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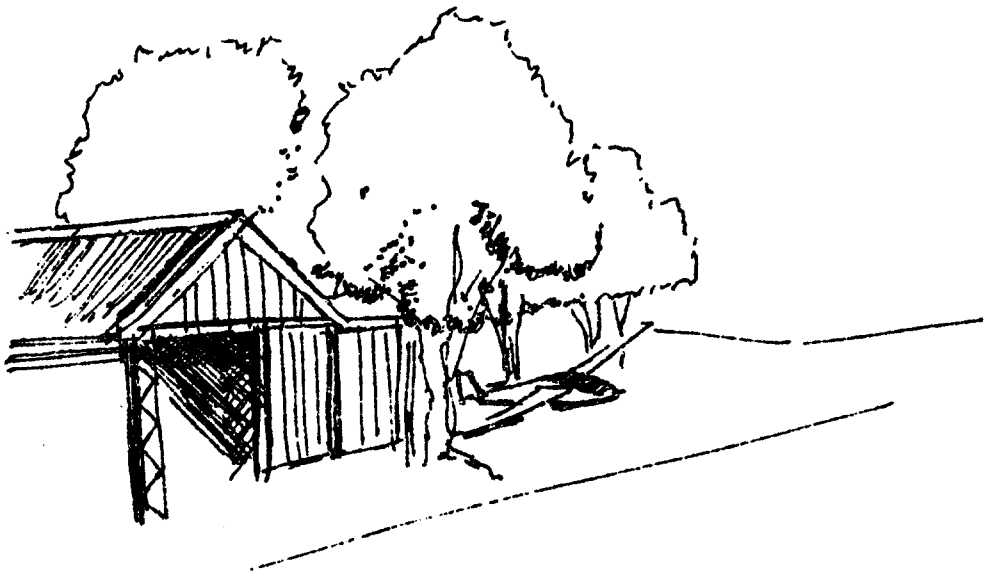


UNI GLIDING newsletter

VOLUME 4 NO.7

Oxygen and the pilot

Air pressure

About 175 years ago scientists first discovered that the prime purpose of breathing was to obtain oxygen needed by the body and to get rid of excess carbon dioxide, a waste product.

The human body is a heat engine which, like any engine, consumes fuel (the carbohydrates, fats and proteins derived from food). This fuel is converted into the energy we need to live by a burning process called oxidation. As in any other burning process, a certain amount of oxygen is necessary. When the body is resting, it consumes approximately 0.3 litres of oxygen per minute. When given an added workload such as walking or running, the body, like any other machine, will generate more heat and use more oxygen, perhaps as much as five litres per minute.

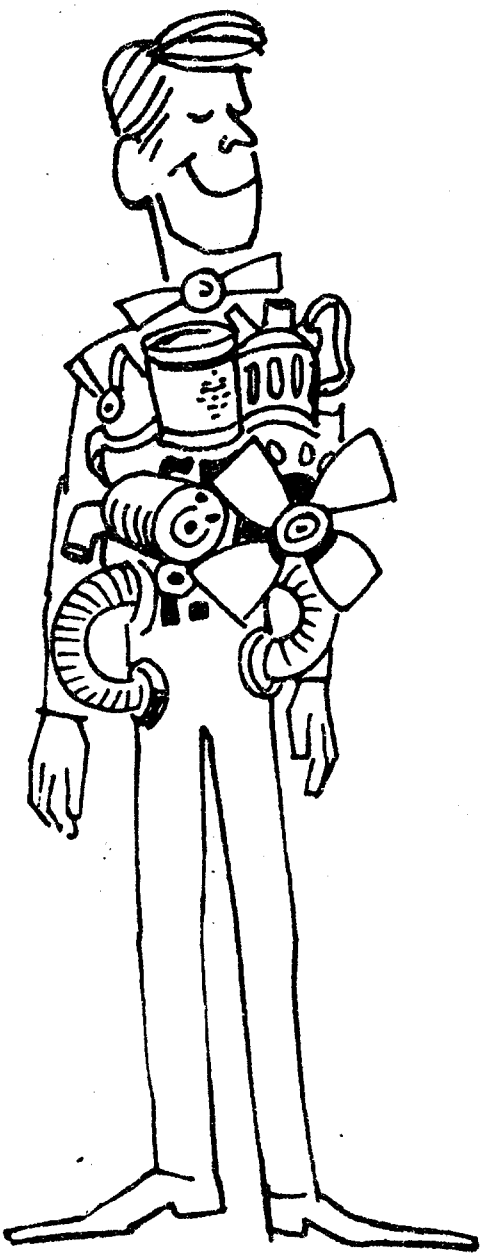
To extract this oxygen from the air, the body is equipped with a respiratory system (lungs). The oxygen is then distributed through the body by a circulatory system (heart, arteries and capillaries).

Air contains about 20 per cent oxygen and about 80 per cent nitrogen. At sea level, a healthy man can extract enough oxygen from the air to maintain his system and continue his normal activities. About 8000 or 9000 feet, however, problems of oxygen shortage begin to appear. Because the air is less dense, it offers less actual oxygen per breath of air inhaled — even though oxygen and nitrogen are still mixed in the 20:80 ratio. The density of air is measured by barometric pressure, and it is on this principle that your altimeter is built.

Oxygen is carried in the blood as a simple physical solution, and in loose chemical combination with the haemoglobin of the red cells in the form of oxyhaemoglobin. As the result of inhalation of air into the lungs, blood is oxygenated and this oxygen is carried to all the tissues of the body. Carbon dioxide produced in the tissues is carried in the blood, in chemical combination and in simple physical solution to the lungs where it is exhaled.

Blood can be compared to a conveyor belt, constantly hauling oxygen in and carbon dioxide out. The amount of oxygen that can be carried in the blood depends, to a large extent, upon the pressure that the oxygen gas in the air exerts on the blood as it passes through the lungs. (Manufacturers of carbonated drinks take advantage of this pressure principle to dissolve large amounts of carbon dioxide gas in their beverages).

At 10 000 feet, the blood of a man who is exposed to outside air can still carry oxygen at 90 per cent of its capacity. At this altitude, the flight performance of a healthy pilot is impaired only after some time, when he may find himself a little



less dexterous than usual at tuning radios, slower at working navigational problems, and less able to sustain close concentration. At 14 000 feet, he may become appreciably handicapped — forgetting to switch tanks, flying off course, or disregarding hazardous situations. At 18 000 feet and beyond, exposure to environmental air will quickly cause total collapse and inability to control the aircraft.

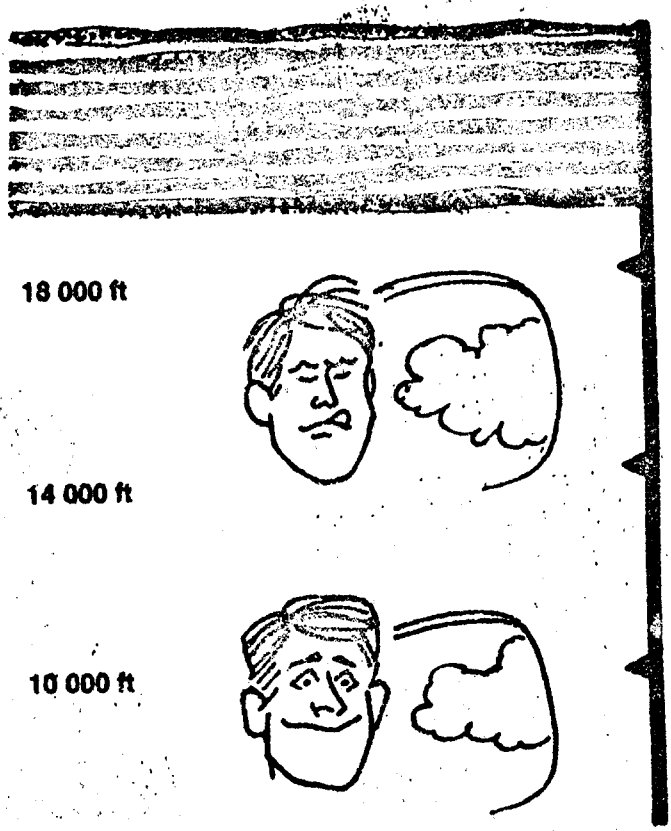
This means that if you choose to fly at high altitudes, you must take along either oxygen or pressure. You have a choice, then, between pressurizing the cabin of the aircraft or breathing a mixture with more oxygen in it.

Hypoxia

Lack of oxygen is the greatest single danger to man at high altitudes, despite the importance of pressure and temperatures. The shortage of oxygen in the human body results in a condition called hypoxia, which simply means failure of the tissues to receive a sufficient supply of oxygen. When a pilot inhales air at high altitudes, there is not enough oxygen pressure to force adequate amounts of this vital gas through the membranes of the lungs into the blood stream, so that it can be carried to the tissues of the body. The function of various organs, including the brain, is then impaired.

Unfortunately, the nature of hypoxia makes you, the pilot, the poorest judge of when you are its victim. The first symptoms of oxygen deficiency are misleadingly pleasant, resembling mild intoxication from alcohol. Because oxygen starvation strikes first at the brain, your higher faculties are dulled. Your normal self-critical ability is out of order. Your mind no longer functions properly; your hands and feet become clumsy without you being aware of it; you may feel drowsy, languid, and nonchalant; you have a false sense of security; and, the last thing in the world you think you need is oxygen.

As the hypoxia gets worse, you may become dizzy or feel a tingling of the skin. You might have a dull headache, but you are only half aware of it. Oxygen



Breathing problems?

Condition	Common symptoms	Cabin altitude
Hypoxia	Visual disturbances Lightheadedness, dizziness Confused thinking Cyanosis Apprehension Sense of well being Muscular inco-ordination and tingling	Rare below 10 000 feet
		Expected between 10-15 000 feet
		Causes collapse above 18 000 feet
		Always above 50 000 feet without pressure suit.
Fear or anxiety (recognised fear) followed by	Uneasy sensation Tenseness Lightheadedness, dizziness Visual disturbances Fatigue Tremors	Any altitude
Hyperventilation	Lightheadedness, dizziness Tingling Visual disturbances Tremors Confused thinking, faintness Numbness	Any altitude

starvation gets worse the longer you remain at a given altitude, or if you climb higher, your heart races, your lips, ears and the skin under your fingernails begin to turn blue, your field of vision narrows and the instruments start to look fuzzy. But hypoxia — by its nature a grim deceiver — makes you feel confident that you are doing a better job of flying than you have ever done before. You are in about the same condition as the fellow who insists on driving his car home from a New Year's Eve party when he can hardly walk. Regardless of his acclimatization, endurance, or other attributes, every pilot will suffer the consequences of hypoxia when he is exposed to inadequate oxygen pressure.

10 000 feet. It will not hurt you and you will be a lot sharper pilot.

4. As the retina of the eye is the most sensitive tissue in the body to lack of oxygen, use oxygen on all night flights above 4000 feet. If you want to give your night vision the best protection, use oxygen from the ground up.
5. Breathe normally when using oxygen. Rapid or extra-deep breathing can cause loss of consciousness also.

Flying above 10 000 feet without using oxygen is like playing Russian roulette — the odds are that you may not get hurt, but it is a deadly game!

g)Bocian Report

-rear canopy has been fixed.

-wheel brake has been sort of fixed.

-wheel needs another spacer.

-undercarriage frame cracked - can be welded.

-discussion about replacing Bob's gear when used.

-NOTE - when towing the Bocian hook the elevator up with the seat belt.

h)Arrow Report

-in many pieces around at Dene's place.

-rubbed down ready to be painted.

-new instrument panel ready to go in.

Pilots who are older, fatter, out of condition or heavy smokers should limit themselves to a ceiling of 8000 to 10 000 feet unless oxygen is available. Smoking reduces tolerance to altitude because carbon monoxide from tobacco smoke combines with haemoglobin in preference to oxygen. Thus less haemoglobin is available for oxygen and a combination of carbon monoxide and increase in altitude can result in hypoxia at lower altitudes.

Remember no one is exempt from the effects of hypoxia. Everyone needs an adequate supply of oxygen. Some pilots may be able to tolerate a few thousand feet more altitude than others, but no one is really very far from average.

Hyperventilation

Some people believe that breathing faster and deeper at high altitudes can compensate for oxygen lack. This is only partially true. Such abnormal breathing, known as hyperventilation, also causes you to flush from your lungs much of the carbon dioxide your system needs to maintain the proper degree of blood acidity. The chemical imbalance in the body then produces dizziness, tingling of the fingers and toes, sensation of body heat, rapid heart rate, blurring of vision, muscle spasm and, finally, unconsciousness. The symptoms resemble the effects of hypoxia and the brain becomes equally impaired.

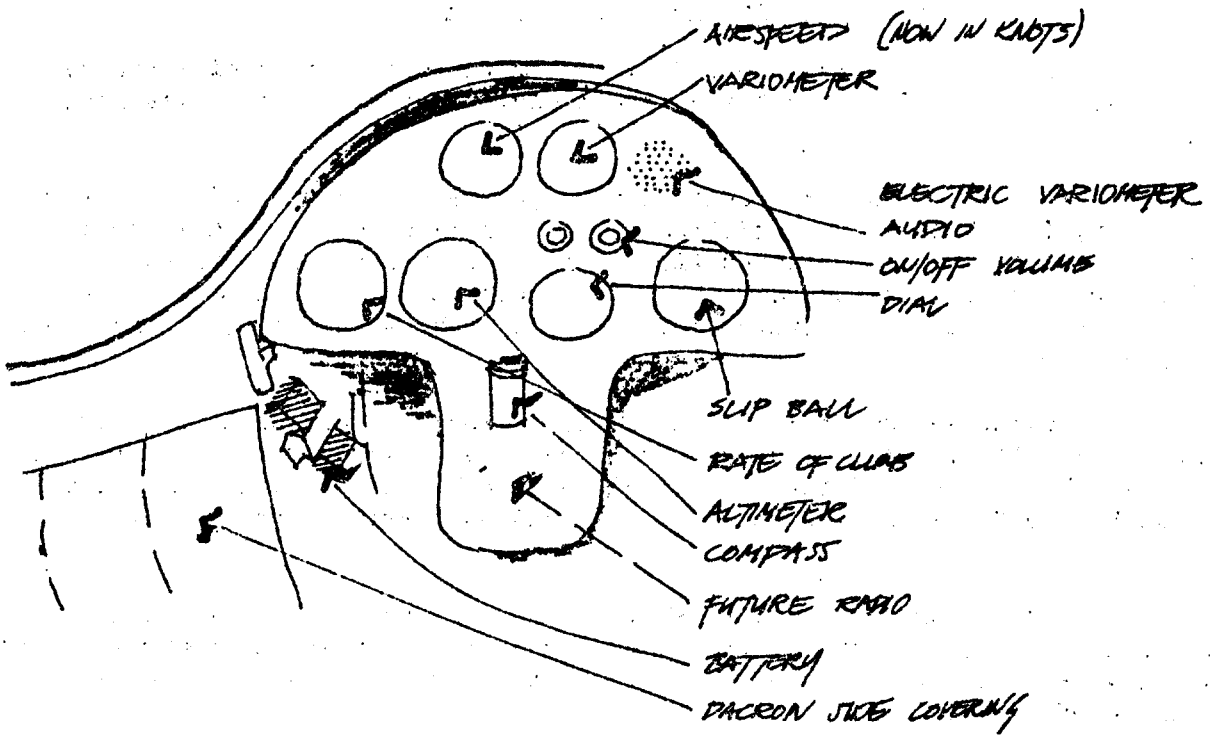
You are most likely to hyperventilate while flying under stress or at high altitude. For example, the stressful feeling of unexpectedly entering instrument conditions, noting both fuel gauges bouncing on empty, or developing a rough-running engine over water or mountainous terrain may make you unconsciously breathe more rapidly or more deeply than necessary.

A pilot who suffers an unexpected attack of hyperventilation, and has no knowledge of what it i or what causes it, may become terrified thinking that he is experiencing a heart attack, carbon monoxide poisoning or something equally ominous. In the resulting panic and confusion, he may lose control of the aircraft, exceed its structural limits and crash.

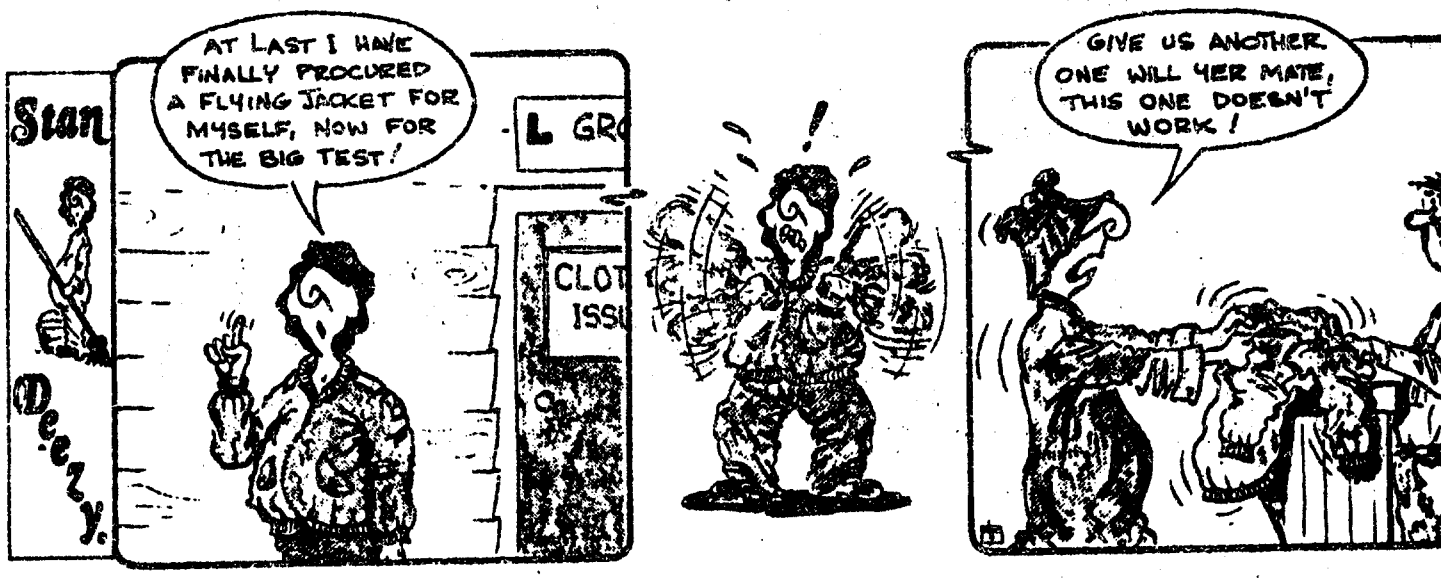
A little knowledge is all you need to avoid hyperventilation problems. Since the word itself means excessive ventilation of the lungs, the solution lies in restoring respiration to normal. First, however, be sure that hyperventilation, and not hypoxia, is at the root of your symptoms. If oxygen is in use, check the equipment and flow rate. Then, if everything appears normal, make a strong conscious effort to slow down the rate and decrease the depth of your breathing. Talking, singing or counting aloud often helps. Normally paced conversation tends to slow down a rapid respiratory rate. If you have no one with you talk t yourself. Nobody will ever know.

Normal breathing is the cure for hyperventilation. The body must be allowed to restore the proper carbon dioxide level, after which recovery is rapid. Better yet, take preventative measures. *Know* and *believe* that overbreathing can cause you to become disabled by hyperventilation.

The best way to recognise the symptoms and understand the effects of hypoxia is to experience it under controlled conditions. This is possible in a decompression chamber and the Royal Australian Air Force has four such chambers located at Amberley, Qld.; Richmond, NSW; Point Cook, Vic; and Pearce, WA. At present arrangements exist for interested organisations to undergo one day training courses in hypoxia and disorientation, in groups of 15-20 people. Enquiries concerning the courses should be directed in writing to the Director of Aviation Medicine, Department of Transport, P.O. Box 1839Q, Melbourne.



ARROW OVERHAULED



THE GREAT FATHER'S DAY REGATTA

Father's Day, September 2nd, formed the culmination of a Sports Class Regatta hosted by the Adelaide University Gliding Club at its home field at Lochiel.

Prior to the commencement, some prospects appeared dim. At a week long camp days before, accomadation at the shearers' quarters were unavailable due to an extension in shearing time. The weather was uninspiring, with little convection and lots of rain in a succession of cold fronts. Just before the Regatta the private winch had a clutch failure after a trouble free period prior.

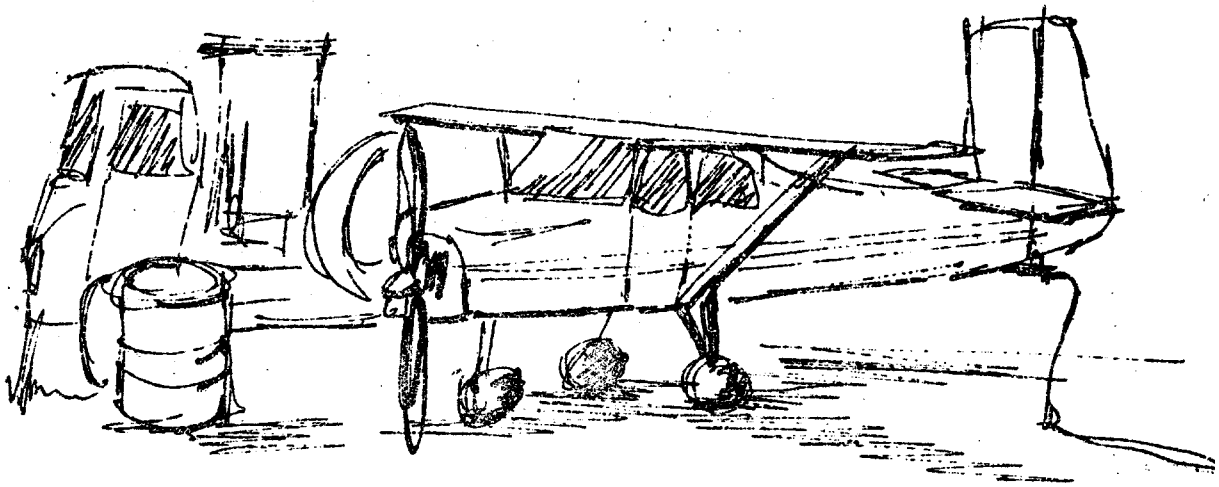
Saturday dawned fine, with a promise of 3½ thousand feet cloud base and 4 knots lift. Eight aircraft competed on a 136km task down Yorke Peninsula and back. In addition, the remaining winch, club Bocian, and the tug made available by Murray Crowell of Price, turned out early to train, fly passengers and give aerotow conversions.

Unavailability of av-gas from petroleum suppliers was rectified by "borrowing" one drum from a local power plane owner. Only one competitor used aerotow, the rest took winch launches. There were four re-lights during cycling of the weather.

In the afternoon, competitors on track home were confronted with cirrus covering the area ahead of a cold front expected late Sunday. All landed out, from three paddocks short of the airfield to 48km out.

Peter Ashenden scored the task in accordance with the handicap system being evolved in S.A., which on corrected scores allowed the lower performance planes further out to beat the "on scratch" sailplanes close to home...

PILOT	AIRCRAFT	HANDICAP	PLACING	DISTANCE
Graham Parker	Sagitta	0.98	1	1
Emilis Pralgauskas	Boomerang	0.98	2	2
Geoff Kempster	Std Libelle	0.88	3	2
Peter Wright	Cherokee	1.25	4	6
Merv Gill	EP-1	1.20	5	4
Dave Ellis	Arrow	1.10	6	6
John Mills	KA-6	1.00	7	4
Chris Dearden	EP-2	1.00	8	8



WINCH & VHF TED.

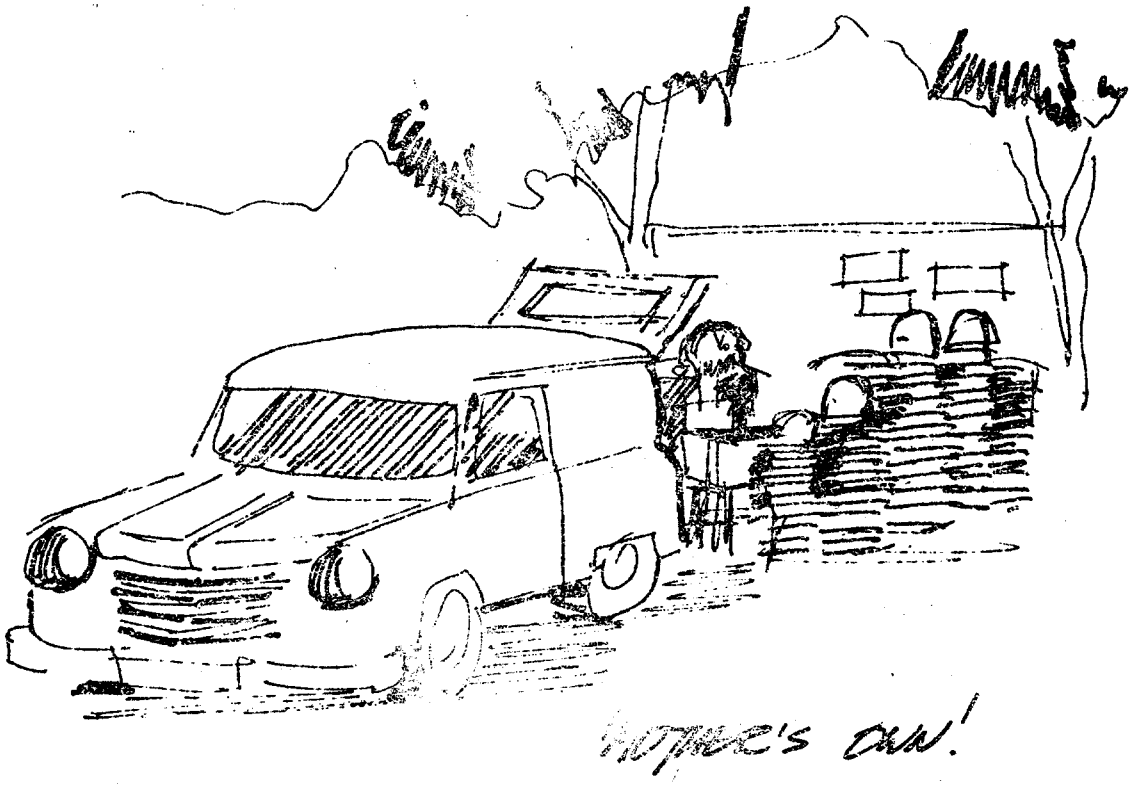
That evening pilots gathered around a log fire unfer the trees. Catering all weekend was from "Mother's Own" out of the back of Michael Docherty's panel van, with hot apple pie, drinks, pancakes and snags and chops. Mrs. Hancy, the met man's wife, won the bubbly raffle. Rigged aircraft and those on open trailers were found hangerage for the night, while pilots did the same or sacked in vans or tents on the tree covered dune area.

The Regatta formed a focus point for Sports Class acticities. A pilots' meeting of the Sports Racing Association was held; visiting non-competing pilots generated discussion on the Sports Class market place.

Cherokee GPR arrived as a result of a last minute purchase by Peter Wright from Neville Damels. Other pilots announced aircraft known to be available in their home areas. Others again explored syndication with fellow pilots.

With flying restricted by increasing cirrus cover, some pilots flew and compared locally based aircraft before the usual afternoon derig and farewells as pilots left on the trek home.

Emilie.



Notes from Instructors Panel.

At least one AUGC pilot to go onto Assistant Instructors course at Waikerie in September.
Neil Mancktelow leaving for overseas appointment in Sept, could be away several years.
Kym Bennett now taking care of winch driver ratings.
On a few occasions, instructor and winch driver did not attend on rostered day. We reiterate, if you can't attend, arrange a stand-in yourself.
Instructors report success in shifting launch point down the strip on strong wind days, to alleviate retrieving of landed gliders.
Ploughed strip verges have been reclaimed - we need to drive vehicles over these verges to compact soil down.
Another outlanding from attempted ridge flight, no damage.
Serious regression in standard of near solo pilot - reason attributed to infrequency of attendance.
Check flights of solo pilots continue to reveal inconsistencies in flying in some cases.
Several pilots ready for solo under the right conditions.
Use of drogue chutes on launch cables to be discontinued due to incident where broken cable drifted onto ETSA lines. DAYGLO flags to be fitted in place of drogue
Cable breaks occurring more often - partly due to wear on cables but mainly due to pilots climbing too steeply. Winch drivers alerted to reduce power if pilot climb too steeply to make pilot flatten out more.

TK.

Theory of cross-wind takeoffs.
Imagine a 10kt crosswind blowing at 45 degrees to the takeoff strip.
This cross-wind will exert a turning moment on the glider due to the tail fin being so far back from the main wheel (remember the theory of levers, arms, pivot etc.). Therefore as soon as the glider starts moving along the ground run, the nose will tend to swing into wind, and this will be even more noticeable when the glider is running balanced on the main wheel. This swing into wind is called "weather-cocking", and is overcome by the pilot applying plenty of opposite rudder initial to keep the glider running straight along the strip.

After the glider separates from the ground, weather-cocking will cease, but another problem arises. The cross-wind will now drift the glider away from the line of the strip, and hence as soon as separation occurs, the pilot must correct for drift by "crabbing" the nose of the glider into wind using the rudder. It also helps to lift the into wind wing (the "wing-down" method), making sure that wing does not hit the ground. In a gently banked configuration then, the glider should climb steadily, the pilot should apply more drift correction during the upper stages of the launch where the cross-wind is stronger, so that after release, the cable should fall and drift back onto the takeoff strip.
In the event of a cable break, the glider should turn downwind at safe speed if there is sufficient height for a modified circuit. Other wise land ahead.

TK.

N.B. Recent structural damage to the Bocian undercarriage struts is attributed to pilots not running straight and landing straight on the ground. Never land the glider side-on, always keep it straight with rudder.

CROSS-WIND LANDING.

Circuits should be flown at good height and safe speed. Watch the 30^0 angle of inclination from the touchdown point, and prevent the glider from drifting by crabbing along the downwind leg.

The final glide is the most difficult part, and the pilot should ensure that the glider is initially lined up accurately on the chosen landing strip. Only then can the pilot judge accurately the amount of drift due to the cross-wind. To prevent the glider drifitng off the final glide path, two methods are available:-

(1) The Side-Slipping Method:
Imagine a cross-wind from the right. To side-slip the glider down the final glide path, the pilot must yaw the nose of the glider to the left and lower the right wing, i.e. left rudder, right stick (in this case).
Unfortunately, this now presents a "crossed controls" configuration , and unless speed is maintained by nose position (ASI useless here), a SPIN can easily develop. Hence this method is not recommended for general operations by GFA. Get an instructor to teach you side-slipping at safe height; it is not to be done near the ground unless in emergencies (e.g. gross overshoot with obstructions looming up).

(2) The "Crabbing" Method:
In order to maintain a straight track along the final glide path, the pilot must crab the nose of the glider into wind slightly, using rudder, and maintain wings level with aileron. i.e. properly balanced flight is maintained with yaw string straight, and speed is controlled by nose position and glancing at the ASI. The glider is flared out in this configuration and finally kicked straight with rudder just before is settles onto the ground.
The crabbing method is recommended and taught as part of the training sequence.

A WEEKEND TO FORGET.

Everybody arrives on field 9am. Truck motor electrics playing up, needs some fiddling. Starts raining. Dark, windy and cold. Bocian DI reveals cracked undercarriage strut (too many da.... side-on landings). With 5 people, take 3/4 hour to get Bocian up onto sleepers and tyres. Removal of rear seat, and floor $\frac{1}{2}$ hour. Complete removal of undercarriage takes 3 hours - poor light and no-ones done this before. At Bob's workshop, attempt to weld u/c strut succeeds in burning holes in u/c tubes. Back to the field, Tim risks life and limb scaling windsock pole to refit sock. Still raining. Hangar tidied and Bocian canopy scratches rubbed out. Arrive Don's place 4.30 p.m. He expertly rewelds u/c strut. Bocian wheel and axle assembly rejuvenated. Arrive home 7.30 p.m. flop into bed.
Back to Lochiel Sunday 9am. Refit Bocian u/c and wheel 4 hours. Refit seats, etc. Stops raining. Launching starts 2.30 p.m. No thermal, no ridge lift, freezing cold, windy and wet. Someone puts fist through Bocian wing skin (frustration?). Truck motor failing, truck gets bogged. Light fading, cables towed out by car, too dark , reel them in again. Dig truck out of bog and break both cables in the process. Swaging tool falls off somewhere out there. Back to hangar 6.30 p.m., pitch black. Ready to go home - car won't start, flat battery - stuff around for another $\frac{1}{2}$ hour. Promised Mark he'll get first 5 launches next time. Glad to get back to Pt.Wakefield 7.30 p.m. All the hot chips cold and greasy.
Makes me think, are those 15000' days with 15kt thermals really worth it? Come to think of it, we didnt have a day like that last Summer, did we?

TK

C.F.I. REPORT TO CLUB 5.9.79

1. The 'MANUAL OF FLYING PROCEDURES' has been circulated to members. Spare copies are in the cupboard at the airfield and in the gliding club locker at the Sport Association. It will be assumed that all members are now fully familiar with th flying rules of the club, and the instructors hope that all pilots will operate within the spirit of these rules, so that we can maintain the good standard of flying which has always been our objective.

2. A few minor incidents, which we can all learn from, have occurred recently:
   (1) The winch driver reeld in the wrong cable causing a stuff up in launching. An unnecessary event which indicates brain in neutral.
   (2) A very low approach over the power lines at the gate end caused by getting too low on the ridge and trying to get back to the launch point. It would have been much safer to cross over the power lines earlier with more heigh and do a modified circuit to land down the strip. Do not let your judgemen of safety be overshadowed by operational convenience. Safety First.
   (3) Overheard two Arrow pilots talking about the way the Arrow trailer snakes around at 60 m.p.h. The speed limit, under ideal conditions, for that trai is 50 m.p.h. on bitumen and 30 m.p.h. on dirt roads. In the event of any accident, the driver will have to pay all excesses, and will have alot of explaining to do to the club, and the Arrow pilots.
   (4) Recent hangar flight occurred with moderate tail wind landing towards the hangar. Pilot admits he should have landed in the other direction, i.e. in wind. Got away with it this time, but possible result of misjudgement coul put aircraft thru hangar fence.
   (5) Several long launch delays due to winch drivers (and others) not watching where end of broken cable falls to ground. Keep eyes open for this event.
   (6) Pilot in outlanding landed with tailwind ; was fooled by another glider i same paddock which had been turned around by pilot after landing. c Pilots remember that wind strength and direction should be monitored at al times.

   Some of these 'incidents' could have had serious results . Good forward planni brain in gear and monitoring of conditions are essential to safe gliding. It's to every pilot to maintain safe standards at all times.

3. Rats, have been observed around the hangars. Rats will get into aircraft and ma nests, eat parachutes, etc. Parachute security and thorough DI's are essential. Do not leave food, sweets, etc. in pockets of gliders. Keep hangar surroundings clean and tidy.

4. Acheivements: From August 2nd to Sept 2nd, total 323 launches, a club record m
   Don Hein and Kim Bennett - converted to Arrow.
   Kate Swanson and Keith VanderPennen - solo in Bocian.
   Graeme Newcombe, Dene Larwood and David Ellis - passenger ratings.

5. Parafield Gdns High School Camp: Several periods of bad weather cut down the number of possible launches. However on one day did in excess of 40 launch Flying often started around 8a.m. Thanks to G.Parker for instructing

6. Kim Bennet congratulated for excellent job on winch renovation and maintenence. Cables end-for-ended on 2.9.79 so can expect some breaks for a day or two until weak points cut out.

7. Regatta: 8 aircraft competed. Mike Hancey did the Met. Task 136k O/R Maitland All gliders outlanded, but most flew very well under difficult conditions. Graham Parker daily winner, landed only 3 paddocks short of home. Mike Dochert performed onerous task of catering excellently, and made a profit for the club Murray Crowell's Cessna attended and several pilots got aerotow practice. No task set on Sunday 2.9.79. 28 launches achieved in drizzling conditions. Em spoke at debriefing on problems of getting gliders wet. Turn point photographs were acceptable, but indicate poor technique in several cases. Note to cross country pilots to get more practice in this area.

8. All pilots should ensure that gliders not being used are tied down properly, we back from the operational runway.

MODIFICATION TO PROCEDURE RE WINCH LAUNCHING SIGNALS

The Instructor's Panel has agrred to modify the signalling method used for launch-point to winch communication. The reasons for the modification are:-

(i) to comply with GFA recommended procedure, in use at other clubs,
(ii) to reduce foul ups to a minimum,
(iii) to make the signals clearly distinguishable at each stage.

It is suggested that the following notes be cut out and affixed into the back of your Manual of Flying Procedures.

WINCH LAUNCHING SIGNALS - WINGTIP DUTIES.

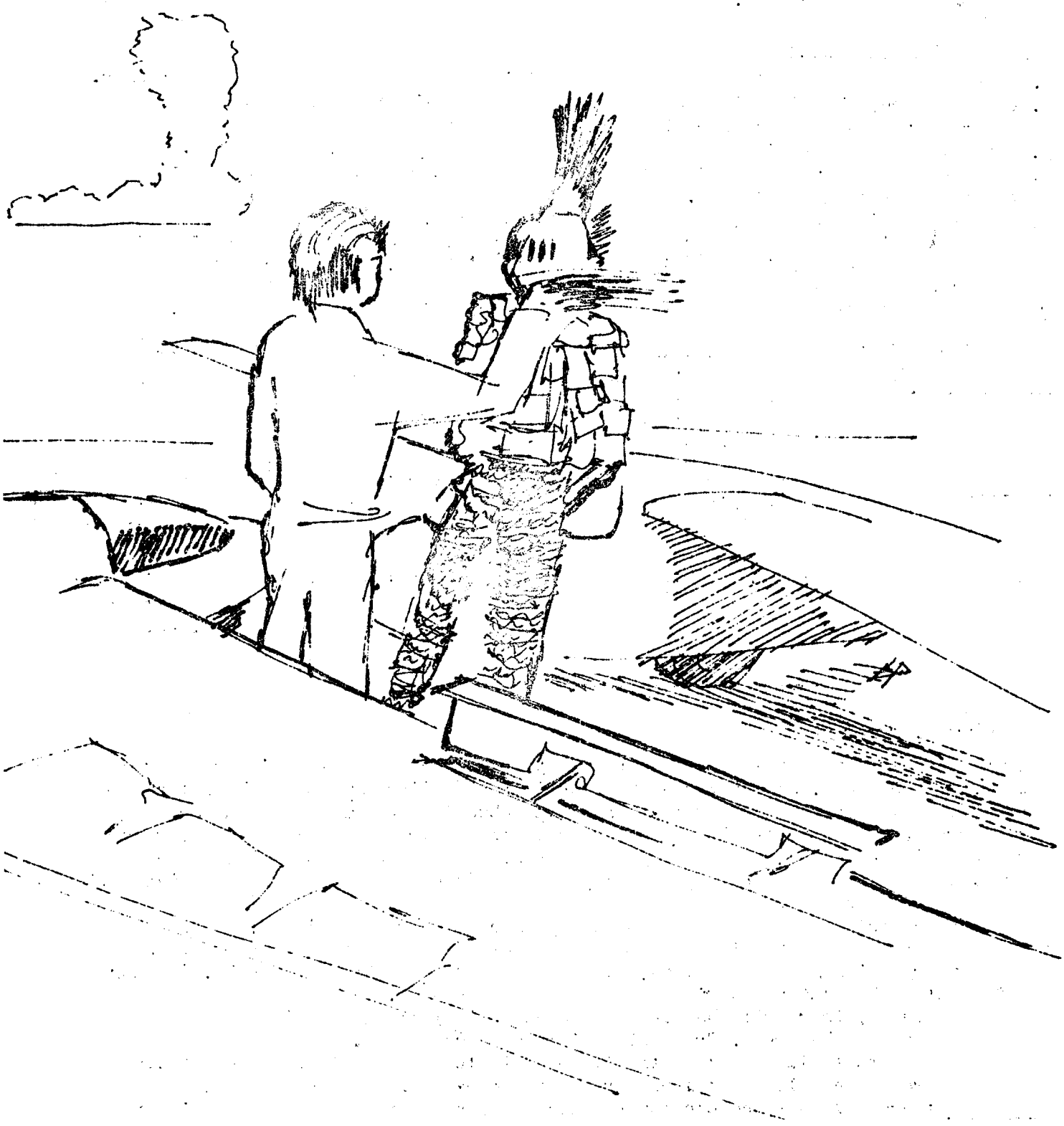
1. Pilot of glider authorises the launch by giving thumbs up to the wing tip runner.
2. From then on, the wing tip runner is in control of the launch, and must shout out commands to the person on the bat or headlights.
3. Any person on the field has the authority to stop the launch at any time.
4. Wing tip runner must check "All clear above and behind" out loud to the pilot before commencing the launch.
5. If a cross-wind prevails, run the downwind wing tip.
6. The signalling method, either wing signals, or bat signals, or headlight signals shall be chosen on a 'most visible to the winch' basis, or by pre-arrangement with the winch driver.
7. If using bat signals, operate the bat well to the side of parked vehicles.

The signals are:-	Wingtip	Bat	Headlights
Take up slack:	Level the wings and maintain them level until the glider is about to move forward.	Wave bat underarm.	Turn lights c
All out:	Wing is rocked up and down twice, and then held level.	Wave bat overarm, with no stop in between.	Turn lights c for 2 seconds then turn on again.
Stop:	Lower wingtip to ground.	Hold bat vertical.	Turn lights c for extended period.

CROSS COUNTRY COURSE:

A cross country course will be held on Friday October 5th at 7 p.m. in the Sports Assocn. meeting room. Pilots who should consider attending are those who anticipate that they will have the minimum 5 hours 10 launches in the Arrow this Summer.
Also there are some pilots who attended the cross country course last year but who have done little or no cross country flying since then. They should also attend this course, or may lose their rating. I will contact those particular pilots individually re attending the course.
The course comprises a 3 hour talk on theory of cross country gliding, and it is recommended that all participants obtain and pre-read the book "Theory of Modern Cross Country Gliding " (Weinholtz), available at the GFA shop (about £4). A comprehensive set of handout notes will be issued at the course.
After the course, there will be series of check flights in the Bocian and some landing checks in the Arrow. Trailering will be checked also.
It is expected that all participants will be able to demonstrate required skills and therefore those pilots can look forward to an exciting soaring season.
BE WARNED there will only be one course this year, so if you miss out you will not be allowed to go cross country this season. The practice of running a second course for those who forget to attend the first course will not occur this year.

THE LOCHIEL
CHALLENGE TROPHY.



WHY THE PUBLIC SERVICE IS NOT BORING. Being a public servant is not boring because there are always plenty of interesting things to do like filling out forms and putting incoming mail in the IN box, and putting outgoing mail in the OUT box, and filling out more forms, and answering telephones with the standard, "I'm sorry, I don't know, I'm only the janitor here" reply, and collecting your money on payday which is the best day of the week, and filling out more forms, and engaging in interesting conversations with fellow workers about the footy and the cricket and the next payrise which is overdue, and filling out more forms, and writing receipts and getting carbon all over your hands and down the front of your shirt, and sucking biros until the ends leak and the ink gets all on your tongue and in your mouth, and filling out more forms, and filing away files where nobody will ever see them again, and browsing through the Government Gazette to see who the latest crawlers are, and filling out more forms, and listening attentively to your boss as he explains the intricacies of attaching orders to backing sheets and stapling them together, and neatly cramming files into compactors, and filling out more forms, and going to the pub at lunch time for a counter lunch and a few quick ones, and staggering back to the office feeling really bonza, and filling out more forms, and bending paper clips into weird artistic shapes, and sticking rubbers full of pins until they look like little porcupines, and filling out more forms, and answering customers' enquiries at the in formation counter with the standard, "I'm sorry, our office is being redecorated and all our files are in a mess, so could you please come back next week" reply, and filling out more forms, and giving money for the collection for the going-away party for the latest typist who's leaving and whom you've never seen anyway, and putting in for office raffles and cross-lotto entries and lotteries that you never find the results of, and filling out more forms, and having ten minute morning and afternoon tea breaks that last for twenty minutes or more, and making free STD calls to your friends in other parts of Australia, and sending personal letters through the official mail, and filling out more forms, and shuffling around in your chair, and watching the clock, and wondering why it moves so slowly, and urging it to move faster, and filling out more forms, and opening and closing drawers, and thumping down DO NOT DESTROY rubber stamps so hard that they tear through the paper and slop ink everywhere, and filling out more forms, and catching to work a crowded bus full of faces you've never seen every morning for what seems like the past twenty years, and catching an almost identical bus home in the afternoon, and filling out more forms, and hanging up scungy Christmas decorations that the boss has graciously allowed you to have, and pulling them down about six months later, and doodling endlessly on Official Government Printing Office paper, and filling out more forms, and putting phony signatures on letters so that if anything goes wrong it can't be traced back to you, and sharpening pencils in the electric pencil sharpener until there's only a quarter of an inch left of them, and filling out more forms, and crumpling up memos and letters and seeing how close you can throw them to the waste basket on the other side of the room, and going to the toilet to see if there's anything new on the walls, and filling out more forms, and working flat out on Friday to fill up your end of the week quota which is four days behind, and opening up letters with a really neat letter opener that rips the cheque inside in half, and filling out more forms, and phoning the bloke across the other side of the room because you're too lazy to walk all the way over there to ask him a question, and biting your fingernails, and resting your elbow on the desk and propping up your head with your hand to stop it from falling down when you fall asleep, and filling out more forms, and I just realized I hate those forms more than anything in the whole bloody world, and they're foul and rotten and rancid and they really stink and make me sick and they make me want to vomit and I'd like to rip and scrunch and tear them up into hundreds and hundreds and thousands and millions of tiny pieces and then I'd like to shove them down that pig-headed fat idiot boss of mine's throat until he choked and fell to the floor clutching his guts and screaming for mercy and then I'd laugh and laugh and laugh and I'd pull out the machine gun that I kept hidden in my desk for just such an emergency and I'd blast everything full of holes, especially the forms, and then I'd run amuck in the office with all its stupid files and desks and cabinets and typewriters and telephones, but mostly forms, and I'd pour petrol over everything, especially the forms, and I'd set it alight and I'd laugh myself silly while the whole of the Da Costa Building burnt to the ground.

A GLIDING CLUB WITH 4 FUNCTIONS

Emilis

The structure of most gliding clubs, in common with many amateur bodies, appears to be an operational function (coaches, players, reserves) backed by an administrative function (executive, committees, manager, cleaners).

Some would also admit to a promotional function, usually tied to the administrators. That is, getting in the spectators, new players and raising some extra brass (money wise).

In the short years of the uni club's existence, staying alive has been the first priority. That has meant that operations came first, then promotion to improve the operations, and administration has run a deserved last. It does little in making the club effective, outside the administration absolutely essential to the operations. So, let's hope that short sharp shiny remain the order of the day. Not like some other bodies some of our members have had contact with recently.

Now that we've been going a while, promotion (of the club existence, Sports class, etc) is established, and to further improve the operations means moving into new fields.

Research is a fairly logical area, with our ties in the institutional system. Two avenues exist for research to get going.

1. In promoting the sport, opportunities stand out crying out to be grasped and used. Usually this involves a need to research the implications, and how to maximise them.
2. From the conduct of flying operations, an understanding of inadequacies evident develops. Takling these problems also allows us to progress; research has a part to play.

Current efforts -

At the August meeting, the Executive recieved a 37 page paper on the potential community wide interest in soaring. This developed from a need to understand who the gliding club serves if we are going to have an effective operation.

The DE-2 project under Dave Ellis is getting into the nitty-gritty of a computer programme. The project grew from a need to guarantee a new sailplane to join existing designs once Sports class becomes fully operational.

ERG was suggested by Guy last newsletter. Peter Ashenden, Kym Bennett and Guy are the core of Energy research group; originated from the developing problem of fuels shortage for launching and the inefficient fuel use of the aerotow which will bring a rapidly rising demand for fuel efficient winches.

The gap between demand for soaring and existing participation highlighted in the August paper is forming the basis of a speculation on growth in the 1980's being written by Emilis.

CLUB MEETINGS
INSTRUCTORS PANEL
MAINTENANCE –
WINCH
AIRCRAFT
ORGANISATION –
PETROL
EQUIPMENT
REGATTA
PROJECTS

ANNUAL DISPLAY
INITIATE PROJECTS
INSTRUCTOR RECRUIT
ENGINEER TRAINING
SPORTS CLASS

PROJECTS SUGGESTED BY –

1. OPPORTUNITIES ARISING FROM PROMOTION

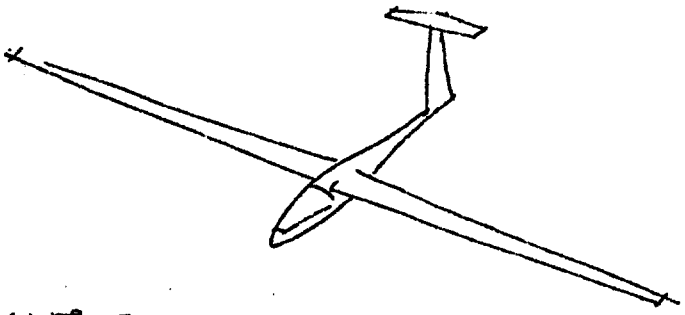
2. INADEQUACIES PERCEIVED IN OPS.

TRAINING
COMPETE
LAUNCHING
FLYING

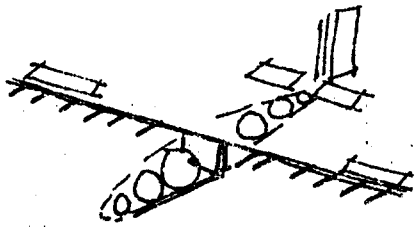
A.U. GLIDING CLUB.

admin promotion operations research

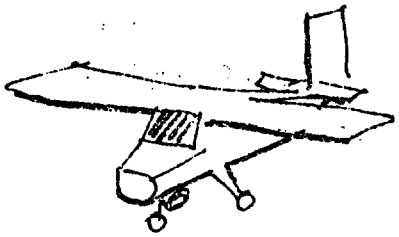
OTHER GLIDING CLUBS



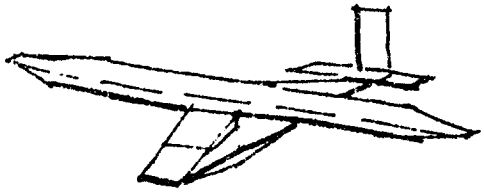
WHAT THE CLUB THINKS IT'S GETTING



WHAT DAVE'S DESIGNING



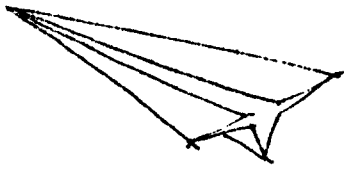
WHAT THE DEPT MIGHT APPROVE



WHAT THE CLUB COULD BUILD

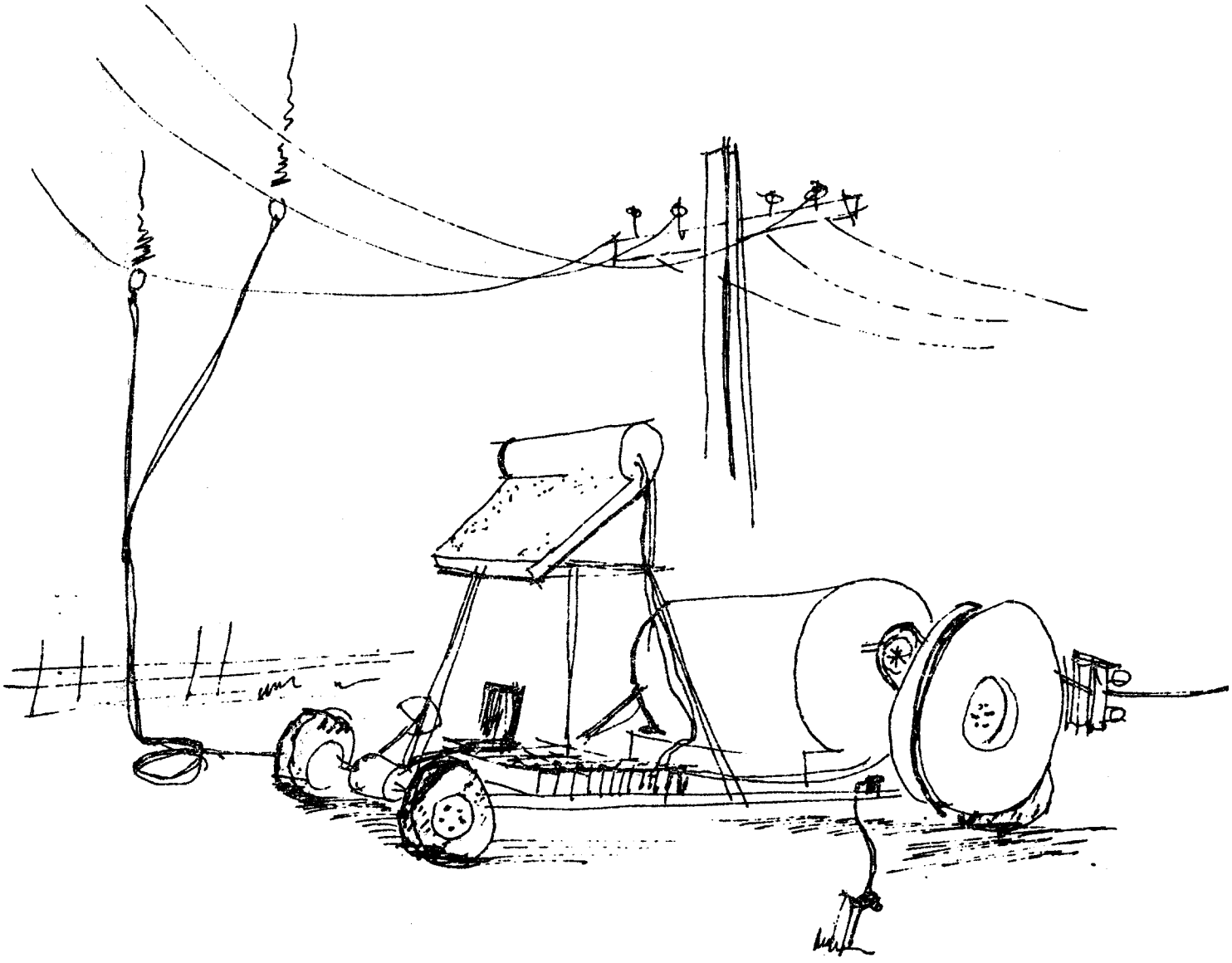
WHAT THE SPORT NEEDS:

THE DE·2 PROJECT



E.o R.o G.o

THE ALTERNATIVE ENERGY WINCH?



AVIATION SAFETY ALERT ---- The hazards involved with mixed power-gliding ops.

At a country aerodrome in South Australia, the pilot of a Piper Seneca was preparing to take a group of Boy Scouts on a scenic flight as part of their Air Activities Course. Earlier in the day, the pilot and a small group of Scouts had walked the length of the strip to straighten some of the tyre markers and remove any tobacco rushes. Nothing unusual was noticed during the inspection.

The aerodrome was also used for glider flying and at the time a glider was operating on winch launches from a cross strip. Before starting up, the pilot of the Seneca checked that he would be clear of the glider, which was airborne, and that the launching cable had been wound back on the winch. After starting the engines, he taxied out and lined up but in the meantime the glider had returned to the circuit and was now landing on the cross strip, so the pilot waited until it had passed the intersection and then began to take off.

He opened the throttles wide and after a ground roll of about 150 metres, and at a speed of about 80 to 85 knots, he heard a loud bang as something hit the windscreen and he saw a piece of fibreglass fly up from the nose. Thinking the aircraft had hit a stone, he closed the throttles and the aircraft rolled to a stop about three-quarters of the way along the strip. He shut down both engines and then saw a length of wire hanging from the left propeller.

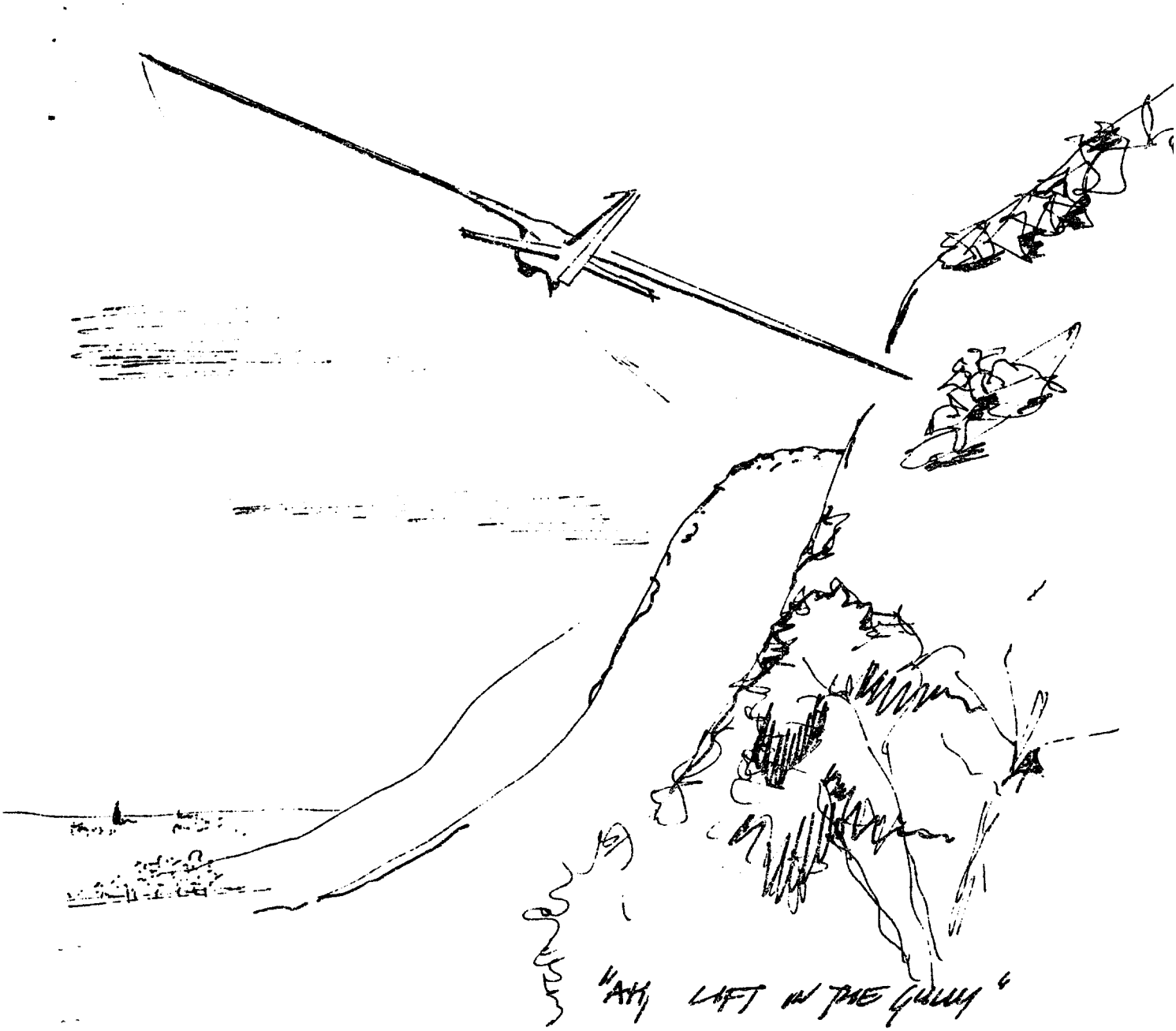
After removing the wire, the pilot taxied the aircraft slowly back to the hangar. Shortly afterwards, a party of Scouts went out to check the strip and returned with two more lengths of wire, each about 30 metres long, which they had found near the intersection of the strip the Seneca was using and the strip being used by the glider.

The wire proved to be launching cable and, during the abandoned take-off, it had been caught up in the aircraft's nose landing gear. The flailing cable had nicked both propellers, slashed the left engine cowling, the nose and the nose locker door, and dented both fuselage doors. The gliding operations log showed that, on the morning of the previous day, the winch cable had broken during a launch and it was this break which probably accounted for the pieces of cable being found where they were. Although the retrieval crew recovered both ends of the cable, it seems that the cable had broken in at least two places and the piece or pieces which had come away completely had fallen alongside the intersection of the two strips and remained undiscovered until snagged by the Seneca's nose wheel.

There are several human errors associated with this occurrence but it seems the pilot did all he could reasonably be expected to do in the circumstances. As the nature of the cable break the previous day, the broken section of the cable was not readily discernible, and the pilot had made a reasonable effort to inspect the proposed take-off area. On the other hand, at the time of the accident, there was no procedure at the aerodrome for carrying out a routine daily inspection of the other strip before operations commenced and the recruitment crew had not been supervised during the cable recovery the previous day.

As a result of this incident, procedures have been introduced at this particular aerodrome which require a daily inspection of every strip before operations commence, but the lesson for pilots is clear----nothing should ever be taken for granted. A mixture of glider and power operations remains extremely hazardous at any time - especially when winch launches are being used - and it is essential that pilots realise that the responsibility for ensuring the surface of a strip is clear of such obstructions rests solely with themselves.

A.S.S. 167 (1979) p.10.


"AH, LIFT IN THE GULLY"

Ooh!
Ah!

THE PHANTOM will carr...

Preparation for flight.

1. Thorough DIs of the aircraft are essential as winch launching can impose more than the normal stresses on gliders. Particular emphasis should be given to wing root fittings and wing skins for signs of stress, and to the tail end of the glider to ensure that elevator controls are not sloppy.

If the glider is fitted with skids, these should be checked to ensure that the launch cable cannot be caught on the ground run. Sharp edges should be honed down and all securing bolts should be flush and tight.

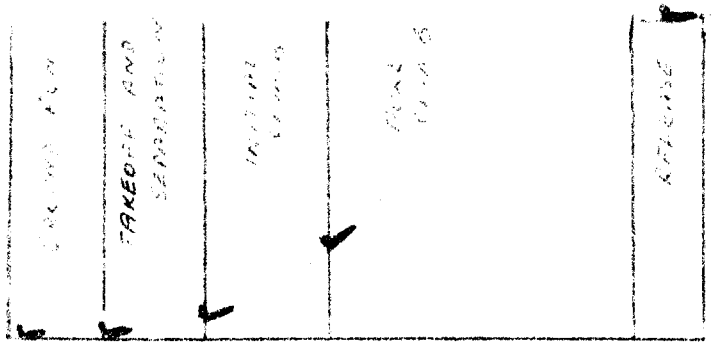
Belly releases should be clean and operational, especially important if the glider is normally aerotow launched.

Placards should be easily visible and indicate winch launch speed limits.

2. Ballast attachments should be secured and placarded limits observed.

3. Clearances: Notify RAAF if operating mid-week as a low jet route exists to the East of Snowtown. Observe airspace restrictions as per attached map. Light aircraft traffic in the Lochiel area is considerable, some have been seen to ridge soar as low as 1500' near the airfield. Good lookout is essential.

Launch Stages.



Ground Run: is the stage in which the glider starts moving and gains speed until it leaves the ground in the takeoff attitude.

Takeoff and Separation: is the stage in which the glider, still in the takeoff attitude, separates from the ground until it enters the initial climb.

Initial climb: is the stage in which the attitude of the glider is gently and smoothly steepened to the full climb attitude.

Full climb: is the stage in which the glider is maintained in the full climb attitude until the cable is about to be released.

Release: is the stage in which the full cable release procedure is carried out.

GENERAL COMMENTS.

Pilot control: The ideal path the glider should follow up from the ground is a smooth curve of gradually increasing steepness until full climb is reached. We must always remember, however, that the following possibilities exist during the launch: Cable breaks,

Mechanical failure or power loss at winch,

Gusts, thermals and changes of wind direction,

Faulty judgement of pilot or winch driver of the speed of the launc

As it is possible, particularly in the early stages of the launch, for the glider to have insufficient height to recover from a stall due to loss of speed, it is essential to have, at all times, an adequate margin of speed.

For these reasons, the glider must be flown by the pilot throughout the launch, a you must guard against any tendency to adopt a fixed control setting and let the winch driver "fly the glider".

Steepness of climb: The pilots decision as to how steeply to climb at any point on the launch is decided by whether he has a reasonable margin above the absolute minimum speed for the particular angle of climb. The minimum safe launch speed is that which gives the pilot an adequate margin of speed above the stall to enable him to carry out launch failure procedures, and is recommended at 1.3Vs. (in the K13 this would be about 45kts.)

An angle of climb which is safe at adequate speed becomes unsafe if the speed is reduced, and must be adjusted immediately by lowering the nose of the glider. Before adopting any particular angle of climb you must first have adequate speed for that angle. Never assume that if speed is increasing, it will continue to do

GROUND RUN.

Initially the glider is at rest with one wing on the ground. Pre-takeoff check are performed as per CHAOTICCC list.

Other factors to be checked:

Release checks - back release without pilot operating release pull,
side release when pilot operates release,
forward release " " " " .

Obstructions: Ensure there are no vehicles, personnel or livestock ahead of the glider. This includes obstructions in a posi where a falling cable may drop onto them. Cables have bee seen to drop onto cars and gliders being towed out from t hangar. Keep all vehicles well clear.

Wind strength and direction: Keep in mind that the falling cable will be drifted by a crosswind, perhaps over power lines or crop. Weathercocking on ground run may cause glider to run over other cables on the ground, watch for snagging in skids,e

Crew should be well versed in hooking on and wing running procedures. Ne let a novice run your wing unless properly briefed.

speed, which allow the gentle change to the climbing attitude to begin.
Altimeter readings become inaccurate due to lag.
In regard to speed, upper and lower limits must be observed by glancing at the
at regular intervals. Before the initial climb is commenced, speed will need to
at least 1.3Vs (e.g. 45 kts), and if this is not being acheived, release and lar
straight ahead.
As the speed comes up, gentle back pressure on the stick will put the glider in
a shallow climb. As safety and ability to recover from launch failure increase
accordingly with the increase in speed and height, we steepen the angle of the
climb accordingly, until the full climb angle is acheived at a height which wil
ample for recovery if the launch should fail.

FULL CLIMB:

In the full climb attitude the pilot may not always be able to see the horiz
because of the high nose position, and so it is a good idea to glance at the
wingtips to check the angle of the wing against the horizon to help judge the f
climb attitude, particularly when you are not familiar with a particular glider

The climbing attitude is maintained by use of elevator. Increased back press
on the stick is needed towards the top of the launch to counteract the downward
pull of the cable on the nose. Speed should be maintained between the lower and
upper limits for that aircraft, typically 45 to 67 kts.

The "TOO SLOW" signal is to roll the wings from side to side by use of aile
and rudder without yawing the glider. The nose of the glider should be lowered
maintain safe speed before the roll is initiated. If speed does not increase it
may be necessary to release.

The "TOO FAST" signal is to yaw the glider from side to side using rudder.
nose of the glider should be lowered to reduce loads on the glider , and the si
given well before the maximum limit is reached (at say 65kts), and if the speed
continues to get too fast, release. The wings should be kept level during the s
so that the "TOO SLOW" and "TOO FAST" signals are clearly distinguishable.

In the event of a cross wind launch, DRIFT CORRECTION will be necessary in
an attempt to allow the released cable to drop onto the strip after launching.
Drift correction is achieved by banking the glider slightly towards the windward
side and making correction with rudder. Ground observations of previous launches
give a good indication of drift and correction needed.

RELEASE PROCEDURE is initiated towards the end of the launch (if not sooner)
As the glider nears the top of the launch, the pilot will notice that the angle
climb becomes less as the cable is pulling almost vertically down on the nose of
glider. Even full back stick may not be sufficient to maintain the previous angl
of climb. At this stage, the pilot will usually feel the power suddenly reduced
the winch, as the winch driver throttles back. The glider pilot must immediately
lower the nose gently and operate the cable release twice, and as the nose comes

All clear above and behind is critically important as the launched pilot has severely restricted forward visibility when in the full climb stage.

Lining up the glider is important so as not to foul other cables or the ground.

Correct control settings for takeoff - full forward trim.

When all checks completed, pilot gives thumbs up to wingrunner who raises the win (If a crosswind prevails, must run the downwind wing, as wingrunners invariably hold back too much).

Pilot and wing runner must observe "cable coming up" as slack is wound in. When cable is taught, "all out" signal is given by either of several methods:

If a signal bat is being used, the operator transfers waving from underarm t overarm.

If wing signals are being used, the wing runner lowers the wing for 3 seconds and then raises the wings level again.

If headlight signals are being used, operator switches off for 3 seconds and then switches on again.

The glider pilot should be right on top of the situation and monitor the signals, always expecting that someone will do the wrong thing.

As the glider moves forward, the pilot will use full elevator control to get the glider running on the main wheel as soon as possible. Remember to steer with rudde and keep wings level with aileron.

SEPARATION:

As the glider increases speed, the glider, balanced on the main wheel in take-off attitude, will lift off the ground.

If the launch is accelerating the takeoff attitude is maintained unchanged so that the glider rises away from the ground in this attitude while waiting for the speed at which it is safe to begin a gentle steepening of the climb (*e.g.* 45 kts).

If the launch is not accelerating or is falling off, do not allow the glider to rise more than a few feet off the ground, and if the speed does not increase in a reasonable distance, say a hundred yards or so, release the cable and land straight ahead. Avoid landing on top of the cable.

INITIAL CLIMB:

After separation, some gentle back pressure of the stick is needed to maintai tension on the cable, otherwise the glider might catch up to the drogue and even overfly it creating a loop in the cable, in which case release is essential.

At this stage of the launch, the speed must be definite and increasing before normal climb procedure can be followed. Still in the takeoff attitude, the glider is allowed to separate further from the ground until it reaches a height, and a

down below the horizon to the normal flying attitude the pilot should perform the release checks (RUST) Radio on, Undercart up, Speed safe, Trim set.

In no event should a turn off the top of the launch be initiated unless safe speed and height are maintained. Many pilots have spun in by not observing this ru

Speed and angle of climb throughout the launch are always judged so that there is a margin of speed for recovery from any launch failure. At any angle of climb you must have sufficient speed to be able to nose over into the normal attitude if the launch should suddenly fail.

LAUNCH FAILURE:

May occur at any height from the ground to the top of the launch, and launch failures are quite frequent, typically 1 in ten. Failure can be due to:

Mechanical failure or power loss at the winch - e.g. launching on a cold winch motor, loss in oil pressure, radiator boiling, slipping clutch.

Faulty judgement of speed by winch driver (or pilot) - e.g. on a day with very strong wind gradient.

Cable breaks (the most frequent) - e.g. by pilot "pole bending", or exceedi maximum speed, or by faulty cable.

Wind changes giving downwind launch - e.g. sudden onset of sea breeze, effe of strong thermal, pilot not observing windsock before launch.

Faulty procedure by pilot - "pole bending", uncoordinated signals, exceedi placarded speeds, drifting too far to the side, overflying the winch.

Glider overrunning the launch cable - on ground run pilot may not keep enou tension on the cable, sudden acceleration of winch then reduced.

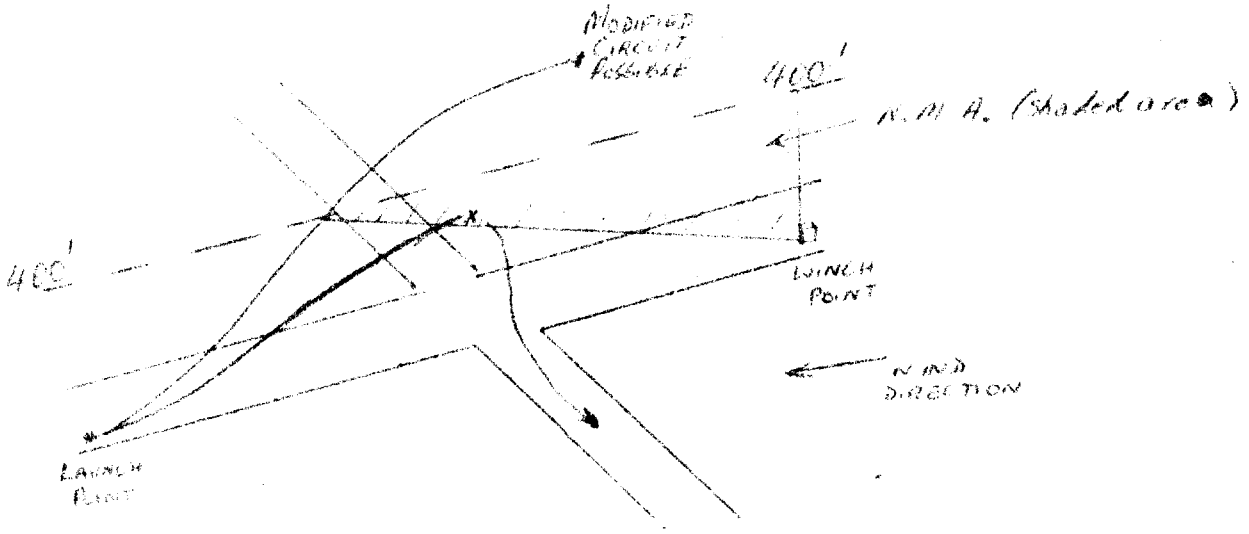
If a launch failure should occur during any stage of the launch, the pilot should strictly follow the procedure below:

1. Regain and maintain the safe airspeed near the ground, i.e. 1.5Vs. To pre a stall or spin the nose should be lowered smartly to regain speed, whic could take 4 or 5 seconds to recover. If a turning manouvre is initiated before speed is regained, a spin will possibly result.
2. The drougue chute and cable must be released from the glider by operatin the cable release several times, and this should be done in conjunction with 1. above. Gliders have been known to underfly the cable by diving t regain speed with the cable still attached.
3. Choose the landing area: hopefully the pilot will have considered all th options before he even gets into the glider. The decision to land ahead fly a modified circuit or continue with normal flight, will depend on th height above the ground once safe speed has been regained, and the exist of non-manouvering areas.

   A non-manouvering area is the area in which a glider is too low to carry a circuit and where an attempt to land ahead will result in an overshoot the available strip length.

At Lochiel there is no great problem with NMAs as all paddocks around the field are landable. However, pilots should not get complacent, consider the situation at Gawler or Mildura for example.

As a general rule, a height above 400' is sufficient for a modified circui to be initiated. If below 400', a landing ahead or to the side must be considered



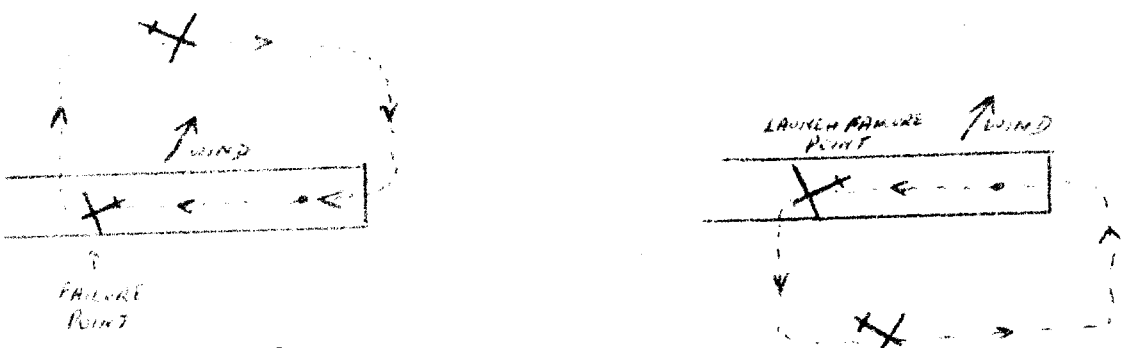
Pilots should not let themselves be winched into a position inside the Non Manouvering Area, but should abort the launch before the critical position i entered.

Gliders will find themselves being winched into the NMA if a very slow launch with zero or little headwind prevails. The pilot must judge if and when he is approaching the NMA and take the appropriate action.

The absolute mimimum strip lenght for winching is 3500'. At Lochiel we have two strips 5000' and 4600'.

CROSS WIND EFFECTS:

When there is a significant cross wind (say above 5kts), and there is a launch failure at a height below that needed for a full circuit, the pilot must, after regaining speed and releasing the cable, turn in the downwind direction but not allow the glider to be drifted away from the strip, and land either into wind (a turn of about 225^0) or crosswind in the original takeoff direction.



CORRECT: Large changes of heading (two turns of well over 90^0 each) are made at height. Pilot has a good view of the landing area on "downwind" leg. Base leg is made into wind and not hurried. Final turn at low altitude is much less than 90^0. If the landing area is suitable it is simple to land into wind.

INCORRECT: If the pilot runs into wind, turns with smaller changes of heading are made at height. On "downsind" leg view of landing area is restircted, base leg is made downwind and is hurried. Final turn at low altitude must be made through much more than 90^0. It would be most difficult to land downwind at this point.

LAUNCH FAILURE - GLIDER OVERRUNNING THE CABLE:

A potentially dangerous situation exists if the glider overruns the launch cable. A loop of the cable can foul on the wheel or skid or other parts of the structure, and in the likely event of the back release operating, the drogue or rings may foul around the glider and cause a hang up (unable to get free) and damage. Although the winch driver should abandon the launch if he suspects that an overrun has occurred, the pilot should not assume that this will be done. Thus whenever a glider overruns the cable, either on the ground or in the air, the release should be operated twice and the glider smartly turned away from the cable or drogue to prevent fouling, if the pilot is sure that no hang up has occurred.

BACK RELEASE DURING CLIMB STAGE:

This can occur especially on a strong headwind day if the tension on the cable is reduced (pilot may not be pulling back hard enough, or winch may fail). The glider will lose speed rapidly so recovery action must be initiated immediately Pilots must be careful not to dive under the drogue or cable which could result in the cable falling over the glider in flight, and becoming entangled in the elevator or other controls. If this unlikely event occurs, the glider should be flown straight ahead until the cable has become disentangled either by dropping off or by the pilot banking to assist it to slide off. If the incident has occurred at such a height that to land straight ahead is not practical, a turn may have to be made. It is essential that such a turn be made to lower the wing that has the cable over it.

HANG UP:

This situation can arise if the release mechanism fails on the glider, at the time of pulling the release knob. The glider will therefore be still connected to the winch, i.e. a "hang-up". An observant winch driver should be aware that this has occurred, and he is required to immediately turn off the winch motor and cut the cable. The glider pilot should regain safe airspeed and land immediately making sure that the suspended cable does not foul any ground obstructions (e.g. power lines, fences, trees, vehicles, etc.). Repeated attempts to release the cable by operating the release knob should be continued until the landing is immiment.

If the winch driver is slow to recognise the problem, or fails to cut the cable, then the glider must, after regaining speed, circle in the vicinity of the winch being careful not to foul ground obstructions or underfly the cable. The cable should always have a weak link (breaking strain approx 1000 lbs) which may fail as the manouvre is carried out. In the extremely unlikely event that the glide has to land still connected to the winch, the landing area should be close to th winch point, into wind with full airbrake, and certainly not attempt a circuit which would take the glider any distance away from the winch (more than 1000').

WINCH OPERATION:

No one should operate a winch unless near solo or post solo standard in gliding has been achieved. It is only at this stage that the driver will know th proper signals and emergency procedures.

The winch driver must be properly trained and fully briefed in the operati of the winch and any peculiarities of that winch in particular.

The winch driver must maintain a set of tools to handle emergencies: a too to cut the cable is essential; a swaging tool and supply of swages is needed to repair cable breaks.

Winch driver training is conducted on field.

LOCAL PROCEDURES:

Gliders are not permitted to overfly the operational runway if there is a glider being launched or in a position waiting to be launched. Pilots flying nea the airfield must keep a continual lookout to see what is happening on the groun especially in regard to launching. It is impossible to see the launch cable on a glider is on the wire being launched.

Circuit patterns must be flown well clear of the operational runway at goo height. Circuits from the wrong side are acceptable if conditions dictate this, a glider returning low from the ridge, emergencies, or gliders being launched.

Local soaring in the vicinity of the airfield should consider the possibi that a glider will be launched into their airspace, and so thermalling should be done well away from the operational runway whenever possible. There are many time when a thermal will be detected while on the launch, and the pilot, after releas wishes to go back to the spot and start thermalling. This is allowed provided th is no other glider waiting to be launched, but otherwise pilots must realise tha they may be delaying the whole operation by working close to the strip.

The Lochiel airfield is considered an all over field, and so landing area will be nominated by the duty instructor on a daily basis, depending on crops, wind conditions, fire hazards, etc. Pilots should be aware of this before launchi

Aerobatics and beat ups are not permitted without prior approval of the duty instructor. Similarly with ridge soaring.

Adelaide University Gliding Club
c/o Sports Assoc. U. of A.
North Ter. Adelaide S.A. 5000

1.4.77

NOTICE

OFFICIAL CLUB POLICY ON TRAILERING, CREWING AND RETRIEVES 31.3.77

1. OPERATIONS AWAY FROM HOME SITE must be approved by A.U.G.C. Committee including trailering to and fro.

2. CROSS COUNTRY FROM HOME SITE

   (a) Pilot and crew chief to be appointed by duty instructor.

   (b) Heaviest vehicle available to go on retrieves.

3. PILOT before setting out on cross-country must arrange crew (i.e. at least two others including crew chief).

4. CREW CHIEF

   (a) Before pilot sets off, crew chief must get trailer coupled to vehicle, and D.I. rig.

   (b) Before trailer leaves on retrieve, crew chief must notify Duty Pilot.

   (c) Crew chief need not be the driver but is responsible for all aspects of the retrieve, and in particular to brief driver about trailer towing characteristics.
   N.B. 30 m.p.h. on gravel roads, 50 m.p.h. on bitumen are the maximum permissable speeds under ideal conditions.

5. DRIVER IS REQUIRED TO PAY THE EXCESS ON INSURANCE PREMIUMS IN THE EVENT OF ANY DAMAGE TO GLIDER OR TRAILER IN TRANSIT.

NAME OF DRIVER: .....

SIGNATURE OF DRIVER: .....

AVIATION SAFETY DIGEST ---- Channelised Attention

A factor often apparent in aircraft accidents is the pilot's pre-occupation with one particular aspect of a flight to the exclusion of other tasks vital to the safety of the operation. This 'channelised attention' is frequently evident in the various forms of competitive flying, where concentration on the task in hand and the desire to succeed can be so overwhelming as to override good judgement and the fundamentals of sound airmanship.

An example of this can be seen in the circumstances of an accident involving an experienced glider pilot competing in the Australian national gliding championships. On the third day of the competitions, a four-leg cross country task had been set. The pilot completed the first three stages without incident and on the fourth leg, about 30 km north of the destination aerodrome, he decided to attempt a final glide direct to the finishing line.

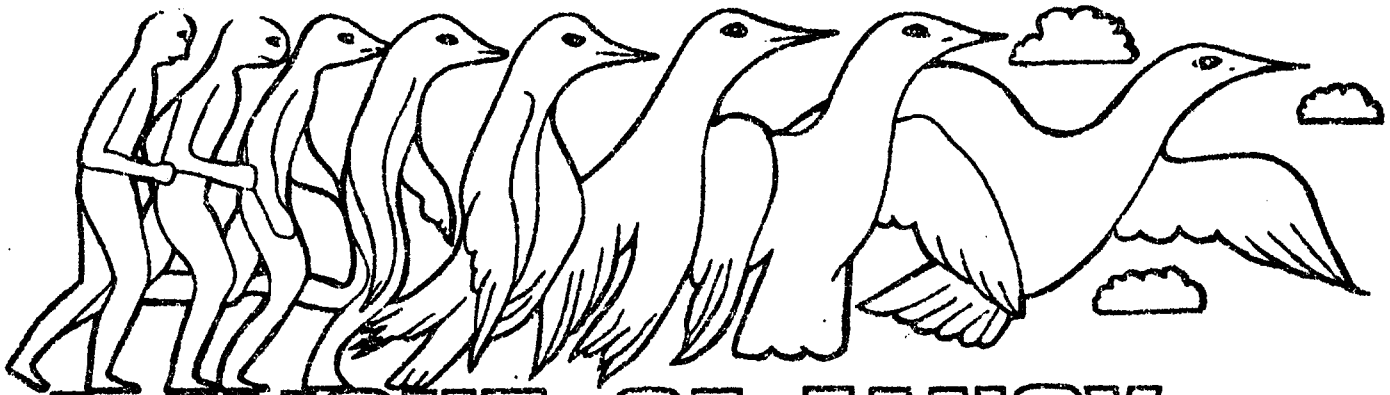
The glider tracked straight towards the aerodrome on a southerly heading but, late on final approach, the pilot saw the glider was not going to make the distance. He noticed a paddock on the northern boundary of the aerodrome and though it appeared only marginally suitable, he realised he would have to put the glider down. Planning to land into the wind, the pilot continued the approach on a heading towards the aerodrome and, at a low height above the ground, he banked the glider to the right. The glider had turned only a few degrees however, before the right wing struck a low contour mound running east-west across the paddock and the glider ground-looped to the right.

While travelling in a southerly direction, the glider slid sideways into the next contour mound and the rear fuselage broke in two. The glider bounced to a halt and the pilot clambered from the wreckage uninjured.

The pilot said later he probably became preoccupied on the final glide with his right to make a straight-in approach to the aerodrome and it was not until too late he realised that the paddock he had selected was unsuitable. Obviously when he began the final glide he was too low to reach the aerodrome but by the time he finally realised this he was committed to putting the glider on the ground as best he could.

Probably, had the pilot not been subject to the pressure of competition, he would have adopted normal out-landing procedures and left himself plenty of time to select a field that would have permitted a safe landing. It seems his determination to complete the task coloured his judgement to the extent that the glider virtually flew into the ground.

The pilot was no doubt aware of the dangers in trying to stretch the glide, but seemingly failed failed to recognise the developing hazard until too late. To ensure competitive flying is based on sound airmanship and remains within the capabilities of both pilot and aircraft, the will to win must be tempered with mature judgement and a proper sense of priorities.



A FLIGHT OF FANCY

[illegible]

It is always a pleasure, when walking or flying, to see birds soaring the cliffs or riding a thermal. Like us, some do it for food whilst others do it for fun.

The simplest form of bird flight is gliding which makes little demand on muscle power. In addition to utilising soaring techniques used by glider pilots, thermal, ridge, front and wave, birds also dynamic soar, slope soar waves at sea, use trailing vortices when flying in vee formation and may be seen soaring cliffs in the curl over from an off-shore wind. Birds are phenomenal creatures, one moment diving at 150mph and the next landing on a cliff ledge. How do they do it and how does their performance compare with modern sailplanes?

The flight feathers, which are basically an extension of the skin, are light and form a very efficient structure. A feather consists of a spine, called the rachis, with barbs making up the vanes on either side. By preening, the barbs hook together to form a continuous looking vane. This allows the feather to absorb a certain amount of damage with no lasting effect. A feather split by a blow is merely zipped up again by the bird. The feather is not quite airtight and a controlled seepage of air through it is thought to be responsible for some of the high lift properties. Birds' wings are flexible and do not stall easily. Both form and skin friction drag are kept to a low value by contour changing of the surface. Part of the wing may be stalled whilst the rest is kept unstalled. Near the stall the wing area is increased whereas at high speed the area is decreased, the tips being swept back keeping the best angle of attack. A large proportion of the drag comes from the wingtip vortex which increases further still during flapping. The wingtip vortex is lower with long narrow wings and reduced further still by using wingtip slots.

When the wings of birds of prey are fully expanded the outer feathers on the tip, called primaries, are emarginated resulting in slots or notches. Some big eagles have seven primaries resulting in deep noticeable slots with square bases. These reduce tip turbulence and help prevent stalling. Each one acts as an individual aerofoil bending by varying degrees under load. In level flight the longest primaries lie fractionally one above the other, with a bi-plane effect, so increasing the lift at the extremity of the wing. This produces extra lift without having long wings like an albatross. The bataleur has long pointed primaries and about 25 secondaries which form the wing trailing edge. This makes the wing appear long and slender with swept back tips resembling a swept wing aircraft. This allows continuous gliding at a high speed of 50mph over 240 miles in a day.

Projected to create slot

Stalling may be delayed on some birds by using the "thumb" to create a leading edge slot. The thumb, called the alula, is a tuft of feathers which can be projected forward of the wing to create the slot.

It was once thought that a bird swam through the air. However, the inner wing and secondary feathers provide the lift whilst the "hand" controls the primary feathers which provide the propulsion. On the down, power stroke the feathers fold flat against the air. The primaries may be seen to bend and propel the bird forwards. On the up stroke the primaries twist open allowing air to pass through them and the wing is rotated about the shoulder to increase the angle of attack and maintain lift.

Or how will you return?

Trim is generally accomplished in gliding birds by a fore and aft movement of the wings. The long fan shaped spread tails may be used to brake and steer. When soaring they are spread to increase lift whereas when descending they raise and lower their tails to slip air to control the rate of descent. The spread tail sometimes acts as a slotted wing flap to increase lift at slow speeds.

Legs and feet are also used to produce high rates of descent and act as airbrakes to reduce speed when landing. The auk uses its feet to increase the tail area when flying slowly.

The lower the wing loading the slower the bird can fly. The harrier flies slowly to use its specialised searching technique. The blunt bodied swift falcons, with their high wing loading, are better suited to fast diving than buzzards

until around 9am. Vultures may have to travel up t 100km from their nests for food. 1500 - 3000ft climbs ar followed by 6 - 12km glides. However, they are good a finding lines of thermals which enable them to dolphi distances of 30km or more with little or no loss in heigh Although the vulture's best glide angle is only abou one-third of that of a good sailplane, its turning radius also about one-third of sailplanes. Hence it can soar mor often and over more hours each day.

Some birds of prey make a long low swift attack fro distances up to 5km whereas others attack from the hove Some birds can descend rapidly with a high lift wing shap controlling break away so that its approach is silent and th prey not disturbed. Attack from the downwind position ha the advantage of quietness whereas attack from upwind

gliding to find thermals. Once the thermal is located the whole flock quickly centre on the core.

When migrants take-off they may well contain up to 50% of their weight as disposable fuel. This gives some small migrants a range of 2000km taking up to 60hrs. A typical journey time from England to, say, Uganda, may take 160hrs of flying with at least two refuelling stops. Some of the long range Pacific crossings include stages of over 3000km. The highest flying birds occurring in this country are migrants which may be found as high as 23 000ft. Kestrels may be found up to 7000ft whereas swifts often climb to 6000ft at night to sleep on the wing. However most birds are found below 500ft.

Whereas the albatross has an aspect ratio of up to 25, some 15% less than many Open ships, the glide angle of 25:1 is half that of the same glider. With a weight of 25lb and a span of 11ft there is a vast difference in size.

The griffon vulture often thought to be a good soarer has an aspect ratio of only seven with a glide angle of up to 15:1.

If there is to be a life hereafter it is quite obvious that glider pilots are already in training to be the birds of tomorrow. George Lee and Bernard Fitchett, supreme in the world, will be albatrosses. John Delafield and Steve White, consistent in this country, will be fulmars. Ivor Shattock will be an eagle, champion in the mountains. You've all seen the skylarks going up and down over the site – never to fly away; the cuckoo pushing "his" to the front at the start of a new season and the swallows seen only during the warm summer months. There are the field fares, the rooks noisily building away, the gooney birds, the love birds, and the ubiquitous secretary bird. Let us hope the interesting Mrs Partridge will always remain a colourful bird. You might think the CFIs will be mother hens, but for all their hard work they must be given free choice.

The question is, how will you return?

Reproduced from 'Sailplane & Gliding', June - July 1979

"...a stall and a very heavy landing."

A RECENT DAYS FLYING SAW:

- Dene Larwood fly 5 hours 20 minutes in TI - duration flight for silver C
- Peter Ashenden fly 5hours 5minutes in NF also duration flight for silver C
- Kate solo - at last
- Dave Ellis get backseat rating
- Don get converted to NF
- 3 passenger rides
- a happy but tired E.P.

Congratulations to all , All proving that you have tp be there on the right day.....

Another Working Day — Emilis

I was going to pick up the last piece of Kookabura from Lochiel.Also, Graeme had asked me to fix the damaged Bocian wing tip. Guy was rostered to instruct. Dave Blackburn wanted to do more fixing on the pie cart plumbing. Kym wanted to work on the winch. Dave Ellis & don were bringing back the Arrow after its overhaul. # pupil type bods also turned up in the two days.

It rained occasionally, it blew a gale, but the ridge worked. So we flew the Bocian Saturday until 3pm Dave got his plumbing done, Kym fitted a new oulet manifold, Distributor leads & so on Guy and I got the patch started.

Sunday we did the instrument plumbing then packed the arrow onto the ridge for the day with Dave.
By 4pm the patch had cured so out came the Bocian and the last 3 bods had their fly

The jobs had got done & everyone had a flight so in effect only the minimum operating oppotunities were wasted.
Thanks to a little forward thinking and team work...

LETTERS TO THE EDITOR

Dear Sir,

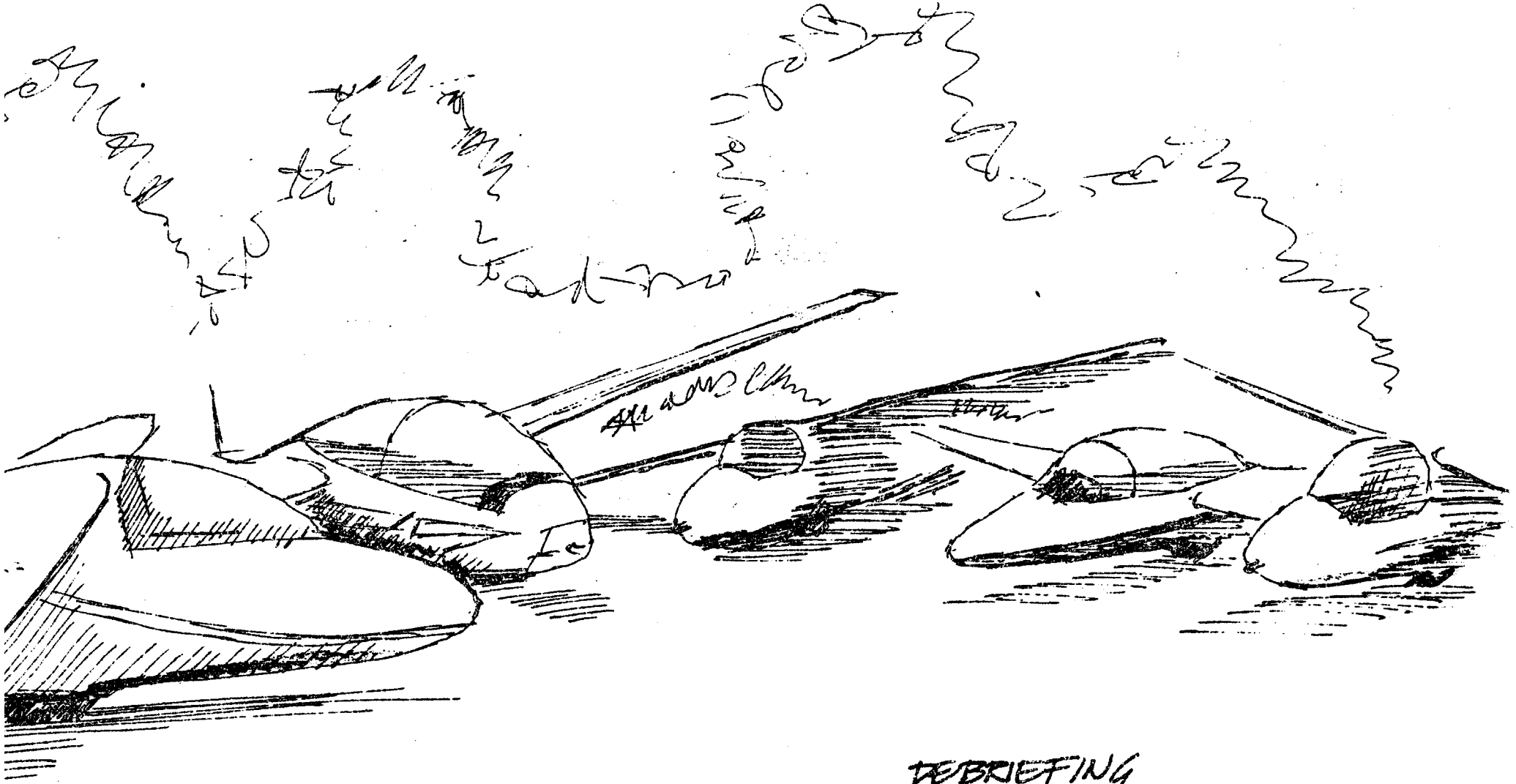
I admit it! I did it!
I wrote the last Newsletter!

THE PHANTOM

P.S. I will return
P.P.S. SOON!
P.P.P.S. SOONER THAN YOU THINK!!

"NEXT TIME, I GET A BIGGER LIVING ROOM"

EMILIS' AUG '79



DEBRIEFING

GLIDING CONTESTS
1979 · 80

DATES YET TO BE CONFIRMED BY

MAIKERIE ✓
GAWLER
PARAFIELD
PLANCHETTOWN

WHEN		WHERE	
SEPTEMBER	1,2	LOCKIEW	
	8,9		
	15,16		
	22,23		
	29,30		1st TERM
OCTOBER	6,7,8	———	
	13,14		
	20,21	MAIKERIE	
	27,28		
NOVEMBER	3,4		
	10,11	BALAKLAVA	
	17,18	BENALLA	
	24,25	BORDERTOWN	
DECEMBER	1,2	BORDERTOWN	
	8,9	MILDURA	
	15,16	MILDURA	
	22,23,25		
1980	29,30,31,1		
JANUARY	5,6	———	
	12,13	———	
	19,20		
	26,27,28	STONEFIELD	
FEBRUARY	2,3		
	9,10	HORSHAM	
	16,17	HORSHAM	
	23,24		
MARCH	1,2	GAWLER	
	8,9	GAWLER	
	15,16		
	22,23		
	29,30		
APRIL	5,6,7,8	———	

1st TERM
HOLIDAY VACATION

A.U.G.C

Report Magazine

Supplementary to
AUGC Newsletter
For Distribution
to active members

REPORTS

a)Treasurer's Report

-things are going well at the moment.

-financial arrangements for the Film Night and the Parafield Gardens H.S. Camp not understood.

-Anton Staric is back in town.

Moved that:

"The Treasurer be authorised to open an Investment Account in the A.N.Z. Bank for the Gliding Club."

Graeme Newcombe/Guy Harley

MOTION CARRIED.

b)Chairman of Instructor's Report

-Jeff Dodd and Mike Barnden to attend an Instructors Course.

-people will be monitored for spin recovery - check flights

-airfield crop is growing - need to correct for drift.

-reqirements for pilots to operate without an instructor:

-C certificates.

-notify an instructor.

-find out hazards before starting.

-midweek flying - no need to notify Edinburgh

-aerotow - must retrim during launch.

-safety on ridge - safe speed, clean turns, safe height.

c)Social Convenor's Report (incorporating Fundraiser's Report)

-Film Night - lost $31.50 (but retained $30.28 in assets)

- not enough members showed up.

- bad date - during Orange Week and Exam Week.

-Regatta - made $39.22 profit from Mum's.

-Passenger Days - Sept 15-16 - normal $4 per flight - no food on sale except wine and cheese.

d)Newsletter Report

-next issue due next week.

e)Winch Report

-winch is alleged to be fully operational.

-new exhaust manifold has been fitted.

-front engine now works wonderfully.

-choke to front engine has been fitted.

-cables have been end-for-ended.

-new battery fitted and earth fixed.

-V-8 fuel pump doesn't work.

-new electric fuel pump fitted.

-studs for drum axle purcased.

Vote of thanks to Kim Bonnett for his work on the winch.

ADELAIDE UNIVERSITY GLIDING CLUB INC.

MINUTES of the General Meeting of the Adelaide University Gliding Club Inc., held in the Sports Association Meeting Room at the University of Adelaide on Wednesday, September 5th., 1979, at 7.30 p

PRESENT: D. Ellis (President), D. Larwood (Secretary), G. Newcombe (Treasurer), M. Docherty (Social Convenor), G. Harley, K. Swanson, D. Hein, K. Bennett, M. Forster, R. Groblicki, P. Mortier, C. Markovitch, J. Dodd, J. Canny, C. Hicks, P. Ashenden, P. Belperio, G. Parker, T. Kiek, T. Nemeth, E. Prelgauskas, B. Minck.

APOLOGIES: T. Dodd.

MINUTES

Moved that:

"The Minutes of the Meeting held on Wednesday, August 1st., 1979, be taken as read and confirmed."

Guy Harley/Graham Parker

MOTION CARRIED

CORRESPONDENCE

Received from:

SAGA:- Minutes AGM
Minutes GM (August 5)

AUSA:- Minutes AUSA Council Meeting
Memo re. S.A.I.T. Market Research
Forms for Blues Nominations
Memo re. non-student members of AUSA Clubs

Sunraysia G.C.:- Advertisement for its Regatta (Dec. 8-15)

Union Activities Co-ordinator:- Thanks for Hang-glider display.

Waikerie G.C.:- Sports Class Competition dates (Oct. 20-21)

Royal Aeronautical Society:- re. Memorial Dinner

Gliding Accessories of Australia:- Price list.

A.S.C.: Thank you for 'Potential Community Demand for Soaring in South Australia'

A.N.Z. Bank:- Balance Statement

Various:- Bills.

Sent to:-

Gliding Accessories of Australia:- Request for price list

I.K. McPhee:- Request for price list.

Local G.C.'s:- Advertising of film night

Meningie G.C.:- re. advertisement for aircraft.

E.T.S.A.:- Denying liability for cable/powerline tangle.

c)Other

a)Non-undergraduate members of AUSA clubs.

-these must pay a fee to join the Sports Association.

-must be enforced by the Club - although we are up to date at the moment.

b)Competition

-intra-club contest outlined in previous Newsletter

-Arrow available to be taken away.

c)Fire extinguisher

-the value of putting a dry powder extinguisher on the winch is to be investigated.

d)Badge

-Peter Ashenden to chase up the Union Graphic Designer

e)Mildura Comps.

-if Arrow goes - must write to them first.

f)Rainwater tank and Cupboard

-these have been obtained and a trailer needed.

-Pat Belperio to supply the trailer for transport.

g)Waikerie Incident

-in light of the recent accident, it was pointed out that it is dangerous to exceed one's level of flying and to try to proove something to yourself or to others.

The Meeting was closed at 9.50 p.m.

=-=-=-=-=-=-=-=-=-=-=

f)Arrow Report

-refurbishing now complete.

-Do's and Don't's - Do look after the interior

Do switch electric vario off at end of

Don't grind nose in on landing.

Moved that:

"The Executive be able to sell the Arrow and purchase one of the Ka6's currently on the market subject to finance."

Guy Harley/Peter Ashenden

MOTION CARRIED.

g)Bocian Report

-strut and wheel have been welded.

-replacement costs - $235 for hub and brake assembly.

$100 for tyre and tube.

-an axle would have to be made up.

-Don Hein asked to fix the wheel and Mike Barnden will be asked to manufacture an axle.

-paint on the Bocian is cracking - person doing the DI should go over these spots with sandpaper and spray them with undercoat.

h)Kookaburra Report

-fuselage to be finished.

-rest ready to be painted.

i)Ka6 Report

-ready to fly.

GENERAL BUSINESS

a)Radio

-Merv Gill bought the set offered by Tony Duncombe.

-new sets cost $600 to set up with necessary extras.

-CB radios

-for communication to give smoother operation.

-could be fitted to winches, Bocian, piecart, car.

-prices: National set $35

8 amp hr. Battery $25

Charger $25

Moved that:

"The Club spend its Capital Equipment allocation to purchase four CB radios and the necessary accessories and that the Executive be empowered to authorise Peter Ashenden to buy the radios."

Emilis Prelgauskas/Guy Harley

MOTION CARRIED.