

# Gliding Australian SKYSAILOR

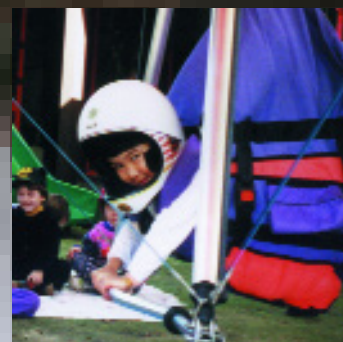
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that Bird?

The Maiden  
Flight

Promoting  
the Sport



# 50TH ANNIVERSARY GLIDING FEDERATION OF AUSTRALIA

## New South Wales Gliding Association

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# Paragliding State of Origin Series:

# 1998-1999

MARK PLENDERLEITH

A total of 55 paraglider pilots participated in this year's Paragliding State of Origin Series held in Manilla over two long weekends during the 98/99 flying season. The series is a joint initiative of the Canungra Hang Gliding Club and the Sydney Paragliding Club and is a state-based team event where low airtime pilots are encouraged to stretch their wings a little and fly those first few cross-country kilometres under the watchful eye of their more experienced compatriots.

The scoring utilised for the event is designed to encourage team flying with novice pilots scoring 3 points/XC km, intermediate pilots (with less than 100 hours airtime) getting 2 points/XC km and those advanced sky gods only 1 point/XC km. Now you don't have to be Bert Einstein to work out that this means that the further the more experience pilots can help the low airtime pilots to fly along the course, the better their team's score is going to be.

Round 1 was held over the first weekend in October, but unfortunately the conditions on both days were not really conducive to team flying, with fairly stable conditions making it very difficult to get away from the hill. Despite this nearly everyone had a good fly, although it sometimes got a little congested around launch and the Borah Basher was kept busy ferrying pilots back to launch for another go.

The first day was won by Enda Murphy who made the best of some fairly ordinary conditions and flew 48km, landing close to Bendemeer. Victorian legend Brian Webb (who was residing in Sydney at the time) was second, while Queenslander Kevin Chisholm and visiting Swede Per Pelin took advantage of their intermediate status to sneak into 3rd and 4th place respectively (and saved some face for the Queensland team). After all the landing forms had been received and appropriate penalties for late pin-in applied, NSW had got more of their team away and

won the day with an average team score of 11.7 points, ahead of the Queenslanders on 10.3 points.

Sunday turned out to be even more stable than the day before and even some of the advanced pilots struggled to get away. Those with enough patience and skill to stay in the air as those notorious 'Borah Sink Cycles' came through eventually managed to get over the back and put a few kilometres under their feet. The quality of the day is perhaps best indicated by the fact that Godfrey Wenness (who was to break the



Photos: Nicole Dillane

world open distance record just six weeks later) only managed 24.7km! However, the day was won by Canungra's Mitch Carter who landed just short of Godfrey, but whose intermediate rating gave him almost double the points of the local legend. Once again NSW managed to get a few more of their team away and won the day with a score of 13.9 points, compared to the Queenslanders' 11.8. So after the first two days of the 1999 Paragliding State of Origin Series the New South Wales led the series with 25.6 points over Queensland's 22.1 points. This first round was fairly unusual in that both teams' scores were dominated by the flights of the more advanced pilots (as a result of the unusually tricky conditions). Unfortunately what was otherwise a very successful weekend was marred by Dave Pearson (one of Canungra's intermediate pilots) crashing into the top of the mountain during an attempt to top land. I am pleased to say that Dave has made a rapid recovery from his not insignificant injuries and has just started flying again.

Round 2 was held over the first three days of the Easter holidays, but an upper level trough moved into the area on Good Friday and the subsequent rain curtailed any flying on the first day. Most people seemed happy enough to mellow out around town. In the afternoon JJ Bastion gave an excellent talk on the use of the GPS for turnpoint verification (which had been used in all three major paragliding competitions this year) and then everyone retired – to the bar. Saturday dawned fine and after a couple of hours of sun the road was dry enough for the hoards to ascend the mountain, and before long the sky was filled with gliders. In a clever strategic manoeuvre, the NSW team had arranged for their pilots to take the first Borah Basher ride to the top and then for a radiator hose to blow on the second trip when the Basher was full of Queenslanders. Most of the Queensland team watched helplessly as Enda Murphy dragged a bunch of other NSW pilots over the back and off towards the Boggabri Gap. When the Queenslanders finally got to launch there was  $\frac{8}{8}$  cloud cover and showers in the distance.

The day looked like it was over but remarkably Phil Hystek, Andrew Horchner and I managed to find a weak core and, somewhat to our own amazement, managed to climb out to 4,200ft asl at 4:00 in the afternoon. At the time we didn't know that the early gaggle of NSW pilots had just flopped over the back and landed, so we were fairly relaxed and revelled in the unusual conditions that would allow us to contribute more than just bomb-out points to the team

score. Andrew and I had been Phil's first students when he set up his business in SE Queensland seven years ago and it was really fun to be all flying together and helping each other along the way. We chatted on the radio, laughed about our student days and joked about how the total cloud cover and rain squalls would probably be considered a fairly good flying day in the UK! At the end of the flight I managed to scratch on a couple of extra kilometres to win the day and with five Queenslanders in the top six places the day went to the Queensland Cane Toads.

And so on the morning of the last day of competition the Queenslanders were on 30.7 points only just ahead of the Cockroaches on 30.3 points. Clearly the event was still wide open and the teams headed up to launch to decide the Paragliding State of Origin Series for this year. Although there was plenty of lift around early on in the day (allowing a few gaggles to get away), a large cumulus congestus started dominating the area around lunchtime and about an hour later the day more or less closed down. Meanwhile the gaggles of New South Welshmen and women were scratching their way west. Enda Murphy flew the furthest, getting close to Boggabri, but the day was won by Restricted pilot Doug Banks who did his first ever XC and helped put his team into an unassailable position.

The presentation was held in the Imperial Hotel on the Sunday night after a splendid meal provided by The Blue Pole Restaurant. In the individual event, the overall winner was Enda Murphy who clearly considered this victory as far more significant than either his win in this year's Nationals or his position at the top of the National Ladder. Top placed intermediate pilot was Canungra's Mitch Carter, while Ashley Bennett took out the top restricted place just ahead of Deirdre Skillen (a.k.a. Mrs Bennett) who was the top placed woman. However this event is all about team flying and so the last event of the evening was the presentation of the Paragliding State of Origin Perpetual Trophy to the NSW team captain Dave Worthington.



*On behalf of all the pilots who participated in this event a big thanks to Godfrey Wenness for providing the Mountain and all the advice; Colleen at the Imperial for bed, breakfasts, beer and briefings; Mark Mitsos (Sydney Paragliding Centre) and Phil Hystek (Silent Sky Sports) for turning up to support the event and contributing so much to its success; the Canungra Hang Gliding Club and the Sydney Paragliding Club for financial support. Complete results of this year's Paragliding State of Origin Series can be found at: [www.uq.net.au/~zzdcrook/psos/psoo/home.htm](http://www.uq.net.au/~zzdcrook/psos/psoo/home.htm) (which is also where details of next year's event will eventually be posted).*







# Where's that Bird?



Waiting for the clouds to lift at Horsham.

Photos: Sue Garlick

SUE GARLICK

When a glider pilot's thoughts soar skywards, and his eyes glaze at mythical white clouds that spell 'thermal' every which way, you know it's the silly – sorry – gliding season again.

As Boxing Day looms and the weather and the GPS monopolise the conversation, you know without a doubt that the Gliding Club of Victoria's annual safari is on again. This is gliding for the adventurous, but without the competition. The aim is simply to make sure that everyone gets there, safely. This year, the gliding safari's goal was to fly from Benalla to Wilpena Pound, in South Australia's Flinders Ranges, and back again. That's a mere 3,000 soaring and driving miles over two weeks. A tough call.

Still, I figured I had the right credentials. I fitted into the age range of 30 to 70 plus, and last year I even did my apprenticeship the hard way, as a crew member. So when the call came to join the safari led by the fearless Ron, affectionately known as "Bwana", I was ready, willing and able.

So it came to pass on Boxing Day, that members of the Gentlemen Pilot's Society a.k.a the 'GPS', met at Benalla, home base of the GCV, to prepare for departure. This year however, an important new group also emerged, Safari Crew Union Members, a.k.a 'SCUM'. With a united front, a shop steward, and a motto: "This is a holiday, not a route march" – they were definitely a group to watch with care.

Indeed on Day 1 it seemed that the cold, blustery weather favoured members of 'SCUM' rather than the 'GPS'. It was a salient reminder that even Bwana cannot control the elements, each day's destination is ultimately in the lap of the weather gods, and boy, can they be mean. Today was clearly meant to be a holiday. So a visit to the local winery for a lazy liquid lunch sounded like the perfect way to start the safari in style.

A generous glow of sunshine on Day 2 promised a flying start to the safari after all. A buzz of excitement filled the air as Horsham, a distance of 342km, was declared the day's destination. On a day when the weather could be summed up with the lament, "It's as weak as a wet weekend up here," it was hardly surprising that there were the odd mishaps. In the rush to arrive there first, one pilot fell from the sky muttering lamely to his unsympathetic crew, "I just fell into a hole."

He was followed shortly after by another unfortunate who fell from the sky in a gesture of sympathy, or so he claimed to his crew as they reluctantly de-rigged his glider.



'Bwana', a.k.a. Ron Grant.



Briefing and flight planning 'on the wing' at Arkapena.

Next morning the sky dawned clear and bright, and fortified by the safari tradition of a McDonalds breakfast in Horsham, Bwana declared, "It's going to be a boomer!" Those fatal words were a death-knell to Day 3. Within minutes, insidious clouds grew like topsy, the wind strengthened and the temperature plummeted. Yet glider pilots have patience a-plenty – after all they need it in bucket loads – and one and a half hours later their patience was rewarded as the sky slowly cleared and the gliders were finally up, up and away to Mildura, 256km to the north.

For the crews, however, negotiating their way through Australia's dusty wheat belt was not so easy. Around here all roads and towns are look-alikes with the requisite pub and wheat silos, and a short cut can lead to 'the middle of nowhere'. Except, that is, for Lascelles, where, at 4pm, a line of glider trailers and their crews were warmly welcomed by a line of three police cars just waiting to test us for drink driving. Such a pity we couldn't oblige.

No-one dared to predict a 'boomer' in Mildura on Day 4, much safer to announce a 'hotter' day, and send someone up 'to sniff the air'. We waited... and waited for the weather to heat up, but an inversion plus the dreaded scrub beyond Mildura put paid to more distant plans so we headed instead for Waikerie, a South Australian orange-growing town across the Murray River, 190km to the west.

By Day 5, the troops were restless to reach the Pound, 232km to the north-west, so when Arkapena (the strip at Wilpena Pound), was declared the day's goal, excitement bubbled as fast as the thermals. Soon we were heading past the historic river port of Morgan, and towards spinifex country with its deserted farmsteads and bare, sandy soil. Luckily, the softer hills in the distance promised easier flying around the town of Burra.

When some crews stopped in this historic mining town, Bwana did his darnedest to join them for coffee. In fact, he tried so hard he actually landed beside the road just outside Burra, but was foiled by his crew who arrived minutes later, quickly re-launched him and sent him off to Arkapena with strict instructions not to try that trick again.



Wilpena Pound.

Photo: Stuart Smith

For the crews, the hardest part was yet to come, 80km of unmade road from Orroroo to Hawker, all that dust just to cut off a corner! When crews finally made it to Arkapena, dusty and tired, the 'GPS' were running around like excited little boys, superlatives tumbling, "Perfect... Fantastic... Wonderful!" Last year, due to poor weather, the gliders had been left behind in nearby Spear Creek. This year, they'd finally flown in. With the imposing Rawnsley Bluff on one side and the setting sun on the other a little celebratory gin and tonic on the airfield was deemed a suitable way to toast the day's achievement.

Meanwhile, in the nearby camping park at Rawnsley Park, Bwana dragged the owner from his New Year revels and told him to, "Get the hell back and open up those cabins." Even the lack of available meals had left Bwana unfazed. In mid-air he had organised a shopping expedition en-route and the safari was able to celebrate the New Year in grand style. As the sun went down over the hill, platters of dips,

salads and fruits appeared, a barbecue sizzled and wine and beer flowed. It was a truly memorable New Year's Eve.

New Year's Day was a day to unwind and unpack. Beneath a dazzling blue sky, we found a shady tree by a waterhole in Bunyeroo Gorge, and there we picnicked, paddled, skimmed pebbles and tickled yabbies. This ancient place, dwarfed by the cliffs of the 500,000 million years old Bunyeroo and Brachina Gorges is just the spot to look for fossils and fossilised skeletons. All



The seabreeze front approaches Gawler.

this and not a single fly or mozzie – what price paradise?

Day 7 brought another day of sheer blue skies and shimmering heat. Whilst the ambitious declared long tasks varying from 750 to 1,000km other more hedonistic souls settled for some flight-seeing over the Pound, or a picnic under the native pines in the Sacred Canyon where the narrow gorge with its ochre drawings and aboriginal engravings always exert a peaceful, mystical presence.

Back at Arkapena things were not going quite as planned. Whilst over-convection and thunderstorms had foiled more adventurous pilots, another 'fell off' his map, becoming temporarily lost when his map ran out. No doubt about it, flying around here is definitely 'Awesome'.





## Where's that Bird?



Preparing for a long day at Arkapena/Rawnsley Buff.



G.C.V. Safari at Gawler.

Despite more heat and blue skies on Day 8, it was time to move on before our luck ran out, so Gawler, the Adelaide gliding field 315km to the south was declared the day's goal. For pilots it was another amazing day, as one grateful mortal rhapsodised, "Today, the goddess of weather opened her arms, took me to her bosom and up to 13,000ft." Others reported flying along a cloud street and a seabreeze front and soaring majestically over to Gawler at 13,000ft and 110 knots. Such is the magic of champagne gliding.

Crews had a pleasant journey too, with a meandering drive past neat country towns, golden brown hills of wheat and hay bales drying in the sun. Eventually we reached the Clare valley where acre upon acre of lush green vineyards led us past the Riesling trail to Gawler.

After a rest day in Adelaide, and with a seabreeze fast approaching, by the morning of Day 10 it was time to leave. What looked like a disappointing day in Gawler turned out to be a boomer past Blanchetown. Enough of a boomer to change the destination from

Waikerie to Mildura, a distance of 320km to the north-east. For some, however, it was initially a struggle to get anywhere at all. When one pilot blithely asked, "How are the thermals where you are?" The terse reply came quick and fast, "Aren't any." For others it was a problem to go anywhere without their beloved GPS. One fanatic was heard to complain bitterly "You mean I have to use a map?"

For crews, it was another hot and dry 40°C day at ground level. Still as one member of 'SCUM' rationalised to another, "Crewing isn't that bad, it's actually quite pleasant driving with the air conditioner going full blast, listening to the cricket whilst the gliders babble along on the radio. Occasionally, your pilot lets you down and you have to retrieve him, but overall, I guess it's okay."

By Day 11 we were back again in Mildura, where the motel swimming pool made a very comfortable briefing spot as well as a meeting place for evening drinks. It was decidedly better than a hot, dusty airfield. Whilst a few keen souls went off to sample the booming sky, others did the tourist trip on a paddle steamer on the Murray. One eager pilot actually managed to land back at home base, Benalla. He hadn't realised it wasn't time to go home yet. Still, at 890km it was no mean achievement.

After a day of unsettled weather, on Day 13 we awoke to a glider pilot's worst nightmare – rain, the really heavy stuff. Heavy enough to put paid to any flying for that day, too, but perfect for sampling local wares. Time for a round of wine-tasting at Trentham vineyard before relaxing on the verandah overlooking the mighty Murray and sampling platters of cheese and antipasto. Soon it was time for evening drinks around the pool, accompanied by a feast of freshly cooked yabbies. The GCV safari likes to do things in style.

Miraculously on Day 14, Mildura lived up to its reputation, "It's never bad for two days in a row in Mildura." The sky was clear and blue again, and after a final briefing by the swimming pool it was time



to head on the home trail and out to Swan Hill, 177km to the south-east. So it came to pass that evening, in a shady spot on Swan Hill airfield, with Bwana comfortably ensconced in his new director's chair, the GCV annual safari savoured its last round of evening drinks, for 1999 anyway.

By Day 15 it was reluctantly time to make for home base at Benalla, 250km to the south-west. Time to head back to work and normal life once more. Time to say farewell to the good friends with whom we'd shared this flying and nomadic experience. It had been another successful safari, enjoyed by members of the 'GPS' and 'SCUM' alike. More importantly, it had been a holiday, and not a route march, with shared moments of excitement, relaxation and laughter. On the road or in the air, no-one was ever alone. Across the airwaves advice, jokes and camaraderie just flew.

Fortunately for those who 'sometimes like to go gliding' there are other GCV gliding meets to help them cope with withdrawal symptoms. Besides 'Long Flights', and 'Old Timers' weeks, there's regular mountain-flying over the Grampians, the Victorian Alps and the Snowy Mountains, as well as a couple of competitions for the real enthusiasts.



Flight planning by the pool in Mildura.

As for me, well, to be honest, I prefer a picnic to a thermal, so I'll stick with Bwana's crazy gang, if they'll have me. That's the way I like my gliding – it's "top fun."



# Celebrating: 50 Years of Airworthiness Schools

GARY SUNDERLAND

**P**ilots who fly military and commercial aeroplanes are supported by numerous skilled ground staff, comprising qualified engineers and trained mechanics.

When the GFA was set up 50 years ago, it was quite obvious that the gliding movement could not afford to pay people to maintain our gliders, and we had to train ordinary glider pilots to inspect, maintain and repair the aircraft they flew. We have no ground crew to keep us in the air.

The National Gliding School was set up in 1958 to train glider pilots to become instructors and airworthiness inspectors. The airworthiness half of the school was under the direction of Ron Adair, a very experienced aeronautical engineer by profession and a dedicated glider pilot, instructor and builder. Ron is now remembered as the designer/builder of the "Altair" high performance sailplane. This remains now as the only 18 metre span single seater ever built and flown in Australia.

Ron was succeeded as director by Alan Patching, who needs no introduction here. Alan pioneered the field of inspection and fatigue, which became so important with the introduction of metal sailplanes to Australia.

Later I took over the airworthiness school from Alan and, with other instructors at NGS, we formalised our procedures into what eventually became the GFA Manual of Procedures, the MOSP Part 3.

With the demise of the NGS, we set up various state based airworthiness schools to train inspectors, still along the lines of the original NGS. These people eventually qualify to hold an "Airworthiness Authority" issued by the GFA in the form of a "Glider Inspectors' Certificate". Please note that nowhere in our procedures is there any reference to "ground engineers"! These mythical beings are no doubt cousins of "somebody else", who wash the dishes and clean up the clubhouse for certain other members who avoid these chores.

The airworthiness training system remains a vital part of our gliding movement and we insist that inspectors must be pilots first. The initial step on the airworthiness ladder is the "Daily Inspector" and this is linked to a member being at near solo or solo pilot status. The rationale being that a person is likely to be careful at an inspection if they are to fly the aircraft afterwards.

Newcomers to gliding need to be made aware of the important status of the people

who are responsible for airworthiness within our system. Our inspectors are not just "erks" or humble "ground engineers", but active pilots who take on additional work and responsibility to maintain our gliders in an airworthy condition so all may fly in safety.



## GFA Airworthiness Directive

### AD493 IS-28B2, IS-28M2/80, IS-30

Inspection of the airbrake handle for cracks and corrosion.  
Modification of the airbrake handle.

### AN135 DG-500M – all serial numbers

Retrofit of Exhaust Gas Temperature (EGT) probes.

# BETTER LATE THAN NEVER

MAX BROWNE

The title of this article was chosen because it is about two accidents that I've had in the past and haven't ever gotten around to lodging accident reports about. I thought that it was better to have lodged late reports about the accidents, than never to have lodged them at all.

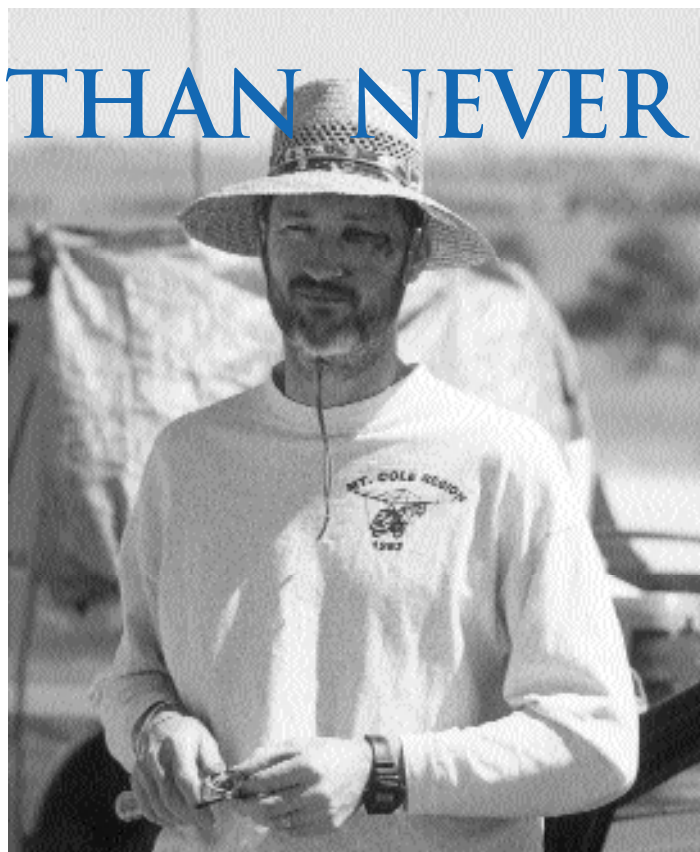
There are three reasons why I have finally written this article for AG/Skysailor. The first is for the purely selfish reason of clearing my conscience (I've have been losing sleep for years worrying about it). The second reason is in the hope that other pilots may learn from my mistakes, and I may learn from any analysis of my accident reports. The third is that I am on holidays and can finally find a few moments to sit down and write. I have called these two accident reports 'Back In The Saddle' and 'Oh What A Feeling'.

## Back in the Saddle

After becoming a father to two kids a few years ago, and living in an area where it was necessary to drive three and a half hours to go flying, it was difficult for me to maintain at least 10 hours of flying time per year. I was getting seriously rusty in the flying skills department. I then applied for a job (I work as an Environmental Health Officer for Local Government) in the north-eastern wheatbelt of Western Australia, based at Wyalkatchem. At the time of applying for the job, I had no idea that a hang gliding club (Western Soarers) was based at Wylie. During a telephone conversation with Steve Hoeffs I mentioned the job that I had applied for and he told me about the club being based at Wylie. I was wrapped.

I couldn't believe my luck, I got the job. Now, after spending years of travelling for hours, and having to enter into serious negotiations every time I wanted to get away for a weekend's flying, I finally had hang gliding on my doorstep! What's more, when I arrived in Wylie I heard that the Western Soarers were planning to bid for the 1999 Nationals. YAHOO!

After settling in, I got in touch with the Western Soarers and learnt of their forthcoming 1997 Spring Thermalling Week. "You beauty", I thought, "spring thermals – a great opportunity to get back into the cross-country flying I had only just started to get the hang of three years earlier BC (before children).



Max Browne post-accident.

The first day went well. I met a whole lot of club pilots and other nice people, had a few tows on the club payout winch and did some good landings. No one else 'got away' so I wasn't worried about still being in the paddock at the end of the day.

Second day: more pilots, hotter, light winds and I was keen to go cross-country. There were two options: the payout winch or a static line with launching trolley. I was used to static line towing and had had a lot of good experiences with this method, so I opted to go static. I had also used launch trolleys many times with good results and had come to enjoy the fast take-off speed that could be obtained from staying on the trolley a bit longer. A couple of other pilots had already launched using both methods.

We were towing at the western end of the Wyalkatchem airstrip. At this end the airstrip finally turns into a car track for the last few hundred metres. We were towing at the very end of the car track to maximise the tow distance. The following is my recollection of what happened that day.

Go, Go, Go! We blasted off down the strip. I was holding the bar in a bit to make sure I had plenty of launching airspeed.

I was about to start easing the bar out to fly off the trolley when I noticed the tow rope go slack and drag on the ground. "A gear change, I'm not launching until the tension comes back," I thought. As the tension dropped the trolley started to veer right, off the track, and was heading towards long grass. I asked the driver to pick up the tension. Just as the tension started coming up I was on the edge of the track and was pushing out to get off the dolly before I got into the long grass. I had plenty of speed, no one reported any tailwind and one person commented that they thought I had a ground speed of 60km/h! Despite this, I was finding it difficult to push the bar out and the glider did not want to leave the trolley. The next moment I hit the long grass, the trolley stopped dead, I slammed into the ground and the glider nosed in big time.

Next thing I knew, I was lifting my face off the ground and looking down at a small pool of blood. I was aware of something in my left peripheral vision (this turned out to be lacerated skin) and blood was dripping from that area. I could hear people running



toward me and thought, "They got here quickly" (it later occurred to me that I had lost some time because I was unconscious for a few moments). To cut a long story short, I was taken by ambulance to hospital where they put 13 stitches in my face a few millimetres from my left eye. The only other injury was swelling and bruising to the left side of my face, and a few aches and pains. My glider seemed OK at the time, however when fitting a new sail a year later, I found that the keel was bent, probably due to the savage nose-in.

## Post-accident Analysis and Causes of the Accident

I later discovered that the keel support on the trolley was too high to allow the glider's nose to freely rotate up when letting the bar out to launch. I believe that it is better to have the keel support too low, if anything, because as long as you are holding your basebar at the correct flying position the keel will just lift off the support as soon as you get sufficient airspeed. The keel can then come down to allow the nose to lift when it's time to ease the bar out.

## Oh What a Feeling!

In 1991 I was an intermediate pilot, with about 80 hours of airtime. I probably thought that I could fly like an advanced pilot because I had just bought a new high performance glider (I was moving from a GTR to an XS) and had achieved only three or four hours airtime in the new glider. I was at Ochre Point (SA), a coastal site that I still wouldn't be comfortable launching from if the wind was more than 20-22kt. It was probably about 25kt when I launched. There were other pilots flying, however they were either advanced pilots with vastly more experience than I, or pilots who had launched when the wind was lighter. I had been undertaking some part-time study and so had not been getting much airtime. For this reason, I was desperate to get into the air and fly my new glider. I also think that due to other events happening in my life at the time, my mind wasn't fully present and 'on the job'.

I got into my glider, did a hang check, and had two hang glider pilots hold my front and side wires. I recall my feet leaving the ground as we approached take-off; this frightened me and, I think, distracted me from concentrating on my launch. I was aware that the conditions felt strong, but I remember thinking, "I have seen other pilots launch in these conditions before." I hadn't much experience at wire assisted launches, however, wire assistance was necessary for this launch. The site was a relatively small coastal site and I was mindful of making sure that I didn't launch into another pilot's flight path. As soon as I thought I had control of the glider I called 'Clear' and launched.

As soon as I launched the left wing dropped and the glider started turning left. I tried to weight shift right but the left wing tip had become caught in a bush. I proceeded to do a steep banked left turn (remember, it was a 25kt wind) and crash landed about 5m behind take-off.

Glider damage was a broken leading edge, crossbar, downtube and keel. The broken leading edge tube perforated the sail's leading edge fabric. I spent the night in hospital with concussion and recovering from a general anaesthetic to pin my broken thumb.

Comments from the two pilots who were holding my wires prior to take-off are significant, and are as follows:

1. The pilot holding my right side wire said 'I had pressure on the wire prior to launch' (I was unaware of this and the right wing lifted as soon as I launched); and

I also discovered that a bolt holding one of the front trolley wheels on was bent, giving the trolley a tendency to veer to the right.

Lastly, upon revisiting the scene of the crime, I found that a vehicle had driven through the long grass when the ground was wet, thus leaving a deep wheel rut parallel with the car track we were towing on. My guess is that the trolley wheels went into the wheel rut causing the trolley to stop dead.

A comment that I would make is that I believe it is important to maintain a dolly in good operating condition and to 'pre-flight' the dolly in the same way as your glider. When attached to a dolly during the launch phase of a flight, the soundness of the dolly is as important as the airworthiness of your glider, because should the dolly break or malfunction at this time, serious injury can result.

The next weekend I was out for a fly again. I hooked a thermal and climbed out of the paddock with the wind blowing through the stitches still in my face. It had been about two and a half years since I had flown cross-country and now I was happy to be 'back in the saddle'.



Max on the dolly prior to his accident.

2. The pilot who was holding the left wing said 'did you hear me tell you to pull the bar in when you launched' (I should have done a much more aggressive attempt to pull on speed and get away from the hill).

Prior to launch I didn't ask the wire men to tell me whether or not they had pressure on the wires and I didn't realise that the right wire man had pressure on his wire. I thought that as long as I could control the pitch I was OK. These days when I have a wire assisted launch, I ask the wire men to constantly talk to me to let me know whether or not they have 'pressure' or 'no pressure'. If I can't hear them due to the wind noise I ask them to yell louder. There is no way that I will launch now unless I know that I am in control of both the pitch and the roll of the glider.

In hindsight I think what went wrong on that day is as follows:

1. My mind was elsewhere and it wasn't a good day for tackling challenging conditions;
2. I was overconfident, and had a bad case of 'intermediatitus' due to having bought a new glider;
3. I was more interested in getting into the air than thinking about whether or not I should be flying;
4. I wasn't really thinking about the launch technique to use in the conditions at the time; and
5. I wasn't communicating with the wire men to see if I had full control of the glider prior to launching.

*Author's note: One of the reasons that I have written this is to allow others to learn from my experience. For me to learn also, I invite comments or discussion via AG/Skysailor 'Letters to the Editor'.*

# Flying Height

B O M B E R

This article provides a view of the changing thermal conditions during a typical day and a suggested approach to making the best use of these conditions. Most of the background material for this article has been sourced from the Soaring Symposia, In-flight Decisions, and modified for hang gliding.

Decisions in flight separate those that succeed, from those that have the potential to succeed. Part of the decisionmaking process is having the background knowledge to make decisions and the ability to execute whilst in flight. This article presents information that can assist with the background information rather than the execution of in-flight decisions and explores the following areas:

1. Height band – what is it?
2. When to leave lift
3. How the height band changes during the day.

## Height Band

The height band is an important consideration in the progress of your flight. Let us start with a definition:

**The height band is the altitude range within which you should fly. It extends from a safe low level up to cloudbase or to a height at which the lift has weakened and to where it is not in the best interests of the flight to continue climbing.**

Later we will discuss in depth how to determine the lower and upper limits of this band. The limits of the height band are influenced not only by the strength of the lift (which is, in turn, a function of the time of day, weather, etc), but also by the terrain, clouds, visibility, task length, and other factors which will be detailed later.

## When to Go

The biggest mistake of beginning cross-country pilots is staying in a thermal too long; that is, after it is no longer efficient to do so. This is a natural mistake (and one I still make) since the first thing that any hang glider pilot learns is to climb as high as he/she can, period. This is not wrong when a pilot is learning. In fact, it is very important for a soaring pilot to know how the top of a dry thermal feels and how to identify it. A big and important step, however, is to learn to leave a thermal when it is still 'good' but not good enough to maximise your speed.

Let's get specific now and give a general rule of thumb about the top of the height band, or, in other words, what is involved in making the decision to go or when to leave the thermal. In the middle of a good day, on a medium task, when the thermal tops or cloudbases are, say, at least 4,000-6,000ft above the ground, you should leave a thermal when you are in the upper part and the lift drops to about 75-85% of the maximum value for more than a turn or two.

This is, admittedly, a general rule, but at least it should be put down in writing so that you will have some guideline for a beginning. However, we must immediately say that many variables influence this 75-85% figure. It is based on the assumption that you can move at your best speed-to-fly to the next thermal and contact and maintain the maximum lift again. This percentage figure would be modified down (maybe drastically) if:

1. The cloud pattern ahead did not look as good.
2. It was overcast ahead.
3. There was thunderstorm or cu-nim shadow ahead.
4. There was rougher or higher terrain ahead.
5. There was wet terrain ahead.

6. There was a turnpoint ahead.

7. It was time to start final glide.

On many days with cumulus clouds, the thermal strength increases up to and into the base of the clouds. In this case the top of the height band then becomes the cloudbase. Of course, we feel compelled here to mention that you should observe the legal vertical proximity to clouds which CASA will allow.

Deciding how much the seven above mentioned items influence the top of the height band is a matter of judgment depending on each individual case. This judgment is developed with experience. In general, the less experience a pilot has, the more conservative he/she is. If things look different ahead, the pilot with less experience will tend to fly higher before making the decision to go. This is correct and natural. The judgment that is involved here is usually the separating factor between champions and 'almost' champions. We have more to say about these influencing factors later.

## Height Band versus Time of Day

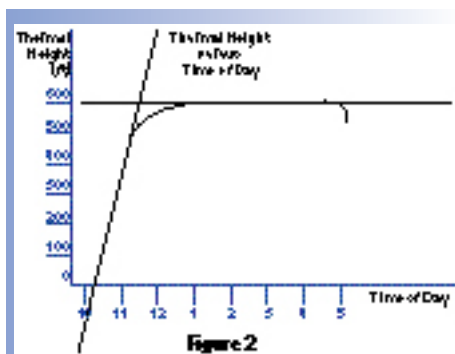
The time of day influences many important parameters of a hang glider flight, not the least of which is the height band. So that we might better improve our mental picture of how these important parameters vary with time of day, a few sketches might be in order.



Figure 1 shows how the lift may vary with time of day on a good day. The specific numbers for lift are not particularly important. What is more important is that you develop a feel for the fact that lift will increase rather abruptly once it starts in the morning and will end rather abruptly once it starts to quit at the end of the day. Notice in Figure 2 that not only does the thermal strength vary with time of day but so does the thermal height; that is, the tops of the thermals vary with the



# Bands



time of day. In Figure 2 we see that the tops may be only 2,000-3,000ft when the thermals first start in the morning and slowly rise until the middle of the day, at which time they generally stay rather constant until the end of the day when they quit. Many times when you can find that last late evening thermal, the top is often as high as any have been all day.

Remember that these figures represent a typical good day not influenced by any sudden airmass changes or other abrupt factors.

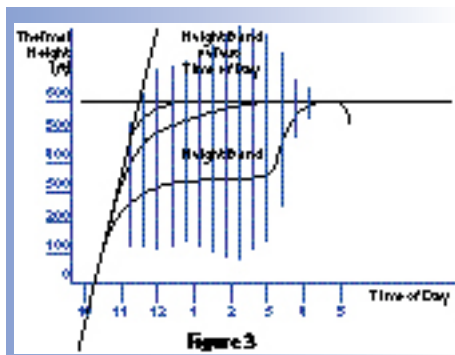


Figure 3 is a typical plot of the height band versus time of day. Note carefully that the solid line represents the tops of the thermals versus time of day and the upper dashed line indicates the top of the height band which, of course, is some percentage below the tops of the thermals (as was indicated earlier).

Again, bear in mind that these figures are rather qualitative in nature and the specific numbers on the curves may not be valid, however the overall figure does show typical trends. This figure assumes no clouds because the top of the height band is limited by cloud-base on many days.

A fact emphasised by Figure 2 is that if you should have reason to fly at the very beginning of the day (such as you might on a distance task), the height band is very narrow at that time and the top is practically at the top of the thermal. As the day gets better and the lift

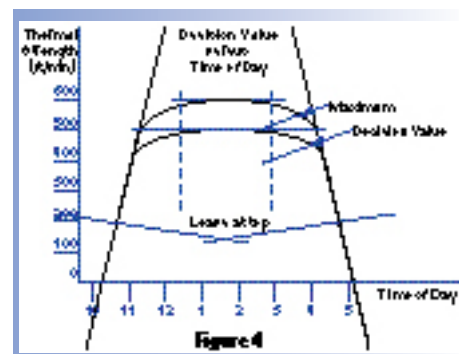
increases, the thermal tops get higher. The height band, therefore, broadens and the difference in height between the thermal top and the height band top also broadens. Another important consideration is that towards the end of the day when conditions begin to 'soften up,' the top of the height band again goes to the top of the thermal, the bottom of the height band moves up rather rapidly and you become more conservative. There is no substitute for being high at the end of the day!

Remembering that Figure 2 is time of day versus height, let us look at Figure 4, which is time of day versus climb rate. Do not confuse the vertical axis (climb rate) with the height in feet in Figure 3 or the thermal strength shown in Figure 2.

Climb rate is related to thermal strength in that we try to make our climb rate as high a percentage of the thermal strength as possible. This is a function of our ability to utilise the thermal most efficiently. It is very important to get a good mental picture and a good physical feeling for the true climb rate.

The upper curve is the maximum climb rate that we can achieve in a thermal at any specific time of day (the specific time of day is indicated by a vertical dashed line). The bottom curve represents the rate of climb at which we should decide to leave the thermal or the minimum acceptable rate of climb. In other words, how much must the lift drop off in a thermal before we make a decision to leave? This gets back to the big decision we referred to in the previous section. In the case of this figure, and for the purposes of our study here, we are assuming that things look good ahead and this decision is not influenced by any of the seven parameters mentioned earlier.

Figure 4 shows that at the beginning of the day when the thermals are just starting, our net climb rate is very low and the two curves are together, so we should decide to be patient and leave the thermal at the top. In the middle of the day when the lift is strongest, we make our decision to leave the thermal when the lift drops to about  $\frac{4}{5}$  of the maximum. At the end of the day we again should make the decision to stay in the thermal all the way to the top as the two curves are together and the net climb rate is again quite low.



A few other very important observations can be made from studying these figures. Study them carefully and see if you can understand why during the early part of a distance day, a turn or two at zero sink at the top of a thermal may be called for but such a thing later in the day would be wasteful and therefore intolerable.

Tasks such as speed triangles and out and return can be assumed to require a fixed length of time. Considering the meteorological and other conditions, an estimate should be made of how long the particular task should take and, after adding a little margin, this length of time should then be fitted on the time of day scale of the above figures. As an example, the length of time between the two dashed vertical lines in Figure 4 would be a typical assumed task time. It would be obviously prudent to utilise the strongest portion of the day for your task. On such a day, first climb to the top of a thermal to check the thermal height and the loss of lift at the top. This is commonly done in competition before going through the starting gate. It is not uncommon in contests or on speed record attempts to take off an hour or so before the anticipated start time. This hour is spent evaluating the thermal height and size as well as how the lift varies in the thermals.

From a study of the figures, notice that from middle to late afternoon we should be on guard for 'softness' in thermals and a little less 'character' to the clouds. When this condition is suspected, we ease the height band up (both the top and the bottom of the band) and as conditions continue to fade, we narrow the band upward all the way to the top. This would be true on a distance day when, hopefully, at the end of the day you are at the top of the last afternoon thermal and ready to start a final glide at maximum L/D speed.



# What is a Club Class World

**C**lub class has been strong in Europe for a number of years, and is very similar to the Sports class which is equally successful in the USA and Australia. It involves gliders which are no longer competitive in Standard, 15 m and Open class, but which still provide some excellent soaring, at usually a much lower cost. Clubs around the world have these gliders readily available for their members, gliders like Cirrus, Libelle, LS3, ASW20, Astir.

The running of competitions in this class has made competitive flying available to as much broader group of people. With the agreement from the International Gliding Commission (IGC) in 1998 for this class to be recognised as a World Championships, we now have an opportunity to bring the highest levels of competition to the majority of our membership, world wide. Countries which have rarely flown in world championships previously, can now afford to fly in Club Class.

The first world championships in Club Class will be held in Australia, at Gawler, in January 2001.

For those people new to Club Class, or those wishing to get some practice prior to the 'real thing', or those just wishing to enjoy some great soaring conditions in the northern hemisphere winter; the Australian National championships in Club Class will be held at Gawler in January 2000, incorporating "Barossa Glide", an International championships.

Barossa Glide will run from 17 to 28 January 2000, and is open to pilots from any country, provided they have previously flown in National or other major championships. With a very favourable exchange rate, it should be affordable for pilots from across the world.

## Barossa Glide 2000

Incorporating the Australian National Gliding Championships – Club Class and a Pre-World Championships in preparation for the Gawler 2001 World Gliding Championships – Club Class

## Weather

Gawler was selected because of its reliable and impressive weather conditions. During National championships over the past 12 years, tasks have been flown on an average of 11 out of 12 available days. Speeds of 140km/h have been common, and a large number of

1,000km flights have been competed from the site. Long days with thermal heights typically 6-9,000 feet and up to 14,000 feet and thermal strengths of 3-7m/s.

## Tasking

The competition will be based on Speed-Only POST tasking, as used in Australia and the USA for many years. In this competition, a minimum time is allocated for the day and pilots are then able to select any of the available turnpoints in order to achieve as big a distance as possible in the set time (and hence the fastest speed). The task is scored on the speed achieved during the day, the speed is calculated from the actual distance travelled divided by the actual time taken.

Task times will depend on the day's weather but will usually be within 3-5 hours.

The advantage of this type of tasking is that it caters extremely well with a range of handicaps, all pilots must fly during the same part of the day. Evidence is that gagging is greatly reduced, in fact it is common not to share a thermal with another glider for the whole task. As a result, safety is improved

Various options based around this task philosophy will be used in order to test a broader range of skills. Some of these options include:

- compulsory turnpoints or a choice between two or more turnpoints
- restricted number of turnpoints
- restricted areas to fly in

## Turnpoints

30+ turnpoints have been identified, predominantly to the North and East of Gawler, which also includes turnpoints around Waikerie, site of the 1974 World Championships. The furthest is approximately 250km North of Gawler.

Details of each turnpoint will shortly be placed on the competition web page and will include GPS coordinates.

The task area is over varied terrain but is predominantly cultivated, flat pastures with some low ridges running North-South.

## Airspace

The Royal Australian Airforce controls much of the airspace over the competition area and we have assurances that this airspace will be released to 15,000 feet for the whole of the competition and practice period. This should

be sufficient, we expect very few days with cloudbase above this level.

## FR/Cameras

Both cameras and FRs will be permitted at Barossa Glide, (only GPS at the world comps). We are approaching FR manufacturers in order to try and get some sets for hire. With support Barossa Glide will be an all FR competition.

Start and finish times will be determined from the FR trace.

## Start Points

A number of startpoints will be used and these will be selected in three groups of four. Each pilot will be allocated one start point in each group so that each has a choice of three start points to select from.

This approach will be used to reduce gagging around the start area, to reduce following and therefore to reduce gagging on track.

Since this technique has been introduced in Australian championships we have had a great reduction in gagging and following and no incidents which are attributable to the starting system.

## Finish

As stated above, the finish times will generally be determined from the FR trace.

We also plan to introduce an alternate finish point which the pilot can elect to use if the weather deteriorates at the airfield. We expect that a small technical penalty will be applied if the pilot elects to use the alternate finish point.

## Handicaps

We will be using the Gliding Federation of Australia handicaps, subject to approval by IGC. These have been compared with those in force in Europe and the USA and allowing for variations in weather conditions, the comparison is quite favourable.

These handicaps are also available on the web page.

For the World Championships the handicap range available to competitors will probably fall in the range from Std Libelle through to DG300/Mosquito.

## Weighing

Handicap factors in Australia are fixed at a particular flying weight and at a specific



# Competition?

configuration (winglets, wing fillets, span, etc.). At the start of the competition, pilots must present their glider at the weight and configuration which will be used for the whole competition. Ballast is permitted to get the glider up to that specified weight if the pilot so elects. The weight selected will remain constant for the whole competition. Handicap adjustments will be made for the use of winglets and fillets, wingspan variation and if the aircraft/ pilot combination is above the handicap weight (due to the weight of the pilot with no ballast).

Gliders will be weighed daily to ensure that the weight does not vary, regular inspections of configuration will also be checked.

## Gliders for Hire

A number of gliders will be available for hire, contact numbers are available on the website. There may be opportunity for arrangements to be made for vehicles and crew for the competition.

Sending gliders to Australia by container is a viable option. Trailers should be available for hire if required. Again, see the website for options here.

## Accommodation

A large range of accommodation options are available within the district. Excellent camping sites, on site vans, motel and hotel rooms, guesthouses and the Roseworthy College which has a large number of 2-5 bedroom houses only 10km from the airfield.

## International Community Groups

Australia is a multicultural society and there are many community groups who retain contacts with their country of birth. Many nations will find community groups from their own nationality living in South Australia who would be very pleased to support pilots during their visits.

## Entry Forms

The entry forms will be available on our web page and can be submitted by email, fax or regular mail. Entries for Barossa Glide will be required by the end of October 1999.

*Further information is available on the World Gliding Championships 2001 web page: [www.worldclubclass.on.net](http://www.worldclubclass.on.net)*

## New Tasks for FAI Nationals

The National Competitions Committee (NCC) meeting considered the options of alternate tasking for the FAI nationals.

Pilots have indicated a desire to stay with set tasks rather than move to POST type tasking; a concern that any new tasks be used for a reasonable number of days, to stop the vagaries of one or two days determining the final result; a desire to use tasks the same as used at World comps. This last point was also raised at the recent International Gliding Commission meeting, where proposals for new classes were also considered. At this meeting, the comment was made that any new tasks should be trialed at National championships first. This is obviously a problem – no one wants to be first.

The South Africans have taken the initiative and have trialed a new task at their recent nationals, an ASSIGNED AREA TASK. The plan on using this at the 2001 World comps. The NCC therefore decided to introduce this task at the next FAI National championships, on at least one third of the competition days – every third day. Instead of turnpoints being set, TURN-AREAS are allocated. The area may be a circle of say 30km around a nominated point. The pilot must achieve at least one logger point within each of the allocated areas. The actual distance used in scoring is the maximum distance achieved by using one data point in each area. Some pilots may elect to fly the shortest distance possible and fly into the edge of each area. Another may decide to utilise particular weather conditions and fly further into one or more of the allocated areas. A minimum task time will be set.

Full rules will be available on the GFA web site in the near future.

Australian  
**Gliding**  
**SKYSAILOR**

## Vacancy for Sub-Editor, Australian Gliding

Bob Thomas, the temporary Sub-Editor for AG, will have completed his

term with the August issue.

Bob would like to devote more of his spare time to gliding.

Expressions of interest in this job are invited and should be addressed to

the President of GFA,

Tony English

14/79 Macleod Road

Applecross WA 6153



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# THE MAIDEN FLIGHT



One of my fellow students takes off Mystic during the paragliding course.

JEREMY BACON

With a mixture of excitement and apprehension,

I approached my first flight since getting my licence.

I would think that almost all novice pilots experience the same sensation when taking off for the first time, minus the reassuring sound of the instructor's voice over the radio.

I completed my novice or restricted licence course over the Christmas break 98/99 with *Alpine Paragliding* in Bright. Near perfect conditions for the majority of the course gave us lots of flights and left us buggered at the end of each long day. By the end of the course I felt, as did most others on the course, reasonably confident in my ability to fly safely. Nearly four months later, before embarking on my maiden flight as a novice pilot, the words 'Do I know what I'm doing?' were uppermost in my mind.

After our arrival in Wondilligong late Friday night on the Easter long weekend, I awoke around 7am on Saturday to what looked like the perfect flying day. Blue sky, little or no wind and a weather forecast that had mum's home recipe for thermals written all over it. After a quick caffeine fix I shot into Bright to arrange hire of my wing for the day. Unfortunately, twenty thousand other people thought Bright was a good place to be that weekend and quite a few had decided it was a good time to do their paragliding licence. The net result of all this was, "Sorry Jezza, there's no spare gliders. They're all out with the school."

Lesson number one: if you don't have your own gear, make sure you can hire some before driving 350km!

Slightly bummed out I headed back to Wandy for breakfast, knowing that the closest I would get to flying would be to sit on Mystic launch and watch everybody else have all the fun. During breakfast, my host for the weekend, Keith, suggested that I might be able to sneak in a flight when the school broke for lunch. Of course, if there's one thing you get a lot of time to do during a paragliding course, it's lunch. They say it's because the thermals are getting too strong

and you need to wait till later in the afternoon when they settle down. Could just be an excuse for the instructors to sit in the main street of Bright and check out the talent. So I took his advice and went up to the launch and waited for an appropriate moment to talk with the instructor. The hour or so I spent watching and waiting on launch was actually time well spent as it gave me a chance to recall the lessons learnt earlier in the year.

Eventually I caught Fred and bailed him up about taking one of the student's gliders for a run during lunch. "Yeah, no worries. Go down to the landing paddock and grab the P22 out of the truck. Don't muck around though because we're not having a long lunch. Have your flight and bring the glider back to the shop. And no cross-country flying, you haven't got time!"

Cross-country was the last thing on my mind! I was going to be happy just to take-off and not end up tangled up in the shrubbery below launch.



After getting the glider from the truck at the landing area my girlfriend drove me back up to launch. I grabbed my gear and asked her to wait around in case I didn't succeed in taking off. I walked up to the launch and found a patch of turf to lay out my glider amongst the dozens of other pilots waiting to launch. By this time I was reasonably nervous but had little time to contemplate my fate due to the time limit of having a borrowed glider. As I set up I thought back to my lessons and the brief read of my notes I had done that morning: Lay out the glider, check the lines are clear, strap in to my harness and headgear and complete my five safety checks. I was ready to go, now just waiting for the conditions to be perfect for a forward launch.

It was virtually calm and I watched the telltales for signs of some wind up the face of launch. My plan was to take off as soon as there was a few knots up the face, perhaps signifying a thermal moving through. Within a couple of minutes the cycle began to move through and it was time to go. One last glance at the glider and I began to run forward. As I ran, I was conscious of the wing filling as I followed it up with the A-risers in my hands. Then the wing was above my head. A quick glance up to make sure all was OK. A slight deflation of the left wing tip gave me a moment of anxiety but began to correct itself during my momentary glance. Off risers still running and I was off. Pretty much a perfect forward launch as far as I was concerned and also the hard part over.

As I settled into my harness I turned left towards the ridge known as Emily (named after its house thermal) and began to climb almost immediately. I kept flying into the thermal for a few (perhaps 10) seconds and then began to circle. I was pleasantly surprised to find myself moving up to a height where I was well above launch. About then I lost the thermal, so figured I'd make a couple of passes over the front of launch while hunting for another thermal. I found the launch area reassuring as it felt like familiar territory, except that I was probably 50-100m higher than I had ever been during the course. I was getting enough lift off both ridge lines to stay up until I was pumped upward by the next thermal I flew into. As I circled and climbed I found myself in very unfamiliar territory indeed... a long way above launch. Without the benefit of a vario I couldn't tell you how high or how fast I was climbing – but it sure felt good.

As I gained altitude I was able to venture further away from the launch and move back over the ridge to join the masses of other gliders thermalling their way up. I found myself in amongst other pilots, with gliders above me, below me, and all around. I was stoked making my way up the stack with each thermal. After about half an hour I began to make my way back, knowing that it would take me 15 minutes to reach the landing field.

As I approached the landing area I scanned for signs of the wind direction. As was fairly typical of the day, the wind was coming up the valley and didn't present any great surprise. I began my figure 8 pattern at the base end of the landing field as I made my descent. Level with the top of the adjacent pine tree at the carpark end of the field, I moved forward in my harness in preparation for landing and turned onto my final approach. As I was coming in I encountered significant amounts of lift from the landing field. I made several 45° turns while I rode out the buoyant air, ready for sink at any moment. During the last few seconds I found myself dropping rapidly and made a quick turn so I was facing directly into the wind. Three metres, two, one and I flared for a slightly heavy, but otherwise great, landing – i.e., I didn't end up on my face!

I packed up my glider and headed back to the shop to return it to the paragliding school. I was totally stoked and knew that this quick flight was only the first, and I'd be back for more.



## 2000 Class 1 Australian National Ladder Top 50

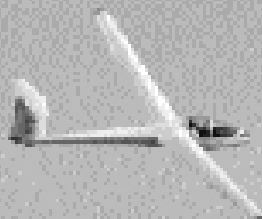
Rank	Total	NSW99	WAS99	SAS99	NATS99	BCP99	FBS99	SEQ99
1	Coomber, Kraig	1,003.5			357.3	360.0		286.2
2	Holtkamp, Rohan	946.8			352.4	306.4		288.0
3	Rebbechi, Joel	910.6			284.2	338.4	288.0	
4	Heaney, Grant	862.3			360.0	244.0		258.3
5	Moyes, Stephen	838.2			294.1	280.7		263.4
6	Paton, Len	706.1	175.7		306.5		223.9	
7	Heaney, Tove	668.7			190.2	262.4	216.1	
8	Freeman, James	658.6			229.7	209.5		219.4
9	Durand, John Jnr	547.0	152.6			227.4	167.0	
10	Lowrey, Tony	485.1				184.4	138.2	162.5
11	Jackson, Mike	417.9	173.8					244.1
12	Wellington, Dave	409.6		184.0	225.6			
13	Durand, John Snr	401.4	185.3					216.1
14	Beavis, Alan	376.9				199.5	177.4	
15	Redman, Dave	363.2	170.2					193.0
16	Schroeder, Phil	347.4	164.6			182.7		
17	Causer, Tim	338.9	89.4				120.0	129.4
18	Davie, Garie	299.6	159.2					140.4
19	Holmes, Andrew	295.8		168.6	127.3			
20	Thompson, Mark	295.4		106.8	188.6			
21	Staver, David	294.8	136.3					158.5
22	Speight, Darryl	293.6		94.9	198.7			
23	Worth, Matthew	292.7	134.2				81.9	76.6
24	Satchell, Hugh	287.9				121.7	166.2	
25	Ruckreigal, Karl	277.1		114.1	163.0			
26	Strickland, John	265.0	149.8					115.1
27	Worth, Craig	259.1	142.2					116.9
28	Wainwright, Phil	247.0		97.6	149.4			
29	Blight, Sam	234.0		110.1	123.9			
30	Wallace, Shaun	233.4		121.0	112.3			
31	Oniper, Tony	231.4	127.0					104.5
32	Wagner, Derek	223.0			223.0			
33	Cooper, Drew	222.2						222.2
34	Stoke, Mark	221.0		129.5	91.4			
35	Knight, Phil	221.0		73.4	147.5			
36	Gonsalves, Bernie	219.0						219.0
37	Giammichele, Tony	214.2						214.2
38	Zwahlen, Bernard	201.3	97.4					103.8
39	Macleod, Glen	200.0	200.0					
40	Pritchard, Phil	197.2						197.2
41	Marshall, Gordon	194.6		99.7	94.9			
42	Tucker, Scott	193.0						193.0
43	Knight, Tony	192.7						192.7
44	Peterson, Neil	188.1						188.1
45	Fowler, Dave	185.9		137.6	48.3			
46	Dall, Peter	185.6	89.0				96.6	
47	Blenkinsop, Steve	184.0		184.0				
48	McLeod, Glen	182.6						182.6
49	Hunt, Steve	182.3	100.0				82.3	
50	Telford, Brent	173.2		173.2				

The complete current Australian National Ladder can be found at: [www.ozemail.com.au/~zupy/lad/20lad.txt](http://www.ozemail.com.au/~zupy/lad/20lad.txt)





# World Gliding Grand Prix



Hornet over Whitwarta.

Discussions over recent years have focused on finding a new way to 'play' our sport. A way which will be interesting for the public, which will attract attention from sports oriented people and hence a way which will attract media and sponsorship. Through this approach we will ensure the survival of our sport in a climate where interest and participation are driven by image.

We have attempted to identify a competition which meets the following criteria:

- It must be easy to understand.  
*People with no gliding technical knowledge must be able to identify who has won a particular race and what any individual must do to win the competition.*
- It must be interesting/exciting.  
*A short media section must be attractive enough to hold the interest of the public.*
- It must be easy to score and administer.
- It must demonstrate the technical excellence of our sport.
- It must be interesting to the competitors and test their skills.
- It must be fun.

The following competition meets these criteria and should provide interest to competitors and public alike.

In conjunction with the World championship competition in Club Class, we also plan on running the 'World Gliding Grand Prix' an international competition aimed at improving media and public exposure and interest.

This competition is designed to meet a number of criteria

- Simple to understand – first one home wins.
- Exciting – close finishes, use of GNSS display and pilot radio contact to bring the flying into the 'lounge room'.
- Rapid launch and start.
- Simple scoring – place scoring system similar to Grand Prix racing cars.
- Easy to understand – the one with the most points on the last day wins.
- Easy to calculate what each pilot needs to do to win the competition – if he/she beats the other by two places, he/she will win promotion – limited numbers means that pilots can become known by the public. Maybe a yellow shirt (hat, wing-covers?) for the leader.

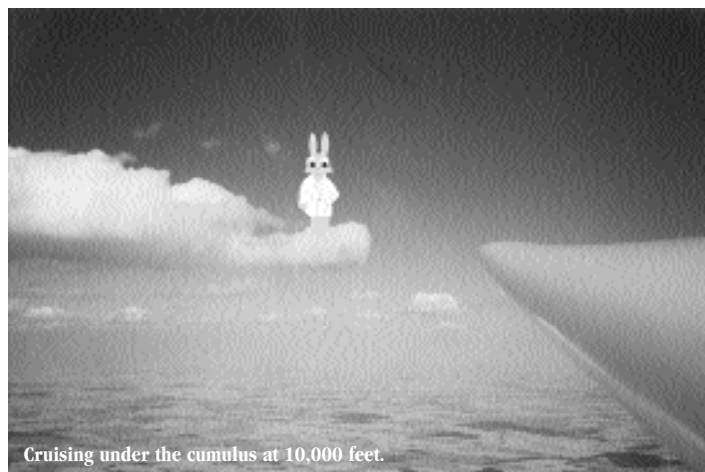
- Competitive – bonus for taking 'risks' in leading out. No major punishment if the risk doesn't work.
- Little pressure to outland, can slow down or come home early if behind the pace.

## The basic rules are simple to follow:

- Maximum of three competitors per NAC.
- Gliders are launched in groups of 8-12 aircraft
- Competitors are split into small groups which are rotated to ensure a balance of opportunities. This reduces the size of gaggles and increases interest for spectators.
- Separate pilots from the same NAC amongst the initial groupings to reduce team influence
- Racehorse start
- Pre-set task, nominal time of 2.5-3.5 hours task duration
- Place scoring system.
- First half of finishers gain points, i.e. 1st – 20 points, 2nd – 15 points, 3rd – 10 points, 4th – 7 points, 5th – 4 points, all other finishers gain 1 point.
- If more than one group, pilots are rotated through the different groups.
- 12 highest placed competitors compete in the one group on the final day (or 2 days).
- Winner must come from this group.
- Limited spread of glider performance – say Discus, ASW20.
- Limited to a wing loading of 43kg/m<sup>2</sup> (no handicaps applied).
- Possibly prize money for three placegetters – sponsorship

Initial competition in January 2001, over a 10 day competition, in conjunction with Club Class World competition (Subsequent competitions could be held over 10 days spread over a number of sites and countries). Racehorse start and similar performance means that gaggles may form, in particular on blue days. Points placing system should reward pilots for leading out in the gaggle, trying to get a break, in particular in the latter half of the task.

Final details of the rules can be discussed and agreed over the next 6 months.



# Last Light Lightbody!

KEITH LIGHTBODY

Some days I just sit for hours cruising under the cumulus below 10,000 feet. When I land just before last light, the few remaining pilots frequently ask me how many kilometres cross country

I flew. Sometimes after 5 hours the answer is only 100 kilometres. I seldom fly more than final glide from base – I fly for fun! I often take my time. A number of times I have done leisurely 200km trips without worry as 10,000 feet on final glide gets you home from a fair way out! I know it is difficult for some competition-hardened pilots to comprehend, but I enjoy the view, watch the clouds form and relax in the cool, fresh air. I wave to the wedge-tail eagles and smile at them – they can tell if you are happy or nervous! I fly alongside them when they are content. Later I polish my flying in the smooth final thermals of the day while savouring the approaching sunset.

## I Fly for Fun!

It all started 27 years ago while I was riding a motorbike around Australia. I stopped at Stanwell Park south of Sydney and watched as pilots walked off the hill. They flew their hang gliders around for hours! I started lessons the following day. I learnt to fly and then spent hundreds of hours soaring ridges near Albany in WA. I flew with sea eagles, kestrels, seagulls and wedge-tail eagles. I flew with my mates. I watched dolphins, sharks, schools of salmon and the glistening ocean. I flew my hang glider so that it blocked out the sun over nude sunbathers. I raced cars along the coastline and dogs along the take-off hill. I felt water condensing on my face as cumulus or orographic cloud formed overhead. My mates and I would sometimes start flying at sunrise. We would land for lunch and then go back up for hours. In the skies we were happy as swifts but at least we usually landed when the sun set. Flying overseas in the moonlight is another story.

## I Fly to be with Nature!

I follow the Russell Brierley and Greg Moloney principle: You should fly for more hours than you drive! In my case this means more than 4 hours. Since October 97 I have had 24 flights of over 4 hours. 3 flights were over 6 hours. Some other principles I often use are contrasted in the table below:

	Fun lover	XC Racer
<b>Thermal strength</b>	Take every thermal	Work 80% of strongest
<b>Navigation</b>	Follow roads, use silos	Go direct, use GPS
<b>Height band</b>	Above 5000 feet	Above 1000 feet
<b>Speed required</b>	Above stall speed	State record
<b>Camera use</b>	Photos of scenery	Photos of turnpoints
<b>Diversions allowed</b>	Any time, any where	If necessary to stay up
<b>Final glide</b>	Check if sun going down	Use glide computer

July 1999

## I Fly for Fun!

I have been in a state competition flying around 350 kilometres most days in a twin-seat glider (sailplane) with an expert cross-country pilot. We averaged around 100km/h for our Pilot Option Speed Tasks (POST tasks). I learnt a lot, saw heaps of country and my flying



My son and I are watching... me fly a hang glider at Albany!

improved significantly. After the comps I even did solo glider flights of 300km and 400km. I even managed 300km in a PW5. However, I did not photograph the turnpoints, carry a barograph or fly a regulation FAI triangle. Some of my flights were in the shape of a pentagon, others a bowtie! When in a fast glider I chased semi-trailers on the highway

to check I was maintaining around 100km/h.

## I Live for Fun!

Safety fits in well with fun flying. While in the sky I prefer to look outside the canopy. I give regular position reports by radio. I wear a parachute. I also follow the 'be-nice-to-the-wife' principle – if she is content then I can have more leave passes for flying! She is happy that I fly safely. My style of flying means I go home like a little budgie – all chirpy and excited. I arrive euphoric and that is always good for a relationship!

## I Fly for Fun!

There are many ways people can enjoy their time in the sky. Gliding clubs should attract fun pilots as well as those seeking the competitive challenge offered by cross-country racing.

*Author's notes: Did you see the rabbit on the cumulus? That's what happens if you fly too high and get hypoxic! Photographs and Photoshop effects by Keith Lightbody. This article can be found at [www.ozemail.com.au/~cumulus/fun.htm](http://www.ozemail.com.au/~cumulus/fun.htm) – Email to the author is welcome at [cumulus@ozemail.com.au](mailto:cumulus@ozemail.com.au)*





## Letters to the Editor

### Combined Magazine

► Congratulations guys, you are doing a mammoth job but obviously one that is hard to please everyone all the time hey! Let me say I enjoy every article that you print and some day soon I hope to contribute to the magazine, whether it be in photo or script.

Being a new pilot to this scene I guess it's only natural that I take in all that I can on the sport, but after reading some of the letters you have received with regards to the combining of GFA and HGFA organisations, it causes me to re-think what I've got myself into. This is a sport I wanted to get enjoyment out – not as an overly competitive person, but one that sometimes likes a challenge – and that's why I chose to get some air under my feet.

I like all flying disciplines, but what I fly is what's convenient for me and somewhat practical on my wallet. I hope I don't get 'bored' with the sport in the future and look for something else to get a buzz or a high (drugs are not an option, OK).

You can't tell me a married person has never looked at anyone other than his or her partner, even if it's just to check out what they are wearing. I look skyward daily to see anything fly. I like looking at all forms of flight, not always agreeing with some – each to his own I say.

What I am saying is this: In a world that is tearing itself apart, we are fortunate enough to live in a fantastic part of it and be able to enjoy a sport that God intended to be only for the birds. We are up there with them enjoying the experience; can't we do it together? Do we have to fly each other's machines or be pressured into doing so? There are a lot of motor vehicle brands on the roads today that I would not choose to drive (I would sooner fly anyway), but I accept that they are there and pass them daily.

Maybe I'm too new to the sport, but I hope I don't end up in my latter years (or an 'old bugger' as some call them) not being able to accept change and withdraw from being able to grow and become a stronger organisation to keep what we already have – heaps of space to fly in.

P.S.: Thank you to all pilots for their contributions to all flying magazines, your

invaluable experience and information out-measures everything (except flight itself) to us newcomers. Safe flying to all.

Mick Haggard

### A Lack of Classifieds

► Have you noticed that with the new policy on advertising there are virtually NO ads for paragliders and hang gliders? One thing I always used to check out was the 'for sale' page. There used to be at least three pages of ads before the \$16 dollar charge was brought in. Now what's the point? Last month (May): one paraglider ad, eight hang glider ads and one trike ad.

I would like to point out that there is a large difference between selling a \$55,000 glider and a \$1,000 to \$4,000 hang or paraglider.

This policy has gutted the classified section of Skysailor all in the name of parity with existing GFA policy. Is this the flavour of things to come? If policy compromises have to be made they should be 'Win-Win' where all members gain. I don't think that this is one of these.

Chris Attwood

### 'Real' Gliders

► I have read various comments about the amalgamation and joined the major group, that is, all those who don't want to get involved. Then I read a letter to the editor by a gentleman whom we will call 'Mr Real'. I call him that, because he suggested that if the amalgamation went ahead, a new group should be formed for those pilots who flew REAL gliders. I presumed that he was referring to sailplanes. That comment gave me a bit to think about.

Firstly, it seemed very much like the Kosovo thing in microcosm, if you can imagine some sort of ethnic cleansing of the glider fraternity. Then it occurred to me that similar silly things had happened amongst the HGFA mob at times. There was the time when nobody was permitted to mention engines in Skysailor, until it was realised that trikes were capable of towing hang gliders. Then the HGFA was given the task by its members to bring trikes under its wing instead of the AUF. It got halfway there too! Then there was much muttering when the 'jellys' appeared on the scene. Incidentally the 'jellys' didn't think much of it either. Out of the hang gliders and the paragliders, which would you call a 'real' glider? I guess Mr Real wouldn't consider either of them.

In 1945 I joined a fledgling glider club out of Perth (WA). We had a flying weekend once a month. We slept on the ground (no sleeping bags) and assembled the gliders at the take-

off site. We had a single seat and a twin seat primary glider. We used an old chev buckboard to tow, and fencing wire as a towline. After a very few months I realised that a three minute flight once a month was not going to have me flying for a long time. So I joined the aero club and soon learned to fly a Tiger Moth. Then I would do a cross-country to the glider club and give my glider club mates

a much needed ride, and in return get to fly their primary glider. That didn't last long as both gliders were written off in crashes.

Years ago I worked as an experimental officer for the Weapons Research Establishment. I designed and had built a series of rockets for an aerodynamicist. It was called a cold round (as in ammunition) because it had no rocket motor. It was really a glider with a tug in the form of a booster rocket that released when it attained sufficient height and speed to do its thing. Mind you, after a short flight its sink rate left something to be desired! One of my contemporaries got the job of putting a shiny silver mylar ball, some 30 feet in diameter, into orbit, and I was involved in the work required to put an Australian satellite, called WRESAT, into orbit. These were the only ones ever to have been launched in Australia. Now they were REAL gliders! Right round the world several times with zero sink rate!

If we go back to nature, what would you call a 'real' glider there? An eagle comes to mind and if you are Mr Real, I'm sure you would agree. On the other end of nature's list comes the little furry animal that transports itself from tree to tree by use of a membrane between its front and back legs. Actually it is not as fancy, but in my opinion it is just as real as an eagle.

Then there was the period of about 15 years when I was involved in the Birdman Rally. I produced 13 different flying machines and entered in 22 rallies. I became friendly with another competitor who was also my major opposition. He had been in the rallies almost as long and probably produced a greater number of flying machines. While he made variations of the one design, I made a totally different thing every time. I got a heap of crazy ideas out of my system, and he found a satisfactory combination that would make the elusive 50 metres. I showed videos of the birdman rally to some pilots at serious interstate hang gliding competition. When the video finished one pilot asked, "What would you want to do that for?" I smiled to myself. I had won about \$5,000 in prizes apart from enjoying myself (and spent a lot more). I doubt if that pilot had ever done as well in hang gliding competition. Yet my opposition

friend in the Birdman Rally had done very much better. During the years he had won even more than I had, and finally when he found the 50m combination he won \$60,000 in prizes in two years! I doubt if many glider pilots could top that!

I guess I could prattle on for a lot longer, and make this letter even more confusing. So what am I on about? Well, at 70 odd years of age I'm out to get as much variety out of the time I've got left. There will be many others in the gliding fraternity who don't mind experiencing a broader outlook.

Amalgamation should do that. It may sound like a contradiction, but I think you can be as greedy as you can, as long as you are not selfish with it. I'd love to get some flying in a sailplane if I could afford it. Some of you real glider people should try hang gliding, it's UNREAL!

Pat Finch

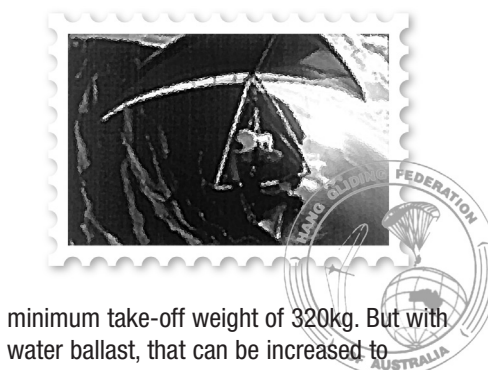
### On 'Performance Perspectives'

▶ The article by Godfrey Wenness, was a brave attempt to compare the performance of paragliders, hang gliders and sailplanes. I believe Godfrey flies paragliders. I fly sailplanes. (I used to say I fly gliders, but it seems the word glider means several different things now, so I use the term sailplane to avoid confusion.) I know very little about paragliding and hang gliding, so I may be brave in trying to add to Godfrey's ideas: Maybe hang glider pilots already know all this stuff. Perhaps we need someone like Tomas Suchanek, an expert in two fields, to write an article explaining hang gliding for sailplane pilots, and another article explaining sailplanes for hang glider pilots!

Firstly I should point out that there have been sailplane flights in excess of 2,000km. The first of these was done (mainly) in wave in New Zealand, and involved turnpoints on both the North and South Islands! Unfortunately the geometry of New Zealand makes an FAI triangle impossible for such a large distance. Godfrey stated the longest sailplane flight was 1,460 km, so hopefully, with this adjusted figure, the relative performance of glider pilots relative to the L/D of their machines will not look so woeful. But comparing very dissimilar machines on best L/D is very crude, and the sailplane community – probably because they have a greater variation in performance between types – has a fairly rich set of ideas which apply to handicapping.

Wing loading, usually measured in  $\text{kg/m}^2$ , is a key factor for sailplane performance.

A typical standard class sailplane weighs 250kg empty. With a 70kg pilot, this gives a



minimum take-off weight of 320kg. But with water ballast, that can be increased to 525kg. Water ballast does not change the best L/D of the sailplane: It simply moves it out to a higher speed, by a ratio of the square root of the wind loading. From 320kg to 525kg is a 64% increase. The square root of 1.64 is 1.28, so full water ballast gives us a 28% increase in the speed at which best L/D is achieved, and on a good day the climbing penalty from carrying full water is fairly minor. Any reasonable handicapping scheme must make allowance for wing loading. Incidentally, on really strong days 15m gliders with really high wing loadings may run down open class machines with much better best L/D, as open class machines tend to be more restricted in maximum wing loading.

Sometime in the early 1960s, a pilot named Paul McCready came up with a 'speed-to-fly' theory which bears his name. There is evidence it worked for him, because he went on to win the world championships, and all good competition pilots use this theory today (though most deny it, and all have their own modifications to the theory). It is as simple as plotting the sailplanes 'polar curve' (sink rate versus speed), drawing a line through the point of zero speed and the average climb rate for the day, and tangent to the polar curve. The point of tangency is the best cruise speed between thermals, and the point where the line crosses the zero sink rate line gives the achieved cross-country speed. From this it is simple to make up a table of speed which can be achieved versus thermal strength, and a table of block speeds to fly between thermals. There are known inadequacies with the theory, and people can achieve better speeds than 'Classic McCready' suggests, through use of cloudstreets and good sky sense. Yet the theory gives a good basis for setting handicaps, and there have been several articles discussing this in Australian Gliding over the years.

It would be quite easy to extend present sailplane handicaps to hang gliders. I do not know if detailed 'polar' curves are available for hang gliders, but I suspect this is not very important. Sailplanes use a large speed range, and conditions ahead would have to

**Gliding** Australian  
**SKYSAILOR**

## STOP PRESS!

Richard Lockhart  
has been appointed as  
new Skysailor Sub-Editor.

Congratulations and good  
luck with the job!

Justin Beplate has left Australia for  
a while to study  
in Europe and we wish him  
all the best for his future plans.

Meanwhile, Richard has  
taken over the post,  
effective immediately,  
and will be dealing with  
the Skysailor materials from  
the August issue onwards.

Please send all your articles, news,  
advertising materials  
and photographs to:

Richard Lockhart  
c/o Blackheath Post Office  
Blackheath NSW 2785

Phone: 0418 130 354

Email:  
skysail@ozemail.com.au

All classifieds should still  
be mailed with payment  
directly to the HGFA office,  
PO Box 558, Tumut NSW 2720

## Letters to the Editor continued

be very dismal indeed for a sailplane pilot to leave a thermal at the speed for best L/D. However, I imagine with a 12:1 glide angle, the danger of not making the next thermal would make it foolish to fly a hang glider too much faster than speed for best L/D. So maybe we can predict the speeds using a polar curve consisting of a single point: that of best L/D. Handicaps from this analysis would give sailplanes an unfair advantage. The secret to going fast is to turn in only the very best thermals, and sailplanes have the performance to reject many thermals that are substandard. With a 12:1 glide angle, chances are you will most times hit the ground before you get to this best thermal, so you will have to take a few not so good ones on the way. Blue holes are obviously a much bigger problem for gliders with lower L/D. So any handicaps would have to be adjusted according to experience.

Now what happens on a windy day? I don't think it takes too much to work out that the whole system will fall apart, especially if paragliders try to race upwind! Handicapping can work well as long as the performance differences are not too big. It would be easy to make up a good set of handicaps that worked well on days when the thermals are close together, they are all the same strength, they are nice and big so we will all climb about the same, and there is no wind. Fortunately these conditions do not apply on this planet: if they did, racing would be a pointless exercise.

One more comment on Godfrey's article. If you saw the price of \$120,000 for a club sailplane, and fainted, I can understand this. The newest and best is expensive. I fly an old LS1-f which only has a 38:1 glide ratio, probably about 10% worst than the newest and best in standard class. It has delightful handling. It cost \$28,000, and is owned by four people. \$7,000 is not that much dearer than a higher performance hang glider.

**Michael O'Brien**



Three pictures this page: Flying in Thailand.

## Flying in Thailand

► Khao Pang is an approximately 4km long ridge with a take-off area suitable for paragliding about 350m above the landing zones. The mountain is good for sustained ridge soaring and thermals are common in the afternoon. The proximity to the sea gives a very consistent wind direction. Khao Pang has been chosen by the Thailand Glider Club as the venue for the two international competitions held in Thailand so far.

I have been flying here for about three months, and intend to stay another six or so. I can only rate myself a 'student' pilot (according to "Paragliding: The Complete Guide", by Noel Whittall) but have been flying alone here and find the air very stable.

As an international competition site the mountain isn't up to scratch, but as a destination for pilots on holiday it's really perfect. Consistent warm weather, flights lasting several hours, top landings, no flying fees, access to the take-off area by pick-up truck and the mountain is only 15km from Chumphon town. Best of all the skies are shared only with the birds. Very few people fly in Thailand.

Chumphon is accessible from Bangkok by plane (1 hour), train or bus (8 hours) and car (6

hours). It's famous for seafood and, because there are few tourists, it's a cheap and very friendly holiday destination. There are mainland beach resorts nearby, and two hours away the island of Koh Tao specialises in scuba-diving over coral reefs. There is a full range of hotels and restaurants, and lastly, I can personally vouch for the hospitals here. I've had an arm put in plaster and a major stitching job done, and it wasn't a bad experience. The mayor of Chumphon is keen to promote paragliding here and has improved both the take-off area and access to it.

As I mentioned, I will be in Chumphon for the next six months, and I am trying to gauge whether Khao Pang could sustain a business catering to pilots on holiday. My long term aim of course, is to run such a business. From now until September I will be promoting and researching this idea and



would like to extend an open invitation to all pilots to come and fly at Khao Pang. Ultimately I will need first hand advice from much more experienced pilots than myself before proceeding with the project.

Any interested party can email me (soapyjoe@hotmail.com) and I would be delighted to introduce them to paragliding in Thailand. I can organise everything on the ground: hotels, transport, diving and beach trips, etc – all with the support of local businesses. In return I ask only for people's views on the site as a flying holiday destination. Daily life here costs about \$10-\$60 per day. I spend about \$20 per day and live very well, although students could camp on less than \$10 per day.

My address details are: Mayazes, 111/35-36 Soi Bangkok Bank, Saladaeng Road, Tha-tapho, Amphur Muang, Chumphon 86000 Thailand – email: soapyjoe@hotmail.com

**Jonathan Stone**





## GFA and HGFA Amalgamation

► Dear Sir/Madam,  
I have read with varying degrees of interest the letters and articles relating to the proposed amalgamation of the GFA and HGFA, the first effects of which we see here in the joint magazine. I am a relatively new member of the GFA (October '98), and am therefore at a loss as to what the fuss is all about. Having read Alan Ash's book on the history of gliding in Australia, I understand the GFA's reason for existence, and I assume the HGFA's past tells much the same story. What I don't understand is the reason for the proposed amalgamation. I, like all other members of both parties am expected to vote on this issue, but I fail to see how I can give an informed vote without knowing all the details. For the benefit of myself and any other newer members, perhaps the main antagonists in this issue could list, firstly the reasons the proposed amalgamation has been raised, i.e. why was it thought necessary and by whom, and secondly the major pros and cons of an amalgamation between the GFA and HGFA. It may be that all this has already been printed in editions of the respective associations magazines prior to December (my first magazine), but as we get closer to the deadline I don't think it would do any harm to remind everyone concerned of why we are at these crossroads.

On the current magazine format, I enjoyed the independent version of Australian Gliding, I also enjoy the combined version. My interests lie mainly with my own form of gliding, but I was amazed the day two hang gliders landed at Boonah earlier this year after a three hour flight from Beechmont. The hang gliders were fitted with flight computers and various and the technology was put to obvious good use. With this in mind, articles about other forms of soaring are of some value. Unfortunately though the pros and cons of a joint publication do not amount to the same thing as reasons for and against an amalgamation.

Yours sincerely,

John Grassens, Boonah Gliding Club

## Combined Magazine

► Dear editor,  
The combined magazine is getting better with every issue. I am even reading the non-sailplane articles and finding some interesting points from a sailplane pilot's perspective. The extreme end of the spectrum is found with Roland Stuck's article on simulated gliding, it appears that this is rapidly growing in popularity around the world and it is even mooted that a separate

FAI commission will be appointed for simulated aviation sport. I personally prefer the real thing, but it may actually attract some younger pilots to aviation sport, and as Roland points out, could be a useful training aid.

The first simulated flying that I remember is a competition organised by Mike Giles. You had to send in your entry form and \$50 entry fee, two weeks later Mike would send back a full set of scores so that you could see how you went. It is a lot cheaper and easier on your leave than real comp flying. For some reason it never took off.

One correction from the June edition, although Roland was present at the IGC meeting in the USA, I am Australia's representative and actually wrote the report on the meeting, not Roland. He may not agree with all of my perceptions.

Terry Cubley

## Re: J. & T. Knight letter to the Editor (April AG/Skysailor)

► Dear Sir,  
I think it is a good idea to group all the hang gliding articles together in a tear out section, so I can tear it out and read only what is of interest to me: the gliding section. I do not appreciate if something I have no interest in at all is being pushed down my throat. I believe that the majority of hang gliding people could not care less about gliders (aeroplanes without engines) and the majority of us could not care less about hang gliders. Anyway, at my age my undercart is a bit weak and can't run too fast either, so I prefer something with a solid seat and retractable wheel to run on.

Vince Jungvirt, Adelaide Soaring Club

## Parachutes

► Sir, I heard that the GFA is considering whether to make parachutes compulsory for tug pilots. This may be a Furphy, but I want to speak up in case anybody is thinking along those lines.

Mid-air collision is now our greatest danger and we don't know what to do about it. I think one line that should be followed is Maurie Bradney's about teaching lookout, and convincing those of us who claim never to have been taught to look out (maybe we were not, maybe I malign my instructors).

The parachute, I regret, is not the answer for tug pilots. I have nothing against parachutes – I have enjoyed half a dozen free-fall jumps.

Firstly it is not possible to wear a backpack in a Pawnee or Callair and control the

aircraft. Seat packs would have to be specially made at great cost. Once on board, you might still be able to see under the cockpit roof but not many would be dedicated enough to struggle in and out through the little window all day with a parachute on. Like an FA18 pilot, you would need three helpers on the ground. For every launch! The only sane solution would be a parachute stowed under an external hatch and a clip-on harness, and I can't see this evolving for years yet.

Secondly – and this is the real argument – I don't see how you would ever get out fast enough at low height. Stepping out of a Pawnee or a Super Cub with a parachute is plain wishful thinking. It might appeal to laymen and insurance companies but those who fly need to bring such people face to face with reality, not go along with them.

It is totally different from jettisoning the canopy of a glider and stepping out into the wide sky, and they say that is not as easy as it sounds. The people who have escaped from power aircraft by parachute have done so at a good height. Test pilots go high for the purpose, and the WWII was fought mostly at height.

Tug collisions are going to happen below 2,000ft. The most probable height would be 1,000-1,500ft in the circuit area. Experienced skydivers, already in the air, plan to pull their reserve if they need it, by 1,000ft. First-time jumpers pull at 3,500ft, allowing for the reserve to open if needed by 2,500ft. I don't want to die in a tug collision but, sadly, I think that getting down by parachute is a Boy's Own dream, not for grown-ups.

PS: I have been wavering on the question of amalgamation but in the meantime I congratulate the two organisations on the combined magazine. I am one of the 'anything that flies' people. The magazine will bring us closer together. These guys seem OK. Let's join them.

Geoff Neely

► Dear Sir,  
Tug pilots are worth saving too. There have been a number of mid-air collisions around the world over the past year involving gliders and towplanes. The Executive considered a number of accidents and identified that it is possible that some lives may be saved if parachutes were available. Single seat gliders around the country are flown by pilots wearing parachutes, yet the two-seaters and towplanes continue to be operated without this protection.

In speaking with foreign pilots, they are amazed that we operate two seaters without parachutes, they are worn even with



## Letters to the Editor continued

passengers in Europe. The executive strongly recommends that all gliders and towplanes are equipped with parachutes. It may require some seat modification but if it saves one life in the future, then this is a minor expense.

For competitions, we already require that single and twin seat gliders must wear parachutes. From this coming season, there will also be a requirement that tow pilots at competitions should also wear parachutes. We do not intend to enforce this requirement with a heavy hand in the first season, but we do urge all operators to seriously consider the safety of tow pilots, in particular in a crowded sky such as at a competition. Operators should then seriously consider introducing parachutes for all aircraft.

This is a little like the introduction of seat belts. Many people queried the real need for this, now it is hard to find people who don't naturally Belt-up. In the future, we will all expect to put on a parachute whenever we take to the skies.

Terry Cubley

## Where on Earth are we?

► Dear Sir,

There are two commercial computer programmes available aimed at glider pilots. to assist them in task planning by calculating Great Circle Distances. There are several other programmes around that I am not familiar with so I cannot comment on them. The problem is that these programmes rely on outside sources for their data. Problem is, just how accurate is this data.

Programme A starts off with quoting the radius of the Earth as 6378.245km. Programme B quotes the radius as 6371km. The Sporting Code quotes 6371km, so at least "B" is starting off right.

Assuming that the official FAI figure of 6371km has been used let us see where my favourite club is from "A" and "B" and several other sources.

	Longitude	Latitude
Programme "A"	150.31.30	30.53.15
Programme "B"	150.31.34	30.53.90
CLUB TP Book	150.31.25	30.53.20
Club Task List	150.31.25	30.53.32
AG Sept 96	150.31.25	30.35.32
Airservices Australia	151.31.25	30.54.00

As you can see there is quite a range of figures quoted, the AG one I suspect has a typographical error in it. The problem is with dozens of clubs, and hundreds of, if not thousands of turnpoints, how can the average club pilot plan a task with any degree of certainty, in particular if the task is a bit marginal? I would certainly (if I were capable) not like to attempt a record if there were any chance of some official saying, "Sorry mate, you were 40 metres short." Is there an answer? I don't know, but there is a need for an Australian wide agreed database, for, as computer programmers say, "Garbage in, Garbage out!", and you can't expect them to go out and verify each and every club's position and TP position. Indeed if my club does not know "Where on Earth" it is, how can I rely on some TP that may or may not be where it is supposed to be? Any who can, should try and get a copy of "Fields of Arthur" from Canada's Free Flight magazine, quite a comical illustration of what can go wrong with wrong co-ordinates. Not really lost, just uncertain of my position.

I.A.M. Verloren ✂

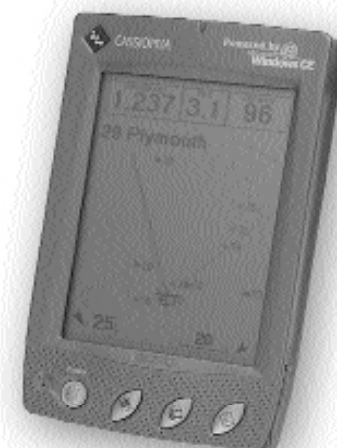


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# I got Lucky!

Some things in life are a struggle and others are a blessing, or maybe one just gets lucky. Like most of us

I had a fascination for flight from an early age, and like most of us I made toy planes and such.

In 1973 I had just left school and with my first few dollars I purchased a Delta Wings hang glider from a local W.A. dealer. He knew less about this new sport than I did. Somehow we managed, with the aid of the manual, to put the thing together in my mum's backyard. After some rather disastrous flights I managed to get a bit of a handle on hang gliding until one day in Toodyay I managed to almost kill myself because of my own ignorance – I suppose I just was lucky.

After three years at university I emerged with a Radiography Degree and started earning real money. My eyes again searched the skies. I always wanted to get my pilot's license so this was the time. I started working a fair bit of overtime in the evenings at Sir Charles Gairdner Hospital. I wasn't always busy so I studied for all my exams and did my radio license and all the others required for my P.P.L. I had saved about \$1,000 and off I went to Civil Flying School. Lessons were \$14 a hour and I went at it like a bull at a gate. In 4 weeks I had my pilot's license, a week later my night VMC and the next week I did my retractable undercarriage and constant speed prop. I had some great weather and a teacher who liked to get up early. We used to start at 5 or 6 in the morning at Jandakot and do low level circuits until the tower opened. I really was lucky.

I got tired of radiography and in a moment of madness, I enrolled in the physiotherapy program at Curtin University. Four years later, and not much flying in between due to a case of chronic poverty, I emerged with a physio degree and set off to conquer the world. I left on a four week holiday to Europe and returned to Australia five years later after doing a four year stint in a Canadian hospital. I managed to keep flying in all those places.

Ten years were spent flying in Australia with most of my recent hours racked up at Bunbury Aero Club in my home town of Bunbury. Then my wife took a transfer to Baltimore, USA and I really got lucky.

We stayed two years and I didn't work due to no permit. I set about amusing myself and drove down to Look Out Mountain in Georgia and regained my hang gliding skills. I came away after 2 weeks with my Hang 2 rating and managed some great flights. What a difference lessons make to one's appreciation for the sport. The school is the largest in the world so if you cannot learn there you can't learn anywhere. While we lived in Baltimore I also managed to get my FAA. license and started flying at a local flight park. I spotted a tall wheeler and my hopes soared. At last I got the chance to do that tall wheel endorsement that I always wanted and guess what? I got very lucky. I think I got the best instructor in the country and spent many hours flying around the Eastern seaboard of the USA. in the Citabria. I even managed to get myself a little job at the EAA show at

Oshkosh, but that is another story. I came across a number of gliders and another passion was ignited. The opportunity never arose in the States to start gliding but then I got extra lucky.

The day after we arrived back in Australia the Naffogin Gliding Club was starting a five day gliding course for beginners. I emailed my details and enrolled. With five other

students, two great instructors, two gliders and some very helpful club members we were away. The weather was great, the flying was great and I managed to go solo on Day 4. It has now been six weeks since I took up gliding and I have completed my A and B certificates and am one outlanding away from my C certificate. I have managed a three hour flight in the club's single Astir and many enjoyable 1 hour plus flights. And now I have got extra lucky!

My wife has taken up a three month position in France. We will be only 20 kilometres from the Swiss border and guess what? There is some great paragliding just down the road, so yesterday I enrolled in a paraglider course. Every one of us who flies is lucky, just some are luckier than others.

.....  
**Every one of us who  
flies is lucky, just some  
are luckier than others.**  
.....

## In the Circuit

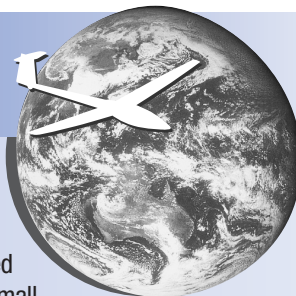
### Local News

#### From the Leeton Gliding Club

In March the Leeton Gliding club was invited to visit the local Aero club in Griffith and compete in their club competition.

The offer was accepted and nine members attended to experience the Aero Club's hospitality. After a barbecue lunch it was off to do some flying. The glider pilots competed in the spot landing, forced landing and a bomb drop. At the end of the day the gliding club came out as the winner, winning

the forced landing and bomb drop (which consisted of dropping a small bag into a drum from 200ft. There was some debate over just how much the instructor helped the glider pilots, however, this just helped fuel the friendly rivalry between the two clubs. The following month ten members of the Aero Club attended our airfield to try their hand at gliding. They all left with smiles after enjoying the day's activities, being most impressed by the winch launch, and



amazed at the relative cheap cost of gliding. Further joint flying days are being organised for the future.

Kevin Roden

#### Tasman Trophy

Applications are called for pilots to represent Australia in the Tasman Trophy to be held in conjunction with the New Zealand National Gliding Championships in January 2000. A free glider and entry fee is provided. Applicants must not have represented Australia previously in a world championship.

Applications with details of experience to Paul Matthews, Convenor, ITC. Fax: 02 9635 9499 or PO Box 248 Parramatta, 2124.





## TRIBUTE TO CLIVE GILMORE

IAN JARMAN  
(on behalf of the HGFA)

Clive was not merely another hang glider pilot. He was not merely a pioneer and enduring character to the sport of hang gliding. He was an icon. Clive was a classic sports volunteer. One of those rare and special people who gave of himself, his skills and experience and gave of his time to the sport of hang gliding for the simple pleasure of being involved in the sport he loved.

Throughout the twenty five or so years of Clive's association with hang gliding he dealt with all pilots with the same warm and friendly enthusiasm. He displayed the same concern and commitment to safety for all pilots be they members of the national team or a novice about to take the first high flight from his home site, Bald Hill. He was a leader of the highest integrity and fairness and sometimes suffered for maintaining those standards.

Clive was a true pioneer. His association with the sport began just as the sport began to gain popularity. Together with Bill Moyes, he took the sport forward developing techniques and equipment. He spent many a long day on the Kurnell dunes passing on his skills and experience at a time when the sport itself

had yet to develop any formal procedures or standards. He helped establish those first standards from which the sport has grown and matured.

He was a stalwart of the Stanwell Park Hang Gliding Club, taking on most roles over the years but is best known for his sound advice and assistance as a safety officer and as a key organiser of the Lawrence Hargrave International Competitions throughout the eighties.



In more recent times Clive would spend hundreds of hours behind the controls of the Dragon Fly tug plane, towing Aussie team



members or visiting internationals alike into the air at the major Flatland events at Forbes, Hay or Dalby. For the past eight years Clive would spend most of his free weekends at Rylstone towing all comers. His dedication and energy seemed endless.

Clive's association with the national team was not limited to the towing events in Australia. Once again in partnership with Bill Moyes the pair moulded a formidable squad of pilots beginning with the World Championships in Kössen, Austria in '85 and continuing until the '98 Worlds at Forbes NSW. He assisted in whatever role

was required from tug pilot, to retrieve driver, to team manager, cook and security guard. Like everything else about the sport he put his heart and soul into helping those teams achieve success. Their successes were also Clive's, but perhaps this has never been properly acknowledged. The pilots that formed those teams not only respected Clive they grew to love and trust him like a second father.

The sport of hang gliding owes much to Clive Gilmore. We will miss his

laughter, his tales, his caring, his enthusiasm and his boundless energy and love for the sport.  
Farewell "Cliffy".



Above, top: Clive with Steve Moyes and his son Steve Gilmore.  
Above: Clive towing behind a boat in the early days of hang gliding. Above right: Clive as a tug pilot.

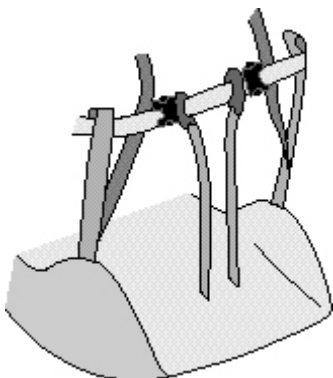
# The Problem with Harness Buckles...

PAOLO GAVELLI

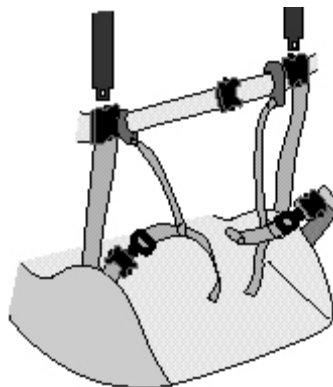
The world of paragliding harness makers is in ferment: every manufacturer is searching for their own way to stop the spate of grievous accidents due to leg buckles failing to lock securely. Both at the international meeting in Bassano, and at the Garmisch Partenkirchen free-flight fair, it was possible to see many different solutions, all of them referring to the same concept: to secure the pilot to the harness at the same time he or she locks the chest buckle or the canopy. The problem with using traditional harnesses (i.e. those with three locking points: one for each leg and one for the chest), is that it is possible to lock the chest buckle while forgetting about the leg buckles. This can cause an involuntary take-off (and has done so on numerous occasions) once the pilot begins running, with the result that the pilot slips out of the harness while airborne.

Paragliders need to be aware that 'Get Up Engineering' – the Italian firm that patented the 'Get Up' system – have already designed, tested and divulged the right idea: one or more straps linking the central portion of the seat to the chest strap (detachable by both sides). Once the pilot has locked the chest strap, the thigh straps prevent him or her from slipping out of the harness. If the pilot forgets to hook both the chest buckle and the leg buckles, an unintentional take-off is impossible: once the canopy begins to rise the harness follows it freely (as the pilot holds only the brake handles).

This article compares the various versions of this pivotal idea; along with their related virtues and defects. Granted that all of the harnesses tested have the praiseworthy potential to save an inattentive pilot's life, let us scan them one at a time.

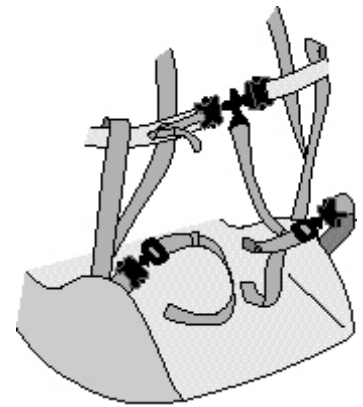


The most innovative harness in Bassano was surely the X-Press by Woody Valley. It shows no leg buckles, and only two buckles in total (by the sides of the detachable chest strap). It's obviously impossible to forget to lock the non-existent leg buckles. The leg straps, in fact, starting from the central part of the seat, build a triangle with the chest strap. They have a length-regulation system under the seat, and allow the pilot to easily sit in the harness. This solution eliminates the bother caused by the leg straps while pilots walk (thus eliminating also the dangerous temptation to unlock them). Moreover, only two buckles to lock makes it easier and faster to pull on and off the harness. This can become useful every time the pilot needs to get out of the harness quickly (for example, in the case of a water landing or in strong winds).

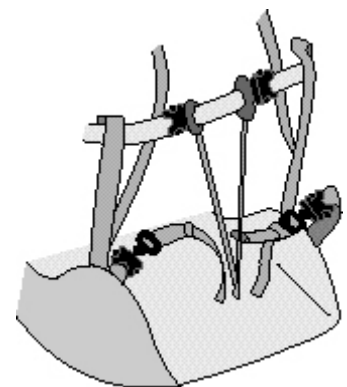


Another innovative harness has been presented in Garmisch Partenkirchen as a prototype by the Charly company. Its main characteristic is the substitution of the two closure connectors (usual hanging points of the wing elevators) with two multiple buckles. The elevator can be locked to this buckle only once the pilot has locked the leg strap (this system enhances the pilot's safety by the same inguinal stop as the other systems). However, this harness presents the pilot with five(!) buckles to lock; moreover, it shows no ABS system. However, being a prototype it will probably be improved before production begins.

Sup'Air, Paratech and High Adventure all updated their harnesses by adopting a system called 'safe-T-bar', the basic principle of which is the same as that of the 'Get Up' system. The difference is that the detachable portion



of the chest strap consists of a double male buckle. A strap links one of the leg buckles to this double male – by locking the chest buckles, the inguinal stop is sure. However, this means that if the pilot forgets to lock the leg straps, he or she is only retained in the harness by the thigh straps: Safe but very painful! This solution requires four locking points, which tends to complicate the harness wearing and stripping (not a good thing in the case of a dangerous landing).



Sky Line, finally, presented a prototype in Bassano with the traditional two leg straps and two more straps that, starting from the central portion of the seat, are sewed to the sides of the detachable chest strap. This solution has the merit of saving the testicles from a possible squeeze; the defect being the requirement of four locking points.

In conclusion: Let's hope that the availability of safer harnesses will soon make it possible to eliminate altogether accidents due to the stupid and dangerous phenomenon of 'leg buckles missed locking'.

# You wouldn't read about it...

PETER BOLTON

After hearing so much about the potential of the cliffs from the SA/WA border to the head of the Bight and seeing how many record-breaking flights they had yielded, I had to go and fly them myself. All of the record-breaking flights so far had been made by pilots from interstate or even overseas and I felt that, as a resident of the same state as the cliffs/Bight itself, I didn't have much excuse for not giving the place a try. I had a window of opportunity in mid-January '99 so I decided to put it to use.



Like previous pilots visiting there, I did plenty of preparation before finally heading for the Eucla area. This included safety equipment and contingency plans (see my earlier article published in the April issue on safety aspects), reading articles about earlier flights there and speaking to other pilots who had previously flown the place. I obtained some statistical info from the Eucla met bureau station, which told me that January was the equal best time of year for SE winds. January and February both had SE as the most common direction at 3:00pm (on 45% of all days for the past 35 years).

I had read in previous articles, and been assured by various pilots who'd been there, that SE was the best direction to fly the place. I thought this was a bit strange, since the coast faces closer to due South on the maps, but I assumed it must be some sort of local knowledge or due to the seabreeze effect. In any case, the historical wind records were only available to the nearest 45 degrees (i.e. SSE did not exist there). On arriving on the coast at Wilson's Bluff (the place used by Rohan Holtkamp's previous trips) on the first morning, I found the wind to be ESE (i.e. about 40 degrees off) and only about 12-14kt. Wilson's Bluff itself was a sheer cliff at the top, but with a slope and beach below. I didn't feel like trying a new site in less than ideal conditions, so I decided to explore a bit and visit the met station. The local weatherman couldn't promise me much in terms of better wind strength or direction but I was interested to see his latest instrumentation – his temporary anemometer consisted of a long piece of string tied to the gutter. Talk about an outback weather station!

As the day wore on, with no sign of a seabreeze-induced improvement, I became resigned to the idea of a day's sightseeing. At least it would allow me and Anthony – my driver for the trip – to get to know the area. First on the list was one of the main tourist draw-cards – the old Eucla telegraph station. When we got there, we thought that we'd just come across some other ruined old building on the way there – only the walls remained and you couldn't go inside because the whole building shell was full of sand! To the beach for a swim next, which was good until afterwards, when the local sandflies started biting us.

Anthony, my retrieve driver (which were all too short) at the 'proper' cliffs which I never came to fly.





Peter standing at the steepest point within about 8km – not exactly precipitous or towering!



My glider after landing halfway down the main face. No need for 'Fly on the wall' technique here – this is the sort of gradient nearly the whole way up. No wonder I bombed out.

The next day started with another visit to the met station, but the synoptic chart showed ESE isobars and again no promise of any onshore moderate breeze from weatherman No 2. Ah well, we could visit the other local tourist attraction – the limestone caves. The recommended ones were between 300km and 50km away on a dirt track. We went to the nearest one, which was marked by a 'Cave Closed' sign. We couldn't have got down there without special climbing gear anyway. The evening entertainment at the border village wasn't exactly raging, but with beer at \$3.60 a can, we weren't inclined to stay.

The next day dawned similarly, but by this stage, I was suffering from flying withdrawal symptoms. We drove to Wilson's Bluff again and, after a bit of exploring, found a take-off facing SE (one side of a small bowl) with a rounded top. Checking the photos with the article from Rohan's first trip showed that this was the 'good' take-off used on previous trips. Everything looked OK except the wind direction was still about 40 degrees off the main face. At least I was going to get into the air. When I finally got into the air, I did the headwind beat first and only just gained height. As I approached the south facing Wilson's Bluff cliff-topped hills, I realised that I had no chance of staying up on them. So, I turned for the downwind beat, expecting to maintain height at least. No chance – I dropped like a brick and not even the famous Eucla sand dunes could help me.

I was on the beach after only a few minutes airtime and on the radio to Anthony. There was no vehicle track down here and how would he like some free fitness/assault course training? The face was 'only' 300ft high and not too steep – it was just the loose sand that made the climb with glider and harness difficult. The rest of the day was spent looking at other take-offs and access tracks (and recovering). The recommended 16km take-off (a highway rest area) made

most coastal sand dunes look like Mt Buffalo to me (i.e. it was not exactly steep).

Day 4 began with slightly better winds, so I was straight off to Wilson's Bluff, keen as anything. An early flight confirmed that it was in fact soarable, so I top-landed and filled in a task declaration, got the photos and switched on my GPS and barograph. This is normally a recipe for an instant bomb-out, but I knew it was soarable here. All ready for one of those flights you always read about (bar to the knees for 300km, etc), I took off and went up! I flew along the coast (into SA), trying to get to the end of the steep section as high as I could. I could see the flatter slopes stretching out ahead of me from the 8km mark as far as I could see. Things got difficult after 9km, then really hard to stay up after that. I don't mind scratching or flying low hills, but when they're such gentle slopes and the wind is about 30-40 degrees off, it's not much fun. I finally bombed out just past 10km. The only consolation was that the hill wasn't too steep to climb and Anthony arrived quickly to help me (again!). Being so disgusted with myself for bombing out on such a consistent site, I took off again from the 10km point and made a total distance of another 2km! By now, the wind was 45 degrees off and when low (as I always was), it was ROUGH!

Day 5 seemed more promising, with some interesting (orographic?) cloud about 500ft above the top. I remembered a few stories of classic long-distance flights under clouds without turning, so I thought today might be my day. Again, it was well soarable at the Wilson's Bluff take-off, and again, the first 8km of the flight were easy. I got as high as the clouds would allow me when over the steep section, but there was no 'cloud suck' over the flat section. I really battled to stay up and even got past one of the hardest sections – near the 'recommended' 16km take-off. I couldn't defy gravity for much longer and ended up on the 'main face' of a piece which was only slightly steeper than a

bowling green, at the 21km mark. Another walk up, but I was only 100ft below the top of this 'cliff'!

For the last flyable day of my week's stay, I resolved to find a better take-off, nearer to the famous cliffs, so that I might actually be able to do what I had come here for and fly the vertical cliffs themselves. We were due for a completely unflyable day (which we got), and spent our time looking at other closed caves and insignificant ruins. That night, the wind picked up and damaged our tents (with a bit of assistance from the local crows?).

At least the wind was blowing onshore in the morning, so we went out and found what should have been a better take-off (nearer to the cliffs, steeper, etc). The only problem this time was the wind strength – gusting to 35mph! I was unable to get any forecast time for moderation from the Eucla weathermen, so I decided to set up and wait. This I did and, lo and behold, it did moderate to a reasonable strength. While making some final preparations, I noticed a few spots of rain. Once I was ready to lift the glider, the heavens opened! I had read the weather stats about how common completely dry months were here. Well we seemed to receive about one month's average rainfall in the next two hours! With no end in sight and wondering how our damaged tents were coping with the deluge, I reluctantly decided to pack up in the rain. As I got the last batten out, it stopped raining and once I drove off, the low cloud cleared. We then drove back to our tents (in perfect flying conditions) to salvage what we could from the soaking wreckage before dark.

Some statistics of the trip:

Total distance driven (including local sightseeing):	3,300km
Total (straight-line) distance flown:	35km
Total air-time:	2.6hrs
Total cost:	
Don't ask!	





# Club Newsletters

EMILIS PRELGAUSKAS

Clubs are complex organic things, part legal entity, part human foibles. As a result many clubs have put in place formal communication methods in addition to the normal launch point chat, gossip, scuttlebutt and bartalk. Club newsletters are the most traditional means of communication by clubs to its members, other organisations, and the public.

Today some of these have become electronic bulletins, or dedicated chatlines. In some clubs the newsletter has faded away, as part of the normal difficulty of finding people to do the wide variety of jobs that make up a club. In some clubs, the newsletter continues. An enthusiast may bring it together regularly from pure personal pleasure in the task, a secretary may produce it in frustration in not getting routine information like rosters out to the affected people, or the treasurer may use it as a non confrontational way to getting to say 'show me the money'.

In my home club, with the resources of the FMCD Library, we have a wide variety of newsletters spanning many years and numerous clubs. For those who send us a courtesy copy – thank you. In years to come, as more clubs pass their critical landmark dates (21st, 50th, etc. birthdays either since formation or moving sites), these collections become important guideposts when someone in the club wants to do a history, or chase up prominent individuals or events from the past.

Often we get old newsletters as part of boxes of random sport aviation stuff forwarded to us instead of going to the tip. These we put with the relevant collection as opportune ways to update/complete collections. A bit like the federation organisation which doesn't have a full edition of its own pilot magazine, many clubs in the same way don't have collections of their own newsletters. Newsletters vary widely, thereby giving an insight into the character of a club, or the guiding editor. The style can be chatty, or formal, or slightly embarrassed. The content can be about the flying, the people, the visitors, the gossip, internal and external operating rules and regulations, organising flying, flying charges.

In informal newsletters, the chatty style rambles across all these subjects at random, resulting in a readable light approach, but where there is no highlighting of 'now hear this' material. At the other end of the scale, some newsletters have developed to a routine style with regular formal sections; from the President, the CFI, social announcements, the instructors' roster; and sometimes almost nothing else. The presumption may be that the roster goes on the fridge door, the rest in the bin. In between are an immense range. Some effective newsletters mix formal and lighthearted; with some items that span across these definitions. In the last category in some club newsletters there is the brief listing of all flying days since the last newsletter, taken from the flight sheets, noting nothing more than how many

Insert Duotone pic  
of author  
supplied

people were in the flying day, how many gliders, how many flights; with perhaps longest flight by whom, and any item of interest. Like the winch blowing up (again).

There are over the years some items that start in the lighthearted category in a club newsletter, but become classics, sometimes being re-published more widely. These eventually become urban myths and a part of gliding lore. In gliding, the snake story (and its variants) fits that category. Not as well known, but headed toward that status are other stories.

An original piece by Marie Knappstein many years ago described the invention of the yaw string. In the chronology listed are that early models in chain links tended to scratch the perspex, and later the yaw string was found to work better if placed on the outside (shock, horror!) of the canopy.

Of that era, the Whyalla club ran a series on the adventures of a gliding character called the Green Hornet (yes, after the comics character). Only in gliding he drove a US car by that name, flew a German sailplane by that name, and the rig right down to the flying suit was in green with red stripe.

Most recent comes to mind the detailed scientific exposition on Heisenberg's Uncertainty Principle (as applied to gliding) by David Conway. Basically, it concluded that at no time can all parts of any piece of gliding equipment every be functional all at once. Which we in fact find in practice.

Less obvious are influences like the 'Nambis4' spoof. Even today pilots call up that vision of the glide slope flatter than the earth's curvature.

As a result, newsletters can play a diverse role in gliding. Beyond informing, entertaining to stirring innovative thinking about the state of our sport.





# Fuel Reserve for Aerotowing

GEOFF NEELY

At a recent meeting our club proposed to set a mandatory fuel reserve in the tug of 45 minutes. I was one of those who wagged our heads, so I was challenged to justify my opinion. I have changed my tune, and I'll tell you why.

**T**he principle of justifying your actions is common now. Many specifications, standards and codes allow you to depart from recommended practice if you know a better way but you must be able to support your action with reasoned argument and calculations.

45 minutes reserve is only a recommendation, but we were told about a pilot who carried 30 minutes and when the judge asked him, all he could say was, "It seemed like a good idea at the time." The judge was not impressed, and found him negligent.

I thought all you needed in the tug was to get back from the last tow and be able to say, in your pre-landing check, "Fuel on the left tank, sufficient for a go-round." I took the hypothetical go-round seriously, but I aimed to complete it with just enough usable fuel for a reasonable depth over the tank outlets.

I don't believe the 45 minute rule should be invariable. It was invented in grandpa's day when aircraft cruised at 65 knots as long as the wind was in your favour. If you wanted something left after a circuit and a go-round you had about 35 minutes to search for your destination (no GPS, just a square search).

It depends on where you are going. I never flew out of Darwin without 60 minutes reserve, usually a lot more. So let's work out a reserve for aerotowing. Please read on, you might get a shock.

I will work backwards from the last landing of all. I will use real consumption figures and add a bit for luck at the end. The figures apply to the popular 235 HP Lycoming engine.

Many flight manuals give a minimum quantity of fuel for flight. Our two seat Pawnee requires 18 litres of usable fuel for ballast if there are two people in it. The Callair A9A has wing tanks and the flight manual says no slip or skid with less than  $\frac{1}{4}$  fuel. This gives us the minimum on the last landing.

On a go-round, the climb to 1,000ft and descent will use 2 litres (faster climb than on tow). On downwind leg at 65% power, 55l/hr (Piper handbook) for one minute (4km at 70kt) you will use 1 litre.

As you take off on the last tow, unless told otherwise, you might allow fuel to 2,000ft, but the pilot may hang on until 3,500ft without warning you. So you had better have an extra 4 or 5 litres.

You might have to give way to a glider on final and come again on base leg. Three minutes is plenty, given that a normal tow is 6 or 7 minutes. That's 3 litres.

Unlike a cross-country flight, you don't need fuel to search for your destination or to wait out a thunderstorm or squall – you should have seen those coming. However, you might have to wait out a short shower. Say between 10 and 15 minutes at reduced power. Allow 10 litres – that gives you 13 minutes at 55% power, 47l/hr. You might argue with this one but I will show that it doesn't make a lot of difference.

We need not allow for all these contingencies – last flight before refuelling, long tow, baulked circuit, rain shower and go-round – to occur in one flight. That will hardly happen once in 100 years. If it did, you could presumably land the tug in a paddock.

As to adding a bit for luck, why not add 15% for uncertainties of consumption and timing, as you would for a charter flight. Let's add up the numbers:

This is the shortest credible combination of contingencies:

Longer tow than planned	5 litres
Baulked circuit	3 litres
Climb & descent on go-round	2 litres
Downwind leg on go-round	1 litres
<b>Sum of these contingencies</b>	<b>11 litres</b>

On the other hand this is the longest credible combination:

Longer tow than planned	5 litres
13 minutes waiting out a shower of rain (you would have beaten it in if he had got off at 2000)	10 litres
Climb & descent on go-round	2 litres
Downwind leg on go-round	1 litres
<b>Sum of these contingencies</b>	<b>18 litres</b>

These combinations only differ by 8 minutes – one tow – and that does not seem worth arguing about, so take the larger combination, 18 litres.

For our particular two seat Pawnee:

Contingencies	18 litres
15% Variable reserve	3 litres
Minimum usable remainder, two seat Pawnee	18 litres
Usable reserve required	39 litres
Unusable fuel	11.5 litres
<b>Total reserve</b>	<b>51 litres</b>

Now the Callair figures: The minimum for sideslipping is  $\frac{1}{4}$  total, not usable, fuel. It is needed to keep the outlet covered.

Contingencies	18 litres
Minimum total remainder, Callair, $\frac{1}{4}$ of 151 L	38 litres
<b>Total reserve, Callair (44 L usable)</b>	<b>56 litres</b>

The usable reserve at 65% power is 43 minutes for the Pawnee and 48 minutes for the Callair but it is better to work in total litres to allow for unusable fuel and varying power settings.

Remember, this is after the last tow so you can not start a 2,000ft tow with less than 58 litres total fuel in the Pawnee or 63 litres in the Callair. That is 39% and 42% of total capacity respectively. Note that 42% in one tank and  $\frac{1}{4}$  in the other won't do.

Makes you think, doesn't it? Maybe grandpa did have it all worked out after all. Usually we do.





# Promoting the Sport

## Hang Gliders and Pre-schoolers



REGINA BÖHLER

Most of us have dreamed of flight since we were little children.

I remember as a five year old telling someone that I wanted to jump from an aeroplane to see what it was like to fly. As I had never seen a hang glider, parachuting seemed the next best thing to do.

**P**re-schoolers are immensely curious and impressionable, and they do appreciate being able to try new things. So I came up with the idea of setting up my hang glider in the childcare centre which my four year old son attends. After getting permission from the director who was most enthusiastic, I had a chat with some of the staff in regards to the logistics of introducing such young

children to the concept of unpowered flight, and setting up the hang glider in the playground. Due to the amount of time involved and in trying to keep within the routine of the childcare centre I decided to have a one hour introduction on a Tuesday morning, and then on the Wednesday bringing in the actual hang glider.

As an introduction I asked the children if they could name things which fly and what is needed in order to fly. Amazingly, even at this young age they knew immediately that one needed to have wings to fly (except for balloons and rockets of course). After showing them some pictures of hang gliders, I read them the story of 'Harry and the Hang Glider', a children's book produced by the Arizona Hang Gliding Club, and sent to me by a friend who is a member of the club. This was followed by a hang gliding video, which was kindly lent to me free of charge by the HGFA.

The children really liked the video whereas the children's book was a touch too technical to appeal to them, although it had very nice drawings. Children of that age also have a very short attention span, so I tried my best to keep things short and

simple. I finished off with folding paper aeroplanes and the staff put up the hang gliding pictures (from the USHGA calendar) around the room.

The next day gale force southerlies hit Sydney making it too dangerous to put up the hang glider as even the sheltered playground was buffeted by wind. So I decided to postpone it for one week. Not only was I being pestered all week by children asking where the hang glider was, but I also managed to choose the one day it was nice and flyable at Stanwell (Murphy's law!)

With the help of my flying buddy and fellow parent Zain, (who is just learning to fly) and another parent we managed to suspend the hang glider from the sun-shade cover over the playground. To the amazement of the kids, staff and many a parent who came to drop off their children, the glider appeared to 'float' about five feet off the ground. Next a couple of soft play mattresses were placed underneath the A-frame and the fun began. The kids lined up in a queue and each one was 'shoved' into the harness, donned the full-faced helmet and started to swing around, pretending



to be 'real' pilots, while the staff were busy taking photos.

It was interesting to see the reaction of the kids. Most just loved it, regardless of gender I might add, and wanted to have another go, even asking if they could take off with it right then and there. A few were hesitant and a bit wary – one boy at first did not want to try, then changed his mind, only to end up panicking inside the harness crying out: "I'm falling, I'm falling!" Hopefully this experience does not trigger a phobia of flying in him.

The reaction of the staff and the parents was extremely positive. Everyone really appreciated the opportunity for their kids to have a look at the hang glider and to have a 'go' in it. They also asked lots of questions about how it works and where we fly, etc.

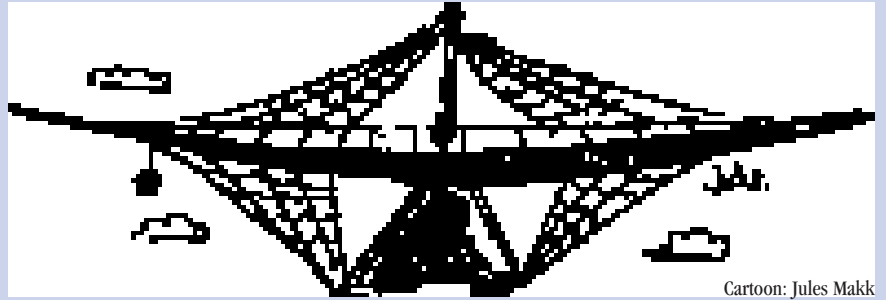
As for myself, I enjoyed it too! Despite missing out on a day's flying. Who knows, maybe in 15 years time we'll have a whole new generation of pilots saying: "I always dreamed of flying ever since I saw my first hang glider at kindy!"



*Thanks to Zain and Cormak for helping to suspend the glider, the staff at Kang's Childcare centre for their enthusiasm and support, and to Margaret at the HGFA office for lending me the video.*



# Super Sleuth



Cartoon: Jules Makk

## AGENT TISH

The sleuth wound his way quietly and sneakily up the mountainside.

He was on the lookout for an area 90ft wide and 200ft long

where the trees chose not to grow on this bush covered mountain.

Lo and behold, after just 10 minutes of winding along narrow dirt tracks on the mountaintop he found a spot with exactly the right dimensions. What a find! How convenient that the trees had left this space for him. He hid his vehicle, a 1993 Super Landcruiser Bat Mobile, and unloaded his secret spy equipment, the latest model from his secret factory in Botany, the CSX5. He was careful to check over his shoulder and make sure there were no stray mountain bikers watching his every move. You can never be too careful. They could easily get lost surrounded by all these trees, and stumble upon this natural lookout.

He quietly and carefully put together the spy equipment, making sure that all recovery systems were checked and double checked. He put a helmet on, more for disguise than safety. He was from another country and could not afford to be recognised or caught. Even the trademark sandals he always wore were replaced with anonymous runners.

He was certain that this point had never been used for spying before. No-one could have found this secret spot. There was a repeater tower at the other end of the mountain. He had a quick scan to make sure no-one was broadcasting his position.

Then quickly, he balanced the spy equipment on his shoulders. It was going to be a quick reconnaissance trip, to check the suitability of this secret spot. It was late in the day, he was hoping that the lengthening shadows and cool autumn temperature were keeping people indoors. Without warning, he ran as fast as he could down the cleared area, generating enough speed to lift himself above the mountain temporarily. Then he began the serious exercise of spying.

First and foremost, he used as much of the remnant lifting air as possible to keep himself up with a view of the countryside. He mentally ran through his checklist of things to note for the file: flat landing areas, clear of powerlines and trees; out of site of houses; in range of the radio repeater so urgent messages could be relayed back to the Bat Mobile. He also needed to be close to a quiet road so he could pack his valuable spy equipment away as secretly as possible. He also needed to note the close-by watering holes for his team mates, who may use the site in future operations with different equipment.

The Bat Mobile received his signal that he had completed the reconnaissance check list and would be landing. He relayed his landing coordinates in a code message. He knew it would be down to retrieve him in a few minutes – just enough time to disassemble the spy equipment.

When the Bat Mobile arrived he loaded up, then took some energy replacement, kept at working temperature by expensive coolants from the container in the back (code name: E.S.K.I.). Then he drove back to HQ making sure to change direction constantly, stop frequently and check he wasn't being followed.

A smile slowly spread across his face. Another mission completed.





# Gliding Revisited

J. MAGUIRE

Just on a year ago I was stuck in London on a 14 week assignment, Easter was looming and I had bugger all to do. While I was waiting for a friend at Victoria Station I wandered into a large newsagent. Whilst scanning the magazines I spotted a copy of "Sailplane and Gliding", now that's what I could do over Easter, have another go at gliding!

It had been about ten years ago when a friend and I had a great idea to fill in our Uni break – we'd learn how to fly. After some searching around we latched onto a one week course being offered by Lake Keepit Gliding Club. What ensued was a great week away under the supervision of the incomparable Ian McPhee. Perseverance on our part and patience on Ian's saw us go solo and do a single seat conversion. We left Keepit feeling very satisfied and except for a couple of weekend visits spread years apart never ventured back to gliding.

So back in London I started pawing through the magazine circling all the club advertisements. Next thing was to get on the phone and see who was running a course over Easter. To say that I was overwhelmed with enthusiasm is to understate the position. All of the clubs that I rang were willing to move heaven and earth to help me go gliding. I one instance I was told that a London based club member would pick me up from my hotel on Thursday afternoon, take me to the field, arrange accommodation and bring me back to London on the Monday night - amazing hospitality.

In the end the only one with a structured course over Easter was Lasham Gliding Society. A booking was made and I dutifully turned up on Good Friday (in the pouring

rain) to commence my re-introduction to gliding under the instruction of Bruce Nicholson. Well Friday was spent in a local pub called The Sun where we talked about the various theories of flight and other interesting topics (boy's talk!!). Saturday dawned, the rain poured, flying was cancelled, back to the pub? No we had enough of that yesterday! And my head still hurt. So we watched a few videos consumed huge amounts of tea and rock cakes and called it a day around 4:00pm.

I decided that it was early and wandered into the local village called Alton. I spent the next hour looking around the shops and generally poking around town. A quick glance at the sky, the clouds and rain were all but gone and it looked hopeful that we might get airborne on Sunday. Just then I was tapped on the shoulder and who was behind me but Bruce – "Sky's clearing want to go for a fly", "But its nearly 6 o'clock" I replied, "Good point we may not be able to find a sober tug pilot but its worth a try!"

So we both dashed back to Lasham. A quick glance around the bar confirmed Bruce's suspicion - no tug pilots with the required zero content!! "I haven't had a beer" said Bruce "All we need is an instructor who hasn't had a drink!!" A quick survey of the bar and Paul Kite was enlisted to take me aloft for the first time in ten years. Bruce in the tug, me and Paul in a K21. I was staggered that these guys would go to this much trouble to get me airborne. It took about 30 minutes to set up dragging tugs and gliders out of hangars. We were aloft for about 18 minutes, but it was great to be back up there and I was left wondering why I'd waited so long!

My first flight at Lasham set the scene for the rest of my experience. I spent the next 5 weekends getting back to going solo and clocked up some 15 solo flights over the ensuing weekends. During that time I flew with 15 different instructors all of whom were incredibly friendly and professional. I made some great friends and they turned what could of otherwise have been really boring weekends into a lifelong memory. Whilst I stuck with Lasham the entire time and can honestly rave about the welcome and hospitality that the club has to offer, my conversations with the other clubs proved that the gliding fraternity is truly one of a kindred spirit.

Since returning I've joined Bathurst Soaring club and again experienced a friendly acceptance and a desire to help me advance in my soaring ability. The challenge now is to find the determination and time to continue to progress in this great sport.

PS: However my biggest concern is that I have given my address to a few too many people and offered to give them a bed for a night or two should they pass through Sydney on the way to an Australian gliding holiday. It looks like I might have to move out of home to make room!



## Soaring Calendar

### 1999 Queensland State Gliding Championships 2-9 October 1999

The Queensland Soaring Association advise that the 1999 State Gliding Championships will be held between Saturday 2 to Saturday 9 October 1999 inclusive, at the 'world class' Darling Downs Soaring Club, Jondaryan, Queensland. Practice and registration day is Saturday 2 October, followed by seven competition days that will be contested in Open, 15M and Standard Class.

The competition organisers are keen receive applications as early as possible to facilitate the provision of adequate tugs and appropriate catering. Please contact the Secretary of the organising committee, Mr Trevor Hamley, on phone: 07 3899 1834 (h) or email: hamleyt@transfield.com.au for entry forms and all necessary information.

**NSW State Competitions**  
**FAI and Club (Ex Sports/2-seater) classes**  
Practice Day: 27 November 1999  
Competition: 28 November  
to 4 December 1999 inclusive  
At Narromine. Contact: Armin Krueger  
on 02 9618 7799.

**"Barossa Glide"**  
**Australian Club Class Championships**  
17-28 January 2000  
Gawler South Australia.  
(Pre-world Club Class – formerly Sports  
& 2 Seater Class)





# New FAI Badges & Certificates



## Summary for June 1999

### A Certificates

DAVIES David William	10253	Lake Keepit
WILSON Timothy Xavier	10254	Lake Keepit
HAUTOP Ann	10257	Adelaide
RANKIN Andrew Paul	10264	Townsville
PEPPER Brad Edward Bruce	10265	NSW AIR TC

### B Certificate

HOFFMAN Glen Laurence	10250	R.A.N.G.A.
LUKE Frank Arthur	10050	Southern Cross

### C Certificate

MALONEY Dennis Gerard	10210	Alice Springs
MARTYN Roderick John	10162	Central Coast
SWEETMAN Garry	10259	Byron Bay

### A & B Certificates

FIRTH David Wayne	10252	Hunter Valley
SWEETMAN Garry	10249	Byron Bay
PALLICH Rudolf	10270	Adelaide

### B. & C. Certificates

DEUTSCH John	9609	Beaufort
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### A B & C Certificates

KENT Garnet James	10256	Beaufort
SLAVEN Anthony	10258	Beverley
KINSLEY Leslie Paul John	10261	Canberra
JONES Peter	10262	Caboorture
SHAW David James	10263	Forbes
ROBIN Neville John	10266	Kingaroy
DAVEY Diane	10267	Mangalore
MALTHOUSE Steven Reiner	10268	Bordertown/Keith
GARDNER Blair	10269	Canberra

### Silver C Badge

FORD Darren Kelvin	4233	Sunraysia
MUSGRAVE Robert	4234	Beaufort
MULHALL Phillip Forde	4235	NSW AIRTC
TRUITT Michael	4236	Gympie
McLACHLAN	4237	Caboorture
MAHONEY Glenn	4238	Grafton
BOUGHEN Michael	4239	Southern Cross
EDWARDS Colin John	4240	Gympie
SHADLER Brian	4241	Darling Downs
HOUGHTON Kim Gregory	4242	Caboorture
CHAPMAN Rory Summerville	4243	Grafton
JENSEN Kristian Scott	4244	Southern Cross
BOULTER David	4245	Southern Cross
SHEAN William George	4246	Lake Keepit
POTTS Harry	4247	Lake Keepit
KINGSLEY Leslie Paul John	4248	Canberra
BINNEY Chris Andrew	4249	Geelong
SUTCLIFFE Brett Allan	4250	Bathurst
HOWE James Henderson	4251	Beverley
PETTENGAL Michael	4252	Beaufort
FRIDAY Richard Peter	4253	Caboorture
HANLEY Christopher Eric	4254	Adelaide
BROWN James Lawrence	4255	Alice Springs
LEWIS Leslie George	4256	Caboorture
SHAW David James	4257	Forbes
BLAKELEY Craig	4258	NSW AIR TC
GARTLAND Allan Robert	4259	Beverley

### Gold C Badge

HART Richard Charles	1498	Harden
CARDEW Julie	1499	Harden
BENNING Ian Richard	1500	Sunraysia
FORD Darren Kevin	1501	Sunraysia
BROWN Roger Lindsey	1502	NSW AIRTC
McGOWN Allan Lindsay	1503	Bathurst
GODDE James Anthony	1504	Albury/Corowa
McGARRY Noel Richard	1505	RAAF Williamtown
HEWITSON Michael Gordon	1506	Adelaide
ILLYES Denes	1507	RANGA
PREM Hans	1508	Geelong
McANALLY Kenneth Ian	1510	Geelong

### Diamond Goal

SCOTT David John		Millicent
BENNING Ian Richard		Sunraysia
FORD Darren Kevin		Sunraysia
MAHONEY Glenn		Grafton
GODDE James Anthoney		Southern Cross
JOHNSON Troy Athol		Bordertown
HEWITSON Michael Gordon		Adelaide
KINGSLEY Leslie Paul		Canberra
SUTCLIFFE Brett Allan		Bathurst
FRIDAY Richard Peter		Caboorture
ORGAN PHILLIP John		Bendigo
GARTLAND Allan Robert		Beverley
WELLINGTON David Brian		Beverley
McGOWN Alan		Bathurst

### Diamond Distance

MOORE Terance Patrick		Waikerie
SCOTT David John		GCV
KRUEGER Roger Reinhard		VMFG
BROWNE ROGER Lindsey		NSW AIR TC
GODDE James Anthony		Southern Cross
BOOTH David Eric Martin		RAAF Richmond

### Diamond Height

PREM Hans		Geelong
BROWNE Roger Lindsey	69	NSW AIR TC
CLAFFEY Kerrie Ann	70	Bathurst
WILLIAMS Malcolm Ross	71	RAAF Williamtown
De FERRANTI Ian	72	Bathurst

### 700km Distance

de FERRANTI	12	Bathurst
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### 750km Distance

STONE Rodney John	79	Canberra
LILLEYWHITE Robert Stanley	80	Beverley
DeFERRANTI Ian	81	Bathurst
MULLHOLLAND Stuart	82	GCV
BATESON Brian Angus	83	GCV
BURY Jill	84	GCV
HILL Susan Elizabeth	85	GCV
TROTTER Lisa Elizabeth	86	GCV
HOKKANAN Peter	87	GCV

### 1000km Distance

CLAFFEY Thomas Philip		Kingaroy
WARD Robert		Darling Downs

## 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

## GLIDING FEDERATION OF AUSTRALIA

### Airworthiness Inspection

## FORM 2 NOTICE

- ☐ A Form 2 inspection is due  
Cheque for \$125 is enclosed
- ☐ A 20, 30 yearly, etc is due  
Cheque for \$275 is enclosed  
with copy of aircraft log book
- ☐ An initial C of A inspection  
and initial registration is due  
Cheque for \$465 is enclosed

(tick appropriate box)  
on the following aircraft.

TYPE .....

VH .....

Please forward relevant airworthiness  
documents to:

.....

.....

.....Postcode.....

Forward to:

GFA Secretariat,

130 Wirraway Road,

Essendon Airport 3041



# What to Fly

BRUCE TUNCKS

Insert photo  
of author  
supplied

Gliding competitions are often won by one percent or so, and it is therefore worth looking for any possible advantage if you are serious about competing to win.

It's also part of the fun to work out what is the best glider choice to turn up with.

There are three quite different methods which can be used and they are all give similar results.

## Method 1

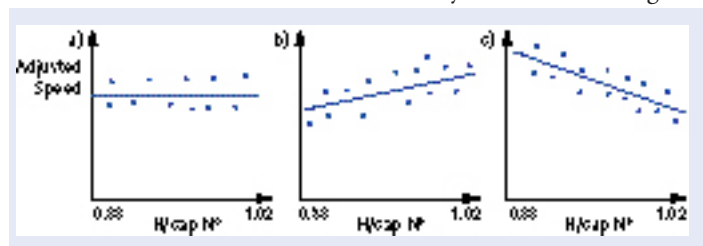
Apply some statistical analysis to a big enough competition.

The Temora Nationals provided a sufficiently large number of gliders to provide a statistically significant test of most of the handicaps currently in use. regretfully, the wooden and PW5 types were not sufficient in number to include and they are therefore excluded from this analysis.

### Method of Analysis

Each day, the top placing 21 gliders were taken, the first placing was deleted, and a linear regression calculation was performed. The graph of the figures for each day can be thought of as a plot of the handicap speed against the handicap number, giving each contestant a single dot. A day therefore gave a scattering of 20 dots or data points, and a line of best fit was computed by a linear regression program.

Possible lines of best fit could conceivably show the following:



Result a) is what we would hope to find, that is a level line. This is indeed a measure of just how level the playing field is.

Result b) would show systematic favouring of lower performance gliders, and c) would show the opposite.

### Notes on Method of Analysis

1. The first -placing glider(or one of them in the event of a tie) was deleted on the grounds that the winner did something "special" and that this should never be reflected in any handicap adjustment calculations.

2. The tail of the results was not included because these pilots also did something special which reduced the glider performance differential to insignificance. Typically, they lost time in weak lift.

The inclusion of just one very slow flight would have a disproportionate leverage effect on the computation, since it is most unlikely to be (say) 60km/h slower than the third-placing glider, but it is most unlikely to be 60km/h faster. Statistically speaking, the inclusion of the tail increases scattering and lowers the coefficient of correlation.

## The Results

On every day, the analysis showed a bias in favour of the higher handicap numbers within the range 0.88 to 1.02 considered.

Taking the comparison between 0.92 and 1.02 gliders gives the following table:

Day	Percent advantage 1.02 over 0.92	Coefficient of correlation
1	1.61	0.214
2	4.26	0.390
3	5.24	0.370
4	0.98	0.120
5	0.32	0.026
6	4.23	0.450
7	2.64	0.388
8	5.97	0.410
9	1.80	0.010
10	4.66	0.480

This gives an average handicapped speed advantage in favour of the 1.02 gliders of 3.17%.

The conclusion from this is that the first generation standard class gliders are the best, for example a Libelle, Cirrus, Hornet, ASW19, or LS1. Then there is a grading down to the old 15 metre and, worst of all, the old open class.

## Method 2

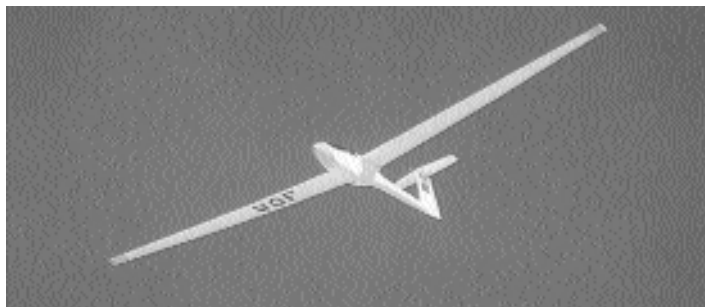
Find some credible handicaps from elsewhere and look for advantage here at home.

The most scientific study of handicaps I have seen has been done by Carl Herold, an aerospace engineer based in California. The study has been published in a series of articles in the USA, and the resulting handicaps are used there, at least in the western region where the conditions are similar to here.

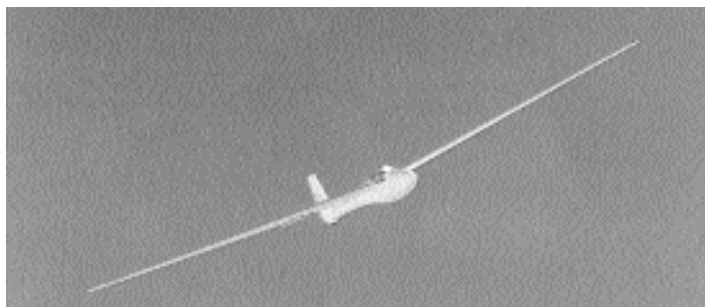
Here's a comparison of the USA and Australian figures:

	USA	Australia	Difference (%)
Hornet	1.00	1.00	0
LS1	1.00	1.00	0
Std Cirrus	1.00	1.00	0
Libelle	1.03	1.02	-1
LS4	0.97	0.94	-3
Pik20	0.98	0.94	-4
ASW20B	0.94	0.90	-4
DG200 (15m)	0.97	0.92	-5
H 304	0.97	0.92	-5
Discus	0.98	0.92	-6
Mosquito	0.98	0.92	-6
DG299 (17m)	0.96	0.90	-6

# in Club Class



Pik 20



Libelle

I have ordered the list to show the best choices at the top down to the least desirable. Interestingly, the order roughly agrees with that produced by the statistical method.

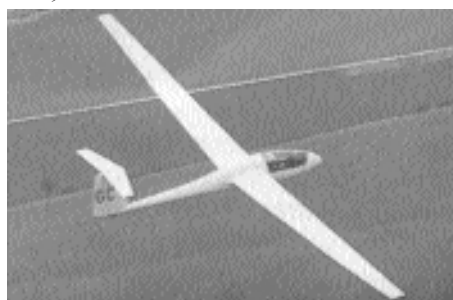
## Method 3

Look at what regular top placegetters fly, and get into something similar.

This, not surprisingly, gives a similar result. Just take care to check that things haven't changed, as they have for example with the Pik and the Kestrel.



ASN 19



Std Cirrus

## Method 4

If your stable of gliders doesn't contain a favoured type, then why not forget about methods 1 to 3 and fly anyway? Well-flown gliders of the least favoured types put in some outstanding performances at Temora, and their pilots and crew had a great time. ✂



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## Calling All Net Users!

Are you interested in receiving occasional news and general information? Mike Zupanc is putting together some address lists so that information can be sent out quickly to people who have Internet access. Send Mike an e-mail ([zupy@ozemail.com.au](mailto:zupy@ozemail.com.au)) stating what type of aircraft you fly and any special interests, like competitions or social fly-ins etc, and he will see if he can match groups and pass out news and information when it comes to hand.

For those seeking discussion on either general or specific topics, try the FAA forum pages at: [www.ffa.com.au/](http://www.ffa.com.au/). Airports netzine is also worth a look: <http://airports.fai.org/may99/issmay99.html>. This is the official publication of the FAI, and sadly does not get a lot of hang gliding or paragliding articles. (Does anyone have articles to submit?) The netzine has a back issue function and a search by sport function, so you can look up all the previously published articles on, say, paragliding, or whatever you are interested in.

Michael Zupanc ([zupy@ozemail.com.au](mailto:zupy@ozemail.com.au))

## Conrad Jupiters Casino: Betting on 'The Classic'

The international tourist resort Conrad Jupiters Hotel and Casino, on the Gold Coast, has agreed to sponsor the Canungra Classic for 1999. Grant Bowie, Executive General Manager, said 'The sport of hang gliding is an exciting and visually stimulating activity which is starting to generate a good public image. I believe with our involvement, this years 'Classic' can expect some extensive media coverage from which we will both benefit.'

According to organiser Peter Beard, this year's event is going to be even bigger and more fun than before, with a total prize package of \$5,000 making it one of the richest competitions in Australia. Timed to follow on from the excitement of the Gold Coast Indy Carnival, the 'Jupiters Canungra Classic' will try to incorporate more of the fun the area has to offer. With the presentation night to be held at Jupiters on the final Saturday, pilots will be offered special accommodation packages at the hotel to finish off a great week of flying. Although, if past night clubbing activities are followed, then you probably won't need to book a room at all. If you can only get to one comp this year then this is the one. See the Comps and Events page for details.

Peter Beard



## 'Cloudbusters' on Video

Above: Stevie Vollmer, Henry Hauck and Jochen Humpel during the filming for 'Cloudbusters' in Castelluccio.

'Cloudbusters', the continuation of Henry Haucks' successful film 'Thermik', is now available in English. As well as fascinating pictures, 'Cloudbusters' is a source of help and advice to all those pilots who want to set off on their first thermal and cross-country flights. Meteorologist Dr Herbert Pumpel, backed up by clear graphics, explains complex weather systems. The film also outlines flying techniques. World record holders Jo Bathmann and Burkhard Martens give tips from their years of experience. Technique and tactics are looked at as well as safety. The film was shot in Castelluccio and the Dolomites in Italy, the Pinzgau mountains in Austria, and Garmisch-Partenkirchen in Germany.



For further information contact Henry Hauck Productions, fax: +49 89 1665833, email: [hph@hph-film.de](mailto:hph@hph-film.de)

## Websites Way out West

The Western Soarers Hang Gliding Club would like to let people know about their great new website that you might want to check out. The site is packed with info for pilots, with links to weather, news, comps, other clubs and schools and a picture gallery to keep your spirits 'up' during those weeks when your glider isn't. The site can be found at: [www.iinet.net.au/~navi/](http://www.iinet.net.au/~navi/)

## Australians Pioneer New GPS Competitions Software

As you are probably aware, sailplanes have been using GPS systems to verify their competition flights for some time now. The system that they use works very well, but unfortunately the equipment required to use this system is somewhat expensive compared to what hang glider and paraglider pilots are used to paying for flight instruments. To counter this problem, a new system has been developed in Australia which uses the track log function of existing GPS units, thereby allowing the ease of using GPS data instead of photographs for competition flight verification. This system has now been used in more than a dozen hang gliding and paragliding competitions and has been quite successful and secure. Mike Zupanc, who along with Tim Cummings has been responsible for developing the software, has now established a website that explains the system and gives instructions for using the software. Keep in mind that this system is still evolving and enhancements are currently underway; but a simple, secure and successful system is with us now. Check it out at: [www.ozemail.com.au/~zupy/gps/gpstrack.htm](http://www.ozemail.com.au/~zupy/gps/gpstrack.htm)

Michael Zupanc

*Note: The organisers of the recent US Nationals (HG), where the new GPS software was used to provide the primary method of flight verification, have referred to the new system in glowing terms. Competition organiser, GW Meadows, reports: '[The system] was overwhelmingly welcomed by competitor and officials alike. We highly recommend that the CIVL work toward official recognition of this system of flight verification as soon as feasible. It will allow for several changes in the future. Currently, pilots must round a turnpoint within 1km and take a photo from the proper sector; this software allows the ability to let the competitor round the turnpoint at any distance. Also, it will allow for a 'forward progress' situation where a pilot may fly 20km along a course leg and have to turn around to land shorter than they flew for safety (weather) reasons. This software (or a version of it) will allow us to reward the competitor for the distance made good along the course line. Also, it will allow for the optimum tasks to be called because we will not have to confine ourselves to physical landmarks; we can fly 'virtual' turnpoints. A big thanks go to the Australians for developing this software and being the first in hang gliding to use it. Special thanks go to Zupy and Tim Cummings.'*

## Australian Paragliding News

Skyhigh Paragliding is based in Melbourne and has over 200 members who live all over the country. They keep in touch by subscribing to Australian Paragliding News, the club newsletter. Dedicated entirely to paragliding, it offers technical, travel, equipment and other articles all dedicated to flying under a jelly. So if you want a peek at the nation's only pure string and wobbly flying monthly, send a (big, A4) stamped addressed envelope to Skyhigh Paragliding, PO Box 441, Kew, VIC 3101. And we'll send you a back sample copy and of course a subscription form to join the club. Go on, it won't cost you much. You might even enjoy it. Or you could ring on 03 97705770 if you need more details.

Jeremy Torr

## Blue Mountains Hang Gliding Club

Our exciting 'guess the number of batten tips in the jar' competition is well under way! We have a large (approximately) 2 litre jar filled with coloured plastic battentips (thanks very much to the guys at AirBorne for supplying the batten tips with more or less straight faces), and all you have to do is guess how many there are. Easy. Over 300 guesses, from both pilots and non-pilots alike, have already been made. Proceeds from the competition go to support Care Flight, Australia's premier emergency rescue helicopter and medical retrieval service. The great prizes up for grabs include:

An all inclusive paragliding license course valued at \$950 (thanks very much to Lee Scott of High Adventure)!

A Charley Insider helmet valued at \$320 (thanks Moyes).

A tailor-made flight suit valued at \$250 (thanks to Godfrey of Manilla Paragliding).

A tandem trike flight (thanks AirBorne).

A tandem hang gliding flight (thanks to Tony Armstrong of Sydney Skysailors).

A tandem hang gliding flight (thanks to Jason Turner of East Coast Hang Gliding).

Videos, shirts and caps (thanks to Ian Jarman and the HGFA).

T-shirts, keyrings, stickers and more (thanks again to AirBorne and Moyes).

So, lots to win for those who fly and those who would like to. At only \$2 a guess it's great value.

The Jar will be turning up at various club meetings in NSW and Victoria. To add your meeting to the list, call me on 0418 130 354. Last guesses will be taken, and the winners announced, at the Blue Mountains HG Club

## FAI News

### Ratification of Breitling Orbiter III World Records

The FAI announced today the formal ratification of the first round-the-world balloon flight by Bertrand Piccard (Switzerland) and Brian Jones (UK). The flight, which took place between 1-21 March 1999, broke four world records, three of them absolute records for balloons. The performances ratified by the FAI are:  
Shortest time around the world (AM 15+ Absolute): 15 days, 10 hours, 24 minutes (370hrs 24min).  
Distance (AM 15+ Absolute): 40,814km.  
Duration (AM 15 + Absolute): 19 days, 21

hours, 47 minutes (477hrs 47min).  
Altitude (AM 15 only): 11,737m.

### New FAI Records

**Hang gliding – Rigid wing/moveable aerodynamic surfaces**

*Category:* General (single place)

*Type of record:* Distance over a triangular course

*Performance:* 105.67km

*Pilot:* Stewart Albert Midwinter (Canada)

*Hang glider:* Swift

*Course:* Mansfield, USA

*Date:* 8 July 1996



Annual Presentation Night on Saturday, 24 July.

Richard Lockhart

### Canungra Hang Gliding Club

This month has seen a slight improvement in the weather and some good (if not great) flying has been had for those able to get away mid week. Jon Durand snr gets the flight of the month with a splendid effort from Beechmont out to Toowoomba (125km) on a day when the rest of us were peering out the windows of our place of work at the awesome sky and salivating heavily. But there have also been some good weekends with Jon Durand Jnr and Michael Jackson skying out from Beechmont and flying to Laidley (95 km) on a Saturday that a lot of us spent sheltering from the rain under Shirley Lake's glider on Hinchcliffe's.

This month also saw the resurrection of the Canungra Hang Gliding Club Academy Awards evening. A three course meal, buckets of house wine and the formal dress requirements, all contributed to making this a splendid night of fanfare, pomp and ceremony. The evening was hosted by a plethora of local flying legends who presented a series of beautifully sculptured trophies to club members who had done something worthwhile in the last twelve months. There were certainly some fairly loose interpretations of the term 'worthwhile' which resulted in some unusual award categories and the recounting of some truly remarkable tales. Needless to say there were cheers and there were tears, but a good time was had by all. A series of working bees have seen more improvement up on Beechmont

launch. Over a couple of weekends a swarm of busy pilots have removed scrub, redistributed the soil and planted new grass. The launch now has nearly twice more area than a year ago and should be in beautiful condition for the return of the easterlies.

Talking about spring, a BIG thanks to Peter Beard for negotiating the sponsorship deal with Conrad Jupiter's Hotel and Casino for this year's Canungra Classic. Prize money of over \$5,000, a presentation night in the casino, accommodation deals and the event's infamous reputation for being the best fun you can have with your clothes off, makes participation in this year's Conrad Jupiter's Canungra Classic a must.

Congratulations are also due to club members Richard Nevins, Bernard (Speedy) Gonsalves, Dave Stevens, Scott Tucker, Trevor Purcell, John Blain, Bruce Crerar, Trevor Crane, Andrew Kennedy and Henk van Raalte who have all been flying hang gliders for 20 years. To celebrate this historic event the club has suggested that they fly their very first gliders off Tamborine on the morning of the next club meeting. For those unable to locate their first glider perhaps we could arrange the loan of a paraglider? Until next month, fly safe.

Mark Plenderleith



# Hang Gliding • Paragliding • Microlights

## HGFA Operation Manager

The Australian hang gliding scene lost one of its long time stalwarts when Clive Gilmore was killed in a car accident recently. Clive was a pioneer in the sport; he began flying in the early eighties; and for many years was President of the Stanwell Park Club. His love of flying was always apparent, in recent years Clive volunteered his time as a tug pilot at tow events. Clive was a true gentleman, one could never meet a finer bloke.

Sincere condolences go out to his wife Val and family.

### Are our Sports Getting Safer?

The following article came from a UK hang glider pilot:

*I've recently received a proposal from an insurance company offering insurance for activity sports. Last time I used them, they graded sports into 4 categories, rated 1 (safest) to 4 (most dangerous). At the top of the pinnacle, at level 4, were two sports: namely paragliding and hang gliding. Their new system now rates sports on a level of 1 to 5. Paragliding is now at level 3 of 5. Hang gliding is at level 2 of 5. Level 5 is now occupied by skydiving, etc. Bungie jumping is uninsurable... I assume these ratings are arrived at via their claims experience. At this rate, free flying will soon be rated alongside such horrendous activities as playing Tiddley-winks, or 10-pin bowling...*

### Accident Statistics

The preceding article is supported by HGFA stats; reported accident numbers have decreased over recent years (though please bear in mind that this could be merely a reduction in reporting). Figures for the last five years show that the number of hang gliding injury accidents has dropped (by 'injury' accident I refer to accidents leading to either injury requiring doctor or hospital treatment, or fatality – these stats do not include minor injury):

Year	1994	1995	1996	1997	1998
Reported HG accidents	36	36	29	16	15

Over the same period, paragliding 'injury' accidents have also dropped:

Year	1994	1995	1996	1997	1998
Reported PG accidents	17	10	18	16	9

Microlighting 'injury' accidents:

Year	1994	1995	1996	1997	1998
Reported ML accidents	3	3	3	nil	3

These same accidents, over the last five years, when presented as percentages of HGFA pilots show a fluctuating, though overall an improving, trend:

Year	1994	1995	1996	1997	1998
Hang gliding	1.80%	1.44%	1.63%	0.79%	0.77%
Paragliding	3.37%	1.57%	2.48%	1.85%	0.99%
Microlighting	0.62%	0.59%	0.50%	0.44%	0%

### Spinal Injuries and Back Protectors

The following information came from the DHV (German Federation) magazine, titled: 'Study on paragliding accidents with spine injuries by Karl Slezak, DHV Safety Chairman.'

About one third of the reported 120 PG accidents in 1998 in Germany resulted in spine injuries. During the research there was an endeavour to contact all the pilots who had suffered spinal injuries. Where this was not possible, the hospitals were queried.

#### 1. Cause of accident

46%	of injured pilots had a tuck
22%	over-controlled (spin, stall, parachuted)
13%	misjudged approach
11%	came down on reserve
8%	impacted with an obstacle

These figures highlight again how important it is to control tucks and avoid over-control.

#### 2. Severity of injuries

Irrecoverable damage:	2 pilots (4%).
Medium permanent handicapped:	12 pilots (29%).
Light permanent handicapped:	12 pilots (29%).
Complete recovery:	10 pilots (24%).
No injuries:	3 pilots (7%).
Unknown:	3 pilots (7%).

Checking with hospitals, it looks like the real number of accidents is about double the number reported to DHV.

### 3. Position of pilot on impact

Impact on ground with:

- (a) back and/or bottom first: 59%
- (b) side, hips: 22%
- (c) legs first: 19%

This supports the use of back protectors and side protectors.

### 4. Usefulness of protectors

Of the pilots who impacted on the back and got injured:

- 16 had no or unsuitable back protectors;
- 2 had only an airbag.

Using a combination of 17cm foam and airbag:

- 3 had no injuries;
- 1 had non-serious crack (out of a 10m full stall).

### Conclusions:

Back protectors based on foam or foam/airbag with enough thickness reduce the risk of serious spine injuries when impacting on the back. Back-plates with thin foam are not enough protection. A back protector is no help on side impacts. At present there is not enough data to study the efficiency of side protectors. There is one case of a pilot who probably suffered no injuries thanks to side protectors.

When impacting with legs first, back and side protectors initially are of no help. It must be endeavoured to use the legs as shock absorbers on impact and then roll over side and back (Parachute Landing Fall). It is important to keep the legs together and knees bent. Impacting with straight, stiff legs can result in very serious, irrecoverable spine damage.

In another article in the same magazine: Dr Georges Blatter of the accident clinic in St Gallen, Switzerland, examined the last 50 paragliding accidents admitted to his hospital during 1998 and found the following (Age of patients from 18-65 (average 35 years)): 49 of 50 injured pilots suffered heavy injuries, because they had no protectors. 11 pilots had a total of 16 fractured breast vertebrae, another 14 suffered 17 fractured pelvis vertebrae. The biggest risk is the wrong kind of wing (high-performance). Dr Blatter strongly recommends the use of foam airbags. Only one of the 50 pilots delivered into his clinic had used a modern foam airbag. He suffered heavy fractures of his legs and concussions on his back, but has since completely recovered from his injuries, even though his impact had been a very hard one. Dr Blatter wants protectors made mandatory by the DHV; and foresees all



national flying organisations and insurance companies also making them mandatory.

## Motorised Hang Gliding Accident

Following is a summary of a recent motorised hang gliding accident:

**Pilot:** Intermediate hang glider pilot  
**Experience:** 50 hours – first flight with motorised harness  
**Aircraft:** High performance hang glider  
**Pilot injury:** Deep lacerations to knee and elbow.

### Description:

The pilot flew for around 20 minutes without incident. On final, at about 150ft agl he turned to look over his shoulder and applied the propeller brake when the prop was horizontal to provide maximum ground clearance on landing. He turned forward to find that looking over his shoulder had allowed the harness to yaw and move slightly to the left, initiating a turn. He attempted to roll right to correct the turn but found he could not do so due to the harness being locked to the side, neither could he slow the glider. He was unable to level the glider which continued in a banking turn until the wingtip hit the ground followed by the control frame.

### Analysis:

Inspection revealed that the aluminium frame, on which the hand throttle is mounted, which protrudes from the harness had jammed behind the rear flying wire of the glider. Had the pilot quickly realised this in flight, he may have been able to push the control frame to the left and forward, to release the trapped wire. The pilot stated that the incident occurred so quickly that he was unable to do so. It is also contrary to standard practice to roll further into an unwanted turn and jam the control frame forward when near to the ground.

Pilots using these harnesses should be aware of the possibility of the frame jamming as described. Depending on the make of harness, it may be possible to extend the aluminium spar forward to reduce the likelihood of this occurring.

Fly safely,  
 Craig Worth



## Australia

### Manilla Mug Revival

2-4 October 1999  
 (NSW labour day weekend)

Competing for the Manilla mug trophy. Entry open to all pilots of any footlaunch aircraft. Entry fee of \$20 includes dinner. Register at the Imperial Hotel, Manilla, on the Friday night/ Saturday morning. For further information call Billo on 02 49213804.

### Inaugural East Coast Sport Aviation Fly-in

2-4 October 1999  
 Maitland, NSW. Hosted by the Royal Newcastle Aero Club and the Windsack Flying Club. All types of sport aviation are invited to attend, provided (1) the aircraft is registered with an official aviation body; (2) the pilot is licensed; and (3) a VHF radio is carried. The Hunter Valley has some very scenic flying areas, and many local attractions for the visitor. A number of tents will be available to pilots for a nominal charge, with showers, toilets and catering on site. A number of seminars and forums on aircraft building, engine maintenance etc, will be held free of charge. If possible, could clubs advise of any volunteers available to help with catering, camping, etc. For further details, contact Dave Caban (Pres) on 02 49682843 or John Robson (Sec) 02 49459792.

### 1999 Canungra Classic

23-30 October 1999  
 Canungra, QLD. Entry fee \$100 plus \$35 site fee. Registration and 'Calcutta' on 22 Oct, 7pm. Paragliders & floaters welcome. GPS mandatory (Garmin or Aircotec). Camera back-ups can be used every day except last day. Prizes awarded for grades A, B, C, Ladies and Paragliding. Int rating required. Closing date for entry: 31 Aug. Late entry fee: \$30. For more info visit the website: <http://tinny.eis.net.au/~tim/classic99/index.html>  
 Contact: Phil Pritchard ph 0418 761193, Glen McCleod 0755 435716, email: [tim@eis.net.au](mailto:tim@eis.net.au)  
 Send entry to: Canungra Classic, PO Box 116, Canungra QLD 4275.

### Corryong Fly-in

26-30 December 1999  
 Meet 12-1pm at the Elliot bomb-out. Free entry. Free camping by the river. Int to Adv rating. Ph: Greg Smith 02 42680589.

### 2000 NSW HG State Titles

11-18 March, 2000  
 Registration at the Imperial Hotel on 10 March. The comp will attract a min AA grade rating. Entry fee \$120.00 – includes films,

T-shirt and presentation dinner. Minimum pilot level adv. rating or int. with inland experience. UHF radio and parachute required. GPS recommended (if it still works in 2000). Databack camera optional but recommended. HGFA rules and scoring apply with GPS turnpoint and timing verification. Cheques payable to: NSW HG State Titles, 50 Park St, Charlestown 2290. For further details email: [BOLIVE@hahs.health.nsw.gov.au](mailto:BOLIVE@hahs.health.nsw.gov.au) or ph: 0249213804 (w)

### 2000 Victorian HG Open

12-18 March, 2000  
 Location: Corryong. Contact: Wesley Hill – email: [whill@nm.com](mailto:whill@nm.com) or ph: 0408 305943.

## Overseas

### Jackson Hole Paragliding Extravaganza

7-14 August 1999  
 Teton Village, Wyoming, at the Jackson Hole Ski Area. This is a USHGA sanctioned event. There will be multiple events and classes. However, the site requires a P3 rating and there is absolutely no tandem flying allowed. Entry fee \$200 before 4 July 4; \$250 after 4 July. The Jackson Hole Paragliding Air Games will be run at the same time, but will not attract USHGA points Entry fee \$100 before 4 July 4, \$150 after 4 July. All competitors pre-registered before 4 July have a chance to win a brand new Ball Graphics Comp Vario. Bring the entire family and visit Yellowstone and Grand Teton National Parks while flying at one of the premier flying sites in the US. Just remember to make your reservations early. For additional information contact: Critter Mountain Wear, Richard Kocurek, PO Box 975, Crested Butte, CO 81224-0975, USA, Ph +970 349 9326, email: [critter@crestedbutte.net](mailto:critter@crestedbutte.net)

### World Hang Gliding Championships

26 July-8 August 1999  
 To be staged in Monte Cucco, Italy. Contact HGFA office on 02 6947 2888.

### WHGS NZ Speed Gliding World Cup

18-25 September 1999  
 The 18th is the only official practice day, the rest set aside for competition days. For more information contact Geoff Dossetor (comp organiser), email: [antigravity@xtra.co.nz](mailto:antigravity@xtra.co.nz)

### Women's Hang Gliding Worlds

18-30 June 2000  
 To be held in Greece. Contact HGFA office on 02 6947 2888.



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Ph: Mike Smith 03 57947284, 0419 302617.

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**LS 3 UKC** 770 hrs, 405 landings, Ferro gel. Dittel 720ch radio, Blumenauer vario, National 425 chute, (3 years old), Thompson trailer with ground handling gear. No prangs.

Ph: Mick Honfi 02 68822000 (w), 68823841 (h).

**LS3a** low hrs, trailer, oxy, Borgelt varios, Dittel 720 comp sealed, chute, Ph: 08 83903022, email btomas@senet.co.au

**NIMBUS 3-25.5**, complete outfit. Refinished S-Nav, Garmin 90, tailtank, slimpak chute, oxy and Komet trailer. Ph: Ian 03 97627658 or 0419 100145.

**PILATUS B4** fully aerobatic, radio, good vario system, trailer, currently based Central Coast, \$18,500 or shares at \$5,000. Ph: Richard 02 92325255, Phil 02 47304774, Ken 02 96302027.

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**BLANIK L13** Low hours perfect cond. throughout. Private owner last 15 years. Very hard to better in Aust. Incl. exc. trailer, \$25,000. Ph: Mike Smith 03 57947284, 0419 302617.

## Motor Gliders

**DG 400 Motor Glider 17m.** Fully rebuilt trailer. Based at Camden Airport. Includes T hangar with water and solar charger. Motor 200hrs left on 300hr motor. B100 coupled to Garmin 90. Very good looker. Ph: Neville Page on 0419 653380, best offer.

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**LS3-17 TOP WQT** (see pict. similar LS4TOP July/Aug AG). Excellent 17m performance, refinished, comp sealed. Fully self-launching. Long range tanks, an absolute delight to fly. All ground handling. Parachute, good trailer (hardly used), heaps of extras. \$69 000. Phone for full details 03 95983265, email daveb@primemover.com.au

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**BLANIK L13 IZD** first class condition. Reference: Noel Backman Glider Man. Basic instruments. Based Central Coast \$15,000. Ph: Murray 02 49772740.

## Gliding Publications

### AUSTRALIAN HOMEBUILT SAILPLANE ASSOCIATION:

James Gary, 3 Magnolia Ave, Kings Park VIC 3694. Ph: 03 03673694, [www.geocities.com/capecanaveral/hangar/3510](http://www.geocities.com/capecanaveral/hangar/3510)

**FREE FLIGHT:** Bi-monthly journal of the Soaring Association of Canada. A lively record of the Canadian soaring scene, and relevant international news and articles. \$US26 for 1 year, \$47 for 2 years, \$65 for 3 years. Suite 101, 1090 Ambleside Drive, Ottawa, Ontario K2B 8G7, Canada. Email: [sac@comnet.ca](mailto:sac@comnet.ca)

**SOARING:** Official monthly journal of the Soaring Society of America Inc., PO Box E, Hobbs, N.M. 88241 USA. Foreign subscription rates: \$US43 surface delivery; \$US68 premium delivery. Annually. **SAILPLANE AND GLIDING:** The only authoritative British magazine devoted entirely to gliding.

52 A4 pages of fascinating material and pictures with colour. Available from the British Gliding Association, Kimberley House, Vaughan Way, Leicester, England – annual subscription for six copies £17.50.

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

**TECHNICAL SOARING/OSTIV:** Quarterly publication of SSA containing OSTIV and other technical papers. Annual subscription 70DM. OSTIV c/- DFVLR, D82234 Wessling, Germany (BRD).

**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 N.Z. 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.

**AIRBORNE MAGAZINE:** Covering all facets of Australian and New Zealand modelling. The best value modelling magazine. Now \$21 p.a. for six issues. Plans and other special books available. PO Box 30, Tullamarine, Victoria 3043.

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- ◆ **\$5 HGFA Pilot Training Workbooks**
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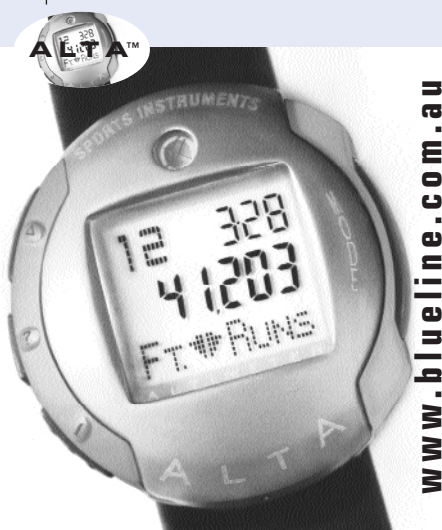
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# CLASSIFIEDS

## Classified Rates

The magazine now has a policy of charging for classified advertisements. The rate is \$15 for up to 8 lines (40 characters per line); with longer ads charged at \$4 per extra line. All classifieds **MUST** be paid for at the time the ad is placed. Please direct ads, together with payment, to the HGFA office (credit card payments may be made by phone).

## Classified Deadlines

The deadline for classifieds is the first day of the month prior to publication.

## Hang Gliders and Equipment

### New South Wales

**Aero 170** int, harness, parachute, vario, Uniden UHF radio, speed bar, complete \$1400. Ph: Rodney 02 66813597.

**CSX 3** adv, EC, under 50 hrs, 2 spare uprights, \$5,000. Ph: Christian 02 49633015.

**Enterprise Wings Elite** adv, sell whole or in parts, complete minus 1 LE, good repaired sail, \$ bargain price (neg). Ph: John 02 42342081, 0408 448108.

**Explorer motor harness**, 6 mths old, height 6'2", VGC, \$4,900 ono. Pod harness & reserve chute, \$260. Two new SX5 uprights, \$100. Two pneumatic basebar wheels, \$25. Ph: Ken 02 95186532; email: pixiejohnston@hotmail.com

**Mars 170** nov, GC, new rigging, mylar in LE, \$600. Ph: 0417 467695, 02 93654635.

**Rage 157** (aka Moyes Max) nov, beautiful glider, EC, \$1,950. Ph: John 02 42342081, 0408 448108.

### Queensland

**Exxtacy 160** adv, blue & white, VGC, exc performance, easy to launch, fly & land. Only flown 6 times in last 12 mths, pilot leaving sport, \$9,000. Ph: Steve 07 55338167.

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### Western Australia

**Elite 150** adv, approximately 100hrs, \$1,800 ono. Ph: Dave 08 93107100.

## Paragliders

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## Other

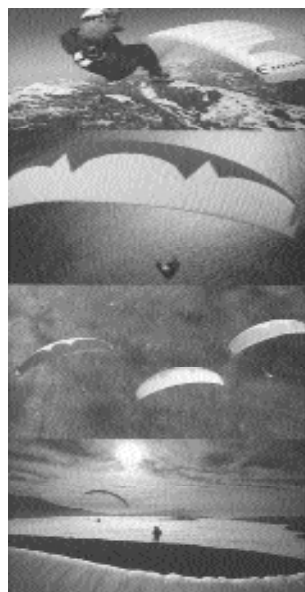
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# HGFA Addresses



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 Steinhart  
PO Box 558, Tumut NSW 2720,  
ph: 02 69472888, fax: 02 69474328,  
email: hgfa@tpgi.com.au

### President: Rohan Grant

188 Bathurst St, Hobart TAS 7000,  
ph: 03 62311112 (h), 0419 344011.

### Treasurer: Robert Woodward

PO Box 6260, Adelaide SA 5000, ph: 08 8232  
5405 (w), 08 82977532 (h), fax: 08 82237345,  
email: benchpos@dove.net.au

### Secretary: Tim Cummings

PO Box 116, Canungra QLD 4275, ph: 07  
55435093 (h), 0418 778422, fax: 07  
55434493, email: tim@eis.net.au

### Vice-President: Keith Lush

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08 93679066 (w), 08 93673479 (h), fax:  
08 94741202, email: keith.lush@hds.com.au

### Board Members:

#### Rohan Holtkamp

RMB 236B Western Hwy, Trawalla  
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email: dynamic@netconnect.com.au

#### Michael Zupanc (CIVL Delegate)

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ozemail.com.au

#### Peta Roberts

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42943941, 0412 009952, email: epicon@  
ozemail.com.au

#### Steve Ruffels

Bright VIC 3781, ph: 018 570168, fax: 03  
57501174, email: eagle@netc.com.au

#### Michael Eggleton

27 Knightsbridge Ave, Belrose NSW 2085, ph:  
02 99754114.

### 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: hgfaops@  
midcoast.com.au

### Microflight 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

### North Queensland HG 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.

### New South Wales HG Association

Sec: Steve Hocking, 19 Gladswood Gdns,  
Double Bay NSW 2028, ph/fax: 02 93274025,  
email: nswhga@s054.aone.net.au

### Victorian HG & PG Association

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

### ACT HG & PG Association

PO Box 3496, Manuka ACT 2603; Pres: Michael  
Porter 0415 920444; Sec: John Wilson 0419  
600636; Trs: Craig Hopkins 02 62862488 (h),  
SSO: Peter Dall. Meetings: 1st Tue/month  
7:30pm, "Sky Lounge" Yamba Sports Club,  
Phillip.

### Tasmanian HG Association

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

### South Australian HG Association

1 Sturt St, Adelaide SA 5000; ph: 08 84101391,  
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82973452; Sec: Mark Tyminski 08 83766117;  
Trs: Gary Stockton 08 82702910.

### HG Association of Western Australia

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## Clubs

### NEW SOUTH WALES

#### Blue Mountains Hang Gliding Club Inc

Pres: Richard Lockhart 0418 130354, email:  
flyhawk@kdbnet.net.au; Sec: Alan Bond 02  
98995351, 9 Finchley Pl, Glenhaven  
NSW 2353; Trs: Dolores Sempereboni, SSO:  
David Middleton 02 96236961; Newsletter:  
Glen Tomlinson, ph: 02 95468028, email: glen\_  
tomlinson@orix.com.au Meetings: Last Tue/  
month 7:30pm, Sportsman Hotel, Kildare Rd,  
Blacktown.

#### Byron Bay Hang Gliding Club Inc

Pres: Bill Bailey 02 66853626, bill@omcs.com.  
au; Vice-Pres: Andrew Polidano 02 66843510  
andrew@byron-bay.com; Sec: James Samuel  
02 66804336, freely@mullum.com.au; Trs:  
Shirley Lake 02 66858147, lois@linknet.com.  
au; SSO: Chris Rollins (HG) 02 6689 7217, Brett  
(PG) 02 66876907. Meetings: 1st Wed/month  
7:30pm, Bangalow Bowling Club.

#### Illawarra Hang Gliding Club Inc

Pres: Mark Ryan 0412 424 760; Sec: Tim  
Causser 02 4294 8110, email: timcau@  
ozemail.com.au; SSO: James Nathaniel  
02 42627677 or 0413 737077

#### Kosciusko Alpine Paragliding Club

Pres: Roger Lilford 06 2851404 (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 Burkhard 02 67751050, mailto://  
felixb@xyon.com.au; SSO (HG): Patrick Lenders  
02 67783484; SSO (PG): Godfrey Wenness 02  
67856545.

#### 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), email: tascha.conrad@hunterlink.  
net.au; V-Pres: Jason Turner 02 49408665 (h),  
015 636384; Sec: Karl Kindl 02 49677711;  
Trs: Tony O'Connor 02 49529146, SSO: Coastal  
- Jason Turner 02 49408665 (h),  
015 636384, Inland - Al Giles 02 49430674,  
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: Mike  
Warner 02 94521217 (h), 02 95573188 (w);  
SSO: Mike Eggleton 02 94517127, Park 02  
94502674, Glenn Salmon 02 99180091.

### Stanwell Park Hang Gliding Club

Pres: Rob de Groot 02 42942173, fax 02  
42943788, rdegroot@ozemail.com.au; Trs:  
Karen Lederer 02 42942273, 0411 362273.

### Sydney Hang Gliding Club

Pres: Dick Heffer 02 93872613; Sec: John  
Trude 02 98873371; Trs: Greg Wilkinson  
02 98184704. Meetings: 2nd Mon/month,  
Moyes Factory Loft.

### Sydney Paragliding Club

Pres: Rob Fakes 02 42942273 (h); Sec: Duncan  
Cross, 48 Cormiston Ave, Concord NSW 2137, 02  
97435128; Trs: Dave Worthington 02 9665  
1465; SSO: Mark Mitsos 02 42949065.  
Meetings: 1st Mon/month, St George Leagues  
Club, Kogarah.

### University of NSW Hang Gliding Club

Pres: Daniel Faber 02 93150727, email:  
dfaber@kensocoll.unsw.edu.au; Sec: Jon  
Ingles 02 93150571, email: jingles@kensocoll.  
unsw.edu.au; www page: www.vision.net.au/  
~gbeng/Hang\_Gliding.html

## QUEENSLAND

### Cairns Hang Gliding Club

Pres: Brod Osborne 07 40534686 (h), 07 4051  
5555 (w); Vice-Pres: Ian Graham 07 40954466;  
Sec: Lance Keough 07 40912117, 31 Holm  
Street, Atherton QLD 4883; Trs: Kasanda  
Brease 07 40532586 (h), 07 40512438 (w).

### Canungra Hang Gliding Club Inc

Pres: Shauna Purser 07 66793404,  
shaunapurser@yahoo.com; Vice-Pres: Andrew  
Horchner 07 38707709,  
0412 807516, afactor@gil.com.au; Sec:  
Richard Glasscock 07 55435057, 015 120874,  
richardg@qldnet.com.au, PO Box 41 Canungra  
4275; Trs: Fran Ning 07 55773260, ning@  
ausinfo.com.au; SSO: Glen McLeod (HG) 07  
55435716, John Botting (PG) 07 33002049,  
bottings@bigpond.com

### 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; Vice-  
Pres: Shane Gingell 07 32851668; Sec:  
Mark Savage 07 54416423; Trs: Annie Crerar  
07 54451897; SSO: John Blain  
07 54948779; Visiting pilot contact:  
Graham Sutherland 07 54935882.

### Gladstone Hang Gliding Club Inc.

16 Far St, Gladstone QLD 4680; Pres: Colan  
McGree 0413 941134; Sec/Trs: Natasha  
Atkinson 07 49726840; PR: Brian Duffy 07  
49922676; SSO: Geoff Craig 07 49923137, Paul  
Barry 07 49922865, prbarr@tpgi.com.au

### Sunshine Coast Hang Gliding Club

53 Yungar St, Coolool QLD 4573; Pres: Geoff  
Pettigrove 018 061595; Vice-Pres: Mal Price  
0412 07450883; Sec/Trs: Cathy Edmunds 07  
54463037; SSO: Dave Cookman 07 54498573.  
**Townsville Hang Gliding Association Inc**  
Pres: Gary Rogers 077 538565 (w),  
077 79264511 (h); Vice-Pres: Peter Scarfe 077  
721766 (w), 077 212666 (h); Sec/Trs: Brad  
Cooper 077 792853 (h), fax 077 815230;  
SSO: Graeme Etherton 077 724467.

### Whitsundays Hang Gliding Club

Pres: David Nash 07 49531817; Sec: Ron  
Huxhagen 07 49552913, fax: 07 49555122,  
email: sitework@mackay.net.au

## VICTORIA

### Dynasoarers Hang Gliding Club

Pres: Peter Hannah 03 52632335; Sec:  
John Norton; Trs: Rod Trevor 03 52811209;  
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

Pres: Geoff Tozer 03 97583250 (h); Sec:  
Andrew Medew 03 98227861, 16/25-29  
Brougham St. Box Hill VIC 3128; SSO:  
Harry Summons 03 59646055 (h), Lance  
Sheppard 03 59623570 (h), M/ship: Mark  
Jeffrey 03 59689015 (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: Jeanette McLaren 03 57544910;  
Trs: Bill Graham 03 57501828; SSO: Geoff  
White 03 57501244. Meetings: 1st Thu/ month  
7.30pm, Pinewood Hotel, Bright.  
www.home.aone.net.au/gilbert/nevhc.htm

### Sky High Paragliding Club

Pres: Adam Nienkemper 03 94811122 (w), 03  
93057442 (h); Vice-Pres: Phil Savory  
03 959772537 (h); Sec: Jeremy Torr  
03 97702775 (h), 03 97705770 (w).  
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; Vice-  
Pres: Alister Johnson 0418 323692; Sec:  
Nicole Matthews 03 57501884, 018 450626,  
email: nicolematthews@hotmail.com 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

Pres: David Humphry 08 95745440; Sec:  
Julian McPherson 08 92279266. Meetings: last  
Wed/mth, 8pm at the Sportsman Association,  
access off Woodsome St,  
Mt Lawley.

### Geraltion & Midwest Hang Gliding Club

Pres: Des Hill 08 99216219; 231 Third Street,  
Geraltion WA 6530.

### South West Microflight 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 Wed/month at  
7:30pm at the Swan Districts Football Club,  
Guildford Rd, Bassendean.

### Western Soarers Hang Gliding Club

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



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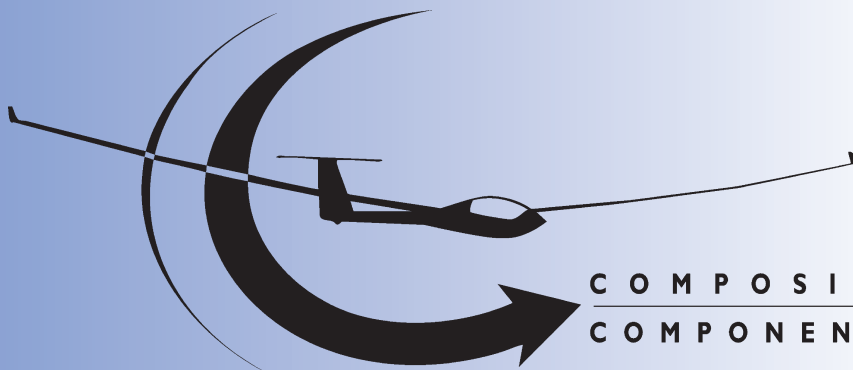
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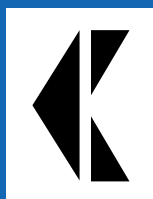
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