www.augc.aus-soaring.on.net January '02

Uni Gliding

The Official Journal of the Adelaide University Gliding Club

Part of the line up at the Club Class National Competition at Temorra this year. Photo: Nick Gilbert

WHAT'S INSIDE

STOP PRESS

The final score: David Conway 15th and Cathy Conway 23rd at the Club Class Nationals. (Cathy may have been 9th if she hadn't outlanded on the first day)

QUOTE OF THE MONTH

" I know what going down is like!" Matt Learmonth after a very short flight .

EDITORIAL

Hi everyone,

Welcome to the second summer newsletter. This newsletter is again slightly later than anticipated. This was mostly due to me being very busy with everything else, as well as other contributors being very busy (flying at the nationals the lucky buggers). Anyway I have put some more summer holiday reading in this issue with the second part of a series on aerobatics and Mark's article about his efforts at the Waikerie Cross Country course.

The Boxing Day to New Year flying camp was moderately successful with around 40 hours flown in club aircraft. Unfortunately the weather was not up to expectations, but whilst it was (mostly) soarable (even the ridge was working on several days), it didn't have many big thermal days. Achievements during the week: **Claudia** went solo, **Dirk Seret** gained his A certificate and **Matt Learmonth** actually managed to stay up longer than 5 minutes with a passenger. Matt found it particularly hard going during the week as he frequently found himself the source of much humour.

A number of other things happened during December and early January. The Puchatek is back with us after its sojourn to be repaired. It now returns to being the clubs most popular training aircraft. **Matt Learmonth** attempted his first cross country in the Arrow to Crystal Brook, but unfortunately only made it 30 km out. Better luck next time **Matt**! **Mark Newton** got his Silver C in MI whilst attending the cross country course at Waikerie (check out page 6 for the story). Justine and I even managed to get away and do a short cross country flight to Gawler in ZQ. I've even found a good picture of the only other Bergfalke (that I know of) in Australia. It's owned by Ian McPhee from Byron Bay. Ian is doing particularly well in it in the nationals at the moment.

There are no further General Meetings till we have the post O'Week introduction night sometime in early March next year. In the mean time we still have social events and we still need to finish of the Strategic Planning effort and I am sure there will be a very lively executive meeting in the near future to discuss the club flying rates.

Anthony
Editor

Ian McPhee's Bergy 3 at the club class nationals at Temora. Photo: Nick Gilbert

HOW TO HAVE A CLEAN CLUBHOUSE

The clubhouse was given an extensive cleaning out over the Christmas to New Year camp. We should try and keep it this way. There is now a good vacuum cleaner in the clubhouse. The clubhouse should be vacuumed and cleaned up at the end of each days flying. The rubbish bag should be taken from the clubhouse and deposited at an appropriate bin at Pt Wakefield or at home.

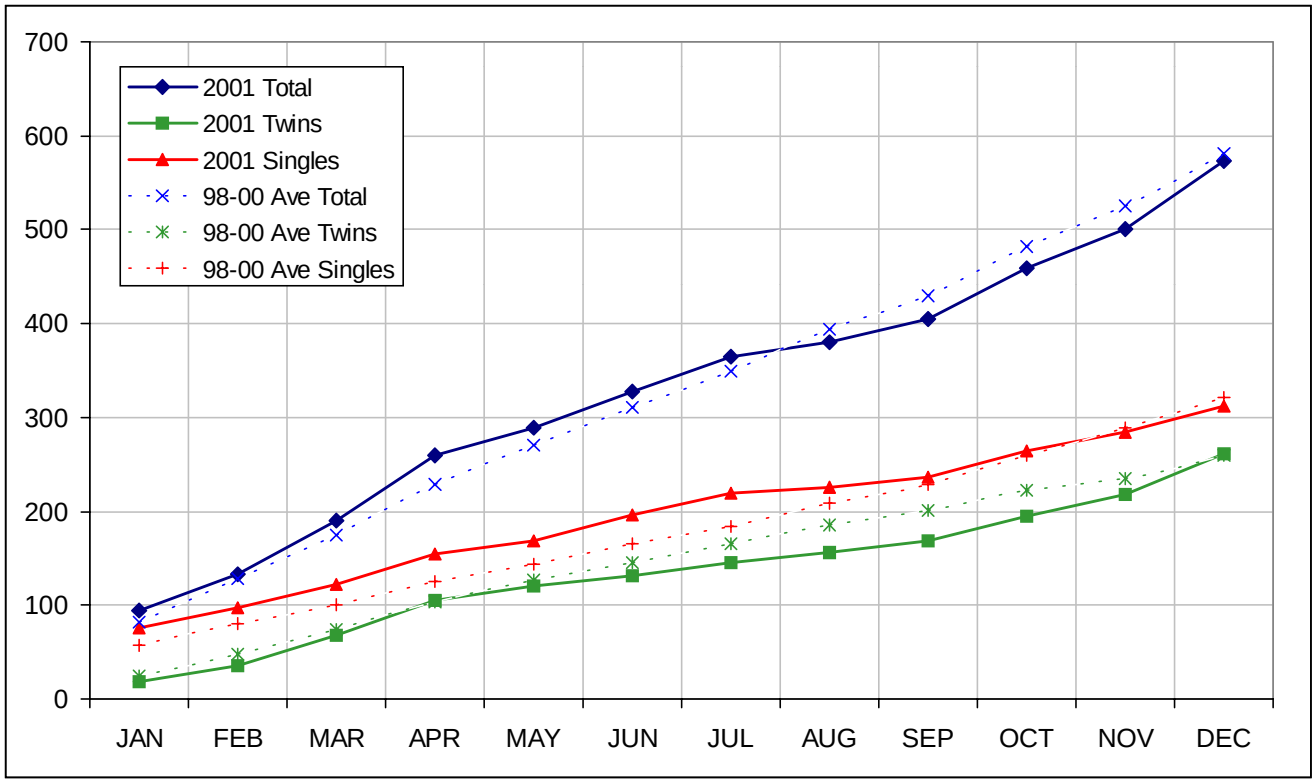
JANUARY

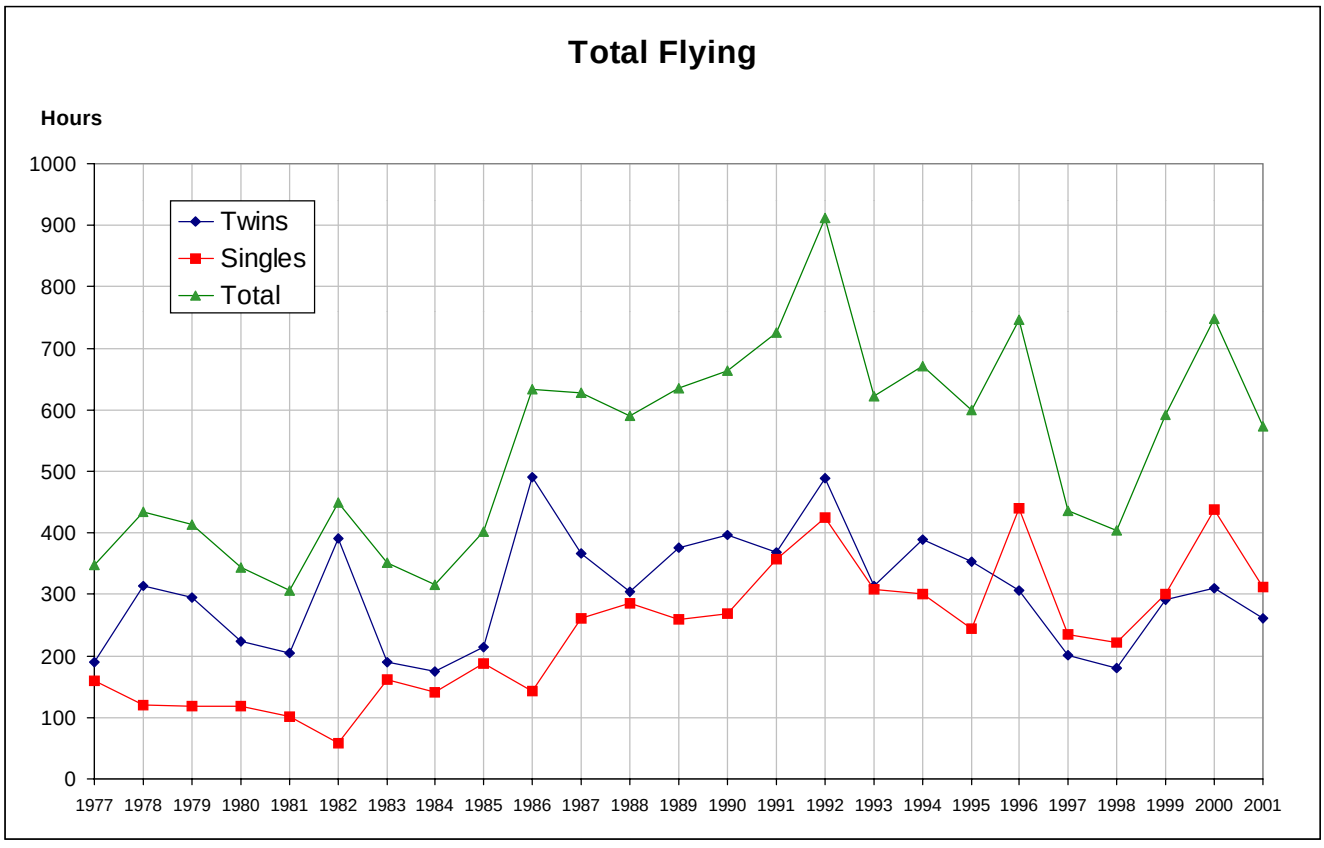
The Arrow over the airfield in summer. Photo: Unknown

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
	1 **New Years Day** *Go gliding*	**2**	**3**	**4**	**5** *Go gliding*	**6** *Go gliding*
7	**8**	**9**	**10**	**11**	**12** *Go gliding*	**13** *Go gliding*
14	**15**	**16**	**17**	**18** **Anthony & Raj's Birthday** The British. From 7:00 pm	**19** *Go gliding*	**20** *Go gliding*
21	**22** **Movie Night** Lord of the Rings 7:15 pm Norwood	**23** **Exec Meeting** Dennis's place 7:30 pm	**24**	**25**	**26** *Go gliding*	**27** *Go gliding*
28 *Go gliding*	**29**	**30**	**31**	**1**	**2** *Go gliding*	**3** *Go gliding*

CLUB FLYING FOR 2001

Here are the club statistics for last year compared to previous years. The progressive hours chart for last year has changed slightly to the one from last month as a number of 'missing' flight sheets have been added to the data. Club aircraft (as well as aircraft hired for use by the club eg Simon's 'Falke') flew just under 574 hours which is not bad, all things considered.





AEROBATICS 2: THE QUARTER CLOVER LEAF

This is the second part in a series of articles on aerobatics for gliders. Each month will feature a new maneuver (*this will keep the newsletter full of something interesting for a while*). It will be largely based on 'The handbook of glider aerobatics' by Peter Mallinson and Mike Woollard. This book is aimed at training to become a competition aerobatic pilot and leans towards highly precise maneuvers.

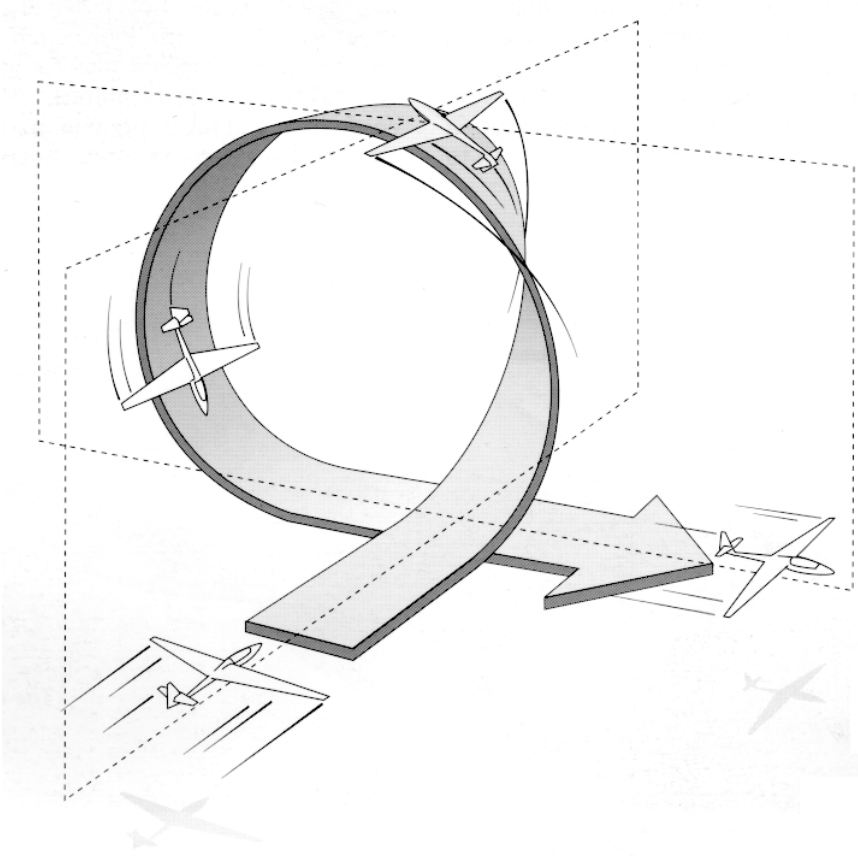
Aerobatics are a lot of fun, but can rapidly get you into trouble if you stuff them up. So care must be taken to ensure you aerobat safely. Take the time to have a go with an instructor first before venturing into unknown corners of the flight envelope.

The cloverleaf extends from the loop maneuver and is essentially a combination of looping and rolling. Whilst it is considered to be a relatively simple maneuver, it should be practised with some caution. This is because as the aircraft is rolling, the load on the wings is far greater than the respective g's felt by the pilot. This makes it easy to overstress the wings without the pilot realising it.

The glider should pitch up from horizontal flight as for a loop, but it should roll at the same time during the second quarter so that as the glider passes through inverted, it is heading at 90 degrees to its starting direction. It should then continue to complete the loop with no further rolling to exit on a horizontal line at right angles to the entry line. A sequence of four identical quarter cloverleafs will produce a full cloverleaf and the glider comes out on the same heading as the entry heading.

Common Faults: The most common is failing to combine the rolling with the looping element in the correct proportions, resulting in an unevenly shaped figure and an exit off the desired direction. Also initiating the roll too early, resulting in excessive speed when inverted or not getting the wings level in the inverted attitude.

Target Speed is slightly more (5-10 knots) than for a straight loop because of the extra energy needed for the rolling component. The entry is the same as for a loop. Pull back to achieve a minimum of **3g** as in the first quarter of a loop. When the nose is 60 –70 degrees above the horizon, glance along the wing in the direction of the roll (remember that you will be exiting in the opposite direction). Pick a reference point on the horizon in line with the wingtip. Focus on this point and try to keep your eyes on it. Move the stick in the same direction, rolling and pulling the glider towards this reference point but be carefull not to relax the backpressure on the stick as you start to roll.



As you pass through the inverted, stop the rolling as the nose lines up with the reference point and check that your wings are level. Continue with the rest of the loop. If you are not properly lined up, you can make cor-

rections to your heading quite easily at this stage.

Your speed over the top should be slow, as in a loop. If you notice that it is too fast, you either started pulling to hard when you began the rolling input or you started rolling too early. In this case it might be better to continue to roll and roll out of it rather than pulling through with the loop and over-speed or over-stress the aircraft.

SILVER DISTANCE (AND HEIGHT)

Saturday was the last day of the cross-country course. One of my goals for the week was to achieve Silver Distance, so this would have to be the day.

The weather briefing looked promising - We'd have a convection ceiling in excess of 5500', about four hours during the day when the lift would be good enough for cross-country, and the possibility of the odd bit of Cu to mark the best lift. I set myself a task from Waikerie to Loxton Grain Bunker and back to Waikerie, total distance 116km.

We launched at about 1:00pm. Conditions didn't look quite as good as the weather briefing suggested, with patchy thermals going to 3700'. It did cross my mind that the previous day had also gone to 3700' and we'd declared it a rest day, but I had faith that it'd get better as the day grew longer.

I set off anyway, working a band from 3700' to 2700'. As I flew further South-East the lift became slightly better, so I was able to shift the band to 3000' - 4000' instead. Getting below 3000' was pretty uncomfortable because the thermals were so weak and broken, so the flight was characterized by moderately short cruises followed by extended periods of thermalling.

There was a vineyard about half way between Waikerie and Loxton which produced fairly strong lift, surprisingly. I remember looking down at a tractor on one of the dirt tracks on the edge of the paddock, and seeing that the farmer had stopped and sat back on the seat with his arms folded, looking back up at me. I was down to 2500', and he probably expected me to land in the paddock next to him -- But he'd only get disappointment from those kinds of thoughts, because I was slowly climbing. I left the thermal at 3500', looking for stronger lift.

That's the way it was almost all the way into Loxton. Every now and then I'd get a good thermal which would take me back to the top of my height band, but usually I was sitting somewhere around the middle of it, trying to avoid falling back through 3000' to where the thermals were more difficult. There were a few occasions where I took a mediocre but easy climb just to avoid being left with a mediocre but turbulent and difficult climb a few hundred feet lower. It was hard work.

Then the lift stopped. I'd taken a climb to somewhere fairly high in my height band, then cruised onwards through sink... and more sink... and more sink. The altimeter was counting down through 3500' and there was still more sink. I deviated over a hopeful-looking treeline, and there was more sink. 3000'. 2500'. Shit!

I could see my turnpoint in front of me in the canopy, so very close – but with the vario displaying 8 kts sink it was rising in the canopy: Undershoot! I wasn't going to make it.

2000' - I was picking likely looking paddocks, eliminating others. The best one was about two paddocks this-side of the turnpoint: If I landed in it it'd take me mere MINUTES to walk to the grain bunker to find a phone. 1500', more sink. 1400'... slightly less sink. 1300'... no sink. 1300'...0.5kt lift.

I wrapped into the thermal. There was hardly any of it there, but I was at less than 1300' and by staying with it I wasn't going down anymore. I kept turning in it, making little exploratory modifications on each turn to see if I could do a better job of finding a center, but each modification turned out

worse so I reversed it on the next turn and tried something different next time. All this time I was circling two paddocks short of the grain bunker, with enough height to make the turnpoint but nowhere near enough height to do a useful circuit afterwards. The goal was close, so close.

Still circling, I heard a radio call: Mark Morgan was pair flying, and his partner had asked him how low he was. "Don't ask. Busy," was the gruff reply. At least I wasn't the only one.

Looking back on the barograph trace, there is a period of about fifteen minutes which shows up as an almost straight line at about 1200'. Then, for no adequately explainable reason, the trace rockets upwards.

My thermal, which had been averaging between 0.1 and 0.5 kts, suddenly bloomed into a 5 kt climb - the best of the day. I was saved! Up it went, capping out at 4900'. I thought back over the theory lectures I'd had, where the instructors had said, "If you're working upwind close to a turnpoint and you find a thermal, it's better to round the turnpoint and come back for the thermal than it is to climb the thermal then go round the turnpoint." But I had been down to 1200', and I was having none of that.

I remembered Derek telling me he was getting a bit low, and found his best climb for the day on the Waikerie side of the grain bunker. It appears that I found the thermal he'd marked for me two days earlier. Good work, mate :-)

So I flew onwards, covering the last 300m to the grain bunker, orbited it, and then turned back to see how far away Waikerie was. And it was a long, long way.

I passed "Derek's thermal" again, topping up on height, and flew back into the awful sink I'd passed to get to Loxton in the first place. But this time I'd started out 1000' higher, and emerged from the other side at nearly 3000'. I did a few turns over the vineyard with the tractor on the way back too, correctly guessing that if there was lift there last time there'd probably be lift there this time as well. I had some other good climbs over some harvesters which were reaping a wheat paddock on-track.

MI has no final glide computer, so I eyeball-estimated it, which (of course) meant I was too conservative and arrived back at Waikerie with a few thousand feet to spare. I flew the last five minutes at 95 kts, then pulled up into an 8 kt thermal right next to the airfield. So /that's/ where all the Loxton thermals went, eh?

So I played around over the airfield for another ten minutes or so, making sure that I had my silver height as well as silver distance, then went in to land.

Total time in the air: 3h 9m. Time on task: About two and a half hours.

Distance: 116km.

This was by far my most memorable flight to date - I'm typing this a week and a half afterwards, and I can still remember all the details with crystal clarity. I managed greater speed at other times during the cross country course, and I certainly achieved greater distance on other flights, but this one was the first one I'd managed by myself, and it was done in what were probably the most difficult conditions of the week.

THE WEEK IN REVIEW

Before I started the course, I'd never flown cross country. On my first day I did about 120km in MI, and the achievements just kept coming from there.

The week saw me fly my first cross country, fly a cross-country with Bill Mudge in excess of 80km/hr in a Twin Astir, fly an ASH25, convert to the LS1f, achieve Silver Distance and Silver Height. The only cross country facet I missed-out on was outlanding, but I'm sure there'll be plenty of time to get more practice with that than I'll ever want.

Would I recommend it to anyone else? Well, that depends on how much money you have. The

course registration fee was $220, I took 9 tows at $35 each, I spent $100 on accommodation, and my day with Bill Mudge in the Twin and a 53 minute local flight in the LS1f set me back $85, and I spent a shade under $130 on MI during the week. All up, I spent as much at Waikerie in a week as I would have spent in a year at Lochiel -- But I kind of expected that.

Then again, I could look at it and say that it cost me about $100 per day, which is probably less than what I'd pay if I took a December holiday almost anywhere else. And I think I got more out of this course than I'd get out of a week of sitting on the beach.

Would I do it again? Yeah, I'm already thinking about it. Half of the people on the course were repeat customers, and I've already given some thought to turning up next year, either for performance week or for a repeat of the Basic X-C course. Perhaps next time I'll be aiming for 300 km instead of 50 km.

Mark Newton

TREASURER'S PLEADINGS

The Club's recent hard spate of flying (over 70 hours in club aircraft during December) has helped our bank balance, currently still hovering about the $3,500 mark. Thanks to all that have been helping to keep the aircraft utilisation up! There is still over $3,000 of near term bills (not to mention the $ 3,500 insurance monster invoice in March) to pay so feel free to fly more and pay more! Overall we ended 2001 with about $1,000 less in the bank than we started with; but given the number of things we've bought or projects started this year that's not a bad achievement. The full story will be told when the accounts are presented at the AGM in April, although I plan to publish some cut down versions earlier via the newsletter.

I think all of the flight sheet data has been entered now for 2001 and the Newsletter Editor will no doubt have some fun analysing all of the flying data (*Yes, see page 4: Ed*). If there are any outstanding 2001 receipts or other paperwork please pass them to me ASAP so I can close off the accounts for last year.

And since the end of the year has now passed it's time for renewals - GFA, Sports Association and Club. I will be renewing the Club and Sports Associations for members in Feb/March once we know the correct Club and Sports Association fees for 2002. At that time if you want to remain a AUGC member you'll need to (a) tell me in writing and (b) have money in your account to cover the fees. GFA membership is renewed directly with GFA by yourself. I'll send out a reminder e-mail next month.

Treasurer's Pleadings (again): PLEASE write the surname of the pilot on the flight sheet! PLEASE write the aircraft registration on the flight sheet (one flight sheet had no aircraft registrations recorded at all)! PLEASE write legibly!

Also note there is a vacancy for the Assistant Treasurer currently open. This position involves keying in lots of illegible flight sheets and sending them to the Treasurer. It is a voluntary, non-voting, non-executive, non-thankful task. I'm sure there must be lots of pilots keen to help!

And speaking of vacancies, the AGM is only 11 or so weeks away - get those nomination forms for Treasurer ready!

Dennis Medlow
Treasurer AUGC

FROM THE INSTRUCTORS PANEL

Another wheels-up landing in the Pik recently again demonstrates the importance of doing checks properly, thoroughly, every time.

In this instance, the wheel was extended during a pre-landing check, but then the pilot thermalled away without putting the wheel back up, and when it came to do the pre-landing check again the undercarriage lever was moved from down to up, and a wheels-up landing resulted.

The glider suffered minor, but extensive damage that will take several days to fix and will likely not be available for the Christmas camp.

The points here are:

* thermalling away after committing to a circuit and doing a pre-landing check? A good idea? Probably not, but the practicalities of a winch club are that it will sometimes happen.

* the "U" in the pre-landing check FUST is not simply to move the lever from where it is to where it isn't; it is to verify that the undercarriage is DOWN and LOCKED. The only way you can tell UP from DOWN is to check the lever position against the placards. That's what they are there for! And locked means in it's detent properly. These are both visual checks so you have to use your EYES.

It is important you develop the discipline to do checks properly; if you do, then even under moments of stress or overload, the ingrained procedure should ensure the checks are done properly.

Enjoy summer and safe flying,

David Conway

Chief Flying Instructor

A HUMAN POWERD PAPER PLANE

The Raven, designed by Paul Illian, is another attempt at a human powered aeroplane. The aircraft weighs in at 44 kg and has a wingspan as wide a Boeing 727. The plane is made of honeycomb paper, foam and graphite-fibre tape.

Unfortunately, it crashed about 100ft into its first flight, causing quite substantial damage during its maiden voyage in Washington (the state not the city). The Raven lifted only a few inches off the ground before thermal induced turbulence resulted in a departure from controlled flight. The landing resulted in a damaged wing and fuselage. The flight took place at Paine Field, near Seattle (ask Peter and Mandy where it is).

Mr Illian has spent 16 years designing the human-powered plane to break the 72-mile flight record set in 1988 by the Daedalus, built by the Massachusetts Institute of Technology. "I feel great that it flew," the former Boeing engineer says. "The landing didn't quite happen as we expected." Fortunately the pilot, Mike Eddy, wasn't hurt. Mr Illian says he's determined to rebuild it.

Have a look at: http://ravenproject.org

Or: http://www.ananova.com/news/story/sm_484714.html?menu=news.quirkies

POWER TOWER

A few years back in the March 98 newsletter I wrote a short article on building a thermal generator in the paddock next to the airfield. The basis for this article was research done by a German group in a Spanish desert. It now seems that someone thought that this was a good idea……

Mildura Rural City Council has welcomed enthusiastically EnviroMission's announcement that scientific testing has started at Ned's Corner Station - it's preferred site for the world's first Solar Thermal power station.

The company has commissioned geo-technical testing at the site, 70 kilometres west of Mildura to confirm its suitability. The site has been identified for its suitable solar energy gain, ideal humidity levels, proximity to regional population (which provides a substantial local market for the renewable energy produced) and commercially viable access to an electricity grid. The power station will be based on German designed Solar Tower technology. It will look like an enormous greenhouse canopy with a very tall hollow ventilation Tower located at its centre. The 1,000-metre tall Solar Tower proposed for the power station will make it the tallest built structure in the world when constructed.

The sun's radiation will be collected and trapped under the 5 km diameter, transparent canopy, creating a massive amount of air heated to around 35°C greater than the ambient temperature. The laws of physics will make this air move at 15 metres per second towards the cold air at the top of the Tower located in centre of the canopy. The updraft will force the rising air to pass through large turbines positioned at the base of the Tower. The movement of the hot wind through the turbines will generate up to 200MW of clean, emission free electricity – enough electricity for 200,000 typical Australian homes.

We can only hope that they sell miniature versions for gliding clubs. Hopefully they will be cheap enough to provide gold or maybe even diamond height gains for around 200,000 typical Australian glider pilots.

Check out:

www.enviromission.com.au

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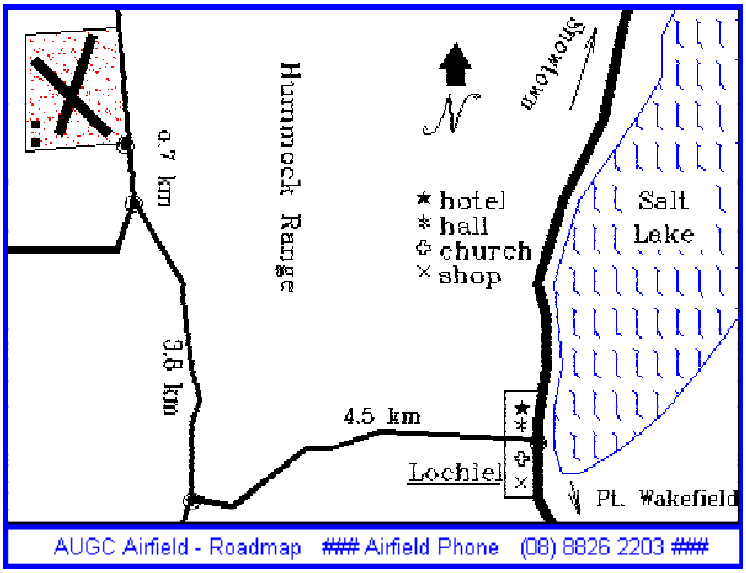
STAY IN TOUCH

The club has an e-mail group address, **augc-people@lists.internode.on.net** , that is used to either discuss or arrange things within the club. If you want to stay in touch with the club, send a blank e-mail to **augc-people-request@lists.internode.on.net** and it will send an automatic reply with instructions on how to join the group list. You can still send an e-mail to the list even if you have not subscribed to it.

You can also get the latest newsletter and up to date news on what is going on at the club's web page: **http://www.augc.aus-soaring.on.net/**

If your e-mail address is on the membership database, Dennis the club's highly esteemed Treasurer can send you your account updates over the internet, as well as receipts for payments. Send an e-mail to: **dmedlow@adelaide.on.net**

SO YOU WANT TO FLY THIS WEEKEND?



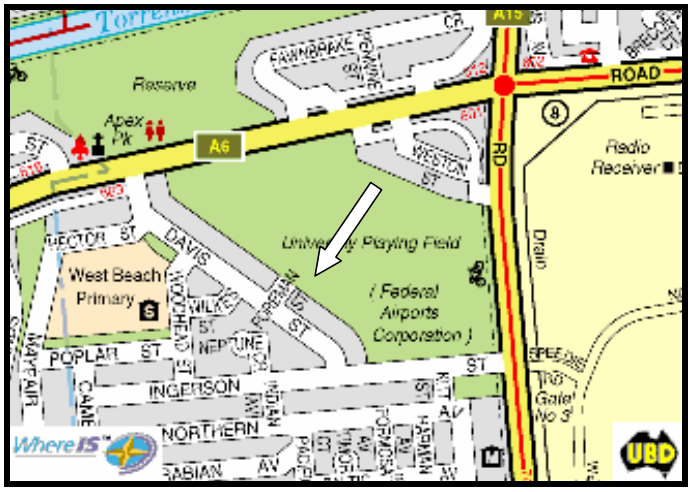
You want to go flying on the weekend? You must ring the club contact person, Mark, on the Thursday before, between 8.00pm and 10:00 pm, on 0412 870 963, (or by e-mail before)so that he can organise instructors and transport for those intending to fly.

You can either drive up yourself by following the map at left, or Scott can arrange a lift to Lochiel either from the Adelaide University footbridge (meet at 7.15am to leave at 7:30 am), or from the Caltex Service station on Port Wakefield road, Bolivar (meet at 7.45am to leave at 8:00 am)

SO YOU WANT TO HELP AT WEST BEACH?

West Beach is where we carry out the maintenance and repair on our gliders and equipment. There are usually volunteers working down there on Monday, Tuesday and Wednesday evenings. The entrance is at the end of Foreman St, West Beach.

So you want to help fix the gliders at West Beach, but can't get there? A lift can be available from the Adelaide University footbridge at 7.30pm by arrangement. Ring Anthony on (wk) 8393 3319, (hm) 8269 2687 or E-mail: Anthony.smith@adelaide.on.net.



WHAT IS GOING TO HAPPEN SOON

30 Dec - 11 Jan 02, Club Class National Comps: Temora. Handicapped POST tasking. Should have Gold Distance to enter. Contact Cathy Conway for more details.

Wednesday 23 January, Exec Meeting. The Medlow residence. 90 River Drive, Athelstone. From 7:30 onwards. The first exec meeting for the year and there is lots to sort out. All welcome to come along and have a say in how the club is run.

Friday 18 Jan 02, Anthony's and Raj's Birthday Night: Help celebrate Anthony's and Raj's birthdays at the British. 58 Finniss St, North Adelaide. From 7:00 pm onwards.

Tuesday 22 Jan 01, Movie Night: Lord of the Rings, 7:15 pm Norwood Cinemas. Have dinner somewhere suitable afterwards.

Saturday 2 Feb 02, Skyshow: Bonython Park.

Monday 25 Feb to Friday 1 March, O'week: The club's major recruitment drive for another year. Volunteers need to help talk to potentially new club members and tell them how great gliding is.

Friday 29 Mar to Mon 1 April, Gawler Easter Regatta: Take an aircraft along and compete in a fun competition. The Bergfalke traditionally does well against the Twin Astirs from Gawler and the ASK 21 from Balaklava.

Uni Gliding
If undelivered please return to;
AUGC Inc.
c/o Sports Association
Adelaide University, SA 5005