Uni Gliding

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In this issue...

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Editorial

Hi all, and Happy New Year! To our new members: Welcome to AUGC!

This is a special O'Week Edition of UniGliding containing lots of useful introductory information for new members: a description of how this "gliding" thing works, an overview of our (awesome!) fleet and facilities, and everything else you might need to know in order to get involved. Come and give it a go - it's impossible to describe how much fun it is to fly in a glider, so you'll just have to try it to find out!

This issue also contains a great article (with a ton of photos) about one AUGC member's adventures soaring in one of the most picturesque places in the world, the Austrian Alps.

We are running a contest for a new AUGC logo, so if you think you might be able to put together a decent one then now's your chance to show us what you can do. Check it out on page 11 - the prize is definitely worth competing for!

Fly safely and have fun!

Teal

What's Inside...

Image Credits
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Up, up and away! The Janus takes flight (photo N. Lieff)

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Uni Gliding

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Welcome to AUGC!

Hello, new members! (And old ones too, I guess...) Welcome to Adelaide Uni Gliding Club. If you've never been in a glider before, you are in for a real treat! We're all ready to teach you (yes, you!) how to fly like a bird. Learning how to soar with eagles is quite possibly the most awesome thing you'll ever experience. So how does it all work?

The Basics: How does a glider fly?
A glider is simply an aeroplane without an engine. For any aircraft, it's not the engine that keeps it in the sky, but the wings. A powered plane uses an engine to move it forward through the air so that the wings can do their job and provide lift; in a glider, we use gravity to do the same thing. (*More details on this can be found in "Flight Theory for the Complete Moofhead" on p.12.*) A glider turns height into forward motion in much the same way that a vehicle rolling down a hill does. If the air is still, the glider slowly descends steadily earthward as it flies. However, the air is *not* still - sometimes it goes up and sometimes it sinks down. A glider pilot learns how to find sources of lift, and a capable pilot can stay airborne for as long as the lift holds out (often many hours).

How does a glider take off?
There are a variety of ways that a glider can launch into the air, but the two most common methods are to tow it behind a powered plane on a rope (aerotow) and to winch it into the air on a long cable. While aerotow has some advantages (the glider can be towed to any height the pilot desires, and/or to a specific location where there is known to be lift) it is rather expensive due to the cost of operating the tow plane.

But fear not! Winch launches (what AUGC uses) are much cheaper than aerotows. They're also a lot more fun! A winch is basically a stonking great engine mounted on the back of a truck. To launch a glider, the winch winds in steel cable (which is attached to the glider waiting at the other end of the airstrip) at high speed, hauling the glider up into the air rather like a kite. We typically get launches of around 1500'-2000' or so using this method. At the top of the launch the pilot pulls a knob to release the cable, but the glider will automatically release as it continues forward if this doesn't happen.

How does a glider stay up?
The basic idea is to fly the glider in air that is going up faster than the glider is descending. Sounds simple, right? Well, there's definitely an art to finding good lift (you'll learn all about that as you progress in your flight training) but there are a variety of sources of lift that glider pilots can take advantage of to stay aloft. The most common source of lift that you'll find at Stonefield is thermal lift - the sun heats the ground, which in turn heats the air just above it. If this air gets sufficiently heated, it will start rising in invisible bubbles and streams called thermals. Gliders (and soaring birds such as eagles, which we often see around the airfield) circle in thermals and thus rise up in the warm air. Strong thermals can carry a glider up past 10,000 feet on a warm day. There are other lift sources as well, (such as wave lift, ridge lift and convergence lift, which will be discussed in a later issue of UniGliding) but the vast majority of soaring during your flight training at Stonefield will involve learning how to find and use thermals to stay airborne.

Welcome to AUGC! (cont.)

How do I learn to fly with AUGC?
AUGC has a number of qualified and experienced flying instructors who will teach you how to fly in our two-seater training gliders. The trainee sits in the front seat while the instructor sits behind them, and there is a full set of controls and instruments for both seats. Learning to fly consists both of airborne instruction where you learn how to operate the aircraft and work out what to do when; and ground instruction where you learn the theory behind what you are doing in the air. Initially the instructor will fly the launches and landings while you learn the basics of controlling the aircraft (flying straight and level, how to make the aircraft turn, and so on) but it won't take long before the instructor starts teaching you how to perform more challenging parts of the flight such as the launch and the landing. When the instructor feels that you are proficient and safe in your flying, you will be invited to fly the aircraft without them in the back seat: to GO SOLO. Typically this takes around 10-15 hours of flight time to achieve, but it can vary a lot depending on how frequently you fly (among other things).

How much will it cost me?
The main costs inovlved in learning to fly gliders are the following:
AUGC (& AU Sports Association) membership
Gliding Federation of Australia membership (necessary for anyone flying gliders)
Launch costs
Glider hire
These costs are all detailed on page 22.

What happens after I go solo?
Going solo is the first step into a much larger world! Once you are flying on your own, there is a series of progressively more challenging achievement certificates and proficiency badges that you can work toward, as well as learning how to fly cross country. You can also learn how to fly aerobatics or enter soaring competitions... truly, the sky is the limit! If you want to know more about these possibilities, information can be found here:
http://juniorsoaring.com.au/going-soaring/after-solo/

Our Fleet

Schleicher ASK-13 (VH-GQS and VH-GQC)

AUGC owns two of these reliable, easy-to-fly two-seater trainers. This type is used for flight instruction world wide, and tens of thousands of pilots have had their first solo in an ASK-13. It has a fabric covered steel tube fuselage with wood stringers and fiberglass nose, and fabric-covered wooden wings and tail. The mid-wing design and one piece canopy make for excellent pilot visibility. The landing wheel is fixed, and the aircraft is fitted with airbrakes.

Wing span: 16m

Minimum sink: 1.56 knots at 37 knots

Best glide ratio: 27:1 at 46 knots

Schempp-Hirth Janus B (VH-GVU)

This is the club's high performance two seater. It is faster, slipperier and more challenging to fly than the ASK-13s and is used for advanced training, especially cross country and competition training. It was purchased with a generous grant from the Hackett Foundation. The Janus has camber-changing flaps and the capacity for water ballast (used in competitions) and is fitted with a non-retractable undercarriage with a disc brake.

Wing span: 18m

Minimum sink: 1.16 knots at 49 knots

Best glide ratio: 39.5:1 at 59 knots

(Photo: Richard Harris)

Our Fleet (cont.)

Schleicher Ka-8 (VH-GQU and VH-GAQ)

AUGC owns two of these simple, fun-to-fly single-seaters. Very much like a smaller version of the ASK-13, these wood, steel tube and fabric gliders are the first single-seater type that most newly-solo pilots fly. With their rugged construction, superb climbing ability in thermals and pleasant handling characteristics, our Ka-8s are an absolute joy to fly. In 1968 Karl Striedeck of the U.S. made a 767km ridge flight in a Ka-8, achieving an out-and-return distance world record.

Wing span: 15m

Minimum sink: 1.3 knots at 32 knots

Best glide ratio: 27:1 at 39 knots

PIK-20D (VH-WVA)

The Pik-20D is the high-performance single-seat glider in the fleet. Equipped with camber-changing flaps, retractable undercarriage and water ballast capability, it is easily able to perform long cross-country flights in excess of 500 km. This glider has represented the club at the National Club Class Championships, finishing 6th on one day and in the top 12 most days. It has also represented Slovenia in the World Club Class Championships held January 2001 at Gawler, where we were shown just how fast it could go!

Wing span: 15m

Minimum sink: 1.28 knots at 42 knots

Best glide ratio: 42

Our Fleet (cont.)

Scheibe SF-25C Motor Falke (VH-FQW)
This is AUGC's two-seater powered glider. It is similar to the ASK-13 in that it is constructed of steel tube and fabric with wooden wings, but it also has a small motor and propeller. This allows it to launch without the aid of a winch or tow-plane and, if necessary, to stay up when there are no thermals or other lift. The Motor Falke can offer extended training flights on days where there is insufficient lift - an advantage which couldn't previously be offered to trainee pilots at the club. It is also great for general recreational flying, with flight distances not being limited by soaring conditions.
Wing span: 15.3m
Minimum sink: 2 knots at 41 knots
Best glide ratio: 22:1 at 48 knots

Fleet & Equipment Status

Aircraft
Janus (VU): Operational
K-13 (QC): Operational
K-13 (QS): At West Beach in pieces being rebagged and overhauled; still lots of work to be done
Ka-8 (AQ): Operational
Ka-8 (QU): In need of an Annual Inspection (aka Form 2) before it can be flown
Pik-20 (WVA): Operational
Motorfalke (FQW): Operational, although it still has some ongoing engine overheating issues in some situations that are being investigated.
Arrow (GNF): Goes No Further. The Arrow is currently stored in the club hangar awaiting interest and attention. Work to get it flying again would include a survey, some wood repairs on the wing, and new fabric for the wing.

Winches
Truck winch: Offline for truck engine work completion
Tost winch: Operational
Trailer winch: Ready for operational testing

Our Facilities

AUGC shares the airfield at Stonefield with the Barossa Valley Gliding Club. On field we have several aircraft hangars, a clubhouse, a large briefing room (containing a partial-movement glider simulator among other things), overnight accomodation (both a bunkhouse and comfortable air-conditioned huts) and most importantly... a fire pit! The bonfires that often occur after the day's flying concludes during winter are legendary! We also have several winches (used for launching gliders) and there is a privately-owned plane (Piper Pawnee) hangared at Stonefield which is sometimes available for aerotows. The countryside surrounding the airfield is ideal for gliding. And since gliders do occasionally need maintenance, we have a fully equipped workshop at West Beach where this is carried out by our members (see page 26 for more info about the workshop, and how you can get involved in aircraft maintenance).

Stonefield's biggest hangar (one of several). Some of our gliders live in here, as do our winches, and a number of privately-owned aircraft. This building also houses the briefing room, an office, and a small kitchen.

The briefing room, where we meet at the start of each flying day for pre-flight briefings. Note the glider sim near the middle of the pic. Pretty fancy, huh? :-)

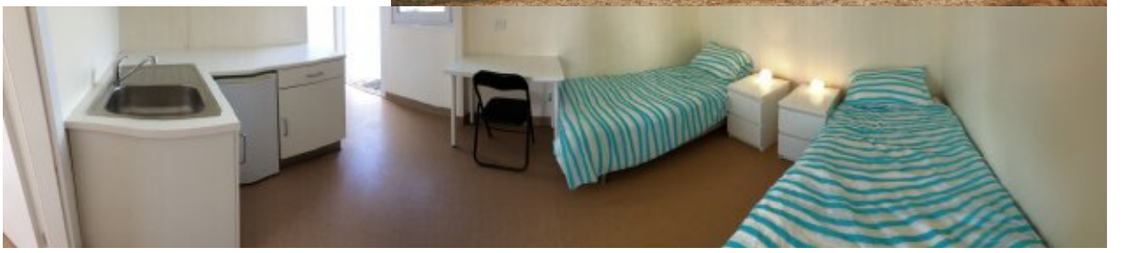
The mighty Tost winch, the most powerful of our winches. It sits at the far end of the airstrip and hauls gliders into the air using kilometres of steel cable (similar to launching a kite into the air by running along with it on a string behind you). VROOOM, and up she goes!

Our Facilities (cont.)

After the day's flying is done, chill out in the clubhouse. Comfy couches, internet access, big TV, DVD player... all very relaxed! Sometimes a generous soul will offer to provide dinner for everyone; alternately, you can bring your own food and cook it here in our clubhouse kitchen (not shown). It's the perfect way to end a day!

The firepit in front of the clubhouse, all cleaned out and ready for the next winter bonfire. If you look closely you can see our impressive new outdoor kitchen under the verandah. It's like the biggest, shiniest BBQ you've ever seen. :-)

If you want to stay overnight at Stonefield, you have the choice of basic bunkhouse accomodation or these splendid huts. Each one is airconditioned and has its own fridge, sink and bathroom. You can bring your own bedding, or we can provide some at a nominal charge.



Meet the Instructors!

Cath Conway: AUGC's Chief Flying Instructor. A commercial (power) pilot, she also flies tug planes for us occasionally, and runs her own flight school. A keen competition and cross-country pilot, Cath's priorities as an instructor are to ensure both a high standard of training, and consistency in training.
Has been instructing since 1989.
Gliding experience - about 2320 hours total, of which 840 hours were spent instructing.

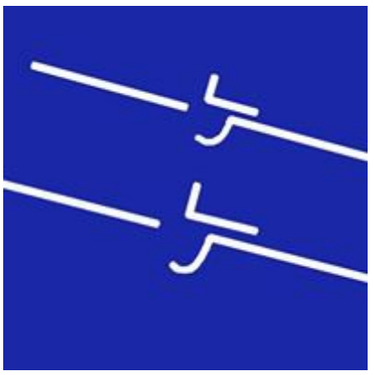
Derek Spencer: Practically a fixture at the airfield. What Derek doesn't know about gliders isn't worth knowing. Flying, repair, maintenance - he does it all! Sometimes known as "The Motorfalke God." (Ask him why!)
Has been instructing since 2002.
Gliding experience - 1500 hours total, of which approximately 800 hours have been spent instructing.

Leigh Stokes: AUGC's Club Coach, and also our newest instructor. Leigh is a fine competition pilot with a strong cross-country focus. He's also a mechanical whiz, and spends at least as much time keeping the winches etc. running smoothly as he does flying.
Has been instructing since 2017.
Gliding experience - approximately 800 hours, of which quite a few were spent flying cross-country or entering competitions.

Redmond Quinn: Has been an AUGC instructor forever, and has taught more trainees to fly than you've had hot dinners. He's also an engineer, 'nuff said.
Has been instructing since 1983.
Gliding experience - 1200 hours total, of which approximately 800 hours were instructing.

AUGC Logo Competition!

You could be the designer of our new club logo!



This is our current club logo. It's not a bad logo, but we reckon it could be improved and it's time for an update. Do you think you might be able to design a better logo for us? If so, now's the time to give your creative side free rein and show us what you can do!

What the judges will be looking for
1) Keep it simple!
2) No more than 3 colours, please.
3) Gliding related, obviously!

The Prize
This should get you motivated: the winner will receive a FREE CROSS-COUNTRY FLIGHT in our high-performance 2-seat glider (the Janus) with our Club Coach Leigh Stokes (launch cost and aircraft hire included). While the exact duration of the flight will depend on the weather conditions of the day, it's safe to assume that you'll probably be in the air for a couple of hours at least.

The competition closes by **31 May 2018**, and the AUGC Executive will select the winning entry.

You can enter this contest as many times as you wish. For ideas regarding the sort of logo that could work well, check out the AU Sports Association club list, which shows logos for other AU sports clubs (https://www.theblacks.com.au/Clubs/ClubList.aspx?S=1)
The winning logo will become intellectual property of AUGC. The club reserves the right to further develop the winning logo (e.g. to tweak it for easy printing, for example); if no entries are suitable for our needs, it's possible we may decline to choose a winner.

Good luck, and may the best logo win!

Lookit those cumulus clouds! Why aren't you soaring RIGHT NOW?

Flight Theory For The Complete Moofhead

By Andrew McGrath

The purpose of this article is to attempt to explain, to even the most Arts oriented university student, how a glider (or, for that matter, any winged flying thing) avoids plummeting to a nasty mess on the ground.

Firstly, you may remember being told how a wing flies because it's curved on top and so the air on top has to go further and faster and so on and so on. Well forget that, it's all wrong.

The easiest way to understand exactly how and why a wing flies is through a simple experiment. (I hope that a word like "experiment" hasn't put off all the Arts students and Pure Mathematicians; if you like, you don't actually have to DO the experiment, but can simply imagine.)

To do (or imagine) this experiment, you will need only (or pretend you have) a long, flat, fairly light piece of wood, sheet metal, stiff plastic, cardboard, glider wing, or similar to serve as your "wing". Now, stand in a large open space (or imagine that you are standing in such a space), take hold of one end of the apparatus (this is another complicated word, but it means the "wing" described in the previous sentence), and while holding it out horizontal, whizz around and around on the spot. You will find (surprise, surprise) that by tipping the wing up and down (i.e. rotating it slightly about its longitudinal axis) you can make it go up and down. You will see that if you tip the front edge up a bit, the wing will try to fly upwards; and if you tip the front edge down a bit, the wing will go down. If you suddenly turn the wing at right angles to the airflow, it will stop almost dead and fall down.

"But that's obvious" I hear you say. "It's just the air pushing on the wing that makes it go up and down."

You're right, you know – it *is* obvious. And it's how the wing of a plane, glider, bird, helicopter, or paper plane works.

We can now think about the same experiment conducted in a slightly different way. Suppose, instead of whizzing our wing in a circle to make the air flow past it, we hold the wing out straight in a strong wind. Now we can get exactly the same effect as before by rotating the wing around its longitudinal axis: tip the front edge (the edge facing the wind, or "leading edge" – the back edge is known as the "trailing edge) up a bit, and the wing goes up. Tip the leading edge down a bit, and the wing dives down. Tip it ever so slightly up, and it will just support its own weight.

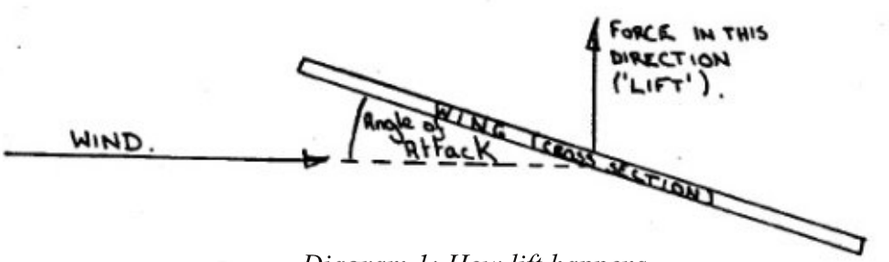
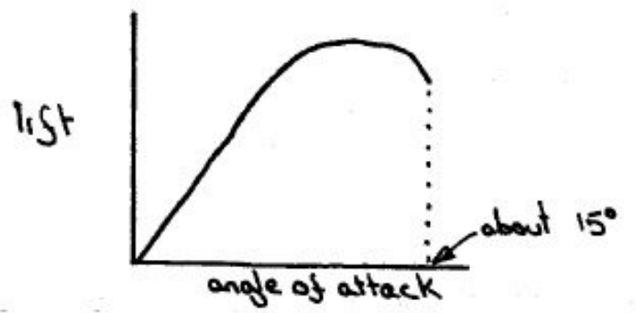


Diagram 1: How lift happens

Flight Theory for the Complete Moofhead (cont.)

Now we can introduce some new terms: "Angle of Attack", which is the angle between the line of the wing ("chord line") and the oncoming air (see diagram 1), and "lift", which is the force in an upward direction caused by the wind blowing on the wing. Now, it is fairly obvious that tipping the leading edge up more (i.e. increasing the angle of attack) will cause the lift to increase (up to a point – remember what happens when the wing is turned sharply up to ninety degrees to the wind). If we a put a spring balance or something on the wing so that we can measure the lift, we can draw a graph of lift against angle of attack. (Some people are a bit frightened when they see a graph, but it is really a very simple way of showing exactly what's happening.)

This graph shows that the lift increases steadily as the angle of attack is made greater; obviously when the angle of attack is zero, there is no lift. A point is reached, however, where a further increase in angle (and thus lift) results in a sudden *decrease* in lift. This is what happens when you tip the wing suddenly right up and it falls down, and is called a "stall". A stall will occur when the angle of attack becomes any greater than about 15 degrees. When you were performing your experiment you were able to tip it at a greater angle for the following reason: as soon as the angle of attack starts to rise, the lift increases, and the wing starts to move upward. Because the wing is now not moving horizontally, the airflow past the wing is not coming from the original horizontal direction (see diagram 2). Thus, although the wing may be tipped up at more than 15 degrees, the angle of attack, between the chord line of the wing and the oncoming air, is less than this.



Graph 1: Angle of attack vs Lift

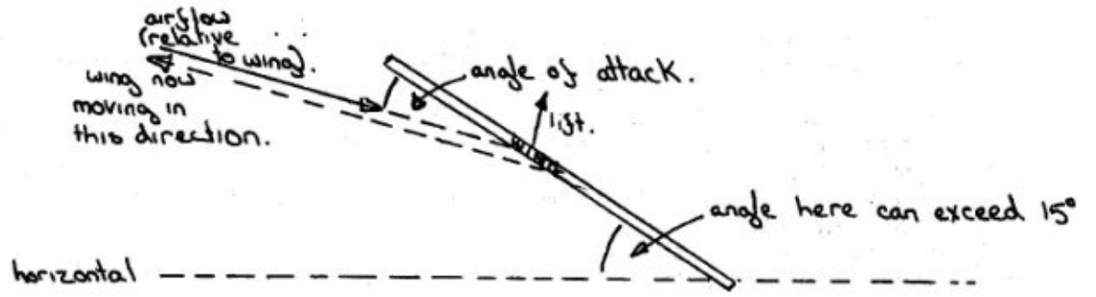


Diagram 2: How lift happens (more complicated version)

Thus to demonstrate a stall in our experiment, the wing must be rotated suddenly, to make the angle of attack high before the wing moves up and changes the direction of the airflow to keep the angle of attack small.

Flight Theory for the Complete Moofhead (cont.)

You may have noticed (or imagined) during the experiment that there is another force on the wing – as well as the air pushing the wing up and down, it is also pushing the wing back; i.e. the wind resistance is opposing the force you are applying to make the wing move forwards. This force is known as "drag". Drag, like lift, increases with angle of attack.

The faster the wing is moving (or the faster air is blowing past it), the greater is the lift and the drag for a given angle of attack.

It has been found that the shape of the cross section of the wing affects the amount of lift and drag that a wing produces, by smoothing out the turbulent airflow around sharp corners and so on. The best shape (or "airfoil section") depends on the requirements of the wing; e.g. high speed, low speed, high lift, etc., but is generally something like this:

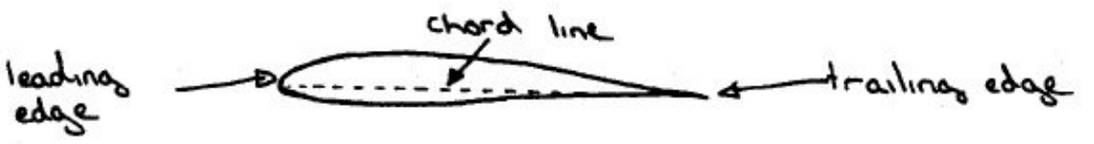


Diagram 3: Cross-section of a wing

Now we will turn our attention from just an experimental wing to a complete glider, where we have a fuselage holding a pilot, supported halfway along a large wing.

With the surrounding air completely still, this glider is whizzing along through the air in a forward direction. The wing is fixed to the fuselage with a slightly positive angle of attack; just enough, in fact, for the lift created at this speed and this angle of attack to exactly equal the weight of the entire glider. So this glider is flying along, not losing nor gaining any height.

If we now change the angle of attack by pointing the nose of the glider slightly downwards, the angle of attack (and hence the lift created by the wing) will decrease. Since the lift is no longer equal to the weight, the glider will start to lose height, to fly downwards at some angle or other. Since it is now effectively sliding downhill, it gains speed. As the speed increases, the lift increases again. Eventually a point will be reached where the lift is once again equal to the weight of the glider, and we are once again in level flight (although at a lower altitude and a higher speed than before) with the nose pointed down somewhat.

Applying the same logic in reverse, if we raise the nose somewhat, the angle of attack (and hence the lift) is increased, and the glider goes up, losing speed until the lift has decreased back to the weight of the glider. We are now at a higher altitude, at a lower speed, with a higher nose attitude.

Flight Theory for the Complete Moofhead (cont.)

Unfortunately lift is not the only force created by the wing – there is also drag. And now that we have a fuselage as well, there is even more air resistance. All of this drag is effectively a force pushing the glider back – slowing it down. To maintain a constant speed against this drag, we can simply put the nose down a little to increase the speed, as described above. We are now flying at a constant speed, with a constant angle of attack, and a constant nose attitude, although the glider is always sliding slightly "downhill" to maintain speed against drag, and slow is slowly losing height.

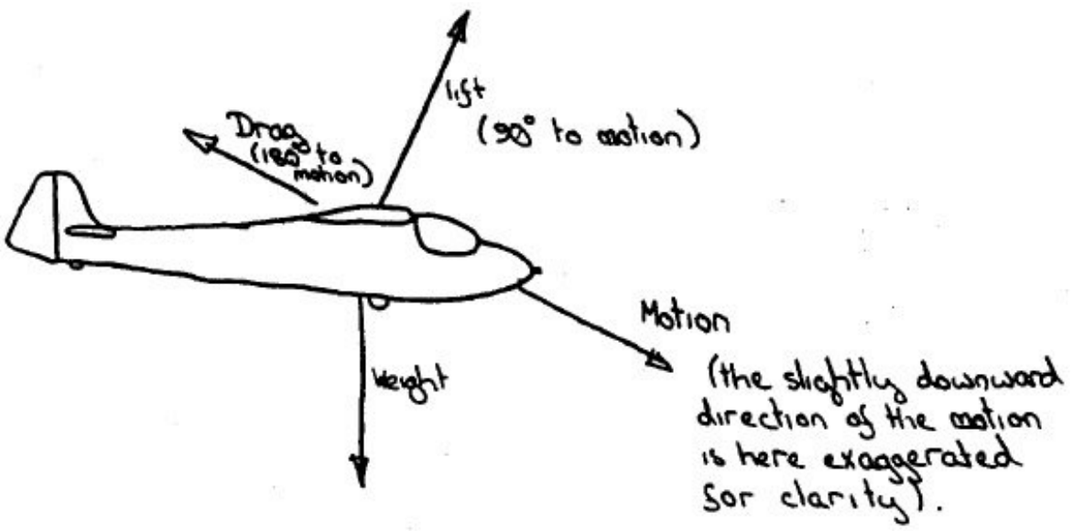
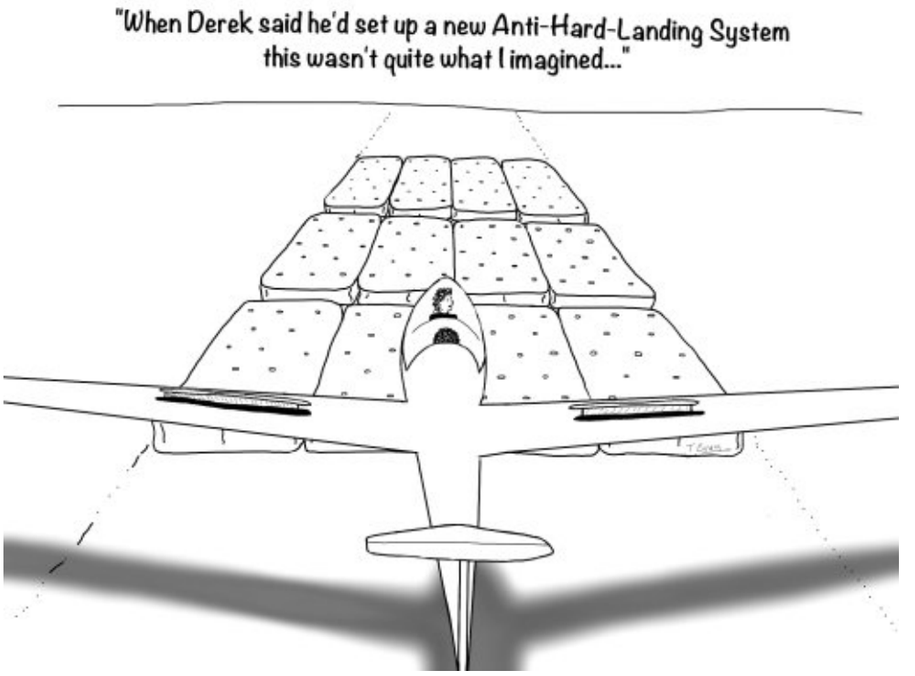


Diagram 4: Forces acting on a glider in flight

And that is why a glider needs to seek out sources of rising air to stay aloft for more than a short time – because eventually when gliding "downhill" you will come to "the bottom of the hill" (the ground) and stop… unless you get an extra boost (lift).



Soaring the Austrian Alps

By Steve Kittel

It happened that my partner Ursula and I took her mother back to Austria for her mother's 100th birthday. While I was there I wangled a flight at the Turnau gliding club located just up the valley from where Ursula's mother was born.

The airfield lies in a valley at about 790m (2600 feet) AMSL (above mean sea level). It is surrounded by mountains with peaks to 4300 feet directly to the south and about 5300 feet to the north. Ursula and her aunty dropped me off there where I met Siegi, who was to take me for a fly. Siegi spoke a little English and I spoke a little German, so we just about managed. After signing the obligatory "blood book" we got ourselves ready, and were towed away by an American (!) registered Pawnee. It was an odd experience to be towed up about 2000 feet and then still be able to buzz over the roof tops of a group of holiday cabins just before we released.

We didn't have a real plan, other than a gentle jaunt out to the east and possibly back again to the west if the day held. I am familiar with some of this mountainous area of the Steiermark, as we had visited Ursula's family a number of times and done the sight-seeing stuff from the ground. This usually involves driving along the valleys to the place of interest. It was a new perspective to see how physically close some of the places were to each other (often only a few kilometres apart) but located in valleys on opposite sides of a mountain ridge, so it was usually impossible to travel directly between them.

After releasing, we worked the lift from the valley slopes to the north of the field. There were a number of other gliders from Turnau there with us. When we gained sufficient height using a combination of ridge lift and thermals, we pushed

Soaring the Austrian Alps (cont.)

out to the east heading along the alpine mountain ridges. I don't think Siegi took a logger along for the flight, but by having a look at my photos the trip went approximately like this:

We initially went north east. I recognised the Neuberg as it has a large church monastery, the "Muenster", which I had visited a couple of times with Ursula previously. Staying high, we followed the mountain ridges until they started to run out. This placed us in an area more than half way to the large Austrian city of Wiener Neustadt. From here we were above the eastern extremities of the European alps. We could see where the mountains ended and the flat land stretched out toward Wiener Neustadt and beyond into Hungary.

Turning around, our path took us over the Rax Alps, the most eastern point of the alps above 6000 feet. We ran along the ridge of the Heukuppe at 6500 feet; it was mostly clear of snow, although there was enough that I could see tracks on some of the steeper slopes which showed skiers had been there not that long before. Hikers were out along the trails and waved to us as we went past the large square stone cairn at the highest point.

From there we continued back towards Turnau, but got low in a valley near Veitsch. We were down to about 4000 feet, but as the valley floor was at 2300 feet we had to start thinking about what to do next. Landing out on the tops of the hills was totally a non-option as they were covered in forest and there were no flat areas or roads. The only reasonable places were in the narrow valley bottoms which typically had a river or road winding along them and small fields either side. That is, they were reasonable options providing there weren't small villages or farms restricting any potential landing area. The fields were typically small - 200 to 400 metres long and a few tens of metres wide, with strong slopes

Soaring the Austrian Alps (cont.)

across them. In any case, we were able to finally scratch away and returned to Turnau.

The flight so far had only taken about an hour and a quarter, so Siegi decided we should gain height again up the face of the northern slopes of the valley and then head north west into the more remote parts of Styria, the Hochschwab mountains. We got to the highest point on these mountains (which is itself called the Hochschwab) at about 7500 feet. There was still thick snow in large patches on the mountains, even in late spring.

The Austrians tend to put markers on all the high peaks of mountain ranges, like the cairn on Heukuppe, and the Hochschwab has a large iron cross, six metres tall, erected in 1950. (I was later able to show my poor-quality pictures of the summit to Ursula's mum, who was most impressed as she was born and grew up at the foot of those mountains.)

On a large plateau, 500 feet below the peak, we observed a large alpine “hut”, the Schiestlhaus, which is used by hikers in summer and as a refuge in winter. The hostel can only be reached by walking or helicopter (that included the building materials of the house too!). A cableway which was built in the early 2000s was blown away in less than one year by the 200kph winter winds that occur there in the mountains.

Soaring the Austrian Alps (cont.)

We then left the high mountains and headed towards a large open cut mine, the Erzberg, which made a good landmark and turn point. We didn't quite get there - we turned a few km short. On the way there I spotted two other places I was familiar with. The first was the tiny village of Sankt Ilgen. It was easy to recognise because we had visited it many times to light a candle for Ursula's mum's older brother, who died in the 1918 flu epidemic and who lies in a now unmarked grave in the churchyard there.

The second place was the Gruenersee, a large alpine lake which we visited a few days before this flight. It is normally a small lake with a park around it in summer, but during the spring as the mountains thaw the water level rises to completely inundate the park. It then becomes a mecca for scuba divers who dive the clear mountain lake and swim around the park benches and amongst the trees! (Do an image search on Google, it is amazing!)

From the Erzberg, we started our dog-leg final glide, first toward the larger Mur River valley where we could see the large town of Leoben, then direct from there north east back to Turnau (overflying Ursula's auntie's house on the way). Overall the flight was 2.5 hours and we covered somewhere between 150 and 200 km over areas of Austria which are both spectacular and (usually) difficult to get to.

By the way, the slogan on Siegi's shirt: "Bodenallergie. Da Hilft nur Fliegen" - Ground allergy. The only relief is flying.

Waypoints identified during the flight:

Turnau 47° 33' 23.10"N 15° 19' 18"E
Neuburg 47°39'45.71"N 15°34'42.83"E
Alpine hut, SeeHutte 47°42'10.91"N 15°43'38.96"E
Rax Heukuppe Cairn, 2007m 47°41'20.58"N 15°41'22.44"E
Veitsch 47°34'45.67"N 15°29'38.88"E
Hochschwalb cross and Alpine hut Schiestlhaus 2277m, N 47° 37.082 E 015° 08.570
Sankt Ilgen 47°32'43.54"N 15° 9'57.75"E
Gruenersee 47°32'29.39"N 15° 3'18.41"E
Erzberg 47°31'34.17"N 14°54'35.34"E
Leoben 47°22'18.42"N 15° 5'23.57"E
Palbersdorf 47°31'39.11"N 15°14'18.40"E

AUGC Instructional Podcasts

Flyin' Sideways Productions[tm] has produced a series of informative podcasts on a range of gliding topics. They are available for AUGC members who would like to learn more about these important issues. They feature a select group of member and guest contributors, and each podcast reflects their particular field of expertise. The 2018 Catalog includes:

Title	Contributor
"Fast Glider Wing Fabric Removal"	Redmond Quinn
“How to Perform Vehicular Aerobatics”	Eddy Au
“Trailer Wheel Disassembly Made Easy”	Cath Conway
“Showing Off Using a Motor Falke”	Derek Spencer
“Rally Driving as it applies to Winch Operations”	Leigh Stokes (note: includes strong language)
“Playing Jenga with Glider Trailers”	Tor Nadeaux
“When Eagles Lie: Thermal Choice and its Effect on Outlanding”	Teal Evans (with additional commentary by Leigh Stokes)
“A Complete History of Nuts, Bolts & Screws Throughout the Ages”	Steve Kittel (includes 478 illustrative diagrams)
“How to get a 9000’ launch off a winch”	Poul Bender
“The Advantages of Using Pre-Preg in Glider Construction”	Redmond Quinn (693 episodes)
“Winch Cable Macrame for Fun & Profit”	Various Artists
"Dog is my Co-Pilot: Canine Aviation in the Modern Age"	Cath Conway (assisted by Max & Holly Conway)
"The Benefits of Avgas-Ignited Bonfires in Aerobic Excercise Programs"	Derek Spencer
"How to Create Fine Cuisine on an Airfield"	Darren Alcoe
"How to Enjoy Fine Cuisine on an Airfield"	Various Artists
"High-Visibility on EVERYTHING! A Brief Monologue on Colour Choices for Gliding"	Redmond Quinn (subscription series of 3 podcasts/week from now until the end of time)

Dates for your Diary

Recurring AUGC Events

Flying
Most Saturdays & Sundays at Stonefield. Check the flying roster on the AUGC website (http://augc.on.net/FlyingRoster.php) to make a booking.

Aircraft Maintenance
Most Monday nights at West Beach. See last page of Uni Gliding for details.

Committee Meetings
Every 4th Wednesday night of the month (usually), at Cath's place (21 Cardigan Ave, Felixstowe). All welcome! Come and get involved in the running of your club (or at least see how it is run...) Check with an Exec member before the meeting to confirm time/date.

Flying Camps and other Major Events

Flinders Camp 2018
June Long Weekend (9-11 June), possibly extending into the week beyond

Khancoban 2018
Date TBA, but possibly in November?

Bunyan Wave Camp
15-23 September 2018, Bunyan, NSW.

Further Afield...

(Unless otherwise specified, details for all of these events can be found in Gliding Australia or on the GFA website)

Horsham Week Competition (3-10 February 2018)
Horsham, VIC.

Australian National 20 metre & 2-Seater Championships 2018 (February 11-18, 2018)
Narromine Aerodrome, NSW.

Keepit Regatta (24 February - 3 March 2018)
Lake Keepit, NSW.

Bathurst Soaring Club Cross Country Flying Week (February 26 - March 2, 2018)
Bathurst, NSW

Fees & Charges*

Aircraft & Airfield Charges

Aircraft Type	Club Rate ($/min)	Student Rate ($/min)	Visiting Pilot Rate ($/min)
Janus (VH-GVU)	0.85	0.55	1.10
K-13 (VH-GQC, VH-GQS)	0.75	0.45	1.10
Motorfalke flying time (VH-FQW)	1.00	0.60	1.50
Motorfalke engine time (VH-FQW)	0.90	0.90	1.00
Ka-8 (VH-GQU, VH-GAQ)	0.50	0.30	0.75
PIK-20D (VH-WVA)	0.80	0.50	1.05

Winch Launches: Student $7.00/launch, Non-Student $8.00/launch

SAA Airfield Levy: $8.00/person/day - applies to anyone that flies.

Memberships

To fly with the Adelaide University Gliding Club it is necessary to be a member of the Club, a member of the Adelaide University Sports Association (AUSA) and a member of the Gliding Federation of Australia (GFA). Membership rates are as follows:

AUGC: Student $30/yr, Non-Student $150/yr

AU Sports Association: AU Student $Nil, Non-Student Junior (under 18yo) $22/yr, Non-Student 18+yo $88/yr,

GFA: Student $143/yr, Non-Student $275/yr, Introductory (see below under Air Experience Flights) $40 (9 days)

GFA Membership is required to fly AUGC aircraft. Introductory membership can only be taken out once per person.

Air Experience Flights

Student $100, Non-Student $120

This covers up to 20 minutes flight time, GFA Intro M'ship, SAA Airfield levy, up to 2 winch launches. Time in excess of 25 minutes is charged at $0.75/minute for K13, $2.00/minute for Motorfalke.

Miscellaneous Items

Basic Gliding Knowledge Book: $25

Pilots Logbook: $5

Dl Handbook: $15

AUGC Training Book: No charge

Airways-Radio procedures: $5

** All prices valid at the time of publication; may change sometime in the future*

Special Deals & Discounts*

Air Experience Flight New Membership Deal
If someone who has gone for an Air Experience Flight (AEF) decides to learn to fly, and they sign up to become a 12 month Glidiing Federation of Australia (GFA) member whilst their AEF membership (which lasts for 30 days) is still valid, $40 will be credited back to them. Nice!

Pre Solo Packages

AU Student $600, Other Student $600, Non-Student $900

This covers flying time, winch launches and airfield levy up to solo with the following limits: Includes 12 hours and 1.5 hours Motorfalke engine time, OR 40 winch launches OR 12 months, whichever occurs first. Logbook, Club, Sports Association and GFA membership are additional.

Declared Cross-Country Flight Discount
To encourage pilots to fly cross-country without worrying about pesky aircraft hire costs mounting up, this Cross Country Discount is as follows: If you fly a DECLARED cross country flight (i.e. you declare where you are planning to fly to before you launch) then if you are airborne for more than three hours, you will only be charged for three hours of aircraft hire. Bargain! Time to start planning those mighty 8-hour-plus flights!

Bulk Solo Package
If you're a solo pilot you may be interested in this one! For one single bulk payment, you get all aircraft hire covered for twelve months (unlimited hours). Note that this does NOT include launch costs or the airfield use fee, it MUST be paid up-front, and your flying account MUST be in credit for you to be eligible for this offer. Price on request.

GFA Weather Forecasting Software
This one's really handy once you've progressed in your flight training to the point where you're learning about how the weather affects thermals, and starting to get your head around meterology for glider pilots. All Gliding Federation members now have *FREE* access to a mini version of the popular Skysight weather forecasting model. The model covers all gliding sites in Australia, with a 4 day prediction and ˜point forecast" capability, on top of the normal thermal and weather predictions.

You can access the site in one of two ways.
1. Click https://weather.glidingaustralia.org/ and just register with your GFA membership details.
2. On the GFA web page www.glidingaustralia.org, click on MyGFA and select GFAMet Weather Forecasts.

** All prices valid at the time of publication; may change sometime in the future*

Flying Checklists to Know

There are a number of safety checklists that you will need to learn that need to be performed in certain flying situations.

All pilots **must** use these checks in the form specified here. For more information see the Manual Of Standard Procedures Vol 2 on the GFA website (http://glidingaustralia.org/)

Pre-Take Off Check (from OUTSIDE cockpit)

- **A** AIRFRAME: walk around check for damage and/or defects. Maintenance Release checked, including DI validity.
- **B** BALLAST: glider loading is within placarded limitations and trim ballast secure.
- **C** CONTROLS: checked for correct sense and full deflections, including airbrakes and flaps.
- **D** Check that all tail or wing DOLLIES (or other ground handling equiment) are removed.

Pre-Take Off Check (from INSIDE cockpit)

- **C** CONTROLS checked for correct adjustment and comfortable access, and rudder pedals adjusted for reach (if applicable).
- **H** HARNESS/ES tight and secure, lap belt low on hips (front and rear if applicable).
- **A** AIRBRAKES closed and locked.
  FLAPS set for take-off.
- **O** OUTSIDE: airspace and takeoff path clear, wind checked, ground crew available.
  OPTIONS: identify critical aircraft speeds, launch failure actions.
- **T** TRIM: set for launch.
- **I** INSTRUMENTS: altimeter set to QNH, intact, avionics on and working, radio set to 126.7 MHz.
- **C** CANOPY closed, locked & clean.
  UNDERCART: down and locked.
  CONTROLS: full & free movement.

Pre-Landing Check

- **F** FLAPS: set to landing position (if fitted).
- **U** UNDERCART: down and locked.
- **S** SPEED: set to safe speed near ground (1.5 x stalling speed).
- **T** Aircraft TRIMMED for selected speed, disposable ballast drained (if present).

Pre-Aerobatic Check

- **H** HEIGHT: Sufficient for recovery by 1,000ft AGL (2,000ft if within a 2 mile radius of a licenced aerodrome).
- **A** AIRFRAME: Flaps, airbrakes, undercarriage set as required. Trim as required. Hatches and vents closed and locked as appropriate.
- **S** SECURITY: Harness secure. Loose objects stowed.
- **L** LOCATION: Clear of built up areas, cloud, controlled airspace
  LOOKOUT: 180^0 plus 90^0 turns checking carefully around, above and underneath. Do not do a 360^0 turn.

Cut this page out and have it handy.

So you want to fly this weekend?

If you want to fly this weekend, there are two ways to arrange it. The first (and best) way is to **put your name down on the flying roster!** It can be found at http://augc.on.net/FlyingRoster.php and is also a great way to see who else is going up to the airfield on the same day. (Note that in order to access the flying roster, you'll need to register on the AUGC website first; it's easy to do, and the registration page is here: http://augc.on.net/Register.php) The other way to book is to call the club contact person **on the Thursday beforehand, either by phone between 8pm and 10pm on 0412 870 963, or by email (contact@augc.on.net)**. Please don't just show up without booking: we need to know that you're attending so that instructors (and transport, if necessary) can be arranged.

OK, you've booked to fly; what now? If you have your own transport, it's easy: there is a map on the AUGC website that shows you how to find us (http://augc.on.net/FindingUs.php), or you can navigate your own way there. Note that Google Maps (and other navigation tools) have our location recorded as **"Steinfeld"**, not "Stonefield". If you leave the city at 8am, you'll be at the airfield in plenty of time for the 10am pre-flight briefing. If you don't have your own transport, we can help! When you make your booking, either request transport from the contact person when you phone/email them, or if you book online make sure you mention that you need transport in the "Msg" field, and leave a contact phone number so that we can get back to you to arrange it.

There are a few other things you should plan before you head up to the airfield. The details are all spelled out on the website (http://augc.on.net/ComeGliding.php) but in brief, you will need:
- comfortable outdoorsy clothes, fully enclosed footwear... and expect to get dirty.
- water, and lots of it (yes, even in winter)
- a hat & sunblock
- lunch (you can bring your own or stop at the awesome Truro bakery on the way, but there is unlikely to be food available to purchase on the airfield)

If you have any questions, please feel free to either ask the contact person, or email the **AUGC-People mailing list.** (You *have* signed up to that, haven't you? If not, go here: http://lists.internode.on.net/mailman/listinfo/augc-people)

See you soon!

Come and fly! You know you want to...

Other ways to be involved...

Stay in touch online

The club has an email mailing list (**augc-people@lists.internode.on.net**) that is used both for general gliding-related chat and for planning and arranging things within the club (and also sending you your copy of the latest newsletter!). It is very much recommended that members subscribe to this mailing list, which can be done by completing the registration form at http://lists.internode.on.net/mailman/listinfo/augc-people

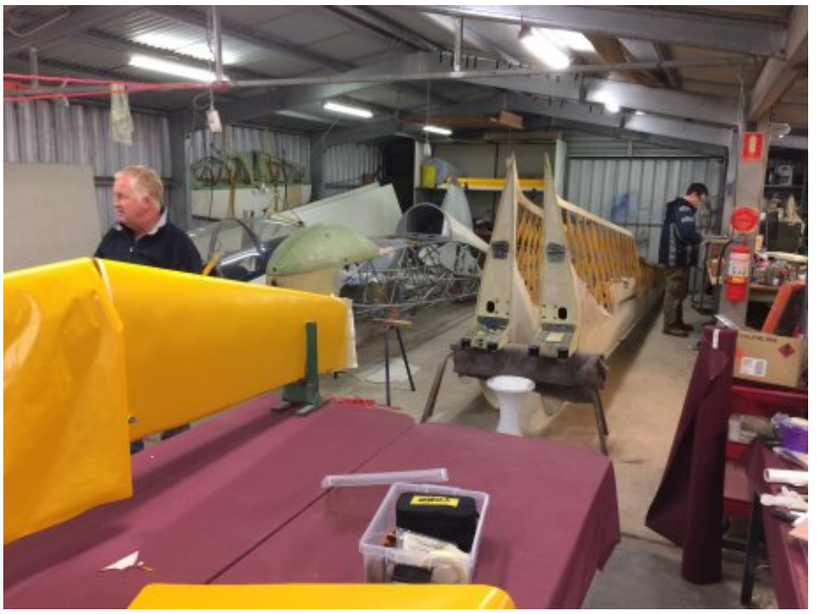
You can also stay up to date with club activities by keeping an eye on the following:

AUGC website: augc.on.net
AUGC Facebook: https://www.facebook.com/AdelaideUniGliding/
AUGC Twitter: https://twitter.com/AdelUniGliding

Get involved in aircraft maintenance at West Beach

The AUGC workshop at West Beach is where we carry out repairs and maintenance on our gliders and equipment. This can range from fixing or replacing small items through to complete strip-down and rebuild of aircraft. We welcome any extra assistance no matter your skill level - if you don't know how to do things, you'll get friendly advice and instruction from the more experienced people there. Getting up close and personal with the insides of a glider is a good way to learn how they work, and great for learning about glider airworthiness and repair techniques. There are members at the West Beach on most Monday evenings from around 7pm onward; if you want to check that people will be at the workshop before heading down, an email to the AUGC-People mailing list earlier in the day is a good way to be sure. If you want a lift to the workshop, that can also be arranged via the mailing list.

The AUGC workshop is located at the end of Foreman Street, West Beach (next to the AUGC sports grounds): drive through the gate, turn right and park on the grass (or mud during winter) and you'll see the workshop to your right.



The workshop at West Beach

Club Contacts and Who's Who

President: Cath Conway (president@augc.on.net)
Treasurer: Redmond Quinn (treasurer@augc.on.net)
Assistant Treasurer: Derek Spencer (derekspencer@internode.on.net)
Secretary: Derek Spencer (secretary@augc.on.net)
Social Convenor: Jarryd Ligertwood (social@augc.on.net)
Exec Member: Leigh Stokes (fifth-member@augc.on.net)

Chief Flying Instructor: Cath Conway (cfi@augc.on.net)
Airworthiness Officer: Redmond Quinn (airworthiness@augc.on.net)
Club Coach: Leigh Stokes (jimmytechnologies@yahoo.com.au)
Clubhouse Officer: Leigh Stokes (jimmytechnologies@yahoo.com.au)
Grants Officer: Teal Evans (augc@chromatic-dragonfly.com)
Contact Person: Ben Carter (contact@augc.on.net)

SAGA Reps:
Redmond Quinn (rquinn@adelaide.on.net)
Jarryd Ligertwood (ligjw001@mymail.unisa.edu.au)
SAA Reps:
Redmond Quinn (rquinn@adelaide.on.net)
Leigh Stokes (jimmytechnologies@yahoo.com.au)
Derek Spencer (derekspencer@internode.on.net)
Public Officer: Derek Spencer (derekspencer@internode.on.net)

Social Media (Facebook): Leigh Stokes (jimmytechnologies@yahoo.com.au)
Social Media (Twitter): Teal Evans (augc@chromatic-dragonfly.com)
Newsletter Editor: Teal Evans (augc@chromatic-dragonfly.com)

The Pik-20 (AUGC's high-performance single-seater) ready to launch

Learn to fly gliders and soar with the birds!
There's nothing quite like it....