

KEEP (COOL WHILE) **SOARING** SUMMER 2016



PRESSING THE PANIC BUTTON

MAKING THE BEST OF THE DAY

TASK SETTING

SOARING BIPLANES

SAFARI 2016

SAFARI 1991

AND OTHER FLYING RELATED RUBBISH.



KEEP ON FLYING

It's been a more than usually busy few weeks at Keepit. The microburst which wrecked a few gliders could not have been foreseen. "A dry microburst can occur when the precipitation evaporates before hitting the ground ("virga"). This rapidly cools the air due to the latent heat of evaporation, increasing its density and accelerating its downward movement. Without visible precipitation, the event is invisible to us."

And a wheel fell off a tug. According to Peter Sheils, "Just before 1400, with James and I strapped into IKX, we made our first launch of the afternoon. We had just taken off (both glider & the replacement Callair Tug- MPL) when James exclaimed from the front seat "did you see that – the wheel on the tug just fell off!"

At about 100' or so in the air, I looked hard to find that the RH wheel hadn't actually fallen off, but was in fact dangling at the end of a collapsed undercarriage suspension, with the support brace dangling alongside the wheel!"

The tug diverted to Tamworth where emergency services were waiting and was expertly landed by Jenny Ganderton with a minimum of damage. The initial assessment is that the strut failed under the coil spring which is not visible on any DI.

Hopefully that's the end of a run of aeroplane damage.

Too Pooped to Pop

So said Chuck Berry. At the club last week, I would have said "Too buggered to boogie." It was well over 40° on many days which made flying and training operations seriously hard work. Ian Downes was towing in his Cessna until MRB returned from a 100 hourly at the end of the week and it must have been exceptionally hard work for a man of his years.

We had a contingent of keen visitors from Hong Kong who did not seem to find the days too onerous... though in summer, all the air conditioners seem to

heat HK up to more extreme temperatures. They even braved the crocodiles and sharks in the lake for a swim to cool down. Unbelievers!

On the days when I was there, we registered 44° and 47° in several places and one morning, it was 30° just before sunrise. I flew only one day and flew like a hang glider pilot, lurking under every cloud just to stay cool. It was one of those days when in spite of how much you drink... and I went through about 4 litres... you don't need the pee tube. Horrible!

Why do you go flying?

Do you ever ask yourself this question? Or do other people ask you this?

I didn't think of starting real flying until I saw a hang glider soaring just a feet above the cliffs down at the beach. Like a man-made seagull, the simple glider soared slowly up and down in the sea breeze and then

slipped out of the lift, flared and landed gracefully on the beach. Just a few kilograms of aluminium tube, wire and dacron but it could soar.

The freedom and independence of those early days in hang gliding are hard to imagine nowadays. You'd turn up at a beach or hill somewhere with some gliders on the roof rack and a gang of mates and if the wind was right, rig up and jump off.

Hang gliding, especially simple coastal dune soaring was and still is for me the closest thing to flying in dreams and it's odd that once I started flying like that, I stopped dreaming of flight.

For many of us, it's not a question of why do you fly, it's a question of why don't you fly. I often run into old friends who I used to hang glide with back in the mid 70s and onwards and they're no longer flying. The last time they removed their hang glider from the roof of the car was when they hung up their wings and became earth-bound. I find that impossible to understand.

Now, though we're ringed around with more rules and regulations than you can keep in your head, we fly extraordinary aircraft which allow us to go further and faster than we could have dreamed of in the 70s. We have tools such as GPS and powerful gliding computers to make flying cross country as stress free as possible.

In this issue, Dave Shorter has written an useful guide to task setting. Even if you just like local soaring, it's a good idea to extend yourself or the chances are that you'll get bored with gliding.

Most of us have different reasons to go flying. Gliding International claimed recently that less than

2% of glider pilots fly comps. I would say it's probably more than that if you discount inactive pilots but it does expose the truth that flying comps is just one of many ways to enjoy gliding.

There are those who consider that anything other than chasing records puts you into the dilettante pilot category and might be surprised to find that these dilettantes don't really care because they're having fun with some other type of gliding.

Many pilots find boating around the sky within easy distance of an airstrip is more than enough to make them happy while others, me included, want to fly well beyond the bounds of goldfish-bowl competition tasks into the wild brown yonder.

Remote area gliding

This issue of Keep Soaring has two articles about remote area flying. One from a month or so ago and the other from a few decades ago. Apart from differences in facial hair, a great deal has changed since then and both articles make interesting reading.

Respect (please!)

In the early 80s, a book appeared called Berger Burrs Ultralight and Microlight Aircraft of the World. This was a catalogue, almost a wish list of the state of alternative aviation at the time. Burger Burrs evolved eventually into the current WIDOLA, the World Directory of Leisure Aviation.

There are two editions of WIDOLA each year, one for flex wings and the other for three axis aircraft including LSA, ultralight, certified, gyros, helicopters

and gliders of all sorts. There's almost 300 pages with 5 entries to the page covering everything from foot launched sailplanes to electric light sports aircraft to corporate jets.

The interesting thing for me is that they claim that without hang gliders, very few of the hundreds of manufacturers or thousands of types of aircraft would be flying at all.

"People have been flying for fun ever since the first experiments with gliding in the 19th century. Traditional gliding had become the main focus of sport flying well before WWII and it retained this position right through till the 1970s, when the upstart hang glider challenged its supremacy.

"And it is the hang glider which spawned the wonderfully diverse industry revealed in these pages. So although there are no footlaunch aircraft in this publication that's the job of its sister title, World Directory of Paraglider and Paramotor we need to look back 40 years if we are to understand sport flying today.

"The modern competition glider, to which WDLA devotes two sections (ultralight gliders and certified gliders) is probably the most elegant flying machine ever created and offers a truly remarkable level of performance. Even by the 1970s its flying abilities had reached a very high order.

"No hang glider could hope to compete, certainly not the crude designs of 40 years ago. But the hang glider had one crucial advantage: independence. A traditional glider cannot get airborne without help from a tow, a bungee, a winch or a small auxiliary engine so you need an airfield, and friends, and a trailer (or hangar).



"But the hang glider pilot just needed a roof-rack, a slope and a breeze in the right direction. It was a revolution. Not everyone approved, but no one could ignore it.

"Towards the end of the decade, flatland pilots were getting envious of their hillside brethren and started thinking maybe if it had an engine... They too soon discovered the joy of flight, by developing the powered hang glider, but they also discovered that attaching a power unit to a hang glider created certain technical difficulties.

"These have long since been solved, but at the time they were serious enough to prompt the development of the trike, where instead of being attached to the wing, the power unit was suspended

below it, in a simple three-wheeled framework which also accommodated the pilot.

"Trikes have since become a hugely successful breed of aircraft in their own right, capable of circumnavigating the globe and operating in very demanding environments.

"The paraglider, with its inflatable wing has become the most popular breed of flying machine bar none and in recent years has eclipsed the hang glider.

"Just as the 70s turned unpowered flying on its head, so the 1980s did the same thing with powered flying. Throughout the decade, as Europeans busied themselves with turning Rogallo's wing into the versatile Trike, Americans and Australians borrowed

the same materials, aluminium tube and Dacron fabric - but applied them to traditional fixed wing concepts.

The result was a worldwide explosion of new designs which revolutionised leisure aviation whose positive effects are still being felt a quarter of a century later." *WIDOLA Editorial, 2016.*

At times it amazes me that many glider pilots rejected hang gliders and paragliders as legitimate versions of gliding when they first took to the air so we now have the silly situation where there's a separate association for flexwing and plastic gliders.

On the other hand, it amazes and inspires me that people like Anne Welch, who started gliding in 1937 and became an outstanding glider pilot... in her 50s she moved to hang gliding, paragliding and microlights working both for the FAI and being president of the British Hang Gliding Association and writing many excellent books on all these subjects.

And finally, is it time for another revolution, to put gliding back to being the affordable and simple sport it once was? We have materials and machines now which glider-building pioneers could only dream about... yet we build gliders only the rich can afford.

So there you go! More propaganda. A little respect for ageing hang glider pilots please!

Have fun, stay safe.



KEEPIT REGATTA 2017

The Keepit Regatta is back!

After a year of absence, the club's most popular event is back again. For those of you who don't know, the Regatta is a relaxed and casual competition, ideal for pilots who are new to competition and those who just like chasing their mates around the skies.

The Regatta is also a coaching event too where pilots can pair up with someone more experienced and either fly in a two seater or lead-and-follow fly in single seaters. Flights are discussed and compared at morning briefing so it's a great way to improve your general flying.

The rules are very simple and the tasks are all Assigned Area Tasks. Team flying and mentoring are encouraged. This year groups will work planning tasks, debriefing and analysing their traces to improve their performance.

At the briefing session each morning, one of the experienced pilots will talk to a topic of interest. We have lined up some good mentors for the less experienced. So come along and learn from the best.

The entry form is now up on the Keepit website. Pilot numbers are limited so get in soon!

<http://www.keepitsoaring.com/LKSC/index.php/comps/lksc-regatta/regatta-entry-form>



CLUB NEWS



Have a Merry Christmas and a Happy New Year they said as they abandoned ship to attend their family gatherings, feasting and festivities! See you after the holiday. Holiday?...Oh yes of course it is!

Oh we had a Merry Dance! On the 21st December a gentle breeze did come a blowing through the region, delicately raising gliders from their earthly bonds and placing them in somewhat unusual attitudes. Oh what fun that was. We picked ourselves up, dusted ourselves down (well, wrung ourselves out, actually!) and soldiered on, thankful for such an experience. The previous day, MPL had been drafted in to cover for the ailing FOO and was subsequently put to good use. The show continued apace. (Grant ran away to NZ). Wise man!

Throwing all cares aside 20 hardy souls attended a delectable Christmas luncheon, beautifully prepared by Patricia and Jenny. Supeito San regaled us with stories and rhymes from distant times, Jenny told us about Albert and the Lion! Geoff came armed with a shed load of good old English Ale. Now we were merry!

And so the show carried on, some lovely weather between Christmas and New Year led to some excellent flying. Huge thanks to Supeito for the loan of IKX and latterly to the LL syndicate for the loan of said aircraft. New Year approaches most of us made it to midnight, (just). And then a day off (at last).

And then a phone call to say 'Happy New Year Val, sorry to trouble you but we are in the middle of a bit

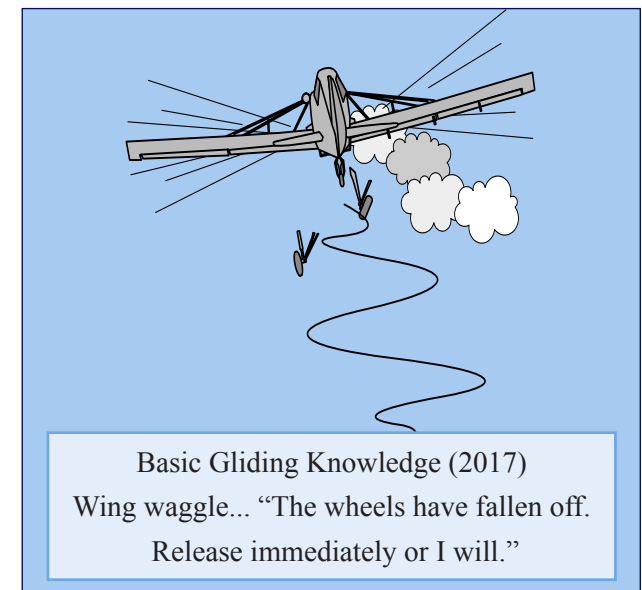
of an emergency.' MPL's undercarriage had failed and Jenny carried out a textbook approach and landing on the left main gear at Tamworth Airport. (Tamworth was chosen due the proximity of emergency services).

Well done Jenny and Peter Sheils, good thinking all round. A great start to 2017. And the show continues... huge thanks to Marcus Edwards for towing at short notice in the best kept Pawnee in the world.

We are currently in the middle of junior development week. Around 15 young (oooooh, scary!!) LKSC members, ranging from ab initio to silver badge are here improving their skills and having a great time (although we could do with an extra 2 seater).

Hopefully the year will continue in a more controllable manner. Aircraft are coming back on line. Full service remain available. The show continues apace. Safe flying and have a happy, healthy new year.

Val Phillips

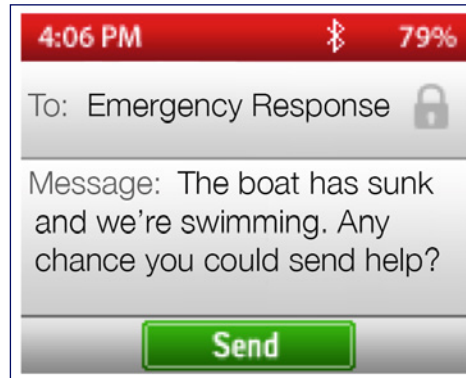


Basic Gliding Knowledge (2017)
Wing waggle... "The wheels have fallen off.
Release immediately or I will."

PRESSING THE BUTTON



Perhaps more than a parachute, an EPIRB or SOS beacon is an essential safety device for soaring pilots who venture off into the brown. The two main devices used by glider pilots are the Spot tracker and the InReach.



There's been a lot written in Keep Soaring over the years (e.g. Keep Soaring March 2014) on the clear advantages of InReach over Spot and it's significant that this year on the safari, the support vehicle had an InReach on board as well as the gliders.

In brief, the reasons are that the InReach is a two-way communication device. You can send and receive messages by satellite as well as sending SOS messages. The Inreach uses the only satellite network with global coverage. The InReach has a screen so you can see what's going on, and can be controlled by most smart phones.

The following articles relate what happens when you actually press the SOS button in earnest.

It is clear what happens in North America and Europe if you press 911 on an earlier SPOT or SOS on the latest GEN3 SPOT but what on earth happens in the backblocks of Australia ?

The scenario put to SPOT and then GEOS was "What happens if a glider pilot in a remote area of Western Australia lands badly and breaks both legs but can still activate his SPOT 911/SOS function?"

If you activated your SOS button on your SPOT device in Western Australia, the International Emergency Coordination Center (IERCC) will contact the AMSA (Australian Maritime Safety Authority) , they are extremely reliable and respond quickly to our calls in Australia. Once the AMSA is dispatched we will continue to monitor your SOS and coordinates and update the response team as frequent as possible.

The resources that the AMSA uses to assist you will be at their discretion, they may even reach out to another emergency service, if they determine that secondary resource will be able to assist you better (the IERCC will be notified of the new dispatch action). The IERCC will continue to monitor your SOS activation until we confirm that you have received assistance and have been transported to a hospital or to safety.

One thing to keep in mind is that unless you have a custom message (SpotGen3) or additional information stating that you are participating in Gliding, the IERCC will not be able to determine what kind of assistance you need. Please make sure you specify this information in your SPOT account so that we can relay that information to the Australian officials.

Jessica Mauch Geos Safety Solutions

PRESSING THE PANIC BUTTON



This tale about isolation and communication reprinted from Soardid, the newsletter of the Beverly Soaring Society in Western Australia.

I out-landed in a very remote part of the WA North Eastern wheat belt late on Friday December 10 2016. I was physically unscathed but the glider is somewhat the worse for wear having completed a ground loop. I had landed at 1648 hours.

I pressed the SPOT "landed out" button almost immediately after I exited the glider and then took some time to take stock of my surroundings and compose myself.

After ten minutes or so rest and reflection I pulled out the map and tried to get a view on where I was. The GPS gave me an exact fix, South 30 05 25 and East 117 41 41. I was 204 km from Southern Cross my take off point, on a bearing of 129 degrees true.

Not good!

I stabilised the glider by ripping off my sheep skin backing on the parachute and folding it around the upwind wing and weighting it down with rocks. I then took inventory of water and food. I had plenty of water, half a sandwich, an apple and some muesli bars. I called "glider down" on the radio, gave a status report to anybody who was listening and then tried both my phones. There was no phone coverage and I got no reply from the radio. Stepping back 20 metres the glider looked ready to go, but up closer it looked like a wounded bird, but not fatally so. I said sorry to her.

After another drink and some food I decided to have a look around. At a fifty metre radius I completed a circle, then increased the radius keeping the tail in sight at all times as the bush land was dense scrub.

The further out I got the thicker and denser the scrub became and when I started to lose sight of the tail I stopped and retreated back to the glider.

I waited at the glider for about an hour or so and then after a lot of thought, and with the sun setting over the trees to the West, I pushed the 911 button on the SPOT. In retrospect this was the right decision as the ground crew and ground based help were still hours away and the forest is almost impenetrable during the day, let alone at night. I had no way of knowing the status of the retrieve.

The effect of pushing the 911 button was almost instantaneous. Within ten minutes a commercial twin turbo prop on route from a FIFO mine to Perth radioed me. It commenced a high orbit above me relaying information back and forth to Melbourne Central and the Southern Cross base.

When I had assured them I was unscathed and I had plenty of food and water they advised that the plane had reached its fuel limit and headed off telling me that a dedicated King Air would arrive in about thirty minutes.

On time, the King Air arrived and confirmed my exact location and health status. It was near dark by now and I had unpacked our out-landing survival kit setting up some strobe lights on a portable aerial that we have made out of light carbon fibre tent poles. I tested the phone on the aerial, to no avail. The King Air stayed with me until a chopper arrived from Search and Rescue.

At 2105 the chopper saw my strobe light and told me to prepare for an in and out snatch, as they would be at the limit of their fuel reserves. When the chopper touched down, the copilot and para medic ran to me and forced a pair of ear muffs on me, hustled me over to the helicopter and physically man-handled me into the chopper. They wanted me to lie in the cot, but after a second or two's gesticulation on my part they reluctantly forced me into a seat.

The copilot forcefully held me down while the para medic buckled me in. Thumbs up and we were gone. It was 2110 hrs. On the way they apologised to me for the rough handling but said the fuel reserves did not allow for any niceties. During the trip the paramedic gave me a full medical and apart from some minor dehydration and a bit of shock I was OK. They radioed ahead and my wife met me at the pickup point at Jandakot airfield.

I must have looked like I felt, with lower lip on the floor, having had several hours of quiet time at the

glider plus the helicopter flight to fully realise what a hole I had got myself into and been extracted from. I gave my wife a hug and a grimy kiss as she met me at the touch down point. Like a trooper she did not say much but her look of concern said it all.

I said my thanks and goodbyes to the crew. Colin, the paramedic, led both my wife and me to the hangar exit door. As he opened it for me he gave me a big grin and said;

"Just before you walk out this door you should know that fifty percent of the people we pick up go direct to the morgue, the other half go to ICU and about two people a year walk out this hangar door. You are one of them, so enjoy the walk and have a nice evening"

I can't imagine how much "my rescue" cost likely many 10s of thousands of dollars and I really expected to receive a bill for this. Amazingly I was told that, in my case, there would be no charge and thus I am in debt to the Australian tax payer. Thank you all!

I am also forever in the debt of the ground crew, Owen Jones and Peter Howlett, who spent more than a full day in oppressive heat recovering our glider. This particular retrieve must go down in annals of our club as one of the hardest glider retrieves, ever.

Reliable and constant communication in a crisis is essential. I was unable to contact anyone directly and this inhibited the retrieval process and caused consternation for all concerned. The 911 button when pushed works very well but all the fuss may have been avoided or lessened if I had been able to communicate in real time with the various parties concerned.

I know that some glider pilots carry a satellite

phone and I can see how this device would have certainly helped in this case. As this technology is getting cheaper we may all be carrying one in the not to distant future. In the meantime a SPOT is highly recommended.

Tom Holt

WPTs bush landing was caused in part because the propellor pylon could not be fully raised. Most if not all SGLs with pylon mounted propellers have a maximum airspeed when raising or lowering the pylon, typically around 55 knots. The starter is enabled when the pylon is fully extended. Also on Schleicher gliders, the drive belt is only fully tensioned when the pylon is erect.

It's very easy, in the stress of a low in-flight engine start, to forget some element in the process which results in an outlanding. Those of us who fly SLGs need to remind ourselves of the fact that we need to allow plenty of time for engine starts.

FREE SPOTS!

Based on the Keepit Safari experience, there are two fairly new and clean Spot 2 trackers available for the cost of a good bottle of red. Contact John Clark or Al Giles for the name of a good bottle shop!



We have the numbers ... all we need is the weather.

Six gliders and a tug are signed up for the Keepit 2017 Mini Safari with about a dozen pilots and crew. It is not too late to join the fun.

The Mini Safari follows immediately after G Dale and Allan Barnes' coaching week, and will be seen by most as the 'graduation' from the training. The coaching starts on Monday 30 January and runs for four days. The Mini Safari departs on Friday 3 February, planning to return on Sunday 5 February.

The overnight stays will be at Rylstone and Coonamble. At Rylstone we will be flying into Rob Lonregan's new and growing Airpark and staying in town.

Coonamble is the site of many safari visits over recent years. The airport facilities are more than adequate and there is a comfortable motel in town, across the road from the Bowling Club. For the coffee addicts the bakery has a Campos franchise.

The legs of the basic route Keepit to Rylstone to Coonamble and back to Keepit are about 250km each. However longer tasks will be set to get the best use out of the day.

It looks as though we will have two self launchers and four gliders needing a launch each day. Ian Downes will be towing in his C180 and we have a ground crew of a 4WD towing the safari POD trailer with the luggage and glider gear.

Participants so far include John Clark, Fred Lips, Terry Petherbridge, Chris Bowman and hopefully his partners in the LS-8, Lynn and/or Leo, G Dale and David Holmes, Allan Barnes, Geoff Sim and Ian Barraclough, plus Ian Downes. There are a few more hoping to be able to join in.

If you are interested to sign up or just chat about the safari contact me:

Ian Barraclough

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One Great Design



This month's issue of Sailplane and Gliding has a review of the new ASH30 Mi. It's an interesting glider but perhaps not for everyone.

Before looking at the highlights of the glider, here's a brief diversion. I looked up some information on Anne Welch earlier in the week. This is what it says on the net:

Ann Welch first flew with Alan Cobham in 1930. After she had acquired a motorbike to visit the local aerodrome, she learnt to fly, earning her pilot's licence in 1934 one month after her seventeenth birthday.

She started gliding in 1937 and started the Surrey Gliding Club in 1938 at Redhill, Surrey becoming their Chief Flying Instructor.

After the war she returned to gliding and trained many pilots and instructors while bringing up a young

family, sometimes shouting instructions to a family member as she flew past in an open-cockpit glider. As well as being a member of the British team, Welch was an active volunteer to the British Gliding Association as vice chairman and in charge of British instructor standards and training for twenty years.

She was an avid cross-country pilot and became a member of the British team at World Gliding Championships for many years. Flying from Lezno in Poland in 1961, she broke the British women's distance record with 528 km.

For many years she and Philip Wills administered British gliding until, conscious of the increasing cost of gliding and the need to involve young people, she moved away from gliding and became closely involved in the development of hang gliding and paragliding,

and was founder President of the FAI's Hang Gliding Commission and its Paragliding Commission, and was a member of the FAI's Microlight Commission.

Gutsy woman eh? Obviously a 100% committed pilot though not only to sailplanes.

Now back to the ASH 30 Mi. Here are the specs:

Wingspan: 26.5 metres. 500mm wider than the ASH 25 which would make it a bit of a handfull on anything other than gliding airfields, avoiding runway lights and gable markers.

Mass including two 85 kg pilots: 800 kgs. Since the maximum mass is 850, that allows you a little drinking water, parachutes, tie-downs, baggage and a few litres of fuel. Quite a little in fact, so if the 30 looks like your sort of glider, lay off the Magnums.

That's some weight to move around on one wheel, especially if you don't buy the draggy steerable tail wheel. You need a few friends with an ASH 30 Mi then.

Best Glide: 60:1. Wait a mo! Isn't that what the ASH 25 is claimed to do?

Having flown alongside an ASH 25 on many safaris, I can say it's an excellent glider but it does not get to where it's going much faster than a DG-808 or an ASH 26E on any but a few days. And you need a few friends to get the glider on and off the strip.

Engine Power: 56 hp. This is only 3 hp more than a DG-808 with a max take-off weight of 600 kgs. 56 hp gives the modest climb rate for the ASH 30 Mi of 531 fpm, though the review says the climb rate, like a car review's fuel use figures, come in rather lower at 350 - 400 fps which is what you might imagine with

an engine of that power lugging an aircraft of that weight. While we are talking about weight, it's worth mentioning that the inner wing panels weigh 120 kgs... that's almost as heavy as some single seaters! The Alisport Silent for example, weighs 125 kgs.

Price: Not including too many extras, freight, (do you pay GST on gliders?), a trailer etc. the ASH 30 Mi costs north of \$330,000. That's a fair wedge of money and you can buy a lot of aircraft for less. 3 fully Aerobatic MDM-1 Fox gliders for example. Or 3 Pipistrelle Taurus self launchers. Or 5 Silent Targa self launchers. Or 3 of literally hundreds of LSA aircraft if you just want to fly.

The point is, are we painting ourselves into a corner with certified gliders? Have they got so expensive that only the very well off or large syndicates can afford to buy them. How many juniors would have to club together to buy a glider like this? Anne Welch turned to hang gliding because she felt that gliding was too expensive for all but a few. Is it time to drain the certification swamp?

This is absolutely not meant to be a criticism of the ASH, it's just a question mark. Is this one of the reasons why RA Aus has four times the number of members (and growing) that the GFA has (2500 and shrinking)?

Good gliders don't have to cost the earth. In the right hands, a well flown Libelle or standard Cirrus and do 750 km and cost around \$15,000. For a bit more than that you can get an LS4 or DG-300 and do the same task in less time. There's a score of well proven and mostly good looking ultralight gliders, most of them self launchers, some of them electric, which cost new only 15% - 25% of the cost of this new ASH.

One Design

In many 'equipment' sports, sailing in particular, the most competitive classes are one design. Here, it's not the machine or the money which counts, so much as the person steering it. We nearly had a one-design class with the PW-5 but you would not have to be too cynical to wonder if the committee did not choose the most ugly glider submitted to be the winner, precisely to make sure that the one-design idea did not succeed. In the USA, where ugly is good (look at any vehicle designed for or in the USA) the PW-5 is popular.

When the World Class Glider Competition was judged, only 6 of the 40 designs submitted were actually flyable. One was the SZD 51-1 Junior. Four rest were either not fully ready for flying or dangerous and the 6th was the PeeWee. Hands up all those who would prefer a PeeWee over a Junior?

This is not to say that the PeeWee is not good at what it does and if you are in the cockpit, you at least cannot see how weird it looks, but if you were to pick a one-design glider for a one-design competition you wanted to succeed, you'd pick the Junior every time.

The ASH 25 Mi is probably a wonderful glider, even though it does not move the goalposts by more than a fraction. However, is it the glider that gliding needs? Would we be better putting our efforts towards more affordable gliders suitable for clubs and pilots with only averagely deep pockets? Perhaps give the Jonker Bros a few Rand to come up with a real one-design?

Wait a minute... looking around the hangars at Lake Keepit, the Jonkers have almost done it already with the JS1!

SUPPORT YOUR LOCAL MILLER!



The community of LKSC bakers (and there are a few of them!) are fortunate to have one of Australia's best flour mills right on their doorstep. Demeter Farm Mill flour comes from the Wholegrain Milling Company at 17-21 Borthistle Road Gunnedah NSW 2380.

A good range of organic bakers flour as well as grains and muesli can be bought direct from the mill in 1, 5 and 10 kg bags.





When you are a low-time pilot, the first question is often 'how far can I fly today given the current conditions.' You may often hear people saying 'it's a 750 km day' or similar but this does not mean much if you are just starting X-Country soaring.

How good is the day? What is a reasonable task for me to attempt?

For someone new to X-Country soaring, best thing is to progress through the basic badge tasks – 50km straight flight, then a 300km triangle or cats cradle, then more.

If you're thinking of more, it is possible to make theoretical calculations of speed achievable given known average climb rates. Maurie Bradney's books, "Flying Further and Faster Pts I and II" (obtainable on the LKSC and GFA websites) include a table of X-C

speeds achievable for various conditions. From these you can estimate with a known length of day the task distance you could expect to achieve.

The other resource which will give you a good guide to the potential of the day is the "Potential Flight Distance" display in Matthew Scutter's weather forecasting program Skysight. This displays on a colour graded map the potential distance flyable by an experienced pilot in a ballasted 18m Ventus2.

Factor in the comparative glider handicaps (say less 30% for a Cirrus or Std Libelle, less 40% for PW5) and then another factor for pilot experience. Pilot experience factor is the challenge. My first 300km flight took 7 1/2 hours... today in a JS1 (Ventus 2 equivalent) that would be something like 2 1/2 hours... or in the same glider as the first flight I did, I'd

expect to do it in less than half that time. So the pilot factor for a newbie may be another 50%.

Jacques Graells for his GP racing weekends has established a sophisticated handicapping system which takes account of glider performance, ballast, and pilot experience, and tasks are set with big circles for the lower handicap pilots, so they can "cut the corners" and fly a fair distance commensurate with their skill. These weekends provide a great opportunity, in a supportive environment for new pilots to have a go.

But if you're on your own, and want to fly a task, and Trevor West in his JS1 reckons it looks like a 750km day, you should be able to manage your first 300km, and the experienced pilot in a Discus or LS7 should try 500. Off you go

Dave Shorter



PLANNING A CROSS COUNTRY TASK

Whether you're doing early badge flights, notching up a diamond award, racing, or cross country touring, its important to understand the requirements for your flight. The most important word is "planning".

To have a successful flight the preparation and planning for that flight needs to be done well before you launch.

TYPICAL TASKS

The main tasks you might set yourself fall into the following categories:

1. Straight distance from a point. This task is required for the 50km Silver C. May also be set by those wishing to achieve record flights. Not really relevant for most club flights where it's nice to get back home.

2. Triangle flight which can be either
(i) the start/finish plus 2 turnpoints, or

(ii) 3 turnpoints separate from the start/finish point (called deferred start triangle), in which case the distance will be the sum of the 3 legs defined by those three turnpoints. An advantage of this task is that the last leg from the third turnpoint home can be much shorter and gives you an "opt-out" option closer to home if you can't complete the task in time.

1.3 turnpoint distance flight (4 legs). This can be a quadrilateral or a "cat's cradle" shape. The advantage of the cat's cradle is that you can design the flight to make a couple of reasonably close passes to the club during the task which is great for an "opt-out" if required.

2. Out and Return – one turnpoint. Takes you

furthest away from the club, but may be appropriate to run along a line of convergence or a trough line. One of the earliest 1000km speed records was established by a Mosquito flown by Bruce Tunks in SA running out and return along a trough – tailwind each way.

There are quite a few other tasks defined in the FAI sporting code, including free distance tasks, many of these only relevant for record flight attempts. Read the sporting code if that's your plan.

THE FAI TRIANGLE

Note on triangle geometry – for record flights of 750km or more there is a requirement that each leg be between 25 and 45% of the total, and for less than 750km the minimum leg size is 28%. This is commonly referred to as an "FAI triangle".



This is NOT a requirement for badge, diamond or diploma flights.

However, the OLC (Online Contest) scores additional points for flights which are FAI triangle geometry. And there is a bit of extra prestige in doing the more difficult FAI triangle task.

LOSS OF HEIGHT

For badge, diamond or diploma flights, the loss of height from start point to finish point should not exceed 1000m (3280'), or a severe distance penalty will apply. Start point may be the release from tow (or means of propulsion) and finish point may be the landing, in which case the tow cannot go more than 1000m AGL (4440' QNH over 1160 field elev). To be safe tow to a max 4000' QNH at Keepit.

You may declare start and finish lines 1 km long line centred on the start/finish point perpendicular to the course. Your start/finish times and heights will be the crossing of these lines in the direction of the course.

In this case the loss of height between crossing the start line and crossing the finish line should not exceed 1000m, to avoid a distance penalty. So, if you tow to 6000' and cross the start line at 5600' QNH then you must finish by crossing the finish line at a minimum height of 2320' QNH (5600-3280) to avoid a distance penalty.

For Distance flights of less than 100km (Silver C flight), the loss of height cannot exceed 1% of the declared distance. So for a 60km flight to Mullaley the loss of height from start to finish cannot exceed 600m (or approx. 2000')

Note – 1000m loss of height refers to barometric pressure reading. If your instrument is using GPS height recording the Loss of Height allowance is 10% less.

FAI BADGE, DIAMOND AND DIPLOMA FLIGHTS

So what do we need to do to successfully complete an FAI badge or diploma flight?

The Federation Aeronautique Internationale (FAI) defines the rules governing our sport and defines a set of internationally recognized achievement awards. They range from the Silver to Gold Badges with Diamonds, and Diploma awards for longer distance flights (750, 1000, 1250km ...)

The detail can be referenced from:

<http://www.fai.org/fai-documents>

Download the pdf document "Sporting Code Section 3, Gliding" – current version dated 1st October 2016. This document has been revised in recent years and is now quite readable.

In summary the FAI badge requirements are:

Silver Badge

- a. Silver Distance a straight distance flight of at least 50 km from the release point.
- b. Silver Duration a duration flight of at least 5 hours.
- c. Silver Height a gain of height of at least 1000 metres.

Gold Badge



- a. Gold Distance a distance flight of at least 300 kilometres with up to 3 turnpoints.
- b. Gold Duration (same as Silver duration)
- c. Gold Height a gain of height of at least 3000 metres.

Diamonds

There are three Diamonds; each may be achieved separately by completing one of the following soaring performances and each may be mounted on the Silver or Gold badge:

- a. Diamond Goal a distance flight of at least 300 kilometres over an out-and-return OR a triangle course. There is no restriction on the triangle geometry. The triangle can be
 - (i) the start/finish plus 2 turnpoints, or
 - (ii) 3 turnpoints separate from the start/finish point (called deferred start triangle), in which case the distance will be the sum of the 3 legs defined by those three turnpoints.
- b. Diamond Distance a distance flight of at least 500 kilometres using up to 3 turnpoints.
- c. Diamond Height a gain of height of at least 5000

metres.

FAI Diploma flights Diploma flights begin with a minimum distance of 750 km and increase in 250 km increments. (GFA are no longer issuing 750km diploma badges.) They may use any course with up to 3 turnpoints.

SO LET'S GET PLANNING.

1. **Weather** – the course you set will be influenced by the weather. We're very spoilt now with the accuracy of weather forecasting even a week away, with RASP, XCSkies and SkySight all now providing good weather forecasts days ahead. I always like weather with Cu's and naturally strong high convection. Plan your task to go where it's good.

2. **Timing** – when to start, and how long you can fly is important for going distance. If you think you can get going early, remember to speak with your tuggie beforehand to organise an early tow and advise the duty instructor of your plans. Jacques' intraday summary on the club website gives a good idea of how early you can expect to be able to get away. It's nice to have convection to at least 3000' AGL.

3. **Know your instruments.** If you're flying a club glider be sure to read the manuals, know how to program your task, and be sure to enter your name in the instrument's task declaration.

4. **Arrange for an OO (Official Observer)** to witness your task. There are a quite a few in the club and it makes it a lot easier for everyone if we have more. It's an easy qualification to get... get yourself and a few mates organised with OO qualification and finding someone for this job won't be an issue.

5. **Do have maps of the area** – Nav instruments do breakdown and if you outland it's nice to know where you are.

6. **Other essentials** – water, pee provision, tie-down kit, money, torch, warm clothing, phone. It's also a very good idea to have an emergency beacon, or Spot device.

7. **Have a number alternative tasks** researched and ready to go. Get yourself a copy of Seeyou and do your task planning at home beforehand.

And then go and have fun. There's nothing like the sense of elation and achievement from getting home after finishing a good planned flight.

Simple Tasks from Keepit

Here are some examples of flights you might tackle from Keepit. You need not use standard Keepit database turnpoints – any place can be nominated as a turnpoint – all you need are the coordinates. You be the inventor. Create your task (and the points you need) to suit the predicted weather.

The Gap (Breeza Rail Junction) S31°21.42" E150°35.5" is no longer in our database and is very useful for some tasks – add it to your database. As is Liverpool Range (S31°46.467' E150°39.383') – both useful for cat's cradle and deferred start triangle tasks.

Gilgandra North (S31°26.6' E148°16.48') and NW of Goondiwindi (S28:21,E150:03) are other points I've used for particular tasks included below.

Any of these tasks can be declared in the opposite direction.

Silver Distance

Mullaley 61km, Barraba 55km, Baan Baa 67km

Gold Distance

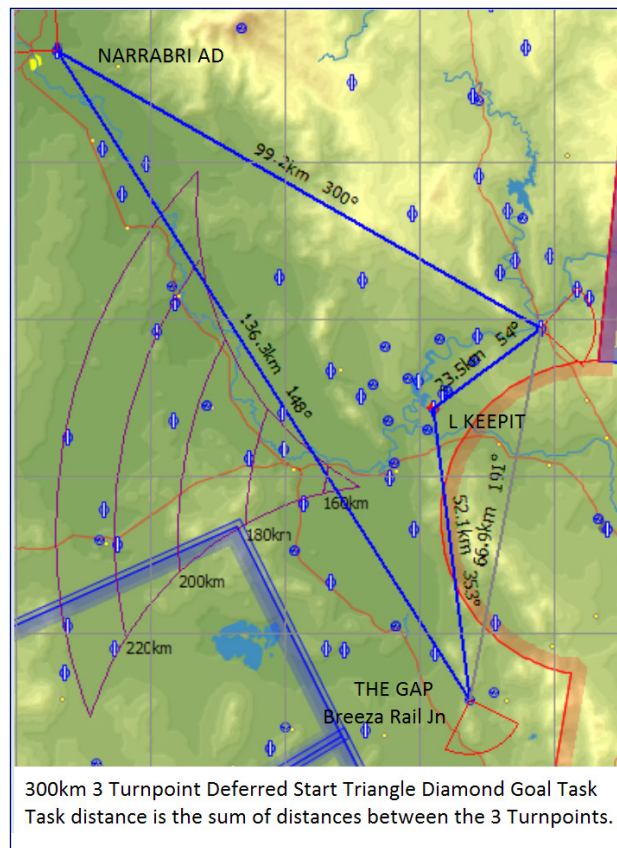
300 km 3point cat's cradle tasks

Narrabri/Breeza/Barraba 302km

Narrabri/Breeza/Baan Baa 309km

Kaputar/Quirindi/Boggabri 302km

Tambar Springs/Edgeroi/Middlebrook 306km



Diamond Goal 300km

Edgeroi/The Gap 320km (2point triangle)

Manilla/Narrabri/The Gap 302km (3point deferred start triangle)

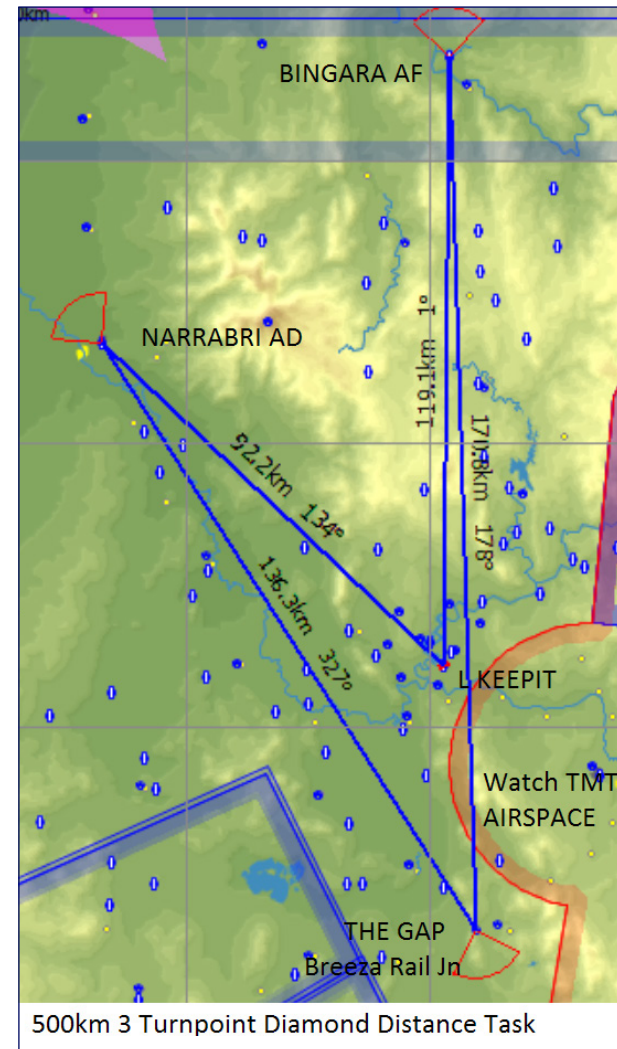
Manilla/Narrabri/Tambar Springs 312km (3point FAI triangle)

Warialda AF 300.9km (Out&Return)

Diamond Distance 500km

Gurley/The Gap/Barraba 503km (3point cat's cradle)

Bingara/The Gap/Narrabri 518km (3point cat's cradle)



Coolatai/Quirindi AD 500.6km (2point triangle)

Dunmore/Moree/Premer 513km (3point FAI triangle)

Dunmore/Gurley/Coonabarabran 503km (3point FAI triangle)

Liverpool Range/Coonabarabran/Upper Horton AF 501km (3point FAI triangle)

Gurley/Toorawenah 526km (2point FAI triangle)

(Careful many 500km tasks require flight over the Pilliga – difficult to avoid for this distance, especially 2point FAI triangles)

Goondiwindi 526km (Out&Return)

750km Diploma

North Star/Quirindi/Narrabri 754km (3point cat's cradle)

Liverpool Range/Gilgandra North/Moree AD 756km (3point FAI triangle)

Narromine/Walgett 755km (2point FAI triangle)

Inglestone Nth 760km (Out&Return)

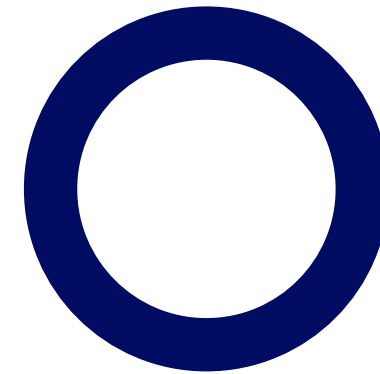
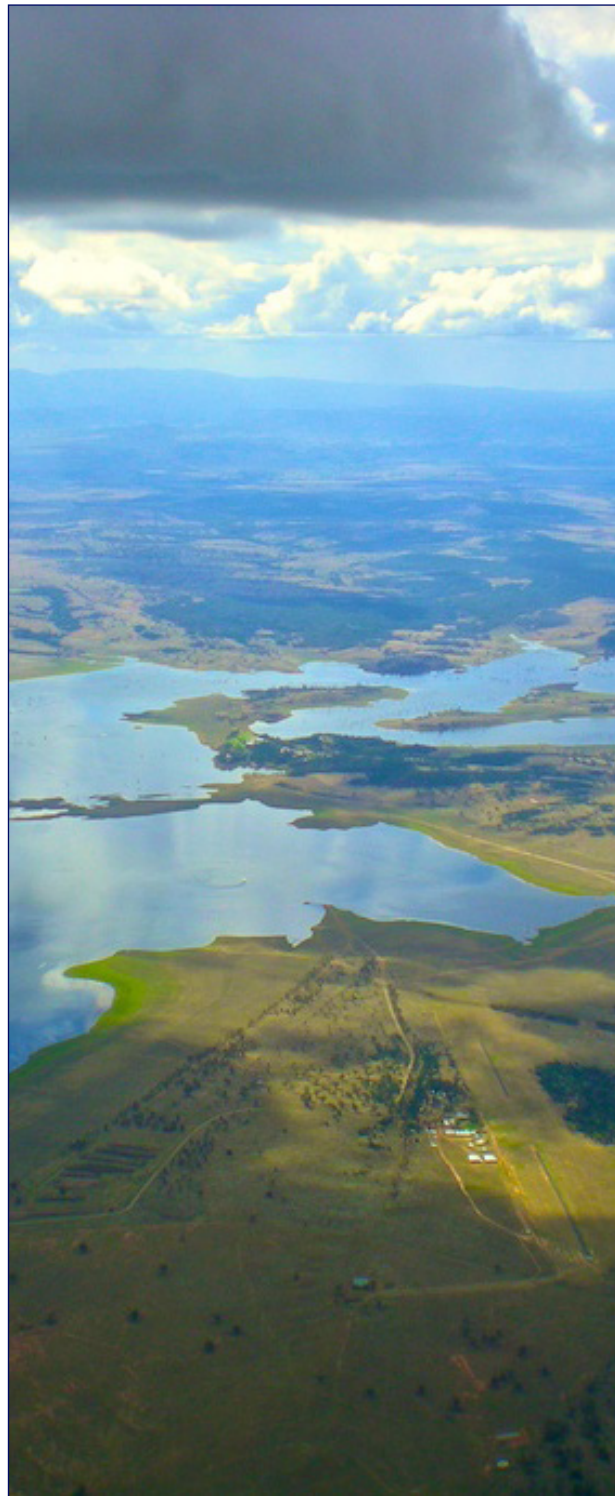
1000km Diploma

St George/The Gap/Narrabri 1009km (3point Cat's Cradle)

Liverpool Range/Haddon Rig/Goondiwindi 1024km (3point FAI triangle)

Trangie/NW of Goondiwindi (S28:21,E150:03) 1001km (2point FAI Triangle)

Roma AF 1022km (Out&Return)



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Geoff Sim





As we landed at Keepit at the end of the 2016 Safari, Pete greeted us with the words:

"You're back! Are you still talking?"

What a funny question. We are the epitome of complete harmony.

Yes, we have spent the last two weeks in close company. But no, there have been no short words between any of us. Well, there's sometimes a comment between John and Geraldine of course ... but they are husband and wife (only just) and you would expect that ... but even then, there was nothing out of the usual. "John, I can't believe you said that" was overheard once or twice, and there were a few "If you go on like that you won't be allowed to speak at your daughter's wedding," but nothing serious of course.

And Al is always good company. Though he does have that rather peculiar habit of interrupting with his obtuse one liners that are a play on someone else's entirely unrelated comment. They are sometimes a bit difficult to work out in the morning; easier in the evening over a beer.

And when he starts talking about the "ASH" we can quickly work out if he is talking about the real ASH 25Mi or the little 26E. But though Al sometimes ties down at the other end of a kilometre long airstrip from the rest of us and prefers a railway carriage to himself, we are sure we have not offended him and that he really loves us.

Geoff is the quiet member of the group. He does have a bee in his bonnet about the geographical fact that all the other Safarians live somewhere to the

north of where he lives. He frequently asserts that he comes from a place called Jannali and as he has 'cried Jannali' so often, he no longer receives even a grunt of acknowledgement for this remark.

But we now know where Jannali is, after the recent article in a motor bike magazine referred to "the world famous Geoff Sim (world famous in the Shire, that is)". And when we hear the phrase "If I've told you once, I've told you a thousand times" we know it is Geoff getting worked up about something, so we combine to calm him down.

And I do not cause any ripples on the team's harmony, as I try not to say much. Anyway there is so much happy chatter, it's sometimes hard to get a word in edgeways. Tucked in a corner I am usually dreaming up some pearl of wisdom to drop into the occasional

still waters. And further, there is even less need now to say “beloved leader” things (John’s phrase), as we are all so practised at this safari game that a leader is rarely necessary. There was one occasion a few years ago when we had to agree mid-air whether to spend the night at Gilgandra or Narromine. I chose Gil and recall that instead of the impersonal Narromine Services Club, we had an excellent dinner at a very pleasant pub on the outskirts of Gilgandra.

There are differing views sometimes; for example agreeing what the day’s weather has in store for us. Geoff, formerly known as “Mr Gloomy”, will assert that if the sun does come up, it will be a late start so we must not take off too early. When we do eventually launch and run into a thermal at the end of the strip that takes us straight to 7,000ft, there are no mutterings that we should have taken off an hour ago, well, not over the radio anyway. There may be a casual remark over a drink in the evening; “I wonder if we could have launched earlier” ... but definitely no recriminations.

“Are you still talking?” Of course we are.

We are the hard core. We have ‘grown accustomed to each others’ faces. We are used to flying together. We don’t need a 9.00am briefing or a weather guru to brief us each morning. We usually know at a glance what the day has in store. And after flying we know that the first round will be 2 champagnes, 2 lights and an Old. Complete harmony.

So you see Pete, yes, we are definitely still talking.

Ian Barraclough





SAFARI 2016



In the last few years the Beloved Leader has organised safaris to places as far away as Narromine and as close as Burketown. Some have been marred by bad weather but on most, we have had many days of brilliant flying. All have been excellent adventures.

The destination of year's safari was the geological structure formerly known as Ayer's Rock and the Beloved Leader had planned that it was to be not only a great adventure, but quite hard work for those who labour below, like the long suffering Princess Geraldine, towing the safari trailer. Any flying leg longer than 500 km is a big drive in the bush on a hot day, especially if it's on dirt roads as several legs were this year.

Though we'd had a Luxury Safari as a payback a few years ago, it was not luxury in the sense that say

Ivana Trump would recognise and I don't believe that the Princess did either. This made selling the idea of this year's safari a long and difficult process.

As usual, by the time the safari set off, we were down to the core safari hard-liners which meant as usual, no other drivers than Princess Geraldine who as usual, graciously (as in gracious in her own way) agreed to drive again.

We had more lay-days due to bad weather on this safari than any I have been on. We had two days where we were airborne for barely an hour. On one, we actually flew cross country and on the other, we hardly got out of gliding range of the strip. And oddly, this proved to be one of the most enjoyable safaris we have all had, including the Princess.

Though we had two genuinely good days flying, we had many more good days busy doin' nothin'. These days were enjoyable because every time we were weathered, it was at somewhere interesting... Broken Hill, Clare and Peterborough... and there was lots to do.

Broken Hill tends to be a kind of hub for safaris and we've been there many times. On this trip, we landed there both on the outbound and return legs. BH is a heritage outback town (whatever that means) but they have nicely restored quite a few hotels, some in a period deco style right down to the towel rails. The general agreement was that the Princess chose the hotels... (the hotels are far nicer than the motels) and for similar money. I say agreement but we had little choice in the matter.



A strange event happened at Broken Hill which is worth relating in case the experience helps others. Geoff proposed a champagne picnic to butter up... sorry, to thank the princess... probably for introducing him to the pastime. If you look at the pictures, he still has a bit to learn about drinking champagne, such as removing your fly veil before opening your mouth.

I was the designated driver and for some reason, only packed one bottle of cold bubbly in the trusty car fridge. It was a hot and overcast day. High 30s. The champagne did not last very long at all. The picnickers demanded another bottle. Fortunately, there was one emergency bottle in the trailer which was pressed into service. It was hot... the temperature of warm tea but bizarrely, it was very enjoyable.

Maybe the first bottle was stronger than we first thought.

Clare is a nice place to visit. An hour or so north of Adelaide, it's too far away to get many city visitors and compared with that theme park to alcohol the Hunter Valley, Clare is strangely authentic as a wine growing area. However it was absolutely brass monkeys while we were there. 7° overnight and only 14° in the day... and this was early summer.

After we had done most of what could be done in Clare, we decided to head towards somewhere north. Anywhere north in fact. The options are few. Beyond Peterborough travelling in the direction of Broken Hill, you have Peterborough and Hawker both of which are fairly interesting. Then you have Yunta.



Yunta has one pub (and five other buildings) but you can only stay there on the one night a week when the interstate trucks are not rumbling close by the front door. We could not be sure of which night though. Between Peterborough and Yunta is the dread Goitre Lion, something which Al Giles was not keen to see close up for some presumably medical reason so it was Broken Hill high and fast, or nowhere much.

So we flew. We flew long and hard. We also flew alarmingly close to the ground which for most glider pilots in Australia is a rare occurrence. We made it to Peterborough but I don't think anyone did not press the button which under other circumstances would be known as the button of shame.



When you have seen wind turbines as close as we have seen them, it becomes the button of good sense.

Global warming note. Considering the weather that week, it would take a better thinker than me to not draw a lion between the freezing and unseasonable weather and the South Australian's love of wind and solar energy. The sun's heat has got to go somewhere and if it does, it is not heating up the ground, providing natural thermals.

If you love bindies and prickles, Peterborough is the place to go. You'd need sock protectors of 6mm steel to avoid them on the strip. Geoff thought he might re-grow the fur on one of his two pairs of heritage socks but sadly, the prickles were too much even for him.



Amongst other attractions, Peterborough has a railway museum, railway parks, railway trains and carriages and a motorbike museum too, mostly small capacity European two strokes. Hand up those who knew that the famous Geoff Sim (famous in the Shire that is) was a railway lover? He was like a pig in muck. Not much change from normal you may say about the boy from Jannali, but he was in heaven.

A strange event happened at Broken Hill which is worth relating in case the experience helps others. The Princess and I were staying in the commoner's suite at the Peterborough motel and were woken up well before the crack of dawn by a call from reception. Geraldine took the call and told me there was an Ian at

reception. We wondered, still vague from sleep, if the Beloved Leader had been thrown out of his room for snoring by Geoff but there was a knock on the door and who should appear but the ex-president of this club, another Ian altogether.

Like many of her species, the Princess spends some time in the bathroom on secret women's business before meeting her adoring public. (Longer than when she first signed on I think.) I doubt that the princess is any more highly strung than any other but the sight of a semi-strange man (the bastard) on the doorstep before sunrise put her morning routines out for some weeks.



Joy, being as well brought up as she is, was waiting outside in the Freeloader to see if Ian would get ejected. And throughout, Joy behaved impeccably unlike Ian (the bastard). There was a lot of noise and before the sun was over the horizon, most of the motel was in our room, including Al, Geoff and the other Ian. The first Ian (the bastard), having apparently achieved his aim by driving like a madman from Broken Hill at sparrow's fart, departed for Alice Springs without even having a cup of tea, leering and muttering about revenge.

It's against the law to discharge objects other than fuel, water and people with parachutes from aeroplanes but there is one exception. Due to the tiny poo tank sizes and increasing long flights in modern airliners, the occasional discharge of a frozen turd



from the overflow pipes of aircraft is permitted. (You might think that the small portions of food supplied in steerage was meant to prevent this so perhaps the poo is mainly first class.) Ian Downes, we know where you live!! We're collecting bags of it!!! And we're coming to Alice!!! Sorry, Joy but we can't really warn you.

Later the same day, we moved to secret accommodation in converted railway carriages. This proved to be another unexpected highlight and somewhere for the Princess' nerves to recover.

We had another pleasant day's local soaring at Peterborough where we rarely got above release height. Good practice though and strangely peaceful knowing that taking every bit of lift that you could find would not get you into trouble. After 90 minutes,

things had not changed at all and since there was no prospect of going as far as Yunta in a relaxed way, we landed and had another night in the railway carriages, surrounded by trip wires and land mines.

One big and memorable feature of this safari was the wetlands. I'll put that another way. One small and forgettable feature of this safari was the dry ground where you could get a proper inland thermal. Anything remotely un-brown meant some miles wide river system and sink city. Mostly, I would enjoy taking a picture of this but we all got so low for so long that one did not have the nerves to swivel the camera out of the window and take a shot or two. That's my excuse for not having the evidence!



Keep Soaring

The last day was almost a mirror image of the first. Half the day was blue and difficult over the Macquarie Marches and the other half was an exhilarating dance through perfect CU.

After crossing all those blue days and all the soggy ground, a sky full of CUs was a sight for sore eyes. A little spice was put on that leg when I lured several gliders from some Narromine comp into thermalling sink over some water holes between the Warrumbungles and Nyngan but it was an excellent end to a most enjoyable safari.

About 2600 kms and 30 hours of fun. And we never got close to making it to Ayer's Rock.

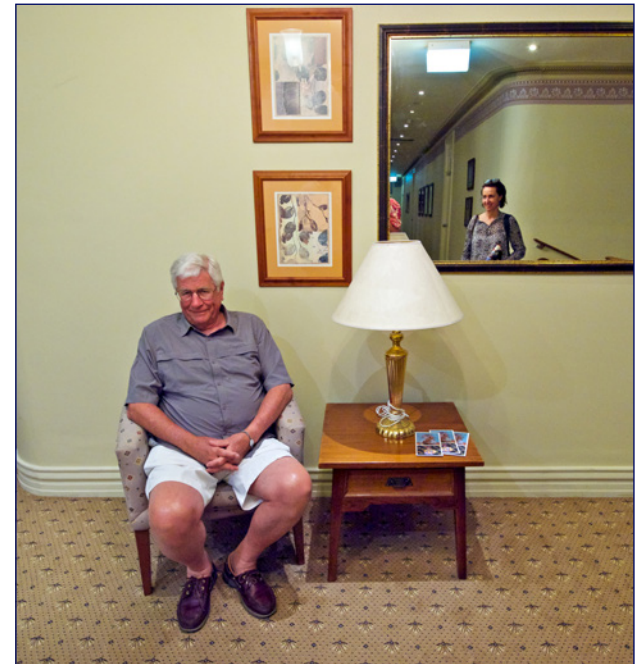
Damage Control. Just because you are on a proper airstrip does not mean you are worry free. While pushing TJC off the strip, the wheel fell into this, hopefully only damaging an undercarriage door.



Spring 2015



The Princess in her limo; Clare



The Beloved Leader; Broken Hill



Vintage racing at the Clare Aeroclub



Sierra India ready for launch, Clare airstrip.



Fields for growing bindies; Peterborough.



Obviously Silverton.

FLIGHT TEST BRISTOL BOXKITE



FLIGHT TEST REPORT

Pilot: G. H. Miles

Report No. Boxkite 2

Aircraft: Bristol Boxkite

Duration: 30 minutes

Engine: Continental A.65

A.U.W. at T.O.: 1150 lbs approx.

C.G. Position: 51% S.M.C.

Barometric Pressure: 1017 Mb

Date: 6 May 1964

Weather: Wind S.W. 12/18 mph

Ambient temperature 13°C

Aerodrome: FORD

A preliminary straight and lift was carried out to check whether the crosswind component along the runway would permit fairly prolonged low level flight

without drifting off the concrete, and the aircraft was flown about 100 yards at a speed up to 40 mph I.A.S. It was, however, impossible to fully correct drift on landing and both axles rotated round the skid on contact with the ground, the inner and outer, respectively, of each pair of wheels ending up flat on the runway surface.

It was decided, therefore, to make the next take-off into wind diagonally across the runway with the intention of landing in the crops if control difficulties were experienced. The take-off and initial climb were satisfactory, but once out of ground effect the climb became very slow but positive.

On the climb-out while within the aerodrome boundaries speed variations were tried to establish the best climbing speed, which appeared to be about 42

mph I.A.S. with variations of more than a few mph either way resulting in a gentle loss of height.

However, a height of about 100/150 feet had been reached at the point of decision and, rather than put down on rough ground, it seemed reasonable to make a circuit. All controls were effective, although ailerons are very heavy. Stability was acceptable.

Shortly after crossing the boundary of the airfield at about 45 mph, it became evident that the aircraft was no longer climbing, and it was noted that the cylinder head temperatures were 250°C and 270°C and that oil pressure had fallen to 10-12 lbs per sq. in.

From then on it became barely possible to maintain height and consideration was given to making precautionary landing, but knowledge that the time needed to dismantle the aircraft was likely to be about



three days acted as a deterrent and, as the oil pressure had risen to 18/20 lb per sq. in., it was decided to continue to try to climb until reaching the built-up outskirts of Bognor and then make a gradual turn down wind.

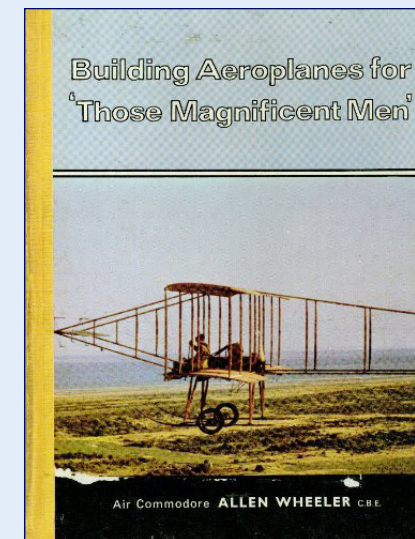
During this period it was found that any movement of the controls to correct attitude resulted in a slight loss of height, but all controls were effective aerodynamically. Cylinder head temperatures had stabilized at 280° and 290°C and oil pressure at 20-22 lbs per sq. in., and it was evident that there had been a slight power loss since the initial climb-out.

Although the down wind turn was made extremely gradually, control drag resulted in a slight loss of height, and wind shear effect, of course, aggravated this, so that, on completing the 180° turn, height was reduced to 50 feet or so. Subsequently, conditions became slightly more turbulent and every control correction resulted in a slight further loss of height,

until it became necessary to take evasive action to bypass trees and buildings.

The aircraft was now sufficiently low to be in ground effect, and this facilitated control by increasing air speed. The final turn in over the northern boundary of Ford was effected by building up enough speed flying very low over the last stretch of level ground and then making a gentle climbing turn mainly on kinetic energy. Although the cross-wind component on the runway was around 10 mph, no difficulty was experienced on the landing, but the port axle turned over as on earlier tests. It must now be considered that this was a peculiarity of the original design, and a modified A frame is being manufactured to improve the main landing gear.

DISTRIBUTION: Air Commodore A. H. Wheeler, Mr. F. G. Miles, Mr. J. Hunt, Mr. F. I. V. Walker, Mr. R. Dark



I was watching the film 'Those Magnificent Men' again a few months ago. I love early aviation and I don't know of any film which shows greater love and respect for aircraft and the pioneers who flew them but it's clear that one or two of the aeroplanes didn't have the right engine.

After a small amount of searching I came across this book. One of the great things you can do on the internet is get copies of out of print books... and this one's a winner. Its only disappointment is that at 96 pages, it's a little too short.

For Those Magnificent Men, all the flying aircraft were replicas and built with a degree of accuracy and dedication which shames the childish computer graphics of films like the Aviator and Tyranic.

The book details how all the aircraft were built (in only five months) and the difficulties of getting them to fly and to fly accurately and reliably enough for film work. What follows is an extract on test flying the Bristol Boxkite.

The Boxkite was a much easier aeroplane to fly than some of the other replicas, so much of the interest arose from incidents during its flights. Here is well known gliding instructor and stunt pilot Derek Piggot's account of its first cross-country flight from Skegness to Booker.

THERMALLING THE BOXKITE

After experiencing two road journeys, the advantages of ferrying the Boxkite by air became obvious. We had to plan flights for the early morning or late afternoon in order to avoid the turbulence of thermals during the heat of the day. Because of the low cruising speed of these old types of aircraft, a head wind of even ten miles an hour would have made the flight difficult, if not impossible, to complete in one day.

As permission to fly across country was not received until almost the last moment, we grew more and more apprehensive, and it was not until the actual take-off that anyone dared to believe that the flight was on and that the bogey of de-rigging was over-perhaps for good.

Miraculously, the morning dawned fine and calm. The jerry-can of fuel was strapped on to the spare seat and a tin of dope, brush and spare fabric was taped on to a strut with the ever useful camera tape. Max and John had a last look round and, I suspect, said goodbye to their beloved Boxkite, while I drew lines on the map and rang the local meteorological man for the forecast.

We could hardly believe our good luck when we

heard that the winds were to remain light all day, and that the only problem might be coastal fog for the first few hours. The first stage was a short hop to the airstrip at Boston, some twenty miles away, and was to be a race between myself in the Boxkite and Max and John (who looked after the Boxkite) in their car. This flight would reveal any serious problems or defects which would be useful in view of the much longer stages further on.

Map reading proved much easier than expected. Although the seat was completely exposed to the elements, the flying speed was too low to flap the map about, and having it taped to my knee was quite satisfactory. I had rather expected to find flying without a compass would prove troublesome. At such a low flying speed the sideways drift in even a light wind could be large, and this might be very misleading over open countryside with few landmarks.

For safety, I marked the exact time and position of each pinpoint on my map so that I could assess my progress accurately and estimate the total time each flight would take to make sure that a headwind had not arisen and that there would be ample fuel. Cruising at only forty miles an hour, even a five or ten mile an hour headwind could mean an unscheduled landing for more fuel besides a much longer and more tedious flight.

The trip to Boston passed without difficulties and I landed at the airstrip to find a very friendly reception. Max and John arrived in the car a few minutes later, having kept me in sight all the way. The average speed had been almost forty miles an hour and the amount of fuel used showed the fuel consumption to be a little less than we had expected.

We decided that the car should drive direct to Booker, as the air route was not along the main road. With a safe range of only fifty miles, it had been difficult to find civil aerodromes sufficiently close together, and the next destination was to be a deserted airfield where I would refuel from the jerry-can before going on to the London Gliding Club site at Dunstable.

Shortly after leaving Boston, a few puffs of cumulus cloud heralded the first real thermals and the beginning of more bumpy conditions. I decided to try to save fuel by gaining extra height by circling in the up-current at reduced power to about two thousand feet before setting off again in a gradual descent on my way.

Above that height I seemed to develop a distinct feeling of loneliness, and I found myself holding on to the strut alongside wishing that I had a parachute. The pilot of the Boxkite has a splendid view of the ground below, and most of the way, flying at only eight hundred to a thousand feet, I waved back to the friendly people in the fields who gazed aloft with amazement.

After having a careful look at my airfield (Polebrook, near Dundle) for hidden obstructions, I landed at the beginning of the mile long wartime runway and stopped the engine. Three workers a hundred yards away looked up for a moment and then continued working. They did not seem in the least surprised to see the Boxkite, and after passing the time of day I returned to fill up with fuel and to dope on a fabric patch over a small hole in the lower wing. A farmer arrived by car to take a photograph, which he hoped to sell to the local newspaper, but otherwise the scene might easily have been back in 1910.

After a few minutes relaxation I restarted the engine and roared off down the long runway, leaving the ground in about twenty yards and turning southwards for Dunstable. By this time, the air was getting quite bumpy, but as the wind was light I decided to carry on. Although the Boxkite is quite strong, the unusual fore-plane gives it a very unpleasant pitching motion in rough air. This, together with the rather slow response to the ailerons and its very low wing loading, makes it rather alarming to fly in bumpy conditions, as it gets tipped over to quite an angle by the gusts. When this happens, it is just a matter of applying all the control and then waiting for the aircraft to right itself.

This can be quite exciting during a take-off or landing, but just makes it unpleasant and hard work to fly at a safe height. The route now led over a number of service aerodromes, and each active one meant a detour to keep outside the traffic area. I amused myself by imagining the reactions of the men at the V-Bomber Base as they went off to lunch. I also kept a very sharp look-out all round to make quite sure that I was not run down by a jet and that I kept out of any area which they had recently flown through.

Above all, I had to avoid flying through the wake of a large aircraft, as this could be dangerous to my relatively flimsy machine. A few miles from Cranfield an inquisitive Scimitar jet made a wide sweep by me with its wheels and flaps down. Obviously a little upset by the sight, he abandoned his landing and climbed away into the clouds to recover his composure. I chuckled out loud to myself.

All the way along I had been amused to see the effect of my flight on the traffic below. Everywhere



Lunch at Dunstable where members of the London Gliding Club discuss the L/D of the Boxkite.

the cars and lorries had gradually slowed down and stopped to wave me on my way. Just north of Luton, I crossed the M1 Motorway. Although some cars stopped for a few moments, most of these drivers were in too much of a hurry and merely gazed out of the window as they slowed down.

At this point a decision had to be made. Whether to fly on direct to Booker, or to land for re-queuing at Dunstable. A quick calculation showed that it would be cutting things rather fine on fuel to go on, so I turned off towards the lion carved in the Downs above Whipsnade Zoo and flew towards the gliding site.

I landed and taxied up to the petrol pump for refuelling. It took the club members a little while to settle down after my unexpected arrival, especially when they heard where I had come from and where I was going.

Up to this point it had seemed best to avoid publicity in case the weather stopped the flight. However, now that Booker was within half an hours

flying, I felt confident enough to ring the film unit to tell them about the flight and my expected time of arrival. After lunch I started up and taxied out for take-off helped by the club members.

Before setting course, I made one low run for the benefit of the people with cameras and then climbed away towards Halton. This last stage of the journey took only forty minutes, and on arrival at Booker, after checking that there was no filming in progress, I flew low and circled, skimming the grass before landing.

Only then I realised that I was tired and deafened by the continuous roar of the engine. But I was happy to have completed the flight without difficulties and to have avoided the need for de-rigging the whole machine for the move. This was the first of several enjoyable ferry flights, and although grateful to have a modern reliable engine behind me, I became quite envious of the pioneers of fifty years ago.

THEY SAID IT SHOULDN'T BE (REPRINTED)



This article was originally published in *Australian Gliding*, March 1992, as "They said that it couldn't be done" by Louise Armitage with photos by Noel Matthews and Ben Day.

It's interesting to compare safaris of 25 years ago with those of today. How the pilots moaned back then but how well they did with the equipment they had back in 1991. And a *deputy* ops director!

The pastime of gliding offers much more than winning races and gaining badges, as proved by the successful 3200km Lilienthal expedition from Adelaide to Darwin in 1991.

The story of how more than 20 pilots travelled coast-to-coast over Australia's harsh inland, relying on each other and their ground crews when the going got tough, becomes part of our pastime's history.

The author travelled by road with the safari and here captures many of the moods... the highs and lows... of those who took part.

What you are about to read is just one account of the expedition taken from my notes, detailed notes from Viv Hyland and Fred Foord, combined with excerpts from a log book in which pilots and crews could make their own comments.

While I can describe the expedition, I cannot describe the excellent spirit of camaraderie and cooperation which existed among all participants; you had to be part of the expedition to appreciate and understand it.

Day 1

Adelaide Airport to Gawler "Pilots, man your aircraft" - John Schumann

With a sky covered with cirrus and alto-cumulus, a stunning soaring day Monday, 28 October 1991 was not.

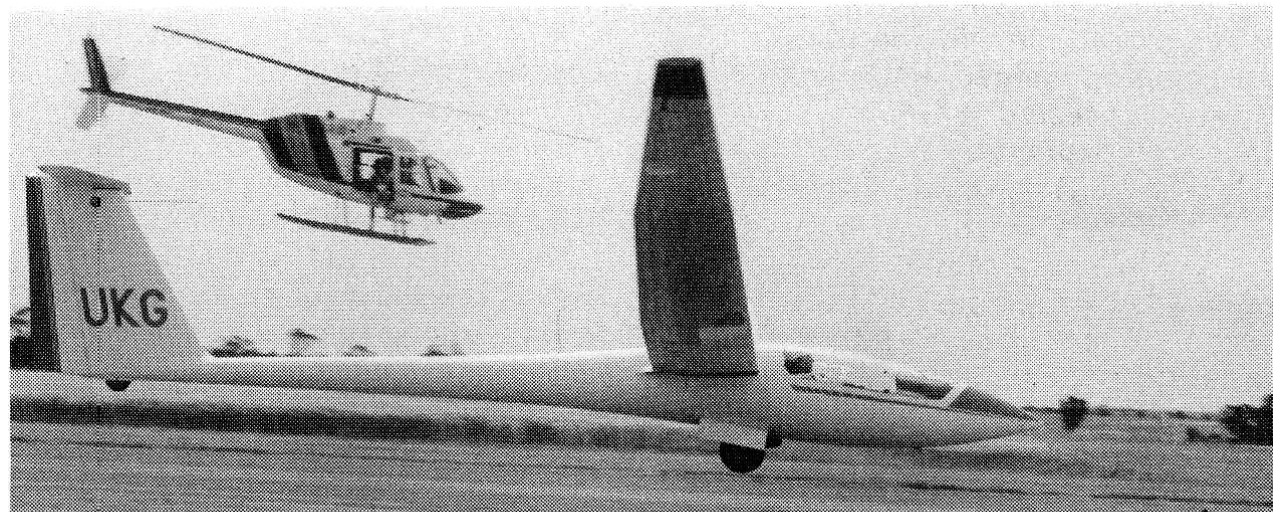
And if there was to be a time where all the warnings, fears and criticisms about what was about to be attempted rose like fearful spectres in one's mind, this first day was it.

Waiting patiently at Adelaide Airport for the Janus and tug to arrive for the trip to Gawler to open the Transcontinental was John Schumann, singer songwriter and former lead singer of "Redgum". John, now being the marketing manager of the History Trust of South Australia, jumped at the offer to officially open the expedition.

Meanwhile at Gawler, pilots and crews were making final preparations for the journey. The air was noticeably tinged with a combination of tension, nervousness and excitement as John Schumann gave a short address to the pilots and the final briefing closed.

Gawler to Pt Augusta-(237km) *"I have travelled 2,000km for 20 minutes soaring"* - Bob Ward GFN

It was after 1300 when John Schumann gave the order for the expedition to begin. Launching into the



Mike Giles in his ASW22 departs Gawler under the eye of a helicopter-borne TV cameraman.

weak conditions, the journey had officially begun. We knew that the two hardest legs of the expedition were likely to be getting away from Gawler, which was still under the influence of spring weather conditions, and the final leg into Darwin, where we ran the risk of being beaten by the wet season. So far we were right and a few gliders fell into paddocks quite soon after leaving Gawler.

The fact that the only gliders to reach Port Augusta were the Grob 109 flown by Stuart Lodge and Maurie Bradney and Rudi Gaissmaier's TOP-motor equipped LS4 is a testimony to the degree of difficulty of the day. A barbecue organised by the Port Augusta Gliding Club and the local Rotoract Club was highly appreciated by the tired pilots and crews.

Day 2

Port Augusta to Coober Pedy (487km)

"Any 'Dambo' will do, let's get up there!" John Dennis GXG

It couldn't be. Not at Port Augusta. It, doesn't rain at Port Augusta in late October. Want a bet. This was Port Augusta and yes, it was raining. Steadily. There was only one solution today and that was to trailer to Coober Pedy. So except for the gliders who aero-towed out and the self-launchers, the rest of us de-rigged. As we headed further north through the featureless, saltbush covered landscape, the temperature had risen dramatically from 17° to 37° and the appearance of lenticulas ahead signalled that we had left the rain-producing air mass that had caused us grief at Port Augusta.

Left Port Augusta under overcast sky, X0 in trailer. Will I have a beer? Maybe we'll wait - a few gliders are towing and maybe we'll get a launch later on.

Turned on the radio and monitored 122.7, 100km south of Woomera heard TDN on the air. Asked whether a launch from Glendambo was on. Pressed on to Coondambo, by this time people were warming to the idea but there was some confusion between Glendambo and Coondambo.

"Any Dambo will do, let's get up there!"

Arrived Coondambo Homestead to find a fury of rigging in progress. The station family must have wondered what hit them, but my crew assured me that they loved it. Rigged and ballasted in about 20 minutes, sweating like hell and covered in red dust. Can see about 5' of rope - it's still straight. Abort? Popped out of the dust, all's well. Straight off, fell into 7kt to about 1,0000' and the expedition had begun! - John Dennis GXG

We all knew that the first few outlandings would be the confidence builders to future outlandings during the journey. The first would be today. As the sun slowly set over the Coober Pedy moonscape, UKO's crew were seen de-rigging Mike's Jantar in a stony backfilled mine area just 5km south of the town. Apart from the glider sinking slightly into the soft earth and the sudden loss of the crew's sense of humour, there were no problems.

Day 3.

Coober Pedy to Erldunda (460km)

"A good day. You could have made it in a Westinghouse!" -- Mike Hosking UKO

The atmosphere was noticeably more relaxed at briefing this morning. If the met proved to be correct, the day was looking promising. What was also promising was that airstrips were only a maximum of 50km apart along the route to Erldunda; The first gliders were in the air by noon and it was a slow start. As the fleet headed further north, the conditions improved dramatically with many pilots cruising comfortably between 8,000

to 13,000' under beautifully developed cumulus. Pilots soon agreed though, that flying at anything less than 7,000' over this country was not comfortable.

What God awful country to fly over! The only redeeming feature is that you can see the next airstrip from here... (Here being the previous airstrip) which is just as well; nowhere to land other than the road - Mike Hosking UKO.

The magnificent conditions which marked the middle of the day were not to last. Late in the day conditions weakened and the two lowest performance gliders in the expedition, Keith Willis's Cirrus and the ASW15 of Jon Davis and Rod Loder, out-landed at Kulgera. Everyone had the pleasure of staying at the Desert Oaks Resort complex at Erldunda. We all enjoyed the excellent meals, accommodation and hospitality.

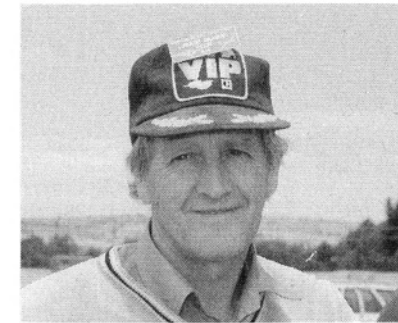
Day 4

Erldunda to Uluru (Ayer's Rock) and return

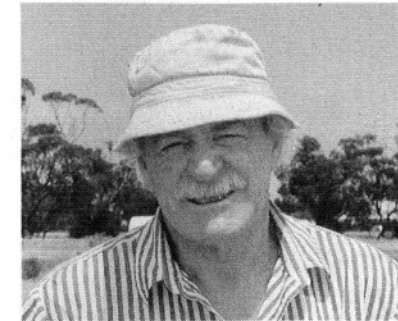
"Not much of a day, really" - Darcy Hogan KYV

It's a good organiser who spares some thought for the crews and the out and return task to Uluru was decided upon to give the crews a chance to see some of inland Australia.

Options were considered on how the task to Uluru would be set. The first preference was to land at Yulara and head for Alice Springs from there the next day, but there was an airspace problem. We could not have been stopped from flying into Yulara, but we would not have been permitted to fly out the next morning.



Laurie Bunnik, Janus



Bob Thomas, Jantar



Paul Mander, ASW20B



Darcy Hogan, Jantar 2

With airspace problems curtailing our intentions, it was decided to attempt the out and return flight. This time the weather, despite a promising met report, would be the problem.

After having a taste of the dreadful conditions after launch, many of the pilots returned to base. Road landings were the absolute last resort for an outlanding, but today some pilots ended up there.

Leave field at 4,000' QNH and headed for Uluru. Flew into large, inactive area and only saw nil sink bubbles until 800' AOL. Found a nice bit of road and radioed the crew to get there quick, but couldn't wait.

Downwind fast, check for iron-posted signs on the road - couldn't see any. No traffic from west. One (car) from east in front of crew; they're trying to stop him by flashing lights. On final, better get down before this car. Over one set of posts, full airbrake and stand on wheel brake, and jumped out just as car was coming over this hill and pushed off road into a ditch. When I turned around, I saw Al Leffler driving the car... oh well! - John Dennis GXG

Day 5

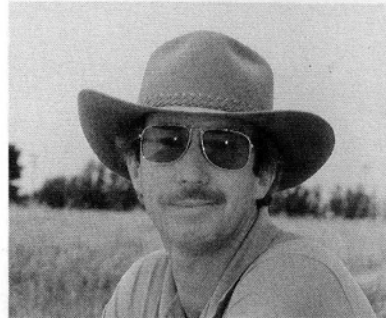
Erlunda to Bond Springs (Alice Springs) - 197km

"Three thermals to Alice Springs" - Bob Ward GFN

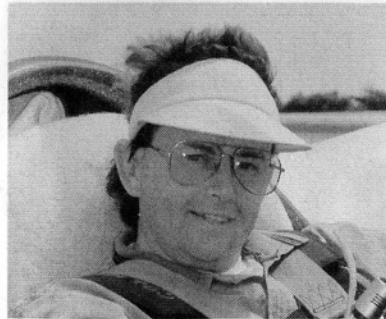
At dawn, it looked like we might be spending another day at Erlunda. The sky was overcast with a lot of threatening thundery activity on the horizon. One millimetre of rain had been recorded at Erlunda overnight - the only rain that had been recorded for six months.



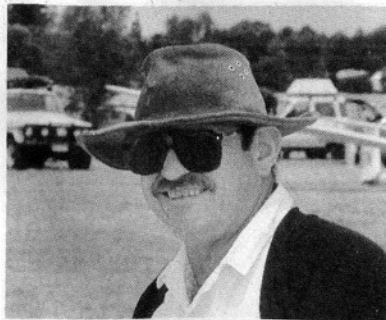
David Jansen, Discus



Arnie Hartley, tug and glider



John Dennis, LS4



Peter Kayne, Jantar

Later in the morning, the sky cleared and we headed out to Erlunda airstrip for the journey to Bond Springs, home of the Alice Springs Gliding Club. The 22km between Alice Springs and Bond Springs is some of the worst gliding country you could imagine.

The local gliding knowledge was that if you did not have at least 7,000' by the time you reached Alice Springs; then don't attempt to fly to Bond Springs. This was going to be interesting.

Today blossomed into classic Australian weather conditions - over 35° and a 25kt northerly crosswind. The wind, as well as creating dust that permeated everything, also caused problems for some of the pilots with a few launches being aborted. Mike Giles was the first to call final glide - 100km from Bond Springs! First launch aborted. Strong crosswinds.

Take two.

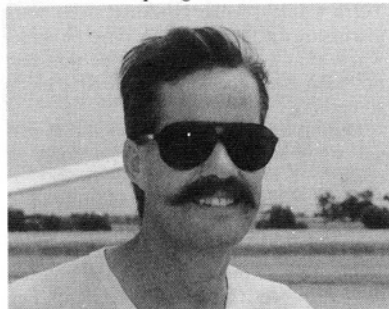
Finally into the air. 6 to 8kt thermals. 8,000 to 9,000' start. At Orange Creek it became overcast, clouds moved in and there was some light rain. Climbed away from 1300 to 4,000'. Gained maximum height of 10,500' and headed for Alice Springs. Enjoyed the day - Peter Kayne IZY

The Mayor of Alice Springs, Mrs Leslie Oldfield, was at the Bond Springs aerodrome to greet the first gliders and John Dennis sacrificed his flight to make sure that we had a glider pilot to meet her. It didn't run to plan and Mike Giles could have done the job without losing the flight.

Arriving at Bond Springs, we were struck by the first appearance of termite mounds; a certain hazard for outlanding gliders. We were to discover that the



Scott Percival, ASW20B, takes time out to relax in Alice Springs. Photo Keith Willis.



Jon Davis, ASW15



Rudi Gaissmaier, LS4 and TOP

termite mounds at Alice Springs were babies compared with what we would see as we ventured further north.

After five days on the road, everyone was looking forward to a free weekend in Alice Springs. The Alice Springs Gliding Club members did a fantastic job in looking after us. We had the privilege of being guests at a civic reception held by Mayor Oldfield followed by a dinner at a local steak house. Hair was let down and much dancing on the tables was done.

The two day break had been well timed. It began raining in Alice Springs, the first for six months, and the weekend would not have been flyable. It was a good opportunity to rest and enjoy the warm hospitality extended to us.

Day 8

Bond Springs to Tennant Creek (432km)

"A nice warm day for a little jaunt" - Bill Kentish TDN

The temp trace showed all the signs of a 1,0000' day. By briefing at 1,000, the cumulus clouds were already popping and every effort was made to launch the gliders as early as possible.

Conditions? Beautiful! Cu's looked absolutely fantastic, but 3kt thermals were the best underneath them for the first 100km.

Things improved to 5 to 6kt until Barrow Creek where the cu's began to disappear and left a big blue hole on track. Lift went back to a lousy 2 to 3kt. Struggled through to Devil's Marbles - down to 3,000' QNH. Grabbed a 1 to 2 knotter and took it to 8500'. From there to Tennant Creek, took every 1 to

2 knotter available and stayed above 6,000ft QNH. Kept struggling until Tennant Creek came in sight 6 hours later. You beaut! - Peter Kayne IZY

The weakening thermals, due to rain further north, claimed four gliders, while Al Leffler declared final glide but had miscalculated his position resulting in an outlanding 42km short of Tennant Creek.

It was a long day and after 2,000 before the ops directors could cancel SAR. Tonight we all dined at the Dolly Pot Inn, reputed to be the best eating place in the Territory.

Day 9

Tennant Creek to Daly Water (378km)

"Average 100km/h - no worries!" - Peter Kayne IZY

It was hot at 0600 and it was going to get much hotter. The met. report was good and we were all aware that from now on, we could expect more heat and more humidity. First launch was away at 1100. Launched next to last today and climbed to 8500 prior to departure.

Continued on track for first 80km without turning and losing only 2500'. With thermals averaging better than Ski to over 9,000', the only low point was at Elliott down to 2500' AOL. Saved by 9kt and continued under overcast sky. Finished with a speed around 120km/h - David Jansen FV

It was becoming apparent that this far north, you needed to leave early as conditions clearly became unreliable and over overdeveloped later in the day.

At one stage, John Dennis and the Janus pilots Laurie Bunnik and John Lee were scratching but finally made it, while Jon Davis in the ASW15 landed 30km short of the field. The Daly Waters pub has to be seen to be believed. If ever there was a hotel that epitomised an Australian outback pub, then look no further. We had a riotous night with much noise and a few water fights to boot.

We couldn't leave without adding a memento to adorn the walls and our contribution was the number plate from Mike Hosking's trailer, complete with all our names on it.

Day 10

Daly Waters to RAAF Base Tindal (238km)

"It was certainly the roughest landing I have had in the Jantar" - Darcy Hogan KYV

As the sky had overdeveloped by late afternoon for the past two or three days, briefing was brought forward to 0830. Held in the barbecue area of the Daly Waters pub, it had to be one of the most relaxed briefings ever seen in gliding. Spirits among the team were very high and a far cry from the tension that marked the beginning of the expedition.

The ops director had guessed the ETA at Tindal to be between 1330 and 1500. On this day, that estimate proved to be crucial for at 1400, a tremendous storm front, bringing with it the first rain in 8 months, struck Tindal. A good run, 5 to 7kt up to Mataranka. Dave Jansen got low but escaped.

Some pilots suggest you grow used to being low over this country, but I haven't. The weather started

to develop with rain ahead at Tindal.

Tindal approach were very good and eventually realised the futility of trying to separate us from each other and just let us run in. Lift was very good in front of a storm approaching from the northwest, so on arrival overhead at Tindal, I stayed at 5,000' as others behind were in sink from the storm. Landing didn't seem a good option with 15kt of crosswind and a dust storm at one end. Then I noticed the rain moving in, so I decided to land. To run with the storm would have been great, but where IO?

The tower was a bit frazzled as I had to descend, but two others were already on finals. I turned final for the taxiway. It was raining at our end; 15 to 20kt of crosswind and blowing dust at the other end which was some 7,000' away. It was certainly the roughest landing I have had in the Jantar. Crosswind... get past Giles in case of ground loop... miss some gable markers. Rough, but successful! - Darcy Hogan KYV.

The RAAF meteorologist told us that there was 38kt of crosswind at the height of the storm. They couldn't believe that we could have landed safely. After all of the drama of landing, we were escorted to our accommodation. The help and co-operation from the RAAF was fantastic and with the assistance of RAAF members Jon Davis and Rod Loder, we were treated to hearty meals, good accommodation and free use of all other facilities.

Day 11

RAAF Base Tindal A Rest Day

Time to play tourist again. We all started the day

with a coach tour of the base including a visit to the F18 hangar complete with a team photo being taken by one of the RAAF's staff photographers. In the afternoon, Katherine Gorge was invaded by glider pilots. They were everywhere... canoeing, swimming, drinking beer and enjoying the cruise down the gorge. A swim in the warm, clear water was absolutely wonderful after days of heat, humidity and dust.

Day 12

Tindal to Batchelor (217km)

"A most frustrating day" - Fred Foord, deputy ops director

Briefing was early today and we were ready to roll by 1100. Unfortunately, the weather wasn't. Left overcast by the previous night's storms, the cloud cover was moving away at an appallingly slow rate. We waited, waited and waited, forever mindful that the available flying time was fast being whittled away.

At noon, Mike Giles launched to do the sniffer flight. All he could find was a paltry 1kt thermal to 4,000', which was not exactly inspiring stuff in this terrain. This was enough to declare it a trailering day. Leaving Tindal by road, you can appreciate the difficulty of flying over this land scape. The scrub is dense and tall, large rocks and cuttings are everywhere and the termite mounds are many feet high. The road is not even a landing possibility as the traffic is heavier and the scrub grows close to the road verges.

Not everyone missed out on soaring. Towards Batchelor, conditions improved and the pilots on aerotow soared into Batchelor.

Day 13

Batchelor to Darwin (76km)

We've done it!!

The excitement in the air today was justified. Just 76km to go and like the first leg out of Gawler, this last leg had the potential to be one of the most difficult.

Briefing was at the Rum Jungle Motor Inn and Flight Lieutenant Graeme 'Doc' McKenzie from RAAF Darwin and his wife Ineca joined us. Graeme assisted us with our airspace arrangements and, being a former president of the RAAF Amberley Gliding Club, he knew exactly what we needed and what our capabilities were. Conditions looked good initially, but storms were likely to develop later. The storms developed early instead and at around 11:30, the lightning and thunder posed a threatening sky.

Davis Jansen read the weather well, launching and leaving as soon as he could. It was the best decision he could have made as he was the first of the 11 gliders to make it into Darwin Airport.

With a dramatic pitch-black sky as a back drop, the fortunate ones among us watched with a mixture of emotion and elation as David in FV, joined circuit to finally touch down in Darwin. Close behind him was Paul Mander, Henk Meertens, Peter Kayne and Bob Ward.

Great flight dodging storms. Got reasonable climb at Batchelor to get away reasonably early, but down to 2,000' at EMKAYTEE. Managed to get a climb under 8/8 between rain. 4,000' cloud base gave me a final glide into Darwin... but where was it in the rain? Arrived overhead with almost 3,000.

A wonderful trip! - Bob Ward FN

The gliders that did not manage to leave Batchelor early either outlanded or returned to Batchelor to be trailered in. Several of the pilots landed at EMKAYTEE, a private airstrip 27km south of Darwin, where they waited for a relight when conditions improved.

By mid-afternoon, the last gliders were safely at Darwin and the historic 3,200km expedition was complete. It was a wonderful feeling.

'Doc' McKenzie and the RAAF personnel at Darwin were fantastic and went out of their way to be helpful and accommodating. Nothing was a problem for them. This historic day was completed with a civic reception held by the Lord Mayor of Darwin, Alan Markham followed by a dinner at the RAAF Base Gold Club.

This final gathering was an occasion tinged with some sadness, as the group had all grown very close to each other during the past fortnight. Now it was all over. But we all agreed about two things.

The first was that the expedition had to be the best thing that has ever happened in gliding. It has extended not only what gliding can achieve, but the different possibilities of what we can do aside from the usual cross-country and competition flying. Secondly, we'll be the first in line for the next expedition.

The Fischer TOP was designed and manufactured by Thomas Fischer in Germany in the 1980's. The unit has a 24 HP Konig 3 cylinder radial engine which develops maximum power at 4200 rpm with toothed belt reduction giving propellor rpm of about 2400. The fuel tanks are part of the unit and hold 8.5 litres of fuel, good for about 45 minutes at full power. Pilot reports are that an LS4 fitted with TOP will climb from sea level to 14000 feet on a full tank.

There is a 3 bladed carbon and kevlar folding propellor which automatically folds when the engine is stopped. This makes the TOP one of the easiest to operate motor glider power units as the prop does not have to be stopped in a particular position. There is also a safety benefit in that if the engine fails the prop will stop and fold reducing the drag dramatically and giving a glide angle of about 25 at around 50 knots.

Extension and retraction is electric and electric start is fitted. The air-cooled engine is very smooth with little vibration and not too much noise and it warms up and cools rapidly. Engine starts can be done with only 50 feet altitude loss. No generator is fitted. Batteries for the TOP are fitted in the nose of the glider which generally means little ballast is required to bring the Center of gravity of a TOP fitted glider to the right place. Around 100 TOP units were made up to end of production in the early 90's. This device needs to go back into production! A mark 2 version with a little more power (say 28 -32HP) would be welcome. The Konig engine is currently made in Canada for powered parachutes. <http://compactradialengines.com>

Mike Borgelt 28 June 2003