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In this Issue:



**Bogong Cup 2000
and
Corryong Cup 2000**



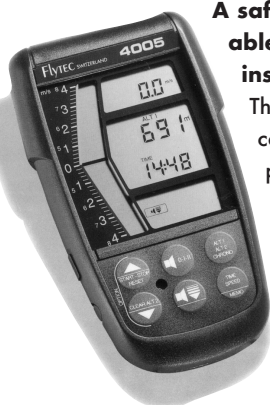
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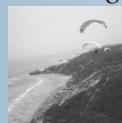
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Peter's chosen paddock with the house and crash site at the far end
Photo: Reg Moore

Accident at Worlds End

PETER SHEARD

About the author

Peter Sheard has been gliding since 1962 and flying commercially since 1965. He has 16,000 hours including 3,000 hours gliding. Best British results are 15 Metre National Champion in 1989 and Open Class Champion in 1997. A member of the British squad, he represented Great Britain at the European Championships in Finland in 1988 and Poland in 1990 and 1998.

Last year he represented Britain at the World Class World Championships in Leszno where he placed 10th. His passion for competitive flying has also taken him to national and international events in Australia, New Zealand, France, Germany and South Africa.

Amongst his present goals is an ambition to be selected for the British team to the first Club Class World Championships at Gawler in 2001. He accepts that this project has taken a bit of a knock, but he has not abandoned the goal.

About the trip

Sue and I were looking forward to spending three months in Australia this summer. I retired as a captain on 747-400's with British Airways on my 55th birthday earlier in the year and Sue resigned her job with the National Health Service shortly afterwards. Our two boys, David and Ian at five and four, had not yet started compulsory schooling.

We arrived in Brisbane in early November and I promptly succumbed to influenza. The rest of the family went down in stages. After about a week we set off in our small campervan for Lake Keepit where we were due to collect the LS4 purchased sight unseen from England. We spent a week at Lake Keepit still recuperating. I didn't manage to fly, but we did some fettling and some painting of the trailer and tow out gear. Then on to Narromine for the NSW State Gliding Competition. For the first time for some years this incorporated the Club Class as well as FAI classes. The Club Class with 12 entries was being flown to the same rules as would apply for Barossaglide at Gawler and the World Championships the following year.

The competition was a great success with six good days flying. I finished third behind two well-flown Libelles. I hoped the better performance of the LS4 would stand me in good stead when it came to battling against the sea breeze at Gawler.

Leaving the glider at Narromine we set off for a month-long family holiday on Sydney's northern beaches; sand, sea and Santa followed by fireworks on the harbour at the start of the new millennium.

Then back on the road to collect 'XQS' from Narromine. The weather there wasn't promising so we headed south for a night stop at West Wyalong. Next morning an impulse took us to Temora rather than Tocumwal or west towards Waikerie. What a stroke of luck, as we found 50 gliders there for a post-Christmas camp with briefings and catering laid on. We spent four pleasant days there with some interesting flying and good company.

Then westward again with stops at Hay and Waikerie, arriving at Gawler four days before the start of Barossaglide. We got ourselves organised in a small cottage and I had two days practice. Although temperatures reached 43°C I didn't manage to get away from Gawler to the better conditions inland.

The first competition day

The forecast was for a fresh south-westerly wind with four knot climbs to 4,800ft and a top temperature of 28°C. Cumulus was expected locally but blue conditions to the north. A three-hour POST was set with a compulsory first turn at Saddleworth or Blyth. I launched at 1,300ft and started at 1,400ft. The first leg to Saddleworth was straightforward and I rounded the turn just behind Tom Gilbert in Libelle 'ZK'.

I had intended going east but decided to follow Tom north towards Burra. Again we managed to stay relatively high. My best was 4,500ft above Gawler. Approaching Burra we were joined by Bruce Campbell in his Standard Cirrus 'AM'. We all headed south from Burra along a broad jagged range of hills. Had we been locals we would have gone to the western edge of the range to a ridge which apparently would have worked well with the wind at 250°/15-20kt. However, without the local knowledge and as we were not that far above the ground, we tracked along the eastern part of the range and in easy reach of paddocks downwind.

I was first to abandon the high ground and head for a paddock two kilometres from the ridge at a place I later learned was called Worlds End.

Five minutes later I crashed.

I hit the ground wheel up, 20 degrees nose down and with 10 degrees of left bank. From the position of initial impact the glider moved right seven metres to its final resting place. Five metres in front of the nose was a vertical earth bank, two metres high. Thirty metres to the right was an abandoned stone house.



Sue and Peter Sheard,
Gawler January 2000,
shortly before writing off XQS
Photo: Martin Simons

The rescue

Very fortunately for me, Bruce Campbell saw it happen. He saw the glider disappear in a cloud of dust and feared the worst. He put out a mayday call and landed in my chosen paddock. Bruce was by my side in less than 10 minutes. In those 10 minutes I had done nothing to save myself. I was conscious, but obviously shocked and dazed. I didn't try a radio call. In fact, the tail with its radio antenna was severed at the leading edge of the fin and only held on by the rudder cables. I didn't reach for my phone in a bag behind my head. In fact there was no mobile service on the ground. Also, I didn't start the Emergency Locator Transmitter (ELT) taped to my parachute.

As Bruce approached, he was relieved to see my eyes were open and reasonably alert. My arm was moving and then also my leg. He pulled my ELT then ran back to his own glider to set off his own ELT and radio to Jonathan Shand circling overhead in his Libelle 'XH'. Jonathan used his mobile phone to contact control at Gawler where Maggie Torbitt took the call and alerted the emergency services.

Whilst we waited, Bruce made me drink water, sheltered me from the sun, and stopped my attempt to climb out of the glider. I can't remember any of that but remember the fire truck arriving after what seemed like 20 minutes, but was in fact an hour and a quarter. Shortly after, the ambulance and police arrived. The ambulance team leader checked me for any obvious injuries. There didn't appear to be any. He fitted a neck brace as a precaution and then about 10 pairs of hands lifted me gently from the cockpit to a stretcher and slid me into the ambulance.

I remember being alert enough to thank everyone for their help and to insist that the purple bag behind my head containing phone, keys and wallet came with me. I was put on oxygen and transported 25km to Eudunda Community Hospital. The first 15km along a bumpy gravel road.

Sue was lucky in that she was told by Terry Cubley, the Competition Director, that I had landed heavily but was okay. She missed hearing the commercial radio report that a glider had crashed in the vicinity. Her initial reaction was one of disappointment that I had "blown it" on day one after all the effort we had put into getting there. She, and the boys, took my trailer in convoy with Bruce's crew Colin and trailer, led by an extra car driven by Peter Sasch with Reg Moore and Gerald Freeman to help out. On the way north they

passed my ambulance heading south and Sue wondered if it was me but was reassured by the fact that the blue lights weren't flashing. At the crash site the fire truck and police were still there. Sue retrieved all my personal items then left the van and trailer with the rest of the gang to deal with the de-rig and went in Peter Sasch's car to Eudunda Hospital.

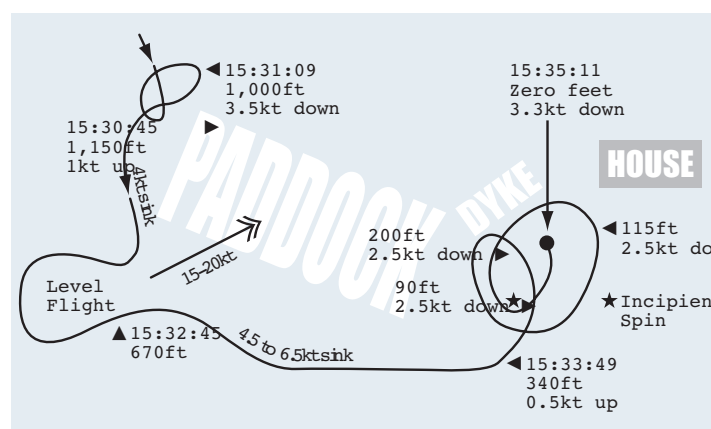
By the time she arrived I was comfortable in bed in a single room with the neck brace removed and under the influence of pain killers to ease the discomfort. I just remember her face, floating above me, smiling reassuringly, and the boys moving around the bed in a slightly subdued state. That didn't last long as David "took control" and started telling the nurses how to do their job.

I spent two nights in hospital being monitored for pulse, temperature and blood pressure every hour, then every two and finally every four hours.

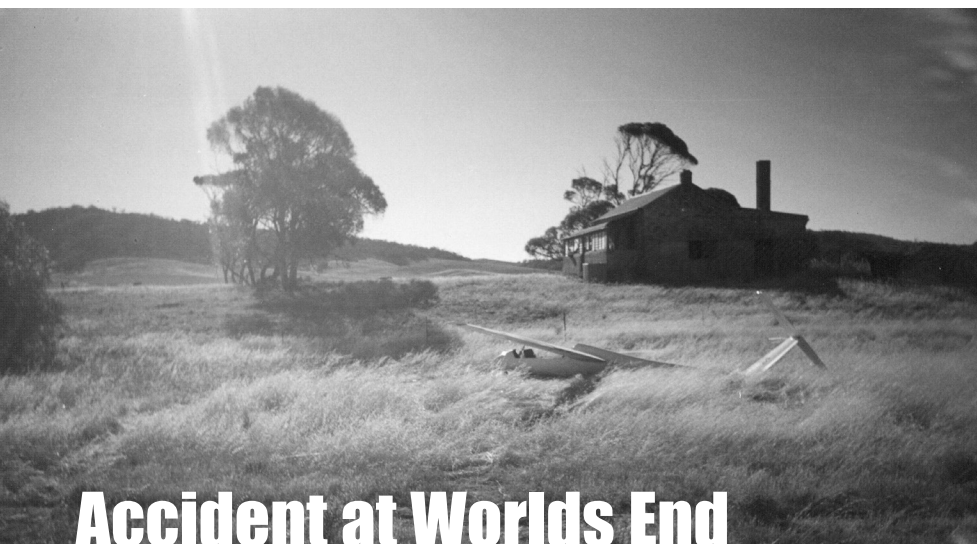
So far as I could establish, the only other patient in the hospital was another competitor who also had an outlanding accident on day one.

I didn't have holiday insurance to cover gliding but apparently you can get ambulance, including air ambulance cover from Kevin Chamberlain. Medicare reciprocal cover paid everything except the ambulance, which cost \$560. If Bruce hadn't seen me go down and, assuming I remembered to pull the ELT, it might well have been a helicopter rescue. I phoned the Australian Search and Rescue organisation after leaving hospital. They told me the first satellite pass would pinpoint an EL transmission to within 12 nautical miles. This would be refined on subsequent passes and finally by aircraft.

The last five minutes: Analysis of the Cambridge trace



After returning to our house in Gawler for recuperation, I looked through the Cambridge datalogger trace of my flight. This was a revelation, especially the last five minutes. Having selected a good paddock and arrived at the upwind end at 1,150ft above the crash site, I started an orbit in what could have been lift but rapidly deteriorated. During the orbit I closely inspected the paddock noting that it was large and flat with a single wire across the middle at right angles to my intended landing direction. It seemed to me that from this point on I was sleep walking towards my fate. I was obviously still looking for a climb. I continued a meandering track downwind in sink followed by fools lift then level flight and more heavy sink. Arriving at the base leg position and down to 340ft I hit half a knot up and started the first of two orbits. Apart from the first quarter turn, these orbits were conducted in sink and a strong wind at low level whilst in reach of a perfectly good paddock. I cannot remember being aware of the heavy sink on the downwind leg, nor can I remember being aware how low I was during the last two orbits. On the second orbit and now below 100ft I entered an incipient spin. Fortunately this came as a wake-up call. Entry to, and recovery from the incipient spin, is something I practiced many, many times in my earlier gliding



Final resting place for XQS
Photo: Reg Moore

Accident at Worlds End

career. As I told myself in a matter of fact way that I'd killed myself I also managed to limit the bank to 20 degrees. As the nose dropped I was surprised by the closeness of the ground. There was insufficient height to recover to unstalled flight and insufficient time to consider, or action, putting the wheel down. There may have been time to put a wing down to absorb the shock. Fortunately I didn't think of this, as I doubt that application of aileron in a stall would have produced the desired result.

The descent into the ground is something that will haunt me as long as I fly. According to the Cambridge I struck the ground at a vertical speed of 3.3kt. Because of a slightly uncomfortable parachute I had five centimetres of firm foam between my back and the chute. I was sitting on 15mm of crash foam, and the LS4 design was apparently ahead of its time in having double skinning in the cockpit area plus strong box sections on either side of the seat. Although the fuselage was extensively damaged, and the glider pronounced a write-off by Tom Gilbert, the seat remained basically intact.

I was very, very lucky. If the impact had been a few metres forward or to the right, or had I failed to recognise the start of the spin I doubt I would be writing this now. My legs and arms were unscathed, as was my head after the initial shock. However my torso received a severe jolt internally and externally, and I think it will take at least three months to recover full strength and mobility.

So why did it happen?

Please note that nothing I say here should be taken as an excuse for what happened. There can be no-one more responsible for their own safety than the pilot of a single seat aeroplane. I put my glider into a position from which it was impossible to recover safely. I have given much thought to what might have contributed to my downfall. Having decided to rule out senility, could there be more to it than just simple stupidity. I offer the following possibilities for consideration.

- Sue pointed out that I hadn't been getting more than five hours sleep per night over the previous few days as we drove through three states with two small children in an old van without air-conditioning. Packing and unpacking, and finally reaching the sweltering heat of the South Australian summer. The two previous days practice, although my flights were brief, they and the associated ground handling were conducted in temperatures up to 43°C. This may have taken its toll and had an adverse effect on my capabilities.
- On the morning of the first competition day, I banged my head. The settee in the clubhouse had been pushed against the wall under a cabinet. The loud bang as my head struck the cabinet startled everyone in the room. I was only slightly stunned and don't think this was a factor, but include mention of it for the sake of completeness.

- I have just had both my ears syringed which resulted in a marked improvement to my hearing. It is probable that during the last orbit I would not have noticed the growing silence as the speed slipped away.
- At the same time I may have been fooled by the false horizon of the nearby ridge into believing the attitude was more nose down than in fact it was. Certainly, I was not monitoring the airspeed on the last orbit.
- The last two orbits were flown over, or just downwind, of the defunct dyke topped by trees which I hadn't spotted. This may have exacerbated the sink at my low level.
- Two days after returning to Gawler I went to briefing and in a "how I had done it"

speech, speculated that maybe an unconscious arrogance led me to believe I could fly right up to the limits. I now think this was not a factor, although it is a tendency I have to guard against.

- I now suspect my greatest failing was a failure to maintain alertness through a failure to maintain proper hydration.

John Buchanan gave a talk at Narromine on the physiology of gliding. He stressed the need to start drinking water as soon as you get up in the morning, throughout the day and throughout the flight. Also, to drink enough to demand regular use of the pee tube. One pilot asked if it was possible to maintain a balance without peeing all the time. John's answer was: "that is the only gauge you have". Without regular use of the pee tube, you have no way of knowing where you are in relation to proper hydration.

I had two and a half litres of water in three screwtop bottles. In the two and a half hour flight, I had drunk half a litre and had not used a pee bag. I think my last drink was taken as I approached Burra, half an hour before the crash. After Burra I was busy looking for lift and flying close to high ground. I don't remember feeling thirsty or feeling the need to drink.

Certainly, if you look at the trace of the last five minutes of my flight, and in particular the last two orbits, you might well ask what was going on in my head. I now think the answer is "very little". Whatever caused my lack of attention crept up on me in an insidious and subtle fashion and I was only brought to my senses by the incipient spin.

Recommendations to myself

- Fit a low speed warning and an automatic ELT in case, heaven forbid, I should ever find myself in a similar predicament.
- Fit a pee tube instead of fumbling with pee bags.
- Take steps to improve my physical fitness and stamina.
- Fit a drinking system with drinking tube.
- I have been in the habit of taking a long drink at 20km out on final glide in order to be alert for the crossing of the finish line and low level circuit. In future I shall do this before any critical event. For example when an outlanding becomes a possibility.

In conclusion

I should like to thank, again, everyone involved in the rescue and recovery of myself and my glider. Also I should like to make public my appreciation of the service I received from the ambulance, fire and police crews and the staff at Eudunda Hospital.

I did wonder, briefly, as I was lying on my back in hospital, if I should give up gliding. But, of course, it is too big a part of my life with so many happy memories and so many good people whose company I would miss. We are already planning and looking forward to our next Australian adventure.



Barossaglide

– a practice preparing for the Worlds

EMILIS PRELGAUSKAS

The South Australian town of Gawler hosted a number of events in the January 2000 period. Of interest to us in this magazine was the sailplane Club Class Pre-Worlds. This continued for almost a fortnight, bringing people, accommodation, food, services demand to the town.

During that period more broadly in the town there also were the Australia Day celebrations, and a one-day event integral to Cycling Down Under. These too bring benefits to the town.

The latter events included posters in shop windows, spectator crowds swelling the town, and a general mood of appreciation and benefit by the town. In contrast, the gliding attracted criticism from the town for its launch period noise.

But not all is gloom; some locals, including the mobile ice cream vendor, have offered to take gliding's message to the town, in the form of posters if such are available. For the Worlds, a 'To the Householder' circular vaunting the benefits of the event to the town sent to post boxes in the town before the contest period may also be prudent.

These additional demands on the contest organisation are in the same basket such as the checking of pre-contest registration handbook literature. The Pre-Worlds one included this gem: *"Your co-operation will ensure a smooth and safe..."* (their typo, not mine for a change).

I can look at the practice for the Worlds from a broader perspective than those with their heads fully submerged in the event, as originally I wasn't expecting to be at the Pre-Worlds at all. However, general chit chat by the host club about access to a club two-seater sailplane for an event sponsor came to nothing, and so it came to be that I provided mine instead for that purpose. This was made practicable by flying the '32 from home to the venue the week preceding the contest, spending the contest in the back seat, and then flying it home the week after the contest finished.

Through administrator insistence in the dribs and drabs style registration process at the Pre-Worlds, despite my forebodings of disaster (feelingly expressed to the administrator involved at the time), resulted in this sailplane then appearing twice on the score list everyday. Regrettably the scores daily listed Simon scoring zero on the bottom of the list; with our actual score elsewhere on the sheet, even though we were the same crew daily in the one two-seater at the same time.

At the wind up, we were declared the runner-up Australian crew in two-seaters, though the published scores say we came third, while the presentation speaker placed us fourth behind two overseas entrants. The seven entered two-seaters didn't get daily scores or medals during the contest; so that final seems only consistent.

The Worlds event will be easier to manage for the organisers, because entry limitations to be imposed then will exclude both low perfor-



Simon Hackett and Emilis Prelgauskas at Barossaglide
Photo: Martin Simons

mance and two-seater sailplane types. But at that coming event, with the wide range of nationalities and cultures then being brought together; it will be more important than ever to have the registration happen only once and completely up front, and to avoid within the process the insensitive allusions and insults apparent at the practice event.

The Pre-Worlds weather this year did no favours to lower performance entries, and poorer handling entries like us poor misunderstood two-seaters. The low inversions combined with strong headwinds and the limited length of convective day slowed and shot down such sailplanes. In that environment, setting long task time periods requiring use of the weaker weather at each end of the contest day only exacerbated that disadvantage.

Pilots more generally reacted unfavourably to mandatory turn-points which turned the POST task system into an effective fixed task for the lower performance entries. Setting such mandates out beyond unlandable intervening terrain on a day of low inversion, late convection start and early sea breeze forecast intimated that a death wish was being imposed on all competing pilots.

In comparison, the marshalling of everyone to the upwind end of the airfield is a minor hiccup. There were a range of positives for the Pre-Worlds practice which deserve recognition and to be strengthened for the Worlds. The pilots themselves maintained the spirit and flew in the unseasonal weather and minimised the effect of the administration getting practice.

Mike Hancy brings a thoughtfulness and candour to met briefing which impresses in terms of local knowledge, avoiding any suggestion of advantage to locals from effects not disclosed, and makes tasking in marginal conditions possible at all.

The SA AIRTC bivouac organisers and youngsters who cheerfully did all the outdoor tasks and sent pilots off on their tasks with a smile.

There is a large positive impact planet wide from the dedicated electronic communication erected on-site specifically for the contest, which deserves a dedicated telephone line rather than one usurped during the day during the contest period. This was reflected in the speed with which information got out to Australian and overseas web sites and lists that were tracking the contest.



Bogong Cup 2000

ANITA MAMERS AND PHIL LAHIFF

The Bogong Cup once more took on a truly international feel this year with ten different countries being represented. Aussie pilots also turned out in force coming from as far away as Cairns. Having most of the pilots staying at the same venue (Mountain Creek Lodge, which was also HQ) certainly facilitated considerable social interaction. Many flying post mortems lasted well into the small hours, and breakfast and dinner took on the appearance of a mini Olympic Village.

Left: Paul Matthews makes the first turnpoint on Day 3
Photo: Paul Matthews

Day 1 (Wednesday, 26 January) – Big debate: fly or not? It was raining in Benalla but clearing in Albury, and pilots were chomping at the bit. Up Mt Emu we went, but they didn't build the hydro-scheme here for nothing – it bucketed down.

Day 2 – The rain had cleared but left behind a strong south-easterly. The only viable launch site was The Pines out near Beechworth. A task of 77km out to Rutherglen was set. Launch conditions were perfect with all the experienced pilots barrelling off the hill almost immediately. The controlled airspace limit of 4,500ft made this task challenging. Oli made the second turnpoint but ran into a single electrical wire after working a sunny dry paddock a little too low. Oli was fine but the glider needed a new keel. Ten pilots made goal led by Joel, Davis and Attila.

Day 3 – With the southerlies abating it was a Mt Emu day. Light lift early with plenty of cu's. A task was set to Gundowring North and back to Mt Beauty Airfield (84km). Joel launched with the rest but didn't take the start gate until an hour later. Ten pilots made goal with Joel recording the fastest time followed by Attila and Gerolf.

Day 4 – Low inversion layer, south-west-erlies again a bit stronger than yesterday. Very unusual weather conditions for NE Victoria at this time of year. Up Mt Emu again, but nobody seemed inclined to launch. Finally a tail-ender pushed and launching began as the inversion layer started to break up. The task was once more up the valley and back (73km). Very strong winds developed at the turnpoint at Kankoon. Grant Heaney apparently made the first turnpoint three times. Davis Straub in his Atos was the person to catch as he streaked ahead. Unfortunately a misjudgment of the downwash left him 2km short of goal. Attila put on the show of the day scratching up Mt Emu for about an hour, watched by everyone on the balcony at HQ. We are pleased to say that he did make goal just before dark. In fact only four pilots made goal, being Joel, Gerolf, Oli and Attila.

Day 5 – With the winds having died we were back to Mt Emu again, with a TV news crew joining us. A tail-ender pushed again and lots of gliders launched quickly to work the big thermal right in front of launch. This gave great TV footage and the cameraman went home happy. Lots of lift allowed 22



Above: Soaring over Mt Bogong
Photo: Paul Matthews

Below: Getting ready for the day's flying
Photo: Top Shots Photography

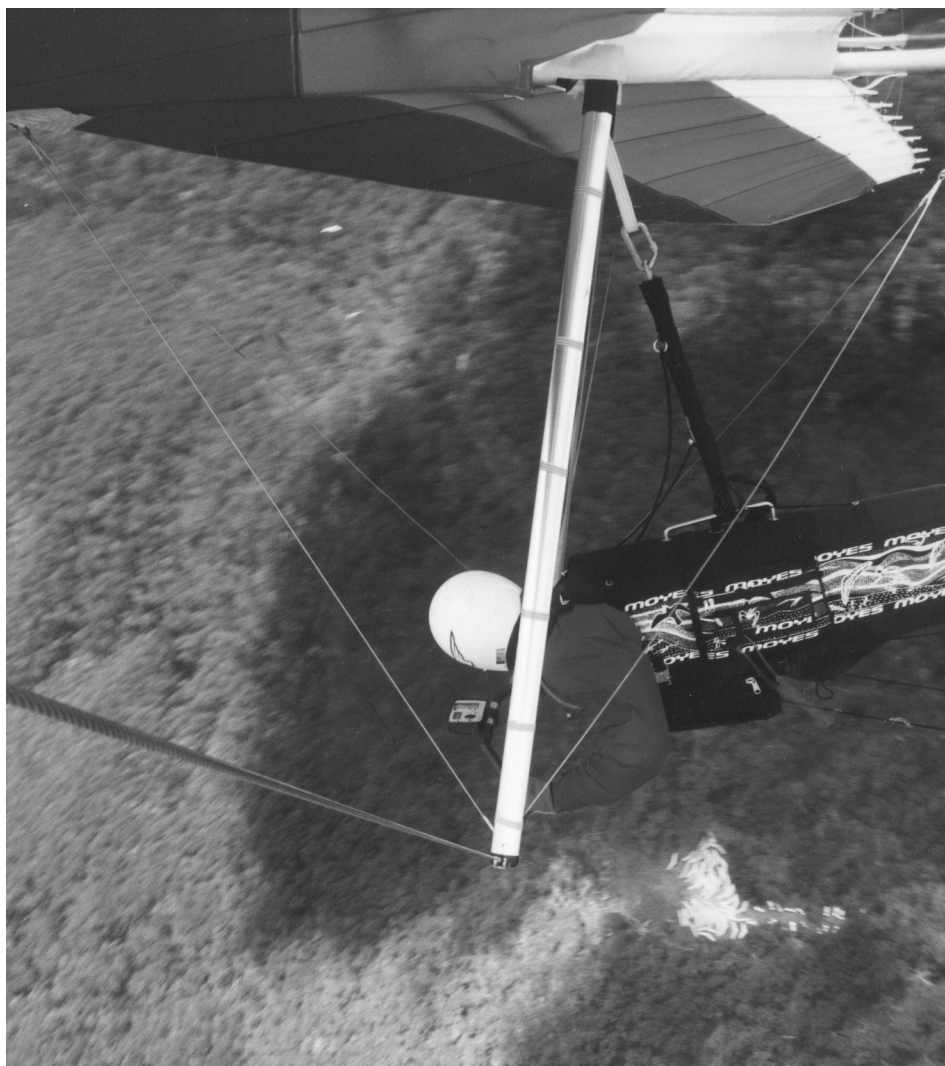


pilots to make the 85km task, led by Joel, Davis and Attila. George Kambas became the first kingpost to make goal this comp.

Day 6 – Gerolf turned 40 and the launch site for the day was Tawonga Gap. The sky was full of high cirrus and pilots were spread all round the hills trying to work the weak lift. There was no racing even though the task was only 65km. Only seven pilots made it to goal, led by Gerolf, Attila and Jon Durand Jnr. Andreas Olsson landed on a road in the depths of a pine plantation. Trevor Kee in his Fun outflow some of the big guns and made the first turnpoint. Sports Momentum let Joel take a camera for a fly. The scoring was really starting to tighten up at this stage.

Day 7 – Finally we got to fly from Mt Buffalo and the media were out in force. Blue sky with a few cu's forming allowed a challenging task of 102km to be set back to Mt Beauty. Like lemmings the pilots started bailing off the cliff launch at 1pm. Many different flying strategies were available this day, with many crucial decisions to be made. 20 pilots made goal led by Joel, Andreas and Attila. Lloyd Pennicuik became the first C-grader to make goal for the comp. He was wrapped!

Day 8 – Back to Mt Buffalo with an 83km task involving some ridge racing. Thick cirrus clouds moved in over almost the whole area, putting launch in shadow. There was still a bit of lift out there but it was hard work. Only four pilots made goal: Gerolf, Joel, Naoki Itagaki, and Jon.



Left: Looking down on the Mt Emu launch
Photo: Paul Matthews

Freeman get lots of height above Mt Bogong but with little forward penetration. Davis finally launched at 4pm, caught some good air and radioed back to Attila. Suddenly everyone on the ground was pushing. Many C-graders decide to just go out for a play – for them it was too late in the day to start a 67km task. Only three pilots made goal: Davis, Joel and Jon.

Day 10 – This was the final day of the comp, with a lot of tired little vegemites. With a NW wind forecast and a temperature of 39°C, pilots agitated for a Mystic Hill launch. The sky was blue with the wind gusting up to 12kt and a headwind task was set. However, no one wanted to take off and Joel, Attila and Gerolf expressed serious doubts about being able to make the first turnpoint. The day was called.

The day might have been called off but the night certainly wasn't! Who were all those clean people with ironed shirts that turned up? Wes shouted the bar and the night was well under way. The final presentation dinner dance was held at Mountain Creek Lodge (where else) so at least for most pilots all they had to do was remember their room number (and as the night rolled on even this seemed to become irrelevant in some cases). It was a great night to finish off a great comp. To say goodbye was like saying farewell to family – and that was what we all seemed to have become, family. So long, Au Revoir. Till we meet again at next year's Cup, safe flying.



Final Results

1 Joel Rebbechi	AUS	Moyes Litespeed	6064
2 Gerolf Heinrichs	AUT	Moyes Litespeed	5691
3 Attila Bertok	HUN	Moyes Litespeed	5466
4 Davis Straub	USA	Atos	5008
5 Jon Durand Jnr	AUS	Moyes Litespeed	4956
6 Michael Jackson	AUS	Aeros Stealth	4629
7 Lukas Bader	GER	Aeros Stealth	4612
8 Dustin Martin	USA	Moyes Litespeed	4487
9 Naoki Itagaki	JAP	Moyes Litespeed	4355
10 Grant Heaney	AUS	Moyes Litespeed	4032

Highest Placed Female

25 Kyoko Murashima	JAP	Moyes SX3
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Encouragement Award

44 Debbie Maher	AUS	Moyes XT145
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Kingpost/A-Grade Winner

16 Gary Davie	AUS	Airborne Shark
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B-Grade Winner

24 Tony Giammichele	AUS	Moyes Xtralite
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C-Grade Winner

20 Lloyd Pennicuik	AUS	Moyes Xtralite
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Author's note: Thanks to all the pilots for their insights, especially Davis Straub without whom this article may never have been written.



The Bogong Cup 2000 family

Photo: Top Shots Photography

Day 9 – At Mt Emu launch today, once again with Sportsworld. They had been with us all week making a documentary on hang gliding and the Bogong Cup. This is for international cable television and will be shown all round the world dubbed into

many different languages. This was their final day of filming and they provided Craig Worth and Gilbert Griffiths the opportunity to become international movie stars with stage make-up and all. Flying conditions were not encouraging, however, as we watched James

The Future Direction for Hang Gliding – a “Wake Up Call”

PHIL BROWN

Serial gliders? Sure, James Freeman has a point. If we wish to generate more interest in competition flying, a serial glider design is the right and necessary move. But if we really want to revitalise the sport we need far more than that. What we need to do is attract and keep the “average pilot”, he/she who has limited time, other commitments, the usual pressures of work and family etc, but still a sense of adventure and a love of flying.

Why is our sport struggling?

Let me make a few observations:

1. Paraglider pilots are not making the progression to hang gliding.
2. The average paraglider pilot is (in the hills) flying as far or often further than the average hang glider pilot. I qualify this to the hills only, not the flats, and to these “average” pilots, not the guns. Yes, it’s true, come to Bright and you’ll see it happen almost every day.
3. Hang glider pilots are giving up the sport “because it’s all too hard”. How often have you heard that quote?
4. The floater class of hang glider, particularly the Fun, is becoming quite popular, especially with the older hang glider pilots.

Why is this so?

It is because modern high performance hang gliders are too difficult to land. Are you listening, you manufacturers? I’ll say it again. Modern hang gliders are, for the average weekend pilot, scary to land.

As a result:

1. The paraglider pilots look at the landings and say “No way, I’ll stick to my paraglider that costs just as much but wears out in a fraction of the time”. The hang glider just looks too scary.
2. The hang glider pilot, whilst he has much better performance in glide and speed, is so careful and focussed about having a “nice” landing option at all times that he/she cannot scratch along the ridges

and hills with anywhere near the same peace of mind as a paraglider pilot who can land just about anywhere. As a result, the hangie ends up in his safe landing paddock while the para scratches along, gets up again and keeps on going.

3. How many hangies do you know who have given up the sport specifically because they find the landings too stressful? I know quite a few. They have had one too many rough landings and decide it’s all too hard.
4. The floaters are very easy to fly and their popularity should be a major wake up call to the manufacturers. People are buying them because they are easy to land. However, when flown inland they don’t have the glide and speed that make the modern high performance gliders attractive. So the paras don’t convert because if they don’t see any gain in performance over their paragliders then why should they?

In our modern society the demands on our time are great. We all work longer hours and generally cannot devote copious amounts of time on practicing our sport. We may not necessarily want instant gratification, but we need to get value out of our limited leisure time. We don’t have the time to devote hours and hours to perfecting our landings. When I converted across to hang gliding I already had about 700 inland hours up on paragliders. I was very tentative about converting because the landings looked so scary. Okay, the landings are not quite as bad or difficult as they look, and even on my small high performance glider I have mastered them, sort of... But I am in the minority. Not many have followed in this direction, whilst quite a few have gone in the reverse. I converted for the sake of performance. I don’t want a floater (although I think that they’re great); I want (reasonable) performance. And don’t come back with a smart retort “If you want performance then learn how to land it”, because I am not alone in this view. There are a lot of frustrated pilots out there who are slowly being pushed out of the sport because they don’t have the time or skill to stay safe on their gliders. They are giving up.

But imagine if we had a glider that had good performance, say at the level of the

Xtralite or Shark. It doesn’t need to keep up with the topless gliders, but it could still be miles ahead of paraglider performance. And after all, performance (speed and glide) in itself is safety in many situations. Imagine then this glider with, through the use of flaps or other designs, the landing characteristics of a floater, an open cross bar ‘just fly it to the ground’ type glider.

Imagine what you would have:

1. The paraglider pilot who is feeling a bit jaded and is looking for a new challenge, or is tired of the durability issue with paragliders would say “Hey, the performance is much better and they look pretty easy to fly (read LAND)... think I’ll try it.” Are you awake yet?
2. The pilot flying cross-country can scratch along the ridges with the confidence of knowing that “that little paddock down there will be more than adequate if I need to land”. As a result he/she scratches harder, flies further and is a darn sight happier.
3. People would stop getting scared or whacking in and giving up the sport.
4. The transition from a open crossbar glider with limited glide to a performance glider would be a lot gentler. People want to progress, it’s in our nature. We just need to be allowed to.

Imagine what this would do for our sport. It would suddenly become more enjoyable and less stressful for a lot of pilots. I think it would also make the sport far more attractive to the average “potential pilot”. Remember the rule in sales and marketing, that you have to sell to the masses. Well in this case the “masses” are not those guns who can make any glider look easy to fly, but those with the limited time and skills that I have already described. If our sport is going to survive in our increasingly regulated society, we need numbers – there is strength in numbers.

Is this all too much of a pipe dream?

Are flaps the answer? If not, are there not other options/ideas to pursue? Have the manufacturers really tried that hard to produce an easy landing, high performance glider? I think not. Probably because they didn’t see the need, just like they didn’t see the market potential of the floater until it was put in front of them. But now is the time to act, to catch those aging hangies before they leave the sport, to snap up those paraglider pilots who want to move on and up in performance, to increase sales (heaven forbid) and the numbers of active participants. To put hang gliding back in its rightful place as the best fun you can have in the air. Imagine that!





Barossa glide

ROGER LAVERS

For several years, Ian McPhee has campaigned that all similar two-seater trainers (such as Bergfalke III, Blanik, K7, ASK13) should have the same handicap. The handicap committee finally relented but put the unofficial proviso that the gliders would have to enter competitions. Hence the events now described:

Monday, 17 January 2000

I was in the shower a bit later than usual (about 8:45am) when my wife came in to tell me Macca was on the phone. *"Tell him I'll ring back in five minutes."*

"Do you want to go to Adelaide?" "What's on?" "The Pre-World Club Class Championships. I think I've entered the Berg. I'm a bit late, but that doesn't matter. Today is only a practice day. We might miss tomorrow too, but the comps are on for two weeks. We'll be okay. I've had the car all fixed up – new exhaust system, it's passed registration and has good tyres. I only ever use the best. Michelin. You'll be right."

Now Macca is one of gliding's 'Living Treasures', and I had just spent a very enjoyable time with him and Giles Taylor at Narromine in the recent state comps. Then again, Giles was there... Oh, well.

"When do we leave?" "What? You mean you'll go? Oh, good. I've got a few things to do... about lunchtime? I've just found this checklist for gliding comps. Pre-computer days. Bruce Brockhoff did it on a typewriter. Let's see... Trailer okay? Check..."

My wife dutifully deposited me, plus camping gear, at Macca's bungalow about 1:00pm. We departed Tyagarah at 5:45pm, estimating Armidale at 11:00pm.

Terrible journey through rain and fog from Grafton to Armidale. Arrived at Brad Edward's home 12:30am. Brad was still up waiting for us. We left the chat until breakfast – we were all pretty tired.

Departed Armidale at about 8:30am to pick up the glider at Kentucky. On arrival, I learnt that Macca needed to do a few repairs to the trailer. A nut welded on here, the jockey wheel moved there. Two hours later we were on our way.

Just short of Tamworth, Macca took a shortcut through the hills that eventually took us into a shopping centre. I was unable to convince Macca that the shortcut took twice as long.

The Brockhoff checklist proved its worth at the shopping centre. Extra tie down pegs, etc, etc. It was funny how the car seemed a bit noisier with the trailer on.

About 30km past Coonabarabran, Macca exclaimed *"I've got no throttle!"* We pulled over under a tree on the other side of the road. It seems that they make the outer cable of throttle cables out of plastic. It had melted, and the inner kinked. Three short sticks and several tie strips made an excellent splint, and we were soon back on the road.

I must hand it to Macca. At each of our subsequent breakdowns he was able to come up with some ingenious improvisation that soon had us moving again. And when, finally, even Macca was lost for a cure for a stripped nut on the exhaust stud, a truckie stopped within a minute of us and found a nut that would do the job to get us to Broken Hill. We stayed overnight with Bill and Joan Smith (friends of mine from way back). Next morning Macca went to a local wrecker to see if he could get the part that had been left off the exhaust system. The very obliging proprietor made up a suitable bracket, welded the exhaust where it should have been, and only charged \$20 for his efforts totalling over an hour. No wonder my friends love living in Broken Hill.

We arrived at Gawler at 5:45pm on Thursday. Only three competition days late. (As it turned out, we'd only missed one day of Club Class. The weather is another story.)

Friday saw us rigged and tied down next to the Berg IV. A somewhat reluctant Macca was finally persuaded to go and register.

Although a task was set on Friday, the winds of 20+knots did not suit the Berg so Macca chose to stay on the ground. A good decision given that the Berg IV flew to the first turning point and outlanded shortly after. Actually, I have a sneaking suspicion that Macca wouldn't have flown even if it had been nil wind and 15kt thermals to 12,000ft. We needed to rest after a somewhat tiring trip down of close to 3,000km, and Macca needed to get his instruments sorted out. So I went in to Adelaide, and Macca pottered around the glider.

The Competition

Saturday, 22 January 2000. Task set was a minimum four hours, 240km, with two alternatives for the first turnpoint and two alternatives for a second compulsory turnpoint. This effectively fixed the task for lower performance gliders.

Macca learnt how to use his latest Palm Nav while we were at the start grid. We had a pleasant flight for a bit over four hours, but couldn't beat the wind and outlanded about 40km from Gawler.

Macca "handed in" his datalogger, and then was rather startled to see it in front of him at dinner that night. As soon as he noticed it, he stopped eating and looked around the room to see who had left it. *"Gee, they did that quickly!"* Next morning at breakfast time the loudspeakers boomed *"Would Ian McPhee hand in his datalogger from yesterday to be downloaded."*

Our goal was *"to beat the Berg IV. We can out-climb it, but it glides better."*

Sunday. We were trying for 200km and four hours. There was reasonable lift to 5,000ft near Gawler. We were in a couple of thermals with the Berg IV prior to the start. I started to wonder at Macca's comparison the second time it climbed through us. After starting, we struggled for several hours with several low points to about 800ft agl. Eventually we broke the magical 3,200ft barrier where we were, and reached 6,500ft. After one of our low points, Macca had just centred a good thermal and said *"I wonder what everyone else is doing – I'll turn on the radio."* He lost the thermal. We made it back after covering 136km.

Monday. Panic stations! Macca's mobile phone was flat, and he couldn't find his chargers – a 240V and a 12V both lost! Anyone who knows Macca knows he can't survive without his mobile. He has withdrawal symptoms if it gets out of range! After several hours, I found the 240V charger under the passenger seat in his car. Macca eventually found the 12V one in the competition office. He had left it on the table when he'd handed in the datalogger.

Weather ruled out flying Monday and Tuesday.

Wednesday. Macca was almost organised! He almost didn't wander off when we were at the start grid.

We had a three and a half hour, 120km task. No restriction on turnpoints. Perhaps we should have taken the hint when the Boomerang landed back before we had launched. But we were there to enjoy ourselves and fly. Surely we could at least start? Unfortunately the weather turned lousy during the flight – winds increased and it overdeveloped. We didn't stay up for long, and outlanded at Roseworthy after starting and going to Freeling and back. At least we had a relatively cheap aerotow retrieve. Getting back early enabled us to be tied down and Macca free to go on a retrieve for a visiting pilot.

A Different Perspective

Thursday. Winds of 50+kt between 3,000ft and 5,000ft are not the stuff for a Berg III – unless we used them to fly home! We chose not to fly, and Macca flew with Harry Medlicott. I caught up on some Adelaide friends.

Friday. Last day. How quickly the time had passed. We had a task minimum of three hours, 140km. Macca was very organised. But it didn't help. We outlanded after one and a half hours in the air. I flew in the front seat on this occasion, and did the outlanding towards getting current for cross-country again. We were in an excellent paddock and could have had aerotow retrieve, but as we had to de-rig anyway, we rang Wendy Medlicott to bring out the trailer. As we were on the road back with the glider secure in the trailer we heard Harry call to say he was landing at the remote finish. After a few phone calls we found ourselves going to the remote finish paddock to retrieve Harry. He had taxied on it and decided it was too rough for a self-launch. When we compared the paddock with the one we had landed in no more than 10km away, we wondered at the choice of field for the remote finish (perhaps shook our heads?). The dinner that night was great!

The Return Journey

Saturday. Macca was awake with the sun. I got up so that I would not keep him waiting. Our objective for that day was Tocumwal. Packed and ready by 8:30am, I relaxed until Macca was finally packed and ready for a shower at 10:20am. We almost made Swan Hill, but the trailer lights decided to pack it in and we stayed overnight at Piangil.

Sunday. We were actually on the road at 7:00am! At Swan Hill we

checked out Pioneer Settlement from the road. Shortly after I learnt a new definition of running repairs. I was driving, and Macca decided to fix the passenger door (we had had to wind the window down and open it from the outside). So at 90km/h, Macca removed the door trim. But he did get me to stop to make the simple repair and replace the trim. It was great to be able to open the door from the inside! At Nathalia, after stopping to make some phone calls, we discovered a disconnected trailer wire minus its plug dragging along the ground. Macca had disconnected it the previous night to save the battery.

The rest of our return journey was quite relaxed. Stopover and business discussions at Tocumwal concerning the fitting of a Jabiru engine to one of our Motorfalcons, a 15-minute visit to Narromine that became an overnight and all morning stay, a diversion to Keepit to look at Wal's and Lloyd's K6, arrival at very last last light to unhook the glider at Kentucky, some difficulty finding the car in the pitch blackness after a cuppa with Bruce and Louise and a pleasant late evening and overnight with Kennys in Armidale. And finally, a blowout on the Grafton–Casino road.

Two-and-a-half weeks, 6,000km drive for a total of 12 hours glider flying. And all that time with Macca – the man whose concept of time is so refreshingly unique. Was it worth it? Well I haven't had room to mention the great discussions with other pilots from totally different backgrounds, the comradeship shown by the other 'wooden' glider pilots, etc, all of which combined to be a really valuable learning experience. I have no doubt my flying has improved because of my attendance.



Problems with flying sites

EMILIS PRELGAUSKAS

Within the January 2000 issue of Australian Gliding/

Skysailor, Graham Sutherland (page 32)

writes highlighting the fragility of tenure of hang gliding sites as pilot numbers increase, and landowner and neighbour tolerance diminishes over time.

This experience mirrors that of other and possibly more senior aviation sports in previous decades. Aeromodellers have had difficulty hanging on to access to public land in suburban areas. Parachutists have centred their operations on sympathetic public aerodromes.

Sailplanes have experienced their share of such difficulties. The F McD Library tracked the UK experience over a five year period, where *'Sailplane and Gliding'* carried 100 instances by gliding clubs facing land tenure difficulties. There this was underpinned by subdivision of unused military airfields where often clubs were based, environment protection policies on previously despised moorlands where some clubs had settled, and noise and public hazard concerns about clubs near urban areas.

Since, the German *'Der Adler'* reports conflicts between local governments and sport aviation due to differences in perception of 'amenity' – government loves aerodromes as quiet open space places messed up by those wanting to go flying.

Tow plane launching of sailplanes at Barossa Glide in January 2000 generated significant neighbour complaints from the abutting Gawler township in South Australia.

Thus the global issue and the response are not unknown. Hang gliding will face the same path as other sport aviators, and head down the FBO path.

Fixed base operations permit the aviators to become part of the local community, to demonstrate economic contribution, to engender community wide pride in its aviation awareness and pre-eminence.

The GFA Development Guide relates precisely one FBO response in the US, where the airport provides ex-sheriff cars as free transport within the town for visiting aviators, with sign-writing 'your local airport at work in the community'.

The costs to hang gliding will be the same as for all other aviation sports; hard capital monies will be invested, and the cost of flying on each pilot will increase.

Yes, the capital dollar will be scary; but the medium term payoff in terms of security of flying site, and public respect for the sport represent a good value payback.





Five Poms go to Oz



The five Poms – Alastair Bell, Colin Metcalfe, Peter Rocks, Dave Britt and Vince Geraghty – enjoyed sightseeing in Sydney after their gliding holiday in Narromine

VINCE GERAGHTY

It all started on a cold December evening. As I sat at home dreaming of summer, the phone rang. It was my friend Alastair Bell – “Would you like to go to Australia?” After thinking about it for 30 seconds I said “Yes.”

Three more phone calls and there were five of us lined up – Alastair, Colin Metcalfe, Peter Rocks and Dave Britt plus myself. Having checked out the gliding sites in Australia we decided to go to Narromine, so booked it all on-line – the gliders, site and accommodation. Isn't the Internet a wonderful thing.

Arriving in Narromine on a Sunday in January, we introduced ourselves to our hosts for the week, Shinzo and Christiane at Soar Narromine. Check flights were quickly made and we looked forward to a few days of soaring.

Monday started promisingly with climbs to 8,500ft, averaging six to eight knots. Being the first day we stayed local to get our bearings and get used to the awesome thermals.

Unfortunately the rest of the week was spoilt by a high-pressure system sitting over us causing temperatures to rise to 42°C, with the result that trigger temperature went up to 37°C. The day only really got started at about three o'clock, with the result that the thermals went blue and stayed that way with average climbs going down together with the inversion level to 6,000ft.

By Thursday we decided, as it was our last day to go cross-country we would so declared a 300km triangle, Gilgandra, Parkes, Narromine. Launching at 2:00pm into one to two knots to 2,500ft the day did not look promising.

As I looked down, gliders from Orana Soaring Club were neatly parked alongside the runway. I got the distinct impression that they were looking up at the Poms wondering why they were bothering. This was later confirmed by Miles Gore-Brown. It's funny how only Aussies can take the rip out of you, and keep you smiling. Then the

thermals started for real with four knots becoming the norm to 6,000ft so Colin and I decided to set off for Gilgandra. We took one last climb over the site to 6,200ft and pointed the Discus at the horizon, then I glided, and glided, and glided. Something was missing, I couldn't quite put my finger on it but some thing was definitely missing? Then it dawned on me then that I had not met a thermal for about 20km. I found myself down to about 3,000ft over the wide plains so called Colin on radio to enquire how he was doing? He was down to 2,500ft about three kilometres behind me.

It was then that I rediscovered religion, and lo-and-behold a six-knotter tipped the port wing upwards. I climbed again to 6,000ft, took a final glide into the turnpoint and found that the total flight time was 42 minutes. Boy, was I going or what?

Well, what, is the answer to that question. I turned round into a 25kt headwind and what looked like a promising time, started to turn into a battle. It took two hours to return to Narromine, by which time it was 17:45 with about 160km to run to the next turnpoint – 80km of it into wind. Being realists we stayed local and landed at 18:30. What a flight – a bit different to ones I've experienced in England.

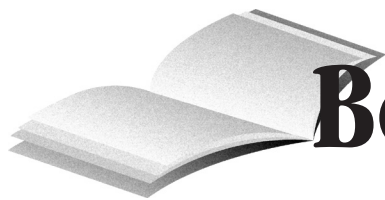
The highlight of the trip for us was meeting so many friendly Aussie pilots. Anne Elliott and her partner Keith Dixon from the Orana Soaring Club made us particularly welcome. Keith, being a fellow tug pilot and gliding instructor, shared a few anecdotes with me about the various experiences he had had.

Shinzo, who with his wife Christiane run a very slick operation, was a mine of local knowledge and gave us a very detailed weather briefing every morning. Ken and Tyoshi, who run the airfield side of the operation for Soar Narromine, were brilliant fun.

The highlight of the trip for me was one evening when we were invited to dinner with some Orana Soaring Club members and other pilots who were flying at Narromine. I was seated next to George Lee, who has long been a hero of mine, and was able to talk gliding to him for a couple of hours.

Will we return? Most certainly. Everything was very much a new experience for all of us. Australia is definitely the place to visit and Narromine the place to be.





Book Review

Fundamentals of Sailplane Design

By Professor Fred Thomas

Translated from German by Judah Milgram

Published 1999 by College Park Press, PO Box 143, College Park, Maryland 20741, USA, US \$50 plus postage & packing. (274 pages, 270 x 230 mm, Foreword by Prof. Loek Boermans, bibliography, two appendices, German-English glossary, indexes.) International Standard Book Number ISBN 0-9669553-0-7

MARTIN SIMONS

This is a magnificent book which anyone with a serious interest in soaring should own and read. There are many sections which ought to be studied with care, even by pilots who claim to have no interest in design or theory. They need to appreciate what they are asking a sailplane to do and how they might, with safety, get the best performance from it. We all benefit from a better comprehension of what is happening to our aircraft as the air flows over and around them.

This is the third edition of a standard German work, revised by the author and translated into excellent and very clear English by Judah Milgram. It is the only comprehensive book of its kind available in any language and is destined to become recognised as a classic. (The original German edition, entitled 'Grundlagen für den Entwurf von Segelflugzeugen' was published in 1979. A second edition followed in 1984.) Fred Thomas, the author, has held senior positions in the DLR (the German Aerospace Research Establishment) and was Professor of Aerodynamics at the Technical University of Braunschweig (Brunswick) from 1966 until his retirement in 1998. During this period the famous 'Akaflieg Braunschweig' (a society of students and staff dedicated to research and practical development of new aircraft) produced some of the most innovative sailplanes, the SB 7, 8, and 9, the giant SB-10 with 29 metres span, the SB-11 with variable geometry wings which won the world soaring championships in 1978. More recently, the tail-less SB-13 has excited much interest around the globe and, it is admitted, caused its pilots some agitation too. The family of wing profiles devised by Horstmann and Quast also came from this University Department and have led to considerable advances in wing design. Thomas is also a sailplane pilot.

The book requires careful study rather than a quick skimming. There are, of necessity, some mathematical passages. By reading all around them and studying the diagrams with attention, even the innumerate can understand what the equations are saying. The text is highly readable even by those who are put off by formulae; Judah Milgram has done a first class job here.

The level of mathematical difficulty is not great. In most cases the reader needs only the four simple rules of arithmetic. Some understanding of basic trigonometrical ratios is helpful and the occasional square root sign or fractional power appears. Integral calculus is hardly needed although to know at least the meaning of the symbols is, in a few places, useful. As Sylvanus Thompson said in 1910, "What one fool can do, another can." The elongated letter S (\int) in calculus means only "add up all such little bits as..." and the large Greek letter like a capital E, sigma (Σ), means much the same thing. These will take most of us fools far enough.

After introductory chapters dealing with fundamental aerodynamics and wing theory, performance and aeroelasticity, the work examines design requirements and cross-country flying theory. This leads to extended chapters on sailplane design optimisation, choices of basic layout and proportions, wing profiles, interference drag, control and stability, illustrated with examples of actual sailplanes. The most extraordinary so far known, the 30.9 metres span Eta with an aspect ratio of 50:1, is among those described.

Later in the book are sections describing routine flight testing procedures, the evaluation of performance and handling qualities. The Braunschweig group has developed valuable experimental methods using sailplanes in flight to measure wing section data. Some expansion of these sections would be interesting but as the title states, this is a book dealing with the fundamentals, an

introduction to its subject, not a detailed manual for designers. There is a very fine bibliography and many well-directed references to be followed up.

The main text ends with a brief but adequate historical survey and suggestions for future development.

In an appendix, flight test procedures employed in Germany for sailplanes are set out in detail. The language here is German but there is an English summary and some samples of results for four well known types of sailplane.

In addition there is an appendix with over 140 small three view drawings, a few of 'vintage' types but mostly modern, and a most useful set of tables giving full data, including not only the usual figures but tail volumes, aileron and air brake particulars, aerofoil sections and wing twist. This section will doubtless be referred to frequently by scale model makers as well as anyone in the market for a sailplane.

In summary, this book should not be missed by the serious sailplane pilot or engineer. It is worth every cent of its price.



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Corryong Cup 2000



ALLAN BUSH

A full field of 55 pilots turned up in Corryong for yet another great week of flying in January 2000.

Interestingly, as other competitions struggle to attract full fields, the Corryong Cup again filled all its places. Perhaps this is some kind of message that there are plenty of pilots out there who are interested in entering a competition where winning isn't the be all and end all. If you just wanted to get in the air with a group of like-thinking pilots and have a good time, this was the comp you were looking for. The Corryong Cup has always been promoted as a fun competition and the level of support given by the flying fraternity shows that this is a much-appreciated event in the flying calendar.

Having now convinced you all that nobody came to win anything, it was interesting to arrive in Corryong with several gun pilots straight from Hay, obviously here to see how a real comp was run and have some fun. There was talk of immediately nobbling any glider without a king post by making them fly the tasks for the day twice to be a part of the comp. They objected.

The practice day on Saturday 22nd was a cracker, with pilots launching and disappearing in all directions. Paul Hunt in the infamous Atos (one of the gliders requiring nobbling) flew to Tumbarumba via Jingellic. Everyone was therefore keen to get some good distance on Day 1 of the competition, but what a difference one day can make. Conditions on launch were anything but inspiring. An optimistic task was set with a first turnpoint at Cudgewa West. Nobody got close (except Joel) and the day ended up as a glide contest towards town. Any activity that was there early in the day ceased and it began blowing over the back with about half the field still on the hill, all of which were awarded bomb-out points.

Day 2 provided much better conditions with a task of Towong–Tintaldra–Cudgewa West–Corryong Airport (a total of 57.5km). Lift was abundant with cloudbase at about 7,000ft. The entire field managed at least turnpoint 1 and the stream of pilots on the deck stretched all the way around the course. The day was won by Paul Hunt in the Atos, with 13 other pilots reaching goal. Joel Rebbechi would have won the day had he not taken the wrong intersection for his third turnpoint. He realised his mistake after taking his goal photo, so decided to get high again over the airport, flew back to get the correct third turnpoint, then flew back to goal for a second time. GPS's may be accurate, but not necessarily the guy giving you the co-ordinates.

Left: Taking off from Mt Elliot
Photo: Allan Bush

Left: High above the Corryong valley
Photo: Joel Rebbechi

Day 3 proved to be an even better day with a 70km task set of Cudgewa intersection–Towong–Kangaroo Creek–Khancoban Airport. Again the majority of the field managed to get some part around the course. Six pilots made goal, with Joel Rebbechi in his topless rocket getting there first, this time with all the correct turnpoints. All the guys in their topless gliders were humiliating the rest of the field, and talk of serious glider modifications for them ran rife.

Days 4 and 5 were canned due to strong winds on launch, so everybody had two days to do the tourist thing in and around Corryong. This included much paddling in the river, much driving in the mountains and much wine tasting over at Rutherglen.

Day 6 provided conditions which at least enabled us all to get off the hill safely. A task of Tooma–Tooma/Khancoban Road intersection–Khancoban Airport (55km) was set. This was definitely a more difficult day with most of the field ending up on the deck between Towong and Tooma. The boys in their topless toys again proved that nothing is too hard for them with three of them getting to goal. The stand out performance came from Mark Robertson in a Shark who showed that there is still hope for us mere mortals by also making goal, being the only glider with a stick out the top to do so. Joel Rebbechi again was first into goal. (That sentence is starting to become monotonous.)

Day 7 (final day of the competition) provided some added interest on launch, as it also happened to be the first day of the Corryong Paragliding Competition.

Needless to say things were quite congested on launch. Through joint discussions the paragliders allowed us to take the first launch window, and in under an hour our complete field had launched. Well done to our two launch marshals, Richard Lockhart and Tim Causer, for getting everyone off the hill quickly and safely (that goes for the entire competition as well as this day). The task for the day was Greg Greg–Colac Colac Caravan Park–Tintaldra–Corryong Airport (77km). If pilots thought Day 6 was difficult, they really had their work cut out for them this time. With a fairly strong west-south-wester blowing all those who managed to get to Greg Greg (there was a lot of low scratching over Lighthouse Mountain) found that the headwind punch out of there proved impossible. To all except the chosen few of course. Yes, Joel again managed to do the whole course, but it

took him about three hours this time. There was some strong cloud out there with Steve Crosby reporting over two thousand up over Mt Mitta at one stage before he was able to escape the monster. Dave Jones provided the excitement for the day by landing his glider on the back of a cow in the middle of nowhere. Dave is fine, but the poor bovine had much trouble coping with the experience.

The competition ended with a perfect record regarding accidents – there were no personal injuries. All pilots need to be congratulated on their flying skills.

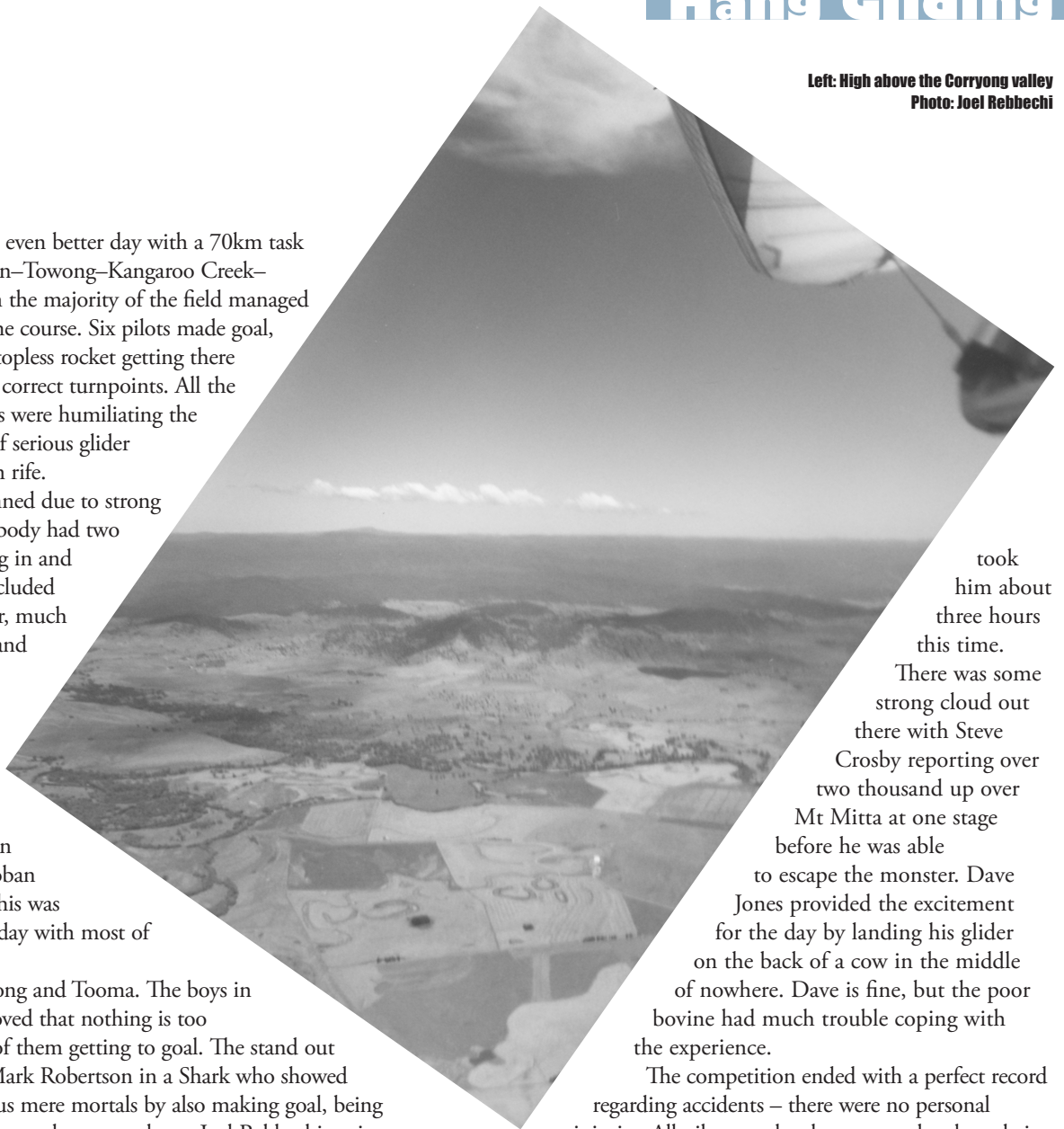
The winner of the comp was, you guessed it, Joel Rebbechi. Second went to Jon Durand Jnr and third to Andreas Olsson from Sweden.

An award was also given to the first king-posted glider, and that was Tony Giammichele who finished in sixth position. The veteran's award went to Dick Heffer who finished in 15th position. The encouragement award went to Geoff Ward who finished in 12th position in his first competition. The award for the open crossbar class went to Peter Burkitt who found those headwind tasks in his Fun hard going. Congratulations to all the prize winners at this year's competition and to all pilots who came and flew personal bests.

Any up and coming pilots who want to get some experience in a laid back fun comp, consider Corryong next summer when you're planning your flying trips. You won't be disappointed.



Left: The eventual winner, head and shoulders above the rest!
Photo: Joel Rebbechi



Sea Breeze Boogie

GRAHAM SUTHERLAND

As I was setting up my paramotor the sea breeze began to arrive, coming against the prevailing south-westerly.

It came in fits and starts as it was establishing itself, which my friend Pete said was typical for the area.

Twenty minutes after its initial arrival I was in the air and climbing. At about 1,000ft I climbed up into convergence. I thought, this is interesting, in that it implies that you can fall out the bottom of a convergence when free-flying. I flew around watching my ground speed on the GPS. The sea breeze was a north-easter so I was surprised to find an area where the wind was northerly, especially as the wind had swung through the south as the sea breeze came in. The inflow into the convergence wasn't as simple as the classic model would suggest.

With the breeze behind me I headed off towards my destination – the Woodford Folk Festival about 10km downwind. On the way I flew through what seemed to be three more separate convergences. The first two didn't change my ground speed much, but the third dropped my ground speed by about 10km/h. This convergence also had the strongest lift. It seemed to me that these separate areas of convergence explained why the arrival of the sea breeze came in fits and starts, with changes in wind strength and direction.

I know from my local free-flying sites that often the sea breeze arrives in a couple of waves, but four convergences imply four waves. Probably the different area could produce different sea breeze effects.

I flew around and over the festival, only flying low when there were safe landing options if the motor should cut out. I wouldn't want to have to land in the middle of a sea of bodies. There was a grassy, largely unpopulated ridge with a helipad on it (almost in the middle of the whole festival) where I could do low passes of about 30ft. Maybe next year I'll ask permission to land on the ridge to attend the festival. I would think that the organisers would be happy for the spectacle and not ask me to pay admission.

The festival site is at the base of an east-west range, tucked in amongst spurs that run down off the range. On the other side of the range is a little valley that is open only to the west. As I flew over the end of the range towards this little valley heading cross/downwind, my ground speed suddenly dropped from 50km/h to 30km/h. I was back in the south-wester! The sea breeze was flowing like water through the five kilometre gap in the mountains, and the south-wester was flowing along beside it in the opposite direction. There were eddies in the interface between the two winds that kept trying to turn me around. It was rough enough to be unpleasant but not dangerous. I had a couple of small tip collapses so I headed back into the sea breeze through the gap in the mountains and promptly got pinned in the venturi.

My ground speed was down below 10km/h so I dropped down to about 50ft where I had a ground speed of about 15km/h. I slowly crept forward until my ground speed increased a little. Then I climbed back up through the stronger breeze until at about 1,500ft it eased up. At about 2,000ft I started hitting the turbulent shear layer at the top of the sea breeze. So I just stayed below the shear layer, put on speed bar and flew the 10km back against the wind to my launch point, dropping back down through the stronger breeze as I neared my destination. It was after sunset by this time and the ground inversion was setting in. I landed in nil wind next to my car, and looked over to some trees on top of a little hill nearby to see the tree tops still moving just 50ft higher up.

This is my first real sea breeze convergence exploration. I'll have to do significantly more before I come to definite conclusions. It's one of the real bonuses of paramotoring in that it offers the ability to explore all sorts of meteorological conditions. So it can even improve my cross-country free-flying. I think, though, that I would be more comfortable on a wing that is more stable in turbulence than my Apco Santana is. The Apco Fiesta, Ozone Electron and the Swing Arcus look like promising candidates for a new paramotor wing. I've test flown the Fiesta and the Electron and both are significantly better than the Santana. By the time this is published I will have tested the Arcus and will probably have a new wing. If anyone is thinking of buying a paramotor wing and would like my opinions of the wings I have tried, they are welcome to phone me on (07) 54935882 or email <grahamsu@mail.cth.com.au>.

Approaching the Woodford Folk Festival
Photos: Graham Sutherland

A Tug Pilot's Perspective of Engine Maintenance and Aerotowing

RUSSELL GROVES

I fly an Edge 582 Trike fitted with a Wizard wing and a lot of my flying involves aerotowing. Listed are some of my thoughts on aerotowing and maintenance.

Maintenance

Every plug change perform and record:

- *Compression test*
- *Cyclone bearing test*
- *Gap and torque new plugs to .020 inch and 20ft lb*
- *Avoid excessive plug cleaning*
- *You are much better off replacing them and avoiding possible plug damage.*

The compression test should read 110-140 pounds per square inch. Lower than 110 indicates stuck rings (usually on the intake side) and requires de-carboning.

The cyclone bearing test should be around .03mm, and when they start to fail they go quickly. This is the only sure way of monitoring bearing wear.

Avoid using both suppression plug caps and resistor plugs.

Keep an eye on fuel consumption rates and investigate and rectify any suspected engine problems.

The water temperature gauge indicates how efficiently the radiator is transferring engine heat to the atmosphere. High temperature will result in engine damage. I find that fitting a larger radiator and thermostat insures reliable performance under all conditions.

The exhaust gas temperature gauges indicate how accurate the fuel/air mixture is at all throttle settings. Rich mixture protects the engine and results in lower EGT readings. Lean mixture may result in engine damage and in higher EGT readings. Check that all operating temperatures are within the Rotax specifications. There is always a reason if there is any variation from normal.

Fit a small O-ring above the needle clip on the jet needle to prevent the clip wearing the selected needle groove. This needs to be inspected and replaced if any wear is detected.

Aerotowing

Get a copy of the towing manual from HGFA (edition issued June '99). Wear eye protection. All pilots should have their own approved, reliable release and a weak link of the appropriate strength. I use five strands of No. 8 nylon builder's line on the tug, and most pilots use four strands on the glider end. All weak links need to be tied securely and releases tested in flying position to prevent accidental release.

The decision to aerotow is the glider pilot's decision only, and they need to release if at anytime they are not in complete control. If a dolly is available use it. Have the keel support slightly low rather than high.

Be organised and ready to take your turn on the dolly. If possible tow from the middle of the airstrip as this allows direction changes to be made quickly. Also, tow in from the end of the airstrip to allow the tug room to land with the tow rope attached.

Tug pilots get as hot as their engines while waiting for disorganised pilots or having to go around as a result of an accidental release or weak link failure. Weak links are to be replaced after every tow, and each pilot should have their own supply of weak links.

Avoid having more than one person giving signals to the tug pilot. The person giving the signals should stand in the same position for each tow. The signal for GO should be signalled by swinging the arm 360 degrees a number of times when facing the glider – this is easy to see from the tug.

Mark the tug and dolly position on the strip with paint or streamers as this reduces turn around time.

High performance gliders tow much lighter with VG three quarters on.

Hang gliders are to leave the dolly and climb to 20ft quickly, then hold this position until the tug climbs up to the same height. Follow the tug and keep the rear wheels level with the horizon. Do not take your eyes off the tug.

The tug should fly slightly faster just after leaving the ground to avoid slack rope. Having the tug climb too steeply will reduce the tug's horizontal speed.

If the glider tows low the tug can speed up and pull it up to the correct position. If the glider gets high it slows the tug's climb rate and the only option is to turn the tug, which reduces line tension and allows the tug to climb up to the glider. If you think you should release and then the weak link breaks then it's functioning as designed.

When waved off the glider pulls on speed to lower line tension, then releases and watches the rope and bridle separate.

If there are thermals around a good tug pilot using a vario can put you into the thermal on most occasions. However, you will need to release and fly straight ahead to enter the thermal that the tug is already in.

If anyone has any ideas as to how one can gain more enjoyment from triking or aerotowing please put pen to paper and share your thoughts.



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My 500

JOHN ASHFORD



The Alice Springs fleet in review

The perfect day for it was, of course, the previous day, Friday. The day was clear, temperature 40°C, thermals to probably 15,000ft with small wave caps over the top of well-defined cumulus (cumulus are the exception in Alice). "Please keep this for tomorrow," I begged the Gliding God.

Saturday was born with a blustery north-west wind but otherwise clear. A north-westerly in Alice Springs usually indicates unsettled and changing conditions. One of my previous preparations for a 500km was realised on a day of north-westerly winds. I consulted the grey heads of the gliding club who recommended caution.

"Be ye cautious o son of the sky. There be fickle sky spirits in the north wind who lay traps for those lacking in the wisdom of ages and those who are ill-prepared for trickery. Dampen thine ardour and challenge the sky spirits another day."

Of course the day was glorious with excellent thermals and cumulus to, I'd bet, 18,000ft. I did not fly this day.

On Saturday I again visited the wise ones who this time, being more circumspect in their advice, said *"it might be okay, perhaps, we think."* Squinting into the haze, looking to the far horizon, Elder Graham's sage pronouncement was *"Go for it my son. The parched sands of the inland deserts are your oyster. The tools of greatness are at hand. Be at one with the great triangle in the sky and seek your destiny. May the great God of the Diamond Distance go with you."* (They talk like that because they're older and I'm younger).

And so it was written.



"The parched wastes are your oyster"

22/1/2000

tical machine in which to attempt this task. As the great doors of the main hanger rumbled open the fine sleek lines of the Mosquito winked at me from the gloom.

But, soft! What light through yonder hanger breaks?

It is the east and Juliet Quebec longs for the sky.

Lighten, fair sky, and kill the envious moon.

(Johnus Ashfordeo AD 2000)

Preparation

The final preparation was done with the meticulous attention to detail of an Olympic event. Cheese sandwiches, bottle of water, camera, maps, GPS, grit and determination. And of course a fine aeronau-

As I wheeled this fine machine into the sunlight it seemed even then to tug the bonds of Earth in pleasurable anticipation of leaping from gravity's cloying tentacles to where it belonged in unpowered flight. I approached the most wise and sage of our ancient ones, on my knees with my forehead touching the ground in great humility, and waited for permission to speak.

In deep resonant voice that rattled even the doors of the great hangar Tom spoke.

"Who disturbs the Karma of a great one for mortal problems."

"It is I, Tom. Jack the Mongrel. Mere infidel that I am. I ask for judgement so I can lead a better life."

"Speak then, and let your tongue not be forked or your quest frivolous."

"Can I take water ballast Tom?" (after recent repair) *"Yes of course you can. (pause) Oh no you can't because I haven't brought out the bungs. Be ye not discouraged lad for thine skills are such that ye will fulfill this quest, and in time to come, be scornful of performance enhancing trickery as this".* (Tom doesn't know about the steroids).

The beginning



"Who disturbs the Karma of a great one"

22/1/2000

The time had come. On the flight line. I settled into the cockpit and carried out my checks and mentally prepared for the task. The first setback had come with the meteorological report. Strong north-westerly winds

growing stronger through the day. Thermals to 12,500ft but a severe wind shear at 10,000ft. With this in mind the task was reversed from the original plan to provide for a last leg from the north-west (following wind) and an option to return to base from the apex of the 'Y'. (following wind and good landing on Stuart Highway). The task, though nominated as a triangle was shaped like a 'Y' starting from the bottom and travelling anti-clockwise. Alice has no sweeping plains of dormant wheat stubble and pilots need to maintain proximity to the roads for outlanding contingency. This meant the actual flight distance for this task was approximately 560km. (The original plan was over 600km but that didn't register at the time as a possibility for another certificate.).

The canopy was closed. Thumbs up and I was committed. At 11:15 the Mossie leapt into the air nearly before the winch took up slack. Quivering in anticipation like a dog on a leash and eager to join battle, the Mossie and I climbed the thrumming wire to become airborne and fly free with the eagles.

Release, and straight into a thermal.

It was now up to us, my valiant sky charger and I.

Pre departure

As I approached 4,500ft I put on my best Boeing 737 voice:

"Alice Tower, good morning, Glider Juliet Quebec requesting height clearance in Bond Springs area to 8,500ft."

"Glider Juliet Quebec, operate not above One Zero Thousand feet, west of the Stuart Highway and north of the Tanami Road."

Did he say 10,000ft? Excellent! I hooked into the thermal, very turbulent, vario on the stops past 10kt, flaps on one position down, riding the updraft like a bronco and now feeling that things were starting to go my way.

"Glider Juliet Quebec, Alice Tower, operate not above 7,000ft until traffic is cleared."

Hmm, I wonder if I can pretend not to hear him. Might be risky with all those Airbuses and Boeings around. Well if I can get



out under the steps, most of the task is out of controlled air space. I headed north at 7,000ft.

Departure

The first hour saw me make not much over 50km as I battled strong

northerly winds. Turning onto an easterly heading and now under the steps I followed the Strangeways Range towards the Harts Range. (One of only two places in Australia where the honey ants are found.) Absolutely beautiful scenery. It enticed me to forget the task and just swan around admiring it. But I was strong! I had a lot of difficulty in getting above 9,000ft, due, I assumed, to the reported wind shear. Much time was lost trying to gain the extra height and looking for wave over the ranges. Some thermals did punch through and maximum height for the day was indeed 12,500ft.

First turn

The first turnpoint was rounded at Harts Range Police Station. Thermal strength had declined and I was at this stage only 122km into the task, very low and well into task time. I headed for the airstrip, expecting to enter the circuit in short order. As I despondently circled the Harts Range community buildings trying to assess wind direction for landing, the great Thermal God recognising my plight came to my rescue. We were in business. Up to 10,000ft and off on track again. The Mossie leaping ahead with me trying to restrain it like an unbroken horse, preserving and conserving its energy.

As I leapt from cloud to cloud in an orgy of porpoise flying I noticed a most peculiar thing. One vario would read up and one vario would read down. The electronic vario obviously out of sorts with the proceedings had decided to spit the dummy and was swinging from 10kt up to 10kt down with the accompanying urgent and strident beeps from the audio. We'll just turn it off I thought. But hear the silence. How did a pilot operate before all this technology? No 'speed to fly' either. The remainder of the flight was done in the way of the ancient ones, though I did have to turn on the audio now and then just for comfort.

Decision point

Back to the apex of the 'Y'. Decision time. Past 16:00 hours and still 200km to go. Or I could just turn left and return home in defeat. Conditions were definitely in decline. I couldn't do it. But wait. The original plan was to follow the road further west after the turnpoint to take a circuitous route back to Bond Springs. It looked to be much shorter back through the apex of the 'Y'. A couple of stabs at the GPS and yes, it was indeed 50km shorter back through the 'Y'. One and hundred and fifty kilometres to go. We can do this.

I whispered quiet words of encouragement into the static vent of the Mosquito, stroked its straining and quivering fuselage and prepared it for the final push. We were off, the air smooth but still strong lift working well. Across Native Gap and on to Napperby. There came a point when we started to struggle, the noble Mossie and I, but we reached Napperby. Turn and click the camera. Nose down, flaps negative and we're going home.

Turn for home

The sight that greeted me on turning chilled my blood and turned the marrow in my bones. I had been betrayed by the Cumulus God and abandoned by the great Clear Sky God and before me now lay virtually 50km of shaded earth. The GPS beeped. Batteries low and the machine shut down. This was like 'Lost in Space'. Once again I despaired. Lost in the wilderness, the vast wastes of the Territory deserts, my technological aids useless, I again resorted to the ways of the ancient ones. I read the maps and limped towards home. 'The Force' was with me.

The Mossie though, oblivious of our plight and not to be cowed, chewed the proverbial bit and pawed the sky. But forsooth, as I circled the weak lift and gazed down upon the community buildings at Mt Caroline, my light was dim, my resolve on the ebb and I looked again for a place to land. I fleetingly wondered if I was destined to see my loved ones again, whoever they were. (Glider pilot's lament)

But no. I did not submit to defeat and land in ignominy in the wilderness, in the vast wasted spaces of the Northern Territory deserts. This was Indian country. Country that was unknown but to a mere few. A Venus flytrap to the unwary. A mystery to all. Besides, I could be eaten by natives and my noble chariot broken down for spears. No, onwards we must forge and forge onwards we did. The Mossie, once again, prancing with pride and vitality though perhaps subdued by the quiet of the deepening shadows. To the next patch of sunlight we flew. And to the next and to the next. Soon, what had been impossibly out of reach was now within our grasp. The Mossie and I.

*"Alice Tower,
Glider Juliet Quebec,
at 50 mile due north
requesting clearance to
One Zero Thousand
feet for approach into
Bond Springs."*

*"Glider Juliet
Quebec, operate not
above 8,500ft. Report
when established below
the steps."*

This bloke must hate me. John Welsh has been up here training them. This must be his star pupil. Send down a Boeing with a tow rope. I need a beer.

A last thermal at 40km. The air smooth, the Mossie sweet. Flaps full negative, final glide into Bond Springs at 135kt.

*"Alice Tower Glider Juliet Quebec, established below 4,500ft
in Bond Springs area. Cancel flight clearance."*

"Glider Juliet Quebec, good afternoon."

"Oh, ah, yeah, Good afternoon." (Boeing pilots' got nuthin' on me.)

Landed 18:24 hours, task complete.





Postscript

I have always wondered why, when I've observed that very experienced glider pilots cannot seem to land an aircraft after a long task with any semblance of grace. Especially curious after all that practice flying. Well now I know. After seven hours in the cockpit, working, straining and sweating with emotions going from boom to bust and back, and finally achieving the goal, fondly anticipating my first discharge of fluids after seven hours as the most immediate highlight of my life, I did the most horrendous landing I could possibly have done. And I thought I was reasonably good at putting a Mosquito on the deck. Lucky everybody else had gone home. I dressed the now replete warrior of the skies in his 'jamies' and wheeled him into the hangar. Removed the battery and watched the instruments sigh into a well-earned hibernation. Goodnight and thank you Juliet Quebec.

It was ended. I think it's my wedding anniversary today. I might try 600km next week.



Notes:

1. The steps for descending into controlled airspace at Alice Springs start at 70nm above 12,500ft. This reduces to 8,500ft at 50nm and 4,500ft at 36nm and 3500ft at 10nm. Bond Springs is located approximately 13nm north of Alice in the 4,500ft band. All heights mentioned are QNH. ASGC is free to operate below these steps but typically has operational clearances on the weekend north of the Tanami Road and west of the Stuart Highway. We launch from 2400ft asl and the terrain over which we travel is scrub on sand plain. The ranges over which this task was flown are in the order of 4000ft QNH. The air traffic controllers in Alice are very patient and do make every effort to accommodate us. Please excuse my gentle jibes.
2. The electronic variometer includes the speed to fly calculation and the final glide computer. It was an added challenge and quite refreshing to fly without these aids. It was also quite unnerving not to have the audio signal from the vario. I had to learn old skills anew. Water ballast was not necessary and would have been dropped at an early stage.
3. Disclaimer: All persons depicted in this narrative are actually real and are not in the least bit fictitious. I recognise that the gender of the main character Juliet Quebec has changed a number of times to accommodate the complex emotional investment to this task. At no stage has the truth been allowed to get in the way of a good story. I warrant that the basic information of the task is correct in detail but may vary in the timing of individual events. I'm the only one who knows! The traffic control is verbatim. Anyway Tom and Graham don't always talk as depicted. Very often. And they don't really wear their robes at gliding lest it deter visitors.



Fournier RF-



BOB JENNESON

I had owned a single-seat Grob Astir sailplane for approximately 10 years and was looking for a new challenge. My decision to change direction was brought forward by my gliding club's decision to sell its Piper Pawnee and club sailplanes, and purchase a Grob 109 motor glider. This left the private owners in the club with no means of launching, so they either had to change clubs or purchase self-launching aircraft.

Coincidentally, as I read the next edition of the Australian Gliding magazine I noticed a small advertisement for a damaged RF-4D Fournier motor glider. The only Fournier I had any knowledge of was the two-seat RF-5 model made popular by the radio controlled model aircraft kit by Veron in England, so I was keen to know what the RF-4D looked like.

After a little research I found a book called *"Gliders and Sailplanes of the World"* which listed the RF-4D model; it gave details and a photo. It was love at first sight. This aircraft looked great from all angles and was obviously designed by an enthusiast, not an accountant.

The next step was to make a call and get as much information as I could and to see if the "damaged" part of the deal was within my repair capabilities. After several lengthy phone calls to the seller I was more than interested and needed to talk to the Gliding Federation of Australia to see what problems there may be in getting this aircraft into the air. It had never flown in Australia, did not have an Australian airworthiness certificate and had been in storage for 14 years.

This aircraft was one of three Fourniers, one RF-5 twin-seat and two RF-4D's, that had been imported into Australia in approximately 1982 in a large shipping container. One of the RF-4Ds and the RF-5 were complete and flyable and were assembled and sold. The other RF-4D had been crashed in Rethal, France in 1980 and was shipped to Australia along with all of the necessary new parts to repair it. The logbook only describes an "incident" but it was obvious by the damage that it was driven hard into the ground with the undercarriage up. There was substantial damage to the cockpit floor, broken propeller, cowl, spinner, canopy, undercarriage doors and all lower fairings and some damage to the wing lower centre section sheeting. The aircraft had been in storage for 14 years and during that time the VW 1200 based Rectimo engine had been overhauled back to zero hours.

After many phone calls, it's called doing your homework, I was ready to set off on a 12-hour drive to view the parts in Euroa, Victoria. Just prior to departure, I contacted the GFA and was supplied with a list of other Fournier owners in Australia and was relieved to find that the only other RF-4D in Australia was located in Tyabb near Melbourne, only a 10 hour drive away. A quick call to that owner set up a meeting at Tyabb the next Saturday morning to view a complete Fournier. I couldn't wait for the weekend to come as I set off with

-4D rebuild — VH-XOS

a buddy of mine, Baylee Roberts first to Melbourne and then on to Euroa to look at Fourniers.

The first look at an RF-4D in the flesh was amazing. It was so right from every angle. Here was a motorised glider that looked right, it wasn't a glider with an engine fitted, it wasn't a stretched powered aircraft, I wanted one. My only concern was that of the cockpit size compared to mine, and would I be able to fit in and close the canopy. After many photos and an informative chat with its proud owner, it was off to Euroa to view the damaged one.

What we encountered on our arrival was not quite what I had expected. The entire airframe had been dismantled into just about every nut and bolt. There were boxes and Fournier parts everywhere. At this moment I seriously doubted that it would ever go back together again and more importantly, were all the pieces there? We poured over the never-ending parts supply for the rest of the afternoon and retired to the local hotel for a beer to take in and contemplate what we had seen and the viability of the project. The seller stressed the point that there wasn't a lot of repair work to be done and that was true, however in my opinion there needed to be a lot of inspecting done internally and there was the 30-yearly survey to be also considered. We left Euroa the next morning for the trip to Adelaide and discussed the project the whole way.

After several more phone calls and more homework, I was fortunate to enlist the help of Harry Bache, an ex RTO/A, a sailplane builder and pilot, who would look over my shoulder during the rebuild and would sign off the 30-yearly when completed. After some encouragement from Harry, the deal was closed and it was off to Euroa several weeks later with an open Twin Astir trailer to bring all the pieces home.

The trip home was uneventful although I doubted that all the pieces would fit on the trailer at once. The fuselage was rolled onto its side supported by a mattress and the 38ft one-piece wing was supported by a hastily made jig up on top of the trailer. The remaining parts were packed in and around the fuselage. Once home, all the parts were stored in my double garage and the wing was taken down to Baylee's farm, approximately 40 minutes drive south of Adelaide, where there was a 40ft long shed waiting. You have to be lucky sometimes.

My first objective for the wing was to completely strip off the original 1970 covering so that a more thorough internal inspection could be carried out, as I needed to know if there was any damage resulting from the accident in France. All metal fittings were removed, checked, painted and refitted. I decided on recovering with the Randolph system after having some adhesion problems with the Stitts system. This was due to the aircraft being originally covered with a nitrate/butyrate dope system and the newer Stitts system not being able to adhere satisfactorily without first coating the entire airframe with an epoxy sealer, an option I decided against.

The fuselage was next to be rebuilt and after completely stripping the wing there was no alternative but to give it the same treatment. Working on the fuselage was now a relief because I could work at home. I could go out into the garage and work when I felt like it instead of an hour and a half round trip to get to the wing. A new cockpit floor had to be fabricated and fitted along with all the new parts fitted under the nose section to replace the crash damage. A new instrument panel was made with some extra holes to accommodate some additional instrumentation. The original altimeter was cali-

brated in kilometres so a new one was purchased. The ASI was calibrated in km/h so a new face calibrated in knots was ordered from Winters in Germany and a northern hemisphere compass was replaced with a southern hemisphere type.

The tail feathers came in for the same treatment as the wing, with a complete strip, inspection and a re-cover. The factory colour scheme was chosen, white with red trim, and was all done with white Randolph dope with automotive red acrylic for the trim. The cockpit area was

re-trimmed in grey upholstery by my wife, whose expertise and support has been invaluable. She was also able to get her small hands into many places on the airframe where I was unable to go.

After approximately four and a half years the wing and the fuselage were ready to be rigged. The same Twin Astir trailer was borrowed, this time from a new owner, and the parts were very carefully loaded and taken up to the Murray Bridge Gliding Club hangar for rigging. I set aside a whole day for the rigging but to my amazement, and with help from friends and interested onlookers, it went together with no major headaches.

A problem was encountered when the entire airframe was lowered on to the ground and the undercarriage bungee rubbers snapped. The bungee rubbers that were supplied new in 1980 had perished and, under load, broke apart, perhaps a blessing in disguise as it was a lot better happening now rather than on the first landing. During the next 10 weeks while I waited for the new ones to arrive from E.I.S. in Germany, (the delay due to the postal service, not E.I.S.), I completed the many small jobs that were necessary to move closer to the first flight.

I was able to run the engine and I will never forget the thrill of firing it up for the first time. By this time I was able to taxi the aircraft up and down the runway and get the feel of it. It felt great.

With the appropriate paper work in hand I was able to do some fast taxi runs up and down the strip. On some of these runs I found myself flying for the first time, albeit only a foot off the ground. After several hours of ground running and taxi tests I couldn't put off a circuit any longer so on 11 September 1999, VH-XOS took to the air for the first time in 19 years!

The first flight proved uneventful with regard to the aircraft however, unfortunately, the pilot didn't have time to savour the moment as I was too busy concentrating on the job in hand, listening to the engine and learning the feel of my new Fournier. Subsequent flights have proved to be much more enjoyable as I learn the intricacies of the Fournier and I can now fully enjoy the fruits of approximately five years of enjoyable work.

I would like to thank my wife for her assistance and understanding throughout the entire project, Baylee Roberts for all his help over the five years, Harry Bache for his help and technical expertise, and to Brian Griffin and Mike Woolard in England, both Fournier owners, who via the internet have helped me with much detailed information and the pre-flight briefing!

As a postscript to this article, Harry Bache who saw so much of my Fournier over the years, now owns the only RF-5 in Australia. His aircraft, coincidentally, was also purchased from Euroa in dismantled condition.

This makes the Murray Bridge Gliding Club the capital of Fournier country in Australia with a total of two Fourniers.



LOCKOUTS —

JAMES FREEMAN

Lockout. A word to send a tingle up even the most gung-ho pilot's spine. Before we go on to look at lockouts in detail a brief description of the theory behind modern towing will be of great benefit.

We all owe a lot to Donnel Hewitt, a physics professor and pilot, who in the late seventies and early eighties applied his mind to the physics of towing a hang glider. I will define the term "on line" as meaning having the nose of the glider pointing towards the end of the tow rope furthest from the glider being towed. "Off line" therefore means having the gliders nose pointed anywhere else.

What Hewitt did was analyse the problem of towing a hang glider and devise the familiar V-bridle system (amongst other things). Up until this point hang gliders were mainly being towed with a rope attached to the base tube (or some other part of the glider) which in engineering terms formed an unstable positive feedback system. Sure it worked, but it required constant pilot input to keep the glider on line. In Hewitt's system, as soon as the glider got off line the pilots body was pulled across the A-frame by the tow line, resulting in a turn back towards the on line condition. This was a brilliant innovation as it introduced negative feedback to the system making it stable, or at least less unstable depending on the characteristics of the glider being towed.

The exact mechanics of how the Hewitt bridle actually works are surprisingly complex. Under tow the forces acting on a glider **are not** the same as in free flight. It follows that the higher the tow tension the more different the glider's handling will be under tow. The mechanism whereby a glider is turned back on line by the Hewitt bridle **is not weightshift**. The movement of the pilot's body across the A-frame caused by the tow tension (although it might seem like a weight shift) does not cause the same forces as a weight shift in free flight, although its ultimate effects are similar, ie the glider turns. The dynamics involved are complex and include keel movement/billow shift, side slipping, yaw roll coupling and yaw stability. Under tow, weight shift as we understand it in free flight only occurs from a neutral position defined by where the pilot's body is pulled by the towline. An unfortunate result of this little understood fact is that the further your body is pulled off centre the less the available weight shift authority in the desired direction. Moving your weight from this neutral position does cause a weight shift control response exactly the same as occurs in free flight, except that the increase in your apparent weight caused by the towline tension will amplify the response. By way of example, say you are in a right turn on tow. To correct this you need to weight shift left. Unfortunately the tow line already has you pulled over to the left so your available weight shift to the left is actually reduced – the more off line you get the less ability you have to correct this condition as your available weight shift authority in the desired direction steadily decreases. To further complicate matters, under tow there is a completely new element introduced – this is yaw. In free flight yaw plays a minor albeit important role. The yaw force that a pilot can apply is quite limited. Even if you might not

recognise it, the act of leading with your hips when applying a weight shift input in prone also applies a yaw force to the glider – to shift your hips right you must push with your left hand and pull with your right. But now consider this: what would happen if you attached the tow rope to the bottom left A-frame corner? The glider would go spearing off to the right, of course. Now consider what happens under tow if you put both hands on this same point and braced your arms. You are now redirecting a significant part of the tow force to the left hand side of the glider and producing a big yaw. The magnitude of this yaw is potentially far more than can be applied in free flight. For a glider under tow there are several points you need to note:

1. *Glider handling on tow is different to free flight, and the higher the tow forces the more different it is.*
2. *Available weight shift control authority decreases when you need it most.*
3. *You have a new control element to deal with – yaw input.*

We can now begin to appreciate some of the potential problems with the Hewitt bridle tow system. If the glider gets too far off line the V-bridle or pilot's body may come into contact with an upright or wire. At this point a problem occurs because the towline tension force starts physically levering the glider into a turn. The direction of this leverage force is the exact opposite to that which is desired to correct the off line condition. Initially, sufficient weight shift/yaw authority may be available to cancel out this physical leverage effect – this is what I call an incipient lockout and generally occurs when the glider gets more than about 30-40 degrees off line. If the glider continues to become more off line, at some point the system passes through being neutrally stable to become an unstable positive feedback system. This is the point where the shit hits the fan and a true lockout occurs.

We can now define what we mean by a lockout. A lockout occurs when a glider becomes turned away from the towline direction and reaches a point where the pilot cannot recover because he/she is unable to exert sufficient force via weight shift/yaw to counter the effect of the tow tension. A lockout may also occur if a wing tip (or the whole glider) remains in a stalled condition although this is perhaps more correctly a spin on the towline with the towline forces simply exacerbating the situation. A third and somewhat unusual form of lockout can occur if the glider overflies the towline, this will result in a steadily increasing dive as the tow tension pulls the bar in.

You should also now be able to understand that the towline forces in a lockout need not be very high. They only need to be sufficiently high to cancel out the effect of a maximum pilot weight shift/yaw in order to cause a continuation and worsening of the situation. Lockouts can, and do, both occur and continue without ever exceeding normal tow tensions. As a result **a weak link offers little protection from a lockout**.

There are two distinct and different processes involved in the development of a lockout.

Firstly, to initiate a lockout the glider must be turned away from the towline direction. The reasons why this may occur include:

1. *Stalling a wingtip.*
2. *Secondary to severe turbulence, probably causing 1.*
3. *Inappropriate pilot inputs in terms of type, timing and magnitude.*
4. *The development of yaw roll oscillations, usually due to 3.*
5. *When launching in strong crosswinds which prevent the nose being pointed on line (towards the tow vehicle).*
6. *Crabbing on tow trying to lay off the drift and keep the rope over the tow strip in strong crosswinds.*

Taming the Beast

Secondly, once the glider is turned sufficiently from the towline direction the bridle or pilot's body will come into contact with an upright or wire. As detailed above this bowing will cause a roll force in the opposite direction to that which is required to correct the incipient lockout and turn the glider back on line. The forces applied by the towline may quickly exceed the pilots yaw/roll control authority and the lockout will rapidly worsen.

Experience leaves no doubt that there is a point of no return. Once this point is reached the only solution is to release. Prior to this point the pilot can often salvage the situation by pulling in to simultaneously reduce both the angle of attack (correcting any tip stall) and the tension on the tow line and applying a full weight shift/yaw. The pilot may also be able to get the tow operator to reduce tow tension (this is easiest for winch and static tow, may be possible with monitored platform tow, but is not really applicable to aero tow).

The combination of reduced towline tension, lower angle of attack and strong weight shift/yaw MAY allow the situation to be salvaged.

So here is the bottom line. When the bridle or your body contacts an upright or wire you are approaching the point of no return. At some point the forces exerted by the tow line will exceed your available control authority. If this situation is not corrected a full blown lockout will ensue. The **only** solution at this point is to release.

The biggest fallacy in towing is that a weak link will protect you from a lockout. For ground towing this is wrong. The tow line force required to break the weak link is roughly 2-3 times the force required to sustain a lockout. I have seen this demonstrated on numerous occasions. As a result you could potentially continue a lockout all the way to the ground without ever breaking the weak link. If you have ever seen a child's kite lock out and arc into the ground you should intuitively understand this. Yes, the weak link **may** break, but remember all sound ground tow systems are designed to control the tow tension below weak link breaking point. In a lockout your winch and/or driver will actively be working to maintain a normal tow tension below the weak link breaking point. You **cannot** rely on your weak link to break. In a lockout your only option is to release. I have heard it suggested that you get the driver to floor it to break the weak link when locked out using static tow. In my experience a weak link break in a locked out vertical dive usually results in a loop, followed by a wingover and then a massive stall. I'd prefer to release personally. On aerotow a weak link will limit the duration of a lockout because the short rope and lack of direct tension control gives less scope for the glider to diverge from the appropriate flight path – of course you could still hit the ground before the weak link breaks. Moral: Lockout = Release.

Okay, so now we understand the beast, how do we tame it and make sure all our tows have a happy ending with us thermalling off into the sunset?

Causes/Precipitants of Lockouts

Tips on Taming the Beast

High tow tension

High tow tensions increase the undesired opposite roll effect as we approach the point of no return. They also introduce the element of a pilot induced yaw force as discussed above, making the handling characteristics of the glider different to those found in free flight. Lower tensions allow us to tolerate the glider being off line to a

greater degree before the forces from the towline exceed our weight shift authority. So how much tension do we actually need to get airborne? The answer is, not much. Typically we calibrate our static tow gauge to 1G by the highly sophisticated method of attaching the gauge to a convenient high point and then suspending 1 pilot + 1 glider + 1 harness below. Marking the hydraulic gauge give us the 1G point. We mark the gauge with a blue working range of 0.4-0.8G. Now for a typical glider with a L/D of 10:1, the amount of drag we need to overcome to create 1G worth of lift is only 0.1G. Add a bit extra for some climb and a towline tension of 0.3-0.4G is more than ample to get us airborne. The critical phase of tow flight is when we are low, because a lockout down low can make recovery difficult before ground impact. Keeping tow tensions around 0.4G when low will give us a good climb whilst maintaining the best possible ratio of weight shift authority to tow force in the event of an incipient lockout. Under low tensions the glider handling is more like that in free flight, so inappropriate input and over control problems are reduced.

In static line towing your driver can give you too much tension down low. They can potentially kill you, so teach them well. Stress the importance of their role in keeping tensions at safe levels down low, and treat them with respect. They really do hold your life in their hands when you're below 100 feet. Similarly, with a payout winch you depend on its correct function to keep tensions at safe levels.

High angles of attack

Too many pilots take off on tow at low airspeed and a high angle of attack. I'm sure you've seen them – three steps, shove the bar out, dive into the harness... We all know the benefits of extra airspeed/low angles of attack on take off as it gives us better roll authority in the potentially turbulent air near the ground and helps prevent a tip stall. It is important to understand that a foot launch tow take off is completely different to a hill launch. On a hill you are rewarded for a strong take off run. On tow a strong run will remove the towline tension so a different (more lazy) approach is required. The concept we teach is "let yourself be towed". By let yourself be towed we mean let the towline control your direction and acceleration. Initially shuffle along, then break into a trot. At this stage even in light winds the glider will be flying and taking its own weight. As the tow continues the key is to fly the glider level with the ground. Correctly executed this is great fun as you get to do a moonwalk as you take impossibly large steps as the glider accelerates. This moonwalking can be continued for as long as you need to build up a good reserve of airspeed. A gentle relaxation of the pressure you have been using to hold the bar in allows the glider to smoothly climb away from the ground.

If you can't master this technique, use a launch dolly in light winds. Once again do not come off the dolly until you have built a good reserve of airspeed which you can use to soar clear of the ground. The technique I use is to hold the bar at my chest until the glider starts to feel very light in the dolly (ie it is flying at bar to chest speed and lifting my weight). Building this reserve of airspeed before exiting the dolly also helps prevent the precipitous drop in tow tension which can occur as the glider accelerates due to the loss of drag from the dolly and the elasticity of the tow rope. This drop in tension is usually followed by a period of excessive tension as the driver floors it in response to your desperate go-go-go-goooo as you sink back towards the ground, usually still in prone. If this regularly happens to you, you're exiting the dolly too early.

Turbulence

Towing = Flatlands = Thermals = Turbulence. Okay, so it's hard to avoid turbulence completely, but you can minimise its degree and effects to suit your skill level. We get mechanical turbulence from wind, shear turbulence from shear layers and thermal turbulence from thermals. When learning to tow a light dawn breeze is perfect, whereas 3:00pm on a windy summer's day is sub optimal.

Interestingly, the best time to tow when you are trying to catch a thermal is when the winds are lightest and the mechanical and thermal turbulence are at their smallest. Why so? Well, every year at the Flatlands competition some pilot will relate the same sad story to me while crying into his pretzels at the bar. It goes like this: "How did you go today?"

"I can't f\$%&^%g believe it, I had eight tows and couldn't get out of the paddock!" "Oh, I suppose you were waiting for a bit of wind to launch in?" "Ah, yeah, how did you know that?"

It's simple really. When a thermal lifts off the surrounding air must rush in from all directions to replace the rising air – let's call this the thermal filler wind. Wind is just moving air so what we experience at launch is the combined effects of the prevailing wind and the thermal filler wind. The wind we get depends on whether the prevailing wind and thermal filler wind are cancelling each other out or enhancing each other. What this means is that if there is a light prevailing wind, and you stand in a tow paddock when the wind is light/tail, there is a thermal out in front of launch. If the wind is very crossed then there is probably a thermal off to the downwind side of you. When the wind is blowing strongest it is because there is a thermal behind you. So if you tow at this time you tow in the sinking air between thermals and not only get a dud (low) tow but also don't find a thermal because the next one is probably still – 2,000m upwind. Moral: tow when the winds are lightest to maximise your chances of jaggging a good thermal out in front. Yes, this does mean on light wind days the optimal time to tow is when it's tail. This is where a dolly comes in handy. One cautionary note: don't take off in a stronger tailwind than you are willing to land in, because you just may have to. Of course, by using a moderate tow tension down low and a 1G weak link this should rarely be an issue.

A very useful technique we use is the 200m windsock. This is a windsock placed directly upwind (which is not directly up the strip in a crosswind). In conjunction with a 50m windsock it allows you to "see" that critical parcel of air which you must fly through to get to a safe altitude. These windsocks show the character of the air you will meet on tow in the first critical 100-200ft. It makes no sense to me to have a windsock just in front of you on a tow strip. You can feel this wind on your face and by the time you do it is gone and of little relevance to your tow. What you need to know is what that air out in front is like. Put out a 200m windsock and avoid any nasty surprises like "invisible" dust devils – you will see your 200m windsock doing circles well before a dusty ever arrives.

Overcontrolling/Oscillation

Under tow the towline tension increases your effective weight and hence enhances your glider's response to a given input. The increased effectiveness of weight shift under tow necessitates making smaller corrections than you might expect. You also have the addition of a new ability to yaw the glider. Experience has shown that the original 2:1 Hewitt bridle makes overcontrolling more of a problem than the current 1:1 V bridle. This is simply because the 1:1 system applies less of the towline tension to the pilot, hence the pilot's control inputs (weight shift and yaw) are not as enhanced as with a 2:1 bridle (which applies twice as much of the towline tension to the pilot compared to the glider). While distributing the tow force in a similar manner to gravity with a 2:1 bridle makes nice theoretical sense, in practice 1:1 just works better.

Some gliders are more prone to overcontrol/oscillations than others. Increasing oscillations will invariably lead to a lockout. As a rough guide from best to worst we would have: floaters/open cross tube gliders, sport/intermediate gliders, square tip high performance gliders, curved tip high performance gliders, latest generation topless gliders, early generation topless gliders.

It makes sense to learn your basic towing skills on a docile easy to tow glider and work your way up. You can pick conditions to make the task easier as discussed above. If the option is available I would advocate flying your new high performance glider off a hill and getting used to flying it fast without oscillations before towing it.

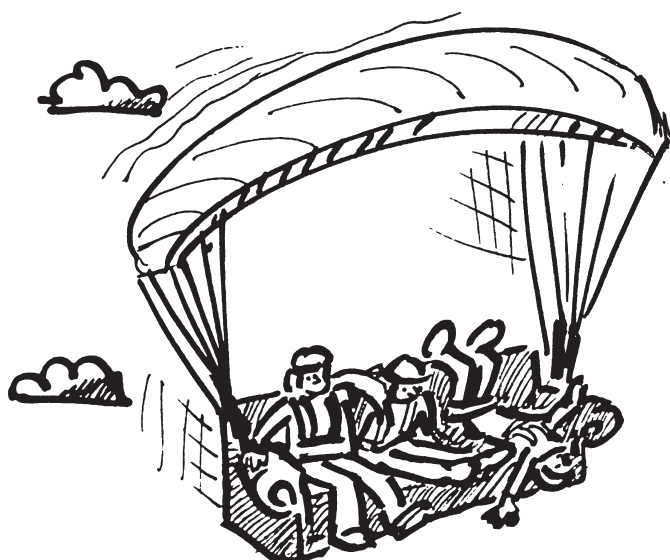
Keeping tow tensions low, making moderate inputs and waiting for a response, and slowing the glider down can all help to minimise problems. Utilising the available yaw force comes with practice. For aerotowing both Quest Air and Wallaby Ranch emphasise a lead with your hips approach for control inputs under tow – this is simply a practical explanation of: "Use the (yaw) force Luke."

I have found pulling some VG on (1/4-1/3) works well to damp out oscillations on the Xtralite and CSX. Of course, you are sacrificing a little roll rate when you do this and potentially making the glider more prone to a tip stall. Any VG seems to make my Lightspeed tow worse, but fortunately it is far easier to tow than my old CSX anyway.

Crosswinds

Crosswinds are the most underrated risk in towing. Consider a high performance glider launching in a strong crosswind. The glider

CARTOON by Jules Makk



Jules. 99

Lounging around...



Gliding over Manilla township
Photo: Tony Sandberg

will want to yaw into the wind. If the pilot starts the tow without the nose of the glider pointing into the wind here is what must happen. Initially the tow bridle is probably touching the uprights/front wires (incipient lockout). As the glider accelerates down the strip the change in the relative wind causes it to yaw/roll around toward the towline. Okay, so this is good, but this yaw/roll must be countered by a pilot input due to the inherent yaw/roll instability of modern designs. So to counter the yaw/roll the pilot high sides the glider. At the same time he/she may well be pushing the bar out to get the glider to take off because even though the wind is strong because it is crossed the useful headwind component is small and this is effectively a light wind launch. For those of you who don't know, high siding a glider in a shallow bank and pushing the bar out is the exact technique required to make a high performance glider spin. Add a bit of turbulence... Get the picture? Crosswind take offs are dangerous. My rule of thumb is that if I can't get the glider's nose to within 10-20 degrees of on line (ie pointing down the strip) the crosswind is too strong. If the wind is so strong and crossed that the tow bridle is touching the glider you are asking for trouble.

Okay, so we get airborne all right. Hey, hang gliding is pretty forgiving really. To drop the rope on the strip in a crosswind requires that we crab. Crabbing on tow puts us much closer to an incipient lockout than I care to be, as the bridle is often already touching the upright/front wire. Keeping on line and allowing the glider to drift downwind is **much** safer. If you must crab do it when high and know the risk. Down low keep the nose on line and accept the ensuing downwind drift.

Instruments or other obstructions on the base tube

Placing instruments on your base tube when ground towing is inviting a lockout. The reason is simply that the bridle no longer needs to contact the upright or front wires to exert leverage in the opposite direction to that which is desired – your instrument mount will do just fine as a fulcrum. In effect you have wound back the clock by twenty years and are now effectively towing off your base tube. Similarly, the rubber grip material on some base tubes has also been proven to cause problems. We discovered this at our school when a course of students experienced unexpectedly frequent lockouts, always right at the top of the tow. Examination of the base tubes of the brand new floater gliders in use showed that the manufacturers recent addition of rubber grip material to the base tube was causing the top bridle line to grip the base tube at the top of the tow. Scuff marks were evident on the rubber. After taking these rubber grips off, the top of tow lockout problem completely disappeared.

So the keys to avoiding lockouts on tow are simple:

- 50m and 200m windsocks to "see" that vital parcel of air.

- Low angle of attack and adequate airspeed, especially down low.
- Keep tow tension low until a safe altitude is reached.
- Train and respect your driver and maintain your tow gauge/payout winch.
- Avoid overcontrol and oscillations by picking suitable conditions and gliders for your skill level and making moderate inputs and waiting for a response.
- Avoid gnarly conditions; pick the light wind bits to maximise both safety and thermal prospects.
- Beware of crosswinds.
- Stay pointed on line.
- Incipient lockouts may be corrected but there is a point of no return.
- When in doubt – **RELEASE**.



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Tow plane seminar

LEVIN BARRETT

In November the Adelaide Soaring Club hosted a one-day safety seminar directed at tow pilots. I have attended, and on a few occasions delivered, several instructor/ tuggies meetings at our own club (Waikerie). So why should I drive one and a half hours to listen to the same thing again? Because this meeting was going to be delivered by Alex Hood from BASI and Ian Brown from Kendell airlines. So what does BASI and an Airline Captain know about gliding? Was it going to be an ear bashing about how dangerous we amateurs are? Was it going to be relevant to gliding? Was it going to be worth the drive? And yet I couldn't help but wonder, if two professional, highly qualified people were willing to spend their valuable time on us, they might just have something I should hear. So, with a measure of doubt, four of us piled into a car and away we went.

After arriving and catching up with a few friends, I was disappointed to learn that

Alex Hood from BASI was down with illness and couldn't attend or deliver the seminar. The drive home suddenly seemed twice as long. But with the typical leadership of a pilot, Ian Brown stepped up and quickly filled the void.

Within minutes the day was looking better. One of the first things we covered was a list of tow plane related accidents and incidents over the last four years or so. As the list was read out the room became quieter and quieter. To me it was very sobering to find out the number and types of accidents that had occurred in this short period. There were very few mechanical failures and almost no weather related accidents. I was initially trying to work out for myself if there was a trend or pattern to the accidents but nothing really stood out. There was a high number of mid-air occurrences but all under different circumstances. Finally the penny dropped as I realised I had overlooked the bleeding obvious – humans. Most of the accidents were related to either human limitations, poor decisions or no decisions. In short, pilot error. Or was it?

In the next few hours, the value of this seminar became apparent. The focus quickly shifted from the single-minded answer of Pilot Error to an education about the new methods of accident investigation. The new method tries to identify the chain of failures that lead to the final event, the accident. This was dramatically shown in an excellent video about an oil rig disaster in the North Atlantic ocean. Whilst most of us have probably heard about the "chain of failures" and the new approach to accident investigation, you may not be aware of the amount of research and focus on human factors that has arisen over the last few years.

One of the catch phrases to come out in recent years is Cockpit Resource Management or Crew Resource Management. CRM has evolved rapidly over the last 10 years. It was initially put forward as a tool to improve the working relationship and co-ordination of multi-pilot airline aircraft in the cockpit. It then expanded to include the entire operation of an airline including maintenance, ground handling, baggage loading, cabin crew, etc. In recent years CRM has expanded again to include the management of an airline, the belief being that unless management

provides the culture and resources to implement the process of CRM, then the failure in the chain is management itself. Poor or inappropriate management can ultimately cause an aircraft to crash.

This system is working for airlines, but what has it got to do with a single pilot towing a glider? Surprisingly quite a lot. The first thing you have to do however is look at the big picture. Gliding operations are almost a contradiction in objectives. Gliding is usually a solo sport. Even with two pilots we are required to nominate one pilot as being in command, so it is still a solo operation. And yet it takes enormous teamwork to get one glider in the air. The operation behind the flight is actually quite involved. This can be likened to the series of events needed to get an airline aircraft off the ground.

Expand your picture and look at the club level. The club provides the management, infrastructure and personnel to support the operation of getting one glider into the air. This is similar to the base operations of an airline at say Adelaide or Sydney. The airline provides the local staff and equipment to support its operations at that base.

Expand your picture again and look at the operation of the GFA. This is the body that provides the culture and resources that allow the establishment of clubs throughout Australia. It is the equivalent of the head office of an airline.

So in fact we are able to apply the principles of CRM to gliding. I would go so far as to say that we need the principles of CRM. If the system is in place, the single pilot towing a glider is just the final act in a long and involved sequence of events.

The seminar then touched on human limitations. Because an accident is usually the end result of a sequence of very minor events, the secret is to identify the little things and break the chain that could have led to an accident. We learnt some hints about recognising the little things. We learnt about the factors that influence human error and the thought processing model of the brain. By recognising and understanding our own physical limitations we may be able to recognise when we are exceeding them. But it is equally important to understand that these techniques don't just apply to the pilot. An overloaded ground crew or an owner carrying out a Form 2 inspection when one of his kids is critically ill in hospital are just as likely to fall victim to a minor error that



will lead to a major accident. The difficult thing about safety is that it is very easy to measure the results of an accident but almost impossible to quantify the result of an accident that never occurred because it was avoided by the most insignificant event.

So during the day we had an insight into the new methods of accident investigation, the way that CRM can apply to us, and the new research done into human limitations and methods of dealing with them.

So why did two aviation professionals give up a full day of their time? They didn't ear bash us. They didn't accuse of us of being unsafe. Are we having more accidents recently or are our accidents proportionally higher than other aviation areas? Those answers are probably in statistics somewhere. I think the real reason they came was to educate us that accident investigation and prevention has dramatically changed. The new methods have been proven to work from airlines down to general aviation. It is now our turn to learn and adopt these proven methods.

By far the biggest disappointment was a comment made by a fellow tug pilot towards the end of the day during an open forum. He said, *"I think things are going pretty well for us. We don't have that many accidents and there's not much we need to do."* Instantly the majority of the room fell back into the past. I was staggered how rapidly everything we had heard and learnt that morning was ignored and people fell back into the comfort zone of 'it's not my problem – it won't happen to me'.

What is an acceptable accident rate? How many fatalities in five years do we tolerate? The answer has to be none. The goal has to be no accidents ever. Whether we achieve that is not relevant. We must try to achieve a zero accident rate.

Presented to us on that day was one of the answers. Our greatest challenge as individuals and as clubs is to listen, learn and embrace the new methods that are working so well for other aviation organisations. The first step is to listen. Get each club or group of clubs to organise or attend similar seminars and invite the people with the knowledge to address the meeting. Almost all airlines from Qantas to piston engine airlines have the personnel and information available. Listen to what the BASI INDICATE Safety Program has to offer. The information is out there, easily accessible and the cost is almost nothing. Learn how to put the new methods into practice and then use the system. Seminars like this one are very good and I would urge all pilots to attend, but be willing to learn and be careful not to fall back into the comfort zone.



Technical Topics

From the CTO(A)'s desk:

The Blanik L-13 and L-13-A1 is still the most widely used two-seater in Australia. Within the scope of a GFA Airworthiness project the fairly old and complicated Blanik Maintenance Manuals, GFA Airworthiness Directives, experience from survey inspectors and other guidelines have been revised and streamlined to simplify the maintenance.

This work was performed by Lukas Bucher under the supervision of the CTO(A) and with the support of Peter Menhennitt and Tom Gilbert. Lukas did practical training with the GFA in conjunction with the schedule of his studies of aerospace engineering at the University of Stuttgart. It certainly helped that Lukas is an active glider pilot and a member of the Akaflieg Stuttgart.

The result of this project is a GFA approved, but not mandatory, 65 page documentation which is very useful to all Airworthiness inspectors working on Blaniks in Australia. The new Inspection plans are arranged like a checklist for easier handling. They sum up all points which need to be checked during a Blanik's lifetime. It includes the Daily Inspection, the 50, 500, 1000 and 2000 Hour Inspections from LET as well as the Form 2 Inspection and the 20/+10 Years Survey Schedule.

During the edition of this document it became obvious that some ADs were outdated (AD 11 and AD 104) and others needed to be updated and combined (AD 11, AD 77, AD 104). AD 11 and AD 104 were cancelled and relevant inspections are included in AD 77 Issue 3 now.

I strongly recommend that all Blanik owners have a look at the document on the GFA homepages <www.gfa.org.au>. Downloading and printing is possible but the quality of the images is rather poor due to compression of the data in a PDF format. It is better to order a good quality hard copy from the GFA Office (A\$15 plus postage). This should be used as a master copy and the relevant checklists shall be copied as blank forms to be filled in during the inspection. The GFA Blanik manual is to be updated like every maintenance manual.

If you have any comments with respect to this document, please feel free to contact the CTO(A).



Australian Gliding IMPORTANT NOTICE

All articles and advertising for the magazine can be sent to:

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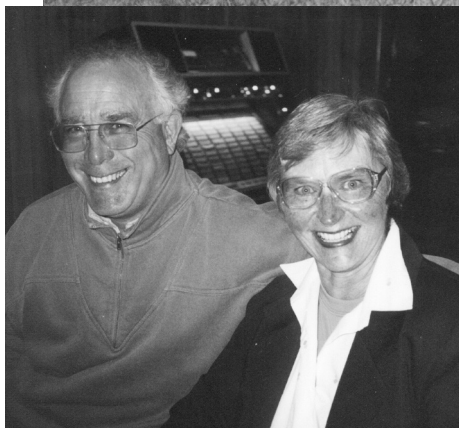
Grafton guys go gliding

Lake Keepit Safari 1999

DAVE SHORTER



Cumulus start to pop while the Cirrus and Club Libelle are prepared for a day's flying from Narromine
Photos: Louis Trichard



Louis Trichard and crew Christine
– "I want to go again next year"

a few tall gliding stories Whether you're a newcomer to gliding, a seasoned veteran, or a wife or friend prepared to crew for a few days, the Lake Keepit annual gliding safari is for you.

Four of us from Grafton Club sharing a DG202 and a Club Libelle joined a Cirrus, an ASH25 and the Super Cub tug from Lake Keepit for this year's expedition. Numbers were down on previous years but that didn't detract from the fun. Organiser and tuggie for the week, Ian Barraclough, had planned our task – Keepit to Narromine for two nights, to Haddon Rig sheep station for another two nights, to Tooraweenah in the Warrumbungles for the last two nights then home – flying cross-country tasks from each location and point-to-point the days in between – seven days cross-country flying in all.

We arrived Lake Keepit Friday night, and it started raining as we got out of the car. It rained all night! All Saturday (our practice day) it continued raining – heavy stuff! Last year's safari had been severely disrupted by unseasonal rain and floods – not again this year! Please God, no!

Sunday broke, beaming with sunshine and a brisk early morning breeze. Weather guru Harry Medlicott reckoned it was flyable, promised us we'd find streets (never believe a weather guru when he promises streets) but suggested we not attempt the last section from Gilgandra to Narromine because the going could be tough.

So off we went and tough it was. Cu's looked good but the sun was reflected in sheets of glistening water in every paddock. Noel Backman in the Club Libelle found going difficult and eventually

Do you find cross-country gliding appealing? Does new country every day interest you? Do you like the camaraderie of shared gliding experiences? How about good food and company every evening... and

chose to land on the Deputy Prime Minister, John Anderson's airfield, between Mullalley and Coonabarabran. They could have used some assistance from the Deputy PM's tractor as the glider bogged down on the wet strip, and Noel, Matt and Roger had to lift the wings over the fence, and man-handle the fuse through the muddy paddock to the gate.

Meanwhile I managed to struggle through to Gilgandra airport in the DG but had to call out the council airport manager on the Sunday afternoon to unpadlock the gate. Louis and Christine Trichard turned up with a very welcome hamburger, which we ate by torch-light on a picnic rug spread on the centre of the Gilgandra airport taxiway as we awaited my crew who'd been helping Noel out of his predicament. Michael and Bronwyn Shirley in the ASH made it safely to Narromine, but had to confess to a little assistance from their motor.

Now, we said to ourselves as we finally tucked into bed late that night at Narromine, things have to improve from here on. Let's get set for a few days of Narromine's famous and legendary gliding conditions. But you guessed it – a cold rainy change came through and it rained heavily all the following day. We learned that our next destination, Haddon Rig, was flooded out so changed plans to extend our stay at Narromine. From then on the famous conditions started.

Shinzo Takizawa kindly allowed us to join in his daily weather briefing and Tuesday morning he promised good conditions – a trough nearby, 20kt breeze and cu's up to 6-7,000ft. But cold – freezing level at 6,000ft! Matt McLennan took off in the Club Libelle and made a very fast dash into wind down to Peak Hill followed by Roger Anson in the DG and Jim Stanley in the Cirrus. Matt got cold feet (literally – he almost froze with the cold conditions) and came back early, while the others flew back out to Warren where cloudbase was up to 8,500ft.

Wednesday was more of the same but we dressed with an extra layer. I had one of those days when everything worked, and flew my personal best average speed on a trip to Haddon Rig, Forbes and back.

Noel and Lou did the same trip turning earlier at Peak Hill as they found problems penetrating the headwind, while the ASH went "touring" to Coonamble and Peak Hill.



Jim Stanley, manager from Lake Keepit, took the week off to share the Cirrus with Louis Trichard



Roger Anson and Dave Shorter with DG202 ready for the 'legendary' Narromine conditions



Bronwyn and Michael Shirley, with the ASH25, take some liquid before launching

Thursday was off to Tooraweenah, nestled in the foothills of the stunning Warrumbungle Ranges. Roger and Matt decided to declare a 300km zigzag task, via Coonamble and Eumungerie. Jim and Michael followed suit together with Shinzo and two of his visiting Japanese pilots who decided to come along for the outing. With thermals averaging over five knots the ground crews watched the gliders fly over at Gilgandra, mere specks at 8,000ft. Conditions threatened to overdevelop but all gliders got home with height and time to spare for a bit of sightseeing over the wild Warrumbungle granite outcrops.

Tooraweenah guesthouse is located immediately adjoining the airstrip, and we were warmly welcomed by Jim and Beryl Hallett who embrace all their guests as part of an extended family. We chatted on the verandah in the evening and enjoyed a few drinks before dinner while the water sprinklers played on Jim's lush garden. But then Matt discovered a major problem – someone had left Matt's pillow at Narromine and there was a lot of unsympathetic debate over who told who what about the pillow. Later that evening Roger and Noel found their beds short-sheeted when they turned in.

Shinzo's weather briefing on Friday morning was again positive. Noel flying the Club Libelle declared a 300km FAI triangle to Quambone, Warren and return, which he completed in the commendable time for a clubbie of three and three-quarter hours from launch to landing. The weather was booming, with the occasional nine to 10 knotter (one thermal on my barograph trace averaged 11.2kt for much of the climb). Jim Stanley followed suit and then went touring for another hour or so. Shinzo took his Japanese guests off home, via Nyngan and elsewhere for a 600km wander, shepherding the following gliders like a mother duck with a line of ducklings.

I set off with a 500km task in mind. My troubles started when I reached for my map only to find I had buckled up with it firmly lodged underneath my parachute. Just try it one day, unbuckling, lifting up and recovering a map from underneath. I then noticed a moving shadow on the brim of my hat. Ahh, just an ant. Brush it off and squash it firmly against the cockpit... then I saw another wandering around. and another, and another! So I determinedly split my time between scanning the horizon, squashing ants, checking instruments, map reading, finding the next thermal, and squashing yet more ants. What a way to fly! I opened the front ventilator to cool down and the airflow picked up a meteor shower of ant eggs, which hit me in the face – no more ventilator this flight. Obviously the ant nest near my tie down point had chosen last night to relocate. I radioed base to go shopping and buy some insect spray – Noel, in the Libelle, chuckling over my predicament came back over the radio *"That's your 'anticap' for today Dave."*

After a while the ants and I came to a peaceful understanding and I pressed on. One look at the Quambone turnpoint made it clear why Quambone doesn't feature as a "holiday spot". From Nyngan on an easterly heading back to Coolah airport I'd be crossing the track of three other gliders who had turned behind me at Quambone onto a southerly heading. We kept a frequent radio reporting interchange with Michael and Bron who were somewhere close and we established separation; I didn't hear from Jim but he knew he was clear and I presumed the same for Noel. Imagine my horror when I passed Noel circling within about 50m at the same height. Even though I knew he may be around I hadn't seen him until we were almost upon each other. I thought my lookout was thorough and it was a nasty reminder of how inefficient your eyes can be.

The rest of the day was uneventful, with both Michael and I flying through some very long blue stretches and over some horrible looking forested country to Coolah. That section slowed us down considerably and I was wishing I'd stayed out west in the good air as one of Shinzo's ducklings.

We thoroughly fumigated my glider that evening.

Last days are always sad, but it was again a boomer. A slightly shaky start with one re-light. Lou Trichard showed everyone his heels with a screaming run across to Lake Keepit. Matt in the Libelle was a bit unnerved by a low recovery at the start, but later flew a final glide for 62km from Mullalley to Keepit gaining height all the way. Matt's troubles weren't over though – someone had left his plants behind at Tooraweenah, a generous gift from Jim Hallett's garden, and the fridge full of Matt's grog at Tooraweenah was still full.

For all of us, the enjoyment of the week was not only in the gliding, but the camaraderie and good-natured fun enjoyed by participants, pilots, crew and friends. Our Grey Eminence, Ian Barraclough, forever with a tolerant smile, ensured every organisational detail proceeded smoothly. Christine Trichard who crewed for Lou for the first time this year summarised it for us all: *"I want to go again next year."* If you want to enjoy a great week speak to Ian – he just might be organising another next year.



Skyhigh Millennium Cup Round One

HAKIM MENTES

Run by the Skyhigh Paragliding Club, the Skyhigh Millennium Cup is open to anyone who wants to join to the club. The main purpose of the comp is to get the club members together and have a good time. The comp is designed to satisfy all tastes, with some rounds taking place along the coast and some inland. This is the story of the first round, which took place at Portsea (a coastal site) and turned out to be an excellent weekend. The next round (26/27 February) will take place at Paps (an inland site) and there will be two more rounds (25/26 March and 29/30 April) before our winner is found (best three of the four rounds).

Thursday, only two days before the first round of the competition and the weather forecast for the weekend was horrible. North to north easterly winds and sticking hot weather, but our nominated coastal site, Portsea, faces south west. What an awful combination! We had our last committee meeting Thursday night to decide what to do, and the decision was made to go ahead with the original plan and rely on the afternoon sea breeze.

On Friday the weather forecast changed slightly. They now said the wind would be easterly, but this was still no good.

Checking the weather forecast was my first task on Saturday morning and it was great: southerly wind 10kt in the morning then 15 to 20kt afternoon sea breeze. Steve and I drove down to the meeting point to find a bunch of keen pilots already waiting for me. The wind was coming straight up the face but it was not strong enough and it was also overcast. Briefing was postponed to 1:00pm as not everybody was there yet and conditions were not good enough to set a task. A couple of pilots at our alternative site of Flinders were passing on weather information to us.

After 1:00pm conditions improved and 13 pilots (out of 20) registered for the competition. It was time to set a task. Given the varying wind conditions and some drizzle, an out-and-return task was set. The competitors had to do two laps to the life saver club building which was only a few kilometres away. Nick, a local pilot, was the first one to take off. His flight did not last long and he bombed out shortly after take off. He was keen though, and walking up the hill did not bother him much, so he bombed out a few more times before getting away. Alistair took off second and managed to stay up. He even managed completing the first lap but bombed out on the return leg of the second lap. It was a long walk back to the start line to resume the competition to complete the second lap, but he was not alone on that walk.

Later on in the afternoon the wind picked up a bit and take offs were trickier. Many pilots got dragged and ended up in the bushes just behind the take-off. Colin was one of the pilots who got dragged back a few times. He possibly knocked his head each time, if his next take off and landing were anything to go by. He showed us an amazing take off: with the canopy flying above him, he slowly walked to the edge and made a diving jump, nearly stalling the canopy. He went straight down to the beach and produced an even more amazing landing by performing a sharp turn very close to the ground and landing with a somersault.

But the star of the day was Phil – he showed us how to do a real top landing. After being dragged back at his first attempt to take off, he was successful at his second attempt. He made a couple of low passes in front of the launch, then came back to the launch slightly above the take-off while a hang glider was getting ready to launch. He misjudged his momentum and was a fraction of a second late to turn away from the hill. So he landed right on top of the hang glider, almost on the kingpost. The canopy stayed aloft for a few seconds and we hoped he would take off from there, but it didn't happen. The canopy got blown sideways and he came down on top of Robert.

Pilots who took off later had a definite advantage as the wind was stronger. Many pilots completed the task after the window was closed.

The first day was a success and the task was valid. Pilots, happy with their flying (some got 3.5 hours airtime), left the site with a smile on their face and a wet glider in the bag.

Sunday morning did not look good at all. The sky was covered with grey clouds and it was drizzling. Despite that I was still hopeful and went to the site to check it out. Yes, the wind was coming straight up the face at the right strength, but it was still raining. It was too early and we decided to wait until others turned up. However, the rain stopped and we took off before the others arrived. Competitors started rolling in at 12:00pm to find us flying. The conditions were okay at this stage, but numbers were not enough to set a task so I postponed the briefing till 2:00pm.

Left: Portsea launch from above
Background: On-course to the turnpoint
All photos: Hakim Mentès

When the sun shined and conditions changed from okay to perfect the window was opened.

The same task as yesterday was called, but three laps this time. It took 14 minutes (compared to 2.5 hours on Saturday) for the local gurus (Jeremy Torr) to complete the task. Conditions got even better as the afternoon wore on, and every competitor completed the task.

Late in the afternoon the weather was just beautiful: blue sky, nice sea breeze and plenty of flying action. Most pilots kept flying till 6:30pm, clocking up a few more hours airtime. Few ended up in the bushes behind the take-off, either while taking off or top landing. I produced the most entertaining top landing of the day, however. I came down nicely with big ears, touched the ground at the right spot with zero ground speed, then pulled the brakes instead of the rear risers. Wow, what a jump! I ended up in the bushes behind take-off. Lucky those bushes are nice and soft.

So, day two was another success. Only eight pilots registered for the day, because some who were content with their previous day's score did not bother registering, saving themselves the \$10 fee instead. Those who came and flew the second day but did not register obviously did not read the rules carefully. That might cost them dearly at the end of the series.

The second round of the competition will take place at Paps on the weekend of 26/27 February.



Top: Pilots gathered at the Portsea launch

Left: Getting ready for take off, with competitors on-course in the background

All photos: Hakim Mentès

First Round Results	Class	Day 1	Day 2	Bonus	Total
1 Barrie Shaw	Novice	350	825	25	850
2 Rick Keating	Novice	559	0	0	559
3 Nick Hauf	Open	876	839	25	901
4 Robert Zachnar	Novice	559	0	0	559
5 Alister Johnson	Open	873	862	25	898
6 Alistair Dickie	Novice	515	0	0	515
7 Steve Meagher	Novice	250	819	25	844
8 Brian Mill	Open	886	0	0	886
9 Carolyn Dennis	Novice	515	0	0	515
10 Phil Giddings	Novice	350	0	0	350
11 Zoltan Toth	Novice	559	824	25	849
14 Owen Jourdain	Open	551	825	25	850
15 Colin Skidmore	Novice	350	0	0	350
16 Fabrice Millet	Open	0	350	0	350
17 Jeremy Torr	Open	0	851	0	851

Barrie is leading the Novice Class with 850 points, mainly due to his effort on Sunday. He was the first pilot to take off and got hefty bonus points, which placed him on the top of the list. Nick is the leader of the Open Class with 901 points. Again the early take off on Saturday helped him to take the lead, despite Alister completing the task quicker than him on both days.



Results of 2000 Board Ballot

Number of members eligible to vote:	2803
Total number of votes received:	404
Invalid votes (unfinancial/ineligible):	2
Duplicate votes (voted twice):	1
Informal vote (no selections):	1
Total number of valid votes received:	400
Member-voter response rate:	14.2 %

Rohan Holtkamp	243	Elected
Mike Zupanc	218	Elected
Phil Pritchard	217	Elected
Brian Webb	208	Elected
Mark Plenderleith	204	Elected
Bill Moyes	175	Elected
Jeremy Torr	166	Elected
John Reynoldson	164	Elected
Rohan Grant	151	Elected
Mark Thompson	131	
Stan Roy	130	
Mike Eggleton	119	
Rob Woodward	111	
Andrew Abbott	101	
Damien Gates	99	
Keith Lush	91	
Mark Howard	84	

Ian Jarman, HGFA Public Officer

Second Grand Prix TV Series

Thanks to all pilots who have expressed interest in the second TV series. I have been madly trying to tie down the second half of the funding required for the project, and today have been told that a final decision will be made at the TWI sales meeting in London at the end of February.

I do not believe this leaves sufficient time for international competitors to make suitable travel arrangements, and given we have a full strategic direction review and a new board it leaves us without sufficient preparation time before the scheduled mid April start. The original dates chosen in the April to May period represent our last reliable period of weather along the NSW coast. After this the sea breezes become less reliable with stronger frontal systems which can hang around for days. Putting things back a couple of weeks to give us more preparation time is likely to escalate production costs due to weather delays and blow our very tight budget. It will also take us further into the northern hemisphere competition season.

I have discussed this with the producers and feel it more appropriate that we delay the filming until later in the year. I have chosen October/November as the best period to ensure we have avoided the Sydney Olympics and the weather has warmed sufficiently to see some regular sea breezes at Stanwell. I will study the international calendar and do my best



1998/99 Board members clockwise from top left: Ian Jarman (Executive Director), Rohan Grant (President), Rob Woodward (Treasurer), Mike Eggleton, Rohan Holtkamp, Craig Worth (Ops Manager), Peta Roberts, Tim Cummings (Secretary), Steve Ruffels, Mike Zupanc (CIVL Delegate). Not in photo (probably taking IT): Keith Lush (Vice President)

to avoid any major events in setting the final dates.

This extra lead time may in fact provide an opportunity for us to secure further sponsorship and I will try to link with the Canungra Classic which is normally a CIVL Cat 2 event for both HG and PG.

Over our winter I will refine the pilot list and send specific invitations to those chosen. We would expect the selected pilots to enter into a formal agreement about involvement in the series. A number of reserve positions may also be offered to allow for last minute eventualities.

As we have a substantially new board taking over the leadership of the HGFA combined with a future directions conference, it is sensible that we ensure we continue to enjoy total support and commitment for this project. However, as an externally funded project there will be no demands on HGFA budgets and hence I am confident that the series will proceed as planned.

Ian Jarman, HGFA Executive Director

Bright Autumn Festival

The airport committee wishes to let all pilots know that they are having a fly-in on the weekend of 5-6 May, this being the Bright Gala weekend of the Autumn Festival which is a big occasion in north east Victoria. There will be BBQs on both days with flying demonstrations by various aircraft plus a Fly-in Dinner to be held on Saturday night at Noonameena Lodge (all welcome) with various prizes donated for this event. Come along and show your flying style. For more details contact Don Walpole 03 5753 5250 or Steve Ruffels 03 5750 1174.

Club News

WA Hill Flyers Club

Summer easterlies have blown strong and hard this year although without the heat. A few of us have managed to get some flying in, but usually for the lucky few who have been able to get out through the week.

Some great flying to look forward to... Hill Flyers Club will be running three events this year (see HGFA Events Calendar). The aim is to get a few more FAI medals out there, especially the bronze. Final details of the autumn fly-in will be available closer to the date (mid April).

At the last RAPAC meeting I attended, I was pleased to see that Air Services will be adding a danger area to the VTC at the skydivers drop zone behind Mt Bakewell. This will at least warn powered aircraft to watch for recreational aircraft such as cross-country hang/paragliders or skydivers etc.

For a number of reasons, The Hill Flyers Club has a new venue for its monthly meetings: 'Cascades' Bistro and function centre, 231 Guildford Rd, Maylands.

Meetings are the last Thursday in the month, starting around 7:30pm, meals available from 6:00pm.

Sean Young has recently won the safety award, for choosing not to fly in blustery conditions up at Whitmans Hill despite three other advanced pilots all flying or flown. (Congrats Sean.)

Thanks to Jamie, the club now has three huge windsocks for each of the landing paddocks for Bakewell, Noondeening and the Range.

Rick



Over Manilla, heading towards the outskirts of Tamworth.
Photo: Tony Sandeberg

Blue Mountains Hang Gliding Club

The BMHGC would like to announce this year's Water Landing Night – a practical safety seminar.

The purpose of the Safety Seminar is to explore in a very practical way the inherent dangers of landing in water. By jumping into a large swimming pool in a fully rigged glider and harness, you will have the opportunity to experience first-hand what is required to survive the situation.

Supplied on the night will be a glider, a harness and rescue scuba divers. You must bring a towel and flight clothes for the exercise. (To increase realism pilots are invited to bring and use their own harness, just remember to remove parachutes, radios and various first.) The night will be held at the Glenbrook Swimming Pool (it is heated!) on Thursday, 13 April at 7:00pm. There will be a small charge of \$5 per person to cover hire of the pool and tea/coffee.

Contact Chris Webster on 0414 425 736 to register your name and confirm details.

This event is just around the corner – ring ASAP!

Richard Lockhart

Product News

Solar Wings Booster Powered Hang Glider Unit

Solar Wings/Pegasus is pleased to announce the introduction of the 'Booster'.

The Booster is a foot-launch power unit with a difference: you use your hang gliding harness, the propeller folds for less drag when gliding and it is much quieter than any known competition.

Will it fit any glider? We believe so, provided they are stressed for the extra weight.

Which harnesses can be used? Most modern harnesses can be converted to fit the Booster, although it was designed primarily for the Solar Wings Edge & Edge 2.

When will the Booster be available? Production starts in April.

Who designed the Booster? Long-term hang glider and microlight designer, pilot and

enthusiast Dr Billy Brooks, Pegasus' Chief Designer.

Is the Booster certified? In the UK the Booster does not need certification because it is foot-launchable. It is however designed, built and tested to the same standards as all Pegasus aircraft.

Design features? Composite shell (light-weight shell attaches snugly to harness for minimum drag), hi-tech folding propeller (centrifugally opening/closing carbon composite propeller for up to 10% better glide and sink rate compared to fixed prop), light weight (just 19kg + harness), low noise (Pegasus microsonic aerofoil intake air silencer/filter gives 0% power loss with 3db noise reduction; exhaust after muffler giving 0% power loss with 2.5db noise reduction), high power output (Radne Raket 120 engine gives measured propshaft power output 10.2bhp at 8,700 rpm), quick attachment to harness (the Booster simply attaches to the harness via two quick-release pins), automatic decompressor and two-handed pull start for easy in-flight restarting, kill switch, optional 10L aerofoil tank for touring, and retractable undercarriage with wheels for easier still air take offs.

Cost? Without harness: £2,548.93 (£2,995 incl. VAT). With Edge harness: £2,936.17 (£3,450 incl. VAT).

Where can I find more information? Look at mpegs and jpegs of the Booster on the Pegasus website: <www.pegasusaviation.co.uk>, or contact John Fack: ph: +44 (0)1672 861578, email: <john@pegasusaviation.co.uk>.

FAI News

New FAI Records Ratified

Sub-class 0-3 (Paragliders)

General Category

Claim number 6199:

Type of record: Speed over a triangular course of 50km

Course/location: Mt Borah, Manilla (Australia)

Performance: 23.6km/h

Pilot: Enda Murphy (Australia)

Paraglider: Advance Omega 4/28

Date: 5.12.1999

Previous record: 15.80km/h (20.7.94, Judy Leden, UK)

FAI congratulates the pilot on his splendid achievement.



CARTOON by Jules Makk





Tasman Trophy 2000

TOM CLAFFEY

The New Zealand Nationals this year were a great learning experience for me and a lot of fun. They were held at Matamata in the North Island, about half way from Auckland to Rotorua – every two years they go to Omarama in the South Island. The site is quite close to the coast with a 2,000 to 3,000ft ridge between the airstrip and ocean to the east. Away from the ridge is a flat valley area and low hills to the west and south, some cultivation such as corn and onions, but main outlanding fields are short (by our standards) dairy paddocks.

As happens when you go to a new site the weather is not as good as the locals expect – tasks were closer to home than usual but due to the ridge we were able to fly for 11 competition days – without it at least four of those days wouldn't have been possible.

I was fortunate to have lots of help to get to New Zealand and met some wonderful new friends there. Qantas was busy in January so I had to fit in the competition around a full roster with the help of one of my managers – coming in from LA after a 14 hour flight, Kerrie met me at the airport and exchanged bags so I could get straight on the plane to Auckland. Once there, friends (who had also loaned us a great little Datsun 1600 towcar) put us up for the night as I was

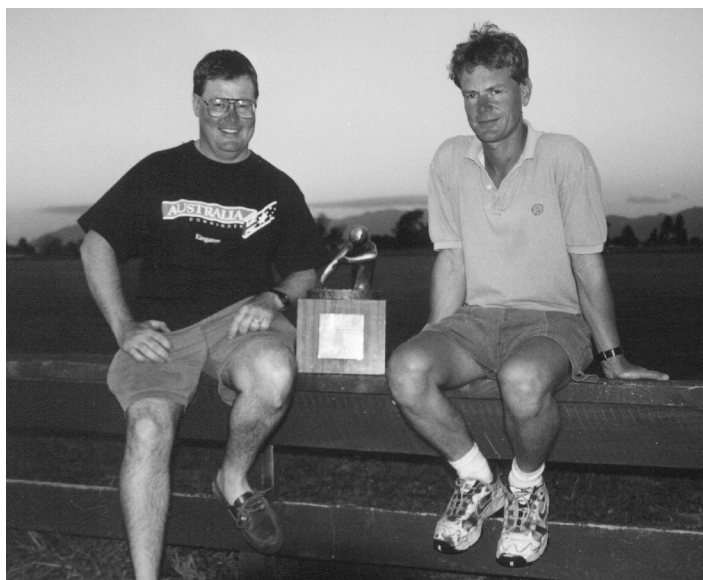
too tired to drive. Next day Val and Mick, my trainee crew, and I picked up Kirk Davis's ASW19 from Drury and made it down to the Matamata in time for a quick rig, water and fly. Kirk flew in Narromine last year as did Grae Harrison, eventual winner of Standard Class.

The 19 was in fine condition and with permanently fitted wing-lets, it flew very well. I became quite good at de-rigging it after three outlandings and removing the wings four or five times to fix leaking waterbags – no wonder Schleicher has now joined Schempp and LS with tanks! My opponent for the Tasman Trophy was Richard Downer from Wellington flying a beautiful old Standard Cirrus. The whole competition was handicapped which seemed to be fine. One difference from Australia was that older 15 metre machines of similar handicap could choose to fly in Standard Class instead of 15m/Open, so we had a Mosquito, Mini Nimbus and an unwingletted (to lose 1% and be eligible) "standard" Ventus which ended up second.

Day one, a taste of a typical weak thermal day – 220km with a few long glides around turnpoints affected by sea air. Ian Finlayson, local guru in an ASW27, said it reminded him of the first day of the Kingaroy nationals which he also won with Kiwis first, second and third. I landed 20km short for fifth place.

Day two, a disastrous final glide after final climb just below leaders to land to land five kilometres short of the 179km task in the same field as Tony Van-Dyke. Richard scraped home so I was now 200 odd points behind after two days! The next two days were cancelled but at least I fixed my comfort and CG problem by removing the backrest on a test flight along a great little convergence line.

Day three, a strong ridge day at last – 265km, flying at 110kt on ridge and then dribble out to turnpoints in and out of rainshowers, then down ridge again. We had to stop a few times because of the showers. Richard got caught and came in one and a half hours behind. I was fifth for the day (suprising all the Kiwis) but only caught up 60 points because the day was so devalued by many outlandings at the first turnpoint.



Left: Tom Claffey with Tasman Trophy opponent Richard Downer
Opposite Page: Tasman Trophy 2000 winner Tom Claffey at Matamata, New Zealand
Photos: Tom Claffey

Day four, another ridge day and I am a little less conservative and push on for a 994 point third place (and a bottle of beer day prize). On the way out from ridge towards the first turn I found a nine knot thermal from the "swamp". Back on small broken ridges I climbed, only to be overtaken (again) by one of the local young guns in a Mossie who knows not to stop here but push on, unbelievably low, over what to me seemed to be crappy looking ridges. After another three turnpoints we land back at an empty airfield – great fun!

Day five, the waterbag split while filling so we removed it but it's not repairable – probably 20 years old. A 320km task further north and south in thermals than before. A very difficult day with lots of gear changing – the day dying on the way back and the good guys just ahead accelerated away while those behind grovelled home. Fourth for the day and only 55 points behind Richard. Today was interesting as we went through Rotorua TMA talking to radar controllers in Christchurch with our transponders on. It worked well but a bit unwieldy with individual clearances. Unfortunately two gliders were damaged today – one seriously, with the pilot in hospital for observation with crushed vertebrae after a helicopter lifted him from a steep paddock.

Day six, after putting in a replacement waterbag a POST task was called for the first time in a New Zealand National. It was a cats cradle with a mandatory first turn, like the tasks in February AG. It finished four hours after starting; you then had a 15 percent bonus for getting home and a five percent bonus for legs over 100km handicapped distance. It seemed to be a great idea, but the weather didn't co-operate and instead of a homogeneous thermal day a change came through which saw over half the field land at the only compulsory turn. Those who (just!) scraped onto ridge had an easy run. This caused an enormous split in the points because so many outlanded, leading to serious devaluation, Grae got under 400 points for 530km and I got 34 points which cost me fourth place overall. At least Richard only got 38 points. We were home and re-rigged by the time the finishers landed!

Day seven, a very weak thermal day, never as good as it looked. Just as well because the wings leaked again with no water. Stayed high (above 1,500ft) and landed as the day died. Aggregate points just ahead of Richard now.

Day eight, forecast light thermals and light SW wind. I tried ridge for 30km north before starting and it was okay so I started early. Couldn't catch the guys ahead and was a little miffed. I found out later they were two LS8s and the Ventus A! Out over the swamp I picked up a large gaggle including Grae and Max Stevens, but they drove around Thames (actually on the north coast) very low and got to the ridges below 500ft. My wimp tactics worked at last and I flew over the top of seven to eight gliders. I headed south with Max and,

amazingly, with Grae who slowly pulled us in from below with his beautiful new Discus 2a. I got a little more aggressive here and basically kept up with them around Matamata, back to the ridge and on to the next turn, a fantastic street off ridge to Tirau and straight final glide home. I actually beat in Max and Grae as they had to go back to the ridge after miscalculating final glide, I was fourth again today, now 115 points in the lead for the Tasman Trophy.

Day nine, a B task of 191km – most pilots dumped water on grid but I kept mine as this morning we had fitted yet another second hand waterbag, this time an unvented bag from a DG400. I was last to launch and was surprised to climb up through gaggle and turn into wind to find wave! Three of us climbed well above the others and started early from the incredible height of 4,500ft! Needless to say I dumped all that hard won water after the first glide took me to 1,500ft. Westerly sea breeze killing thermals so onto the ridge and around next two turns okay. After two attempts to get high enough to attempt the last turn, three of us glide out at 55-60kt around turn at 2,000ft and back the 15km towards ridge at 45kt with a tailwind – the other two are a little higher and just make ridge but I am forced to ridge fly a 100-200ft high finger, keeping 75kt for manoeuvring speed and being on base for what seemed like two dozen paddocks until I find a good patch of lift to get high enough to escape onto the main ridge and home. Sixth for the day with Richard seventh as closest outlander as he couldn't make it back to ridge – now 300 points ahead.

Day ten, yet another ridge day – a little more straightforward with Richard choosing to stick to my tail – I didn't mind. Off the ridge for the last time I was sure I had a reasonable final glide but Grae and another top pilot in front came back to the ridge so, to play it very safe, I did the same. Richard went direct and I only just beat him in. Grae was using team tactics against his follower that day to help Max back into third place, hence this strange return to the ridge. I didn't mind too much, as it was my only loss to Richard on a speed day! The final dinner was held that night – no speeches as we still had to fly the next day, which might account for the Kiwis buying me red wine all night!

Last day, re-task on grid in doubtful weather – had a good run in weak thermals and only lost the hotshots on the final ridge segment for yet another fourth place. The Tasman Trophy was safe to take home again by over 400 points and fifth overall behind current or former New Zealand team members.

At the prizegiving various winners received their trophies. For Open Class, Ian Finlayson by 1,700 points; Standard Class Grae Harrison, speed and distance trophies and a bunch for Sports Class, won by one of five immaculate Ka 6's, and PW 5 class – some guys asked me why we don't have more of them here – I told them! As well as the Tasman Trophy, there was also a trophy for the best competitor from the "other" island. As no South Islanders turned up they gave it to me as a representative of the "west" island!

The trip was most worthwhile and I have some discussion for us about some of the differences in the way we do things – handicapping, classes, tasking and the sensible use of Garmin tracklogs amongst them.

Many thanks to GFA and NZGA for having me there and to Kirk for his lovely glider; to Keith and Dijo for their car and hospitality; to Ralph and Pam for local assistance; to Jason for parachute, charger and an unending supply of waterbags; Richard and all the Kiwis for a great time and being so helpful to someone from out of town. Of course a special thanks to my crew of Kerrie, Val and Mick who had only once been on a gliding field before and is now one of the best crew ever.





Living with the Schleicher ASK21

LEIGH BUNTING

Some five years ago, the Balaklava Gliding Club saw the need to replace one of its two Tin Cans (Blanik L-13s) with a more modern two-seater. A sub-committee was formed to examine all available two-seaters within our price range and recommend a suitable aircraft.

The outcome, of course, was the ASK21 (otherwise the title would be different – wouldn't it?). Now that we are close to having four years use of the aircraft – how has that outcome been reflected in achieving original aims?

It has certainly been a consistently popular aircraft and usually the last to be put back in the hangar. It is all too often difficult to get a flight. The decision to purchase an aircraft at the pricey end of the market was not universally accepted but, after receiving the aircraft, it soon became apparent that even those initially opposed to it, enjoyed flying it and any negativity quickly evaporated.

One of the original objectives was to have an aircraft out earning its keep, rather than in the hangar being maintained. It has met this objective with ease. The annual inspection can be done in a day – actually less if we didn't spend several hours on TLC through polishing and waxing its not inconsiderable surface area. There are no ADs

Like bees around a honey pot – getting ready for ZBG's first flight at Balaklava
All photos: Noel Matthews

to worry about. After building almost 800 aircraft the manufacturer seems to have found all bugs. One area we do keep an eye on is the hydraulic disk brake pads. The original brake pads were of the riveted variety and only lasted just over a year. However after going to bonded pads we are now getting more than two years of service.

Rigging and de-rigging the ASK 21 is not unlike a single-seater; quick and easy. Care has to be taken with the control connection to the wings, being H'Otellier couplings. The inspection hole in the fuselage is certainly on the small side making it a fiddly job to connect the controls. Automatic controls would be better but as the aircraft is seldom put in a trailer we can live with this inconvenience.

Very high on our list of priorities was the ease of ground handling. With the average age of glider pilots increasing, the ground handling issue has definitely been a plus for degenerating spines. Because the main wheel is very close to the centre of gravity, the ground handling can only be described as heaven-sent. We don't even possess a tail dolly, it would be a waste of money.

Flying the ASK21

The handling of the aircraft is totally benign and flying it is an absolute delight. It is not difficult to see the '21 as a direct descendent of the K7 (the '21's grandmother). I haven't flown a K13 for at least 20 years, but have spent some hours in a K7 over recent years.

The similarity in handling is remarkable but the glide performance, visibility, comfort, and noise level just so much better – but one would hope so.

The thick section of the wing seems to have a ridiculous propensity to keep the air glued to it at crazy angles of attack. It doesn't stall in any true sense of the word (at least with my weight of around 75kg – in clothes). The nose just remains high and the airframe parachutes down.



Noel Matthews and Dene Newton in ZBG on the occasion of Noel's 40th anniversary of his first flight, also with Dene

It is these low-speed characteristics that make the aircraft reluctant to spin. A couple of us have managed to entice it into a short bout of auto-rotation but it sure doesn't like it. Then, of course, it was designed not to spin. The Germans have a hard time understanding anyone who needs to have an aircraft that spins – which makes sense as long as all the aircraft a sprog pilot subsequently flies have similar spin resistance.

The aircraft can be thermalled steeply with the ASI in the 30s. Pre-stall buffet can be felt but that wing just hangs in there (memories of Ka6's in narrow-gutted thermals drifting up from the deeper recesses of aging neurons). The controls are as well harmonised as could be expected with the ailerons on the firm side – just right for a two-seater.

After so many years of Blaniks and worrying about all those rivets and crack-potential, aerobatics are wonderful. The '21 is rated for two max load cockpits for inverted manoeuvres with a 150kt VNE (inverted). You would want to be a braver man than I am to be down in that corner of the flight envelope. Power pilots are quite surprised when told the aircraft is rated to max G-loading of +6.5/-4.0. Slow rolls are definitely a two-handed job to keep those ailerons at full deflection with consecutive rolls an interesting challenge to control co-ordination skills.

It is certainly a robust aircraft. The main wheel has a rubber block suspension which can be called on if needed. I have been on board when the P-I-C dropped it in from about three metres – the arrival was definitely positive – but nil damage.

The cross-country performance – while not startling – is certainly at least as good as a Hornet, Standard Libelle etc. but has the capability to screw into those narrow cores that a Hornet cannot get to. In fact I have been out-thermalled by the '21. At the high speed end of the polar, the performance would suffer compared to other plastic two-seaters. While it is probably not the best aircraft to want to break records in, it has sufficient cross-country performance to not have to worry about checking out every paddock and therefore ideal for cross-country training or a relaxed getaway.

One other objective, which will only be verified in the fullness of time, is a long trouble-free life. Certified for 12,000 hours we expect to see at least 25 years and probably 30+ out of the aircraft. Reports of over 35,000 winch launches in Europe without any sign of fatigue problems make us wonder whether the aircraft will outlive many of us.

The bad news is – it probably will.



Badges & Certificates



FAI Badges and Certificates – February 2000

A Certificate

URASANG Murray		
Chulawallai	10371	NSW AIR TC
MILLER Patrick Leslie	10372	GCV
HOWELL Adam	10375	Adelaide SC
SLEEP Kevin	10376	Beverley
BREIG Thomas	10379	Adelaide SC

B Certificate

HARRIS David Thomas	10307	Narrogin
HOWELL Adam	10375	Adelaide SC
NELSON John William	10365	Southern Cross
WILKES Darryl Ronald	10366	Beverley

A & B Certificate

AKINS STEVEN	10386	VMFG
HACKER Gabriel	10387	Byron Bay
DAVIS Martin John	10388	Beverley

C Certificate

WILSON Joel Bruce	10340	NSW AIR TC
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B & C Certificate

WHITE Caleb Matthew	10174	Mangalore
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A, B & C Certificate

McEACHERN Cameron Stuart	10380	Kingaroy
HENDERSON Peter	10381	Wagga Wagga
SKAHILL Edward Royce	10382	Adelaide Uni.
GROOM Stephen Fredrick	10383	Gympie
KAHL Jorg-Udo	10384	Concordia
SPIESSER Oliver	10385	GCV
BARNES David Leslie	10389	Central QLD

600km

GRYLLS Peter Andrew	74	Sunraysia
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800km

WHELAN Mark Leonard	6	GCV
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900km

REPTON Andrew Palmer	7	GCWA
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Silver C

ZDANOWICZ-		
MUCHLADO Ludwig R	4287	Hunter Valley
STEWART Angus John	4298	NSW AIR TC
HILL Keith Reginald	4299	Sunraysia
HOFFMAN Glenn Laurence	4300	RANGA
O'NEILL Cameron Thomas	4301	NSW AIR TC
LEWIS John Francis	4302	Albury/Corowa
O'DONNELL Kane Michael	4303	NSW AIR TC
WILSON Joel Bruce	4304	NSW AIR TC
WILLIAMS Francis Edward	4305	Geelong
L'ESTRANGE Heath Edward	4306	Southern Downs
KENT Garnet James	4307	Southern Cross

Gold C

STANLEY Mark Wayne	1520	Wakerie
HANLEY Christopher Eric	1521	Adelaide SC
HILL Keith Reginald	1522	Sunraysia
GRYLLS Peter Andrew	1523	Sunraysia

Diamond Goal

STANLEY Mark Wayne		Waikerie
HANLEY Christopher Eric		Adelaide SC
BELLAIR John Terence		Geelong

Diamond Goal continued

ASHFORD John Daniel	Alice Springs
KERR Donald John	Adelaide
MAREL Edmund Stuart	Orana
JACOB Russell Noel	Albury/Corowa

Diamond Distance

FORD Darren Kevin	Sunraysia
GRYLLS Peter Andrew	Sunraysia
BELLAIR John Terence	Geelong
ASHFORD John Daniel	Alice Springs

Diamond C

ROCK Warren Clive	Beverley
KERR Donald John	Adelaide

Claims for all badges and certificates to:

FAI Certificates Officer:

Beryl Hartley

106 Meryula Street, 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:

Gary Hollands

92 Grange Road, Westbourne Park SA 5041

Ph: 08 8230 5722 (w), 08 8271 2020 (h)

Fax: 08 8230 4428

Email: Gary.Hollands@adelaide.on.net



Australia

WA Hill Flyers Autumn Fly-In

15-16 April 2000

Social event open to all hang glider & paraglider pilots. Hill launch flying from our sites within 100km of Perth. FAI bronze badge tasks will be set. More details will be published on the HGAWA message bank 08 9487 3258 during the week before the event, or contact David Longman on 08 9385 9469.

"Flatter than the Flatlands" Birchip 2000

21-25 April 2000 – Easter holidays

Birchip, VIC. The Flatter than the Flatlands hang gliding competition for next Easter, will be 5 long glorious days of flying due to ANZAC day falling on the day after Easter Monday. Apparently this is something to do with the eclipse. Entries open on 15 January 2000 (note this has changed from previous years). Further information & updates are available on the official website at: <www.users.bigpond.com/warwick.duncan>

Yea Adventure Fly-In

29-30 April 2000

Murrindindi Aviation Group Inc. is holding the 3rd Annual Yea Adventure Fly-In. Fly into Yea, VIC, on Sat. & join the aviators for some fun. Sat. night dinner & entertainment at the airfield Fire Station Hall. Sunday we will be doing more local flying to some of the 10 airfields in our area. Food & accom. available both days. For more info call John Norman ph: 03 57972972 or Peter McLean ph: 03 57972159.

Bright Fly-In

5-6 May 2000

Held during the Bright Autumn Festival in north east Victoria. There will be BBQs on both days with flying demonstrations by various aircraft plus a Fly-in Dinner to be held on Saturday night at Noonameena Lodge (all welcome) with various prizes. Come along & show your flying style. For more details contact Don Walpole 03 57535250 or Steve Ruffels 03 57501174.

WA Hill Flyers Winter Fly-In

17-18 June 2000

Social event open to all hang glider & paraglider pilots. Hill launch flying from our sites within 100km of Perth. FAI bronze badge tasks will be set. More details will be published on the HGAWA message bank 08 9487 3258 during the week before the event, or contact David Longman on 08 9385 9469.

Eungella Hang Gliding Comp

25-30 September 2000

Remember the good old days of Eungella of old? We are hoping to have the same once again. Pilot rating: Int & Adv. GPS or camera turnpoint. Nomination fee \$100. For further information call Ethel on 0427 831797. For accommodation call the Chalet on 07 495854509.

Australia continued

Corryong Cup

20-28 January 2001

Registration & practice day Saturday 20th.

Registration & start day Sunday 21st. Last competition day Saturday 28th.

Overseas

German Open 2000

29 July - 6 August 2000

Kössen, Tyrol, Austria. This event will be officially registered as a FAI Cat 2 event & will count for the world ranking list. The sporting organisation will be managed by the DHV League, with Lukas Etz acting as sporting director. The overall event organisation will be in the hands of the local Austrian Kiting Club (the oldest hang gliding club in the world by the way) & the Kössen Hang Gliding School. The entry fee can be kept as low as DM200, including films, maps & transport

to take-off, because of potential support by the Tyrolean Government, the Kössen Council & tourist management as well as proper sponsorship by Austrian Airlines & major local banks. We hope that many international hang gliding pilots take the opportunity to enter the German Open 2000, exactly 25 years after the 1st (unofficial) World Championship in hang gliding which took place in Kössen in 1975. See you in Kössen! For further information & preliminary entries please email <Lukas.Etz@t-online.de> or <fly.koessen@tirol.com>.

Women's Hang Gliding Worlds

18-30 June 2000

Greece. Contact HGFA office on ph: 02 69472888.

More details on the webpage at: www.pwca.org/

Red Bull Speedrun 2000

20-21 June 2000 (training days)

22-24 June 2000 (competition)

Cross Country Magazine called the Red Bull Speedrun 1999 "the best (hang gliding) event of the year". A combination of two competitions, the Streif Downhill & the Parallel Speedrun, will determine the Red Bull Speed Master 2000. The Streif Downhill is a speed glide along the ski slope known for the annual alpine ski World Cup Race. This competition features 11 mandatory gates, 5 of which are low flight gates where some part of the pilot or glider has to pass lower than the tips of the poles (which can be as close to the ground as 4m). In the Parallel Speedrun two pilots launch at the same time off two exactly parallel ramps & fly around two buoys, set slightly higher than the launch. Spectators are able to watch the entire flight from the starting area. The very fast & very brief flight ends in a landing right next to, but slightly higher than, the launch. The prize money for the entire event will

Overseas continued

be a minimum of US\$12,000, but our aim is to double it. The event will be covered by TV (in 1999, we broadcasted over 60 hours on TV & cable stations around the world) & will feature great side events for spectators & pilots alike. The field is limited to only 32 of the world's top raking pilots, so get in touch with us ASAP. Ph: +43 5356 73736, fax: +43 5356 625184, email: <info@redbullspeedrun.com> or you can register online at: <www.redbullspeedrun.com>. Entry fee: US\$250 before April 1, after that US\$300 (fully refundable until 30 days prior to the event).

Hang Gliding Pre-World Championship (Test Event for World Air Games 2001)

25 June - 8 July 2000

Algodonales, Andalucia, España. The test competitions 2000 are intended as a preparation for the WAG 2001 as well as the 2001 World Championships. We guarantee a very pleasant stay in a region which is renowned for its tourism interest, food (neighbouring the land of Sherry wines), folklore & enjoyable character of its people. Events hosted in Algodonales (Cadiz), 90km ESE from Seville, are Pre-World Hang Gliding Championships in Class I & Class II. Entry fee: EU300. Official entry forms (available from your national sporting federation) must be completed & submitted to the Real Federacion Aeronautica Española no later than 1 March. Entries received after this date may be accepted if there are vacancies, with a late entry fee of EU50 per person. There will be a max. of 12 pilots per nation. Contact information for this event: Real Federacion Aeronautica Española, Carretera de La Fortuna, s/n 28044 Madrid; ph: +34 91 508 2950/508 5480; fax: +34 91 511 0310; email <rfae@mad.servicom.es>.

Paragliding Pre-Worlds

18-24 June 2000

Granada, Spain. Team selection will follow the Manilla Comp. 12 pilots per nation. Contact information for this event: Real Federacion Aeronautica Española, Carretera de La Fortuna, s/n 28044 Madrid; ph: +34 91 508 2950 / 508 5480; fax: +34 91 511 0310; email: <rfae@mad.servicom.es>.

Under 21s Paragliding Championship

23 to 30 August 2000

Pole Espoir, France. If you have a competition licence, have participated in at least four competitions & are interested in participating, we will attend to board, lodging, transport & other costs, you only have to pay for the trip over. Competitors under 18 must be accompanied by a tutor. Note that the offer concerning board & lodging is only good for competitors, not tutors. If you have any questions you can contact us at the following postal or email addresses: Pole Espoir Parapente, Lycee Andre Honnorat, 04400 Barcelonnette, France, email <bernard.giacometti@free.fr>.

Watch My Hips!

or how to get a picture of your bum on a cover page

JIRI STIPEK

Ever since the picture of me cranking my VT at Flinders appeared on the cover of the February issue, I've been asked a number of questions. To save my breath I decided to write about it once, for everyone.

The questions belonged in two categories:

a) *How was it done?*

b) *Why is the print of such a poor quality?*

I'll start with the quality. The picture in question was never meant to be published – at least not at this size! A few months ago AG/Skysailor asked me to supply some photos from my collection. I gladly obliged and sent the required. With the other pics I also sent a low resolution test print made at some stage of computer editing of this photo, and added a comment saying something to the effect: "Sorry, you've missed out on this one as it has just been used on the cover of APN!" To my surprise it appeared on the cover of AG/Skysailor as well. To the credit of the editor, the quality is actually GOOD considering the material used. Now to the other category: how was the photo taken? In short, with great difficulties. It certainly doesn't belong in the category "take a shot, then have it developed and printed." Sophisticated photo equipment has been used, and a great deal of computer editing took place before the picture took its present form.

The basic idea was simple enough: hang a camera under your harness, perform a wingover and snap. Only those who have tried this will know how many obstacles are lurking in the way. First, a choice of lens. It had to be an ultra wide-angle fish-eye lens, as for stability's sake it had to be very close to my bottom. These things are not cheap and they are not indestructible either. One has to be very determined to perform this type of flying with about \$2,000 worth of fragile goods hanging down from the harness.

I had to design a special pod for my Minolta 500I SLR camera, which had an added radio remote control for the occasion. The whole thing was suspended on four 1.5m long fishing lines tied to the corners of the bottom plate of my harness. As it wasn't possible to take off with the gadget in position, I had to develop a method of lowering it in flight. Simple as it sounds, it happened to be one of the worst problems. A few hours of trying with a dummy camera eventually produced a satisfactory result.

Another drama was exposure. The photo was going to be taken against a strong backlight, and the amount of light was going to change with every picture. I decided to use an automatic exposure with back-light compensation. It turned out to be a good choice, as almost half of the pics were reasonably well exposed. But in accordance with



The February cover: Jiri's photo was chosen because it was the best free-flying shot available at the time. Being a small print, the quality of the enlargement is poor, yet I opted for the colourful posterised look of Jiri's shot over nothing at all – Please send in more large prints or transparencies (slides) for cover shots! The Production Editor

Murphy's law, all the well exposed ones had awful composition.

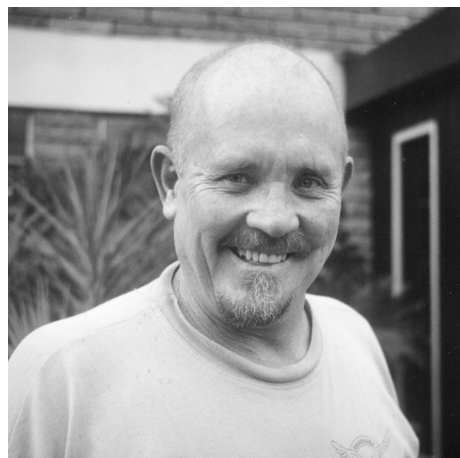
So, with all the equipment sorted out, I took off from Flinders ramp, lowered my setup without incident and started the show. I was aware that the camera, despite all my efforts, was swinging wildly. I tried hard to snap pictures at the right moments. I made two flights and used two rolls of 36 frame film. Seventy-two shots altogether... and guess what? None of them lived up to my expectations!

After a long and careful sifting through of the negatives I finally found two which, put together, could give me what I wanted. One was almost it – but my legs were savagely amputated. The other one was a shot in the same direction, but only my legs were visible on the left-hand side of the frame. Both were, of course, desperately underexposed. A concept started to take shape: I scanned both negatives and opened them in Adobe PhotoImpact editing software. Using the first photo as a base, I stitched to the left of it the landscape and legs from the second picture. The legs didn't fit precisely, so they had to be cut, moved and rotated until the result looked life-like.

Now I had to deal with the black corners left by the fish-eye lens. A bit of cloning produced some bushes and lawn, as good as real. Then I replaced the ugly grey sky with a blue diagonal gradient fill. The next step was removing the suspension lines, which were surprisingly prominent in the original photos. A great effort was required to deal with the underexposure. Almost each area of the picture had to be selected in turn, and the colour saturation brightness and contrast modified. Some four hours after scanning the negatives the picture was ready for printing. Easy? Well, I'm not going to go through all that again...



HGFA Operations Manager's



Firstly, a reminder to instructors of the instructor clinic planned for May in the Byron Bay area. Many existing instructors will need to attend this one to be able to maintain their qualifications. This "clinic" will concentrate more on sharing training techniques rather than the compliance focus of some past conferences.

Dust Devils, Fires and Tumbles

A report was received recently from a pilot whose hang glider tumbled after flying into a dust devil (see accident following reports). The pilot involved asked about similar occurrences, and I could find only a few reported tumbles over past years. There is no doubt that flying into a dust devil is extremely dangerous. I have heard it said that if there is any sign of dust it should be avoided.

I had a frightening experience myself whilst hang gliding west of Manilla last December. Late in the day I was at about 2,000 agl and decided that a burning paddock nearby might generate some lift. On a stable day once before I had managed to stay above a smouldering fire for a half hour or so, and though I came down feeling like a smoked salmon I thought that soaring fires was feasible. As I approached this time I noticed that the farmer had not long lit the stubble and it was flaming pretty well. Immediately I entered the smoke the glider rolled to a ninety degree bank and I basically did a hand stand up the side wire for what seemed like an eternity (probably about three seconds) while the glider decided whether it would fall on its back or stabilise. Luckily for me it stabilised. I hung on with white knuckles through some very rough air and left the area as quickly as I could. Scary stuff; I will never fly above a

raging fire again. Avoiding dusties (and raging fires) is certainly the best policy.

Competitions and Risk Taking

There is no doubt that when competing, pilots tend to push the bounds of safety for the sake of a few points. Most commonly this is in not carrying out a proper circuit prior to landing. Often a pilot will set out to make it into the furthest paddock he can to maximise his score. This can, and has, led to pilots hitting unseen powerlines, or suffering injury on landing because of an inadequate circuit. Another area where safety goes out the window is overflying areas where there are inadequate landings, risking injury for the sake of making the task. This has led to more than one tree landing.

Towing Accident

Visiting Dutch pilot Mike Nooy suffered serious head injuries following a lockout during the hang gliding Nationals at Hay. Last reports are that he is now in rehabilitation and making a slow, though steady, recovery. The lockout occurred when he launched into a strong crosswind. Following the accident, James Freeman has written an excellent article on avoiding lockouts, which can be found in this issue of AG/Skysailor.

Accident Reports

No.1

<i>Pilot:</i>	Advanced hang glider pilot
<i>Experience:</i>	570 hours
<i>Glider:</i>	High performance hang glider
<i>Aircraft damage:</i>	Broken left upright, bent basebar
<i>Weather:</i>	5-10 knot winds, light-moderate turbulence
<i>Location:</i>	Inland tow site
<i>Pilot injury:</i>	Broken right humerus

Description (in the words of the pilot):

I was towed to 1200ft (all altitudes agl) through light to moderate thermic activity; didn't find much, circling in a few not-quite-zeros and drifting back over the launch end of the paddock. Spotting a dust-devil in an adjacent paddock I headed over to it. The dusty was about 2 metres inner diameter, only visible close to the ground (maybe 2-3ft, but consider I was looking at it from

the top) and rotating counter-clockwise. Once above it, at 800ft, I did a left-hand circle in some thermic turbulence, then adjusted my turn direction to be against the rotation of the dusty and completed another one and a half circles in moderate thermic turbulence, losing little height. At this point I was at 700 to 800ft, flying at maybe 50km/h, VG full off, harness still open, mild right bank, having encountered nothing but mild, normal conditions. I hit a little up-bump, followed by strong acceleration downwards (stronger than free-fall), lasting perhaps two seconds. The glider rolled 180 degrees over the left wing, without, as far as I can remember, changing its pitch angle very much. This is probably when I broke or at least bent my left upright. I found myself lying on my back, looking at the sky. It took me maybe a second to take the decision to throw the chest-mounted 'chute, a six months old LARA 250. I had two unsuccessful grabs for the handle, which surprised me, since I regularly practice finding it in flight. At this point the glider, which had been falling smoothly, started to buck fairly violently. My next grab found the handle and I threw the reserve through the rear lower (well... normally lower) wires straight up. Almost immediately the glider pitched upright again (can't remember if forwards or backwards), smacking my camelbak into the keel, so that I descended in a cloud of water for a moment. I grabbed the basebar again, trying to fly the glider. After a few seconds I realised this wasn't happening, and looked around, unsure if the reserve had opened. I remember seeing the filled, small looking red canopy to my right. I had practised the throwing sequence many times, but hadn't actually gone through the next step thoroughly enough. Instead of climbing into the A-frame, I just got upright, noticing that my left down tube was bent or broken. I gave a short transmission on the radio to alert the others to my situation. The sink rate seemed to be oscillating quite a bit. Later I was told that the canopy actually looked quite stable, while the glider was yawing around, trying to fly. I waited for the impact, the glider being pitched down by the 'chute bridle at about 30 degrees. Deciding to try and flare the glider instead of climbing into the A-frame was probably what broke my right arm! After hitting the ground I found myself

Report

with a broken right humerus below the glider, which seemingly only sustained a bent base bar and a broken left down tube.

Comments (also by the pilot):

I had rehearsed many times how to grab and throw the reserve, but wasn't sufficiently prepared for the descent under canopy. The 'chute's manufacturer told me that out of 400 reported deployments I am the first with a broken arm.

No.2

Pilot: Advanced paraglider pilot
Experience: 370 hours
Glider: DHV 2 rated paraglider
Harness Make: Skyline, "System X" back protection
Aircraft damage: Broken speed bar line
Weather: Light wind and turbulence
Location: Inland XC
Pilot injury: Minor compression injury to vertebra

Description (in the words of the pilot):

In a competition, near cloudbase, the cloud was sucking, so I pulled big ears and pushed full speed bar. I was still going up, so let off the speed bar and pulled two line big ears (out of three A lines). This gave me a small rate of descent and allowed me to fly to near the edge of the cloud. I pumped both ears at the same time and the wing felt a bit strange, as if in turbulence. This struck me as strange, because the conditions had been so smooth all day. I damped the perceived turbulence with a little brake and suddenly the wing shot forward to well below the horizon. I fell through the lines and some wrapped around my leg. The wing cravatted and began spinning, winding up the risers above me. I grabbed them and held them apart, then tried to spin around to untwist them, but they twisted back up even more. So I threw the parachute. The wing went round it once or twice before I could pull the tip in. I grabbed the material but it ripped out of my hand. I was able to keep it within about one metre of me by holding the lines. I tried to get my hook-knife out of my pocket to cut the lines from my leg, but didn't have it. So with my leg strung up I was unable to do a parachute landing roll and flopped from one leg onto my backside, hitting at 4.5 m/s.

Comments (also by the pilot):

I hadn't recognised the stall – there was no feeling of falling backwards. I'm at the top of the weight range and hadn't realised how close to the stall point I was with two-line Big Ears. I've used them before. I should have B-lined in the first place, or pumped the big ears out in a couple of steps. Big ears stay in on this glider, until pumped out.

No.3

Pilot: Advanced paraglider pilot
Experience: 250 hours
Glider: DHV 2/3 rated paraglider
Aircraft damage: Nil
Weather: Moderate wind and turbulence
Location: Coastal XC (in tropics)
Pilot injury: Winded, bruising and minor soft tissue damage

Description:

Whilst thermalling in punchy thermals; pilot noticed loss of pressure in left-hand brake and glider began to turn. Pilot weight shifted right and applied some brake, also on the right. The glider was still turning a little, and as the pilot pumped the left brake to re-inflate the left-hand wing and as the left-hand inflated, the right-hand wing collapsed. A 360 ensued as the pilot went through the same process with the other wing. The canopy seemed to come out and then the left-hand wing collapsed again. He was not prepared for this and did three rotations before again getting control. After a second of calm the glider went negative and the pilot began to rotate below the glider in the opposite direction; he grabbed the D risers and stalled the glider. As it began to come out of the stall and untwisted just above the ground the pilot took a couple of raps on the brakes, but before he could use them the glider, which was still surging and fully stalled, hit the ground.

Comments:

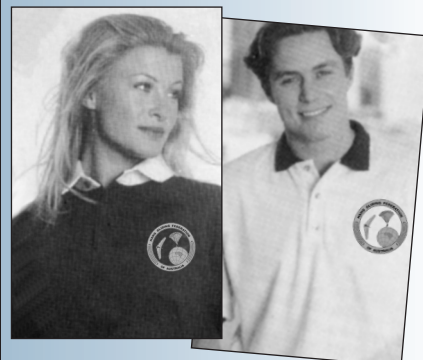
The pilot stated that though strong turbulence initiated the collapse, he did not realise that the glider had gone parachutal. He did not deploy the reserve as the glider kept coming out of the collapse and he was above a small village with powerlines.

**Fly safely,
Craig Worth**

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Letters to the Editors



The following is an edited transcript from a letter we received from a visiting Englishman recently. I would like to share it with you, as I believe it captures some of the essence of gliding. Peter was taught to fly at Caboolture and spent some time in Australia working as a doctor at the local hospital before moving on. His roster permitted him to fly on Fridays as is evident from his letter. The letter was sent from Kabul in Afghanistan on 12 October 1999. The aircraft he refers to is our club's I.S. 29, GPO. I think we got to him!

To everyone who flies on Friday

► Sorry for not having written sooner, I was busy scraping up enough cash in England to stay afloat and then came here. Words cannot express how much I miss flying on Friday at Caboolture. Since I soloed, every morning is different. I don't start the day wondering if it will be sunny or warm but look around for the chance of a thermal. My whole life has changed, I think, by the flying and companionship of the club on Fridays. No longer do I think of the weekend but of Friday. I miss being strapped into the "29" and feeling the pull of the cable and then all around silence and total freedom.

Although I didn't gain my Silver C I can list my three greatest accomplishments in order – One, not landing with the wheel up; two, not outlanding in Caboolture shire; and three, an eternally memorable four-hour flight in the "29" when I really thought it was me who had grown wings.

Working here is so completely different from Australia. It is so difficult to achieve anything with the maniac authorities who have no interest in the patients and care only for the war that goes on a few miles up the road. The Taliban/Afghan authorities care so little for women and children that they would prefer to see them die. A couple of weeks ago a Taleb, married to a doctor just behind our office, came back, threw petrol on her and burnt her to death. But it means nothing to them. It is just normal, so there's no point in trying to argue against it.

I am medical co-ordinator for Medicines Sans Frontières (Doctors without Borders) who I used to work for in Africa. Although I have quite an amount of authority, it is just so difficult to do any work. Nevertheless it is good to work in French again and I enjoy the diversity of the Europeans I work with. In

general, I am happy if a little overtired and stressed. Thinking of flying at Caboolture is one of my greatest pleasures. I can escape, if only temporarily. I think also of the comradeship and smile. Best wishes, Peter.

Richard Friday, Caboolture QLD

Thank you

► A big thank you to all the glider pilots I met during a short visit to Australia in February for their hospitality and friendship. Special thanks to the Hunter Valley, Bathurst and Southern Cross clubs for the enjoyable flying experiences. Hopefully, it won't be too long before I return.

Michael Abbott, Chester, UK

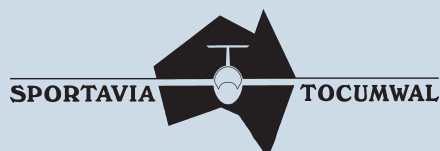
A new name

► Putting aside the question of the suitability of the combined publication, I would add my support to Martin Simons when he suggests a new name should be sought for the magazine. However, there is obviously a problem in getting something which is acceptable to all the sport interests involved, but I believe that as far as GFA members are concerned the current title is not suitable.

I was surprised that Martin says that when he was Editor of the real AG he was uncomfortable with the name Australian Gliding, as, in fact, it was universally referred to as AG. You couldn't get anything much easier than that. In fact in March 1969 the new cover design for the magazine used AG as its sole title, and as Editor at the time I cannot recall one objection.

It is noteworthy that Australian Geographic also refers to itself in editorial material as AG but uses its full name on the cover.

Peter Killmier, Warradale SA



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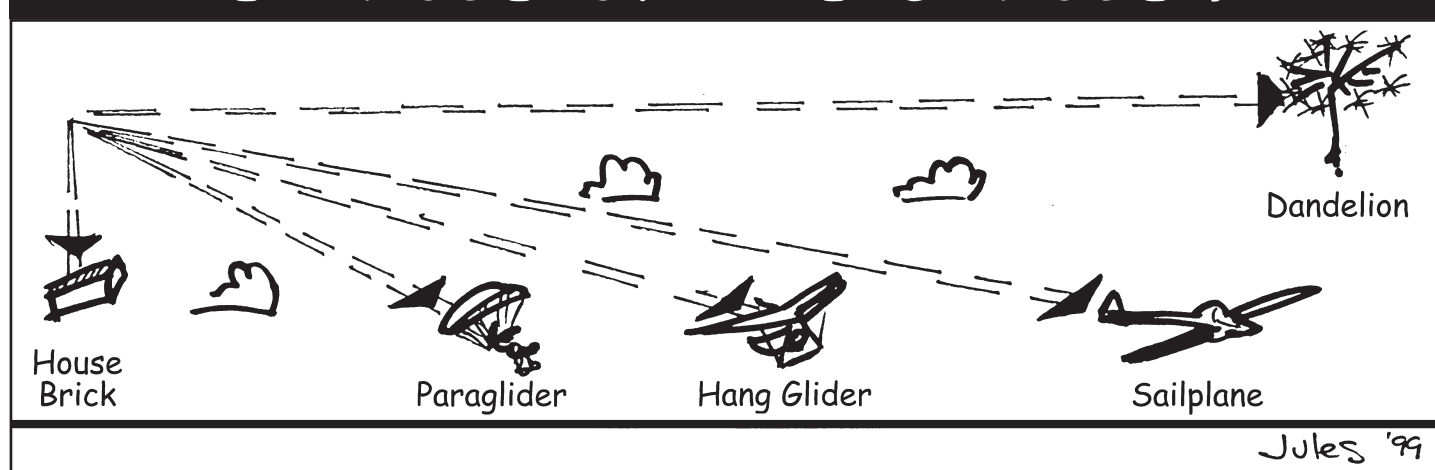
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THE ANGLE OF THE DANGLE by Jules Makk



I wonder what that big tower on the hill is for?

RUSS JACOB *Albury Corowa Gliding Club*

The day started late with the first tentative wisps of cu appearing at about 1:00pm. I loaded the Mosquito and started to get my head around the 300km task ahead, while waiting for my turn to launch.

Considering my task of Temora–Yerong Creek–Leeton, and with the rest of the fleet heading in the other directions, I began to wonder what did they know that I didn't.

An uneventful launch and I was off, and around the first turnpoint Yerong Creek. It was looking pretty ordinary on my next leg, and still worse my mate Malcolm, who was ahead of me, radioed that conditions were not as they should be. An interesting point begins to become more relevant to me – Malcolm is also my nominated crew, and he's struggling.

By the time I reached Narrandera grey crud had encroached on my source of thermals, and the ground was in full shadow. Out to the north and to the east the ground was in full sunshine, and the few remaining gliders in the area were heading off at VNE for home, while this mug was struggling on, more or less into the crud.

Leeton finally turned behind me, and I headed for a handsome cu about eight kilometres away, on the final leg home, with just enough height to safely clear a small range of hills.

The handsome cu took on a rather miserable aura as it spat me out, with just enough height to set up a circuit and a turn on to base leg, over the only farmhouse in sight.

The farmhouse had a car in the carport and looked more or less occupied, even though there was no washing on the line. A ute was making its way around the next paddock so things weren't looking too bad.

Onto final and a half reasonable landing, I pushed MOB on my GPS and set off for a cold beer and some congenial conversation – feeling a little guilty that poor old Malcolm, would have to swelter in my old Holden on his way to retrieve me.

I'd been in radio contact with Malcolm, but when I landed a small hill shielded my

transmissions, so there was no chance of giving him my location by radio.

Malcolm had his bright shiny new CDMA mobile (which is reputed to work in the bush) turned on most of the time, but that was no good to me. My digital wouldn't work out there, even if I had had it with me.

I wondered what that big tower on the hill was for.

The house was abandoned, and the car I saw in the carport turned out to be a "Hillman Husky" (a bit of a nostalgia trip for us old blokes) that was so old the tyres had perished to almost nothing. So I climbed the tankstand and had a gander for the next habitable abode.

A group of pepper trees with a protruding roof appeared as if a mirage through the heat, the only hopeful sign of habitation, and only about five kilometres away. Lucky me.

Stubble, punctuated by numerous fences seemed to go on forever, and finally the pepper trees with the roof, while not a mirage, were no more helpful as far as a friendly farmer with a beer fridge was concerned.

So up the dam bank for yet another gander. A farm house, a very long way off, seemed the only hope for that cold beer.

Sweltering in my old Holden was becoming a more luxurious thought, as I climbed yet another fence. Any thought of feeling sorry for Malcolm had long gone.

Still more stubble and fences...

Two thoughts crossed my, by now slowly functioning, mind that most farmers head off on holidays soon after harvest, and why are there so many empty farmhouses? Don't these people have any regard for outlanding glider pilots?

My GPS said 11km to the Mosquito, when I first spotted the sprinkler on the back lawn of a house. I walked straight through it while the bemused lady at the window watched on.

The farmer's (Ray) son was yakking on the phone, but I could use his mobile to ring in if I liked, "...yeah, the big tower on the hill right next to your glider is a mobile cell. Yeah, I was over there about the time you landed, looki-

ng at my sheep. I'm surprised I didn't see you, maybe you should have a horn on the glider."

Things were not going well. I'd been there over an hour and while the conversation was congenial, I still hadn't been offered a beer, only water.

Maybe he's a teetotaler. Perhaps all the stories from other outlanded glider pilots being offered cold beers were wrong, Ray certainly looked like he could handle a schooner or two.

"Is your vehicle a four-wheel drive? It looks like its going to rain and you won't get into that paddock if it's wet." Yet another glass of water was proffered.

A thought crossed my mind, that I should stop drinking the water, I might be totally "topped up" when Ray finally offered me a beer and I wouldn't be able to drink it.

And so, many glasses of water later, when we finally pulled up next to the Mosquito it started to rain. How could this happen to such a law-abiding person – two empty farmhouses, a dirty great mobile tower you could hang a 747 on, no radio, no mobile, no beer, 11km of stubble and fences, farmers who don't look at the sky, and now rain. Was there anything else you could do for me Mr Murphy?

In retrospect, a very bad mistake invoking Mr Murphy's wrath. Readers will also note my new found respect for said individual by using the title Mr.

A very fast de-rig assisted by Ray and his son, and we turned onto the main road at 9:00pm. Things were starting to look up at last, until we looked down at the LPG gauge, "uses a fair bit of gas," says Malcolm.

"Can you get fuel at Ardlethan?"

"No but you can at Narrandera, and they've got a truckstop where you can buy me a feed," says Malcolm, as we headed off 40km in the opposite direction, wondering what the next instalment of fate would be.

It was about that time that we found that high beam had become a feature of the past.

After a meal and all fuelled up we headed for home. After several aborted attempts on my part to get us lost, we finally parked the car and trailer at the airfield, and headed for town in Malcolm's old "One Tonner".

I remember thinking "not much else can go wrong now", as we got out of the car in front of the hotel, when Malcolm asked, "Have you got the keys to the room?"

Just by way of a contrast to my miserable saga, a Canberra pilot outlanded on the same day, was picked up by three lovely young ladies on horseback and accompanied to the local pub to await his retrieve.

And I'll bet there wasn't a mobile cell for miles.



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Xtralite 147 adv, good condition, blue & yellow undersurface, flies excellently, \$1,800. Ph: Andrew 07 38922753; 0411 422926.

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Moyes SX5 or **CXS5**. Ph: Paul 02 49487759.

Paragliders & Equipment

New South Wales

Edel Energy DHV 3, pilot weight 55-75kg, white & light blue, 50 hrs, good condition, \$1,000. Ph: Seong 0414 695581.

Vision Wing NCIS rstd, blue & white, 70 hrs airtime, 60-70kg. Captain harness (small), only used twice, blue & white, excellent condition. UV bag & backpack (small). Helmet, blue & black, only used thrice, excellent condition. Will sell separately, \$3,000 ono.

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Edel Quantum (M) DHV 1-2, pilot weight 55-90kg, 3 hrs! Mist green/gold logo, \$2,300. Ph: 03 98770376; email <russell.alsop@adventist.org.sb>

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Other

Free-Flying Magazines

Cross Country Magazine subscriptions Carol Binder 0417 311360.

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Ads for **AUSTRALIAN GLIDING** can be placed with the GFA Advertising Contact Henk Meertens, PO Box 352, Frenchs Forest NSW 1640, Fax: 02 9453 0777, Email: <hkmxor@msn.com.au>.

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SAILPLANE BUILDER: Monthly magazine of the Sailplane Homebuilders Association. \$US29 (airmail \$US46) to 21100 Angel St, Tehachapi CA 93561 USA.

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GLIDING KIWI: Official bi-monthly publication of the New Zealand Gliding Association, edited by John Roake. Specialises in up-to-date overviews of the world soaring scene and Omarama the NZ base for many of the current World records. \$A44 annually (Send A\$25 for 12 months back issues). New Zealand Gliding Kiwi, Private Bag, Tauranga, New Zealand.

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20 April 2000

At 19:30 at the Uniting Church Hall,
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AGM (venue t.b.a.)

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HGFA Addresses



All correspondence, including changes of address, membership renewals, short term memberships, rating forms and other administrative matters should be sent to:

Hang Gliding Federation of Australia

Executive Director: *Ian Jarman*
Administration: *Margaret Crane*
PO Box 558, Tumut NSW 2720,
ph: 02 69472888, fax: 02 69474328,
email: <hgfa@tpgi.com.au>

Board Members:

Rohan Grant

188 Bathurst St, Hobart TAS 7000,
ph: 03 62334405 (h), fax: 03 62243598.

Rohan Holtkamp

RMB 236B Western Hwy, Trawalla VIC
3373, ph/fax: 03 53492845, 014 678734,
email: <dynamic@netconnect.com.au>

Bill Moyes

173 Bronte Rd, Waverley NSW 2024,
ph: 02 93875114, fax: 02 93693342.

Mark Plenderleith

School of Life Science, Qut GPO Box 2434 QLD
4001, ph: 07 38641477.

Philip Pritchard

PO Box 734, Beenleigh QLD 4207,
ph: 0418 761193.

John Reynoldson

68 Teddington Rd, Hampton VIC 3188,
ph: 03 95970527, fax: 03 95981302.

Jeremy Torr

134 Kars St, Frankston VIC 3199,
ph: 03 97705770.

Brian Webb

PO Box 238, Bright VIC 3741.

Michael Zupanc (CIVL Delegate)

6 Sibyl Street, Southport QLD 4215,
ph: 07 55325895 (h), 0408 662328;
email: <zupy@ozemail.com.au>

Operations Manager: *Craig Worth*
(Safety & Operations Committee, Pilot
Development & Training Committee)
PO Box 71, Hallidays Point NSW 2430,
ph/fax: 02 65592713, 0418 657419,
email: <hfgaops@midcoast.com.au>

Microlight Public Relations: *Paul Haines*
ph/fax: 02 42941031.

For information about site ratings, sites and
other local matters, contact the appropriate
state associations region or club.

States & Regions

ACT Hang Gliding and Paragliding Association

PO Box 3496, Manuka ACT 2603; Pres:
Belinda Head 02 62268400; Sec: Jim Kelley
02 62805605; Trs: Craig Hopkins 02 6286
2488 (h), SSO: Duncan Kelley 018 625091.
Meetings: 1st Tue/month 7:30pm, "Sky
Lounge" Yamba Sports Club, Phillip.

Hang Gliding Association of Western Australia

PO Box 82, South Perth WA 6151; Admin:
Graeme Wishart 08 94449505; PG Rep:
Julian McPherson 08 93881584 & David
Humphrey 0418 954176; HG Rep: Michael
Derry 08 92840750 (h) & Keith Lush 08
93673479 (h), 08 93679066 (w); Trike Rep:
Graham McDonald 08 93649226 (h), 0418
910841; Trs: Phil Wainwright 08 92424483.

NSW Hang Gliding Association

Sec: Steve Hocking, 19 Gladwood Gdns,
Double Bay NSW 2028, ph/fax: 02 93274025,
email: <nswghga@s054.aone.net.au>.

North Queensland

Hang Gliding Association

12 Van Eldik Ave, Andergrove QLD 4740;
Pres: Graeme Beplate 07 49552913, fax: 07
49555122, email: <sitework@mackay.net.au>;
Sec: Ron Huxhagen 07 49552913.

South Australian

Hang Gliding Association

Pres: Stuart McClure 08 82973452; Sec:
Mark Tyminski PO Box 59, Hove SA 5048, ph:
08 83774570 (h), 08 84076621 (w), 08
84076628, <Mark_Tyminski@nag.national.
com.au>; Trs: Gary Stockton 08 82702910.

Tasmanian Hang Gliding Association

PO Box 163, South Hobart TAS 7004;
Pres: Brett Tooker 03 62503506; Sec/Trs/
State Co-ord: Stephen Bayley 0408 154156.

Victorian Hang Gliding

and Paragliding Association

PO Box 400, Prahran VIC 3181;
Pres: Phillip Campbell 03 53343034;
Sec: Andrew McKinnon 03 95631162;
SSO: Rob Van Der Klooster 03 52223019.

Clubs

NEW SOUTH WALES

Blue Mountains Hang Gliding Club Inc

Pres: Richard Lockhart 0418 130354,
<flytation@mailandnews.com>; Sec: Alan
Bond 02 98995351, 9 Finchley Pl, Glenhaven
NSW 2353; Trs: Dolores Sempredoni, SSO:
David Middleton 02 4736 2605; Newsletter:
David Phillips 02 9456 252, <dphi@ina.com.au>;
Meetings: Last Wed/month, 7:30pm at the
Blue Cattlelog Tavern, St. Clair.

Byron Bay Hang Gliding Club Inc

Pres: Andrew Polidano 02 66843510,
<andrew@byron-bay.com>; Contact: Shirley
Lake 02 6685 8147, <lois@linknet.
com.au>; SSO (PG): Brett 02 66876907.
Meetings: 1st Wed/month 7:30pm, Bangalow
Bowling Club.

Illawarra Hang Gliding Club Inc

Pres: Mark Ryan 0412 424 760; Sec: Tim
Causar 02 42948110, <timcau@ozemail.
com.au>; SSO: James Nathaniel 02 4262
7677, 0413 737077.

Kosciusko Alpine Paragliding Club

Pres: Roger Lilford 06 2815404 (h); Sec:
Lisa Ryrie 06 2359120, 06 2359060; SSO:
Heinz Gloor 02 64576019 (w), 02 64567171 (h).

Manilla SkySailors Club Inc

<http://gri.une.edu.au/mss>; Pres: Brian
Shepherd 02 67852182; Sec/Trs: Felix Burk-
hard 02 67751050, <felixb@xym.com.au>;
SSO (HG): Patrick Lenders 02 67783484;
SSO (PG): Godfrey Wenness 02 67856545,
Trikes: Willi Ewig 02 67697771.

Mid North Coast Hang Gliding Association

Pres: Lee Scott 02 65565265;
SSO: Dale Davis 02 65597716.

Newcastle Hang Gliding Club

Pres: Tascha McLellan 02 49278867 (h),
1800 653935 (w), <tascha.conrad@hunterlink.
net.au>; V-Pres: Jason Turner ph/fax: 02
49637070 (h), 0419 997196; Sec: Karl Kindl
02 49677711; Trs: Tony O'Connor 02 4952
9146, SSO: Coastal - Jason Turner ph/fax: 02
49637070 (h), 0419 997196, Inland -
John O'Donoghue 02 49549084. Meetings:
Last Wed/month, Souths Leagues Club.

Northern Beaches Hang Gliding Club Inc

Pres: John Clark 02 99972842 (h);
Sec: Mr Sandy Thomson, 80 Warringah Rd,
Narrabeena NSW 2099, ph: 02 99812019,
0419 250220, <planky@bigpond.com.au>;
SSO: Mike Eggleton 02 94517127, Forrest Park 02
94502674, Glenn Salmon 02 99180091.

Stanwell Park Hang Gliding and Paragliding Club

PO Box 258 Helensburgh NSW 2508;
Pres: Rob Lepre 02 42948694, <pepielepre@
one.net.au>; Sec: Angela Johnson 02 4268
3748; Trs: Joe Fussell 02 42943942; Events
Co-ord: Jules Sanderson 02 42943092;
Site Manager: Steve Pick 02 42944195.

University of NSW Hang Gliding Club

Pres: Daniel Faber 02 93150727, <dfaber@
kensocoll.unsw.edu.au>; Sec: Jon Ingles 02
93150571, <jingles@kensocoll.unsw.edu.au>;
www.vision.net.au/~gbeng/Hang_Gliding.html

QUEENSLAND

Cairns Hang Gliding Club

Pres: Ian Graham 07 40954466; Vice-Pres:
Russell Krautz 07 40541085; Sec: Lance
Keough 07 40912117, 31 Holm St, Atherton
QLD 4883; Trs: Nev Akers 07 40532586 (h), 07
40512438 (w).

Canungra Hang Gliding Club Inc

Pres: P Beard 07 33487150; Vice-Pres:
Shauna Purser 07 66793404, <shaunapurser
@yahoo.com>; Sec: David Pearson
07 55437252; Trs: Fran Ning 07 55773260,
<ning@ausinfo.com.au>; SSO: Andrew
Horchner 07 38707709, 0412 807516,
<afactor@gil.com.au>.

Capricorn Skyriders Club Inc

Pres: Brian Hampson 079 226527;
Sec: Geoff Craig 079 923137;
Brian Smith 079 287958.

Conondale XC Flyers Club Inc

13 Cottman St, Buderim QLD 4556;
Pres: Bruce Crerar 07 54451897;
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Trs: Annie Crerar 07 54451897;
SSO (HG): John Blaine 07 54948779;
SSO (PG): Graham Sutherland 07 54935882.

Gladstone Hang Gliding Club Inc

16 Far St, Gladstone QLD 4680; Pres: Paul
Barry 07 49922865, <pbarry@tpgi.com.au>;
Sec/Trs: Natasha Atkinson 07 49726840,
16 Far St, Gladstone 4680; SSO: Geoff Craig
07 49923137, <gcraig@tpgi.com.au>.

Rainbow Social Flyers Club

PO Box 48, Rainbow Beach QLD 4581;
Contact: Kevin French 07 54863773;
PG SSO: Jonathan Allen 07 54748169.

South East Queensland Hang Gliding Club

Pres: Peter Beard 07 33487150,
<Peter_Beard@msn.com.au>

Sunshine Coast Hang Gliding Club

PO Box 227, Rainbow Beach QLD 4581;
Pres: Gary Allen 07 549440543; Vice-Pres:
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Whitsundays Hang Gliding Club

Pres: David Nash 07 49531817;
Sec: Ron Huxhagen 07 49552913, Fax:
07 49555122, <sitework@mackay.net.au>

VICTORIA

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SSO: Ted Remeika 015 841107; Rob van der
Klooster 03 52223019, <hrt@deakin.edu.au>;
PR: Warwick Spratt 03 52531096.
Meetings: 1st Fri/month, Bay View Hotel,
2 Mercer St, Geelong.

Eastern Hang Gliding Club

www.vhpa.org.au/Clubs/EHGCINFO.htm
Pres: Geoff Tozer 03 97583250 (h); Sec:
Andrew Medew 03 98227861, 16/25-29
Brougham St, Box Hill VIC 3128, <andrewm
@moranccomfort.com.au>; SSO: Peter
Batchelor 03 97353095 (h). Meetings: 3rd
Wed/mth, Montrose Town Centre Meeting
Room, Cnr Swansea Rd & Mt Dandenong
Tourist Rd, Montrose.

North East Victoria Hang Gliding Club Inc

Pres: Ted Jenkins 03 57551753; Sec:
Lisa Basler 03 57501252; Trs: Bill Graham
03 57501828; SSO: Geoff White 03 57501244.
Meetings: 1st Tue/ month, Alpine Hotel,
Bright; <www.home.aone.net.au/gilbert/
nevhc.htm>.

Sky High Paragliding Club

<skyhigh@vhpa.org.au>; Pres: Hakim Mentes
0412 617216; Vice-Pres: Carolyn Dennis
0417 515626; Sec: Fabrice Millet 03 95961321.
Meetings: 1st Wed/month 8pm, Retreat
Hotel, 226 Nicholson St, Abbotsford.

Southern Club

Contact: John Reynoldson 03 95970527.
Meetings: 1st Tue/month, Middle Park
Hotel, Canterbury Rd.

Southern Cross Paragliding Inc

Pres: Gary Clarkson 0419 319948.
Meetings: Last Wed/month.

Southern Trike Club

Pres: Mark Howard 03 97511480, 0418
533731, fax: 03 97511584; Vice-Pres: Dave
Wentworth; Sec: Ben De Jong; Trs: John
Amor. Meetings: 2nd Tue/month 8pm,
Jakes Nightclub, 23 Church St, Brighton.

Western Victorian Hang Gliding Club

Pres: Phillip Campbell 03 53343034; Vice-
Pres: Andrew Hume 03 93760907; Trs: Sandra
Holtkamp 03 53492845; Sec: Rachelle
Guy 03 98092974; SSO: Rohan Holtkamp
03 53492845. Meetings: Last Sat/month,
The Golden Age Hotel Beaufort.

WESTERN AUSTRALIA

Avon Valley Hang Gliding Club

Pres: David Drabble 08 93071816, <wescoast
@iinet.net.au>; Vice-Pres: Rob Stevenson 08
92211338; Sec: Stephen Hoeffs 08 95275782;
Trs: Michael Derry 08 92840750.

Cloudbase Paragliding Club Inc

Club message bank 08 9487 5253; <www.
cygnus.uwa.edu.au/~madmike/para
glid.html>; <cloudbase@paragliding.org>; Pres:
Dave Humphrey 08 9574 5440, 0418
954176, <paradive@avon.net.au>; Sec:
Michael Duffy 08 9382 3036, 0417 923741
<madmike@cygnus.uwa.edu.au>. Meetings:
Last Wed/month, 8pm at the Sportsman's
Association, Woodsome Rd, Mt Lawley.

South West Microlight Club

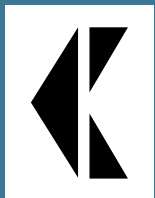
Pres: Brian Watts 0412 552363; Vice-Pres:
Don Wilson 08 97641007; Sec: Paul Coffey
08 97251161; CF: Brendan Watts 0408 949004.

WA Hill Flyers Club

Contact: Rick Williams 08 92943962 (h),
015 057961. Meetings: Last Thu/month
at 7:30pm at the Swan Districts Football
Club, Guildford Rd, Bassendean Oval.

Western Soarers Hang Gliding Club

Pres: Sam Blight 08 93363738; Trs: Nav
Brennan 08 93397991; Comp co-ordinators:
Gordon Marshall 08 94519969, Nav Brennan.



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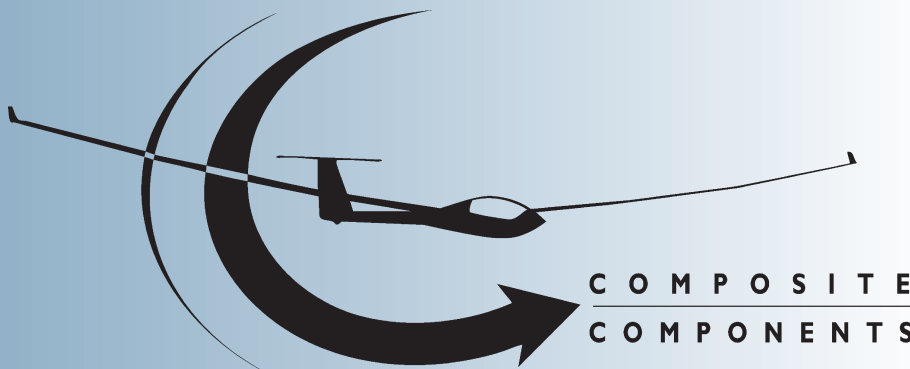
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