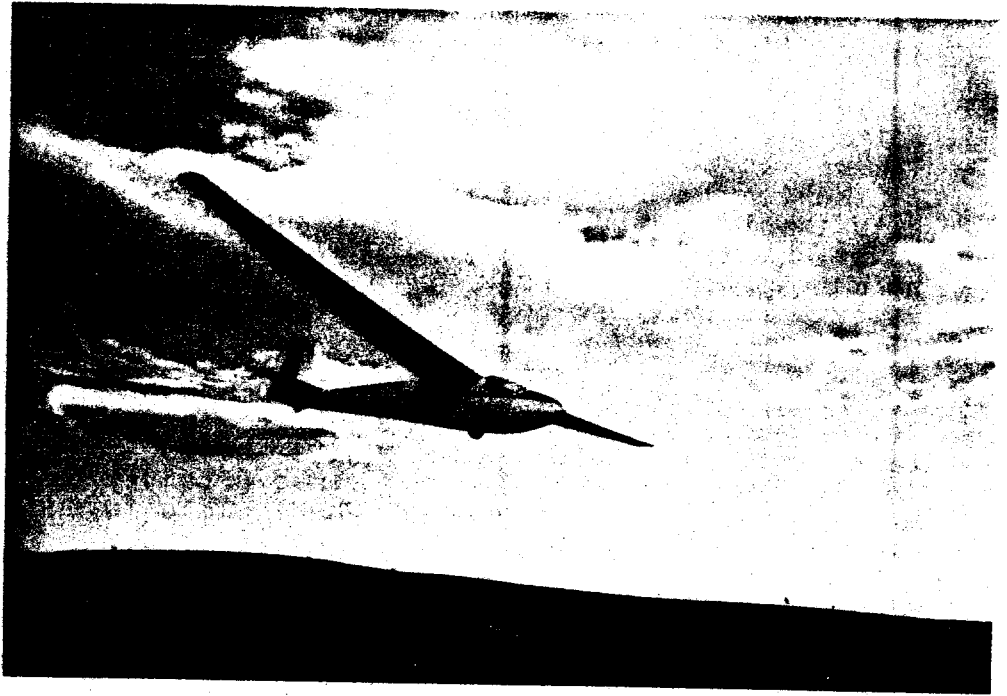
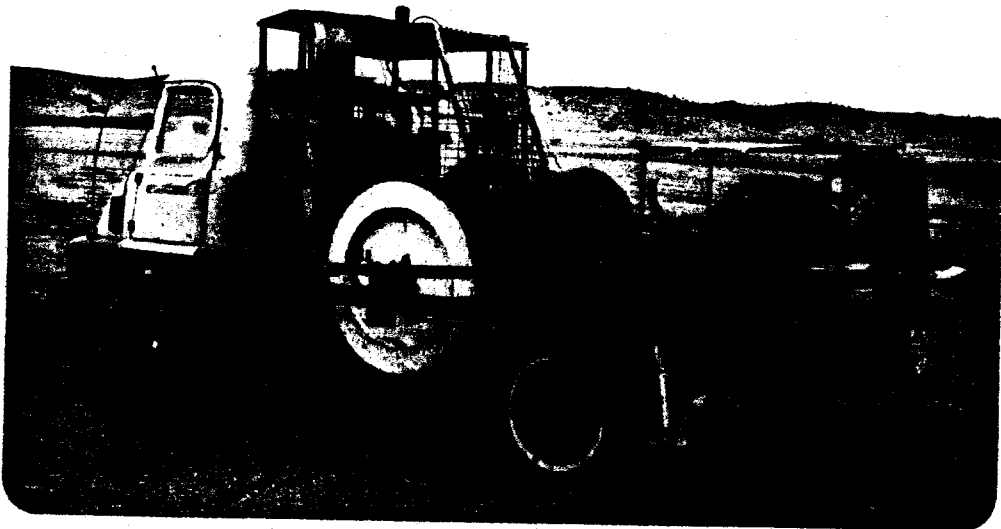


# Uni Gliding

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## EDITORIAL

Ahh - back in the Editor's Seat again. You may not realize this, but last month, Uni Gliding was the target of an underhanded, subversive takeover bid. Nick Abbott, our power-crazed chemical engineer president, not satisfied with merely being president, took advantage of a momentary lapse in my vigilance (caused by a terrible onslaught of exams) to whip out his previously concealed editorial talent and produce ... a newsletter!

Now, however, the exams dealt with, I have discovered this insolent usurper and, wielding my supreme editorial power, have banished him to the Presidential Seat, where he must spend the rest of his days writing President's Reports and Letters to the Editor.

Now, I feel I have some apologies to make; firstly to Don Hein, who sounded quite worried about his shed in his letter published last month. Over the past few months, we have been dropping some quite broad hints in the newsletters that the club had (inadvertently or otherwise) done some damage to Don's Shed. This is, of course, entirely fictitious and hilariously funny. So I'm not really sorry. (By the way, Don, did you realize that when the club's new Toyota truck is driven down your drive into your shed, the top part of the tray (sticking up past the cabin) actually hits the air-conditioner in the wall of the house - no don't worry, it wasn't working anyway).

The second apology regards material promised for the newsletter and not published; in the May issue, I said that a report on the Easter Comps at Gawler was coming. It is now a little late for this, so suffice it to say that the only time in the whole competition that a certain Foka 5 dared to raise it's pointed little snout and pot-bellied little pilot against a certain Ka6, it was soundly thrashed.

Andrew



ADELAIDE UNIVERSITY GLIDING CLUBS.....

ANNUAL DINNER

Will be held at CHIEF CHARLIES, 12 GRENFELL ST. at 7.30 PM  
on Wednesday the 27th of June (3rd week of term).

No tickets are necessary-you can pay on the night plus \$1  
for your reserved seat. If you want to come along, call  
DAVID CONWAY 2978638 and let me know. Guests are more than  
welcome but let me know how many!

The following is a list so far: (18/6/84)

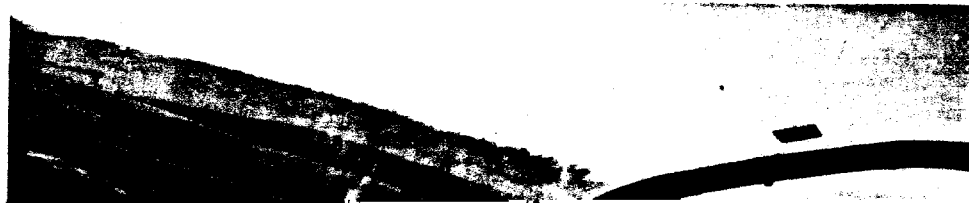
Jenni Sleigh (+2 guests)  
Andrew McGrath  
Nick Abbott  
Andy Rowan  
Mark Streich  
Tim Parish  
Paul Clarke  
Mark Raftery  
Robert McKenney  
Dennis Medlow (+1)  
Dick Temple  
Peter Temple  
Redmond Quinn (+1)  
Tom Nemeth (+1)  
Guy Harley (+1)  
Russel Norman  
Eric Jansons  
David Conway  
Damian Knight (+1)  
Andrew Materne (+1)  
Nick Roesler

Next General Meeting: Wednesday, 4th July  
at 7.30 p.m., in the  
Jerry Portus Room,  
Union House.  
A video tape (gliding related  
or otherwise) will be shown  
after the main business of  
the meeting.

The following quote is from the book, "ABC of Gliding and Sailflying", edited by V. W. Page, in 1930:

"METHOD OF TRAINING SAILPLANE AND GLIDER PILOTS.- In training glider pilots the student usually 'soloes' from the very start and in that way the instructor can learn the ability of his pupil and in no way endanger himself. (Passenger carrying gliders have been successfully flown.) As there is no engine, it is possible for the instructor to coach his pupil by calling to him from the ground..."

It is rumoured that Mark Forster is pushing to have some of the old methods restored...



THEORY OF FLIGHT FOR THE COMPLETE NOONG  
(or, "Advanced Aerodynamics for the Medieval Peasant")

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.

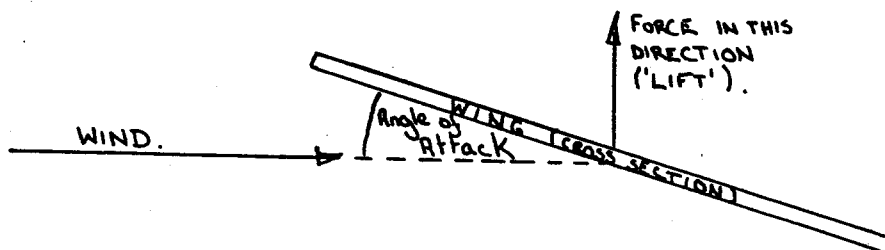
The easiest way to understand exactly how and why a wing flies is through a simple experiment. (I hope that a word like 'experiment' hasn't put off all the arts students and pure mathematicians; if you like, you don't actually have to DO the experiment, but can simply imagine).

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 our '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 or 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.

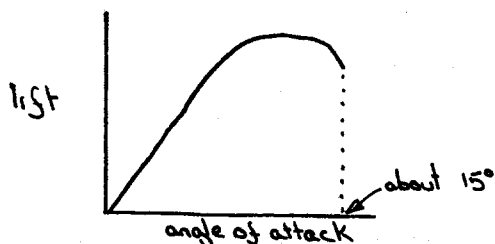
'But that's obvious', I hear you say. 'It's just the air pushing on the wing that makes it go up and down.'

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

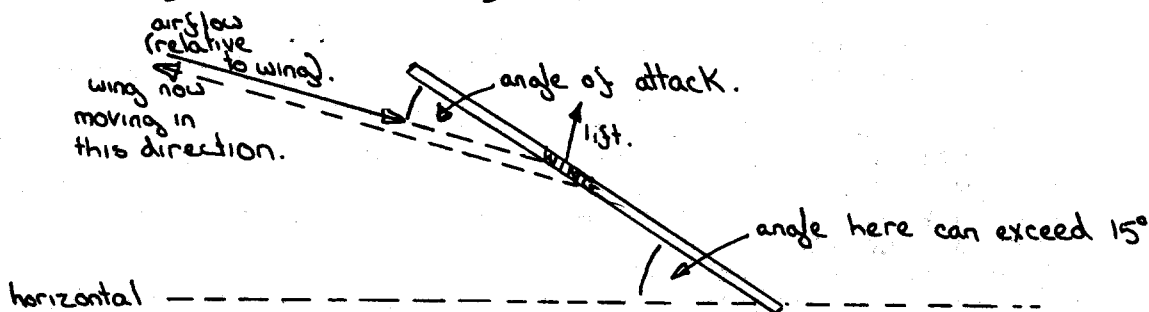
We can now think about the same experiment conducted in a slightly different way. Suppose, instead of whizzing our wing in a circle to make the air flow past it, we hold the wing out straight in a strong wind. Now we can get exactly the same effect as before by rotating the wing about its longitudinal axis; tip the front edge (the edge facing the wing, 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.



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), 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 (ie, 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 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 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). 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.

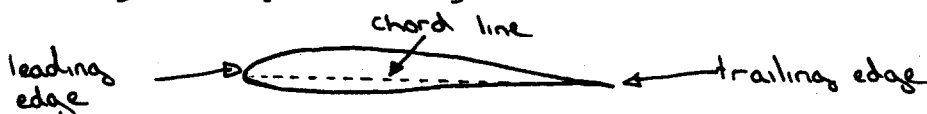


Thus, to demonstrate a stall in our experiment, the wing must be rotated suddenly, to make the angle of attack high, before the wing moves up and changes the direction of the airflow to keep the angle of attack small.

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 an increase in angle of attack.

The faster the wing is moving, (or the faster the 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 'aerofoil section'), depends on the requirements of the wing; e.g. high speed, low speed, high lift, etc., but is generally something like this:



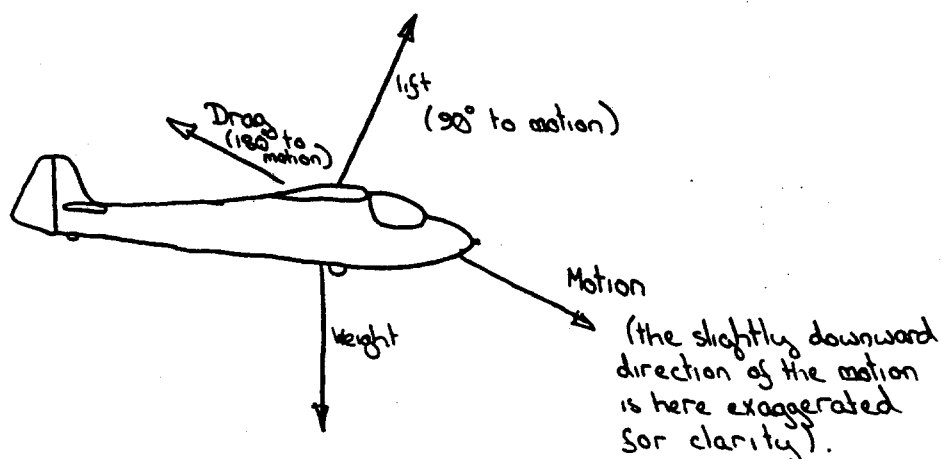
Now we will turn our attention from just an experimental wing to a complete glider; where we have a fuselage holding a pilot, supported halfway along a large wing.

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, for the lift so created to exactly equal the weight of the whole 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, 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.

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 so is slowly losing height.



Adelaide University Gliding Club, Inc.  
Report to the South Australian Gliding Association  
for period  
July, 1983 to June, 1984

In pursuing a positive perspective, the previous year has seen several long term club projects undertaken, but unfortunately the immediate consequence was a survival year.

Operations were confined to an average of one day per weekend with only two club aircraft operating from a possible three. Early in November our ever faithful Bocian was removed from service for replacing of the fabric, recabing and the replacement of several patches, which although structurally adequate were aesthetically displeasing. Training was then intermittent with the Bergfalke suffering skid problems and a lack of instructors. A tyre blowout on landing and consequent minor damage resulted in training being curtailed for several more weeks.

Fortunately, concurrently with the intake of 70 new members at the start of the academic year a period of smooth operation has occurred. Yet the recruiting and subsequent training of new enthusiastic members has introduced frustrating logistical problems. A dedicated commitment from our instructors' panel has seen only one days flying on many weekends. Resultant congestion occurs with anything up to 15 trainee pilots to fly on any one day. A solution to this unique problem is being sought in the form of an informal association with the instructors of other clubs which could reduce instructional demands with the cooperation being of mutual benefit to all involved. Any internal relief is unlikely as scheduling of Instructor courses prevent University members attending to gain instructor ratings. A.U.G.C. has also adopted a policy of inviting other clubs to visit in an attempt to maintain our association with more experienced members of the gliding fraternity.

On a more positive note, the year has seen some bold projects initiated. Other than the "reconditioning" of our Bocian, a new winch is under construction. The major components have been purchased with completion expected before the end of the year. The club has also undertaken to hold a regatta during January which will provide incentive to finish our present projects.

The summer also saw some successful cross country flying in our KA6 out of Lochiel, most of which was flown by pilots on their first cross countries. The nature of the club results in the focal point being training but new attempts are being made to promote higher achievements amongst more experienced members.

Although this resume of our years activities has outlined some of our difficulties, we are still VERY active in pursuing solutions and possess enthusiasm and dedication envied by any organisation. This enthusiasm along with sound future planning promises a progressive period ahead.



## FLYING RULES

### 1. SAFE SPEEDS:

#### Ka6 & BOCIAN.

Safe speed near the ground ..... 50 knots  
For medium strength winds ..... add 5 knots  
For strong winds and strong wind shear add 10 knots

#### BERGFALKE.

Safe speed near the ground ..... 55 knots

### 2. LAUNCHING:

Aim to launch the Bergfalke between 50 & 55 knots.

If the speed drops below 50 knots & is still decreasing, lower the nose & signal too slow.

If the speed is between 55 & 59 knots, signal too fast without lowering the nose.

If the speed is above 59 knots, lower the nose sufficiently to take the load off of the cable & signal too fast.

If the speed rises above 60 knots, pull the release.

### 3. RIDGE SCARING:

If a pilot is not cross-country rated, he/she cannot fly on the ridge unless the instructor of the day gives permission to do so.

### 4. AEROBATICS:

All aerobatics must be signed out before they can be done, apart from trainees flying & training with an instructor.

Full spins are treated as an aerobatic manoeuvre.

All aerobatics must be approved by the instructor of the day.

Adelaide Univeristy Gliding Club  
Airworthyness Officer's Report

20 June 1984

1. AIRCRAFT.

Ka6 : Technically still airworthy but flying under previous years C of A. The new C of A must be completed as soon as possible. A remaining problem is the harness release mechanism which was incorrectly assembled at the previous C of A and may require repair/replacement, or rewabbing of the harness. I am liasioning with A. Sawyer about this.

Berg Falke : Airworthy. Urgent attention is needed on the tailplane patches.

Bocian : Unairworthy - out of service. Fabricing of one wing soon to be undertaken, when complete the patches on the second wing will be redone.

2. DI COURSE.

ASC is holding a DI course on the 27th of July at 7:30pm at Gawler. Our members are welcome to the lecture on airworthyness theory but will not be able to attend the practical on the next day. Cost is \$2 for the notes. I have contacted our members who have indicated interest in the course and have informed them of the details. I will arrang with Mr. Forster for a practical demo/test at a later date.

! PLEASE NOTE !

WILL WHOEVER HAS THE BERGFALKE  
(VH-GZM) LOG BOOK PLEASE RETURN  
IT TO D. MEDLOW A.S.A.P.

### 3. AIRCRAFT WORK ROSTER.

I have drawn up the following aircraft work roster based on the replies received from members attending the June GM :

MONDAY

No Work.

TUESDAY

D. Temple (Teamleader), M. Streich, D. Medlow, R. Quinn.

WEDNESDAY

No Work.

THURSDAY

D. Conway (Teamleader), T. Parish, B. McKenney.

FRIDAY

N. Abbott (Teamleader), M. Raftery, N. Boroky, P. Clark,  
A. Rowan, A. McGrath, J. Sleigh.

This arrangement will allow work on three nights a week. I have discussed the above schedule with Mr. Forster and he is amenable to its implementation.

The concept of the "Teamleader" is quite simple, that person is :

- (1) Responsible for shed and contents during work.
- (2) Responsible for cleaning of shed.
- (3) Responsible for obtain a list of work to be done from the previous night's team leader.
- (4) Is the contact point for all of his team members.

I hope to publish and implement this list immediately, and ask to it as other members offer (read 'are asked for') their services.

(I do notice that some prominent club members do not appear on the list).

### 4. CHANGE OF ADDRESS.

As of 23/6/84 my address will be 66 Boucaut Avenue, Klemzig. do not as yet know my new phone number but will advise as soon as I do. Please ring my old number (42 5093) if you wish to contact me.

D. P. Medlow  
Airworthiness Officer

MINUTES OF THE EXECUTIVE MEETING OF THE  
ADELAIDE UNIVERSITY GLIDING CLUB INC.  
ON MAY 16TH, 1984 AT 7.30 P.M.,  
AT THE SECRETARY'S RESIDENCE, MYRTLE BANK

---

PRESENT: J. Sleigh (Secretary), R. Norman (Treasurer), D. Medlow (Airworthiness),  
M. Raftery, D. Conway, A. McGrath, B. McKinney,

APOLOGIES: N. Abbott (President).

1. PREVIOUS MEETING'S MINUTES

RESOLUTION 1: *THAT the minutes of the previous meeting be accepted as a true and correct record of the proceedings.*

J. SLEIGH/D. CONWAY  
Carried.

RESOLUTION 2: *THAT the minutes of the meeting dated 21st March, 1984 be accepted as a true and correct record of the proceedings.*

J. SLEIGH/A. McGRATH  
Carried.

2. BUSINESS ARISING FROM THE MINUTES

The question on money to help pay for the electricity bill for the club's use of Mark Forster's shed was deferred to the next executive meeting.

3. REPORTS

3.1 President

Not present.

3.2 Secretary

The Secretary was notified by Dick Temple that the tyre put on the winch was oversized & Dick suggested we purchase another (at a cost of about \$60). It was decided that the present tyres would suffice. Dick Temple also reported that there is some work & expense involved in repairing the Ka6. A new rear wheel and axle is needed as the existing one is cracked. There is also a problem with the harness buckle but at this stage it isn't known what the problem is. The only other repair appear to be minor.

Dick Temple suggested that the club buys the wreck of the Ka6 (NN) from Andrew Sawyer at \$350 if the club has the finance. Discussion on this was deferred to the Treasurer's report.

The tailplane of the Bergfalke was inspected by Mike Burns (C.T.O. airworthy) and said it was airworthy. He suggested an external timber patch to fix it and not fibreglass. Repairs should be done in the near future.

3.3 Treasurer

The Treasurer reported that there is \$1,253 unallocated funds in the bank but assessment of funds should include running expenses of the next month compared with how much was earned. There is also \$3,400 approximately in the operating account for the rest of the year's operating expenses and this should be spent gradually. Enquiries were made on spending the capital grant money allocated for hanger extension on the new winch and the idea was approved.

RESOLUTION 3: *THAT we spend the \$1,800 allocated from this year's capital grant on the new winch project.*

As a result \$1,800 can be spent on the new winch and winch shed, so a shed design must be finished. This years budget was put in and it included money for a glider to replace the single seater Ka6 and money for a shed floor. The Commonwealth Bank account had \$150 put in it. Outstanding debts include \$402 for the Bocian fabric.

The Treasurer will also examine how worthwhile it is to buy NN (Ka6) in respect to the club Ka6 (NB) twenty yearly examination.

RESOLUTION 4:            *THAT Russel Norman be authorised to purchase the wreck of VH-GNN for the sum of \$350 if it proves to be cost effective.*

D. MEDLOW/R. NORMAN  
Carried.

3.4. C.O.I.P.

Not present.

3.5 Airworthiness Officer

The Airworthiness Officer reported that the Ka6 was on a C of A course and a report from Dick Temple and Andrew Sawyer is expected on what else is required to complete the C of A. The Bergfalke (ZM) is presently grounded with damage to the tail plane. The idea of a fibreglass repair put forward by Redmond was rejected. Mike Burns (current C.T.O. airworthiness) has seen it and approved it for flying. The tail will come down for repairs as soon as possible. The Bocian is at Don's/ Mark's shed and work is progressing very slowly. Doublers need to be bent to match the shape of the patch then approval by Mark Forster is required before it is glued on.

3.6 Newsletter Editor

The next newsletter will be produced by Nick Abbott and not Andrew McGrath.

3.7 Winch Officer

The truck has clutch problems which need looking at and the head gaskets on the V8 have blown on both sides and need replacing. Dick Temple has bought 'fluid and had the tyre fixed but new tyre may be needed soon. A warning was extended to not leave pieces of wire on the strips, they should be put in the truck, as this would lessen the number of tyre repairs. The suggestion of a vulcanizing clamp to be purchased by the club to help keep costs down was forwarded.

4. GENERAL BUSINESS

4.1 Next General Meeting

To be held in the Jerry Portus Room on Wednesday, June 6th at 7.30 p.m. A film will be shown.

4.2 Flying Calendar

Saturday 19th May: Redmond Quinn  
Sunday 20th May: Guy Harley

4.3 Next Executive Meeting

To be held at the Secretary's residence, Myrtle Bank at 7.30 p.m.

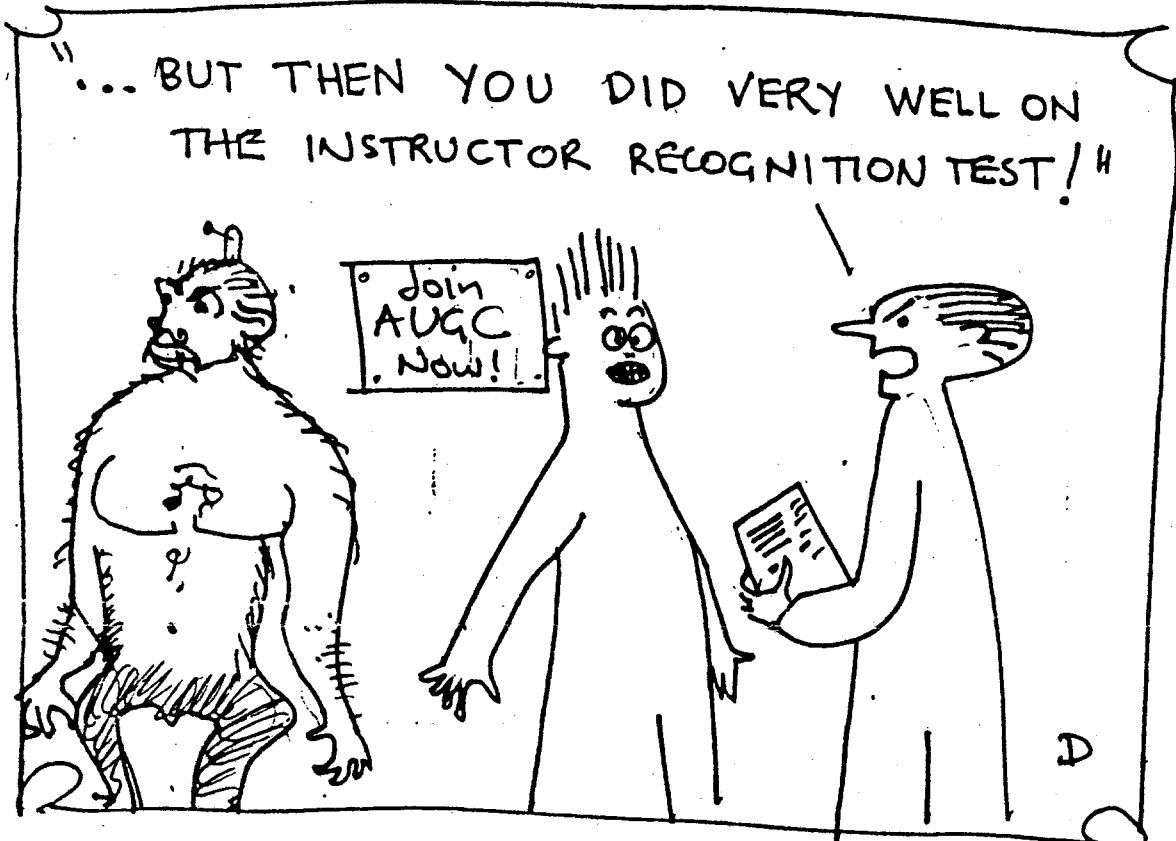
4.4 Other Business

The arrangements for a dinner were discussed and venues were examined. These included a restaurant, caterers in a hired place, the University bistro and the University Club. The new winch has been painted white with red trim and needs to stay in the hanger where there is room. There are plans to buy a radiator & steel

Aircraft insurance was discussed and all three aircraft are currently insured. The two twin seaters have ¼ million personal liability, third party, passenger and pilot covered. If an aircraft isn't flown for a period then a rebate can be claimed but an aircraft should still be covered then a rebate is given later. The Bocian has been out since October so it could get a rebate on insurance falls due in December and is \$1,197 for twin seaters and half this for single seaters.

There is a S.A.G.A. meeting on 26th May at Stonefield.

There is a D.I. course on 26th - 27th May but this is during exams so there is likely to be no volunteers.



#### TREASURER'S COMMENTS

=====

It is good to see the KA-6 is back on field after its C of A. However it is a little unfortunate that it cost us a little more than it should have, in both monetary expense and loss of flying. I would like to ask those involved to try and remember that we are having to keep strong controls on our spending this year and that we could do without those avoidable expenses.

In the coming months the gliding club is going to be busy on various projects. If you could help out on any it would be much appreciated. Some of the jobs are:

1. The Bocian (contact Redmond Quinn or Dennis Medlow)
2. The New winch (contact David Conway or Redmond)
3. Clubhouse
4. Winch shed (contact David Conway or myself)
5. Hanger/Airfield
6. The floodlight

So as you can see there is plenty to do. I would like to mention that the gliding club only survives on the effort put in by its members.

TREASURER'S REPORT  
=====

National Bank .....(operating).....\$ 1100.00  
Held with Sports Assoc. ..(operating)..\$ 2300.00  
Held with Sports Assoc. ..(capital)....\$ 1680.00  
Members Accounts ...(debt less credit).\$ 300.00

TOTAL -----  
\$ 5380.00  
-----

Note ! Because of the short notice that I have been given to prepare this report the figures are only approx. I do have the exact figures available if you are one of those people who get excited about exactness.

\*\*\*\*\*  
\*  
\* TO ALL THOSE WHO HAVE OUTSTANDING ACCOUNTS WITH THE CLUB. \*  
\*  
\* I would like to ask you to fix this situation as soon as \*  
\* soon as possible as it will save me the hassle of havins to \*  
\* write you a nasty letter, and save you the shame of \*  
\* receiving one. If you are not sure how your account stands \*  
\* Please contact me and I will be pleased to tell you. \*  
\*\*\*\*\*

Note. We are actually planning to either give some incentive to ha credit account or penalty to those who have debit accounts.

If you don't already know how to contact me the address is

The Treasurer  
Adelaide University Gliding Club  
C/- Sports Association  
University of Adelaide  
North Terrace  
ADELAIDE 5000

My home phone no. is 390 1824

STARTING FROM JUNE 23 TH ( NEXT WEEK ) THE NEW

PERSON TO CONTACT ABOUT FLYING ON THE FOLLOWING WEEKEND IS .....

JENNI SLEIGH (SECRETARY)

THE CONTACT TELEPHONE NUMBER IS ...

79 4995

PLEASE RING ON THE THURSDAY NIGHT AFTER 7.30 PM

NOTE: REDMOND QUINN IS NO LONGER THE CONTACT NUMBER.