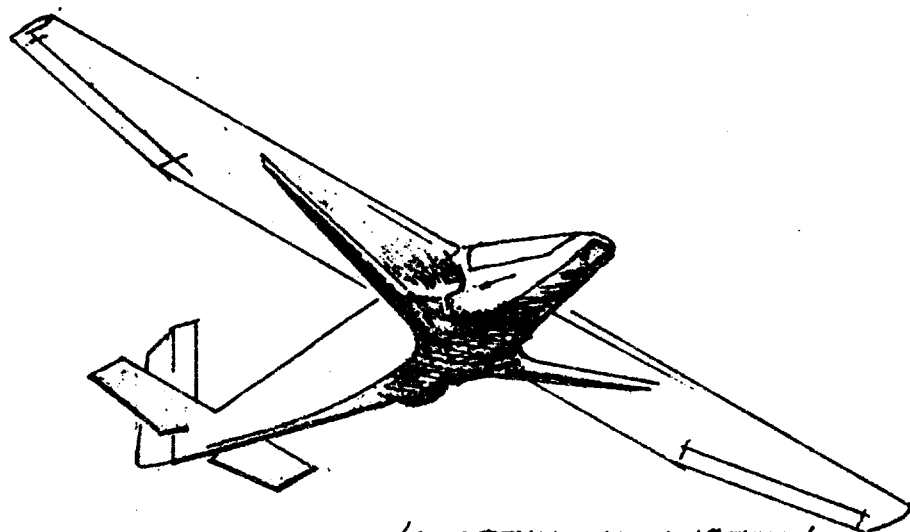


uni
gliding

NEWSLETTER

Vol 4 No. 5

JULY 1979



*CONCEPTUAL ARRANGEMENT!
DESIGN PROJECT*

APPLAUSE

Since Don Hein soloed, Kym Bennett followed suit at the end of the June camp. Roman completed his 5 hours in the Arrow, while Dave Ellis (Arrow) was under pressure to give it away after 3½ hours, while Dene (Boomerang) and Graham (Sagitta) missed out by a ¼ hour on individual days.

The hangar doors were completed on time (Tim Dodd) and below budget.

Peter Ashenden converted to the Arrow.

The application for an Operations Centre did result in placing the club and its self help approach in a favourable light to our parent body.

Our financial position at the June meeting had recouped 1977 deficits and matched our intended 1978 earnings curve; reflecting not only high club member utilisation, but additional loads from ATC and ASC accommodated.

Kym fitted the second set of rollers to the winch, and tacho and new manifold are under way.

Dave Ellis spent a day fixing tailplane, canopy and wingtips on the Arrow. Roman has been measuring and checking for new instrument capacities in the luggage compartment and a new panel layout for the additional instruments.

Tim and Don Hein completed the doors to the hangar with guides.

Don also fixed the Boomerang trailer with new hinges, floor and fittings. The trailer has also been filled and primed ready for painting next month.

Dean Hill (state airworthiness) dropped in to inspect work on the Kookaburra 20 yearly. We discussed ways to get at the main spar fittings, and repairs to areas overenthusiastically stripped into the plywood.

By the time this newsletter hits the stands, the Kookaburra is completely stripped down, will have all control surfaces repaired, skinned and fittings replaced, and work will be underway in filling wings and cutting open the fuselage.

PROMISES

Bob McDonald will be digging up and seeding after the next rain. The whole area, including the bare portions of runways will be seeded.

So, if next time you turn up, the runway is ploughed over, the seed is in. Operations must be confined to our normal operating areas, where the crop is for root structure only; and leave the rest for harvest.

Tim wants a metal box for club parachute storage.

The Arrow syndicate want to get together to talk about getting work done on the Arrow and its trailer.

UP FRONT

The cover this month attempts to visualise one of several projects the Uni club is trying to get under way; which are beyond the normal style of short term projects we run.

While most projects have an immediate goal, usually tied to the flying operation; the unique attributes of the Uni club also can be used on a variety of initiatives looking further ahead.

From the club's point of view, our first submission for an Operations Centre at Lochiel has started a series of such long term projects.

In the first place, a 5 YEAR AIRFIELD DEVELOPMENT is being prepared. Not only should it benefit the club in continuing the current momentum of the club generating its facilities in an orderly fashion; benefit the University by proving that all support is toward worthwhile viable projects; but it should also benefit the sport as a whole by permitting us to increasingly open the site to all glider pilots.

Out of this exercise above, of course flows a similar forward plan of options for aircraft fleet development, for internal use. In this way we can update our fleet, also in a systematic way, without putting ourselves unnecessarily in debt; AND without losing the benefits of keeping aircraft of low residual market value in the fleet as a bonus.

From fleet development arises a realisation, that before a major loan capability in 1983, we also have a 'slack period' in aircraft maintenance between Bocian refabric (early 1981) and Arrow 20 yearly (late 1983), when we could use the accumulated expertise in building our own.

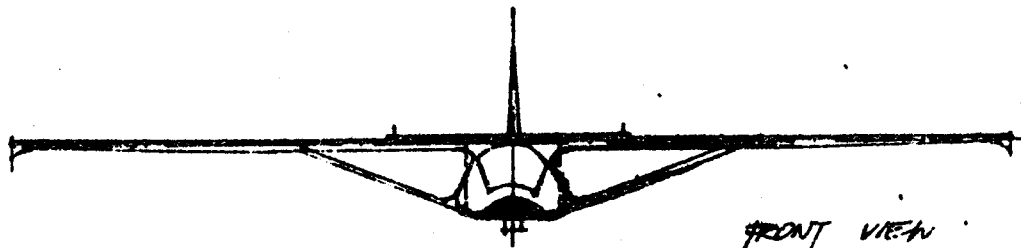
This was introduced to some degree last newsletter. The most ambitious option is of course the complete job, including design your own. If we are to be ambitious, then the design stage must be complete well before the free time for construction starts. This should give some time to combat the authorities, and of course to conduct our traditional money grubbing exercises.

And I would like to think that by now we have shown ourselves very successful in being ambitious. For us it offers the chance to flex our airworthiness muscles, gain a new aircraft in the fleet at moderate (perhaps subsidised) cost; while to the sport as a whole it is just one more way of promoting the resurgence of moderate cost sailplane class, and the other benefits it brings with it.

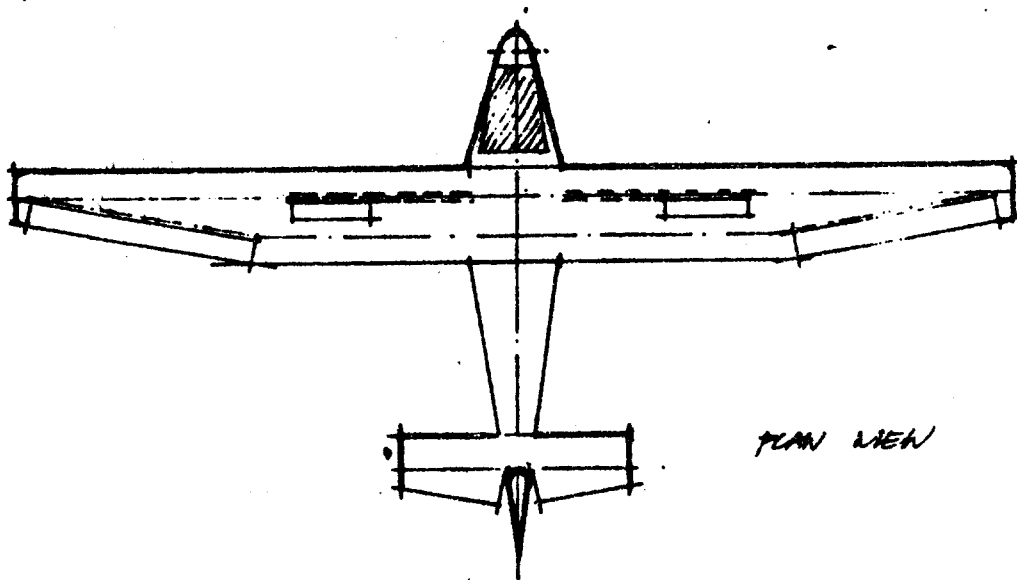
The front cover is only one view. This has been prodded into our system, to be digested. What comes out the other end will be influenced by the people both inside and out the club, that will get drawn in at the various stages of the project.

Initially, I am gangpressing Dave Ellis, of DE-1 fame; into heading the work. This article of course, is part of that gangpressing. I hesitate to describe the overview drawing as representing the DE-2, for it is based not only on the Spruce Goose (with acknowledgment for the idea to Ted Pascoe), but if you look closely, it also has bits of 'Vampyr', 'MOBA 2', and SZD 'Ogar' in it.

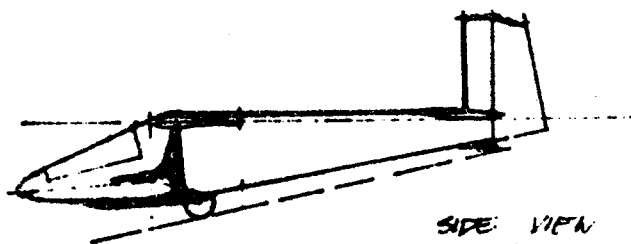
SCALE 1/8" = 1'



FRONT VIEW



PLAN VIEW



SIDE VIEW

DESIGN PROTECT

© A.V. GLIDING CLUBS

GOING OUTWARD

Lochiel has been opened to outside groups, both glider pilot and public, since its beginning. Groups included Renmark, Scouts, Balaklava, and ~~most~~ lately the Adelaide S.C.

Over the last months we have begun a programme for the Air Cadets at rates they can afford, and this is to be supported in August by a Parafield High School camp in addition to continued weekend ATC visits.

It's nice to show others our little place, we earn a little brass from outside, thereby keeping rates for our own members down too.

But, there is more. It is one more way to promote the way we operate; to show that high performance ambitions, high costs and impulse are not the only way to make gliding work.

I would like to thank our members for their part in making it work. Guy and Tony write their views within the framework of the club. I see the weekend of June 2 & 3 from both my perch on the 6 cylinder winch, and my view of the need for gliding to change in adverse economic and infrastructure conditions.

We showed that it is practical to run a high intensity operation, with moderate performance sailplanes and winches. We explained our own limit with amateur manpower, and amateur maintenance of winchs. However, we were able to improve the image of winch launching, by running our stranded cable and two winches, which gave both minimum brak trouble and moderate turn around. In fact, while the V8 went out for some maintenance, the 6 with Peter Ashenden's help continued to maintain 9 cables per hour.

The implications for a large gliding operation are clear. The dependance on tugs can be reduced, by introducing professional built, maintained and staffed winches on separate pads. A launch rate of 100 per day should not be uncommon if evrything is kept working, cables changed at 1/2 life thereby avoiding breaks, and 2 winches can launch independantly of each other .

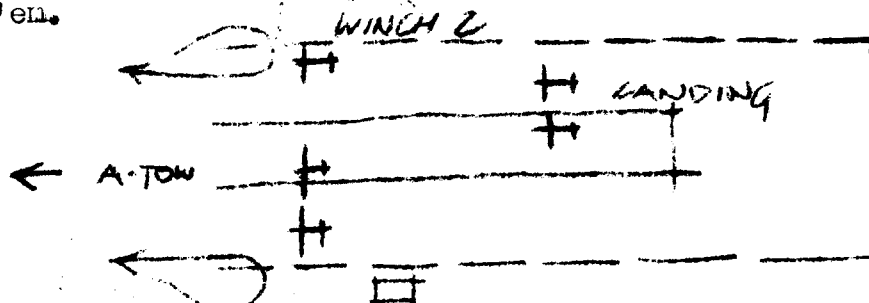
The cost per launch of \$2 would be broken into -

running costs	petrol	.20	
	oil	.10	
	cable	.30	strnded throw away at 1200 launches
maintenance	professional	.95	
		.45c	profit per launch.

And I seem to remember winch launch at my first contests where entry numbers were consequently kept small.

Emilis

P.S Just let me loose with the old 6 at Gawler, we'll show 'em.



Rules of The Air Booklets.

10 booklets were purchased from the GFA shop in 1978, and now there are only two or three left in the file. These booklets were for loan only to AUGC members and should be returned to T.Kiek once the rules of the air test has been completed. Therefore, those of you who have a booklet still out on loan and who have finished with them, please return them to me as soon as possible to avoid a costly repurchase order with GFA.

Landing out.

Already this year several pilots have landed out after getting caught out at the far end of the ridge. On one such occasion club operations were virtually brought to a standstill while difficult retrieves were made. Your training at AUGC aims to produce a pilot who is safe to land out as soon as he or she goes solo. However, this does not imply that the pilot is cross country rated on that aircraft, and accordingly any such land outs should be treated as unauthorised cross country flights. Strict application of this rule would of course prohibit almost all ridge flights where the glider has less than a 30° angle back to the landing point, and therefore this "rule" has never been enforced at AUGC. We prefer to rely on a pilots judgement and experience so that he or she, hopefully, never gets into a position where an unauthorised land out occurs, and so far this attitude has been seen to work fairly well. Generally a short briefing of the pilot on return to the field is carried out.

A few pointers are perhaps in order as far as ridge soaring is concerned.

1. Solo pilots in either single or 2-seaters are, by virtue of pre-solo training, ridge rated (but not cross country rated).
2. A good look at the windsock and a talk with the duty instructor or other experienced pilots is in order before venturing to the ridge. We can almost always predict the amount of ridge lift and the positions where it will be working best by observing wind strength and direction on the airfield. Be warned that the ridge does not work nearly as well with an Easterly wind as it does with a Westerly wind.
3. Even though the ridge may be working at one spot, never assume that it will continue to provide lift further along. Particularly in strong thermal conditions; strong sink may in fact be encountered in various places along the ridge, even though a brisk Westerly is blowing. This fact has caught a couple of pilots out.
4. In Winter, the pilot must observe rain showers moving through, because there is generally a large area of strong sink associated with it, and

particularly with wet wings, strong South Westerly winds, and a poor angle back to the field, a landout is imminent. This has also caught out a few pilots.

5. A sudden drop in wind strength, or a change in wind direction, can also leave a pilot stranded at the far end of the ridge. Therefore the pilot needs to be observant of wind indicators along the ridge, e.g. windsock, smoke and dust trails, windmill directions, etc.
6. Curlover on the leeward (downwind) side of the ridge is usually severe and one pilot was caught by this and landed at Lochiel. Never let the glider be drifted over the top of the ridge unless ample height is achieved to get back through the sink. That means don't work weak thermals past the top of the ridge; you need a rate of climb at least double that of the ridge lift in order to get back.
7. Getting too low on the ridge face can also be a problem. As the glider approaches the base of the ridge, lift will be seen to fall off markedly, and at least one pilot has been caught out by this problem. The distance out from the ridge top for best lift varies somewhat according to the wind strength and direction, but maintaining height is the criterion which should be used when exploring.
8. Always make sure that you have a landable paddock within reach at all times. As you are ridge soaring, look at the terrain, assess the paddocks as you go past, work out the best landing direction, and remember the four S's, Size, Shape, Slope, Surface. Avoid landing downhill, and watch out for power lines.
9. Avoid "pie cartitis", and if a landing is imminent, then do it properly and don't try to get back to the field "at all costs". We would much rather see a glider safely landed out that wrecked on a low approach to the airfield.

TK

Manual Of Flying Procedures

This manual has now been completed and is in the process of being printed in handbook form with coloured cardboard cover. Initially 100 will be printed for us by the Students' Association. Every club member will be required to have one of these manuals which outline the flying rules at AUGC, the stages of progression from ab-initio to cross country ratings, and other information re cross country flying, etc. I expect that the manuals will be available for distribution within 1 month.

AUGC Regatta September 1&2, 1979.

Planning is now under way for our second regatta. Publicity sheets, rules, entry forms, etc. are being run off at the moment, for distribution to other clubs and our own members. The club Arrow will be competing, but the Bocian will still be available for club local flying, (no trailer). We are able to provide aerotow and winch launching so those pilots who want an aerotow (£7) should revalidate their rating.

We can expect about 10 visiting gliders to compete, and so we are going to need the help of a number, if not all, of AUGC members on field that weekend. I have put up a provisional list of nominations for various jobs on the noticeboard in the Sports Assn, and unless you notify me to the contrary, I will expect you to take up that job and start preparing now. Those engaged on met/briefings will need a blackboard and chalk, etc., those employed as ground marshals and start line/finish line crew will need to start getting their equipment ready now. Caterers will need to plan well ahead. Tug crew will need to think about tow ropes, rings, avgas, landing patterns, etc. Scorers will need to have their handicapping system operational, and calculators and scoreboard checked out. Someone will need to look after turn point films and develop negs. The job nominees will need to get moving now and organise themselves. A special meeting is scheduled for Wednesday July 4th at the Sports Assn immediately after the usual club meet.

TK

WHEREAS

THERE ARE OLD PILOTS

AND, OF COURSE

THERE ARE BOLD PILOTS

NONE-THE-LESS, REGRETFULLY

THERE ARE NO PILOTS BOTH OLD AND BOLD.

FLEETINGS CORNER

or HOW TO BE AMONG THE SURVIVORS.

From our Waikerie Correspondent

You will, no doubt, have marvelled at those fellows who are always raving on about doing the checks. Checks for everything, this that and the other, and things that no-one ever thought about before.

How do they ever get that way? And what's it all for anyway. They seem to check it forwards and backwards, and then for good measure, go over it all again in a few minutes.

Clearly, grave insecurity complexes. Not like us, clear eyed, alert, confident, everything under control, fast reflexes, handle anything, I suppose they are more to be pitied than blamed, I've heard some people get like that as they get older.

And they do, the survivors that is, and how did they get that way? They discovered something. One day, IT happened, they got a big surprise.

One fellow may have gone off with air brakes open, another had a close encounter of the worst kind on circuit or in a thermal, another perhaps found his parachute harness was not done up after all.

One Monday February morning, fine day, already 24 degrees, a few cu around at 4,000 base, looks like another 6 hours in the Kestrel, but first I have the job of organising the sailplanes down to the 02-20 pad, and that's a half mile away. Six others to help, all people along for the 5 days mid-week course. All new to the business, so there's a good deal to watch out for. Lots of asides to be tossed around, each one artfully contrived around some pearl of wisdom.

Must be overdoing it, as one fellow is looking a little wooden faced.

Sailplanes now all paired off on the pad, and most of us into the car to drive back to the club house for the odd bits and pieces.

Time now for another nugget, ah yes, always have a good look around before crossing the airfield, you never know who's around. Wooden face looks a little pained at this last sally. Were not all the sailplanes right there on the pad, carefully sited by our very own selves. No one had been anywhere yet. I too am a little weary of the game.

The car is in gear and starting to roll.

And then..... Quelle Horreur... A Sailplane on late final, very soon to touch down where we will shortly be.

Stunned disbelief, quickly masked as experienced insouciance.

It turned out to be someone on an air-tow delivery to the east from Gawler, calling in for a fix and a look around.

I'd sooner be lucky than famous any day.

"...could pose quite a serious survival problem."



TRAVEL TO PLAY

In the planning field, lots of theorising, forecasting & philosophing is done about the way people move around our urban environments. This is usually characterised under the heading of "JOURNEY TO WORK".

Similarly, participation in sport is constrained by what can be called "JOURNEY TO PLAY".

ONE of the most critically affected sports in this way is of course - soaring. Because glider pilots predominantly live in the big urban areas, while their gliding sites are sprinkled out in the rural areas, travelling from home to recreation becomes a major component in the constraints which control whether we take up gliding as a hobby.

In fact, its one of the reasons that soaring isn't a hobby, but rather a commitment sport.

There are few sites which can be reached by an impulsive journey. That is one which takes the uncommitted portion of a day devoted to other things; e.g. visiting friends in the morning & watching the relay on TV in the afternoon.

Even now, the trip has to be premeditated. The family car has to be allocated for the whole day. To make it worthwhile, means getting out of bed early and getting home in the dark.

So right here are many good reasons for the half-hearted glider pilot NOT to go gliding.

However the other big constraint is now becoming - money.

Traditionally we use private transport. The cross country pilot needs his car for retrieves. The rest of us take our cars out of convenience, or habit.

But a day's trip to the gliding field can now cost \$10 or more in petrol. The easy solution is to give up soaring as a past-time. Or to expect gliding sites to form closer to home.

The fallacy of the second train of thought is of course that the cost premium of the closer site's airspace restrictions likely small site size & high land cost would exceed the travel cost to the established site further-out.

On the other extreme, in the distant future we may be catching the bus to the gliding field once a fortnight for several days. By then we'll all be on "flexitime", or the 3 day week any way.

In the mean-time, we are likely to continue to use the private car for transport to & from the gliding field.

How to control the time & cost elements involved in travel to soaring?

The only effect on time is where the constant travel time is offset by spending more time on field. This means travelling to gliding once each 3 weeks for the whole weekend instead of a half day each week or day a fortnight.

If you're a cross country pilot it may mean travelling to the site & living there during the promising weather pattern instead of going home each night.

On the cost side we can do more. At present the \$10 plus running expenses carries one person to & from the field.

The choice of motor vehicle/motor bike on cost grounds & other factors remains a personal decision.

Instead, how many of us really need OUR cars on the airfield. Very few.

1 There's the people who live furthest from the field & need the transport; as a public transport operates at the urban fringe at the late time of night when glider pilots sometimes get back to town.

2 There's the air stay of the club who's car has the tools, spare parts, etc that are used around the club.

3 There's the intending cross country pilot who wants to have the retrieve vehicle on-hand.

We all know the fellow club members who live in our area, or come through our area on the way to the field.

We know who of these fall into the 3 categories above.

A phone call or conversation at the previous mutual attendance on field can arrange a lift with the most needed car in each group of members in the various parts of the city.

The same cost of travel can then be shared between several pilots.

The generic term for this form of travel is "car-pooling".

Normally, it works in a "journey to work" situation with limited success. In a specific trip like travel to play at wide intervals (once in 7 or 14 days) it can work well. The travel to a common destination from a part of the residential urban generator reduces the number of variations possible which limits car-pooling within the city.

Perhaps the club can assist by defining the most needed car in each part of the city; linked to the roster of instructors, winch driving roster or past record of reliable attendance on-field.

EMILIS.

Profile as requested.

Emilis Prelausas

Sailplane pilot for 11 years, Emilis is 29 years old, and has 1000 hours & 3500 flights experience in over 20 types of sailplanes.

Co-founder of the club in 1975, he is a qualified instructor & ground engineer. Through involvement in the club's operations before it had any equipment of its own, Emilis has built up his own resources which include a shed, glider trailers, a winch, and one each "Kookaburra" trainer and "Booarang" racing sail planes.

Emilis has flown competitively since 1973, mainly in the medium performance "Sports" class, and in the last 3 years has placed 3rd at state level.

With this background, he has a strong conviction that the sport is -

First a team sport, where each and every member participates for mutual benefit rather than motives of personal selfishness.

Second, composed of a continuous string of challenges, with the result that no member ever achieves all facets of the sport.

Consequently, everything the individual member achieves is dependant on the help of the team; and going solo, flying single seaters, cross country, proficiency flights or competitively are each only part of the satisfaction the sport has to offer.

EMILIS

DEADLINES

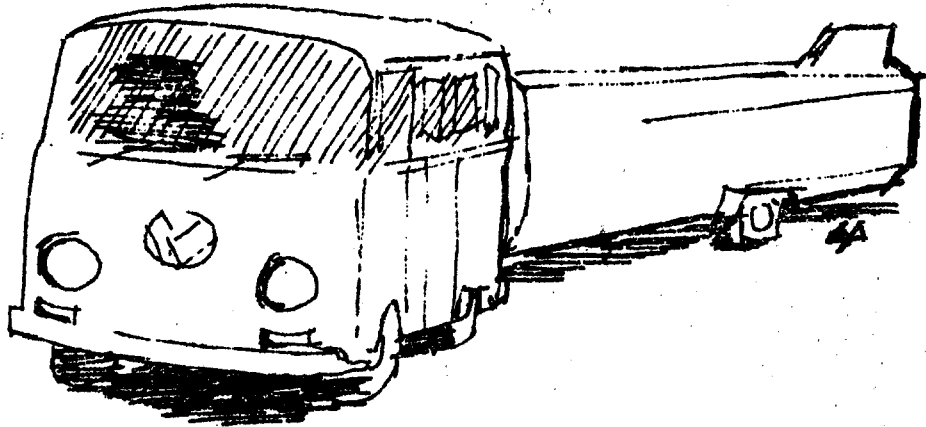
THE Newsletter is printed and put together the Thursday before each general meeting (general meetings are on the first Wednesdays of each month) - so I would appreciate untyped articles at least two (2) days prior to printing (longer if it's a big article). Typed articles can be handed in on the Thursday if they are put in the pigeon hole before 5 to 9 AM. A complete page is encouraged as I may have trouble turning it into a complete page to put in. Typed articles are best done on wax stencils within the A4 boundaries and with 2cm margins both sides.

As I am always short of material to include in the newsletter all articles are appreciated.

Also many thanks to all those people who have handed up articles typed especially Dene who hands up all his articles typed. Also to Emilis who hands up by far the greatest number of articles.

Members

Included is an up to date list of active members as I can find. From it you will be able to figure out who lives close to you to arrange lifts etc. If any addresses etc are inaccurate please leave me a note in the pigeon hole and I will print an amendment in the next edition.



.....and now Cross-Country

The day is hot in this shadeless spot
Where the sun beats down on me.
The grass is dry under the clear blue sky
You know where this must be....
The gliding field, my fate is sealed
I'm doing my first cross-country.

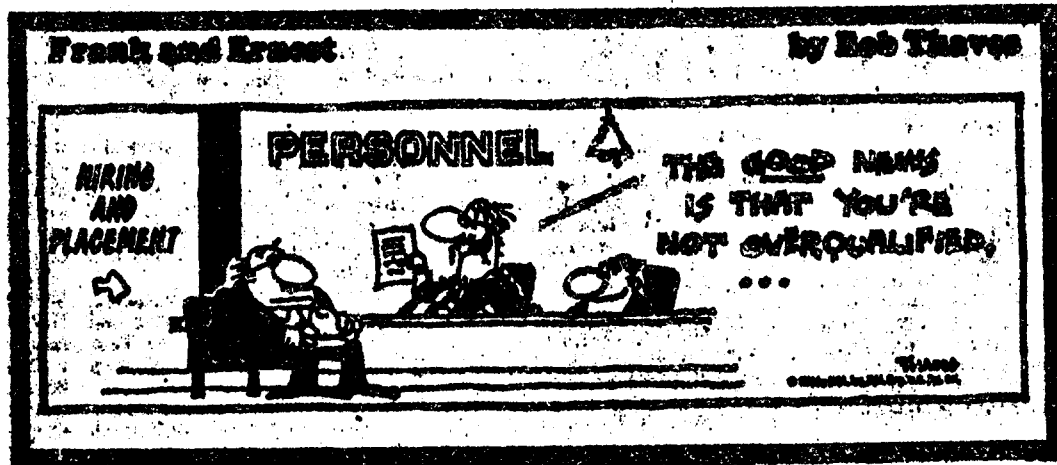
I've got my car, I've got the trailer
I've got my glider and crew.
I've got my maps and floppy hat
And plenty of water too.
I've got my glasses and my "Ultra-V"
And also my Aerogard.
(My bucket and chamois and Mr Sheen
To rub and wipe so hard.)
Torch and matches, dope and patches
Do I need much more?
Some sticky tape and of course a case
Are what I need for sure.
Survival gear I pack in fear
Of ever wanting it.
And one would hope that I've got the rope
Which goes in the tie down kit.

Now, on my list, I think I've missed
Neither one thing or another.
But wouldn't you know, I just can't go
Because of the lousy weather.

D.E.

membership

(active members)



INSTRUCTORS

Tony Kiek
11 Coolibah Ave
Kensington Gdns
5068

Guy Harley
42 Northumberland St
Tusmore
5065

Neil Manchtelaw
40 Mitchell Ave
Highbury
5089

Camp Centre
31 3999

Not at Uni
31 3788

SG
???

Tom Nemeth
11 Terrigal Rd
Redwood Pk
5097

Graham Parker
15 Winton St
Broadview
5083

Emilis Prelgauskas
13 Onkaparinga Rd
Bridgewater
5155

Camp Centre
Wk 223 4333 ext2717

MM
261 5968

???
339 2381

Dave Biggs
107 MacKinnon Pde
Nth Adelaide
5006

Not at Uni
???

Others on the Executive

Dene Larwood
58 Harris Rd
Klemzig
5087

Graeme Newcombe
233 Military Rd
Henley Beach
5022

Michael Docherty
39 Margaret St
Walkerville
5081

MD
2615732

MM
356 7868

(Moving Soon)
RA
269 2023

Dave Ellis
8 Tania St
Salisbury Nth
5108
Not at Uni

General Members

Anthony Allen
5 Larupa Dve
Ylenelg Nth
5045

???

David Blackburn
110 Rose Tce
Layville
5034

SL
Uni ext 2281

Shirley Sorokin
F2/2 Cassie St
Collinswood
5081

Flinders Uni
269 4069

T & J Dodd
3 Woorra Pl
Semaphore Pk
5019

SP
495870

Roman Groblicki
4 Soutchak St
Fairview Pk

???

Vesna Jadresk
10 Shandon Ave
Seaton
5023

AY
356 7141

Chris Markovitch
22 Linston Ct
Ylengownie
5044

GN
???

Pat Muncey
39 Oxford St
Millcrest
5086

LL
261 1002

Peter Ashenden
45 Elmo Ave
Westbourne Pk
5041

GN
272 3929

Anthony Beveridge
39 Margaret St
Lakerville
5081

???

John Canny
53 White St
Somerton Pk
5044

GA
2941873

Mark Forster
37 Cronulla Dve
Redwood Pk
5097

MG
2512820

Chris Hicks
9 Baby Crescent
West Lakes Shore
5020

SP
49 7505

Adam Kirkland
35 Coorara Ave
Payneham Sth
5070

SZ
352 7657

Phillippe Montier
66 Clifford St
Torrens ville
5031

PA
352 6126

Judy Roberts
35 Coorara Ave
Payneham Sth
5070

???

Kym Bennet
F5/1 Garfield Ave
Kurralta Pk
5037

AD
297 2375

Brian Hensch
61 Reid Ave
Hectorville
5073

GN
337 1523

Andrew Clermont
25 Frontenac Ave
Panorama
5041

NM
276 5701

Gordon
73 North Tce
Hackney
5069

EC
42 4929

Don Hein
1 Yandra St
Vale Pk
5081

MD
261 4245

Des Maslen
17 Lirkdale Dve
West Lakes
5021

???

Brenton Minck
20 Wootter St
Greenacres
5086

AY
261 4040

Linda Smith
8 Melanto Ave
Camden Pk
5038

AY
???

Kate Swanson
79 Galway Ave
Roadview
5083

Dave Stobie
197 Childers St
Mt Adelaide
5006

Keith Van Der Pennen
59 Walkerville Tce
Gilberton
5081

Hartley College
44 74th

???
267 2118

DD
269 2191

Antony Veale
9 Hallett Rd
Grindale
5066

Thin Leong
9 Aldridge Crs
Orange
5022

Andrew Sawyer
19 Salerno Ct
Elizabeth Pk
5113

MM
332 4946

MM
356 1100

Not Mt Uni
???

Robert Duckmanton
5 John St
Eastwood
5063

Jamie Thompson
36 Golf Links Rd
Stirling
5152

Anthony Berglas
2 Pains Rd
Mahndora
???

???
???

Flinders Uni
359 2392

GN
388 7387

If you are not on this list of ACTIVE members but think you should be please leave a note in the club pigeon hole. An amendments list will be printed in the next newsletter if needed. ??? indicates the information we don't know but would like, once again please leave a note in the pigeon hole

NOTE NEXT GENERAL MEETING WEDNESDAY 4th JULY. THIS MONTHS LECTURE
METEOROLOGY

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NOTE NEXT GENERAL MEETING WEDNESDAY 4th JULY. THIS MONTHS LECTURE
METEOROLOGY

PLEASE ATTEND, THE MORE THAT COME THE BETTER.....

Club Secretaries,
Member Clubs,
SAGA.

Dear Sir,

COMPETITIONS: Background to proposals submitted
to the SAGA by the South Aust. Competitions
Advisory Committee (SACAC)

At the last meeting of the SAGA it was decided that a letter should be written to clubs in the Association setting out details of proposals recommended to the SAGA by the South Aust. Competitions Advisory Committee (SACAC) and to include information about the problems associated with the Regional Championship (RC). It was suggested that the note contain enough information to allow a vote on proposals to be taken at the SAGA meeting on 26th May, 1979.

It seems best to start with the problems associated with the Regional Championships. When the SAGA first moved to establish the RC there was a belief that the regatta system could be adapted to link decentralised events run to a standard set of rules with the primary aim of expanding the opportunity of pilots to compete and thus to improve their skills. The success of the move is now well established with the standard of flying improved and with the bonds between the members, clubs and Assoc. being drawn tighter. But with the many benefits, problems have accrued to the point where there is a balance in favour of changing the system.

There was an understanding from the beginning that the RC were likely to be an interim measure and that evolutionary pressures would eventually force a change.

In this note it is necessary to limit discussion to the major problems but it should be understood that the cumulative effect of the minor problems is significant. There is a major problem with the increasing number of entries at some events, and club officials have attempted to limit the number of competitors but without success and their restrictions have produced tensions between clubs and members. Within the framework of the rules there is no solution to this problem.

There is another important factor that bears heavily on the problem. It would be possible to have club CFI's apply a yardstick to reduce numbers attending events and if the test were based on ability to fly, then the low experience pilots would not be permitted to compete. Couple this with the fact that the experienced pilots are voicing their concern about having to accept the dangers of competing with low experience pilots and it can be seen that a very complex problem has developed.

A second problem is that of stewardship. Some clubs have done the job well while others have adopted a less than acceptable role as organisers with inadequate control of some aspects of their event.

A much deeper problem is the restriction that the rules place on clubs in the choice of the style of event they would prefer to have. Some club officials have said that they would prefer to change the type of contest at their regatta and would be happy to see an end to the RC if they could be assured that pilots would continue to support them.

It has been the practice of some clubs to run two events concurrently, one having a style chosen by the club and superimposed on that, the Regional Championship event. This has provided a few problems for those administering the event.

Summing up, we are pressed on one side to raise the entry standard to satisfy the quite reasonable requests of the expert pilots and on the other side, club committees are becoming more vocal in their demands for a competition where their junior pilots may compete. Clubs want to be hosts at regattas having styles of their choosing. Events are often run with a lack of stewardship.

The SACAC has examined alternative arrangements but they all have major flaws. For example, competitions could be held at two sites over the same period with two classes flying at each site. This solution has major defects, one of which is the lack of tugs to service the two sites. Another way is to cut out one or two classes, say eliminate Sports and Open Class but this is not a reasonable solution. It has also been suggested that events should be limited to selected classes on a rotating basis but this has as many defects as the split site proposition.

As the discussions progressed it became obvious to the SACAC that solutions for the growing number of problems associated with the RC were not available and that a system change was necessary. The evolutionary pressures predicted at the outset were beginning to dominate.

So to provide a properly regulated competition, likely to have the greatest benefit to the association, clubs and their members, the SACAC has made a strong recommendation to the SAGA to reintroduce a centralised state championship to take the place of the existing Regional Championship. During informal talks, some club officers have indicated their willingness to host a centralised event.

There has been discussion of the proposals by concerned pilots and there is a general acceptance that it is time to change to a centralised state competition.

Many of the pilots canvassed, expressed concern about the cost of attending the National Championship each year and suggest that the burden is no longer acceptable except for those who are wealthy or those who receive adequate sponsorship. From discussions, there has emerged a feeling that National Championships should be held bi-annually and that State Championships should be held in between.

An examination of this suggestion shows that it has many benefits and not too many defects. State Championships are likely to be well attended in each State and the cost to competitors could be kept within reasonable limits. A direct spin off from such a system would be that seeding would be automatic, being based on placings in the State Championships. State seedings would be used to build up a Nationals seeding list. The suggestion grows in attraction as one considers the growing cost of motor vehicle transport.

If the proposal to return to a centralised event is adopted, clubs would return to an individual regatta system where the style would be chosen by the club and with the RTO/A clubs would be responsible for control of operations. It would also open up the options of clubs to limit entry. Most importantly, the pressure to compete would be reduced and there would be more opportunity for tyros to gain experience in far less competitive circumstances, where help could be given by the experienced pilots in a relaxed and informal atmosphere.

The SACAC believes that the inertia gained in the past five years in South Australia will continue if the proposal is adopted.

The SACAC suggests that at this stage the concept of a bi-annual National Championship and State Championship should be examined with the view to submitting a motion to the GFA AGM this year. As mentioned it is anticipated that the move would reduce the cost to the regular competition. Second the system has the potential to introduce a more ordered system for entry to competition. At regatta level, entry would be restricted by clubs through their CFI's. This is a restriction that must apply under any circumstance as was highlighted by the investigations following the fatal collision in January this year.

Entry to the State Competitions would be open to all pilots who met a standard that would sieve out those who were inexperienced or not competent. Also seeding at State level would become a formality as lists could be promulgated according to the placings in the State Championships. The lists would be used for entry to the Nationals and the states would not have to develop arbitrary systems for seeding, systems that might have some unsatisfactory aspects.

There has been acceptance of and support for the bi-annual Nationals and State Championships by competition pilots and this has given the SACAC confidence in recommending the proposal to the SAGA.

To date there seems to be only two disadvantages that can be visualised if the proposal is adopted. The first relates to the lack of a State Championship in the year of the Nationals. Those not gaining access to the Nationals would have to attend regattas and other events to satisfy their demands. This is not seen as a major defect.

The second criticism is that a bi-annual Nationals could trouble selectors for the World Championship. Strangely, there are good arguments to show that the opposite is the case for both selectors and the team organisers.

In this note it is impossible to comment on all the issues that bear on the subject, but the most important ones have been outlined and it is fair

To add that at the meeting of the SACAC, where the proposals were finalised, there was a unanimous vote recommending them to the SAGA.

In short the proposals are that:

- (i) the S.A.G.A. no longer organises a State Championship based on Club Regattas in the S.A. Region;
- (ii) the S.A.G.A. reintroduce a centralised one pilot per aircraft State Championship based on a period not less than seven days;
- (iii) the S.A.G.A. moves to influence the other Member Regions of the G.F.A. to accept a bi-annual National Championship with the proviso that if adopted by G.F.A., that South Australia moves to a bi-annual Centralised State Championship.

These are independent proposals and each ought to be considered on its merit though it can be seen that adoption of proposal (ii) makes sense only if (i) is adopted.

Prepared by Ted Pascoe and Geoff Cleland
at the request of the S.A.G.A.

May 1979

What the hell am I doing here ?
(or "what to do with a southerly!")

The day started off just as any other autumn gliding day, with lots of work to be done around the hangar and a stiff, cold, southerly blowing. (I know I should have stayed in bed.)

The Bocian had already done a few launches by the time we finally got the Arrow to the northern end of the cross-strip. There doesn't seem much chance of staying up today, but you never know your luck. So I take a launch and promptly land again. Oh well, there's my flying for the day, I might as well give the Arrow to Tim and suffer my turn on the winch. But Tony seems to think that I want to go again, and I'm easily convinced.

While I'm strapping myself in, Tony suggests that I try the other side of the ridge. Well, I'm not Dave Biggs!....But, I'm mad enough anyway. I get 1700 ft from the launch and push straight on towards the ridge. There is a fairly strong head wind and I don't know whether I will make it. Still, I push the speed up a bit and press on. The two knots sink quickly changes to four and as I approach the ridge it passes six. The ridge is creeping up the canopy and I'm getting cold feet.

"Don't worry about the sink", he said "just keep on going. Enjoy yourself" Enjoy myself!? I've already lost eight hundred feet, the top of the ridge is looming up, the adrenalin is pumping (how melodramatic) and I'll never make it back to the field. As I fly over the ridge I crotch the sheep with one wing tip, whilst dodging trees with the other. "There's no turning back now."

I'm almost over and still no sign of lift, I hope there's a good field to land in. (Instructors : please take note) I'm well over now, and if this gully doesn't work nothing will. Hello, what's this?, the vario wasn't stuck on the stop, it's starting to rise (I'm saved). The glider is rising (and me too). I gain a couple of hundred feet by turning in the gully, which brings me back above ridge top height, and have a look round.

I soon regain my composure (yes, even the president gets ruffled occasionally) Shortly, I am joined by the Bocian (on a training flight !) with Don and Tony inside. It's just like soaring the other side of the ridge, with the same old traffic to compete with.

The rest is even more boring than that which I've written so far. I gain some more height and manage to maintain thirteen hundred feet easily, and then for a while even seventeen hundred.

After about an hour it's time to go back to the field. I turn the glider towards the setting sun and head off back to the field. Another day over, another mission completed, the triumphant airman returns. Sorry, I got carried away! anyhow, I get back to the field and hangar-fly the Arrow. Emilis who has been working vigorously all day, as usual, looks up at me as I walk into the hangar and says "Did you enjoy your circuits?"

Flying the Space Shuttle



The Space Shuttle will be the first spacecraft to actually fly on re-entry to Earth's atmosphere.

THE WORLD'S FASTEST glider, which was built by the combined efforts of 60,000 people in 47 States in the US, has now flown five times. On 12th August last year, the Space Shuttle 'Enterprise' was carried, piggyback style, on a specially modified 747, to a height of 8,540 m where the two craft started a descent to 7,350 m, at which point they separated, and Enterprise flew for the first time.

The first free-flight test of the Space Shuttle, watched by 60,000 people marked the commencement of the final phase of months of testing at Edwards Air Force Base in the Mojave Desert of Southern California. At the end of January 1977 the Shuttle was moved from its assembly facility at Palmdale, along 58 km of specially widened roads to Edwards AFB, for the first Approach and Landing Test (ALT).

The Space Shuttle is the first of a new breed of spacecraft which is designed to be reused. Previously, the technology available meant that each spacecraft could be used only once, but for any long-term program of space research this is extremely wasteful. Everything was built to the highest standards and then used only once. The Space Shuttle changes this. The Space Shuttle Orbiter vehicle is designed to land intact in the same manner as an aircraft, and the solid rocket boosters used to provide the enormous thrust at takeoff are also reusable. In fact, a Space Shuttle can be launched as quickly as 180 hours after landing from the previous mission, although a two-week ground turnaround is the goal in actual use.

The Shuttle is launched vertically, attached to an external tank which contains the ascent fuel burnt by the Orbiter's main engines, and two solid rocket boosters. At lift-off all the engines fire in parallel, the SRB's each generating 11,800,000 Newtons of thrust and the three Orbiter engines each generating 2,100,000 N. The two SRB's are jettisoned once they burn out and are recovered after a parachute descent. The external tank is jettisoned before the Orbiter attains orbit.

The orbital maneuvering system is used to make any adjustments to the orbit or any maneuvers that may be required during the mission. The jets for this system are mounted near the nose and in pods on the upper rear of the fuselage. These jets can pitch, roll or yaw the Orbiter.

The Orbiter is designed to carry a crew of seven (early missions call for four), including scientific and technical personnel and a payload up to 18m long

1.5g on re-entry, space flight is no longer limited to intensively physically trained astronauts - now experienced scientists and technicians can have access to zero g, vacuum conditions.

Payloads up to 29,500 kg can be placed into orbit by the space shuttle. These can range from small satellites to fully equipped scientific laboratories, and not only can the Space Shuttle launch payloads into orbit, it can also retrieve them and return them to earth and service or refurbish satellites in space. The versatility of the Shuttle's cargo bay opens up whole new areas, such as space manufacturing.

Upon completion of the various mission duties, the crew will prepare the Orbiter for re-entry - this is when the Space Shuttle really flies. The Orbiter, since it moves in the two media of air and vacuum, has two separate maneuvering systems. One is the orbital maneuvering system referred to above, and the other is a set of aerodynamic control surfaces that act in much the same way as conventional aircraft.

There are seven aerodynamic control surfaces on the Orbiter. Four of these are on the rear of the wings and are called 'elevons' - they combine the effects of elevators and ailerons. The fifth surface is at the bottom rear of the fuselage between the wings, and assists the elevons in controlling the pitch of the craft. It also protects the rocket engine nozzles from buffeting in the airstream during re-entry. The two remaining panels are on the rear of the vertical tail and can be used as a rudder or spread apart to form a 'speedbrake' by increasing the drag. This is used to limit the airspeed during landing.

At low speeds these surfaces act in a conventional manner. However, at supersonic speeds above Mach 1.5, the effect of some of the control surfaces is reversed, or not the expected one, which makes flying in a conventional manner impossible! To get round this problem, the Space Shuttle, unlike most aircraft, which use mechanical or hydraulic links between pilot and controls, uses a digital 'fly-by-wire' Flight Control System. This is based on three on-board IBM System/4 Pi AP-101 computers which monitor their own operation to provide a measure of fail-safe redundancy.

The Flight Control System (FCS) can be operated in three modes: Direct (DIR), Control Stick Steering (CSS) and AUTO. The mode can be selected separately for pitch, roll/yaw, speedbrake and body flap controls.

trotter and ordinary pedals. Movements of these inputs to the FCS produce movements of the control surfaces in the same way as a conventional aircraft would respond - at subsonic speeds, at least. Above Mach 1.5 things go haywire - the result is like trying to ride a bicycle with your hands crossed, and only with considerable training can the pilot avoid making involuntary, incorrect movements of the RHC stick.

In the AUTO mode, the FCS takes inputs from star sensors, inertial measurements units, rate gyros, accelerometers, and air data sensors, and compares this with the desired trajectory, automatically making corrections to keep on the path. In fact, the Orbiter can land itself from orbit completely automatically, with the only pilot intervention required being landing gear extension and operating the brakes on the runway!

In the CSS mode, the Flight Control System interprets between the pilot and the control surfaces. The pilot uses the Rotational Hand Controller and pedals, but the FCS accepts these inputs as rate commands in pitch, roll or yaw - in other words, the way the pilot wants the Orbiter to move. These commands are compared with inputs from the rate gyros and accelerometers, and generates control signals to implement the pilot's commands. In this mode the FCS automatically takes account of the reverse effects produced by the aerodynamic surfaces at high airspeeds.

Re-entry

The Orbiter starts re-entry at a high angle of attack, around 30 to 40 degrees, so that the bottom of the wing and fuselage are exposed to the airstream. The under surface is covered with a high-temperature structure of reinforced carbon-carbon on the leading edges and special silica tiles over most of the other surfaces to maintain the airframe within acceptable temperature limits.

Unfortunately, because of the high angle of attack, moving the RHC to the left in the DIR mode causes the Orbiter to roll to the right. This is because the right elevon is deflected downward, but this causes drag, and turns the vehicle to the right. This increases the lift on the left wing, so it lifts, causing the right roll. In the Control Stick Steering mode, though, this problem is taken care of by the Flight Control System, and the pilot simply moves the stick the way he wants the vehicle to go and it responds in the correct way.

The angle of attack must be carefully

during the descent. To accomplish this, the Shuttle banks at up to 80 degrees, and so flies on a curved path. This would take the Shuttle away from its target and so, several times during the re-entry, the bank angle is reversed, and the vehicle starts turning back towards its target. This maneuver is complicated by the fact that, because of the high angle of attack, the rudder is virtually in a vacuum, and so these turns are executed by rolling the Shuttle.

Approach

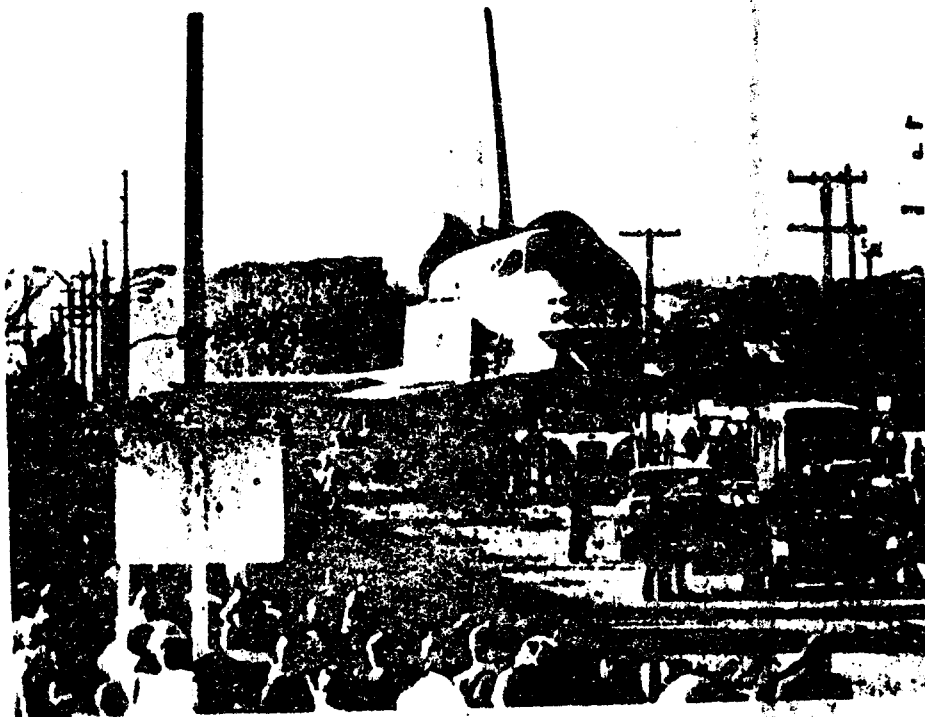
Finally, the Orbiter is down to a speed of Mach 1.5, and begins to fly like a conventional aircraft. It is now at a height of 21,000m and about 50km from its landing field. From now on, things are straightforward as the pilot closes in using conventional electronic navigation equipment like TACAN and Microwave Scanning Beam Landing System. As he turns to the final glide-path, the pilot will use the speedbrake on the tail to lose both speed and height. During this phase of the landing, the speedbrake is normally open at 45°. If the Orbiter is high, the pilot will open the speedbrake and steepen his descent; if low, he will close it and fly a shallower glidepath.

The Orbiter makes final approach at 540km/hr and at an angle as steep as 24°. At 600m, the pilot starts to pull up, or 'flare', and at 300m, the landing gear is dropped. The vehicle touches down at 350km/hour; at this point it is losing 9km/hr of speed every second and stalls at 280km/hr, which is why the land is at such high speed.

The Approach and Landing Test were designed to check out the performance of the Shuttle during this phase of the mission. They were also designed to check the performance of that now-famous 747/Space Shuttle combination which will continue to fly, delivering Orbiters to the launch site from the production line and landing sites.

First Flight

The first flight of the Space Shuttle took place on 12th August last year. At 8 AM, the 747 Shuttle Carrier Aircraft with its piggyback Orbiter took off on



58 km of road was specially widened to move the Space Shuttle.

time - the only problem had been a fault in one of the AP101 computers, but that unit was quickly replaced.

At 8.47 the pair were at 8,539m, and the Boeing started a 7° dive. At a speed of 280kts, and a height of 7,346m, the Boeing pilot informed the Shuttle crew that they were ready for separation. The crew, Haise and Fullerton, fired the separation bolts and lifted away, rolling to the left while the 747 dropped to the right. Following a pair of right and left rolls to put some distance between the two craft, Haise tried a practice flare and some banking maneuvers. This gave the computers at Johnson Space Centre the opportunity to calculate any deviation from the predicted lift/drag ratios, information which would allow a more accurate landing. In fact, the JSC ground controllers muffed it by assuming that the Orbiter was in level flight, whereas it was actually climbing, so they concluded that the lift/drag ratio was lower than predicted.

Fullerton then took the Orbiter into a 90° right turn, with the vehicle responding well, and about 20 seconds later Haise performed the second 90° turn. At this point Haise could see the runway, and noticed that the Orbiter was too high, with excess speed. Opening the speedbrake to 35°, the Shuttle was still accelerating, so Haise opened the speedbrake to 45° and decided to overshoot the original landing point by

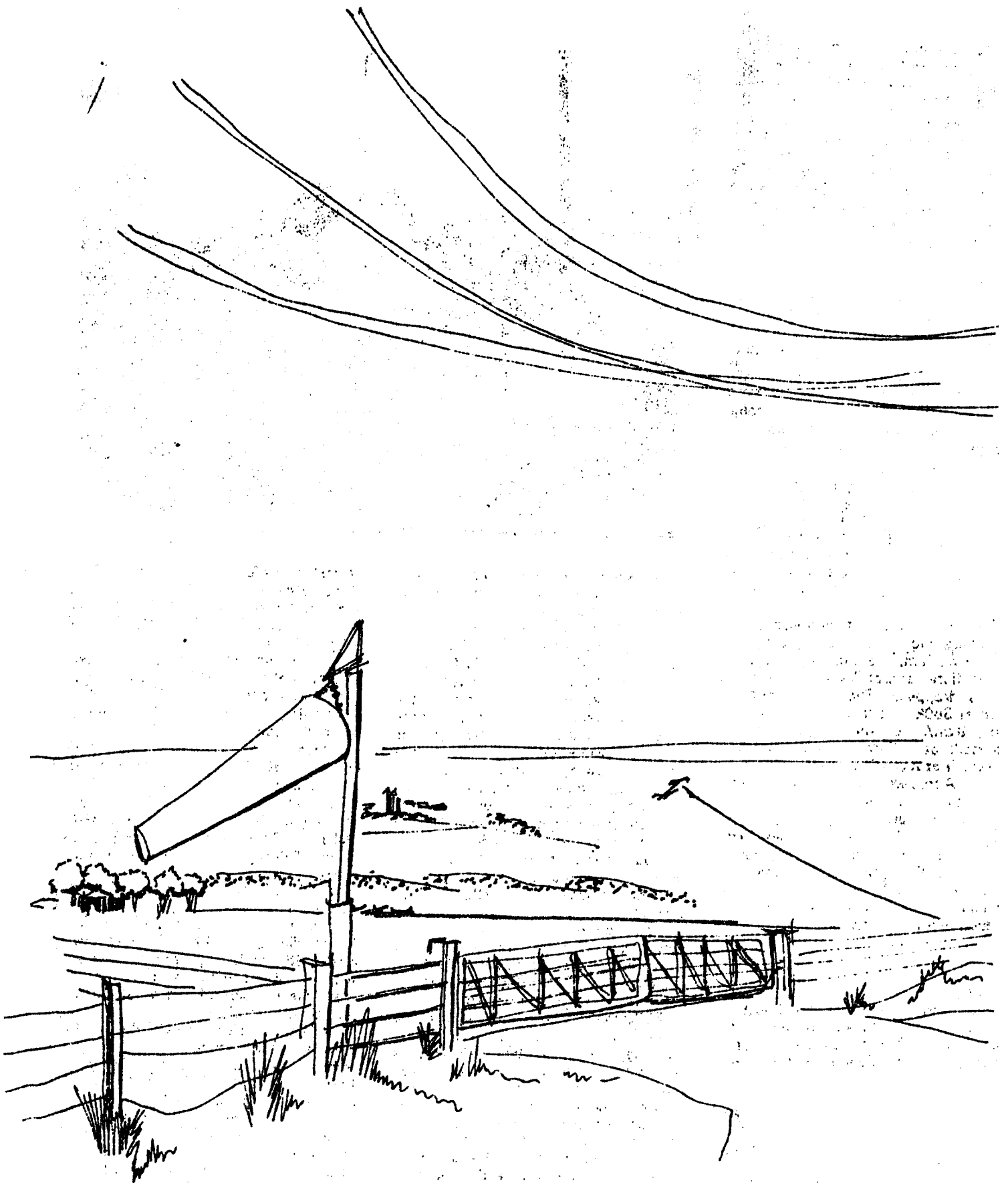
several hundred metres. By this point it was becoming painfully apparent that the Shuttle was behaving as original predicted, and that the calculated excess drag was an error.

Haise could not open the speedbrake beyond 45°; this was a mission constraint to avoid steep glideslope angle. Performing a flare at 270m, Haise touched down 600m beyond the expected touch down point at a speed just over 360km/hr. The overshoot was no problem, as runway 17 at Edwards AFB is 11km long, but, with the wheel on the ground, Haise opened the speedbrake to 90° and the nose wheel came down. The flight had lasted just 5 m 23 sec.

The first three flights were made with a streamlined tail fairing covering 1 dummy rocket engines at the tail. The fourth flight, on 12th October, was made with the fairing removed, giving slightly reduced lift/drag ratio. Otherwise, the vehicle did not behave significantly differently.

A final flight on 26th October ended with a clumsy landing, but in every respect the tests were successful. Frankly, the fact that a craft as large and as complex as the Space Shuttle Orbiter can fly at all is a tribute to advances that have been made since Orville brothers flew on 17th December 1903, and the men who made those advances.





On June 2nd & 3rd the University Airfield was invaded by Cesco's Commandos, alias the boys from ASC. Approximately 16 people showed up from ASC with 12 flying on any one day. This led to a record 35 people being on field.

Regretably the weather wasn't the best. Although blue skies and fine weather was the order for the weekend, there was never any lift to be seen. However, this didn't upset ASC who only wanted to do circuits for winch conversions.

This led to an all out effort to see how many launches we could do in one day. Despite being hampered by a club winch whose spreaders were falling apart the operations ran smoothly with the help of Emilis' winch. On the Sunday afternoon Kym Bennett welded in new spreaders on the right hand side of the club winch which replaced the special case hardened rollers that had only lasted a couple of days. However, when the club winch was put back into operation, it suffered from fuel starvation problems and this caused lengthy delays as it stalled half way up the runway.

In the end, 54 launches were done on Saturday and 68 on Sunday. This, however, is more of a tribute to Emilis and his winch than the club. It became quite obvious that the U.S. winch is not operating efficiently and consideration should be given to taking it out of service for a while in order to completely rebuild certain parts and overhaul the rest.

Nevertheless, ASC was impressed with the operations. All appear to enjoy their first experience with winch launching and a number went solo. There seems to be no doubt that they will be back again sometime this year to finish off their conversions and the ASC visit may well become a regular feature of life at the University Airfield.

Guy.

Please refer to "Lochiel" as "the University Airfield" since it is a University Sporting Ground and we would like to remind the University that it is.

Some odds and ends from January 1979 "Soaring" Journal of the Soaring Society, America -

1. Art Anderson and Pem Drinker of Massachusetts have had some success in a test of a "project to build panels designed to create thermals near the release of a winch tow and thus reduce the cost of launching sailplanes". Using a light, wooden frame, plywood gussets and black PE cloth (like garbage bags) they observed increased lift in model sailplanes over the field concerned.
2. George Moffat, no slouch himself describes Helmut Reichmann's cross-country soaring (Stretonsegelflug) as "the best and most comprehensive work yet published on competitive and cross-country soaring". He says pilots with a couple of world championships to their credit will find plenty to learn. So there is obviously something in this book for all of us except Mr. Harley.
3. "The Federal Register" for Nov. 16, 1978 says that there have been reports of cracks in the bulkhead where the tow release system countershaft attaches on certain Blaniks. These cracks could result in failure of the tow release function". Oh for a Blanik!
4. There is a story about a "gray-haired retiree going on 63 with a very bad back who can rig, derig and trailer his ASW17 by himself. So there's still room for improvement Emilis.
5. Here is a quote from the "Accent on Clubs" page "THE \$1 TOW". Sounds like something out of the distant past you say? It's actually happening here and now in a club formed 5 years ago called Long Beach Soaring Inc. Launches are from a double drum winch at \$1 a piece (every few months, the students journey to another glider-port and practice airtows to higher altitudes). HOW PRIMITIVE!
6. George Moffat laments the increased cost of the National (U.S.A.) giving an example of a pilot whose flying cost him \$168 per hour. Entrance fees etc. taken into account. It appears that gliding is expensive in places other than Australia.

7. With a few alterations this advert appeared -

"Ya say yer getting

ulcers Bruce.

Ya say that on

Monday the winch

was blown up.

Tuesday the winch driver ran off

with the farmers daughter.

Wednesday the Bocian was getting a

new axle and the Arrow had

a dinged wing.

Thursday, cloud base was 12.5

but there were 22 cable breaks

and you didn't get to start until

6 p.m.

Friday your tutor told you that

if you spent one more day away

you better start getting ready to

fail.

And it rained all day Saturday

and Sunday.

"Well take a walk in the sun and cast your eye on the American
Eablet Self-launching sailplane". There were 2 articles in the
latest A.G. hailing self launchers as the future of soaring. Is
this where we're heading?

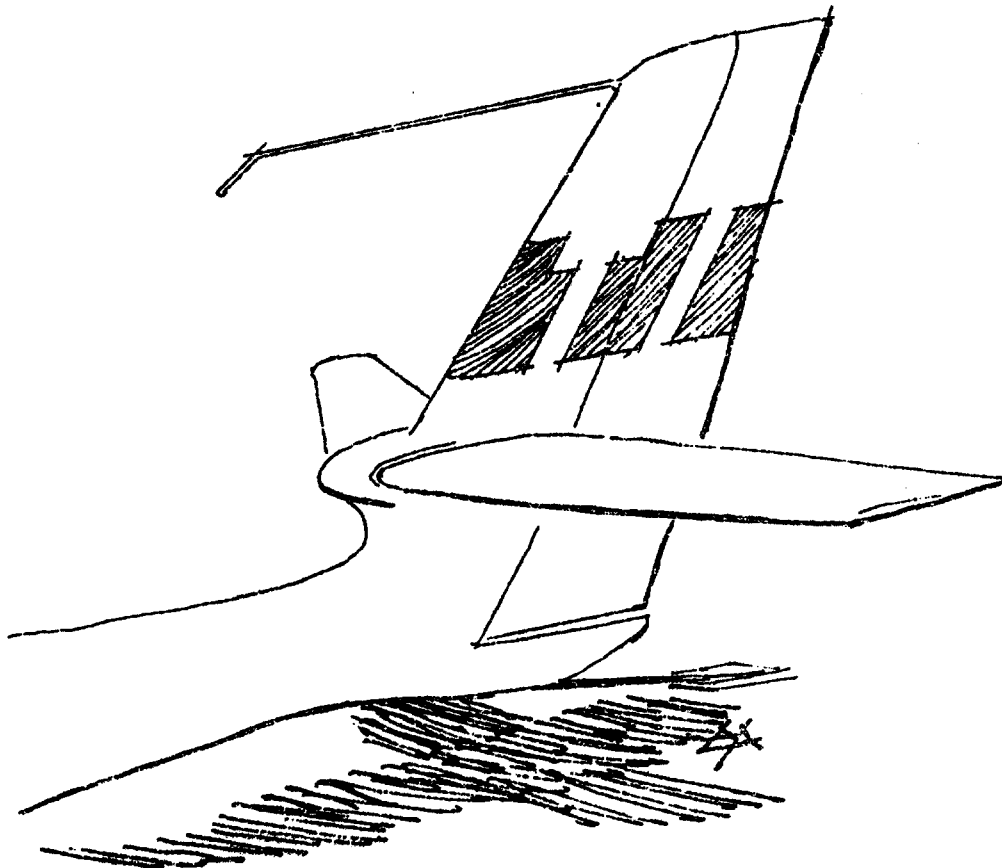
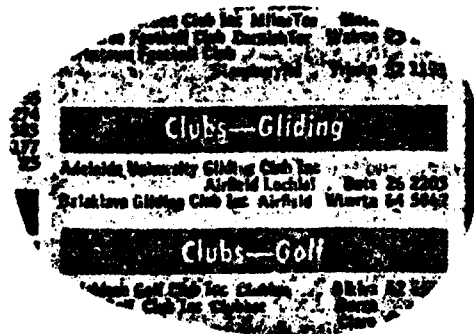
GLIDING FIELD

- IS LISTED IN THE LATEST TELEPHONE DIRECTORY UNDER :

ADELAIDE UNIVERSITY GLIDING CLUB INC
EDUCATIONAL INSTITUTION LOCHIEL

- ALPHABETICALLY IT FALLS BETWEEN THE 'ADELAIDE CEMENT CO' ON ONE HAND, AND 'ADELAIDE & WALLAROO FERTILIZERS' ON THE OTHER.

- THE YELLOW PAGES LISTING IS —



A Letter To The Club via Tony K
From Andrew Hinton

I seem to remember saying to you just before I left to join the Navy that I would be at HMAS (Creswell (near the RAN gliding club) for about 3 months. In fact it was $3\frac{1}{2}$ weeks, so I didn't get as much time gliding as I would have liked.

First, a bit about life in the RAN. Its quite enjoyable, once one makes allowances for such things as discipline. The working day runs from 8a.m to 4p.m and, as officers, we are woken up by stewards who hand us a glass of orange juice at 6.30 a.m. This tends to make us want to go to sleep during lectures in the afternoons, but there it is, it's something we have to put up with. The $3\frac{1}{2}$ weeks at HMAS (Creswell) was basic officer training which all 30 of us underwent, irrespective of profession (doctors, dentists, electrical engineers, aero engineers, teachers) This included such things as discipline and naval law, leadership and squad drill (marching and everything associated therewith). The next $1\frac{1}{2}$ weeks was at HMAS Penguin in Sydney. The Course there was rather specialised; it taught us how to deal with ships that have holes blown in their sides; how to deal with out-of-control oil fires on ships; what to do if someone drops some noxious gas over you. This is accompanied by practicals so you get soaked, bombed, burnt, gassed out and covered with fire-fighting foam. Frosh day at Uni is nothing compared to this!

Some of the 30 who started, moved away to other establishments for other courses; I was one of them and I've just completed a 4 week course here at HMAS (Cerberus, it was really an extension of the course at Creswell without the squad drill. It taught us what problems we would encounter as officers controlling a whole batch of sailors. Its interesting to note that our professional qualifications are used not as much as one might think they would be, our main job is as divisional officers (a "division" is a particular department on a ship, e.g. the weapons and electrical division) and thus acting as a sort of "father" to all the sailors in our particular divisions below us; some of those sailors can get into all sorts of marital and financial problems and it is our duty to help them get out of them.

I, with 6 others, will now be undergoing a 4 week course called a weapons electrical engineering officer acquaintant course. The first week of this at (Cerberus, here, and the other 3 are spent touring around all the shore establishments and one or two ships in Sydney, looking at all their electrical and weapons facilities.

Now the report on the RAN gliding Association. It seems to have about 40-50 members who are all associated with the RAN. It is almost exclusively a training club; it possesses two Blaniks and one PA6 which is syndicate-owned. The first time Graeme (England - he's also a weapons electrical engineering officer like me - and I went to their airfield to fly, they also had a Shortwing Kookabura (1960 vintage) which apparently belonged to some other club (Mirimba) but which was staying temporarily at R.A.N.G.A. Its very interesting flying a Shortwing after being used to such high-performance machine as the Longwing. The airbrakes were particularly effective, too - the panels seemed to be about half the size of the wing! The Blaniks are just like any other Blaniks and the PA6 was away at some competition so I didn't see it at all.

The R.A.N.G.A. is based at HMAS Albatross which is the Navys air base so there is a ready-made airfield available, complete with bitumen strips which allow very smooth landings. Launching is by aerotow, using a Piper (I forget which model). Flying is possible only at weekends, since the airfield is used by jets and such-like during the week.

As regards thermals, the place has slightly better capabilities than Lochiel, but sea breezes can shut them up very quickly.

It was interesting to note that Graeme, after 5 months or so away from gliding and with no previous aerotow experience went solo after only 3 or 4 duals. He handled the aerotow part very well indeed.

Cost of flying is very low - \$2.70 launch to 2000 feet; 9 cents per minute gliding time

I think that completes the report on the RAN.G.A. as I said its mainly a