

Uni Gliding

The Official Journal of the Adelaide University Gliding Club



"You're right mate, she is doing well ... considering I should be up there teaching her!"

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PRESIDENTS BLURB

EDITOR'S PAGE

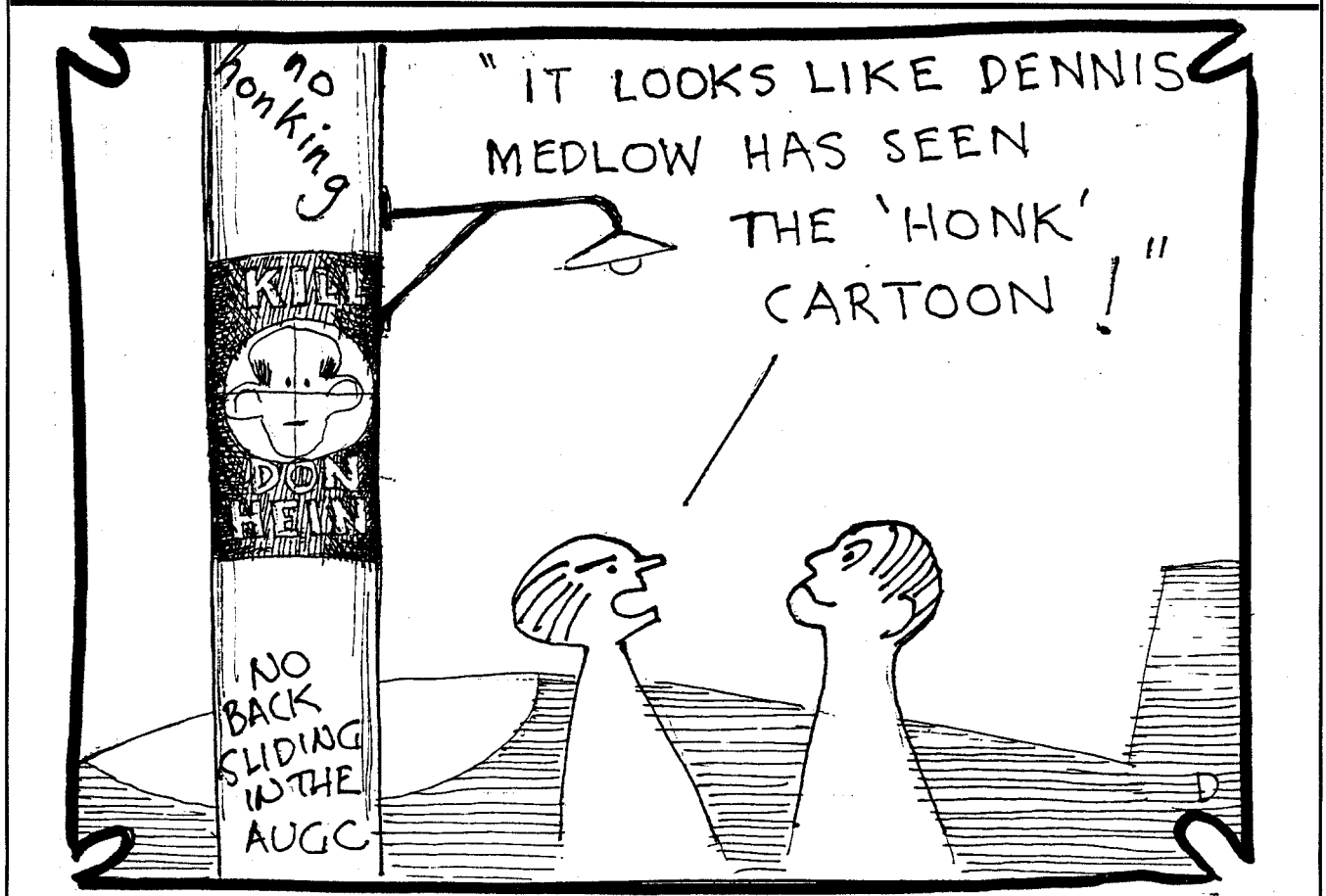
Hi everyone and welcome to all those new faces that joined during O'week. I hope to meet you all soon up at Lochiel.

This month carries on from the February edition of Uni Gliding in explaining some of the things that go on around the club. The club is **not** a 'flying school' where you turn up for your lesson and then go home again afterwards. The club operates on the principle of everyone helping everybody else to go gliding, so if you are not flying you are helping somebody else by launching them or driving the winch etc. In doing so we can keep the operating costs to an absolute minimum.

The first way of everyone helping you might see is car pooling. Those people without cars get lifts to Lochiel and back by those who do, for a small contribution to petrol costs. The cars that do get driven up also get used on the airfield to drag gliders around, herd errant sheep (it is a paddock after all) and other airfield things. The problem occurs

when people jump into **someone else's car** and race off at 100 km/hr, get airborne over the ruts and fill the radiator full of weeds ie hoon about and trash the car. Firstly, this really pisses the owner of the car off, especially since it is he who is going to have to pay for the repairs and secondly it could cause a fire in the car or the paddock. Don't believe me? This has been highlighted by two recent incidents where weeds and stubble have been collected in the engine bay and under the car by people driving fast through the weeds. This will get caught around exhaust systems which will eventually ignite the weeds. My car was trailing glowing embers from burning weeds down the highway on the way back to Adelaide from this a couple of weeks ago and Greg's car had a fire in the engine bay after he got to Bolivar a week ago. Although no damage was done, it could have been a lot worse.

If you are driving someone else's car at Lochiel, please **take care of it**.



- Do not drive fast, it is not necessary.
- Do not drive through the weeds unless you absolutely have to. Drive down the edge of the runway.
- Do not leave rubbish in the car at the end of the day.

If you do not take care of others cars, they will not take care of yours and eventually everyone will refuse to take their cars to the airfield and the club will collapse...

On a more positive note we have both of our two seat gliders back in the air, and West Beach is now free for some of our long term projects like rebuilding the Bocian and building the new winch (Thunderbird 3). The summer weather is still with us, its still daylight savings and there should be plenty of good flying around for us all to have a share in.

Hope you have great flying,

Anthony (Editor and Contact Person)

GETTING HIGH PART 1

This article is probably not going to discuss what you are thinking by reading the title. To stay air-borne longer a glider needs to find rising air. During the summer you will hear experienced pilots talking about **thermals**, how many **knots** are in them and how high they are working to.

Essentially a thermal is an elongated bubble of warm air that rises because it is warmer than the surrounding air. Basically the sun heats a particular patch of ground slightly more than the surrounding area. The warmer ground, in turn, heats the air immediately above it. Eventually this air will start to rise and form a bubble because it is warmer than other air around it.

As the bubble rises the air pressure decreases and the bubble expands and cools. As the pressure decreases relatively constantly with increasing height, the thermal will cool at a constant rate; 3 degrees per one thousand feet (this is the dry adiabatic lapse rate). Eventually the thermal will have reached a point where it is the same temperature as the surrounding air. Here the thermal stops. This height is how high the thermal is '**working**' or '**going**' to.

Occasionally there will be a layer of warmer air on top of a layer of cooler air near the ground. This is called an '**inversion**' and is characterised by a sharp increase in air temperature at a particular height. Depending on the temperature change, the inversion will act as a brick wall and

stop the thermal dead in it's tracks. If the inversion is relatively weak, the thermal will suddenly slow down as it passes through.

How fast the thermal rises is dependent on the temperature difference of the thermal and the surrounding air. The greater the difference, the faster the thermal will rise. The speed at which it rises is usually measured in knots ie nautical miles per hour. Typically 2 knots is a weak thermal, 4 to 5 knots is moderate and anything over 7 knots is a strong thermal. The thermal rises fastest in it's center, called the '**core**', and the further from the center the weaker the thermal is.

As the thermal rises, it pushes cooler air aside. This cooler air descends and is called '**sink**', and eventually this cooler air ends up over the warmer ground, where it gets heated and the cycle continues.

If a day is particularly windy, the wind will start to break up the thermal into smaller bubbles. These days are typically turbulent, rough and very difficult to thermal in.

In the morning, the ground is cool and has not been warmed yet by the sun. As the ground starts to warm the air will start to rise up in small thermals. These small '**bubbles**' don't go very high and are too small to circle in, but are good indications that the day is almost hot enough to produce bigger thermals.

A THERMAL GENERATOR

It has been a long running joke in gliding circles about building a machine to create thermals. Just think of it, even on the worst of days the machine could be turned on and everyone would get a decent flight. Early attempts within the club at making a thermal generator have met with failure.

The main reason for this is they have relied on setting fire to things: Redmond reckons that burning a LPG cylinder will sooner or later produce a thermal (or a second Wilpena Pound), the Conways have set fire to their car (but that only causes pilots, distracted by a burning Commodore, to land with their wheel up) and a pilot in our regatta a while back tried to cheat by breaking the cable and draping the broken end over the power lines to set fire to the trees and paddock to produce a thermal (this only succeeded in blacking out Yorkes Peninsula and nearly giving the winch driver both a heart attack and heat exhaustion).

In the mid 1980's the German Ministry for Research and Technology set up an interesting solar power technology demonstrator in the desert at Manzanares, Spain. The idea was simple: set up a circular greenhouse roughly 250m in diameter with a central chimney almost 200m high. In the base of the chimney put a constant speed turbine driving a generator. The air trapped under the greenhouse canopy (plastic supported by poles) is warmed by the sun and rises up the chimney driving the turbine/generator. Cold air is drawn in from the edges and a constant cycle is set up.

Under peak conditions the temperature difference was up to 11 degrees C which produced a flow of 40 km/hr up the chimney and 70 kilowatts of power from the generator. In gliding terms they produced a constant thermal with a 20 knot core by covering an area roughly a quarter the size of the airfield.

It would be an interesting thesis topic to do with the club wouldn't it? Investigate the variables of how high and wide the canopy should be, chimney height and diameter to produce the best thermal (say a nice seven knots) for gliding. The advantages of such a generator would be a constant ther-

mal producer at a constant location so everyone could launch and find the thermal straight away and get a decent flight. There would also be free power to the clubhouse. The disadvantages are it would take up a large area, require regular maintenance and a tall chimney near an airfield would be an obstacle to aircraft.

Anybody interested in looking at the concept?

QUOTE OF THE MONTH

At West Beach while polishing CY for O'week:

John: "Mandy come over and rub your hand on this cloth just here."

Mandy (after some rubbing): "Oooh! John there's a lump! Peter come over and feel John's lump!"
Peter: "What?"

LANDING OF THE MONTH

On our skydiving course, we had an instructor on the ground giving us direction, including when to flare for landing. Unfortunately, the instructor was a bit late in telling Claire when to flare and she did this perfect three pointer (both heels and bum). Better luck next time, Claire!



ANNUAL GENERAL MEETING NOTICE

The Adelaide University Gliding Club Inc's Annual General Meeting will be held in the Canon Poole Room, Adelaide University (Level 5 of Union House) at 7:30 pm on Wednesday 1 April 1998. We will have tea in the Equinoxe Bistro (Level 4 Union House) at 6:30 pm.

*Every club member is requested to attend
(unless you have a note from your mother!).*

FREE BEER

REPORTS ON LAST YEARS OPERATIONS

EXECUTIVE AND NON-EXECUTIVE ELECTIONS

SPECIAL MOTION: WHETHER TO EXPAND THE CLUB'S OPERATIONS TO INCLUDE HANG GLIDING.

MORE FREE BEER

AUGC ON THE NET

Check out what is happening around the club at our very own web site:

<http://www.augc.aus-soaring.on.net/>

You can also stay in touch via our e-mail list:

augc-people@internode.com.au

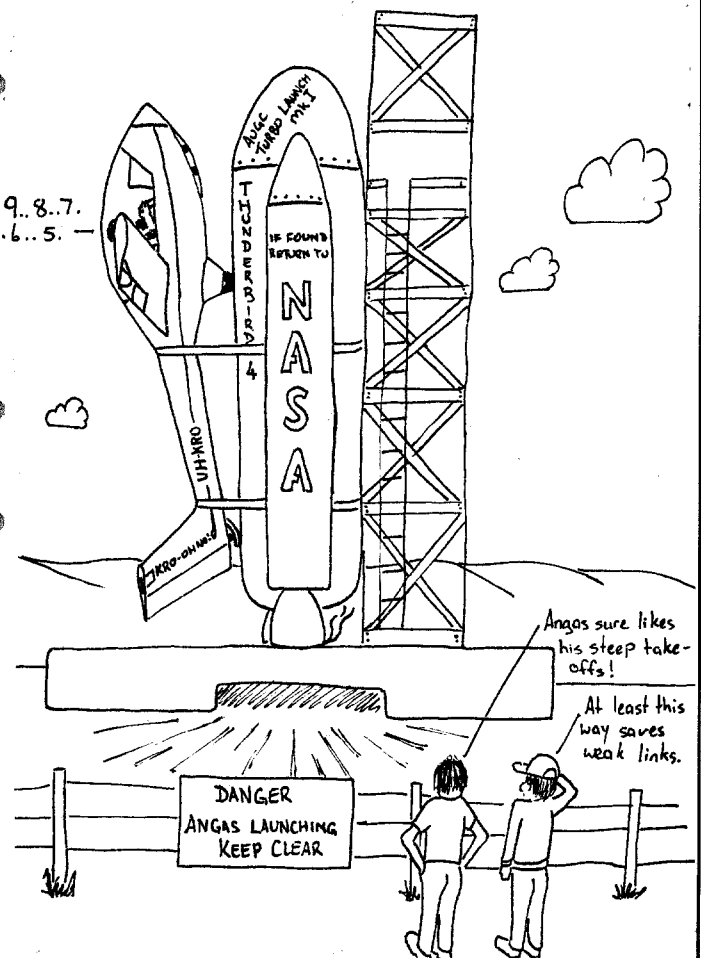
If you want to join this list send an e-mail to:

augc-people-request@internode.com.au

AEROSPACE COURSE

Adelaide Uni is now offering an aerospace engineering subject. It aims to cover a basic understanding of the design and performance of aircraft and space vehicles including flight mechanics, stability and control, aerodynamics, V/STOL aircraft and space vehicles.

Lectures are held Monday 3:00-5:00pm (S216) and Wednesday 3:00-4:00pm (S216) in the Engineering Department. Everyone is welcome to come and sit in on the course if you are interested.



CLUB POSITIONS AND OTHER STUFF

The Annual General Meeting on Wed 1 Mar will be when the club elections are held. Although there are only five formally elected positions in the club, there are a multitude of other things that need to be done so that we can fly. There are also other things, that while not essential for flying, are really nice to have.

In order to keep the flying cost to an absolute minimum, the club relies on it's members to do a lot of these jobs. If these jobs are not done by members, the club either goes without or has to pay for it to be done (which means more expensive flying). The following is a list of most of the jobs carried out in the club. Some jobs will require a small effort each week eg contact person. Other jobs will require a lot of effort once a year eg regatta organiser.

General Jobs

- President, secretary, treasurer, social convenor, fifth member. (These are the elected positions).
- Newsletter editor.
- Contact person.
- Regatta organiser and helpers O'week organiser and helpers.
- Sports Assocn liason.
- Club t-shirts.
- Recruiting and advertising.

Aircraft

- Radios (a regular effort to fit and maintain the radios)
- Trailers (maintain the tyres, lights and fittings)
- Parachutes (arrange to get them repacked twice a year)

Lochiel

- Clubhouse supplies
- Clubhouse repairs and improvements
- Winch maintenance
- Gardening around the clubhouse
- BBQ supplies and maintainence
- Hangar maintainance and supplies
- Pie cart maintainence

West Beach

- Aircraft maintainence (helping out here is important)
- Purchases (North, south, east, west and city)

Please consider which job/s (you can do more than one) you would like to do. Some jobs will require more than one person to do them. The more people help out, the less each person has to do. Get in early and volunteer now! It doesn't matter if you don't know what to do, just ask and someone who has done it before will help you.

Cont'd from page. 2

see the control disconnected. Pilot C determined that the problem was easily rectified by checking the aileron stops in the future and called Pilot B away from the aircraft to help finish fixing the winch. Pilot A promptly readied the aircraft for flight, unaware that the port aileron was disconnected.

Pilot A took off normally, but after finding a thermal, slowed down and the aircraft began pitching up and down violently. The pitching was so violent that Pilot A's head hit and broke the canopy. Pilot A considered bailing out of the aircraft but was too low over the ridge to safely open the parachute. Pilot A radioed that there were problems and decided to attempt an emergency landing and increased speed. The violent pitching disappeared.

Pilot A carried out a fast landing succesfully but as the aricraft slowed on the ground roll, a wing dropped which Pilot A could not recover and the aircraft ground looped.

While everything turned out all right, it could have been a lot worse. Certainly Pilots B and C should have ensured that either the controls were reconected or that Pilot A was aware that they were disconnected.

- If you disconnect something, reconnect it when you are finished, or
- Make sure there is a big sign in the cockpit and everyone knows about it!

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 and Tuesday evenings. Here is a summary of what has been going on:

Standard Libelle: CY (Charlie Yankee) is in the shed for repairs to its canopy and an inspection after a heavy landing. It will also get a polish and be used for the O'Week display then get dragged back to Lochiel for the Regatta.

Bocian: Yes it's still at the back being slowly rebuilt. It was extensively damaged a few years ago and progress is slow because of the above work. There will be more done now the Puchatek is out of the way.

Winch #3: The winch drums and diff have been mounted on the F100 chassis. Part of the back wall of the cab needs to be cut away to fit the winch drive shaft to the transfer box.

WHAT'S ON MARCH!

General Meeting, Wed 4 Mar 98

Introduction to gliding video night. Come along and find out what gliding is all about. Meet the instructors and everybody else in the club and have a drink in the bar with them afterwards.

6:30 pm Uni bistro for dinner

7:30 pm Canon Poole Room, Adelaide Uni
Drinks in the bar afterwards

BBQ and Beers at West Beach, Mon 9 Mar 98

7:30 pm at West Beach Shed, entry is off Foreman St, West Beach.

A good introduction to what happens with glider maintenance and winch construction at the West Beach Shed. All welcome.

Annual General Meeting, Wed 1 Apr 98

See page 10. These are the elections for the club executives and other positions of power and influence. Everybody in the club should attend and volunteer to help the club.

6:30 pm Uni bistro for dinner

7:30 pm Canon Poole Room, Adelaide Uni

SO YOU WANT TO HELP AT WEST BEACH?

- Do you want to help fix the gliders or build the winch at West Beach, but can't get there?
- You can ring the club contact person, Anthony, on 018 810 963 or (08) 8393 2646, E-mail: anthony.smith@adelaide.on.net. He can organise a lift for those who need it. If you are **truly desperate**, his work phone and work e-mail are : (08) 8393 2897 and acsmith@raaf.defence.gov.au
- A lift is available from the Adelaide University footbridge at 7.30 pm Mondays and Tuesdays.

SO YOU WANT TO GO FLYING THIS WEEKEND?

- You must ring the club contact person, Anthony, on the Thursday before, between 8.00 pm and 9.30 pm, on 018 810 963 or (08) 8393 2646, E-mail: anthony.smith@adelaide.on.net, so that he can organise instructors and transport for those intending to fly. If you are **truly desperate** (ie its Friday and you forgot to ring, his work phone is : (08) 8393 2897.
- A lift to Lochiel is available from the Adelaide University footbridge at 7.00 am, from the Caltex Service station on Port Wakefield Rd, Bolivar at 7.30 am, or from elsewhere (by arrangement only) if you have real transport problems.
- **Remember to phone the contact person or you could be forgotten.....**

JANUARY ON FIELD

Sat 7 Feb: A rainy day with westerly winds and low clouds. The Puchatek returned to the airfield and was eventually rigged with a lot of effort as the sky cleared. We eventually got flying late in the day and flew the ridge with a few thermals to boot! Considering the late start everyone had a good flight.

Flights: 13 Total Time: 12 hr 14 min

Sun 8 Feb: A pleasant day with strong, narrow thermals to 5500' with very strong sink in between. Miss a thermal and you were back to circuit height in no time. However the thermals, although weaker, lasted well into the afternoon and most people managed a soaring flight. A great weekend!

Flights: 26 Total Time: 10 hr 46 min

Tues 10 Feb: Go-Karting night where Kamikaze 'I am not a bulldozer' Quinn showed everyone his unique driving talent.

Sat 14 Feb: Andrew McCauley, Claire Clements, my sister and myself did a skydiving course at Lower Light.

Flights: ? Total Time: ?

Sun 15 Feb: All those on the skydiving course did our first jump. There was no flying at Lochiel due to lack of numbers.

Sat 21 Feb: A lot of people did preparation work for the regatta, including replacing a lot of cable on the winch. Local soaring with thermals only to 3000' because of a huge inversion. There was a light south westerly wind which allowed a few flights on the marginal ridge.

Flights: 16 Total Time: 5 hr 35 min.

Sun 22 Feb: Similar to Saturday but the wind had swung south south easterly. There were still a few thermals but they stopped at the inversion at 3000'. Most flights were only extended circuits.

Flights: 22 Total Time: 2 hr 48 min.

Mon 23 to Thurs 26 Feb: O'week! Thank you to Greg Newbold, Redmond Quinn, Andrew McCauley, Scot Battersby, Claire Clements, Rob Curtis, Kevin Zietz and Michael Texler for all of their efforts during this week.

Sat 28 Feb: Day 1 of the regatta. A strong south easterly made the day difficult. Eight aircraft competed and only two made it around the course. Peter Temple won his class and so did the Bergy even though it only made 17.3 km!

Sun 1 Mar: A better day with a lighter easterly and thermals to over 4000'. Everyone made it around the course with Peter Temple winning again and Gary Hollands winning his class.

Uni Gliding

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