Open Classes.

Beginning with the 2008 WGC, Open Class gliders will be limited to a Maximum Take-off Weight of 750kg.

All WGCs for these championships will be held in even years commencing with 2008. Sites for these multi-class World Championships will be selected three years in advance.

4. IGC Category World Gliding Championships

WGC for Juniors – The Bureau recommends that the WGC for Juniors be organised in three classes: the Club, Standard and a third Class to be specified by the IGC Plenary.

WGC for Women – The Bureau recommends that the WGC for Women be organised in three classes: the Club, Standard and the 15-Metre.

All WGCs for these championships will be held in odd years commencing with 2007. Sites for these multi-class World Championships will be selected three years in advance (except for the 2007 WGCs when the sites will be selected in 2005).

5. Disciplines and Scoring Systems

The Bureau charges the Annex A sub-committee to develop appropriate rules and scoring systems for a menu of disciplines. These disciplines will become available to

bidders for WGCs after they are fully developed by the Annex A group and are subsequently approved for use in a WGC by the Plenum. Each of these disciplines may have their own unique set of scoring systems and associated rules. These disciplines include:

- i) *Team-flying event – A team-flying event would be one that would have a two-member entry from a NAC compete and be scored as a unit in a class. The winning team would be recognised as World Champions. (Note: a defending World Champion team would not be permitted to be an additional entry for a NAC for this type of event).*
- ii) *Individual event – An individual event would have one pilot per NAC compete in a specified class during a WGC. (Note: a defending World Champion would not be permitted to be an additional pilot for a NAC for this type of event).*
- iii) *Distance Events and Free Distance Events – The distance events would utilise a type of cumulative distance scoring. These could be held in either a team-flying or individual format.*

After the disciplines are fully developed, approved by the Plenum and they become part of Annex A, a bidding NAC for a world gliding championship may select a discipline from the menu of available choices. The bidding NAC will specify in their bid if one or more of the classes for that WGC will be held with a specific discipline other than the currently used WGC disciplines.

6. Alternative Competitions

The IGC will continue to selectively sanction competitions such as continental championships and the World Air Games. As these fall outside the WGC framework, organisers may bid for them and if approved they will be inserted into the IGC calendar. Additionally, The IGC will continue the work on the development of alternative types of competitions such as the Soaring Grand Prix. Alternative competitions will be held in odd years commencing with 2007.



STRANGE THINGS HAPPEN IN BYRON BAY!



Lindsay Wootten with Andrew Polidano

LINDSAY

Some pilots say every cross-country kilometre on the coast is worth five or even 10 inland. In my view it is impossible to put an accurate number on it, but generally a coastal cross-country kilometre is equivalent to many more inland. This is for a number of reasons, all of which certainly hold true around the Byron Bay area. First, the launches used by paragliders are low, Possum being only about 180m asl and Monte's only about 210m asl (and less above the bomb-outs). Second, due to the proximity to the coast, the cloudbase when we fly is usually between only 650m and 850m asl. Lastly, the coastal seabreeze usually kicks in at some stage and chops the thermals up. The breeze can also mean that you are quickly blown over the back a long way if you go with a thermal.

One Saturday morning in early November it poured with rain in the Byron Bay area and I thought that the chance of a good fly was slim. But the ever enthusiastic Ben and Mel (there's nothing like the enthusiasm of new pilots) came over after lunch. I was watching my wind trees, the ones in the distance that I use to gauge, while we sat on my verandah drinking Jasmine tea (yep, that's what paraglider pilots drink... what a bunch of wimps I can hear you hangie pilots

mutter). About 2pm things started to look better, so up to Possum we went.

Ben and I had a few goes, but the wind was still up and down and we couldn't stay up. Meantime the regular crew and a few visiting pilots were arriving one by one. After bombing for the second time Mel drove me back up to launch at about 3:15pm. I was thinking that I should go home and do some work as it didn't look like it was worth hanging around. But then I noticed that Ben seemed to be staying up and getting some reasonable height, so I decided to give it another go. The battery on my radio went flat about then. I usually carry a couple of spares, but thinking that flying was not all that likely I hadn't bothered to put my case of spares and other bits and pieces in the car (a lesson to be learned here!). So after telling Mel that I wouldn't be on channel, I launched. Meantime Andrew was apparently issuing his challenge, but I didn't hear any of it.

ANDREW

I wasn't able to get to the hill due to being grounded with a neck injury. As I had a base station set up at home I decided to have an impromptu competition to add some spice to the weekend's flying. As Ben was the only one flying at that time his report on the

conditions was quite important. I later found out that it was incredibly accurate. There was a range of pilots from newly signed off novices to experienced pilots, as well as some imports. I set two tasks; one for novices and one for more experienced pilots. For the ambitious pilot, I offered a case of beer for going over the back and making it to Federal where I was based (about 13km away, up on the plateau somewhat higher than Possum launch).

LINDSAY

After flying around for a few minutes I noticed that the best lift was right over launch, so I hung around. After about five minutes a nice small (but relatively strong) thermal came along and I started climbing out, first doing tight figure of eights as I was too low to safely circle over the back of the ridge. Then Ben came along and tried to push me out of the thermal (not on purpose I know!). As it was too small for both of us to safely do tight figure of eights, I flew down the ridge a bit and then came back and cranked hard into it, managing to quickly out climb him. When I got to about 230m ato I decided to keep going with it, as I figured I could always punch back to the front of the ridge, or, if need be, turn tail and land over near Friday Hut Road. Any-



Left: Paraglider over Possum Launch

Above: Cape Byron in the distance

Photos: Lindsay Wootten

way, it just kept going up, not strongly but up. So the thermal and I slowly drifted back over Friday Hut Road. I spent quite a bit of time just past the road circling over Ms Chile's house and hoping she was on her verandah watching me (she wasn't). I thought about getting my mobile out to give her a call, but was worried I might drop it. Anyway, I was circling around up there thinking, "This is as good as sex" (I'm sure most of you have had similar thoughts at cloudbase). Of course, once back on terra firma sanity prevails and one realises that whilst getting to base is better than bad sex, it is certainly not as good as good sex. It felt great anyway!

Cloudbase was about 720m ato. I had a look around as I had to make a decision which way to go. The view was fantastic looking way down the coast and north to

the Gold Coast. I could see heavy rain showers inland, but not close enough to be an immediate concern. At the same time I was aware that I was somewhere near the northern boundary of the Ballina/Lismore MBZ, and as I didn't have my VHF I didn't want to go anywhere towards the south. I thought about going crosswind towards Monte's launch, but by this time I was quite a way off track for that. So, I thought I might as well head over towards Federal. I should add that I had never flown that direction before.

I spent a few moments working out where Federal was and then headed off in that direction. I got one more thermal on the way and topped up my height a bit, but the sink in between was fairly gentle, like the lift had been. As I approached Liz's house

(where Andrew is convalescing) I was wishing I had a radio and at the same time thinking that the big north facing gully that her house is built on the edge of looked like a good collector, so there might be something at the top of it. Unfortunately the whole Federal area was now in dark shadow due to the rain clouds, and although I got some little blips on the vario there was nothing worthwhile. I probably should have hung around in the sun further back until everything started working again. That old lesson about being patient when flying cross-country re-enforced.

As there didn't seem to be any more thermals around I decided to see how far I could get past Federal and so went on glide. I got three or four kilometres past, and then turned back as I was now going down fast and further on looked pretty wild. Back towards the village a bit I could see a huge flat paddock with the only powerlines running down one side. There weren't any other nice big flat paddocks in sight! Plus it was near the road. So I landed a couple of kilometres past Federal. I rang Andrew, and Liz kindly came to pick me up. I noticed that she had \$50 in her hands and was mumbling about having to get a case of beer. I had no idea what she was talking about until we got to the bottle shop and she sent me in to buy it.

So it seems that somehow I had tuned into Andrew's offer of the case of beer even without a radio. As I said, strange things happen in Byron Bay, or maybe I just have an inbuilt psychic receptor for any offer of free beer!



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AIRFOIL SPEEDBARS

James Freeman

HOW MUCH DIFFERENCE CAN AN AIRFOIL SPEEDBAR MAKE? A SURPRISING AMOUNT ACTUALLY. A GLIDE IMPROVEMENT OF ABOUT HALF A POINT IS OFTEN QUOTED, BUT THIS IS SIMPLISTIC.

THEORY

A glider sinks through the air because it is converting potential (height) energy to supply the energy required to overcome the energy lost via drag. It therefore follows that by reducing a glider's total drag less energy is required – as a result the sink rate is reduced in direct proportion to the decrease in drag. While a reduction in sink rate is significant by itself, the glide angle (lift/drag) is also correspondingly improved.

The following is a breakdown between the contributions to a glider's total drag of the various drag components at different airspeeds (I=induced, F=form, P=parasite).

Stall: I=60%, F=15%, P=25%

Minimum Sink: I=55%, F=15%, P=30%

Best Glide: I=42%, F=16%, P=42%

Well Above Best Glide:

I approaches 5-10%, F approaches 5-10%, P approaches 80-90%

An airfoil speedbar is powerless to affect induced or form drag – these depend on the angle of attack, airspeed and design of the wing. Parasite drag however, can be reduced by streamlining. Reducing parasitic drag decreases total drag.

The decrease in parasitic drag between a round and an airfoil section is remarkable. An airfoil section can have a coefficient of drag as little as 1/10th that of a round section. Don't believe it? Stick a round upright out of the car at 60mph, then stick an airfoil section out. The difference in air resistance is amazing. By substituting an airfoil speedbar for a round one we can significantly reduce our gliders parasitic and thus total drag. As a result we can decrease our sink rate and improve our glide. While the reduction in sink rate and corresponding improvement of glide holds for all airspeeds, the effect is most marked at higher speeds. This is because parasitic drag becomes the dominant form of drag (and energy loss) at speeds roughly above best glide. So in a nutshell: reducing parasitic drag decreases sink rate and increases glide ratio at all speeds, with the biggest improvement at the higher speed end of the range.

Here is a parasitic drag analysis of a king posted glider. A large number of assumptions are made to provide this. They include all rigging wires 2.5mm uncoated, reflex bridles 1.5mm, uprights 1,600 x 28mm airfoil, speedbar 1,500 x 30mm (round, average diameter including grip material), king post 1,000 x 28mm airfoil. Reynolds number effects ignored.

As a basic guide the parasitic drag can be calculated from the formula:

Parasitic drag (DP) =

Cross sectional area (CSA) x coefficient of drag (CD).

We will use the following figures for the drag coefficient.

Flat plate cd = 1 (by definition)

Rectangle 0.75

Round tube/wire cd = 0.5

Ellipse cd = 0.25 (varies depending on ratio of thickness to length)

Airfoil section cd = 0.10 (varies depending on section)

I will arbitrarily assume the CD of the pilot's body and arms is 0.4. I have assumed a tight harness and include the deltoids in the arms. I have ignored the pilot's head, assuming it to be tucked in front of the body. Also I have ignored any contribution to drag from a side mounted chute and side pocket, assuming this is minimal in the dirty air behind the pilots arms.

To do the analysis we need to calculate the cross sectional area of each part and multiply it by its approximate coefficient of drag. Here are the figures:

Part	CSA (x 1000 mm ²)	CD	DP	DP (% of total DP)
Pilot body	120	0.4	48	29
Pilot arms	100	0.4	40	24
Harness main	12.5	0.75	9	5
Hang loop	3	0.75	2	1.5
Uprights	90	0.1	9	5
Speedbar	45	0.5	22.5	13
Side wires	15	0.5	7.5	4.5
Front wires	10	0.5	5	3
Rear wires	9	0.5	4.5	3
King post	28	0.1	2.8	1.5
Top wires	25	0.5	12.5	7.5
Reflex bridles	12	0.5	6	3.5
Airfoil speedbar	30	0.1	3	

Okay, so now we start to get the picture. The round speedbar actually contributes around 13% of the glider's total parasitic drag. If we airfoil section it and reduce its thickness to 19.5mm as has been done we then get a CSA of 30 and a calculated DP of 3 as opposed to 22.5. In other words we have lost 85% of the drag of a round bar or something over 11% of our total parasitic drag.

At minimum sink, where parasitic drag contributes ~30% to total drag, we have thus lost around 3% of our total drag. This will correspond to a 3% improvement in sink rate. If we assume that minimum sink is 200ft/min with a round bar, it will be reduced to 194ft/min with an airfoil one.

At best glide, where parasitic drag contributes ~42% to the total drag, we have thus lost 4.5% of the total drag. If we assume that at best glide a topless glider gets 14:1 we can say for that glider:

$L/D = 14/1$

for a round tube let D = 100%

$L = 14D = 1400\%$

Assume new improved glide with airfoil bar is X:1, hence we can write:

$L/D = X/1$

From the above discussion:

$D = 95.5 (100 - 4.5); L = 1400\% X/1 = L/D = 1400/95.5 = 14.6$

Thus we expect glide ratio to improve to around 14.6:1. This corresponds to an improvement of glide at best glide of about half a point.

At high speeds where parasitic drag becomes dominant the benefit in terms of total drag reduction is even greater in percentage terms and may approach 8%.

Disclaimer: These are rough back of envelope calculations. They are meant for comparative purposes only. Reynolds number effects are both real and important, but have been ignored for convenience.

PRACTICE

What do Thomas, Manfred, Guido, Oleg, etc, etc, all have in common? Besides the fact they are all superb pilots they all recognise the value of drag reduction and have been flying with airfoil base tubes for years. In side by side glides the performance improvement of an airfoil tube is sufficiently large that a glide difference can easily be seen within a short period of time.

How much use is an extra half a point? Consider a few examples. Let glider A have a round base tube and a best glide of 14:1 and a minimum sink rate of 200ft/min. Glider B has seen the light and fitted an airfoil tube and gets 14.5:1. Glider B also has a sink rate of 194ft/min (~97% the sink rate of glider A) due to the decreased drag.

Consider a glide to the deck from 2,000m. Glider A will hit the deck at 28km. Glider B will pass over A at about 70m (230ft) and glide a further 1,000m before landing at 29km. Ever landed less than 1,000m from goal? Ever hit a last ditch low save thermal just below another pilot who gets up while you scratch around in broken lift and eventually have to land?

Consider a climb in weak 100ft/min lift. To climb 5,000ft will take glider A 50 minutes. Glider B will achieve an improved climb due to its decreased sink rate and climb 5,000ft in 47 minutes.

Into a headwind the performance difference is even more marked as the increased speeds place a premium on parasitic drag.

IS IT WORTH IT?

Let's take as an example the difference in price (at time of writing) between an SX (kingposted) and a CSX/Lightspeed (topless) being around \$2,500. The improvement in glide is around ~7%. So you are paying \$380 for each percentage point improvement. An airfoil speedbar will set you back \$295 for an improvement in glide of ~3.5%. You are paying \$85 for each percentage point, 350% less than the price of going topless.

The bottom line is that an airfoil base tube will give you some extra performance for a small price. The advantage is greatest at higher speeds where parasitic drag is the dominant contributor to total drag.

Unless you wind tunnel test (full scale to remove the distortions caused by Reynolds number effects) or comparison fly it you can argue about the theory. Perhaps the ultimate form of comparison flying is at high level competitions. The real world benefit has been sufficient that all top level pilots have unanimously adopted them. Will it turn your glider into a Nimbus IV capable of 60:1? Unfortunately not, but you will get change out of \$300,000!

If you bought a topless glider to get the best flex wing performance, you won't have it without an airfoil base tube. If you can't afford a topless or want to keep those tried and tested reflex bridles, then an airfoil base tube will go some of the way to bridging the gap to topless performance. If you are a serious racer you probably already have one. So is it worth it? That's up to you. And they do look cool!



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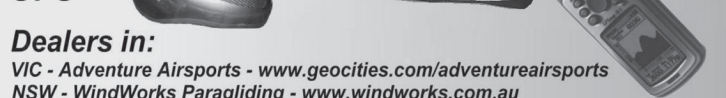
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RIDGE LIFT AND SLOPE SOARING

Part 2

Bernard Eckey

LAST MONTH WE HAD A BRIEF LOOK AT THE THEORETICAL FUNDAMENTALS, BUT TODAY WE WILL CONSIDER PRACTICAL ASPECTS OF RIDGE SOARING.

Experienced pilots will know that the shape of a ridge also has a major bearing on updrafts. Although even a strong wind is unlikely to produce useful lift on a very shallow mountain a steep escarpment doesn't necessarily guarantee us strong lift either. As Figure 3b highlights, severe turbulence can spoil the all important laminar airflow

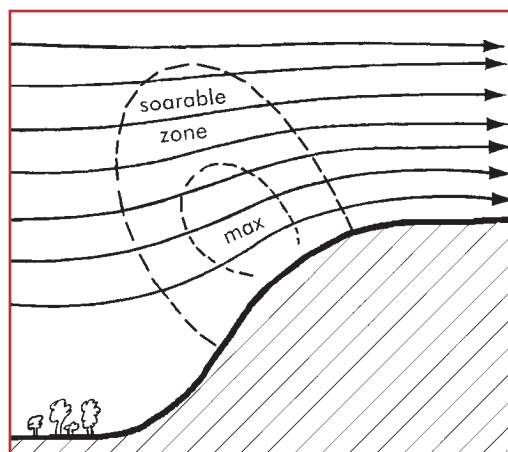


Figure 3a: Laminar airflow



Figure 3b: Turbulent airflow

sufficiently to prevent the generation of reliable and usable lift. To put it differently, a nice laminar flow around a moderately high hill (Figure 3a) can often produce stronger and more reliable updrafts than a rather turbulent airflow around a big and rather steep escarpment.

Thanks to Mother Nature's limitless creativity, our mountain ranges are far from uniform and generally feature changing gradients and different peak heights. The usual bends, gaps, protrusions and saddles tend to divert the wind or even funnel it into a particular spot. Therefore it shouldn't come as a surprise that we find areas of particularly strong updrafts next to stretches of weak or non-existent lift. Even areas of sink need to be crossed from time to time but as long as such ups and downs are resulting in a net gain of altitude these changing vertical airspeeds are of little consequence.

When the wind is blowing against the ridge at an oblique angle, protrusions in the face of the ridge are of particular interest to glider pilots as they favour a mini venturi effect with a significantly faster local airflow. The phenomenon is often referred to by ridge soaring glider pilots as "a funnel" simply because the air is funnelled into pockets of particularly strong updrafts although it is also worth noting that there can be down-drafts on the lee side of these funnels.

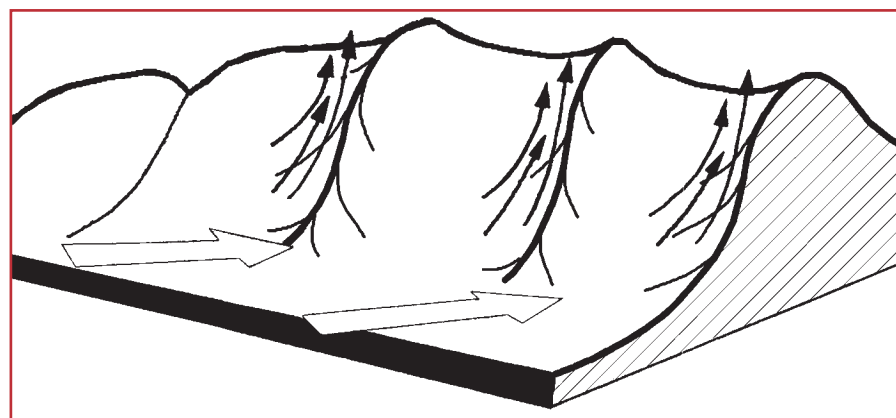


Figure 4: Funnel effect

2.4 OBSTACLES UPWIND OF THE RIDGE

Extra care is needed when Mother Nature has produced mountains in clusters and glider pilots are attempting to fly in the midst of them. Upwind obstacles almost always influence the airflow in mountainous areas especially on low inversion days.

Rather than following the contours of the landscape, the air is often channelled through valleys instead. Air (pushed along by the forces of wind) will never rise voluntarily and will only do so if rising represents the path of least resistance. This means that the far bulk of the air tends to detour through valleys even if these valleys are not properly aligned with the general wind direction. For this reason it is worth remembering that the air can bypass a particular ridge even if it appears to be located almost perpendicular to the general airflow. Glider pilots beware!

Another complicating factor is the excitement of air in a vertical direction by another upwind mountain. In this case, the air can assume a flow pattern very much like a typical wave flow and the upstream vertical excitement of the air can have the welcome effect of enhancing the lift as shown in Figure 5.

Generally this is good news for glider pilots. But when the position of a particular ridge is not in phase with the upper airflow, extremely turbulent and unpleasant conditions can be encountered. It is not uncommon for pilots to be faced with severely



depressed ridge lift or possibly no usable lift at all.

Even worse, with every change in wind strength, there is a real danger of encountering severe sink without prior warning. Good lift turns into nothing but turbulent sink within seconds and when that happens glider pilots can experience a rapid rise in blood pressure unless enough height is

maintained for a return to a landing field within safe gliding distance of the ridge. For this reason it is necessary to re-evaluate the ridge on each path looking for signs of change in the way the ridge is working. Most ridges will change their character throughout the day and it should never be assumed that the ridge will work the same with the next path along it.

Photo: Bernard Eckey

Before we leave the subject we should put the reduction in lift strength with variations in wind direction under the spotlight. Of course, we always prefer the wind to be blowing at a right angle to the mountain ridge but more often than not the wind is striking the ridge at a considerably shallower angle. Let's look at a typical scenario together.

Day 1

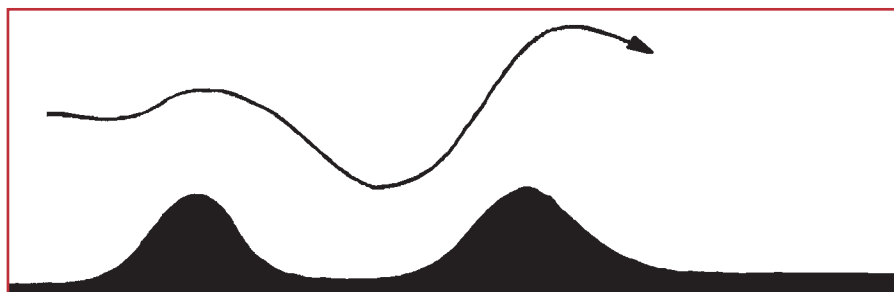
We enjoy perfect ridge soaring conditions. The wind is right on the ridge, which has an average gradient of 25° and the wind speed at the top of the ridge is averaging 15kt.

Day 2

The next day we want to operate off the same ridge again but overnight the wind has changed direction and is now striking the ridge at 45° (although we still measure the same wind speed).

Is the ridge still going to work and if so, what is the likely reduction in lift strength?

Basic calculations will reveal that on day one the wind is deflected upwards at a rate of 3.2 m/s or approximately 6.5kt – no wonder we had a good day. Allowing for a



Enhanced ridge lift (ridge in phase)



Depressed ridge lift (ridge out of phase)

Figure 5: Vertical excitement of air by an upwind obstacle

glider sink rate of, say, 1.5kt we still find lift of approximately five knots in close proximity to the ridge and that means that we are likely to climb to a comfortable height above the summit.

But what has day two got in store for us? Mathematics dictates that, if the wind is striking the ridge at 45° we will experience a lift reduction of about 30%. In other words, the lift drops to around four-and-a-half knots and if we make allowance for a one-and-a-half knot glider sink rate, only approximately three knots of real lift remains. Sure, there is nothing wrong with a three knot climb rate, but the maximum altitude is unlikely to be well above ridge-top

Wind direction towards ridge (Degrees)	90	80	70	60	50	40	30
Lift reduction (Percentage)	0	2	6	14	24	36	50

Table 1: Lift reduction in relation to wind direction

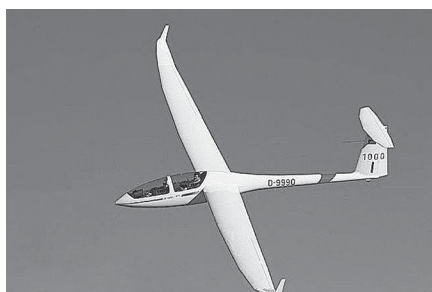
level. The net result is that we can still use the ridge but we can never afford to relax and we will get a much closer look at the trees.

Just to get a feel for the reduction in lift the above table was produced indicating that relatively small deviations from the optimum wind direction have only a very minor effect on the strength of the lift. However, winds striking the ridge at 45 degrees or even less results in a significant lift reduction and for this reason they should be treated with a fair

degree of respect and suspicion. Even the slightest worsening in wind direction can lead to a situation where the air starts flowing parallel to the ridge and if that happens we see an instantaneous collapse of updrafts. In such a scenario pilots can be forgiven for thinking that the weather gods just flicked a switch and turned the lift off.



To be continued



DG1000 in flight

Photo: John Good

DG1000 AND THE DUO DISCUS

Karl Striedieck (Permission from USA 'Soaring')

OVER THE LAST 18 YEARS, THE REALM OF THE TRADITIONAL UTILITARIAN TWO-SEAT GLIDER HAS SEEN THE ADDITION OF SOPHISTICATED, VERY HIGH PERFORMANCE GOLIATHS WITH PRICE TAGS TO MATCH. THE FIRST OF THESE NEWCOMERS WAS SCHLEICHER'S ASH-25 IN 1984. BASED ON THE OPEN CLASS ASW-22 AND SPORTING A 25-METRE WING SPAN, THIS BIRD WAS A MAGNIFICENT LEAP FORWARD IN DOPPELSITZER PERFORMANCE, WITH CONTINUING SALES SHOWING THE WISDOM OF THE CONCEPT OF HIGHER PERFORMANCE FOR THIS CLASS.

Schempp-Hirth followed with the Nimbus 3D and 4D, and, recently, the leviathan ETA, all 30m span of it, took to the air, raising once again the level of performance and sticker shock with its jaw-dropping price tag. At US\$750,000 this two-seater is no Volksplane.

Exploiting the obvious thirst in the glider market for a two-seater with high performance that was affordable to the commoners of the glider world, Glaser Dirks in 1989 and Schempp-Hirth in 1993 introduced 20-metre tandem seating gliders that are still selling well. The current version of the former is called the DG-1000, while the latter's conforms to standard Latinium designation as the Duo Discus.

Having been invited to fly the DG-1000 at this year's Seniors contest in Florida and

having recently acquired a Duo Discus, I was curious to see how they measured up to single-seaters and to each other. Would the obvious drawbacks of greater size and weight outweigh the attraction of sharing this wonderful activity with another soaring nut?

Overall, these ships are similar in price (about US\$100,000, delivered today) and performance (46:1 glide ratio). The differences are primarily in details. Both are beautifully finished with excellent mylar seals, nice canopy fit and close tolerance construction not found in most products of mass production these days.

One major difference is immediately apparent on the ground: the 1000 uses two canopies, the Duo one. Both suffer the fate of many gliders of canopies being difficult to close when they get very hot on the ground. The 1000 could benefit from a safety inter-

lock between the two canopies such as found on the Schleicher two-seaters where the front latch cannot be closed unless the rear one is closed. The Duo has a one-piece, one handle design, and a spring that partially latches the canopy when the handle is released. Both ships have remarkably quiet cockpits with no whistles or shrieks.

Another external difference is the noticeably higher vertical fin on the 1000. Since it is above eye level for a six-footer it would seem that installation of the horizontal stabiliser would be a bit awkward. DG solved that issue by locating the latching device on the side of the fin at the same height as the Duo. Both feature automatic control hook-ups for all controls.

Both ships have four-piece wings with about a 15m span for the assembled main panels and two-and-a-half for each tip panel.

January 2004

Weights are similar: 90kg per inner panel, distributed about 55/35, so that rigging without mechanical aids is feasible for the average chap. While the Duo is a one-span ship, the 1000 can be fitted with short tips to make it 18m and in this configuration it is authorised for full acrobatics. Acro is not permitted in the Duo.

Externally, another difference is immediately apparent. The Duo has a shorter main landing gear and nose wheel, while the 1000 has an extended main gear with no nose wheel. A consequence of the more rearward weight distribution for the 1000 is a heavier tail weight and the need for assistance when installing the tail dolly or manoeuvring without a dolly.

Speaking of the landing gear, both are equipped with disc brakes actuated by the rear travel of the spoiler handle. Additionally, the Duo has a squeeze grip on the stick that increases the force on the master cylinder to improve braking action. Even with both devices employed the Duo wheel brake is not as effective as the 1000.

One reason for the longer landing gear of the 1000 is that it incorporates shock absorbing springs which do a good job of soaking up the bumps. The simpler design of the Duo is unsprung.

Actuation of the landing gear of the 1000 is somewhat different as well. With the lever on the left side there is no need to switch hands to operate the gear, which can be a problem after a low finish in a contest. Both cockpits can lock/unlock the gear – not so with the Duo. And actual force required to raise and lower the wheel is less with the 1000, although judicious use of G forces with the Duo make it effortless as well.

Internally, both ships offer comfortable seating and enough leg room for a six footer, with the 1000 marginally more commodious in both cockpits. Neither has an adjustable backrest in the rear, although the Duo front backrest can be moved. The 1000 has a rear seat height adjustment that is useful in giving the gibs (guy/gal in the back seat) the highest possible position for better forward visibility. The position of the gibs relative to the leading edge is important for visibility. The 1000 position is slightly farther ahead of the leading edge.

Because the 1000 seat pans are not removable, accessibility to controls, wiring and tubing is restricted. Both have good ventilation via nozzles in each cockpit. The 1000 has larger storage pockets in front and the rear stick can be removed. Neither has an adjustable front headrest, while the rear one in the Duo can be moved.

A simple safety device that all manufacturers should install is the so-called Piggott January 2004

Hook. This invention is nothing more than a small spur on the spoiler rod that prevents inadvertent extension of the spoilers unless the handle is rotated upwards. So even with them left unlocked by mistake before take off they cannot open during flight until the handle is rotated and pulled. Only DG has this.

Speaking of safety issues, both these birds have the tow release controls in identical positions. In the rear seats the yellow handle are prominently mounted above the floor pan so that if a quick release is necessary there is no hunting and fumbling around to find the release. The front releases are not so favourably situated.

And while we're talking about safety, another issue that is critical, although rarely encountered, concerns the matter of egress for bailout. The DG company is light years ahead of everyone on this one with their NOAH system which is available on all their gliders. It consists of an inflatable bladder that lifts the pilot up to the canopy rails and greatly increases the chances of getting out of the glider if it is pulling G's such as in a spin. Additionally, the 1000 has much better vertical leg clearance which makes normal and emergency egress easier.

Both ships have a system for adjusting the CG via tail ballast. The Duo uses the venerable tail tank while the 1000 has an impressive looking ballast block system in the fin complete with a clear view access door and electrical sensing system that transmits a signal to a panel light revealing the number of blocks aboard. One has the impression that, overall, the DG approach to engineering involves more complicated and elegant solutions while Schempp-Hirth follows its tradition of reliability through simplicity.

In the air the two birds are enjoyable to fly, with comparable glide performance and handling. We made a smooth air formation comparison flight starting at 6,000ft and noted the difference in altitude after two-minute glides at 50, 60, 70 and 80kt. The 1000 was better at 50kt, they were about equal at 60kt and the Duo got progressively better as the speed increased. Later we made a formation approach to stall and that revealed that the DG had about a three-knot lower speed where controllability and mushing flight began. When these results were mathematically corrected for wing loading the two polars were essentially identical.

The maximum permitted wing loading for each glider is practically the same at 42.7 kg/m² for the Duo and 42.8 for the 1000. In practice, given pilots of equal weight and no water ballast, the 1000 can slightly out climb the Duo, while the latter pulls away in the glide.

Handling features are not easy to quantify since personal preferences come into the equation. However, from my perspective, I thought each bird had some strengths and a few weaknesses.

Both ships exhibit annoyingly high pitch force stability. This is most likely a result of German regulations regarding PIO resistance and is not something the manufacturers can change. Whatever the reason, one must assign the left hand to the trim control duty where it is very busy.

Rudder authority and the pilot's ability to keep the yaw string centred differed somewhat. The 1000 "ran out" of rudder at half aileron deflection while the Duo had more than enough rudder to keep the string centred with full aileron. This is probably due to the unique Schempp-Hirth aileron design which allows the outer part to go up but not down. It is in effect a one-way aileron so that adverse yaw is reduced.

The 1000 felt more stable in the glide where it seemed to plough along unperturbed by the various atmospheric eddies. The Duo on the other had felt marginally more "twitchy," something like the ship is balanced atop a gimble.

Quite by accident we learned that the 1000 is less resistant to incipient spins than its counterpart. Casually thermalling at a minimal 45kt with some top aileron, the inside wing went down and we were looking at Florida real estate before making a routine recovery. Climbing back up we did five more similar manoeuvres in each direction and found it was a consistent feature. It should be added that this departure could be stopped at any point by either unloading the back stick force or applying opposite rudder (or both). When the Duo is subjected to the same flight conditions or slowed all the way to a stall in a 45-degree bank, it never drops a wing but basically goes into a wobbly, mushing mode.

There is plenty of "elbow" room for the gibs, but due to the shape of the fuselages the front has a little less room in both ships, with the edge for space going to the 1000. It takes a couple flights in the Duo to get used to banging your left elbow on the fairing that covers the rear seaters feet and keeping your right leg out of the way when the ship is being flown from the rear.

All in all, these two ships offer our sport a great deal. With relative ease you can take a buddy along on a flight that matches what the current crop of Standard and 15m ships can do, and they are a great tool for cross country introduction and teaching, something that holds promise for retention of our members.



EUROPEAN ADVENTURES

Jiri Stipek

I ARRIVED IN FRANKFURT AT THE END OF AUGUST – JUST A FEW DAYS AFTER THE CATASTROPHIC HEATWAVE THAT DEVASTATED FRANCE AND MOST OF SOUTHERN EUROPE. NOW IT LOOKED LIKE ANOTHER EXTREME: IT WAS COLD AND RAINY.

I spent the first three days recovering from jet-lag at a friend's place in Germany, so the weather wasn't of paramount importance. Then a German pilot by the name of Gerrit picked me up for a one week trip to the Alps. As if on command the weather improved immediately, and in the end we didn't waste one single day. All flying!

Gerrit proved to be an excellent guide and a good pilot as well. We managed to cover the best sites in the Austrian Alps near Innsbruck and some in Germany as well. As the summer holidays had just finished, all the sites were only moderately busy and there were no problems with overcrowding. The sceneries were stunning – it is hard to beat the Alps. The only negative side of this part of my trip was the inversion persistently sitting only a few hundreds metres above the peaks. It was no problem to stay in the thermic air for the most part of any given day, but virtually impossible to do any decent cross-country flying. Also, my photos didn't come out as good as I hoped. I was only

improvising and experimenting with my new digital camera and it soon became obvious that the hand-held method is not the best in bumpy alpine air.

Unfortunately, all good things must end at some point and I had to leave for Macedonia where I was supposed to do another acrobatics course. Unlike last year, when I flew to Skopje with Swiss Air, I decided to take a bus this time. One of the reasons was financial: I wasn't returning to Germany and the price of a one-way airfare was obscene. My decision proved to be a big mistake, never to be repeated. First of all, the bus route was selected not to be the fastest, but the most profitable (to pick up as many passengers as possible on the way). As a result, the 1,000km (straight distance) trip took over 30 hours, and I swear I got some glimpses of Havana on the way. Secondly, the bus was Macedonian. Smoking was compulsory for all adults to support the tobacco-based economy. For toddlers passive inhalation was accepted as a sufficient con-

tribution and training for later stages of their lives. As far as the smoke screen allowed, I could tell the travellers were a really colourful crowd, mostly from rural parts of Macedonia. With the exception of one German-born Macedonian girl who kept me entertained for most of the journey, nobody spoke English. At least nobody had a bear with them! (Yes, some years ago I travelled in Bulgaria on the same bus with a huge brown bear.)

As we were approaching the Macedonian border, one of the more experienced travellers started to collect money to bribe the custom officials. There was some serious contraband aboard, including one pre-remote control era TV and some secondhand kitchen appliances. The idea of crossing the border without any hassles appealed to me and I happily contributed five Euro to the cause. And indeed – the custom officer gave us the all clear, making an obvious effort to see only what was within the limits of the law. The Immigration was worse. The families of these officers want to eat as well – and the wages are not that good. As it is hard to get something from fellow Macedonians, the foreigners have to be milked. Bad luck I was the only foreigner on the bus... First I was told in sign language that I didn't have a visa and had to go back. The communication was hard, as none of the officials showed any signs of understanding my broken English, German, Russian or Czech (I speak all of these languages well enough to get me out of problems like this). I knew well that it was possible to buy a visa on the border, and that their show of difficulty was only a way of extracting some money from me. So, I made a show of dialling the Australian Embassy on my mobile. I was at the fifth digit when one important looking uniform directed me to a shed where for 15 Euro I received a piece of paper allowing me to stay in Macedonia for 30 days. Too easy, I thought. And indeed, the armed guard who took my passport led me to his office and let me know that if I wanted it back I'd have to



On the bus to Macedonia



pay him five Euro "coffee money". I have good enough experience with corrupted officials in the former communist Czechoslovakia. One of the golden rules was: "Never argue with a man with a gun." So, I paid him another five and boarded the bus again. There was a whole range of alternatives open in case I refused. One of them could have been expressed in headlines like this: "A heroic border guard shot dead a dangerous Australian agent trying to cross our border. Later investigation revealed the man was in possession of a portable aeroplane, two cameras, a mobile phone and a roll of German-made toilet paper." Might sound funny, but in the old golden days of Socialism this wasn't all that impossible.

So, I was in Macedonia. The bus arrived at the capital, Skopje, at 11pm. A bad time if you don't have accommodation booked. And worse: if you want, in fact, to be in Ohrid, 150km away. I noticed that the depot for the bus I was on was actually Ohrid, and that it was going to continue there – without passengers. I asked the official at the station if I could have a lift. He answered it was strictly prohibited, but for 10 Euro he could make an exception. He didn't have a gun, so I turned down his offer and approached the bus driver directly. He took me aboard for only five... On the way I managed to establish some communication with the driver and well before reaching our destination I had accommodation arranged as well – in the house of the driver's sister, delivered to the door. I knew well that 10 Euro per night was about double the going rate, but I am isn't a good time for efficient bargaining.

The room was nice, clean and had a spectacular view of Lake Ohrid. One member of the family even had a good grasp of English, so I stayed for another two nights. Then Nikola Barakovic, hangie pilot and a nightclub owner, took me under his wing and arranged accommodation for five Euro per night right in the middle of town. The stay in the resort town of Ohrid was pleasant enough – but it was flying I was after. No luck there. The weather simply refused to cooperate and I had only five days to play with as I was expected in the Gradient factory. The timing was incredibly bad: just when I was crossing the border on my way to Czech Republic I received a message from Nikola saying that the conditions had improved and the acro course was in full swing.

Prague was beautiful as always – no trace of the devastating floods of last year. I was staying with my son who flies paragliders as well, only about 30 minutes by tram from

Gradient. The schedule was really busy as I was trying to gather as much information about the Gradient operation as possible, see a couple of paragliding accessories manufacturers and do a lot of flying as well. At the same time I was busy with running my business venture by remote control. My son's computer with a cable connection came in very handy and his huge stock of whisky suffered badly while I was sorting out problems with orders and deliveries. We made a weekend trip to Ostrava where we flew for two days some sites in Beskydy – nothing to compare with the Alps, but nevertheless a good warm-up for the coming thermic season in Australia. My biggest problem was the famous Czech cuisine and obscenely cheap beer (about \$1 per litre)... Combined with the hospitality of my friends there, this caused a serious increase in my wing loading. Fortunately, the guys at Gradient had all the sizes and models available and they were actually grateful for my help with pre-delivery testing of larger gliders.

A special experience was flying at the famous site, Strana, near Prague. This is the place where pilots like Tomas Suchanek (three times HG world champion) and Ondrej Dupal (a fabulous pilot and now the boss of Gradient) learned to fly. The hill is only 150m high! If you want to fly somewhere from it, you'd better be really good and have sharp elbows as well. On good weekends often 100 or so pilots converge on the ridiculous place, with each of them trying to stay in the one or two residential thermals there. But do not underestimate the site: flights of 100km or more are being done on a regular basis... My flights there were mostly limited to pre-delivery or prototype testing, so I had a good excuse for getting nowhere. Only the last day I flew my own Bliss about 20km – a flight I was immensely proud of. It was the first time I'd managed to peel away from that hill at all.



The German Alps



The Austrian Alps

Photos: Jiri Stipek

That flight was a nice finale to my trip, and the next day I was in one of my German friend's car on the way to Frankfurt. On the autobahn was probably the most dangerous part of my whole trip: Eva only let the speedo fall to 200 at traffic jams. Early in the afternoon I boarded Malaysian Airlines B777 to Kuala Lumpur and Melbourne. A beautiful trip – hopefully I will go again next year.

More pictures from my trip can be seen at [www.paraglidingheadquarters.com/europe03].



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Manilla Magic or Manilla Madness?

Bob Pratt

WITH A NEW FLYING SEASON UPON US, PILOTS WITH LOW AIRTIME WILL BE LOOKING TO DEVELOP EXPERIENCE OFTEN IN UNFAMILIAR CONDITIONS. A STATE OF ORIGIN COMPETITION DEMONSTRATED 'MANILLA MADNESS', AND A NEED TO REMIND PILOTS TO PLACE MORE CONSIDERATION ON RATING CURRENT AND APPROACHING CONDITIONS. AT UNFAMILIAR SITES, JUDGEMENT CAN BE COMPROMISED IN A POSSIBLY ALREADY COMPLEX SITUATION.

Manilla Madness: Eight gliders parked, a few flushed down the valley, collapsing canopies, note the wind streamer!

Recognise any of the following thoughts? Had two bomb-outs, others are launching, going home tomorrow without a flight for three days, 4:00pm and still not off the hill... the list goes on. Don't be embarrassed about your level of knowledge; ask advanced and local pilots to assess conditions.

Beware: Not all pilots, regardless of experience, have the knack of passing on their expertise or coming down to your level of understanding. So be patient with your enquires, and filter out the sometimes overenthusiastic jargon.

But there is plenty of Manilla Magic for all who exercise thoroughness in flight planning (don't forget conditions likely to be encountered on landing), with a dash of informed confidence.

16 Soaring Australia

The first or ninety-first flight can bring unexpected events like a 10,000ft height gain, a little 50km XC, or just sailing around for three to four hours, landing back at the house paddock or Manilla caravan park.

These events often happen on days with quite mild conditions, well within the skill of low airtime pilots. Don't be put off by accounts of ripping thermals, strong launch

Manilla Magic: at 1,0000ft (triangular clearing at top left is Mt Borah launch area, Manilla Club house is on tree-lined creek running to Manilla)

Photos: Bob Pratt

conditions and all the other nasty possibilities your instructor mentioned, although in season they do happen. Just don't commit Manilla Madness; be patient and enjoy the Magic. If the conditions are a touch above your ability, late afternoon conditions are often great. In the meantime, enjoy the personalities, latest flying gear, and techniques of accomplished pilots.

When the conditions suit your skill level, go for it. Pilot enemy number one is to procrastinate on launch. Your friend is informed confidence.



There Be Whales!

Peter 'Moses' Kelly

FINALLY, AFTER YEARS OF VOWING TO DO IT, I GOT TO FITZGERALD NATIONAL PARK, 180KM EAST OF ALBANY, WA. AND WHAT A PLACE IT IS! MAGNIFICENT COASTLINE, PRISTINE INLET, RIVER, DUNES AND 1,000FT RANGE ALL IN THE ONE SPOT. BUT WAIT... THERE'S MORE... WHALES!



I've lived in the West all my life and have marvelled at the pristine raw nature of the south-west of our country – miles of empty (of humans) coastline, somewhere you can really spread your wings. And since getting my wings that's exactly what I've been doing. But the Fitz, being over 450km away from home and it being very prone to strong winds most of the year, has sat on the back burner... till now! After the death of my father in May I decided I needed to get away and cheer myself up; a flap around the Fitz sounded like just the medicine.

I made it down there in June and used Bremer Bay airstrip (which is huge) to launch from. It's a gravel cross strip about 1,000m x 600m with, surprisingly, landing lights (if you get caught out late). I was in the air about an hour after sunrise, the sun in my face, tracking east for the Fitz, ocean mist masking the mountains in the distance, and, yes, that old friendly feeling jumping up in your brain saying, *"IT'S GREAT TO FLY!"* It was cold, damn cold, but that fresh crisp cold that says, *"It's good to be alive!"*

Climbing toward the waking township, the Bremer River below revealed its many twists and turns as it made its way to the ocean. North-east lay my mission, the mighty Fitzgerald National Park, and finally I was on my way!

After crossing an expanse of dunes an inlet was coming up with strange black elongated dots on the sand bar. So off with the juice and in with the control bar – this needed checking out.

Whales. Small (6m) dead whales. Five of them. (It turned out a pod of whales beached

themselves some weeks before. Sadly, locals only managed to save a few.)

Power on and up. Mt Barren (340m) cruised by on my left with the crystal waters of Doubtful Islands Bay on my right. Miles of white sandy beach with occasional piles of granite on shore or grouped in the water like they had been put there in some giant oriental garden sculpture. But in amongst my joy at this scene a problem arose: my morning cuppa had found my bladder... and it wanted OUT!

Adopting the standard wriggle squirm motion, with legs firmly pressed together, I valiantly pressed on. The coast below me was too rugged for a landing, but I could see in the distance the Fitzgerald Inlet and the sand bar there looked good. So power on, bar in, wriggle wriggle. It was touch and go there for a bit, but it's funny how as soon as you go into landing mode all urgent need to relieve one's self disappears! The sand sparkled like ground glass, but with no wheel marks or foot prints I couldn't be sure how hard it was... I guess it looked okay?

With a bladder about to burst I had no choice – in we go! After landing I looked back at my tracks – what tracks? Hard as nails!

After joyous relief I climbed a dune and surveyed the surroundings. It's great to look about and feel like you've discovered something not many people get to see. The bay, the inlet and the 1,000ft mountain range made this paradise. I wanted to set up camp and stay forever. But that would have to be another time. The nor'wester was picking up, time to leave.

Taking off, I climbed out over the bay with the sun behind me. The ocean was a brilliant blue and clear as glass. Outcrops of submerged granite dotted an otherwise clean sandy bottom. And there they were! Two very large whales, breaking the surface. Wow!

Time for action, so it was on with the video and down for a closer look. With the camera fixed to the control bar you had to point the trike at the target and glide at it, not easy in a 20kt wind. I felt like the dam busters.

The whales were beautiful; two males side by side, cruising along the shore, raising



Did You Know?

The awesome Blue Whale is the largest of whales, not to mention the largest mammal on the planet...

... Just the tongue can weigh as much as an elephant.

... They have a heart the size of a small car.

... A grown man could swim along an artery.

... And they are incredible singers – their song can be heard underwater halfway round the planet!

their heads out of the water occasionally, not a care in the world. Sadly I had to push on, fuel doesn't last forever.

Further along the bay I saw another whale with a much smaller one next to it. Upon closer inspection I saw the approximately 6m baby to be white, unlike the mother. Could this be Moby Dick's great, great grand-whale? It was all over mom, sliding onto her back, playing with her flippers, bursting out of the water and splashing back. The little fella was having a right old time. But my time was running out, and that wind was getting stronger, so up and away and back to base.

What an amazing flight, seeing whales from the air! I'll never forget it. Keith Greenslade, the town's only mad pilot, has his Kestrel housed at Bremer airstrip. On one of his flights he counted 48 whales!

Keith and Gloria were great hosts, providing a guided tour of Bremer Bay, a beautiful meal and a rescue when I attempted to leave Bremer and 50km out my fuel pump fell to bits. Thanks again, Keith.

The whole area is "must see". I'll be going back – soon!





Feedback Forum



Jenny Thompson

The feedback email was recently asked about the purchase of a used oxygen system and the requirements for maintaining a system. Here is the response from Len Diekman, Chairman of the Technical Committee, RTO(A) NSW.

The Short Answer

Your bottle would require hydrostatic testing and re-certification to a relevant Australian Standard (AS2030.1) every three or five years, depending on the make, because of internal oxidation of the alloy walls of the cylinder. You'll have to look after them, which means don't let them completely empty or expose them to heat or they won't pass hydrostatic test requirements and will be prematurely condemned.

Some cylinders are made of Kevlar and are very light weight but you may have difficulty in having them tested by a local Authorised Test Station. You may be able to rent a bottle, if your oxygen system is compatible with rented types of cylinders, so life limitations need not be a concern nor would be cylinder testing as this is paid for by the rental company on exchange.

The regulator will need testing and servicing at intervals specified by the manufacturer, so read the user manual carefully. "Aviator's dry breathing Oxygen" is certified for filling cylinders. Providers, such as BOC agents, will be able to advise the suitable gas code for the pressure of your cylinder. In any case, it should have a moisture content less than 0.005mg of water vapour per litre of oxygen at 15°C and 760mm Hg pressure. Medical oxygen is not certified for aviation use.

For more details (the long answer), read on...

Some Further Comments on Oxygen Systems

Adding an oxygen system gives the sailplane pilot a much broader spectrum of flight experiences. High altitude flight in wave conditions or riding thermals on those magic days after strong fronts pass that flatten out high altitude inversions and thermals wind their way up to 16,000ft, or more. That's the up side, if you'll excuse the tenuous pun, but there are a few things to think about on the down-side which is the price of the freedom up in that cold and rarefied high altitude air with your oxygen mask.

Oxygen and the Pilot

I'm certainly no medico, and don't profess to be anything of the kind, but it would appear that those in the know consider that there is almost no down-side to using a properly maintained and functioning oxygen system. A concise article by Dr Brent Blue, MD, a member of the EAA Aeromedical Board in the USA, discusses the medical benefits and used supplemental oxygen. The reference is: *Brent, B., EAA Aeromedical Advisory Report, Oxygen for the Pilot, p104, Sport Aviation, October 1999* (check the EAA website at [www.eaa.org/members] or email <info@eaa.org or library@eaa.org>. The author's email is <brentblue@dila-doc.com>).

During training for commercial pilot licensing, the benefits to pilot performance of supplemental oxygen above 4,000ft amsl were emphasised several times, that's still on aerotow if you're operating out of Bathurst, NSW or many other sites in high terrain.

The legal side of Oxygen

The use and maintenance of oxygen systems in the GFA's Operational Regulations deal with the use of oxygen in sailplanes. Paragraph 7.1.4 states that "supplemental oxygen shall be used by all occupants of a sailplane above 10,000ft amsl (above mean sea level) and it also states that supplementary oxygen systems shall only be filled with dry-breathing oxygen." The relevant documentation can be viewed or downloaded from the GFA website at [www.gfa.org.au] by clicking on the "Operations" button on the homepage and then clicking on the "GFA Operational Regulations" and going to page 10 of the document (opregs.pdf).

Section 20.4 of the Civil Aviation Orders (called the "CAOs" deals with the operational use of oxygen systems by the pilot and passengers and applies to all aircraft, including sailplanes, since there are no exemptions to the Order. Check out paragraph 6, "Supplemental Oxygen Requirements for Un-pressurised Aircraft" in Part 20, Section 20.4 of the CAOs at [www.casa.

gov.au/download/orders/Cao20/2004.pdf] which is a free download. The paragraph goes into considerable detail because it is mainly concerned with commercial passenger aircraft, but it's the law.

The installation of supplemental oxygen systems are covered by CAO108.26 which can be downloaded from the CASA website at this address: [www.casa.gov.au/download/orders/cao108/10826.pdf]. If you want to fly higher than 40,000ft then there are extra requirements that vary on a case-by-case basis and you'll need some expensive equipment. This CAO may seem overly technical and difficult to comprehend at first glance but it does tell you (albeit in a round-about sort of way) what type of equipment you need and how it should be designed to perform at various altitudes. You can ask the manufacturer or dealer if the equipment complies with CAO 108.26 and, if so, which part it complies with. Then you will know the operational ceiling of the equipment and also the legal flight ceiling using the equipment. To cut to the basics, the higher you want to go, the higher the purchase price and the higher the maintenance cost.

That's probably enough documentation talk for a while. What about selecting a system, installing it and maintaining it from a practical point of view?

Installing, Maintaining and Breathing it...

Types of systems

There are four broad types of supplemental oxygen systems in use and you will need to decide which to install, depending on how high you want to go. In summary, these are:

1. *Constant flow types deliver a constant flow of oxygen into a bag, mask or cannula delivering oxygen enriched air at cabin pressure to the pilot. Most of these systems are designed for use up to 25,000ft and are pilot-adjustable, depending on altitude. These are the least expensive types and there are several portable systems available*
2. *Diluter demand types deliver a pre-set mix of ambient air and oxygen at cabin pressure, which becomes more oxygen-rich with altitude, as the pilot inhales. These systems are designed for use up to 35,000ft and are non-adjustable by the pilot. These types include the "blink" systems familiar to many pilots and cost quite a bit more because of the extra equipment requirements.*
3. *Pressure demand types operate like the diluter demand types but deliver pure oxygen under slight pressure above 35,000ft. They are non-adjustable by the*



pilot and are usually rated to 42,000ft. Your wallet is really going to feel these types of systems but they'll keep you up there safely. Very optimistic pilots buy them for use in Australia.

4. Pressure demand and suite types provide oxygen to the pilot in an enclosed environment to enable flight into the stratosphere. These systems may cost more than your sailplane and are for the world record setters and frustrated astronauts!

Inspection requirements

These basic requirements in designing an installation for all types of system are:

1. an "on/off" valve accessible to the front pilot during flight,
2. physical access to the regulator and visual access to the flow meter by the front pilot during flight, compatible masks for each seat and
3. compatible cylinders, lines regulators, flow meters and pressure gauges.

Section 1.18 of the GFA publication "Basic Sailplane Engineering" covers the various components in more detail and deals with installation requirements and materials standards. This publication is available from the GFA Secretariat or can be ordered from the GFA website at [www.gfa.org.au].

All these basic requirements are subject to initial and annual inspections by an authorised Annual Inspector. The inspector will inspect and functionally check the system for compliance with section 1.18 of Basic Sailplane Engineering and will conduct any inspection required by the manufacturers of the various components, such as the regulator, flow meters, plumbing system and masks. The inspection covers:

1. Confirmation of manufacturer's requirements being met within the period of validity of the maintenance release.
2. Inspection of cylinder and cylinder mounts for corrosion and fatigue cracking and general security.
3. Inspection of plumbing, flow meter and regulator for fatigue, damage, general condition and security.
4. Functionality test and leak check.
5. Confirmation of correct placarding and up-to-date weight and balance calculations.

Refilling

Cylinders should be refilled with one of the following acceptable grades of oxygen:

C.I.G. Gas Code 420 or 430, RAAF

Specification G172, UK Ministry of Defence DEF STAN 68-2 1/1 or US Military Specification MIL-O-272 10.

These are all types of "Aviator's dry breathing oxygen". Your local gas supplier, January 2004

usually BOC Gases, will be able to advise the availability of either a refilling service or supply of a large cylinder for decanting into the smaller cylinder fitted in the sailplane. Some further information on refilling is included in the Beverley Soaring wave camp guide available at [www.beverley-soaring.org.au/docs/wavecamp.pdf]. You should exercise extreme care during decanting and should specific instruction and training before attempting the process yourself.

Other things to think about

I mentioned the down-side of installing oxygen systems into your sailplane a little earlier. I wasn't referring to the descent before landing, but to some other things that you will need to think about. Some of these "downers" concern extra care required for safety and other are airworthiness issues.

Extra care is needed when there is pressurised oxygen around. Oxygen by itself is quite harmless but if you let it get near oils or any organic substance in high concentrations, say near a leak or during servicing, then you're in for an explosive experience! Even lip balm in combination with oxygen at high concentrations may spontaneously combust. So be very, very careful with hygiene around oxygen, that means no oily rags and no leaks.

After fitting an oxygen system you'll need some extra cockpit placards. The first is a "Minimum Oxygen Flow Versus Cabin Pressure altitude Chart" if you've fitted a constant flow type of system. This is so the pilot knows what flow rate to set on the regulator. Next, you need to fit a cockpit placard indicating how V_{ne} varies with altitude as an important flutter prevention measure. You'll also need a new weight and balance placard for load limits with and without oxygen fitted. Talk to your local authorised weight and balance inspector about this. The extra weight of the oxygen system is likely to reduce the maximum pilot weight and you need to consider this before you install a new system.

You'll also have to rethink your lubrication system for the whole sailplane because it is very likely that you will be operating in sub-zero temperatures. This will lead you to thoroughly removing most existing grease from at least the entire control system and replacing it with aviation grease with a freezing level below -60°C . Aeroshell 7 and Mobilgrease 28 are suitable lubricants.

The electrical system needs to be in prime condition as any sparks, shorts or overheating can be catastrophic in an oxygen-enriched environment. Electrical bonding should also be carefully looked

GLIDING FEDERATION OF AUSTRALIA

Airworthiness Inspection

FORM 2 AND C OF A NOTICE

- ☐ A form 2 inspection is due and a cheque for \$143* is enclosed
- ☐ The C of A requires renewal. A cheque for \$33* is enclosed for renewal and the existing C of A document is returned
- ☐ Initial registration package is required and a cheque for \$363* is enclosed

* Fees include GST

A) DOCUMENTATION REQUEST

- ☐ Please send me a change of certificate and owner document
- ☐ Please send me an application to register an aircraft form

Aircraft Type.....

Registration marks VH –

Address to which documents are to be sent is:

Name

Address

State..... Postcode

Forward to: GFA Airworthiness Secretariat,
130 Wirraway Road,
Essendon Airport VIC 3041


at and, at the bare minimum; the oxygen system should be integrated into the electrical bonding system in the sailplane as a fire prevention measure.

Carriage of water ballast at high altitudes is hazardous because water expands as it freezes and has been known to cause structure failure within wings. To avoid this check the function of the water dump system before flight into possible freezing conditions and either fly dry or add anti-freeze to water, with appropriate placarding and an Outside Temperature gauge (OAT) should be fitted. The latter will also aid in calculating true airspeed. It's also advisable to have your altimeter calibrated by an authorised instrument technician so that you know what height you actually are at when calculating V_{ne} , oxygen flow and TAS.

Now that you've done all that, it's time to go looking for that diamond height badge.

Equipment Manufacturers

Some useful websites for some equipment manufacturers are as listed below. These might help you decide on which system best suits your high-flying aspirations.

Mountain High AVIATION Oxygen Systems [www.mhoxxygen.com]; Aviation Oxygen Dot Com [www.aviationoxygen.com]; Aerox [www.aerox.com/]; Av-Ox Inc. (tyco – Scott equipment) [www.avoxinc.com]. 

GERHARD WAIBEL IN AUSTRALIA

Leigh Bunting

ON THURSDAY, 30 OCTOBER 2003, IN THE ENGINEERING DEPARTMENT OF ADELAIDE UNIVERSITY, GERHARD WAIBEL GAVE A LECTURE TO AROUND 80 AVIATORS, MOSTLY GLIDER PILOTS.



Gerhard shares a jovial moment with Martin Simons

Introducing Gerhard to a glider pilot is hardly necessary, but perhaps not everyone knows that Gerhard Waibel is the “W” in ASW. Schleicher honours its designers by including the first letter of their surname in the aircraft’s name. As an example, ASW27 stands for Alexander Schleicher as the manufacturer, Waibel as designer and 27 as the current model number.

Gerhard’s arrival in the workforce coincided with the dawn of the fibreglass revolution. Even during his student years Gerhard began experimenting with fibreglass. His arrival at the Schleicher factory in 1964 saw wooden aircraft phased out in favour of all fibreglass designs.

Names like ASW 12, 15, 17, 19, 20, 22, 24, 27 all ring a bell and lately Gerhard has added the ASW 28 to this list.

Perhaps one of the highlights of his long career was the prestigious OSTIV award for his safety fuselage – now in series production for all models after the ASW24. But next to making his mark as a designer Gerhard also became a first class competition pilot winning the German Nationals in 1964. No wonder top pilots like Hans Werner Grosse developed a liking for Gerhard’s designs and world records were broken in quick succession.

Gerhard’s excellent dissertation on the future progress of our winged hardware was an eye-opener. It’s a pity I’ll be well past it, or most likely I’ll have been recycled, when they come to fruition. However, the young jocks of today can look forward to some mind-blowing performances with cross-country



The gathering of aviators

Photos: Leigh Bunting

speeds of 250kt and 100:1 L/D’s. Gerhard presented data and facts that demonstrate these performances can be achieved.

That we can learn from history, is oft repeated but usually ignored by society. Gerhard, however, spent some time showing how things had developed and grown to the current technical level. This showed that, even in the early days, designers knew what to do to achieve performance, it was just that the materials of the day proved to be the limiting factor. As in most forms of technology, leaps in technical achievement depend on some other crucial piece of technology that just hasn’t been invented.

Even today an L/D of 100 could be achieved with a 42m wingspan and an aircraft weight of 1,500kg. However, the weight is probably not practical for many reasons and the current JAR rules would require changes. The problem of flutter on such an aircraft is a real concern. As a result, the only solution being that the glider has to have fly-by-wire/optic-fibre connections to the control surfaces and managed by a computer to overcome flutter. Hence other technologies are required to reduce the span while decreasing drag to achieve these incredible L/D’s and speeds. The most likely technology is boundary layer suction. This has been experimented with in aviation for some

50 years. Gerhard showed how slots towards the rear section of the wings and tail surfaces, together with fuselage slots, can substantially reduce drag. This will allow a 30m wing to achieve a performance of 100:1!

A contentious technology that Gerhard then described was to coat the upper surfaces with solar cells and use the electrical power to drive a suction pump. The aircraft could still be called a glider as it is exclusively using solar energy. Of course, the glider would still have to use existing methods of extracting energy from the atmosphere.

I envy those young jocks present, who in 50 years, can look back at this lecture and contemplate on the outcomes of the prophecies of Gerhard Waibel in the early part of the 21st century. We were only able to assemble for the talk due to the extreme generosity of Brad Edwards, who flew Gerhard and wife to Adelaide in his executive jet. It was a terrific gesture, and fully appreciated by the gathering.

A great deal of thanks to Bernard Eckey, Cathy Conway and Andrew Wright for the organisation. On 5 November, Gerhard presented a similar lecture to a group of around 70 Victorian aviators. I’m sure they found the presentation just as fascinating.



FAI NEWS

Third Club Class World Gliding Championship 2004

The Third Club Class World Gliding Championships 2004 will be held at Elverum, Norway, with competition flying from 13 to 25 June.

Preliminary entries for the event closed on 31 December and the final entries are due on 10 February, 2004.

Championship Class

The Championship will be a single class competition in Club Class, defined to be all gliders within the handicap factor range 96 to 106, with 15m wingspan and no flaps or similar devices for changing wing geometry. The handicap factors defined by DAeC Index List, valid as per the deadline for final entries, will be used – subject to IGC approval.

National Teams

Each nation will be allowed to enter a maximum of three pilots and one substitute pilot. The present World Champion is automatically qualified and will be admitted in addition to the above quota. However, he must, like all other pilots, be entered by the NAC.

Requirements to pilots

A competitor must be citizen or resident of the country of the entering National Aero Club and satisfy the conditions of the FAI Sporting Code, Gen.1 Section 3.7 on citizenship and representation, and must:

- have flown at least 250 hours as pilot in command, of which at least 100 hours must be flown in a sailplane
- have documented competence on aerotow
- hold an FAI Sporting License with a current FAI stamp
- hold a pilot license issued or endorsed by the authorities of the country in which the sailplane is registered
- know, understand and abide by the Sporting Codes and the Rules and Regulations issued for the event
- hold a gold or silver badge and have competed in at least two National Championships

Rules

The FAI Sporting Code General Section and Section 3 with its Annexes will apply.

The Local Procedures will be issued with Bulletin No. 2, after approval by IGC, and will be published on [www.wgc2004.no].

GNSS

Documentation will be by GNSS only. All flight recorders which have received IGC approval for championships by 11th April 2004, will be admitted. Please note that before the first competition day, valid GNSS FR calibration certificate for primary and secondary FRs will be required.



Conway enjoying ridge soaring in Standard Libelle VH-GTX near Adelaide Uni Gliding Club at Lochiel just before sunset on Sunday, 18 August. The photo was taken by Justine Thompson in the front seat of Adelaide Uni's Puchatek VH-KRO, flown by Anthony Smith from the rear seat.

Wrong and Missing Captions

Unfortunately the wrong caption was placed under this photograph which appeared in the December 2003 issue.

It should have read: Phil Organ in his Libelle VH-GSQ over Raywood. Our apologies to Craig for this error.

The December Contents photo showed David



Home Page on the WWW

The home page of the 3rd Club Class World Gliding Championship 2004 can be found at: [www.wgc2004.no].

be pleased to assist with accommodation and information. Social events will be held to compliment the competition.

To register or for any enquiries phone Darren Edwards on 08 8955 0014, or Simon Holding on 08 8953 4100.



CLUB NEWS

Alice Springs Masters' Games – 16 to 23 October 2004

The Alice Springs Gliding Club will participate in the Alice Springs Masters' games which will be held from 16 to 23 October this year. This will be a low key and social competition for anyone over 35 years of age, and a great excuse to experience some of the best soaring conditions in the world (as well as seeing a bit of the outback).

Courses will be set so that most of field will make it home – we want to minimise outlandings and keep the competition fun. Winch launches only, and bring your own oxygen. Trophies will be awarded for all classes.

Competitors will need to bring their own sailplanes, however the club would

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First Times – Remember Your First Cross-Country Flight?

Javier Alvarez

LIVING ON THE NSW CENTRAL COAST, MOST OF MY HANG GLIDING EXPERIENCE HAS BEEN AT OUR LOCAL COASTAL SITES - CRACKNECK LOOKOUT, FORESTERS BEACH, CATHERINE HILL BAY, MOONIES, MEREWETHER, ETC. THIS MEANS VIRTUALLY ALL OF MY FLYING EXPERIENCE HAS BEEN COASTAL AND NOT INLAND.



I did a thermalling course with our local Newcastle instructor, Tony Barton, earlier this year at Manilla. This was really interesting. I didn't really get away on a thermal, but some other pilots did and I was amazed at what you could choose to do when you had the height. Imagine going to cloudbase!

Well, I knew I wouldn't reach cloudbase flying on the coast, so I decided to get involved in some inland flying with other members of the Newcastle Hang Gliding Club. Most of these people are advanced pilots and great mentors. The majority of the pilots on the Central Coast are intermediate rated and also did the thermalling course with Tony Barton. So we all decided to start flying the Newcastle inland sites. Most weekends, weather permitting, people fly Brokenback, Mt Sugarloaf, Heetons, Hunter and other sites in the Watagan Mountains. Although I haven't gotten away locally yet, I haven't been discouraged, as I have felt my inland flying skills have been improving.

When I heard about a cross-country course being held at Dalby I was really interested. The course would be a 10-day course held by Lee Scott from High Adventure and Jason Turner (my original instructor in Newcastle) and would include an aerotow certification. The advantage of this type of flying was that you would be towed straight into a thermal and you could take off from there. If you lost it, you just landed and got

towed up again. Much quicker turn around times than mountain launches. I signed up with another local pilot, John Harriott.

On the first day we all met at High Adventure headquarters at Laurieton, where Lee Scott would assess our flying skills. There were five pilots doing the course; two from Sydney, one from Switzerland, John and I. Three pilots were flying the Airborne Sting II 154 XC, I flew the Airborne Sting II 175 XC and another pilot flew an Airborne Fun 160. We all had varying degrees of experience. The conditions were "perfect" for a site called Nellies. Launch was about 1,500ft above the paddocks below. The idea was to do a mountain launch and observe people's fast flying skills for aerotowing. If we caught a thermal and got up, that would be a bonus.

I was first off and launched into some strong, rough lift, but got things under control and I quickly climbed to about 1,000ft above launch. As the others launched and climbed, Lee asked me to fly down the ridge-line and let them know what it was like.

"*There should be plenty of lift,*" I was told. Well, I flew about two kilometres down the ridge and found myself sinking. I reported this and tried to come back. Unfortunately I was now going into a cross/headwind which meant a slow trip back as I continued to sink! Bummer. I kept reporting where I was and told them not to come over here unless they had more height. If the wind was at a slight-

ly different angle it would've been fine. I was in no danger as I could always reach the bomb-out paddocks, but who wants to bomb out?

As I started to sink below the height of the ridgeline, I was not happy. I radioed back I would have to get ready to land. I was getting too low, flying about 200ft above the tops of trees. The landing paddock was into headwind and at least 500m away. Everyone else was now up and flying and I was getting ready to land! Bummer!

Well, I did something that requires trust and belief in yourself – or just plain stupidity. I knew from flying the local coastal sites that I had gotten to the point where I could consistently scratch around looking for lift with my wingtips about 10-20ft away from the cliff face or bushes, so I thought I won't abort at 200ft, but keep trying to find lift. Well, my trust paid off and I ended up finding lift again. I was now back above the cliff line again, so the lift got even better, but I was still struggling. I radioed back to launch and told them where I was and what I was doing and they said keep coming back as far as possible. John Harriott reported he had a visual on me and would watch me. I found out later they didn't believe I would make it back and were amazed when I radioed them from above the original launch site!

Being the least experienced inland pilot on this course, I expected that I would probably do the worst out of everyone, but I just wanted to learn more and keep improving my skills. I knew some of the other pilots already had lots thermalling and cross-country experience.

From above launch, the wind direction started to change slightly and I caught a great thermal. I looked at my vario and watched myself climb to 4,500ft! I had never been that high! I was contacted by another local advanced pilot, Scotty, who was on the Middle Brother south-west launch. He could



see me from where they were. Scotty had met me a couple of times before and couldn't miss a name like Javier on the radio. He told me there were three pilots on his launch site, but it was now too dangerous for them to launch as one had already tried unsuccessfully. He asked me again what height I had. I confirmed 4,500ft and there was silence. I'm sure they were thinking "you bastard!" Anyhow, they got back on the radio and told me to go for it!

Lee was keeping tabs on everyone as some of us started to get high enough to go cross-country. He asked who was above me. I looked around and the nearest person I could see was at least 2,000ft below me. Out of five pilots I could only see two others though. I radioed back that I couldn't see anyone above me. Lee said someone was a lot higher than 4,500ft. I couldn't see them. After about three minutes I radioed back my realisation – I was 4,500ft above launch, I was really at 6,000ft! To make sure, I said I'd do some 360 degree turns for them to identify me. Then Scotty did get on the radio and say, "*You bastard! Go for it!*" Well, from there I could see to the ocean which was about 30km away as the crow flies.

Lee said to me, "*You have more than enough height to reach Middle Brother, I want you to head toward the transmission tower over there.*" At this stage I started to get worried. As I turned that way, I saw it was about 20km to Middle Brother and there was nowhere to land for ages. I was over heavily wooded areas. As I left the ridge I got into sink. They told me to head towards a big cloud that was still forming, as there should be lift there. "*Yeah right!*" I thought. I've never done this before. I was constantly in sinking air and losing height. It takes a fair while to lose 6,000ft, but at this height it seems like you're hardly moving across the terrain. I radioed back "*Okay, I'm going to have to trust you on this one,*" because I certainly didn't believe I could make it!

All the way to the cloud I was in sinking air. "*Keep going, you'll find some lift shortly,*" was all I heard back from them. From 6,000ft I was now down to 4,000ft and only half way there. What if I encountered headwind?

Or something else happens? My anxious mind kept screaming at me – even though I was going downwind and travelling fast. At least once during the flight I looked at my parachute release to make sure I knew where it was without looking.

I was now within gliding range of paddocks and feeling comfortable again. I was down to 3,000ft and Middle Brother was still about 10km away... The last part of the flight seemed to go a lot faster. Maybe you notice your groundspeed more the lower you get, or maybe you focus on the target so much time slips away. Anyhow I never found the lift I was supposed to get from that big cloud and reached Middle Brother with about 1,000ft above the south-west launch site. The air was rough as the convergence of the seabreeze was now starting to affect the air.

I could see Scotty and the two other pilots on launch as they spoke to me. I was quickly losing height and soon I was flying about 50ft above them. I radioed back to Lee I was preparing to land at the Middle Brother bomb-out paddock. Amazingly I managed to catch a thermal about 300ft above the landing paddock and rode it for a bit. I managed to maintain my height, but not really climb, so I set up a standard aircraft approach to the landing paddock. I was now extremely anxious, as the last time I landed in this paddock (two years ago with only nine hours flight time and no inland landing experience) I really botched up the landing and hurt my shoulders. Coastal pilots need to learn to flare a lot harder for nil wind inland landings.

As I came in on the final leg of my landing I hit some rotor from trees at the far end of the paddock. I pulled the bar in as hard as I could to land with lots of speed. I sped through the rotor and landed perfectly towards the end of the paddock. I radioed to Scotty to relay a message to Lee that I had landed safely and was packing up. Since it was just me and about a hundred cows nearby, I screamed out "*Wooo hooo!*" What a hoot! I managed to overcome at least two major fears that day.

I walked the glider back towards the roadway and started to pack up. The cows seemed to love it and surrounded me as I

packed up. About fifteen minutes later Jason Turner drove up to the paddock. I had almost finished packing up. I asked where the other pilots were. He pointed upwards. I could see another glider at about 3,000ft. He told me another pilot had already gone past us towards the coast. "*You bastard!*" I thought. "*Go for it!*"

The pilot above me got caught in sink and landed in the same paddock as me. The other two pilots never got away and landed at the Nellies bomb-out paddock.

I had just completed my first cross-country flight and had travelled 20km. This is living, I thought! My personal best for height and distance – and this was just day one! Would I fluke it again during the week?

The aerotow course was moved from Dalby in Queensland to Gloucester in NSW. We got there on Monday morning. Richard Waterfield and Jim were already there doing their trike certification. We set up the gliders. Jason Turner test flew the five gliders behind the Airborne trike. Next thing on the agenda was doing tandem tows to see what it was all about. I was first off and it seemed simple enough. I had completed my ground towing certification with Tony Barton so I had some idea of what to expect.

After the tandem tows Lee asked who was ready to give it a go. I stepped into the dolly first. Funny how you're not nervous on a tandem flight, but your heartbeat reaches 200 when you're in there by yourself! Well, the transition from the dolly to flying behind the trike was fine. The tricky part was keeping yourself at the correct angle behind the trike. It seemed like we were screaming through the air and yet Lee was flying as slowly as possible for us.



By lunchtime I had done a few tows and the conditions were starting to change. The thermal activity was getting much stronger. The guys doing their trike certification called it a day as it was getting too rough for them. I got towed up again. I was towed to about 800ft when the weak link broke due to my keeping an incorrect angle. I flew back to the airstrip but felt a few bubbles so I tried to get up. Amazingly I rode this thermal to 4,000ft! Jason told me to try and get away. There should be other thermals around the ridge of the mountains in the background. I flew over there, but kept losing height. At 2,000ft I headed back towards the airstrip. I caught another thermal and went to 4,000ft again. After about two hours I ended up landing. What a day!


The next day I tried to break the land speed record for crash landings. I broke off the towline at about 800ft above a cow paddock that was not ankle friendly for landings. I looked back to the airstrip and saw both wind socks pointing west-north-west, so I setup my landing into the wind. It was really bumpy with dust devils breaking off and rough air. I came in for the final approach and the ground was moving past really fast. Jason radioed me and told I was heading downwind. How does that work? The wind socks two large paddocks away were pointing



the other way! Having used up most of the paddock I could see I was about 10ft off the ground and heading towards the corner of a barbed wire and electric fence. I knew I wouldn't make it over the fence, so my choices were to hit the barbed wire fence or fly the glider into the ground. I chose the ground. I lost some skin off my knees, but I was okay and so was the glider. My confidence got a reality check though. There's

more to inland flying than catching thermals.

Over the course of the week we improved our aerotow technique and thermalling ability. Rick Duncan from Airborne came up to test fly some gliders midweek. He gave Lee a break from towing and towed up one of the other students, Nick Abicare. Apparently Rick tows a bit faster than Lee did, but you have to get used to every tug pilot. Nick had a great flight and flew down the valley about 10km. Later Rick got towed up and flew back to Dungog.

The course ended successfully for all of us. It was a great experience and all became good friends too. Since doing the course I have flown many of the Newcastle inland sites in the Watagan Mountains – Hunter, Heetons and Brokenback. Nick Abicare came up from Sydney to fly Brokenback with us, his first time for any of our sites. I launched and climbed up in a couple of good thermals. I got to 3,500ft but couldn't push past the inversion that day. Tascha McLellan, Conrad Loten and Chris Lawry flew to Budgewoi Beach on the Central Coast. Adam Donaldson and I landed in Tyrell's long paddock and Nick Abicare flew back to the Watagans on his first go – 20km and he reached 5,000ft! As we drove back to pick him up you can be assured we were all thinking, *"You bastard! Go for it!"* 

MICROLIGHT FLYING PHOTOS



Clockwise from top left: 1. Glen Eastment and passenger Thi Nguyen flying northbound coastal from Old Bar to Telegraph Point late June 2002. Photo: Rod Eastment 2. On final to Old Bar late June 2002. Glen Eastment. Photo: Rod Eastment (passenger). 3. Rod Eastment on final at Barnett South of Goulburn, 9 June 2003. Photo: Glen Eastment. 4. Glen Eastment and passenger Thi Nguyen flying southbound from Old Bar to Foster at 1,000ft amsl, 3 January 2003. Photo: Rod Eastment passenger in another trike. 5. Glen Eastment inbound to Moruya from north, 5 June 2002. Photo: Rod Eastment (passenger). 6. Unknown local flyer from Telegraph Point crossing to coast late June 2002. Photo: Rod Eastment.

Photos taken on Fuji FinePix 2800 and S304 digital cameras, resolution of 1280 x 960 pixels (1 Megapixel).



Stanwell Park, Flyer Friendly



Bob Pratt on approach to the Stanwell Park LZ

Bob Pratt

CONGRATULATIONS AND THANKS TO EVERYONE WHO CONTRIBUTED TO A WORKABLE PLAN FOR SUCH AN ESSENTIAL SITE. IT WAS NEVER GOING TO BE EASY TO PLEASE EVERYONE WITH SUCH A MAMMOTH TASK DEALING WITH SUCH A DIVERSE RANGE OF REGULATORS AND PILOT VIEWS. LET'S GIVE THE NEW RULES OUR BEST SHOT AND LET CHANGE OCCUR THROUGH NEGOTIATION AS THE NEED PRESENTS ITSELF. THERE IS NO ROOM FOR THE OLD 'THEM AND US' ATTITUDE WHEN DEALING WITH REGULATORS OR HG VS PG.

Already there is change, but more pilots need to help spread a culture of compliance, and don't forget diplomacy when situations occur. Unresolved issues should be settled through the SPHGPGC, which would be a broader and informed outcome.

Like other sports, accept the referee's decision.

An Austrian friend tells the story of a little boy who was given a basket of smiles to distribute in the community, but when he came home the basket was full. He said, *"Every time I gave one out, I got one back"*.

Let's try to adopt this philosophy at Stanwell Park.



Photos: Bob Pratt

Far right: Stanwell Park local, Rob Fakes

Right: Stanwell Park guru, Enda Murphy



Narromine Cup Week 2003

Text and all photos: Anne Elliott

Pilots from throughout Australia, and several overseas countries, converged on Narromine during the last week in November 2003 to take part in Narromine Cup Week and coaching clinic.

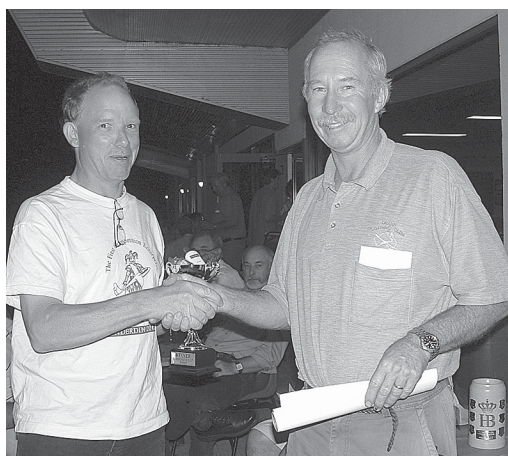
Hosted by the Orana Soaring Club, the event attracted a total of 84 pilots, just over 60 gliders and five tugs: probably the largest gathering of pilots at any gliding event in 2003 and a far cry from the first cup week in 1997 with nine participants.

Soaring conditions were good, especially on 25 November when a total of 22,700km were flown including 1 x 1,000, 1 x 900, 1 x 800, 2 x 750, 5 x 600, 14 x 500, 10 x 300+ and several 50+km.

Winner of the week-long event was James Cooper, Western Australia, followed by New South Welshmen Ben Coleman and David Pickles.



Swiss visitor Erwin Szafranska and Phil Eldridge



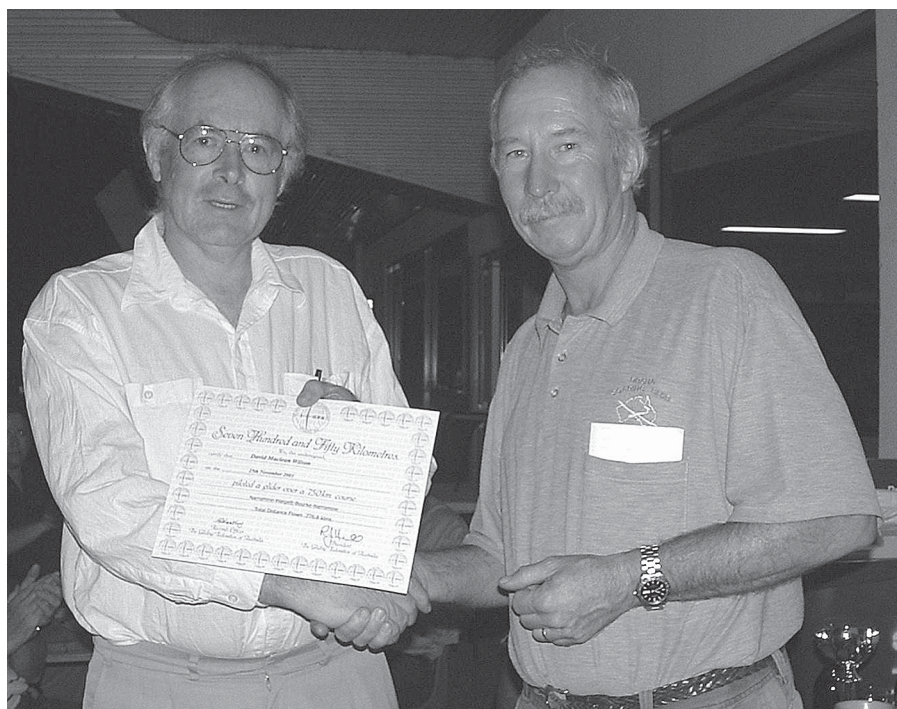
Narromine Cup Week winner James Cooper who travelled from Western Australia for the event



Second placegetter Ben Coleman



David Pickles came in third



David Wilson received his 750km flight certificate from Orana Soaring Club President Arnie Hartley. In his ASW24, David flew 776.8km from Narromine to Walgett to Bourke and back to Narromine on 25 November.

David started gliding while on a scholarship to Cranfield, United Kingdom, in 1964 and achieved a British Bronze C before returning to Australia. That flight required a soaring flight of half-an-hour duration.

Back in Melbourne he joined the VMFG and has been a member of the club ever since. He first flew in a Nationals at Benalla in 1968, in a Phoebus C, and since that time has been a regular competitor.

As well as flying during Narromine Cup Week, David very generously took on the role as met man.



Snooze time for tuggie Les Mitchell



Peter Buskens



Colin and Evelyn Turner, who are now happily residing in Bathurst



Neil Cox and John Jurotte in the Southern Cross Gliding Club's DG1000 with Orana Soaring Club members Paul Thompson and Ray Dawson



Orana Soaring Club members Graeme Thompson, Keith Dixon and Chris Stephens with Ka6 pilot Arie Van Spronsen



German national Hans Rashke



Bill Bland and Keith Dixon on tow in the 'Mighty K7'



Below: Bob Bowler and Rolf Cetinski



Jack Hart



Record keeper Sam Dixon



GFA President Bob Hall



Don Gray



Graham Engel checks out the weather



Michael Boughen



Right: Hans Rashke sets off in GKU



The flight line



A section of the tie-down area at Narromine



Richard Bull



Watching the rugby final - the faces say it all



The 'Flying Doctor', Ed Marel



Mike Cole, Bob McDonald, Ed Marel, Graham Cant and Leigh Youdale



Orana Soaring Club instructor and tuggie Nobuo Harigae and his Japanese friends lend a hand at the barbecue



Stuart Ferguson



Ross McLeod achieved his first 500km flight during cup week. Congratulations Ross



The happiest man on the airfield was Stephen Jeffries who was 'beside himself' at achieving his Silver C during cup week. He also flew just over 300km but didn't declare the task!



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GFA Badges & Certificates

FAI List – December 2003

A CERTIFICATE

Latimer, Rebecca E	10900	NSW Air TC
Palmer, Jade	10902	SA Air TC
Carpenter, Dylan	10903	Byron Bay GC
Jameson, Lauren E	10907	NSW Air TC
Chye, Daniel John	10909	SA Air TC
Stewart, Andrew J	10910	NSW Air TC

B CERTIFICATE

Robinson, Gregory H	10869	NSW Air TC
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C CERTIFICATE

Cook, Barry Allan	10809	Boonah GC
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A, B & C CERTIFICATE

Messinis, Nicholas T	10896	Beauford GC
Murphy, Robert C	10897	Caboolture GC
Hird, Lee David	10898	GC of WA
Camilleri, Peter C	10899	North Aust. GC
Trone, Steven G	10901	VMFG
Iveson, Michael	10904	Southern Downs GC
Muspratt, Neil	10905	Caboolture GC
Wright, Sydney H	10906	Barossa Valley GC

SILVER C

Kendall, John R	4500	Caboolture GC
Deal, John Charles	4501	GC of WA
Johnson, Swain R	4502	GC of WA
Trone, Steven G	4503	VMFG
Murphy, Robert C	4504	Caboolture
Jeffries, Stephen W	4506	Hunter Valley GC
Linnet, Christian	4507	Lake Keepit

GOLD C

McDonald, Robert J	1575	Bathurst GC
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DIAMOND DISTANCE

Thompson, Jennifer J	Darling Downs SC
Brown, Simon	Geelong GC

DIAMOND GOAL

Moller, John Kerry	Darling Downs SC
Mitchell, Pearce Ross	Caboolture GC
English, Brendan Mark	GCV
Thompson, Graeme Herbert	Orana SC

600KM DISTANCE

Buskens, Peter	85	Beauford GC
Sweeney, Geoffrey A	86	Bathurst GC
Brown, Simon	87	Geelong GC

750KM DISTANCE

Wilson, David MacLean	112	VMFG
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Claims for all badges and certificates to:
FAI Certificates Officer Beryl Hartley
PO Box 275, Narromine NSW 2821
Ph: 02 6889 2733 (w), 02 6889 1250 (h)
Fax: 02 6889 2933,
Email <hartley@avionics.com.au>.

Decentralised Competition entries to:
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AMYS AVIATION



SZD-55-1



SZD-50-3 PUCHACZ

Paragliding National Ladder 2002/2003 – Top 50

1	NSW	McKenzie, Ron	3,117
2	NSW	Murphy, Enda	2,995
3	NSW	Rockman, Rhett	2,914
4	QLD	Horchner, Andrew	2,763
5	NSW	Wenness, Godfrey	2,507
6	ACT	Donnell, Craig	2,396
7	VIC	Gungl, Fred	2,393
8	NSW	Annisimov, Ivan	2,304
9	QLD	Hystek, Phillip	2,288
10	ACT	Dennis, Stewart	2,249
11	VIC	Webb, Brian	2,227
12	NSW	Bastion, JJ	2,131
13	QLD	O'Donnell, Brandon	2,121
14	ACT	Robinson, Brett	2,055
15	QLD	Sexton, Geoff	2,012
16	VIC	Texler, Karl	1,953
17	NSW	Ladyman, Ian	1,942
18	VIC	Harris, Rod	1,849
19	VIC	Hamann, Heike	1,840
20	NSW	Lawson, James	1,821
21	NSW	Smith, Bob	1,722
22	NSW	Thompson, James	1,554
23	VIC	Kelly, Bernie	1,416
24	ACT	Bowyer, Peter	1,382
25	VIC	Stevenson, Garry	1,219
26	VIC	Gingell-Kent, Sharyn	1,137
27	ACT	Elston, Mark	1,092
28	NSW	Hack, Nigel	1,058
29	VIC	Gingell-Kent, Kevin	1,025
30	QLD	McFarlane, Ian	1,022
31	NSW	Roser, Patrick	999
32	VIC	Martinson, Craig	987
33	NSW	Couper, Rob	974
34	QLD	Cawte, Steve	948
35	NSW	Turner, Jason	930
36	NSW	Gray, Edward	830
37	NSW	Ryrie, James	819
38	VIC	Wong, Geoff	798
39	NSW	Robert, Bill	791
40	WA	Duffy, Mike	766
41	VIC	Toth, Zoltan	764
42	VIC	Scott, Barbara	758
43	QLD	Vandenbegine, Richard	750
44	VIC	Clarkson, Gary	738
45	NSW	Smith, Suzi	674
46	QLD	Rogers, Howard	673
47	QLD	Hill, Shane	669
48	ACT	Appleby, Warren	558
49	NSW	Sheppard, Brian	549
50	VIC	Collings, Craig	526

Scores included:

AAA comps (450 points) – Canungra, Bright,
Manilla A (288 points) – NZ Open at Manilla C
(184 points) – Mystic Cup
C-50 (50 points) – CMAC XC league.

Former NZ pilots Craig Collings and
Jill Borst would have scored 3,164 and 2,023
points (1st and 15th) had they been flying with
Australian licenses instead of NZ licenses. Craig
and Jill – welcome to Australia for 2003-2004!

CLUB NEWS

Blue Mountains HG Club

The weather's getting warmer from time
to time, the thermals are getting higher and the
flying a bit more consistent. The weather however
is still not getting behind the program properly.
The good news for the farmers I hope, was this
weekend's deluge which was a good addition to
the other rain during the week. In fact we had
some good thunder and lightning with hail at one
point and then torrential rain. There has been
30 Soaring Australia

more flying though and last month's comp round
was a good indication of what we have been
hoping for. The round was won by a novice –
Aaron Hart

– landing on the back road to Lithgow.
A good achievement in an XT given the windy
conditions. Dave Seib flew the furthest, landing
near Lithgow gaol, but on handicap Aaron took out
the round. Looking back through my diary, October
gave some decent flying although it has been
fairly windy. This has been good for soaring but
making it harder to get away from Blackheath
with it being it a bit of a challenge to get out of
the valley and over the pass. Last weekend's fly
was typical of these sorts of conditions with an
absolutely beautiful hot day with some great
looking high cu's and some lovely lift but very
difficult to penetrate across the valley and get
away. Hopefully December will bring some better
XC weather. I'll look forward to seeing you all out
there getting high. All news and reports can be
sent to me at <dtoulalan@hotmail.com> or
<derek.toulalan@ozemail.com.au>.

Derek Toulalan

Cloudbase Paragliding Club WA

The weather is still being a little uncooperative in
WA, but we have squeezed in a few days of good
flying. Most notably the annual 333 week record
camp with Western Soarers was almost blown out,
but Justin Post took advantage of the one really
good day to smash the WA record with a flight of
235km on his new Boomerang III, flying from
Wyalkatchem to just past Perenjori. On the way he
set a new WA declared goal record of 129km.
Justin towed up at 10am in the morning and
landed about 4pm with a couple of hours potential
lift still left in the day.

On the sites front there has been
a hiccup in council approvals for the new ramp
installation at Sandpatch and it is unlikely to be
finished for this summer. Noondeening Hill has
been sold and we will possibly lose access from
February; the new owners will be approached by
the club to try to maintain access.

On a brighter note, Mt Bakewell has a much
improved main east-south-east take-off with
artificial turf, and a new south to south-east
launch which has made launching in those
directions much safer.

With the news that there will be no Manilla
paragliding competition in February 2005, plans
are afoot to seek an A sanction for our WA towing
comp in 2005 (which normally clashes with
Manilla) and try to attract some Eastern States
pilots over.

Mike Duffy, Secretary

NEW PRODUCTS



RELAX – The new school and fun hang glider from Icaro 2000

New models Relax 14 and Relax 18 have passed
DHV testing.

Manfred Ruhmer says: "The Relax 14 and 18
have both passed easily the DHV pitch and load
test. Up to 80km/h the pitch is good. According to
the DHV rules the maximum speed (VNE) will be
70km/h. We have also made the load test with the
Relax 18 at 800kg positive and 400kg negative.
This means that the maximum clip-in weight will
be 120kg. To complete the tests a DHV pilot
(Christoph Kratzner) has just to make a final
flight."

The Relax 14, which weighs only 20kg, is
ideal for lighter pilots with weight of 45-70kg. The
Relax 18, which weighs 24.5kg, is ideal for pilots
with weight of 80-120kg.

See [www.icaro2000.com] for more
information.



CompeGPS

CompeGPS software is a program allowing pilots
to review and analyse their flights, project them in
two or three dimensional maps or even re-play
them in real time. One of many features of the
software is a comprehensive digital logbook.
CompeGPS can be used with any 3D recording
GPS or instruments like Galileo and Graviter. Para-
gliding Headquarters is an official distributor of
this product for Australia and has permission from
the manufacturer to sell CompeGPS for \$142 –
about \$20 less than from the parent company. For
more details visit [www.paraglidingheadquarters.
com/instruments.html], email us on <jiri@
paraglidingheadquarters.com> or call 0414
332737.

USHGA Calendars Now Available

USHGA's 2004 Calendar, their first ever for both hang gliding and paragliding, is now available, providing 13 months worth of spectacular photography to enjoy, reminding us of the grace and beauty of our sport, even if we're stuck in our office.

Total cost for one calendar, airmail delivery, is US\$21.95; two calendars with airmail delivery is US\$33.90 (which must be in US funds drawn on a US bank). Orders may be faxed to (719) 632 6417 or emailed to <ushga@ushga.org> with a Visa, Mastercard or American Express. Our mailing address is: USHGA, PO Box 1330, Colorado Springs CO 80901-1330, USA.



New Explorer Model

Airtime Products is releasing the new Explorer model. Our goal was to improve on our already successful Explorer, which is recognised worldwide. It has been completely redesigned from the earlier model and will be available in three standard sizes in stock for quicker delivery time. Our popular custom-made option will still be available. The new Explorer is very streamlined, much more comfortable than the old model, and features neoprene arm and neck gaskets for reduced drag, single suspension point, removable outer cover and positive pivot system enabling the pilot to get in and out of hang with ease. New options include fuel bladder integrated into the harness, intake silencer and high performance quieter exhaust giving you more power and much less noise. Folding propeller and electric start will still be available as standard options.

Also being released is the new Radne Discovery paramotor. Intake silencer and high performance exhaust will be standard. Features new single one-piece cage for extra lightweight, high strength and affordability. With its light weight it is easily put onto roof racks by one person. The Top 80 and hugely popular Cors-Air Discovery models will still be available and all models will have the option of high or low hang points, single, two or four-part cage.

Airtime Products can also offer package deals with Airborne and Aeros Hang Gliders and Sky Paragliders.

Airtime Products are now also dealer for Aeros and can offer the Target 16 and Discus M

Hang Gliders, which have been specifically designed for motorised flight.

Airtime Products Pty Ltd, Ph: 07 49452851 (w); 07 49466305 (h); 0427 726984

FAI NEWS

World Rankings

Paragliding

Added: Canungra Cup, Montana Cup, Norwegian League, Slovak Open, Korean Nationals, India Pre-World Cup, corrected Nordic Open. Not added: Tropheo Montegrappa, Jaen Open, X Copa Pirineus, Swiss PG Champs, Greek Open (Amfikela), Pedro-barnardo Open, Portuguese Open, Brazil Nationals, Algodonales Nationals. Deleted: Korean League 02.

The top 10 remain the same, with Alex Hofer (SUI) leading, Norman Lausch (GER) 2nd and Helmut Eicholzer (AUT) 3rd.

Nations rankings Switzerland 1st, France and Japan retake 2nd and 3rd moving Austria to 4th. Germany and UK remain 5th and 6th while South Africa gains 7th. Italy and the Czech Republic fall a place to 8th and 9th and Norway remains 10th.

More details are on the FAI website: [www.fai.org/paragliding/rankings/].

Paragliding Accuracy

No competitions added but the Yugoslavian Competition 02 was deleted. Results not received so not added were the Greek Nationals and the European Cup UK.

There are still changes to the top 10, Matjaz Feraric (SLO) retains his lead, but Andy Shaw (GBR) moves up to 2nd, Matjaz Sluga (SLO) drops to 3rd. Tone Svojsak (SLO) stays 4th but Jaka Gorenc (SLO) and Sandi Marincic (SLO) jump to 5th and 6th, deposing Simeon Klokocivnik (SLO) a place to 7th. Brett Janaway (GBR), Neil Slinger (GBR) and Nick Simmons (GBR) all move up to equal 8th and 10th.

In the nations, the top three remain: Slovenia 1st, GBR 2nd and Serbia/Montenegro 3rd but Lithuania moves to 4th.

Full details at: [www.fai.org/paragliding/rankings/precision/].

Hang Gliding (Class 1)

Added: Canungra Classic. Deleted: Flytec 02, Korean League, Swedish Feltre Open and Wallaby. Not added: Open Serra de Estrela, Upper Austrian, Brazilia, Italian Val Comino, 22nd Birdman Cup, Japan HG Open.

Manfred Ruhmer (AUT) leads, Antoine Boisselier (FRA) 2nd, Oleg Bondarchuk (UKR) 3rd. The rest of the top 10 stay the same except Gordon Rigg (GBR) and Tom Weissenberger (AUT) move to 9th and 10th.

Nations rankings: France, Germany then Austria. Australia stays 4th but UK jumps to 5th, Spain stay 6th, Italy gain 7th and USA fall to 8th. Brazil (9th) and Sweden (10th) complete the top 10.

APCO AUSTRALIA

congratulates the following pilots
for their achievement

Winner of the Trevor Challenge Cup: **Rob McDermott (Bagheera)** and **Jeffrey Cole (Keara)** for being the first PG pilots to reach the Cherry Venture from Teewah ramp (40km). **Graham Sutherland (Bagheera)** for being the first pilot to reach Teewah ramp from Rainbow Beach (60km). **Neil Sutton** for being the first Australian pilot to clock up over 1,000 hours on APCO gliders since he started to fly in November '98. In recognition of their effort, Apco Australia is offering \$1,000 rebate off their next APCO glider.

Due to the increased value of the Australian dollar, APCO AUSTRALIA has reduced its prices:

Tetra was \$4,100 – NEW PRICE \$3,600
Fiesta was \$4,100 – NEW PRICE \$3,600
Presta was \$4,500 – NEW PRICE \$4,000
Keara was \$5,000 – NEW PRICE \$4,500
Mayday PG 16 was \$750 – NEW PRICE \$650
Mayday PG 18 was \$850 – NEW PRICE \$750
Mayday HG 18 was \$850 – NEW PRICE \$750
Silhouette harness was \$875 – NEW PRICE \$695
Finesse Plus was \$1,000 – NEW PRICE \$895
Finesse Top was \$1,150 – NEW PRICE \$985
Gate Lock carabiner was \$35 – NEW PRICE \$28
9 L Ballast Bag was \$55 – NEW PRICE \$40
Cloudchaser full-face kevlar helmet was \$290 – NEW PRICE \$250
Cloudchaser open face kevlar helmet was \$180 – NEW PRICE \$160



Finesse Top features: only 2 buckles system, easy to get out floating seat board, seating position or lay back with foot rest, neoprene chest windbreaker, lexan + xthick airfoam back protection, side protectors, new design bottom of seat reserve pocket, enormous back pocket, excellent weightshift

For second hand and new equipment, weather, pictures, videos, acro and more Check out new website designed by pilot

Jorg Feddler [www.paraglidingrainbow.com].

Jean-luc Lejaille CFI 45192
Rainbow Paragliding
Apco Australia
PO Box 227,
Rainbow Beach QLD 4581

Phone: 07 5486 3048
Mobile: 0418 754 157

Email: <intheair@ozemail.com.au>
[www.paraglidingrainbow.com]

Full details at: [www.fai.org/hang_glider/rankings/class1/].

Class 5

Competitions deleted were Flytec, Nasa Cup and Wallaby. No results have been received yet from the Japanese Open.

David Chaumet (FRA) takes 1st, Christian Ciech (ITA) and Alessandro Ploner (ITA) 2nd and 3rd. Johann Posch (AUT) 4th, joined by Toni Raumauf (AUT) 5th. Bruce Barmakian (USA) 6th. Juerg Ris (SUI) and Hansjoerg Truttman (SUI) 7th and 8th, Davis Straub (USA) 9th. Oliver Schmidt (GER) completes the top 10.

USA still lead with Switzerland 2nd and Germany 3rd.

Full details at: [www.fai.org/hang_glider/rankings/class5/].

Class 2

The Flytec Comp was deleted.

Brian Porter (USA) leads Manfred Ruhmer (AUT) with Robin Hamilton (UK) in 3rd.

USA is 1st, GBR 2nd, Germany 3rd.

Full details at: [www.fai.org/hang_glider/rankings/class2/].

100th Anniversary Publication

As already mentioned in a previous press release, FAI will mark its Centenary by publishing a 224-page book (English and French) covering the history and the development of FAI and Air Sports. Mr Pierre Morath, a sports historian, started research work in March 2003 and we now have pleasure in publishing the provisional Table of Contents. In 2004, a subscription campaign will be launched, inviting you to place pre-orders for the book which will be published in March 2005. FAI Members, Air Sport Commissions, Museums and Companies wishing to personalise their books will have the opportunity to have their own logo printed at the beginning of the book.

Provisional Table of Contents (subject to later adjustments)

1. Introduction (approx. 20 pages)

Introduction by the IOC President

Foreword by the FAI President

Preface by Mr Eilif Ness

The FAI: role and mission at the dawn of the 21st Century.

2. Main Part (approx. 130 pages)

Six thematic articles, which put together constitute the history of FAI:

Development of aeronautics before the founding of FAI

Birth of FAI and its first years of development (1905-1914)

The FAI during First and Second World Wars

Relations between the traditional and new FAI Air Sports

The FAI and the Olympic Movement

Relations between sporting and civil aviation; flight for airspace

3. Annexes (approx. 50 pages)

FAI Presidents (list and biographies)

FAI Secretary Generals (list)

FAI Members (list)

FAI General Conferences (list, dates, locations)

FAI Gold Air Medals (list and short biographies)

Chronological development of FAI Air Sports

Aviation museums world-wide (list and description)

4. Bibliography & Guide for FAI Archives (approx. 20 pages)

New Guidelines for the Future of FAI

Adopted by the Executive Board at the beginning of 2003, the new FAI Strategic Plan presented at the General Conference forms a long-term vision to guide FAI activities for the next three to five years. The main goals depicted in the Strategic Plan are to modernise and promote the image of FAI and Air Sports, to develop attractive international competitions, products and services, and finally to increase the proportion of financial revenues coming from external commercial sources.

The first projects resulting from the new FAI Strategic Plan have already been launched in 2003, and should bear fruit in 2004 and 2005: among other projects, a new Corporate Identity and Communication Strategy will be introduced in the course of 2004, the exploitation of FAI Archive and World Record Files will be improved, and the organisation of several public events has been launched to celebrate the FAI Centenary in 2005.

The success of the FAI Strategic Plan relies on the whole FAI Community sharing responsibility for achieving these goals. Each person involved in Air Sports can contribute to these efforts and create positive effects for the whole Air Sports community.

Therefore, we invite you to read the basic principles, visions, goals and priorities contained in the FAI Strategic Plan by downloading the leaflet available at [www.fai.org/documents/StrategicPlan.pdf] (242kb). To better understand its content, please print this PDF file recto-verso on an A4 sheet of paper, then fold the document in three equal parts. FAI, Lausanne

CIVL Minutes

The minutes of the CIVL Bureau meeting ending 2 November 2003 are now published at [www.fai.org/hang_glider/meetings/].

Items included in the minutes are information on drugs testing, FAI Centenary celebrations,

reviews of major championships, minimum standards in Cat 2 competitions, Section 7 changes, FAI Licences and nationality, new WPRS.

The full Plenary meeting will take place 20-22 February 2004. The agenda will be circulated to delegates by 6 January 2004.

Paula Howitt, CIVL Co-ordinator

CIMA (Microlight Commission) Annual Meeting

CIMA Delegates met on 14 and 15 November 2003 for their Annual Meeting at the Olympic Museum in Lausanne (SUI). The organisation of the 2004 European Open Microlight Championship has been awarded to Portugal (Castelo Branco/31 July to 8 August 2004 – dates to be confirmed) and the 2005 World Microlight Championship to France (Levroux/12 to 20 August 2005 – dates to be confirmed). Diamond Colibris have been awarded to Hungarian pilots Csongor Latky and Andor Kantas for their humanitarian flight from Budapest to Australia. CIMA President Tormod Veiby (NOR) has been re-elected, together with Carlos Trigo (Portugal/1st Vice-President), Tomas Backmann (SWE/2nd Vice-President) and Tom Gunnarson (Secretary).

World Records

FAI has ratified the following Class 0 (Hang Gliders) record:

Sub-class 0-3 (Paragliders) – General Claim number: 7822

Type of record: Straight distance to a declared goal

Course/location: Carrizo Springs, TX (USA)

Performance: 285.2km

Pilot: Josh Cohn (USA)

Paraglider: Windtech Nitro

Date: 22/06/2003

Previous record: 278.3km (21/11/2002, Szilard Forgo, Hungary and Peter Simonics, Hungary – joint flight)

FAI congratulates the pilot on his splendid achievement.





Flying Tips

John Chapman

IT NEVER HURTS TO BE REMINDED OF SOME BASICS!

GETTING UP

Get out of the house, get up a hill.

Get up the right hill.

Get into the habit of checking weather reports and weather stations, even on days when you don't fly. This will help you get better at getting the previous point right!

Ring experienced pilots early, so you can be included in their plans for the day. Even if they are not going to a site you can fly, you will get another opinion on the day, and probably some good advice.

Try and get a driver as often as possible, this will make you very attractive to other pilots. (Remember, experienced pilots will always be going flying, your aim is to get yourself included.)

If you're a paraglider pilot and need ground handling practice (and we all do), try not to do it when it's "on". Find a convenient slope and play with your wing regularly.

If you wait until it is "on" before leaving home,

chances are you'll be too late. Conditions are almost always a-changing.

Learn to set up your glider efficiently and systematically, not forgetting a pre-flight check.

THERMALLING

If you want to fly cross-country, be up the right hill early – before the best part of the day.

Learn to enjoy having plenty of company in the air, as this will increase your/everyone's chances of finding lift.

If you see other pilots circling together and climbing faster than you, join them.

Exploring for lift is fine if you have the height, but don't go down just because you want to do your own thing and don't like gaggles.

If you wait and take off in a lift cycle, don't fly away looking for more lift, it's behind you. Work the lift you took off in. Then find some more.

Remember to always observe what is happening in the sky and on the ground, as many

indicators of changes in conditions can occur whilst you are flying. Learn to use these to your advantage.

When near to the hill, watch the trees.

Moving trees = moving air.

Never fly through the same patch of bad (sinking) air twice. Always lurk in the good (rising) air.

Always remember the Rules of the Air and stick to them.

LANDING

There is a line between "never give up" and "prepare in plenty of time for your landing". Assess your priorities. There is always another day (so long as you still have both arms, both legs and a glider).

Some General Rules for Flying (from Dennis Pagen):

1. When in lift, turn.
2. Never leave lift, unless you're sure there is better lift ahead.
3. Get high and stay high.
4. Be patient. Slower pilots often fly further.
5. Try to establish the pattern of the day after your first two or three thermals, and adjust your flying pattern accordingly.
6. Always fly with a goal in mind.



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T-Shirt

Available in a range of sizes and colours. Contact HGFA for an order form on 02 6559 2713

Letters to the Editors • • • • •

Flying Grunau Babies

Back in the June 2003 issue, Alan Ash reflected on the advances in gliders from his days of flying Grunau Babies.

I believe I would be correct in saying, I am the only current Grunau Baby pilot in the country, with close to 300 hours in GBs over the last 33 years. I've had some club members approach me with quizzical looks and ask, *"How come, after landing, you always have a smile on your face and look as though you have had a good time?"*

Alan's words appear to have put the wind up some people about how the Grunau flies. It seems that his words like *"Grunau... frights and experiences... a bit of a beast"* seem to have stood out in capitalised bold, while words like *"gentle and forgiving"* appear to have taken on a very small, pale-coloured font.

To be sure, the flight characteristics of the Grunau might seem different from today's aircraft, but I can't understand how anyone ever managed to prang one. Everything happens so slowly. There always seems to be plenty of time to think things through.

Perhaps, unlike Alan, I am also fluent in flying plastic fantastics where things happen much more quickly – I have acquired the necessary habits to fly them. It is certainly necessary, perhaps more-so in modern gliders, to have the brain well ahead of the airframe, something which may not have had much emphasis in the old days when training was less rigorous to non-existent.

On the other side of the coin, I can recall the Libelle being a slippery, twitchy critter after Ka6s, which was the highest performing glider, I had flown at the time. These days flying a Libelle, wouldn't faze me at all and I would be wondering what the concern was that I once had.

Having flown the oldest glider (Golden Eagle) and the newest (DG-1000) in the country, I can relate, more than many, to the paradigm shift required to sit in each of these cockpits and aviate.

Despite the difference in performance and flight characteristics of these two aircraft, I can appreciate the qualities, and charms, of these aircraft that are close to being at the extreme ends of aviation technology.

The latest gliders, invariably, seem to be nice to fly with none of the odd habits of some of the early glass gliders. This is certainly a credit to the designers and engineers and much better for the pilots who fly them. Old gliders certainly have more variability in their handling characteristics and hence this leads to different items

in the conversations between pilots for which polar curves and L/D's constitute the main theme of discussing current designs.

It has been said that we should learn from history and Alan stated that he would not want to have to go back to flying the old-timers. However, it is a pity that many more pilots are usually not in a position to gain some experience on old-timers as it does affect one's appreciation of and adds to the skills set when flying modern machinery.

The one aspect of gliding that is growing is the interest in flying vintage gliders. Ancient bones are actively being dragged out from long-forgotten corners all over the country and these historical items restored to flying condition. Why? Perhaps because, in part, modern gliders have generally followed a path of convergent evolution and tend to all look the same – same colour, same shape – while older aircraft look different and are often finished differently and therefore have colour, flavour and charm that is absent from the modern aircraft sitting on the flight line.

Talking to people at vintage regattas has revealed a ground swell of visiting onlookers, both pilots and non-pilots alike, who see the informality and fun that has been a part of the vintage scene. Some of these people definitely get a wooden splinter in their finger which they are finding difficult, if impossible, to extract.

Recently, perhaps because of a festering splinter, one of those onlookers is now one of Balaklava's newer members and has purchased the Ka6E from Paul Clift at Gawler. I was invited to do the shakedown flights for the owner (who has yet to go solo) and report back whether his purchase was worthwhile. Not having previously flown an E-model before, which has a huge all-flying tailplane, it was also a new experience for me. I could only confirm what the previous owner has always said, and agree that, indeed it was a lovely flying machine and that the new owner will have many fun hours in the type. The beam on his face said it all.

So, while Alan might not wish to fly old gliders, there is another generation who are finding some challenges in bringing old gliders back from the dead and enjoying the type of aviating that they have to offer.

Leigh Bunting

Praise

I feel a letter of Praise is in order for Airborne Trike Instructor, Colin Evans.

I own and fly an Airochute. but living in



Man-powered glider

Our company facilitates TV commercial shoots for Japanese Advertising agencies wanting to film in Australia.

We have a client interested in filming a beer commercial based on man-powered gliders. The client has asked us to research gliding clubs in Australia to see if anyone is flying man-powered gliders. Please contact me on 02 9357 3299 if you have any information on this subject.

Helen Kennedy

a VERY remote area of the Kimberly, WA, got me very little flying time due to extreme (42°C plus) heat and wind conditions.

A trike seemed the way to go. A call to Airborne and Colin on the other end of the line and I was on my way to owning a trike.

Colin went 200 percent in his efforts, flew from Sydney to Kununurra (in a real plane!) then a drive to Turkey Creek to the remote Aboriginal Community I live and work on (an experience in itself).

Teaching me to fly the trike in extremely difficult and remote conditions would have tested the patience of a saint. Including being out at 3:30am with the temperature already at 30 odd degrees – Colin never faltered in his patience, attitude and brilliant teaching methods.

Colin, if you happen to read this, thanks again for everything, top marks as an Instructor and Ambassador for the sport, and I can't recommend you highly enough to anyone contemplating purchasing and flying trikes.

"Airspeed, Airspeed" Jim Reilly,
New HGFA member

Conservationists

Hang gliding and paragliding are under threat from radical conservationist attitudes. We have had a site closed because there was purportedly a wedge-tailed eagle nest in the vicinity. They won't let us chop down a few trees in a state forest that has had thousands of trees taken out of it. The Qld Environmental Protection Agency has a

written policy that states that hang gliding is not considered a suitable activity for state forests.

I spoke to Damian Gates about this and he said it was up to the state hang gliding and paragliding organisations to tackle these problems within their own state departments. To me this sounded a lot like passing the buck. This seems like just the sort of problems that the HGFA should be tackling. Certainly clubs and state organisations should be addressing them as well. The more directions we come at this increasing problem the greater the chance of a breakthrough.

We need to be able to show these bureaucratic organisations some scientific research that shows we have minimal impact on the environment. I have heard of the existence of at least two studies that have been done overseas. One of which we have managed to find, but the other sounds much more useful.

One of the main stated purposes of the HGFA is promotion of the sport. So how about doing something to promote the sport as environmentally friendly?

Find what scientific studies that have been done. Encourage universities to do research studies, commission studies, etc. Then send this scientific evidence to all the governmental and conservation bodies around Australia.

We should be promoting ourselves as low tech solar powered aircraft (the sun heats the ground, warm air rises and takes us with it) and in tune with the environment. We need to show the blinkered conservationists that wildlife sees us as just another big bird and soon gets used to us in a new equilibrium.

Doesn't this sound like the sort of thing that was intended when the HGFA constitution was written to include promotion of the sport? Does this sound like a desirable and important thing for the HGFA to do?

Graham Sutherland

Juniors in your Club

A Junior is defined as a person who is 25 years or less.

I need your help in getting the junior gliding movement happening in Australia on a much larger scale that it is now.

Just recently I have been getting together with a number of keen juniors in Queensland, and now in Victoria, and have been holding many junior cross-country meets once a month at a different club each time. The juniors have been getting a lot of support from everyone and would

love to keep this new momentum going!

At the moment we have a list of 35 known juniors all over Australia and would love to better that number to, hopefully, promote gliding as a fun and exciting sport for the youth of Australia!

At this stage we'll be holding the first ever Junior Australian Nationals in conjunction with the NSW State competition in 2004/2005! We are also holding the first Junior State Competition held in conjunction with the Chinchilla Easter Competition at Chinchilla in 2004! All approved by the GFA as well!

The biggest goal that we have at the moment is to send a junior to the Junior Worlds in 2005. This has been discussed many times on our junior_soaring webgroup, which is open to all juniors, RTOs and National Coaches!

Please, if there are any juniors out there that we don't know about, send your name, address, contact phone numbers, and email address, along with your club, hour, achievements and goals to me at PO Box 46, Benalla VIC 3672, or email <get_soaring@hotmail.com>.

Adam Woolley

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GFA Development Officer's Report

Terry Cubley

Coaching activities

The soaring season started in earnest a few months ago and, with this in mind, a number of clubs and states arranged a series of coaching opportunities. I haven't heard of them all, but a few that I have heard of are:

Bendigo Gliding Club

This is now an annual event and heralds the start of the soaring season in Victoria. A good mix of pilots from a number of Victorian clubs and even one from South Australia attended. The general experience varies, from relatively low with some pilots aiming for their Silver C distance, to others practicing for the forthcoming competition season. It is a fairly low-key event with the major emphasis on all pilots having the opportunity to do what they are comfortable with. It turns out to be a very nice social event also.

Bacchus Marsh

Generally only attended by Bacchus Marsh pilots, although a few others do brave the more southern weather and airspace restrictions. Still, a great opportunity to see what interesting cross-country is available from this picturesque site. One of the biggest collections of advanced two-seat gliders makes this a great start for new people with ample opportunity to fly dual. A Duo Discus, five Janus, a DG500, a Twin Astir, and even the Puchacz are used.

Narromine Cup Week

The best known and most attended coaching program. This year over 80 pilots attended, making it the biggest collection of pilots at any one site. Pilots come from nearly all states, including Western Australia. The structure is quite simple – people attempt a range of tasks based on their experience and interests. Good weather, good tasking, good fun. The organisation supports and encourages participants to complete Decentralised Competition entry forms. Many pilots fly their first 500km flights; others are chasing National records. This is a great opportunity to get help from some very experienced pilots.

Wagga

Actually a coaching camp for a number of clubs along the Murrumbidgee river, including Leeton and Harden. The coaching

was provided by Peter and Lisa Trotter, whilst the organisation of the weekend was handled extremely well by Grant Johnson. Wagga is a winch launch site and all demonstrated great skills in thermalling away from relatively low altitudes. Dual cross-country was provided in Blaniks and some single seat flying. A great social event as well as a great learning event.

Benalla

This was actually elite coaching for four groups – sporting coaches, women's squad, junior squad and club class squad. GFA arranged for Brian Spreckley (world champion 1987) and his wife Gillian (world champion 2001) to provide coaching, along with Martyn Wells (UK team pilot) and Bruce Taylor and Paul Matthews (Australian team pilots) to coach these different groups.

Junior Flying

Judging by comments on the junior soaring email list, there is a lot of activity in Queensland, NSW and Victoria at the moment, with a number of special weekends being arranged and well attended. I suspect that this is the start of a much bigger movement with events planned already for early 2004.

Club Camps

December/January is the major season for club camps. Certainly a lot of the city clubs take this opportunity to get out to the better weather and do some serious flying. Lots of two-seat flying and many pilots completing badge and personal best flights. The social part of these camps also adds to their value. It is getting more important for many of these camps that they are held in places suitable for non-flying partners, and there are some really nice places around the country that are regularly visited by clubs. Hopefully we might get a couple of reports from clubs about their achievements over this period.

Building on the Enthusiasm

Pilots come back from these summer coaching sessions and club camps very enthusiastic with their skills at their peak. What is your club doing to capitalise on this? Local cross-country and soaring achievements are eminently possible in February through to May: maybe you can formalise operations at your local club to mirror some of the techniques used at the other events.

This could include setting tasks, arranging for mutual retrieves, social events in the

evening, completing badge and decentralised competition forms.

The club two-seat section of the decentralised event is very open, and of course it is handicapped.

Hopefully we will get some detailed reports of some of these events over the next few editions of Soaring Australia.



Coach Lisa Trotter



Coach Peter Trotter



David Pickles



Goe Teramoto with Narromine Cup Week coach Paul Matthews

Photos: Anne Elliott

Instructing Performance

I received some feedback from a club member of an interstate club who had given gliding away fairly recently because they just weren't making progress. Unfortunately, I don't believe that this is an uncommon complaint.

Instead of having all of the arguments about commitment, and personal involvement in the club, why not set some targets and see how you go. Some people may not be committed enough, but if you consistently get low results, maybe it is an inherent issue with your organisation.

Some targets for you to consider:

- Five flights or 90 minutes per day (seven winch flights). Each of your pupils should achieve this number of flights or flying time each day that they turn up. Yes, they need to turn up early enough, but does your system support this? What time do you start? Do



Bathurst Soaring Club member Brian Bailey



Bathurst Soaring Club camp participants Armin Kruger, Bill Tugnet, Eddie Pahic and Leigh Youdale. Leigh stayed on for Narramine Cup Week and achieved his first 500km flight. Congratulations Leigh!



Armin Kruger and Graeme Cant attended the Bathurst Soaring Club camp held at Narramine in November

you have sufficient aircraft, is your launching efficient, are your instructors aiming to get this number of flights?

- Six to 12 weeks to solo. Obviously this is linked to the target above. The commercial operations can often get people solo in 30 flights due to consistent flying. If you can give enough flights quick enough then six to 12 weeks becomes quite easy.
- Twelve months to C certificate. This means that you consolidate their flying and promote cross-country checks and local soaring skills. I suspect that if you achieve target two above, then this should be easily possible within 12 months – can you do it quicker than this?
- Twenty-four months to 100 hours and Silver C. Now you really have to support the new members' development. Give them some help to develop their skills and also encourage achievement of badges, and give them access to the equipment. Even if you are a coastal club, you could arrange a visit to a better soaring site a few times each year.

I urge club committees and instructors' panels to measure some of these performances. You can look back over your records and get a benchmark for your club over the past few years. Now let's see how you go over the next 12 months?

Training Courses

One-week courses: A number of clubs are now providing this opportunity for new members (see adverts in Soaring Australia). It would be great to hear from some of these clubs how much success they have had with this system. Maybe your own club should give some thought to promoting these courses for some of your own members. You are not going to lose out, and may even

reduce the workload on your instructors and other members. Find a club close to yourself that is running courses and suggest to your newer members that they book in.

One option that I have heard of from England, don't know of any clubs in Australia but please let us know, is to provide instruction during the evening. With daylight saving in many states providing daylight through to 8:30pm and later, people can get three hours or more of flying after work. This helps for sites close to where the people live.

Weekend Membership

The Geelong club is providing a three-day, five flight package instead of the normal 'joy-flight'. At probably twice the price of a single flight, they can provide five flight experience over a weekend to really give the person some idea about the sport. It would be good to hear from someone about how successful this has proven.



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ECHUCA AIRSHOW

Mike 'SkyCruiser' Rose

THE SOUTHERN MICROLIGHT CLUB WERE INVITED TO PARTICIPATE IN THE ECHUCA AIRSHOW AS PART OF THE CELEBRATIONS TO COMMEMORATE BI-CENTENARY OF THE SORRENTO (VICTORIA) SETTLEMENT OF 1803 ON 4 OCTOBER.

The air display was part of the around Victoria Air Race and also in part recognising that this year is also the centenary of the first powered flight at Kitty Hawk USA, on 17 December. Because our microlights are probably the closest to the first aircraft in terms of weight and minimum aerodynamic control, the organisers were keen for us to participate so they could field a good cross section of the history of powered flight.

Barry Wood and Mike Rose decided to trailer their microlights just in case the weather turned bad and to ensure we did have some microlight aircraft at Echuca. Kel Glare and John Wait flew in from Mangalore and Tyabb respectively, and we were also pleased to welcome Ryan and Karl Romeike (with brother Alex) who joined us from Albury, making six trikes in all. All our aircraft arrived by mid-morning and then thoughts turned to breakfast (have to eat sometimes).

The day dawned with sunny weather and high cloud, excellent flying weather with light winds – perfect for microlight flying. High cloud restricted the heat build-up so the air was relatively smooth. Stan and Jeanette (Sky Walkers) and Bob and Lynda also joined us for the day but decided not to bring their aircraft this time. They kept an eye on our aircraft and this was much appreciated.

Aircraft of all shapes and sizes commenced arriving around about midday, including two DC-3's with full loads of passengers, and a number of Warbirds including a Mustang fighter.

Barry and I assembled our aircraft close to the boundary fence and were able to give the public a good view of how the trikes are transported and assembled. There was a lot of interest shown in our type of aircraft, many feeling that this was the affordable way to fly in these days of high cost GA flying. We were kept busy holding on to our wings as numerous aircraft, including Warbirds, taxied close by – the pilots were in general very thoughtful in limiting their prop wash when passing us which was much appreciated (though one crop duster in deciding to "dust" Kel's trike

had him concerned for a while).

With the airshow briefing finally over we were all given temporary call signs of trikes one to six and asked to be ready to fly within five minutes. Kel commented that we would be pushing to pre-flight etc in such a short time and they understood. It took about 15 minutes and we were all sitting in our aircraft with engines running. Unfortunately a Cessna decided to depart about that time and required a full runway departure, so we were delayed somewhat while he backtracked and then finally departed. Ryan and Karl decided to do a runway 35 intersection departure but we had previously decided we would be better doing a threshold start so the spectators could get a better view of our aircraft in action. So for a few moments we needed a traffic cop and Kel, who was also our squadron leader and an appropriately qualified person, came to the rescue with a follow me! Then the taxiway was blocked by a refuelling tanker who seemed a little alarmed to see a 'squadron' of microlights charging at him down the taxiway. Of course we simply passed him on the grass and well clear, though he appeared to be in a bit of a flap for a short time!

Ryan and Karl departed first and flew along the runway at about 50-100ft so the spectators could get a good view of their aircraft; they then had permission to depart the circuit and head straight back to their home airfield near Albury (good to see you again, fellas). Next, in order, were Kel, Michael, Barry and John. We didn't take-off close to one another for safety, but waited until each aircraft was well airborne or had commenced a turn before commencing our take-off runs (we had a very long runway). We only had eight minutes for our part in the show, so we tended to commence our turns as soon as we reached 500ft.

Kel and John got to do two circuits with a low run along the runway due to traffic and I was instructed by the "Ring Master" (tower) to follow (?) Kel with his faster Streak Wing in my Wizard. I was on short final for 35 and set for my own fly past



The Flight Crew (L to R): John (Diesel) Waite, Alex Romeike, Karl Romeike, Ryan Romeike, Kel (Old Man Emu) Glare, Barry (Barky) Wood, and Mike (SkyCruiser) Rose



Barky and the 'Surface' Transport



Our Ground Crew hard at work (left to right): Stan Walker (recovering from a knee operation), Bob and Linda (Shepparton) and Jeanette Walker (Club Secretary). Photos: Mike 'SkyCruiser' Rose

when the traffic controller said we could now land, so I cut throttle and increased airspeed to 45kt, landing on the runway straight in front of the crowd.

We all cleared the runway promptly on landing, facilitating those behind us to land in sequence. Our "Ground Crew" reported we all made good smooth landings (had to with all those pilots watching!). Some 5,000 people were reported to have participated in the air race and airshow. The organisers were pleased with our performance and have indicated their intention to involve us in future airshows. CASA officials were also pleased with our flying and all necessary HGFA approvals were requested and given. This was the first time some of us had actually participated in an airshow, but to be given the first performance in recognition of the centenary of flight was an additional recognition and acceptance of our type of aircraft and airmanship, as well as recognising the similarities, in terms of weight and airspeed, to the original Wright Flyer.



Gulgong XC Classic

Rick Duncan

THE CUDGEWONG VALLEY SOARING CLUB ONCE AGAIN HOSTED THE AIRBORNE GULGONG XC CLASSIC. MANY OF THE PILOTS WHO TOOK PART LAST YEAR WERE BACK TO TAKE ADVANTAGE OF THE EPIC CONDITIONS SEEN AT THE 2002 CLASSIC.

Unfortunately, we did not see the 14,000ft cloudbase days or 38km final glides experienced during the 2002 drought year event, but we still had a lot of fun. A deep state-wide trough resulted in more challenging conditions with frequent overdevelopment and a bit of rain thrown in for good measure.

The airstrip has an all over grass surface and a usable length of two kilometres in an east/west direction. There is ample area for aerotow take offs in any direction. Aerotowing was the only method of launch with Pete Wilson, Joe Fussell and Matt Olive doing a great job in their Airborne trikes.

The club has two hangars, which were made available to us during the competition. Knowing that there is hangar space back at goal gives even more incentive to make it back on those tough days. It's real pleasant to just rock on up to the strip next morning and slide the glider out of the hangar ready to tow.

Briefings were held at 11am at the clubhouse adjacent to the airstrip. The clubhouse was also the venue for the BBQ evening meal, which was put on by the club. The ladies and gents put on a great feed and made us all really welcome. Oh! You can also enjoy a beer at the end of the day. A special thanks to Ian and Hank for their help and support.

ROUND 1

The competition started off with a triangular course of 90km heading north-north-west to Cobbara then East past Dunedoo to Leadville and back to the airstrip goal. The day was quite stable and the task proved difficult, with only one pilot, Dave Seib, making goal after spending about six hours in the air. Dave mentioned after landing that he had just given Jonny Durant Jr a lesson in the finer art of cross-country hang gliding! Jonny was a close second, followed by Conrad Loten.

ROUND 2

The trough had started to take effect around the area and cirrus was moving in from the west. The task committee, headed by the great Yoda, selected a task with a turnpoint January 2004

to the west of Mudgee and with goal at Rylstone. The conditions made it tough going, with eight pilots making the 76km to Rylstone. Jonny, who was first for the day, showed Dave the finer art of racing. Conrad Loten was second for the day with Phil Schroder third.

ROUND 3

Overdevelopment and heavy cirrus forced the call for a drift downwind task straight to Rylstone. Conditions at the airstrip were quite buoyant, but became quite difficult on course. No pilots made goal, with Rick Duncan just in front of Al Daniel at around 50km. Tony Barton was close behind in third place after flying through heavy rain.

Bruce Daniels had decided to enter the Classic after about 10 years of not competing. After a couple of difficult days, Bruce received some expert advice via SMS: "Bruce, to get twice the amount of competition points you must tow twice as high". A bit of light-hearted relief from Barney at Stanwell Park.

Late Friday afternoon an informal aerobatics event took place, with Tony Barton, Jon Durant and Dave Seib performing some great manoeuvres for the crowd who were kicking back in front of the clubhouse.

Jonny came in after his performance and nailed the spot landing. Tony Barton demonstrated an impressive one-foot slider landing on the track in front of us all. Not to be outdone, Dave Seib demonstrated the finer art of using his hang glider as an agricultural implement.

We woke up to statewide rain on Saturday, so the day was called off and the presentation was moved forward. The clubhouse was the venue once again with three magnificent trophies supplied by the Durands.

FINAL RESULTS WERE:

1 Seib, Dave	6 Kee, Trev
2 Durand, Jon Jnr	7 Schroder, Phil
3 Loten, Conrad	8 Daniels, Al
4 Heaney, Grant	9 Wiener, Max
5 Lawrie, Chris	10 Wynne, Bruce

A special thanks to Bill Olive. Billo spends countless hours organising both the State comp and the Classic. His tireless work for



Matthew Olive in the Airborne Outback tug with tundra tyres (the most fun aeroplane I've ever flown)



Joe Fussell in his tug, looking west from the centre of the strip



Cudgewong Soarers club house and western hangar, note solar power panel which charges the batteries for all lighting at night



Team Maggot suits up (Bruce Wynne and Jnr)
Photos: Mark Fox with Sony Cybershot 3MP Point & Shoot



Jon and David

our sport is second to none. We might chip in and buy him a pair of shoes next year.

We are planning next year's event already. The consensus from the pilots was that the Classic be lengthened to a six day event which will give us more flying as well as the possibility for AA or AAA national ladder points. It is possible that the Classic could be the last points meet prior to Australian team selection for the Hay Worlds in 2004.

So if you want to get some great flying and lots of fun, mark your calendar for next year from the 15-20 November 2004.



Soaring Calendar

AUSTRALIA

WA State Gliding Championships

3-10 January 2004

The Gliding Club of Western Australia will host this year's event at Cunderdin. All classes catered for. Support provided for first-time entrants. Travel subsidy available for all Eastern States' entrants. Enquiries to the Competition Director, Rod Carter ph: 08 96417045, <rodcartr@avon.net.au>.

Hay Open and Pre-World Hang Gliding Championships

6-13 & 14-21 January 2004

Hay, NSW. Hay Open AA, Pre-Worlds AAA. The drought has broken, we have green grass (knee high) in the tow paddock! The Hay Shire and Dynamic Flight will be hosting these two category 2 CIVL sanctioned comps (AA and AAA respectively). Entry fee \$200 per competition or \$380 for both. There will be manned goals with free goal drinks, as usual for Hay. Both the welcome BBQ and presentation night meals will be provided free again this year. Day prizes, like meals for two and petrol vouchers, will be awarded at morning briefings like in past Hay meets. There will be one rest day between the two comps, with free water skiing this day. Tasks will be set to minimise retrieve distances except for one day each meet. This is a tow meet, if you want to aerotow please contact Moyes or Airborne. If you want to car tow, form a team or put your name on a list with us, there are heaps of long and smooth tow strips. HGFA membership, GPS, parachute and tow endorsement mandatory. Registration: 6 January at the Waradgery Club, Hay, 10am to 7pm, just follow the signs in town. Welcome BBQ briefing starts at 7pm, also at the Waradgery Club, which will be the HQ for both meets. So come and fly the big skies at Hay and enjoy the country hospitality with the best in the world! Entries via email to <dynamic@netconnect.com.au>, payment on registration day.

Australian FAI Club Class Gliding Nationals

11-23 January 2004

Waikerie, South Australia. Contact: John Hudson email <john.hudson@santos.com> or [www.waikerieglidingclub.com.au/clubclass/].

Corryong Cup 2004

18-24 January 2004

(The 20th Anniversary – Take Two!)

Corryong, VIC/(NSW border). This 20th Anniversary Celebration rises from the ashes, bigger and better than ever. Not even acts of god will stop us this time (uh... not that we're putting out a challenge or anything big guy...) so turn up, come what may, for registration and practice day 17th, comp start 18th with registration in the morning. Come to the best fun comp of the year. Mt Elliot, Corryong is one of the most reliable and spectacular flying sights in the Eastern highlands, a hill launch set at the base of the Australian Alps on the border between Vic and NSW. Tasks are generally 50-100km with up to 4 turnpoints set to make pickups easy in the flying-friendly valley. This year the comp will again be scored on a handicap basis according to your glider type and flying experience, so everyone who enters has a chance of taking out the top prizes (first three positions, best placed veteran, most improved new comer to competitions, first placed team receiving the Corryong mugs, and numerous day prizes). You must have an Int rating (preferably with inland experience), UHF radio and parachute. Camera optional (databack not required), as this year scoring will be with GPS or

camera, whichever you prefer (please let us know if you require a roll of film). This is still the cheapest comp on the HG calendar at only \$100 if you register before 30 Nov 2003 (\$120 thereafter), cheques made out to Blue Mountains Hang Gliding Club. Included in this fee is comp entry, the great 20th Anniversary T-shirt, a film for turnpoints (ask), colour topo map of the area and Presentation Dinner. Places are limited so don't miss out. Register now with: The Blue Mountains Hang Gliding Club, C/O Steve Bell, PO Box 110, Woonona NSW 2517. Phone 0412 686 812 or email <spbell@earth.net>.

Bogong Cup & Australian HG Nationals 2004

24-31 January 2004

(Now, due to the cancellation of Deniliquin, the Bogong Cup will also serve as the National Australian Championship.) Mt Beauty, Bright, VIC. AAA comp. Mt Emu 4WD access only at this stage. After 16 Dec first in best served entry policy. Looks like one group only. Max 70 pilots. Entry fee: \$190 (includes \$15 site/club fee). Website: [bogongcup.dustydemons.com]. Contact Tove for more info: <chpggc@goulburn.net.au> or mobile 0419 681212.



Apollo Bay Fly-in

7-8 February 2003

Apollo Bay, VIC. Presented by Sky High PG Club the goals of this event are to introduce new pilots to the fun of coastal flying while allowing experienced pilots to do greater distances at the coast. Costs: SkyHigh members \$15 or one day \$10; non-members \$20 or one day \$15. For more information visit [www.skyhighparagliding.org/]. Contacts: Leanne 0408 344095 or Georgia 0412 126517.

Horsham Week

7-14 February 2004

Horsham Week is again being organised by the regulars and will include the VSA State Comps. All classes. Camping on site. Clubhouse meals. Please let us know if you'll be flying – phone Noel Vagg (Snake), Contest Director, on 03 9743 6830 or email <noeljanvagg@primus.com.au>.

Hang Gliding State Titles

14-21 February 2004

Manilla, NSW. Comp is A grade, GAP parameters are 5km, 50km, 90 minutes, 10%. Entry fee: \$120 (includes site fee). Entrants from last year \$60. Details, registration and payment online at [www.nswhgstatedtitles.com].

Australian Open Paragliding Championships

14-21 February 2004

Bright, VIC. With what promises to be an amazing flying season, the renowned flying venues of Bright and the surrounding areas will bear witness to a what is becoming a regular pilgrimage for many PG pilots, both Australian and international. As in years past,

this is an HGFA AAA and FAI Category 2 sanction event. The entry fee includes a competition T-shirt, pilot pack, presentation dinner and site fees for the duration of the event. A limited number of places are available on a complete retrieve package for those of you who can't organise your own transport – book early if you don't want to miss out. Carnivorous pilots are again invited to "eat the National Emblem", as well as other activities, courtesy of local businesses, and the central location of the competition (within the town) gives pilots, their partners and friends many opportunities to enjoy the evenings "Après Flight". For more information, visit our website [http://www.brightadulthoodeducation.org.au/BAE/BrightPGComp] or contact Karl Texler on 0428 385144 or <brightvt@netc.net.au>.

National Trike Gathering

3-4 April 2004

Wangaratta, VIC. The Southern Microlight Club is holding this HGFA sanctioned event a little earlier than previous years, so mark it on your "must not miss" calendar, then set to and make the appropriate bookings. Last year was our most successful event to date with more than 50 trikes attending, including a large group flying in from South Australia. We are negotiating with our previous caterers to provide breakfast and lunch on the Saturday and Sunday, and we intend holding a dinner at a local hotel on the Saturday evening. A great camping ground is located at the airport or alternatively Wangaratta has numerous motels/hotels a short drive from the airport. We intend distributing registration information closer to the date. To enable us to have your correct contact details, could you register your interest with our secretary Jeanette Walker on (03) 5941 2721, mobile 0438 418 808 or email <jesta@wingdriver.com.au>. And of course, you are most welcome to spread the word far and wide.

Flatter Than The Flatlands

9-12 April 2004

Birchip, VIC. HG pilots are invited to the 11th annual Flatter Than The Flatlands cross-country towing competition. The event will be conducted over the four day Easter long weekend. Entry fee is \$70 and incl. maps, daily prizes, presentation dinner, scoring, goal beers and lots of fun. After the flying each day, social events including a Red Faces competition (mandatory event per team), movies and much more will be held with prizes awarded. Cameras not required, GPS recommended, parachute compulsory, lots of fun guaranteed. Entries will only be accepted from teams of five pilots. Entries open Wednesday 11 February 2004 at 8pm. Entries will accepted on a first come basis. Places will be confirmed on the competition website after the full team payment is received. Following the success of previous years' events, get organised early. There will be approximately 12 tow strips, two of which will be held in reserve for South Australian teams until 10 March. To enter, phone Ian Rees on 03 9762 1364.

Alice Springs Masters' Games

16-23 October 2004

A low key and social competition for anyone over the age of 35. To register or for any enquiries contact Darren Edwards, ph: 08 89550014, or Simon Holding, ph: 08 89534100.

OVERSEAS

2004 Flytec Championship at Quest Air

16-24 April 2004

Quest Air Soaring Center, Florida USA. The Flytec Championship meet purpose is to have a safe, fun and fair competition. Our focus is to have a relaxing and affordable meet that is a great time for everyone involved. Registration begins 15 Dec, 9am East Coast Time, online at [www.flytec.com] or for help phone (352) 429-0213 or fax (352) 429-4846. Register early, last year the meet filled up in just a few days! May limit size to just 90 pilots. Sanction: USHGA Class A and applying for CIVL/WPRS points meet. Flex, Rigid and Swift class. Location: at the end Sun'n'Fun Air Expo, Quest Air Soaring Center, 6548 Groveland Airport Road, Groveland, Florida, 34736. Fees: only \$375 (add \$100 within 30 days of meet). Tow fee separate. Meet Organiser: Steve Kroop and the Quest Air Family. Meet Director: David Glover. Awards and Prizes. Mandatory Pilot Briefing: 7pm, Thursday, 15 April. Pilots must have flown in a USHGA aerotow competition previously or have written prior meet director or safety director approval. Pilots must have successfully aerotowed the glider model in

competition conditions at least ten times. USHGA intermediate rating and membership with aerotow sign-off required minimum 7 days prior to start of meet. Pilots must have specific Garmin or approved GPS units. Meet format is cross-country race to goal with or without turn points. USHGA rule book along with local meet specific rules will be used. Scoring Race – GAP/ GAP modified. See online registration form for requirements and restrictions.

IGC World Gliding Championships Calendar

2007 and beyond

2007 WGC – Juniors, Bid selection = 2005*
2007 WGC – Women's, Bid selection = 2005*
2007 Alternative Events, Bid selection = 2005*
2008 WGC – 15 Metre, 18 Metre, Open, Bid selection = 2005
2008 WGC – Standard, Club, World, Bid selection = 2005
2009 WGC – Juniors, Bid selection = 2006
2009 WGC – Women's, Bid selection = 2006
2009 Alternative Events, Bid selection = 2006
2010 WGC – 15 Metre, 18 Metre, Open, Bid selection = 2007
2010 WGC – Standard, Club, World, Bid selection = 2007

* Sites for these WGC's will be selected in 2005. After

2005 sites for all WGC's will be selected three years prior to competition.

2011 WGC – Juniors, Bid selection = 2008
2011 WGC – Women's, Bid selection = 2008
2011 Alternative Events, Bid selection = 2008
2012 WGC – 15 Metre, 18 Metre, Open, Bid selection = 2009
2012 WGC – Standard, Club, World, Bid selection = 2009
2013 WGC – Juniors, Bid selection = 2010
2013 WGC – Women's, Bid Selection = 2010
2013 Alternative Events, Bid Selection = 2010
2014 WGC – 15 Metre, 18 Metre, Open, Bid selection = 2011
2014 WGC – Standard, Club, World, Bid selection = 2011

NOTE: This calendar is shown as running through 2014 for illustrative purposes only. The calendar and structure of the World Gliding Championships will continue on as shown after 2014 (until changed or modified by the IGC Plenum).

DON'T CALL ME PILOT

PARAGLIDING



Graham Sutherland

ONE DAY AFTER A NICE CROSS-COUNTRY FLIGHT I LANDED RIGHT NEXT TO TWO GUYS WEEDING ON A TURF FARM.

I NOTICED MYSELF SAYING THAT WE EVOLVED FROM PARACHUTES.

I NOTICED THAT THE "WE" HERE HAD MEANT MAN AND WING, TOGETHER. A SYMBIOSIS.

An interesting thing about paragliders is that the so called pilot is much more than just the pilot. He/she is a vital part of the very functioning of the glider. Without your weight, your wing will not only be out of control but it won't even fly at all.

A paraglider canopy turns into a bag of washing fluttering in the breeze without our weight to pull it into shape against the air. It's not a wing without you. Only with your weight can it be more than a pile of cloth and string.

A normal aircraft will still fly without the pilot (albeit without control). We form an essential functioning part of the glider itself and are not merely its pilot.

We don't have to pretend to be one of the big boys by calling ourselves pilots. What we do is so much more magical. In fact it is

probably more correct to call oneself a paraglider rather than a pilot.

Someone that surfs is a surfer, someone that sails is a sailor. Why do we have this ego thing to try to big note ourselves by likening ourselves to those that simply control the trajectory a mass of metal through the air?

I sometimes feel like the canopy and harness are part of my clothing. Clothes that I wear when I go paragliding. When I land I take off my outer layers of flying clothes, put them in a bag on my back and hitch hike back to my car.

When I'm sitting under a cloud (literally) looking at my options for heading on to the next cloud etc, it is me that is flying. I'm a paraglider, not just a pilot.

Sitting under a cloud letting the subconscious work on the sky. What looks good? What looks best?

Okay, head off.

Now there's time to look around and let the magnitude of my situation soak in. Hanging in a comfortable chair from a skyhook. It is me that is floating through the sky. There's nothing between me and the planet but the soles of my boots and a kilometre or two of air.

In tune with nature. With just a big handkerchief and a pile of string we harness the power of the sun to explore the sky.

We're not flying just by the feelings that come through the seat of the pants. It is our whole body that is feeling the air as it wafts past our body and canopy. I'm like a spider in a web; the myriad of lines feed me detailed information as to what the air is doing in the ten or eleven metres of air that my fabric extremities are feeling.

Don't call me pilot, it is me that is doing the flying.





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HGFA General Manager's Report

Damien Gates

Conargo Closed for Towing

Along with the unfortunate loss of the competitions at Conargo, permission for renewal of the use of the stock routes for general towing operations has been denied. Please be advised and make all who may require the information aware of the below:

*Closure of Travelling Stock Route
Tow Strip near "Boonoke" Conargo NSW
Dear Sir,
Could you please advise all hang glider pilots that use the launching site on the Conargo Road immediately south of Conargo that the strips will not be slashed this year and the Riverina Rural Lands Protection Board at Deniliquin have refused permission due to the severe bushfire risk. It has been suggested that you may be able to place an add in your hang gliding publication so that pilots are aware of this before they make the journey to Conargo.*

Regards,

John Trist, Conargo Shire Ranger

VPM's

Arrangements have been made to address the need for a shorter term Visiting Pilot Membership. The four month period is too long for many; to accommodate these pilots a VPM form (yellow) valid for a two month period are available from the HGFA Office, for sale to the VP for \$44. The four month (blue) forms are also still available, for sale to the VP for \$77. These forms may be ordered on invoice from the HGFA Office by clubs and instructors. They should be contacted for full details and arrangements on payments and cost recovery for the sale of these VPM's by the clubs and instructors.

Harness-induced Pathology (Suspension Trauma)

The below is reproduced from the APF news with permission from John Chapman. It contains points well worth noting for all our operations: training, TIF's and free flight.

While recently training for roof-top work requiring a full body harness, the instructor spoke briefly of suspension trauma and the need for anyone having a fall to be rescued within five minutes to prevent the onset of harness-induced pathology. We were also warned that, whatever the type of harness, motionless suspension is not physiologically safe and will eventually lead to very serious blood circulation problems. Further questioning and research led me to the following: if a person is motionless for any longer than five minutes, the normal exchange of waste and oxygen between

January 2004

muscle and blood does not occur due to compression of the femoral arteries by the harness leg straps. The femoral arteries are the large arteries running down the inside of the upper thigh. Once the compression is released, the toxins that have built up are pumped back into the body and can do significant damage to the internal organs. The legs can contain up to one third of the body's blood, so if a person has a fall but is not rendered unconscious, the lack of blood flow can lead to the person 'passing out' or vomiting. This may explain why some tandem passengers do pass out or vomit. There is a reason that we as skydivers do not experience this more often; the key to avoiding passing out or vomiting is by moving in the harness regularly to relieve the pressure on the femoral artery. Also the amount of time actually suspended obviously is a factor, but tests done some twenty years ago found that the time taken to pass out varied from between two and 20 minutes, depending on circumstance. It is probably a good thing for tandem masters to bear in mind, especially if you inadvertently open high or the tandem passenger complains of pins and needles or the harness being too tight.

Factors that can contribute to suspension trauma (in no specific order) are:

- Temperature (cold exacerbates the problem)
- The comfort of the harness (more padding lessens the problem)
- Age (older people can be affected more by the "toxic shock")
- Weight
- Also the ability to change the harness from hanging to sitting will reduce the likelihood of problems

Warning signs are: subject may feel faint, pulse rate increase until faintness, paleness, hot flushes, sweating, breathlessness and/or unconsciousness.

Earlier tests were halted due to the dangers presented to the volunteers and the inability of those conducting the tests to prevent the volunteers being rendered unconscious.

A large number of sportsmen involved in sports using harnesses (climbing, caving, etc) have laughed in the past at the idea of people dying from suspension trauma, probably because of being so familiar with their equipment, but this information is now generally accepted by many involved these sports. Indeed, some climbing deaths originally blamed on exposure are now accepted as being caused by suspension trauma.

Since we are in the business of hanging people up this is worth keeping in mind, and

it may go some way towards explaining the (dis)comfort and reactions of some tandem passengers. First jump course instructors may want to remember this also as it is applicable to harness training where the student's complaint of the "uncomfortable" harness is often a standard part of any course. Remember, it is sitting motionless in the harness that is dangerous, and sometimes in only a few minutes.

Australian Women Pilots' Association

I am in receipt of some information and "Air News" (the periodical of the AWP) of which I have a few copies which I may pass on (first in first served). If any women pilots would like further information, especially on up and coming events held by the AWP, please feel free to contact myself or check out the details at [www.awpa.org.au]. The AWP offers courses, conferences, scholarships and the opportunity to meet and befriend fellow women pilots.

CASR's

Australia is bringing its aviation regulations in line with other countries like the USA, NZ and Canada. We are in the process (and have been for some time) of drafting new rules for the regulation of our sports. CAO's 95.8 and 95.32 will be replaced with the CASR (Civil Aviation Safety Rules) Part 103 and will cover sports aviation for aircraft like ours as well as other sport aviation aircraft like ultralights and gliders. Part 149 will be the other main area affecting us, specifying the requirements for approval, ongoing management and administration applying to the Recreational Aviation Authorities (HGFA, GFA, and AUF etc). The HGFA, along with the other Recreational Aviation Authorities, shall be grandfathered into the part with time given to meet any new requirements and/or to bring existing standards and documents up to speed.

Essentially Part 103 will be the bare bones authority with minimal operating requirements and limitations, with further requirements and limitations and rules defined with our own (Part 149) Procedures Manuals (Operations Manual). I and other Board members are part of an ongoing consultative group drafting guiding principles and commenting on the draft rules as required, protecting and managing our interests. The implementation will not occur for eighteen months or more, and with the opportunity to get things written, essentially from scratch, a great deal of focus is being placed on getting it right the first time, so that we have clear rules defining our operations for the indefinite future. More

HGFA General Manager's Report

information at [www.casa.gov.au/avreg/newrules/casr/index.htm].

Accident Reports

No 1.

Pilot: Restricted PG
Experience: 24 hrs total, not provided last 90 days
Glider: DHV 1/2
Pilot injury: Nil
Glider damage: Nil
Location: Coastal site
Conditions: 6-12kt headwind increasing, light turbulence

Description:

The pilot had been soaring for about an hour at the site when they headed for the designated LZ. On approach to the LZ the pilot encountered an increasing seabreeze, getting stronger as they got lower and causing penetration to diminish significantly. As a result, making the LZ as an option deteriorated until an alternative was required and the pilot landed in a small area (50m x 30m) before the nominated LZ. During the landing the canopy blew back onto telephone wires and after the pilot called the appropriate authority they arrived and released the canopy unharmed, before the pilot left and went on another successful soaring flight at a different location.

Comments:

Situational Awareness. Remaining aware of what the weather **is** doing around you and what it has the **potential** to do are important factors in flight planning and assessment of conditions while flying. Maintaining enough height, which includes a large element for instances where conditions change or deteriorate, is always important, even at familiar sites. Always assess the landing area extensively before landing; this requires height and should be done at all LZ's even if you are familiar with them. Options should be available as a matter of course and before there is any need to use them; last minute changes without a planned contingency is a recipe for disaster.

No 2.

Pilot: Adv PG
Experience: U/K
Glider: DHV 2/3
Pilot injury: Nil
Glider damage: Nil
Location: Inland XC site
Conditions: 6-8kt headwind, light turbulence, light drizzle and showers

Description:

The pilot had landed on the face prior to relaunching in light or approaching rain. The pilot did one pass along the ridge and had gained some 100ft before returning towards

launch over a high canopy rainforest area which ceases abruptly to a clear face where the pilot intended to face land. On approach over the tree canopy, at which time it was most definitely raining, with the left wing to the ridge, the pilot pulled big ears to lose height and set up for another face landing. At a point where the pilot was approximately 20ft over the canopy approaching the end of the treed area he released big ears. The canopy did not reinflate immediately and some more height was lost before the left wing tip only reinflated, with the right wing tip still tucked under. The glider turned to the right side and then surged back stalling, dropping the pilot and canopy into the trees right at the edge of the clearing. Subsequently rescue crews and helicopters arrived, and after some time the pilot was extricated from the tree unharmed, not with out a fair share of media coverage and helicopters landing variously on private property in the area.

Comments:

The decision to relaunch after having rain at the launch and with more approaching was not a good one. Having seen this incident myself it appeared that a number of factors were involved; Launching into approaching rain with a possibly already wet glider. Setting up to do an advanced manoeuvre (face landing) with a wet wing low over trees while performing height loss through the use of "big ears" is adding unpredictability to an already tentative predicament. The unpredictability of wet canopies to reinflate properly is a fact well known to myself and should have been to the pilot involved. Add it all together and one may say that an incident was more than likely to occur. The pilot was lucky that the incident occurred low over the trees as opposed to another 25m on the flight path, as the stall would then have occurred at a height of about 100ft agl. Don't fly in the rain or launch with approaching rain in any wing.

Rather than place the incident reports for a couple of scenarios I am about to refer to here, I shall undertake a quick discussion on a problem that arises from time to time with aerotowing of hang gliders. In the past few months there have been a total of four incidents in this vein. Back in September I reported on another very similar incident that revolves around this problem. With the season in full swing and aerotow becoming more popular it is timely that a quick discussion is had on this potential hazard.

Dolly Launching Hang Gliders – Aerotow

As an offender for this very problem earlier

in my flying and aerotowing career I am well informed on the causes, effects and solutions to this particular problem. The scenario is such that during the roll out of the glider on the dolly one wing lifts, with the basebar corner of the lifted wing side also coming up out of the dolly stocks. Ultimately the lower wing may then drag or the glider might come out of the dolly with wings unlevel in an imminent or actual lockout **real** close to the ground, with an ensuing ground loop and resulting damage to both glider and pilot.

The problem is usually the result of a crosswind, turbulence or stronger winds in which one wing flies before the other. It is sometimes referred to as being "blown out of the dolly". Firstly, the angle of attack set for the glider in the dolly has an effect. Too high an angle and the glider may wish to fly far too early in any sort of wind (including while stationary) resulting in the glider lifting out of the dolly with insufficient airspeed, at or close to a stall, with a resulting lack of control and attitude. Setting an appropriate angle of attack in the dolly is imperative to avoid this: too low and the glider may want to "stick" in the dolly, too high and it may want to fly prematurely. When hanging prone in the harness, hands off, the basebar should be at about your forehead/face level (obviously differs for particular gliders).

Let's run through the sequence. You are set in the dolly with a good angle of attack, a slight crosswind is encountered. (Less experienced pilots should defer and wait for a better wind direction, ie on the nose, though winds on the roll out may still differ so careful note of the following should still be taken.) Before giving the **go** the pilot should have **pulled in** with the bar at about chest level (less for keel release attachments). This ensures firstly that sufficient airspeed, commensurate with the angle of attack that the glider will now fly at, for that bar position is gained **prior** to exiting the dolly. Pulling in a little more rather than less is preferred. Remember that you are attempting to fly the glider low and at the speed for which the tow will be occurring – faster than normal flight and usually between 30-35kt depending on the glider and pilot.

Holding the rope on the dolly is also the preferred option to help keep the glider seated in the stocks and to possibly add weight in order to keep the glider seated and controllable while in the dolly. I prefer to use just one or two fingers to grasp the rope. This makes it easier to feel the weight if you are starting to lift off and to let go of the rope at the right time while

still maintaining a strong grip on the basebar throughout.

So the roll out commences with the pilot pulling in and with dolly rope in the fingers. Maintain this until such time as sufficient airspeed is gained and the glider rotates the keel from its seat. At this time, with the right pull in and wings level, the glider should be flying with enough airspeed above and beyond what is required to exit the dolly. I prefer to wait a second or two at this time to allow a little more airspeed to generate, and then release the rope and ease out on the bar a little giving a **positive** exit from the dolly. (Some prefer to wait and even lift the dolly a small amount to ensure that the airspeed is far more than needed to fly the glider alone). Rising to a good 15ft agl is then required and maintaining this until the tug begins to fly, at which time you should begin to ease out on the bar to climb a little allowing the tug to "catch up". **Do not** wait at this level and then ease out as the tug climbs to your level as it will surely rise above you, you must pre-empt and manage your position ahead of the tug's altitude.

Now, if during the roll out one wing wants to lift prematurely or before exiting straight and level, immediately pull in a little to keep the glider seated in the dolly **and correct the lifted wing aggressively**, punching your body over to the affected side. The same rules apply when you are in the dolly as in normal flight; **correct** the wing to maintain straight and level. Only exit the dolly with wings level, as adding any pitch movement when wings are not level will exacerbate the turn, just as it does when co-ordinating a turn in normal flight.

Points to note, in summary:

- Set correct angle of attack on the dolly before setting the glider in the dolly. Like gliders require the same setting.
- Pull in on roll out to ensure no premature lifting of the glider or any one particular wing and so ample airspeed is gained prior to exiting the dolly.
- With enough airspeed (gained from pulling in on the dolly), the exit from the dolly should be a **positive** separation; then requiring some pulling in (not so

much that you lose altitude) to again set your station, awaiting the tug to fly.

- Fly the glider right from the start of roll out, if one wing lifts while in the dolly, **correct it while in the dolly**. "Don't cheat on it." Fly the glider. This means flying it as aggressively as required; you should be doing everything within your abilities to keep the glider level. Do not fight it, **tell it** where you want it to fly in no uncertain terms.
- **Focus:** Right from the start focus on what you are about to do and make it happen. "Plan the flight, fly the plan".

General Manager's Office

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K6e. Based in Gulgong NSW, enclosed trailer, \$8,500 ono. For details ph: John 07 49756613 (evenings).

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DISCUS 2b "76". This glider has absolutely everything. Factory prepared for the WGC in Bayreuth. In immaculate cond. As new Cobra trailer with all extras. This glider has achieved three national records. Unique purchase arrangements to suit buyer, term payments over 12 mths possible. Vendor finance available. Extras to suit buyers budget. Buyers in NZ: this glider was originally on the NZ register. Shipping to NZ is possible. For further details contact: Miles Gore-Brown 07 55789904 or <mgbisia@pacific.net.sg>.

STD JANTAR 2, GEE. Excellent cond, low hrs, great cockpit ventilation, winglets, oxy, full panel, near new chute, spare canopy, ELT, dust covers. Ex trailer: disc brakes, 2-person rig, ground handling gear, maintenance gear. \$29,000. Ph: Malcolm Ferguson 0427 825500, <malferg@bordertnet.com.au>.

ASTIR CS, WUK. Good cond, good instruments, Microair radio, 3,356 hrs. Enclosed braked trailer. \$20,000 ono. Ph: Peter Warburton 08 86452619, <petwarbt@mbox.com.au>.

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Due to fleet restructuring, Waikerie Gliding Club now offers the following aircraft for sale:

Hornet, GMU – One piece canopy mod. Borgelt B20, 21, 24 & 25 vario/glide computer system, Microair radio & basic instruments. Enclosed trailer. Tow-out gear. 4,100 hrs, \$24,000.

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K13 based in Gulgong NSW, \$25,000 ono.
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SUPER XIMANGO, GFU. Excellent cond. Total
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Found

A GPS was found on Narromine airfield a few days
after Narromine Cup Week. If you lost one during this
time & think it may be yours, please contact Anne
Elliott, <annell@hwy.com.au> or ph: 02 68891229.

General

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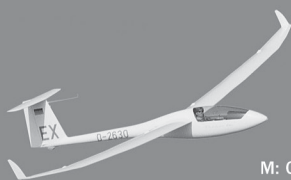
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