From the home of the *Scottish Gliding Centre*

Portmoak Press

Editorial-*Ian Easson*

Well, that's the end of another summer – our ATC people have migrated south for winter and a number of our members are cosseting newly achieved badges.
Although the summer courses have now finished, we can book places for next year. Anyone interested, speak with Irene at the club. We are all now looking forward to a good couple of months of wave. Well we have to remain positive, don't we?
We can now boast a real BGA man at our club. Keith Auchterlonie has joined us and he is the BGA Communications Officer. This means that every one of us has a direct line to the BGA, via Keith. Please don't be shy, talk to him. Tell him about your good ideas and suggestions. We all like to talk about them in the launch caravan or in the bar at night. Now we really do have a chance to make things happen at BGA level.
Thanks to everyone who has contributed to this issue (all 18 pages!). We are still keen to get as many issues out by e-mail so if you don't already receive this by e-mail, and would like to get an instant copy, drop me an e-mail with your details please.
Please note the cut-off dates for future issues: End of December for January, end of March for April, end of June for July and end of September for October. Material can be sent to me either typed or hand-written and dropped in my mailbox beside the payphone in the clubhouse or you can e-mail me at ian.easson@btinternet.com.

In this issue:

Board Members.

Chairman	Brian Cole-Hamilton
Secretary & Caravans	Bruce Marshall
Treasurer/Buildings/Property	Kevin Hook
Vice Chairman and Gliders	Chris Robinson
Chief Flying Instructor	Bob Jones
Tug, WOA and Tech. Officer	Joe Fisher
Winch & Ground equipment	Douglas Tait
Safety Officer	Neil Irving
Cadets & Deputy CFI & Duty Rosters	Neil McAulay
Membership Comms, Office re-orgs and Publicity.	Ian Easson

The Safety Officer's Bit – Lookout!

A few weeks ago a K-8 doing a low right handed circuit nearly intercepted a K-21 on final having done a left handed circuit for the same bit of the centre strip. The pilot of the K-21 closed his brakes, and over-flew the K-8 to land long. Neither pilot saw each other until they had both turned finals, probably because they were both overworked - the K-8 pilot had got himself low in circuit, and the pilot of the K-21 was very early solo. Most mid-air collisions occur in circuit - please be very careful, and watch in particular for gliders and powered aeroplanes doing opposite circuits.

Notams

Recently the system of obtaining temporary navigation warnings has changed. They are now only available via the Internet on the ais website www.ais.org.uk. The new system is slow, although it is improving. To use the new web site you must first register. The registration process takes some time – mine took four hours to be confirmed. Then:

a) From the home page, select NOTAM.
b) Select NARROW ROUTE BRIEFING
c) Enter a meaningful name in the Briefing ID field. This name will be added top your list of stored briefings and presented to you when you next log in. You can therefore store commonly required briefings (for example, for an area around your gliding site, for your standard 50km task, etc) and re-process these whenever required without having to enter details every time).
d) Uncheck the SNOTAM box.
e) Enter the date and time of flight.
f) In Departure Aerodrome enter the ICAO designator for one side of the imaginary box. For example EGPF is Glasgow.
g) In Arrival Aerodrome enter the ICAO designator for one side of the imaginary box (For example EGPA is Kirkwall.
h) In Traffic, enter VFR.
i) In Purpose, enter General + Misc. The purpose box should default to this but (as of 10 Sept) didn't, so always check.
j) In UTC Validity Period, enter the from/to date and time. Alternatively, you can leave this blank, which will give you all NOTAMs from the Date of Flight for the next n days, where n is the value you enter in the Earlier Than nn Days box.
k) In Flight Level, enter the flight level above which you do *NOT* want information (the data given will be to a level 4000ft higher than the FL specified).
l) In Narrow Route Width, enter the distance either side of the line joining the aerodromes specified (say 70).
m) In Route, enter DCT (for Direct).
n) Click on Submit.

The results of the above route will give all Notams within 70Nm of a straight route between Glasgow and Kirkwall – which covers most of the area we are likely to fly in.

We intend to collect the notams once a week and publish them on the safety notice board. Instructions for using the site from the BGA are also available on the notice board. The notams outputs are no longer listed in alphabetical order, so you have to look at them all. The ones beginning NAVW (Navigation warning) are the ones most likely to be of interest.

Parachute zones and silver distances

There is a tethered balloon at Arbroath, which is being used for dropping parachutists. Also Kingsmuir is an active parachuting site. This means that ***neither Arbroath nor Crail are suitable destinations for a silver distance***.

Night

The nights are drawing in and the clocks will go back soon. Do be aware that

1. It is illegal to fly later than half an hour after sunset.
2. It is darker on the ground before it gets dark at height – if you are watching the sunset at 10,000' you are likely to be in deep trouble.
3. It is very often too dark to fly before the legal last landing.

Do check the last landing time before you go flying. If any one has any suggestions or comments (on safety) - I can be contacted at the club on most weekends, or via email at Neil.Irving@yakara.com

Neil Irving

Uni News

Nothing to report – they're still on holiday, aren't they! (*Ed*)

The gliding club fly every weekend, weather permitting, if you want to go flying, come along to our meetings Wednesdays at the Blind Poet, 8 p.m., email us at gliding.club@ed.ac.uk, or phone one of the committee. The first meeting of autumn term will be on October the 2nd. You can check out our web site, which has lots of interesting stuff: http://www.eusu.ed.ac.uk/clubs/gliding//

Decompression Sickness

As promised in the last issue of *Portmoak Press*, this article follows the item on Oxygen (Going for Gold or Diamonds)

Decompression Sickness (from an article published in Flight Safety Bulletin [FSB] - by John Stewart-Smith)

Glider pilots who spend time at altitude in an unheated and unpressurised cockpit expose themselves to the risk of decompression sickness. This article aims to alert all pilots to the risks of decompression sickness and to provide some generalised information on how and why decompression sickness occurs.

My previous article on hypoxia (*FSB - 3/96*) gave the composition of dry air as 78.09% nitrogen, 20.95% oxygen, 0.93% argon, 0.03% carbon dioxide, plus traces of hydrogen, neon, helium, xenon, ozone, krypton and radon. That article then went on to ignore the 79% nitrogen and consider how the partial pressure of 21% oxygen affected our ability to survive at the reduced ambient air pressure at increased altitudes.

This article will consider the nitrogen content of the air and how this major component of the stuff we breathe can cause decompression sickness - with the resultant "collapse, coma and death" which seemed to feature so frequently in the aviation medicine lectures I attended so long ago!

Decompression sickness may be defined as a group of effects produced by exposure at low pressure. These effects are variable both in individuals and between individuals. Decompression sickness was first recognised in the 1850s in divers and others breathing compressed air, when it was called "Cassion Disease". Divers named the symptoms as bends, chokes, creeps, staggers and collapse. The first description of the same symptoms in aircrews exposed to low pressures at high altitudes was not made until the 1930s. Aviation Medicine as a specialised subject was still in its infancy, but the various symptoms were recognised as being due to the saturation of the body tissues with nitrogen.

When breathing air at sea level pressures, the tissues and fluids of our bodies contain dissolved nitrogen which exerts a partial pressure approximately equal to the partial pressure of nitrogen in the air. Recalling my previous article on hypoxia, which showed that the partial pressure of the 21% oxygen in sea level air was 760x21%=600mmHg. There is about one litre of nitrogen in solution in our bodies at sea level pressures. (mmHg = millimetres of mercury)

The partial pressure of nitrogen in the ambient air decreases as we ascend to the lower air pressures at higher altitudes. Nitrogen is carried by the blood from the tissues to the lungs, and breathed out. The solubility of nitrogen in blood is low and some tissues, particularly fat, retain large amounts of nitrogen. Thus nitrogen is not cleared quickly from tissues as its partial pressure drops with increasing altitude. This causes tissues to become supersaturated with nitrogen, resulting in the formation of nitrogen gas bubbles. These bubbles can grow in size and be carried around by our circulation system where they can give rise to pain in the limbs and joints ("bends"), respiratory disturbance ("chokes"), skin irritation ("creeps"), disturbance of the central nervous system ("staggers") and, finally, cardiovascular collapse ("collapse, coma and death").

The accepted lower altitude threshold for decompression sickness is 18,000ft, where the ambient air pressure has fallen to half the sea level pressure and the partial pressure of nitrogen has fallen to about 380x79%=300mmHg. The chance of suffering decompression sickness at altitudes between 18,000ft and 25,000ft is low, but exists. In fact there is a considerable chance of suffering decompression

sickness at altitudes much lower than 18,000ft if you have been SCUBA (Self Contained Underwater Breathing Apparatus) diving prior to your ascent. The Royal Air Force has a strict rule that anyone who has been SCUBA diving may not fly at all for a minimum period of 12 hours after using SCUBA gear down to a depth of 10 metres of sea water (2 bars absolute), and for 24 hours after descending to depths greater than 10 metres. The reason for this order is that it is quite possible to have already acquired small nitrogen bubbles in our tissues while SCUBA diving which do not cause any problem until exposed to the decreased pressure of even a small altitude above sea level. So, it's not a good idea to go SCUBA diving on the last day of your holiday before flying home in the comfort of a pressurised airliner, let alone going wave flying in a sailplane.

The incidence of decompression sickness increases greatly at altitudes above 25,000ft. *Aviation Medicine* by Ernsting and King includes a table showing the relative incidence of symptoms of altitude decompression sickness following exposure for two hours at 28,000ft. Their information is repeated here:

Symptoms	Incidence
Joint and limb pain	73.9%
Respiratory disturbance	4.5%
Skin irritation	7.0%
Visual disturbance	2.0%
Neurological disturbance	1.0%
Collapse	9.0%
Miscellaneous	2.5%

I will mention, later, the personal factors which affect susceptibility to decompression sickness, but the table above indicates the relative incidence of symptoms based on a sample of fit young male military aircrews. Before leaving this table, it is worth mentioning that the relative incidence of symptoms changes at increasing altitudes so that, for example, the incidence of collapse increases from 9.0% at 28,000ft to 25.8% at 37,000ft.

The manifestations of decompression sickness are very varied and may occur in any combination or sequence of symptoms. It is worth noting that skin irritation ("formication") is a symptom of both hypoxia and decompression sickness. We can now examine the symptoms of decompression sickness in more detail, to allow us to recognise and react to these symptoms as quickly as possible.

Joint and Limb pains, often called "bends", are the most common symptom of the onset of decompression sickness. The pain is usually localised and may increase from mild discomfort to agonising pain if altitude is maintained. The commonest sites are knee, shoulder, elbow, wrist or hand, ankle or foot and, rarely, the hip. Mild pain may encourage the subject to move or rub the ache but this increases the pain, perhaps by spreading the nitrogen bubbles. "Bends" almost always disappear during descent but mild ache and stiffness can persist. Agonising pain from bends can induce collapse while airborne.

Skin irritation often occurs at altitude and is, alone, of little medical significance. Rarely, itching may be severe with localised skin rashes and mottling which can persist for 2 or 3 days. These more severe symptoms are unlikely to occur in isolation.

Respiratory disturbance, "chokes", are a serious but infrequent effect of decompression sickness. The onset is usually a feeling of constriction in the lower chest when an attempt to take a deep breath can cause a paroxysm of coughing. Remaining at altitude while suffering the "chokes" almost always leads to collapse. The "chokes" may persist for several hours after descent and can be started again by smoking or taking a deep breath. Personal experience of "chokes" allows me to assure the reader that it is an extremely unpleasant sensation.

Neurological disturbances, the "staggers", are unusual in aviation decompression sickness. Paralysis and fits can occur but only one case of permanent paralysis has been recorded as a result of aviation decompression sickness.

Visual disturbances are probably the result of gas embolism. The most common effects are blurring of vision, obscuration of part of the visual field or blindness over half the field of vision.

Collapse. A significant number of those affected by decompression suffer a general feeling of unease, illness, anxiety and reduced consciousness.

This syndrome may occur in isolation or in association with other symptoms. A feeling of restlessness, a pale appearance and cold, clammy sweating on hands and face often preface collapse. Vomiting is common and most cases develop frontal headache. Rapid descent is usually followed by rapid recovery.

The actual rate of ascent encountered in aircraft has no effect on the incidence of decompression sickness. The duration of exposure to low pressures, re-exposure, temperature, exercise, hypoxia and personal factors all affect the onset and seriousness of aviation decompression sickness.

Duration of exposure. Decompression sickness does not occur immediately on exposure to the reduced pressures at high altitudes. This fact is only of interest to those who fly in pressurised cabins which fail, because it allows some time to make an immediate rapid descent to a safer altitude. However, a slow climb in an unpressurised aircraft like a sailplane means the pilot is gradually exposed to increasing altitude over a long period. The onset of decompression sickness can then occur while still climbing.

Everyone who is exposed to a high enough altitude for long enough will suffer decompression sickness

Re-exposure to altitude soon after first exposure to risk greatly increases the susceptibility to decompression sickness. The longer the interval between flights to low pressure the better. This effect is still apparent even with a 24 hour interval between exposures. A break of 48 hours between high altitude flights in an unpressurised aircraft is necessary to avoid the problems associated with re-exposure, so two high altitude flights in a glider on the same day will greatly increase the risk.

Exercise. Heavy physical exercise at altitude is unlikely to be a problem while lying supine strapped into a sailplane, but exercise does increase symptoms and lowers the altitude by about 5,000ft at which symptoms occur. Perhaps it would be unwise to climb to high altitudes immediately after rigging a glider which demanded particularly strenuous exertions.

Temperature. A low environmental temperature increases the incidence of decompression sickness. The cockpit of a glider will quickly drop towards the outside air temperature, which drops to minus 56ºC at the tropopause on a standard day. Warm clothing which does not restrict circulation can very slightly reduce the risk of decompression sickness among glider pilots.

Hypoxia. Lack of sufficient oxygen increases both the incidence and severity of decompression sickness. It is possible for a pilot to confuse the symptoms of decompression sickness with those of slight hypoxia. Remember *(FSB 3/96)* that a fully fit 20 year old flying at a cabin altitude approaching 30,000ft will be hypoxic even when breathing 100% oxygen. If you, like most UK glider pilots, rely on an air-mix oxygen system with a less than perfectly fitted mask which has probably passed its sell-by date, then you will become hypoxic at a much lower altitude than those breathing 100% oxygen, and consequently be more liable to decompression sickness.

Some people are more likely to suffer decompression sickness than others. Personal factors such as age, body build, sex, previous injury and general health all affect one's susceptibility.

Age has a marked effect on susceptibility. Research has shown that there is a NINE FOLD increase in liability to develop symptoms during two hours at 28,000ft between those aged 17-20 and those aged 27-29 years. How does that place a 60+ year old glider pilot? "Poorly", is a likely answer.

Body build and sex. The more fat you carry around the more likely you are to suffer decompression sickness because fat stores nitrogen very efficiently. It's a fact that women tend to have more fat than men who are equally fit. This may help women keep warm during sea survival but it doesn't help with decompression sickness.

Previous injury to a joint or limb increases the likelihood of suffering "bends" at the site of the injury.

General heath. Flying with a hangover is never a good idea. If you have any alcohol in your system or are suffering from any infection, you increase your chances of finding out about decompression sickness at first hand. Various medications

which can be bought over the counter are unsafe to mix with any kind of flying. Take advice from an Av Med qualified doctor before flying while using any medication. Do you KNOW how long it takes YOUR body to get rid of alcohol?

Avoidance of decompression sickness

Taking into consideration all the personal factors mentioned previously, there are only two ways to minimise the risks of decompression sickness. One way is to avoid cabin altitudes in excess of 18,000ft, which marks the normal threshold for the onset of problems. Remember the increased hazards associated with flying after SCUBA diving - and don't forget age, fatness, fitness and that session at the club bar last night. The second way is to remove nitrogen from your system before you begin your ascent. This can be done by breathing 100% oxygen for a considerable period before you begin your high altitude flight. This is known as "pre-oxygenation" or "denitrogenation". This is why Space Shuttle crews and SR71 "Blackbird" crews walked out carrying their 100% oxygen handgrip systems prior to launch. You MUST breath 100% oxygen (NOT from an "air-mix" system) to wash the nitrogen from your body. The protection gained depends on the amount of nitrogen removed from the body, which depends upon the time spent breathing 100% oxygen prior to take off - and, of course, remaining on 100% oxygen throughout strapping in and for the duration of the flight.

Ball park figures for fit young military aircrew are that pre-oxygenation for 30 minutes will provide protection for short duration to 48,000ft during which the subject does not spend more than 10 minutes above 25,000ft. Pay particular attention to the last part of the previous sentence! Pre-oxygenation for 3 hours is needed to provide 3 hours protection at 40,000ft. It is present RAF policy for aircrews (fit, young etc.) to pre-oxygenate for 60 minutes before they undergo training to a pressure altitude of 25,000ft in a hyperbaric ("pressure") chamber.

Treatment of decompression sickness

The primary treatment of decompression sickness arising at altitude is recompression to ground level as rapidly as possible. The effects of nitrogen bubbles in the body can be decreased by overcompression and by breathing 100% oxygen. Surface transport of the patent to a hyperbaric chamber is preferable but if it is necessary to fly the patent to the nearest chamber, the flight should not go higher than 3,000ft amsl. Obviously, speed and specialist attention are both vital.

Anyone flying at cabin altitudes in excess of 18,000ft is exposed to the risk of decompression sickness, which can cause permanent injury or death. It is suggested that, however unlikely decompression sickness may appear, it might be a good idea if those gliding clubs which specialise in wave flight to high altitudes were aware of the risks and developed an emergency plan to get a suspected patent from the gliding site to the nearest hyperbaric chamber where specialist help is available. One person saved from permanent injury or death will repay the effort.

I am reasonably certain that I have seen at least one glider pilot who was suffering from the after-effects of decompression sickness following a wave flight of several hours duration at high level. If you have the slightest reason to suspect you may be suffering from decompression sickness at high altitude, get onto the ground as quickly as possible and seek expert help, the sooner the better. If you are on the ground and suspect you are still suffering the effects, then get onto 100% oxygen and relax as much as possible while waiting for the medics to arrive.

John Stewart-Smith

The Man from the BGA

Your editor has asked me to write a few lines introducing myself – he must be struggling to fill up space this month.

My name is Keith Auchterlonie and I've been gliding for 9 years. I originally hail from St Andrews and have recently returned to the area after 26 years in the south of England (I moved down there for 6 months in 1976 and never really quite managed to get away). Previously I flew at Bath & Wilts GC. This site sits on top of a small hill and has a single E-W runway. Wave is virtually unknown and ridge soaring is only possible very occasionally. Quite

different from Portmoak. Bath & Wilts has benefited over the last few years from at least three ex-SGU members who have made the journey south, so I thought that it was about time that I helped redress the balance. Gliding is a passion but unfortunately my ability doesn't match my enthusiasm, although I was able to scrape a diamond goal earlier this year. That's enough of the autobiography. The reason that I suspect Ian asked me to write a piece is my day job. When I moved to Fife, I took up the post of BGA Communications Officer. This, for me, was a classic case of combining business with pleasure.

The Communications Officer is a new BGA post, set up as part of the current BGA strategic plan. My role covers anything to do with communicating about gliding in general and the BGA in particular. More specifically, I see three major areas of activity:

1. Raising the profile of our sport with the general public. I believe that this is essential if gliding is to thrive. Increased public recognition will lead to increased membership – you need only to take a look at the membership statistics for the UK as a whole to see how important this is. A higher profile may also lead to increased success in gaining external sponsorship for the sport. Many clubs are already doing an excellent job in working with their local press, but I believe that it is the role of the BGA to concentrate on the national publications, as well as TV, film, etc.
2. Working with member clubs to assist them in their marketing. Again, I am very aware that many clubs are already doing this successfully and I have no desire to tread on their toes or to teach them how to suck eggs. I would like to try to establish what clubs are doing and what has been successful in an attempt to establish best practice and pass this on to others. I also want to find out what clubs want in the way of marketing support from the BGA, so that, with the Communications & Marketing Committee, we can supply this.
3. Internal communications, i.e. how the BGA communicates with its member clubs and with you – the individual glider pilot. I know that, as an average club member, I have often been unsure just what the BGA does and what it was able to offer me in return for my annual capitation fee. In the couple of months since becoming Communications Officer, I have been amazed at the amount of work that goes on behind the scenes and the range of services and information that the BGA provides to the gliding community. I am currently working with the C&M committee to devise a new internal communications strategy and I hope that this will be approved by the Executive Committee very shortly. For the time being, let me simply say that the BGA must get a lot smarter about distributing information to its membership, in a way that is meaningful yet relatively concise.

So, I see many challenges ahead (not least of which is getting some more time to go gliding myself). Before I finish though, I would like to return to the issue of increased membership. At the end of the day, we, centrally, can get more people to try gliding but we can't have much effect on what happens when the prospective new member turns up for the first time at the airfield. A plea, therefore to everybody – whenever you see somebody new, please go out of your way to help. Be enthusiastic, informative, take him or her under your wing, just go that extra step to try to make that person want to return and participate fully in this wonderful sport of ours.

Thanks to everybody who has helped to make me feel at home at Portmoak whenever I have been able to get along. I look forward to meeting many more of you over the next few months.

Keith Auchterlonie

Walking On Air

We are planning a trip to the Ulster GC at Bellarena next year and are looking for sponsors and helpers. Anyone interested in contributing in any way should contact Joe Fisher via the club. The following are examples of how people can help:

With a club population of over 300, we must have people with a considerable knowledge and expertise of our club requirements, and superb business contacts. You might have sources for products, equipment and materials at advantageous prices, or you might have knowledge of the best person in your

organisation to contact for sponsorship.
It seems silly and wasteful to ignore the expertise we have on our doorstep so **I am asking you, the members if you would be willing to help us with your knowledge and expertise, not often, just occasionally.** If, from time to time, you would be willing to put your knowledge and expertise at the club's disposal please let me have your details along with the type of services or products on which you could advise. Thank you in advance for your help.

Joe Fisher
Chairperson
Walking on Air

We received the following ad from John Thomson and he has agreed to donate £50 to Walking on Air for every Mobility Scooter purchased via this ad:

New Hangar Proposal

The SGU board are investigating the cost and feasibility of replacing the existing glider hangar. The proposed replacement hangar is of a design that will allow all aircraft unobstructed access to a door. The benefits of this will be clear to all club pilots who have had to move four or five aircraft in order to extract a Junior or K8 from the back of the hangar. It is anticipated that the club fleet utilisation will be significantly increased by improving the availability of any given aircraft on quiet days.
A planning application will be made during September. Finances permitting, it is possible that construction will commence next Spring.
Preliminary drawings are on display in the clubroom corridor. Any syndicate who would like space in the new hangar should let me know as soon as possible. For those with heavy, or difficult to rig gliders, there is immense potential to increase your utilisation of your machine.
Please note that the following costs are provisional proposals only. Anticipated cost of parking your aircraft in the new hangar is £600 per year (compared to £380 in the present hangar). Syndicates wishing to reserve a place would be asked to make an interest free advance of £5000 to the club. In return for this, they would receive 10 years free hangarage (i.e. a 17% discount with total protection against inflation). Their place in the hangar would be fully transferable to any other club syndicate in the event that the syndicate no longer wanted to store their own aircraft there. I am open to other suggestions from anyone with a serious interest.

Kevin Hook

Internet Updates

Anyone interested in Euroglide 2000 should check this out. By the way, Euroglide 2000 was a 2000K race around Europe, as you would expect. The web site shows an excellent animated reproduction of the race showing individual, or groups of, sprites moving along the routes to the turn points.
http://intranet.eaczc.nl/animate.asp

317k In a Club Junior

or 6hr 39m Without a Yaw String
(Written 22/10/98, rediscovered and revised June 2002)
Well so far, so good, its 06:30 on Monday *(12/10/98)* and I'm first on the flying list for a club Junior and I have a club barograph. Better than Saturday (but that's another story).
Having smoked my barograph I opened the hanger and started to fill the glider with oxygen. A couple of visitors appeared so I checked and filled their bottles first. Adi Vongotard has arrived and is second on the list. We fill HRG, but there is a leak from the back of the regulator, which is buried deep in the instrument panel. Adi suggests that I take FUS as he "only" wants gold height and doesn't need oxygen (Generous these Montana folk). So we extract FUS from the back of the hanger and fill it with oxygen. Have you ever known the aircraft you want to be at the front of the hanger?
Fred Joynes volunteered to DI the aircraft and get it to the launch point

while I seek out an O.O. for my barograph and declaration. (There are nice folk in Lanark too). A quick call to my boss who had been on stand-by and so was agreeable to "A Wave Day Holiday". *(Chris, you seem to know a lot of "Nice People" - Ed)*
Just after 11:00 I'm ready to launch, not bad - I've only been out of bed 6 hrs. I wonder if I'm too late for the "early" morning wave. During the launch I notice that the yaw string has caught in the edge of the sticky tape and is useless, it will stay there for the whole flight! At 1,200ft I pull-off and take a low point on the way to the North face of Bishop. At around 100kts with the mechanical vario still indicating 2kts up, I become suspicious. Operating the Climb/Cruise switch confirms that it is stuck in cruise mode and operating as an air mass vario. A pain but I can live with it. Up to 4,000ft at West Lomond. I've checked the electric vario, it's rather optimistic and the total energy compensation of both instruments is poor. (Made a mental note to "fix" panel one way or the another – *as Director for Gliders I arranged for new varios to be fitted to both Juniors*). Now the Turn/Slip, although checked on the ground I always check it once airborne while turning. About 6 weeks ago I was suddenly caught in collapsing wave at 10,000ft and had to descend 6,000ft in cloud, this convinced me that an in-flight check is good practice and saves embarrassment with the laundry.
Now I'm up to 6,000ft and the wind has increased from 18kts at 1,200ft to 24kts and has veered from 300º to 310º. Things are looking good. I run along a wave bar tracking 030º out to the East of Perth. Now the problems start. It is Monday, so the airway to the West of Portmoak *P600* is operational, but we have negotiated a crossing procedure, however this involves contacting Scottish ATC by radio and hence requires an R/T Licence, which I do not have (Mental note: Get R/T Licence this Winter – *got it, but it took until spring the following year*). West of Perth the bottom of the airway is FL065 with a minimum altitude of 5,500ft. As QFE at Portmoak is 1000mb and Portmoak is 365ft amsl QNH is 1012mb. As flight levels are referenced to 1013.25mb it means that the base of the airway is just below 6,500ft as indicated on my altimeter. (All those sums for the Bronze paper weren't wasted). For safety I nominate 6,000ft as my maximum altitude, but to the South the base of the airway falls to FL060 and then to FL055, so I must be careful. Its also crucial to keep a good look out as power traffic often flies under the airway to use the beacons without incurring the cost of using the airway.
After sampling a few wave bars at altitudes ranging from 3,000 to 10,000ft I select one just North of Perth heading just South of Creiff. As the air is smooth I let down from 10,000 to 7,500ft using airbrakes and then accelerate to 110kts, weaving gently in and out of the wave to start the crossing at exactly 6,000ft in maximum lift. The general plan is to adjust my airspeed to maintain 6,000ft. Cruising between 60 and 70kts at around 5,500ft for 10 minutes and ¾ of the way across the wave bar begins to disappear. Time to change tactics, slow down, reach the end of the bar at just below 6,000ft and get as far North and West as possible.
Now there are two choices fall back to the bar behind or go forward. The bar behind would be further into the airway and could lead in to area where the bottom reaches down to 6,000ft or worse to 5,500ft. It should "guarantee" lift but with the chance that it may end before crossing the airway. The wave system also can become confused West of Stirling making a jump forward difficult (In September I was caught in a changing system near Fintry and landed-out at Kippen - Mental Note: Remember not to land at Blair Drummond Safari Park they have Lions).
I go North. The wind speed is 28kts, so subtract 10 and divide by 6 gives a wave bar spacing of about 3nm. The best glide speed (V_{ld}) for a Junior is 42kts, so add $^1/_3$ wind speed (V_{wind}) to give Speed to Fly (V_{stf}) of 51kts; so I set this on the MacReady ring. Ignoring sinking air flying at this speed I would expect to loose a minimum of 1,500ft and take about 6 minutes to cross to the next bar. (In practice with sinking air I expect to loose double this height - 3,000ft).
I set off and as the sink increases I increase speed as indicated by the MacReady ring. If it gets above 90kts I won't make it. Half way across the wind speed has increased to 32kts and I expect to loose at least 3,500ft.

I'm now in rotor and its getting worse, 75kts just below max rough air, the vario wants 90kts, no can do. Down to 3,000ft at Crieff, press-on. I can see the field where I landed in February, perhaps the two fire engines, three police cars, an ambulance and that friendly local reporter would welcome my return - not if I can help it, press-on. 2,500ft very rough, but zero sink, 60kts then pull-up to 45kts in lift! Slowly at first then rapidly (8kts up) climbing to 10,000ft, one hour into the flight across the airway and in lift. Sliding along the bar climbing beyond Comrie a pattern begins to emerge - wind 315º 37kts, bar spacing about 5nm aligned 220º/040º. At 12,000ft I can see the areas of weaker lift where the bars spread indicating where the sink is likely to be least between the bars.

Now well on track to Crianlarich the first turn point. Good strong lift South of Killin 6kts at 12,000ft. Something to drink and then onto oxygen. While contemplating the possibility of a diamond height I can see the river at Killin, where in July at 1,200ft while preparing to land-out two Tornadoes flew under me at 500ft and whizzed up the glen to the North. Around 15,000ft the lift falls off to zero and doesn't look like it will get any better, time to press-on to Crianlarich.

I'm in luck Crianlarich is in a gap and I press forward and take my TP photographs just before the bi-sector, but well in sector, jumping to the next bar all in one manoeuvre (2:20 elapsed).

Richard (Alcoat) said it was easy and I could do it, may be he was right. I've flown several times with Richard when his father wasn't available in their beautiful DG-500 (Winglets) and benefited greatly from his advise on where to look for "green air" (ie: going up). Flying a Junior needs a lot more lift to keep it aloft than a DG-500, but the principles are the same. I've also done a lot of flying with Kevin Hook one of my original instructors particularly in the SSC ASH25. We flew (with Adi Vongotard) at the Bidford Regionals where we unfortunately learned the importance of good look out *(we saw a fatal mid-air collision).*

I do another look-out just to be sure.

Flying along a bar on the South side of Loch Tay I can see that the bars are aligned almost exactly along my desired track; so I shouldn't have to jump too many bars. Time to experiment, at what height is the best lift, how far out into the gap is the best lift, so how fast can I go? The answer is rather disappointing only 2-4kts up, with very little difference between 8,000 and 10,000ft tailing off to zero at 12,000ft. This means flying at 45kts along a bar so that I can gain to sufficient height (2,000ft) to jump to the next bar - its going to be a long day.

Near Ben Lawers I pause and take a climb to 15,000ft Toni Shelton advised that this is a hot spot for diamond height, but not today. *(See postscript).*

Just short of Pitlochry the system changes. Trying to find a way through I'm down to 6,000ft. I flew up this way with Alan Bauld in his Jodel in the Spring with snow on the ground; its back again with a dusting on the tops. It will soon be Winter and there will be skiing, my other passion. No time for that now I need lift. Lets fall back and try that curved wall of cloud to the south. Mid-way there is a call from Portmoak its Ian Trotter asking if I'm OK. "I'm OK, but rather busy looking for lift" says I. "Good luck" says he and right now please thinks I. A little latter and back at 12,000ft and a little less busy. I call back and advise that I'm OK, back on track but a front is beginning to show to the West. The lift here is weak and the wind has backed to 300º and fallen to 28kts.

I've found a big blue hole. Now the tactic is to get as much height as possible, nearly 15,000ft and tip-toe to the edge. Off to the right the Southern edge is nearly 20nm away. The bars over the far side seem to be setting-up more North/South. The wind is now 290º at 20kts. I jump. Not to bad at first, not much sink flying close to best glide (42kts) as there is a large tailwind component. There are two or three "sink holes" 6kts down, but I get across 18nm losing 6,000ft. Back to 10,000ft and jump a few bars North. I'm getting better at judging where the bars merge and the sink is weakest.

Well the GPS tells me that Abyone airfield is 3nm to the South West, but where is it? Come to think of it where is the village? To recap I'm equipped with a smokie barograph and a camera, but no where to point it! Well I suppose any picture in sector is OK, but what should I photograph. Having consulted the map there

are several readily identifiable landmarks, but the cloud is covering everything. I decide to head North East, but not too far, the Aberdeen CTA lays at the East of Abyone village. From my map Stavanger is in sector but my John Willie tells me I need 140,000ft for a final glide and I'm not sure how to say "I've landed my glider in your field" in Norwegian; maybe there is a better option, patience, so I wait. After 20 minutes of looking I can see the village through a small gap, camera on, turn, one shot - should be OK, second shot didn't go off - too quick film hadn't wound-on, continue to turn, another shot - it fired but maybe too far south. Try again, push North 80kts big pull-up Chandelle right keep the turn going, where is the gap - gone! One gap, one shot and that's all folks! (Another mental note: buy IGC logger/GPS this photo stuff is too stressful – *bought a GR1000, now I only have to worry about the batteries going flat!*).

I feel cold. Its becoming overcast and I need to find somewhere to park in lift while I attend to a small personal matter. ("Small" it must be the cold. The Silver/Gold Endurance duration is set about right for my bladder - Elapsed time 5:00).

So I got round both TPs, if the photos are OK, so how do I get home. The direct track is through *P600*, not a good idea, particularly as the Northern end joins with Aberdeen CTA. Heading off SW I aim to track just to the West of Bravo 2. The wind has changed, at low level its almost due West and at 10,000ft 290º 20kts. The wave is breaking-up and the slots are closing; that is wrong they're not slots anymore rather rivulets at the bottom of a snowy valley (I told you I am a skier). I need to head West whenever I can, as the bars merge I turn West and speed-up. Its slow progress now there is a small headwind component and the front is creeping forward from the West.

Near Dunkeld it gets better, proper bars, I take a picture and fly faster. Its after 17:00 and overcast. There is low cloud, it looks like weak wave has set-up in the valley between Perth and Crieff, just where I want to let down. I go further West and South, its worse here. Back towards Methven letting down on the way using airbrakes and I run in with a 45 degree tail/cross wind. This cloud is a pest, the bottom is not far above the tops of the Ochil Hills, so I aim for Glenfarg at the end of a valley across the hills. These weak wave bars are strange in this light, soft and smooth almost vertical sheets like sails closely spaced on a clipper. Sliding down the face of one sheet increasing speed while maintaining height, pull-up Chandelle, dive round the end and jump the gap to slide down the next sheet the other way; zigzagging my way towards Glenfarg. To the East I can see Dundee (I landed-out there in February - my first time, you never forget you first time so they say) and beyond Arbroath (100k out and return in March for Silver Distance, first leg of my cross-country diploma, plus Gold Height as a bonus).

I'm cold. Nearly at Dunning (landed-out here in August - sea breeze cut-off my return but soared for 2 hours up and down the valley before landing). Glenfarg reservoir and clear of the airway at last.

I suddenly realise I've been slicing along these bars at 80kts, I pull-up over the last bar and climb rapidly to 8,000ft. I think with 10nm to go a final glide is in order. I put the nose down, 100kts, Yeahaa.

Coming up on the left is Auchtermuchty (I landed out there in April returning from Forfar in thermal when the wave collapsed - too far East should have pushed West further North).

Bishop on the left, Loch Leven on the right, over the caravan site, camera on, pull-up, Chandelle, click, flash what was that! The default mode of my camera is auto which selects flash when in low light conditions; was it trying to tell me something?

Back over the Loch, secure my bits and pieces, one loop (well why not), open the brakes down to 2,000ft and then back onto the hill to re-calibrate my height judgement. Now a good circuit, wind 260º 10kts, call down wind, land in the South field and stop next to the tug hanger. Yes!

Down, but I think I need a crane to get out of the cockpit. As I open the canopy the yaw string blows free from the sticky tape to which it has been securely adhered for the whole flight - I give it its freedom.

Hamish Wotherspoon *(sadly no longer with us)* is first at the scene. Adi did get his Gold Height but could have gone higher with oxygen (Mental

note: fix oxygen and buy Adi a beer or three).
Hamish offers his hand in congratulation, but has offered very much more by way of advise and encouragement in the past
Well its not been a bad year, my first as a cross-country pilot (my second in total). 300 launches, 250 hours and 2,500km mostly in the club Juniors, but also in K21, ASH25 and DG-500 learning the skills of cross-country flying from others.
I'm grateful to (all) those soles who collected me when I didn't quite make it back, and the tolerance and good humour of the farmers whose fields I visited (Rumours, largely spread by Graham Lawrence, that I am a honouree member of the Farmers Union are quite untrue, but justified).
Next year, (much to the relief of other club members, who have threatened to disable my alarm-clock) I hope to have a share in a glider, but at the time of writing (21st Oct) the wave season is not over and there is this 500k and if I get up early, get a glider, find a barograph on the right day it might just be possible...
Remember what Hamish used to say "Its all to be learned boys" - so get out there and do it.

Chris Robinson

Dates for your diary:
Ceilidh at the Club House (in Aid of Walking On Air) - 8th November 2002.
Christmas "do" - 14th December 2002
Burns Supper night - 22nd February 2003.
Tickets for all events can be obtained from the club.
Calling all talented (or not) club members. You have a chance to show everyone how good you really are, at the Burns Supper in February. If you are keen to help out with Burns' songs, recitations or speaking, please contact the famous Douglas Tait at the club.
Copies of the minutes from Board Meetings can now be sent via e-mail. Anyone wanting to be added to the circulation list should contact Bruce Marshall at bruce@flyinghigh.freeserve.co.uk
Our club member database is completed but new entries can be added at any time by sending your e-mail addresses to: office@Portmoak.force9.co.uk.

Wanted
Does anyone have a workable JSW calculator for a Junior, that I can borrow/buy? I have discovered that Mr W is now living in Australia and his cunning devices are no longer made.

Ian Easson

Club News
July saw us at East Fortune Festival of Flight Air Museum for the annual air-show. The weather turned out to be one of the best of the year with many of the visitors complaining of the heat and sun-burn. Our *Walking On Air* K21 proved very popular with the visitors and our volunteers were kept busy all day. As well as the usual side shows, there were very impressive flying displays finishing with the customary Red Arrows. Our aerobatics display had to be called off at the last minute but we were given a "slot" in the commentary programme so that we could publicise our club and Gliding in general.
The BGA publicity officer, Keith Auchterlonie, has moved North and joined our club (see "Our Man at the BGA"), and we all look forward to the various publicity events that he is no doubt planning. First Solos have included Robert Furness, Bill Irvine, Angela Fraser and Ian Fraser. George McKay and Pete Benbow have completed their Bronze.

Wings over Scotland
To celebrate the 75th anniversary of the Scottish Aero Club, well known aviation author (and SAC member) James Allan has published a beautifully produced book "Wings over Scotland". It tells a fascinating story of light aviation in Scotland, starting as early as 1507 and charting the beginnings of flying in the north. It continues through the formation, activities and people of the Scottish Flying Club (mostly at Renfrew) and the Strathtay Aero Club at Perth to their amalgamation into the Scottish Aero Club in 1956. The period since then is covered extensively and there is a most interesting chapter on airfields at Renfrew and Perth. It's a worthwhile addition to the enthusiast's bookshelf and costs only £7.95 over the counter at Perth or £8.95 by mail (Send a cheque in favour of The Scottish Aero Club, to The Secretary, Scottish Aero Club, Perth Airport, Perth PH6 2PL).

And now a bedtime story children.

Woops Upon A Time

Once upon a time, on a lovely sunny Sunday afternoon, there were many happy bunnies learning that, at Portmoak, sunshine doesn't necessarily mean thermals, or at least not ones that last for long!

Consequently, bunnies were dropping out of the sky quite regularly – these were the ones who didn't believe that there were no thermals left in the pretty, bright blue sky.

One wrinkly old bunny woke up, stretched, looked out of his warren and noticed that two bunnies had landed in the centre field, near the winch cables and in the way of those bunnies still trying to get up to the non existent thermals.

Well, like all Portmoak bunnies, he was really keen to help the others, so he jumped into his car and headed out to tow a stranded bunny off the field. He looked quite carefully (he thought) right at the flight line, then left at the winch. Nothing flashing and anyway, they couldn't be launching with the landed bunnies out there, could they? So, off he drove across to the middle of the centre field, out with the rope and ……, the winch light started flashing.

"B**y H**l"** sorry **"gosh"** exclaimed the wrinkly old bunny, "they can't be launching with us out here can they???"

"That's not cricket." said the stranded bunny!

Anyway, the wire sang, the glider launched, it didn't have a cable break and it did miss the car and glider by a reasonable distance, so all was well.

Later back at the launch point.

"Um err, Wrinkly Old Bunny", said the DI, "did you see us flashing Take Up Slack?"

"Well I thought that I had looked carefully." said the wrinkly old bunny, feeling daft.

"It might have been embarrassing if the wire had cut your car in two." said the DI!

Later at close of play.

Like all the other bunnies who had flown that sunny Sunday, wrinkly old bunny helped to put the gliders away and was really pleased to see how much wave had developed just after close of play, in the sunny, bright blue sky. All of the club toys were now away, only a couple of "privates" left and they looked really pretty up there, in the sunny, bright blue sky. Then, he gave someone a lift down to the end of the ash track to pick up their car, and after a quickish look into the sun, to check that no one was on approach - well all the gliders were in the hanger now, weren't they? - he drove north across the end of the centre field, heading back to his warren.

"B**y H**l"** sorry **"gosh"** exclaimed the bunny to himself, as a shadow flashed across the edge of his vision. "Strueth the "privates" are still up. I hope that's not one of them landing, with me crossing under them, getting in the way! "**B****y H**l"** sorry **Gosh"!**

Moral of the story.

Take more b**y care when looking! Not just a quick glance!** Two woops in one day - not clever!

Wrinkly Old Bunny.
(alias that day, the flying Oik)

Going Solo - by *Robert Furness*

Friday 26 July, 2002 - Internet weather forecast for Kinross: wind from the WSW at around 10 mph, chance of precipitation 0%. Yes! I left the west side of Edinburgh around 7 a.m. and arrived at Portmoak just after 7:30. Ian Easson, the editor of this august publication, already had the hanger open and after hearing that I was hoping to go solo today, insisted that if I did I should write an article for Portmoak Press. (*Well, I can't miss an opportunity, can I?- Ed)* So here it is:

I was on a week's gliding course. We had lost all of Tuesday to the weather, but had reasonably good flying on the other days, and by Thursday I had started cable breaks. So going solo looked close, and on the Thursday evening I had been 'psyching' myself up for the possibility of a solo flight the next day. And with the weather favourable, the chances looked good.

My first trial flight had been just over a year ago. I had been doing some work for the Open University, and met Iain Johnston who told me about gliding. I had been meaning to do something about it for some time, and finally last May I had looked up gliding on the web, found the SGU page, and my wife Loraine and I came up the following Monday.

I found the trial flight amazing and that was it.

I joined up on a three months' trial, and started coming Friday evenings. My first lesson was 44 minutes. This was looking good. But then there were a lot of east wind days with just circuits, and bad weather days with no flying at all. By mid November I had done 36 flights and was making reasonable progress, but a combination of poor weather, short days and work commitments meant I was unable to fly again until late March. A lot of the progress had been lost, but it started to come back again. By mid May, I had nearly 60 flights, and was getting closer to solo. Then came more poor weather and other commitments, and there was another break of about 10 weeks until this course at the end of July. But this time the flying skills came back much more quickly, and now here I was on the Friday on the threshold of solo. I was apprehensive and nervous, but had built up some momentum during the week and wanted to seize the opportunity otherwise there might be another delay due to poor weather.

So we did the DI on the K21 and we were in the air for 9:20. That was our best start of the week. I managed to get three flights in the morning, including an unannounced practice cable break, and everything went well. On the first flight of the afternoon the speed dropped off half way up the launch, and despite lowering the nose it fell to about 50 knots; it felt like the top of the launch. I released the cable at about 600 ft, lowered the nose, and turned over the north field for an early landing. An unannounced simulated power failure. We brought the glider back to the launch point, and I asked John Northern, our instructor, what we were to do this time. "Same again", from John, a man of many words.

Sensing something was afoot, I asked, "And where will you be watching from?"

"I think I will watch from here", said John, from outside the aircraft. So this was it. Solo at last. Or not quite - I hadn't done it yet. The checks were done, the cable attached, and the slack was taken up. Was I nervous? Not really - I had managed to tell myself that being nervous was a distraction, and concentrated on the launch. The moment had come, and I wanted to seize it.

The right wing dropped a little on the launch, but I managed to pick it up, there was a fairly normal ground run, lift off, and rotation into the climb. The speed was a little high, but I reached the top of the launch and released - and there I was, flying the aircraft by myself! What a feeling! I did a few turns in the area of the loch to lose height, arrived at high key a little on the high side, flew a right hand circuit and started final approach a little high (better to err on the safe side) and landed safely on the aerotow strip. I had done it! There was a wonderful feeling of elation and relief. We towed the glider back to the launch point, and I was still on cloud nine. "What now?" I said. "Do it again," was the detailed reply. The second launch was uneventful until I had to pull off slightly early due to cloud, and I landed safely again on the north field.

The whole experience was wonderful, and over the next few days I kept getting flashbacks to my first solo flights. I must express my gratitude to all the instructors who have been prepared to sit in the back while I have been at the controls, especially John Northern, and Chris Robinson and Joe Fisher of the Friday evening group. Thanks also to my colleagues on Friday evenings for their encouragement and comments, to the winch drivers Ian and Steve without whom none of us would get anywhere, and to Irene, Steve, Sandra and John for keeping us fed and watered so well, and for generally keeping us on the straight and narrow. And what next? There is still a huge amount to learn - you could say the sky's the limit!

Robert Furness

ASH25 to the Wallace Monument (& back)

It wasn't a great day. In fact no-one was flying. The course people were in the briefing room and the windsock was showing Westerly with a bit of South, and quite blustery at that. Bishop Hill would be working but there would also be some turbulence downwind of Benarty. I had been passing the club and popped in on the off-chance of a quick flight, so I was disappointed when I saw that "the toys" were not out. The SGA ASH25 was rigged and staked out just inside the trailer park and I was very keen for a cross-country (in advance of my Silver Distance attempt - any time soon). Bob Petrie was keen to go as my P1 but

was suffering from a head cold ("*by doze is blogged"*). As we watched the clouds scudding by and looked forlornly towards the ASH, another opportunity presented itself. Colin Hamilton arrived to do some work on his glider but was quickly tempted by the prospects of a "wee hurl" in the ASH. We gathered the maps, drinking water and a couple of Mars Bars and prepared the ASH. Nothing declared, we launched and sauntered in the lift in front of Bishop. After a couple of beats, Colin suggested we set off up-wind towards a couple of likely looking clouds. They provided 2-3 knots and we slowly progressed upwind. Colin would point out the good clouds and I attempted to circle under them. I tried to milk every last drop out of each thermal but Colin reminded me that we needed to push on while we could still see the next source of lift, and not spend too much time drifting down-wind. With 25 metres of wing, and flaps, the ASH "*can boldly go*…and get back again!" Although I was studying the map, I was aware that the GPS was telling us what height we needed to be to get back. We pushed West and had a grandstand view of the racers practising at Knockhill. Before long we were past the Wallace Monument - about 30K out. I thought we looked low and Colin took over to take a weak climb to "top us up". The GPS said we were now at final glide height so we turned East and dolphined our way home. Speeding up and slowing down at the appropriate places, with associated flap movements, we quickly arrived back over the site with plenty of height in hand. We landed about two hours after we set off and covered about 60K. Not an epic flight by pundit standards but extremely useful in terms of navigation, use of flaps, a 25metre "hot ship", and preparing the way to shake off the shackles of being tied to Bishop. Thanks Colin!

Ian Easson

A Different Sort Of Eventuality!

Most glider pilots tend to think of eventualities in terms of cable-breaks, winch failures or rope breaks. I can assure you that there are many others to consider! From forgetting essential pins at rigging and having your wings flap more than they should, to having loose objects in the cockpit float around your ears after performing negative g manoeuvres. Cases of unlocked canopies flying open are commonplace, and ground loops at the start of the launch, or stalling halfway up, are all designed to catch the unwary. I daresay that most of you could add to the list. Let me relate a couple of incidents that have occurred during my flying days that you might find amusing, or even instructional. I apologise to those readers who may already have endured the same fate - just pass on to the next article.

A few seasons ago I was flying our syndicate Vega on aerotow. There I was, blissfully following Darren in the tug, under a beautiful sky, when a bumble bee flew into the cockpit through the DV panel and alighted on my leg. It was the biggest B I've ever seen! The combination of tug and glider was perhaps around 600ft. "Always keep your eyes on the tug," makes good sense - except if you have a huge (I swear it was growing in size!) beastie crawling towards important parts of your anatomy, then you can be forgiven for casting your glance somewhere else. It's amazing what can pass through one's head at such times. Thoughts of an agonising sting, followed by partial or full paralysis or even loss of consciousness were considerations which flashed through my brain.

I must admit that for a few vital seconds my concentration was fatally distracted. So much so, that when I looked up there was no tug to be seen! It wasn't above me so it must be below, and so it proved. I was miles out of position, high, potentially in an extremely dangerous position, especially for the tug pilot. Recovering as quick as I could, the rest of the tow was uneventful. The bee was trapped with a duster and despatched at height somewhere over Kinneswood.

After landing, I went to see Darren and apologised profusely. He just laughed when I told him the story and said that he thought something must have been wrong. He had every right to have ditched me, especially at that height.

Moving on to this year. Again on aerotow, same glider but this time being tugged out from Sutton Bank towards the wave lying to the west of the airfield. We'd reached 1500ft with some way to go to reach release point in front of the bar, when I hear this buzzing noise.

My first impression is that it is coming from outside, but it's not. Slowly coming into my peripheral vision and crawling up my right leg is this monstrous queen wasp probably packed with millions of youngsters.
My experience of yesteryear, which should have provided me with the ability to cope, failed miserably as I panicked, looked away from the tug and went screaming out of position. Luckily this time the glider had descended into a low, but very low, tow position. Grabbing a cloth from the pocket I managed to squash the wasp and it fell down the side. Zooming back up to normal position, I quickly radioed the tug and told him the story. He politely asked if all was well and we proceeded. A little later we had some more chat and I asked him to drop me in the most suitable spot to contact the wave.
So we drone on a wee bit longer and higher. Then the tuggie comes on the radio and asks "Can you hack it from here?", which all coincided with a very angry, and very much alive, wasp reappearing on my trouser leg. Keeping my head I managed to release the rope and the tug dived away for another punter. As he circled down he called up to say that I still got m wheel down. Bloody Hell!, I've got this killer beast roaming around the cockpit and he's worried about my undercarriage!
As I tried to dispatch the wasp for a second time, I idly notice that in spit of events the glider is gaining height quite rapidly. It's at times like these that you realise how vulnerable you are. Tightly strapped in, you can't move your legs very much and certainly can't see your lower parts. Another swipe at the wasp and finally it appears to be dead and as I pass through 5000ft I gratefully push the offending insect out.
So, what lessons can we learn from all this nonsense. Well, first of all make sure that you are not taking up any unwanted passengers - in the case of the wasp, I think it may have already been aboard. Fly with the DV panel shut, at least until release of cable or rope. Perhaps be trimmed neutral, or nose down.
It all may sound very funny, but the consequences could have been anything but. Certainly the rapidity of departure from normal tow position can be alarming if total concentration isn't given to one's flying. I like to get a buzz out of my flying, but not if there's a sting in the tail.

Frank Smith

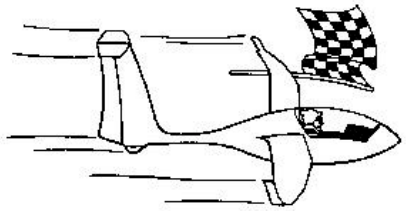
Rotas for Duty Pilots and Instructors

Duty Pilot rotas are notified to individual pilots by Sally Pearce. Duty Instructor rotas are as follows:

Saturday 5th October	Neil McAuley
Sunday 6th October	Jonathon Pryce
Saturday 12th October	Neil Irving
Sunday 13th October	Mike Carruthers
Saturday 19th October	Andrew Bates
Sunday 20th October	Bob Petrie
Saturday 26th October	Joe Fisher
Sunday 27th October	Ray Hill
Saturday 2nd November	Frank Smith
Sunday 3rd November	George Ross
Saturday 9th November	Bob Jones
Sunday 10th November	John Henry
Saturday 16th November	Ian Trotter
Sunday 17th November	Jonathon Pryce
Saturday 23rd November	Ian Dandie
Sunday 24th November	Chris Robinson
Saturday 30th November	Neil McAuley
Sunday 1st December	Mike Carruthers
Saturday 7th December	Andrew Bates
Sunday 8th December	Ray Hill
Saturday 14th December	Joe Fisher
Sunday 15th December	George Ross
Saturday 21st December	Frank Smith
Sunday 22nd December	Neil Irving
Saturday 28th December	Bob Jones
Sunday 29th December	Ian Trotter

If unable to attend, PLEASE arrange a swap with someone on the list and update the list on the notice board.

Neil McAuley



Competition Corner

To encourage more people to take part, I have reprinted the BGA rules and regs on the following pages. The new season is about to start and we don't anticipate any changes to the rules:

National Ladder Rules Season 2001/2002

1. The competition will start on October 1st and end on September 30th.

2. Any flight which originates in the UK may count except for flights in a competition for which BGA entry forms are required. Points will only be awarded to the P1 in a two-seater.

3. There will be three separate ladder competitions:
- The Open Ladder (for any flight).
- The Weekend Ladder (for flights made on weekends and bank holidays).
- The Junior Ladder (for flights made by pilots not yet 26 years of age at the start of the Ladder season).

4. For each competition a pilot may enter any number of flights but only the best four will count towards a final placing, of which no more than two may be height claims. Only one claim per flight will be allowed.

5. The pilot's word will be accepted for flight times, rounding TPs and landing positions except that BGA Trophies will only be awarded in each of the Ladder Competitions with the support of photographic or properly controlled GPS logger evidence.

5.1. Turnpoints.
In a single flight, turnpoints will conform to one of the following:
FAI 90-degree sectors, as for badge flights.
0.5km-radius cylinders ("Barrel Sectors") as for competitions.

For barrel sectors:
i. The scoring distance will be reduced by 1km per turnpoint.
ii. Turnpoints may not be claimed by pilots not carrying GPS.
iii. BGA Trophies will only be awarded with GPS-Logger evidence.

5.2. Photographic Evidence.
TP photographs must contain the following:

5.2.1. A start board clearly showing:
- The date
- Pilot's name
- Glider type and identification
- Declaration of start, turning and finish points

5.2.2. Photos of the start point, each turnpoint rounded and if possible the finish point.

5.2.3. A photo of the glider fin showing the same identification as on the start board.

Cut films are acceptable if accompanied by a declaration containing the following for each flight on the film:
- Date of the flight.
- Pilot's name.
- Glider type and identification.

5.3. GPS Logger Evidence
GPS Logger traces will be accepted provided that the trace is either from a secure logger or has been downloaded to the satisfaction of the club ladder steward or his deputy who will then record that the flight has been properly controlled.

5.4. Barograph Evidence
Barograph traces must be shown to Club Ladder Stewards for height claims.

6. Flights in gliders with motors are accepted. If the engine is used in flight, the glider is scored as landing at the point where it was used. If qualifying for a ladder trophy, barograph/camera or GPS evidence is needed to substantiate whether or where the engine was used.

7. Declarations must be made ***before take-off, either electronically or in writing as appropriate,*** and must include the start point, up to three turning points and the finish point. All declared turnpoints must be features shown on 1:50,000 Ordnance Survey map, and\or sets of coordinates, and preferably be selected from the BGA List of Turning Points (obtainable from Ian Strachan, BGA TP Co-ordinator - see S&G April/May 1995 pp98-99 or the BGA Web page).

8. Up to three BGA Turning Points may be used for Undeclared flights. If any other point is turned, the nearest BGA TP that gives a shorter scoring distance will be used for scoring purposes.

9. The competition handicap (Si) will apply to all cross-country tasks.

10. For uncompleted tasks, the distance counted for the uncompleted leg is the length of that leg as declared, less the distance between the landing point and the next turning point (as in BGA contest rules). For undeclared flights the full distance counts.

11. Points are given for **Cross Country** distance and/or speed and for **Height** gains.

11.1. Full **cross-country** points plus a bonus are awarded for **declared** flights where:
- The declared start, turn and finish points are all rounded in the declared order
  AND
- The height loss between the start and finish points is the lesser of 1000m or 1% of the distance flown.

A proportion of full points are given to **declared/incomplete flights** where a declaration was made but not achieved. A smaller proportion is given to **undeclared** flights.

11.2. **Height** points are awarded for gain of height. No flight may earn both height

and speed/distance points. No points may be claimed for flights above 15,000ft without oxygen.

12. Calculation of points.

12.1. Cross Country Points **A * S * dh * (4000 + (va * vh)) / 2000**

where: **Si** = speed index

dh = handicapped marking distance in km
= actual marking distance (km) * 100 / Si

va = actual speed (kph)

vh = handicapped speed (kph)
= actual speed (kph) * 100 / Si

A = 1.1 for declared and completed tasks
= 0.5 for undeclared tasks
= (distance achieved) / (distance declared) for declared but uncompleted tasks

S = 1.0 for tasks with 1, 2 or 3 legs
= 0.8 for tasks with 4 legs (with exception below)

For closed-circuit tasks with 4 legs, **S** may be scored as 1.0 provided the pilot declares the task distance to be measured as a triangle with Leg1 + Leg4 replaced by the straight-line distance between the first and last turnpoints.

12.2. Height Points (not more than two per pilot per ladder) **((height gain in feet) - 5000) / 10**

13. Details of each flight must be submitted to the Club Ladder Steward within one month of the flight taking place. Full details of flights, including photographs and/or GPS Logger evidence when available, must be submitted to the National Ladder Steward within one month of being requested.

14. Trophies are awarded to the first and second places in the Open and Weekend ladders and first place in the Junior ladder as follows:

- **Open Ladder** Enigma and Firth Vickers trophies.
- **Weekend Ladder** L. duGarde Peach and Slingsby trophies.
- **Junior Ladder** Spitfire trophy.

A pilot may only win one trophy and, if qualifying in more than one ladder, will win the trophy for which there has been the greater number of entries.

Club Ladder latest:

Pos.	Pilot	Points	Flights
1	John Williams	8265	4
2	Kevin Hook	7080	4
3	Tony Brown	1983	2
4	Z Goudie	1824	4
5	Dave Thompson	1525	4
6	Dave Clempson	1355	1
7	Guy Hall	1128	1
8	Neil Irving	937	3
9	Gareth Francis	804	3
10	Ewan Crosbie	488	1

National Ladder Latest (top fifteen only)
Updated Sunday 29th September

Pos.	Pilot	Club	Points
1	Phil Jones	Cambridge	13813
2	Mike Young	Cambridge	13555
3	David Masson	Lasham	12006
4	John Bridge	Cambridge	11261
5	Dave Caunt	Booker	10962
6	Sarah Steinberg	Cambridge	10808
7	Tim Macfadyen	Brist./Gloucstr.	10239
8	Richard Smith	Brist./Gloucstr.	9887
9	Mike Smith	Cambridge	9715
10	Richard Baker	Cambridge	9699
11	Trevor Stuart	Brist./Gloucstr.	9561
12	John Wilton	Four Counties	8533
13	Adrian Hatton	Four Counties	8289
14	John Williams	Scottish (SGU)	8265
15	Jack Stephen	Deeside	8215