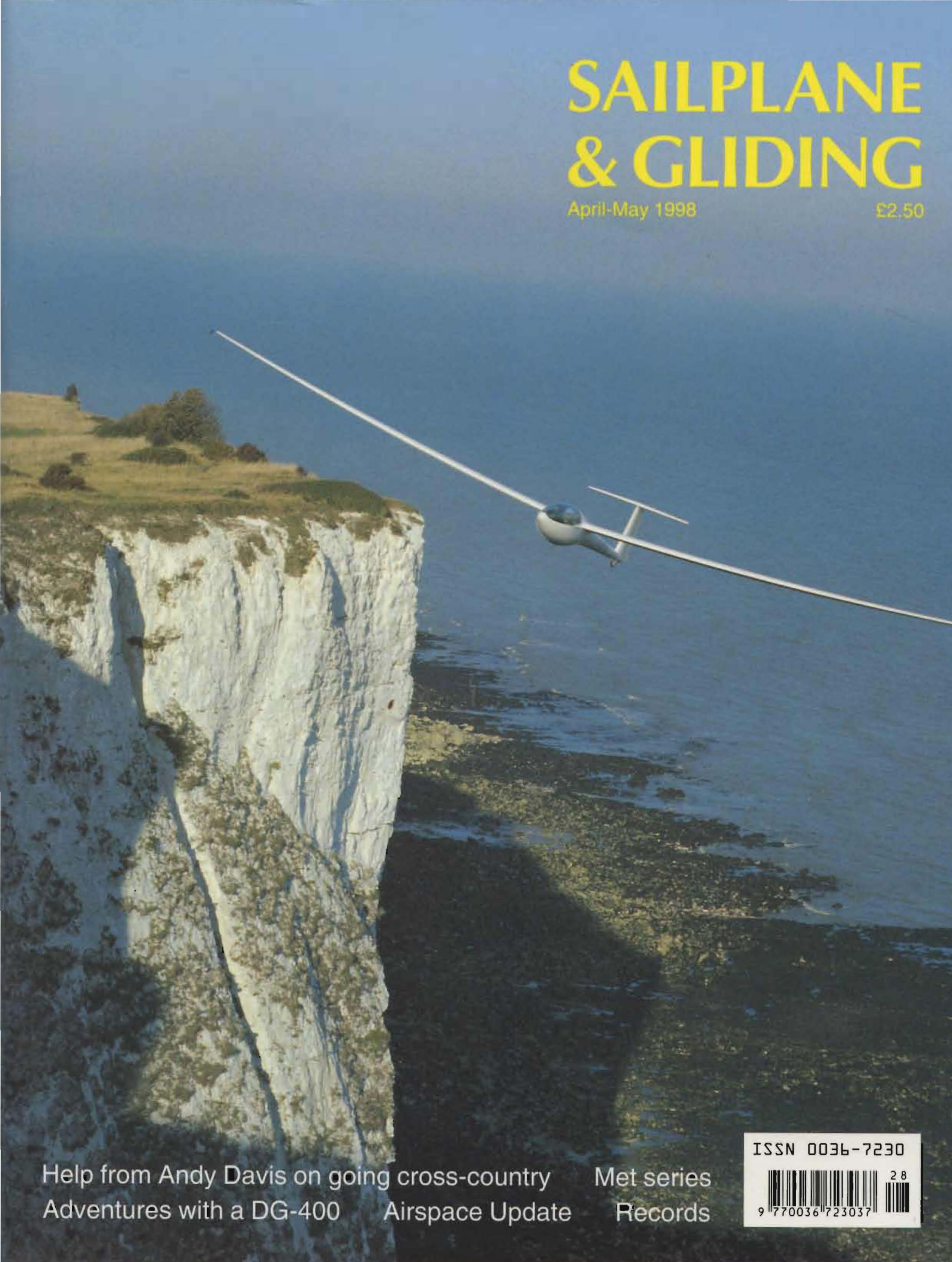
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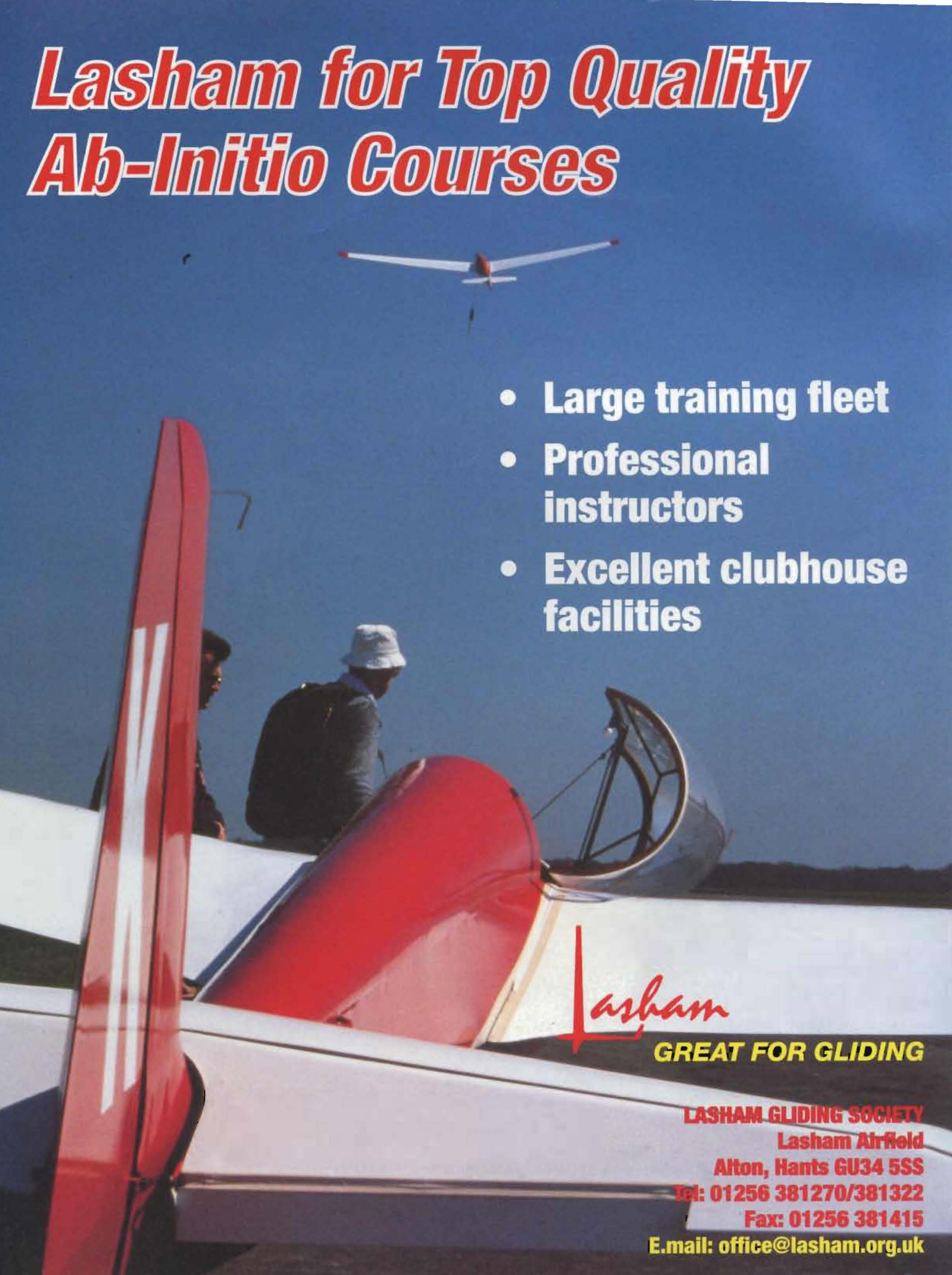
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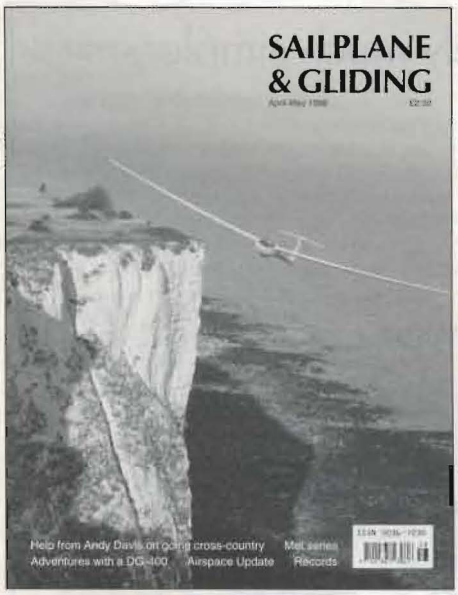
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C. Pollard

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TELEPHONE CALLS
Do make sure you have the correct number - a lot of you are wasting calls by 'phoning S&G when you want the BGA and vice versa.



Cover: Guy Westgate, who describes his adventures in this DG-400 on p112, photographed Kev Fresson flying below the Dover Cliffs in the same area he chose to cross the Channel for the start of his journey.

SAILPLANE & GLIDING

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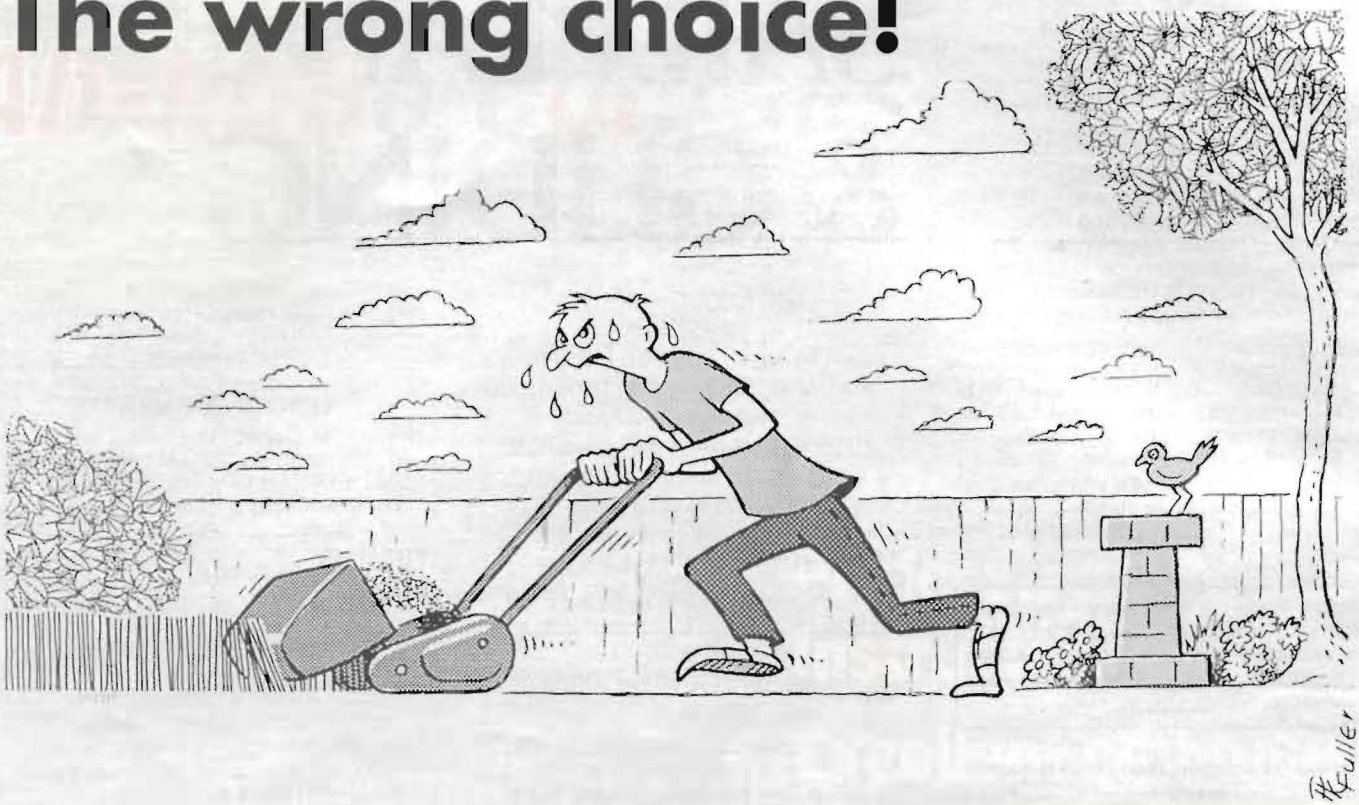
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Member of the
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GreenShires Creative Colour Ltd, Leicester.

The wrong choice!



Is something we all make at one time or another.

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YOUR LETTERS

MOTOR GLIDER SAFETY TRAINING

Dear Editor,

Gliders with extending engines and/or propellers are becoming increasingly popular, particularly with private owners who value the independence from club launching and/or retrieve facilities they provide. However, the drag from an extended power plant which fails to start is severe. It is not uncommon for glide angles to be reduced to something like 15:1.

With a dead engine extended, approach speeds need to be higher than usual to allow for the loss of airspeed during roundout. Flying speed needs to be maintained as speed lost on approach is difficult to regain without losing lots of height, with the dramatically reduced rate of acceleration. Stalling speeds may also be affected. Failure to allow for these factors can be serious and, on several occasions, has had fatal results.

An engine failure to start and too little time to put it away, combined with the high workload of a field landing, is not the time to explore any differences in your glider's handling. It is much better done under ideal weather conditions at your home airfield.

Provided that the manoeuvre is not prohibited by the aircraft flight manual and subject to the CFI's agreement, may I therefore encourage pilots to make practice approaches at their home airfield with the engine/propeller out but with the engine not running. I suggest that for the first few times pilots should aim to land further down the field than usual to allow for possible undershoot. I think it is also desirable for the practices to be observed by an instructor or pilot experienced on type.

Having had such training, our pilots will be much better placed to deal with the degraded handling caused by a non-running engine with the propeller stuck out in the breeze. I am sure it will keep our accident rate down.

JACK ALCOCK, *senior regional examiner, motor gliders*

THE SKYLARK 1

Dear Editor,

I agree with Chris Riddell in the last issue, p30, that the little Skylark 1 was an excellent sailplane. I certainly did not intend to be in any way dismisive of it. In my **Slingsby Sailplanes** book I said it was "a very considerable advance for Slingsby. It is interesting to speculate what might have happened if he had done as originally intended and produced a new version with exactly the same wing and a superior fuselage and cockpit."

On another page I described it as technically advanced and innovative.

It is worth noting that the specification for the World Class sailplane is not very far from that of the Skylark 1. We might almost have been there fifty years ago!

Does anyone know what happned to the Skylark 1 that went to South Africa?

MARTIN SIMONS, *Stepney, South Australia*

Dear Editor,

Chris Riddell, in his happy reminiscing about the Skylark 1, writes that Philip Wills invented the "speed-to-fly" pencil which was the Cosim variometer equivalent of the MacCready ring for dual variometers. More information please!

Chris is writing of 1953, but Paul MacCready had already invented his ring in 1949. (Note that he did not invent the best-speed-to-fly theory on which it depends, which had been published in *S&G* two years earlier; it is a misnomer to talk about "MacCready" settings in modern flight directors.)

Did Philip adapt the idea for the Cosim, with its unco-operative non-linear scale? Or did he adapt K. M. Chirgwin's 1938 suggestion for a similar "speed-to-fly" pencil to give best-gliding-angle speeds for various wings (*S&G*, volume 9, p242)?

ANTHONY EDWARDS, *The Arm-Chair Pilot, Cambridge*

Chris Riddell replies: Anthony Edwards raises a nice point when he asks if Philip Wills adapted the idea of the MacCready ring to the Cosim variometer. I have no idea. I remember Justin Wills saying to me once that his father had invented the device. I certainly remember seeing it fitted to Philip's Sky sailplane in the mid 1950s. If my memory serves me right, I made one for myself from his description in *S&G*.

From what Anthony had to say it seems unlikely that Philip originated the idea. In his interesting book **Innovation** (published by John Calder, 1977), William Kingston defines the stages in innovation. He describes the originator who postulates the idea as the dreamer. He terms the one who describes it in visual terms as the artist. He defines the one who takes the visual form and produces a working demonstration of the idea as the inventor.

By this definition, it is correct to say that Philip Wills was the inventor of the "speed-to-fly pencil". Kingston does not say that to qualify the inventor has to be the sole inventor. Good ideas often appear simultaneously in similar forms in different parts of the world without their inventors having had prior contact. The invention of the jet engine is an example of this.

Dear Editor,

We have a Skylark 1 at Burn GC which hasn't flown for many years. It sports the best breakfast mushrooms in Yorkshire.

JULIAN DAY, Wakefield, Yorks

FOURTH EMERGENCY SERVICE

Dear Editor,

With respect to Stephen Harvey's letter in the December issue, p327, I have been a member of Green Flag using their caravan and trailer cover for many years precisely for the reasons given - that the other services will not cover trailers of the length we use.

Before last October's pilgrimage to Aboyne I checked the details with Green Flag and was reassured that a 9-10m glider trailer was covered as long as it was a proprietary make. As ours isn't exactly "proprietary" I queried this and was told there would not be a problem if it had a 50mm hitch and was properly maintained and roadworthy.

So there you have it. Join Green Flag today (0800 00011) and venture forth reassured that you are a member of the real Fourth Emergency Service. As it seems to be common practice for service providers to give generous group terms, couldn't we have a BGA negotiated discount with Green Flag?

BRIAN PAYNE, *Didcot, Oxon*

GRANDFATHER, FATHER, SON

Dear Editor,

Recent issues have included references to families with three generations of glider pilots. Mention has already been made of one example at the Midland GC. I wish to record another - namely that of the Neill family.

Robert ("Uncle Bob") Neill joined the club in 1937. His son Bob joined in 1951 and his son Robbie in 1975. All three gained a Silver badge and in the early 1980s they were simultaneously active members of a Mynd based Skylark 4 syndicate.

"Uncle Bob" was chairman of the Midland GC for 14 years to 1967 and Bob was chairman for five years to early 1993.

KEITH MANSELL, *president of Midland GC*

BUT PLAT ISN'T ORDINARY!

Dear Editor,

Platypus's flair for stretching final glides is well documented (by himself) but 53.6 miles from 4000ft at 48:1 (December issue, p330) has to be a miracle. Ordinary mortals are limited to 36.36 miles.

For his next trick Plat might consider not dumping quite all his water before landing. He should then find it easy to turn the last few litres into wine - or even cold beer. A third miracle might then come to pass - drinks on Platypus.

Miracles apart, Platypus (whose wit and perception I have greatly enjoyed ever since he started writing for *S&G*) seems to have overlooked what is possibly the most significant advantage of a ballasted glider over a dry one, *ie* the ballasted glider spends less time in the sink between thermals. It should be possible to calculate this effect based on typical thermal/sink patterns. Any offers?

ROBIN COLE, *Winchester*

Platypus replies: He is absolutely right. *Mea maxima culpa*. The fact is that on my Excel spreadsheet I mixed up kts and ft/sec. *Quel horreur!* So a realistic 1.5kts sink rate at 68kts was transformed into a blissful (not in my lifetime) 1.5ft/sec, or only 90ft/min. That takes the glide angle into the high 70s, which I suspect is way out of the reach of even the projected new super-ship for millionaires. The distances flown from 4000ft for the heavy and light glider are in fact 32.2 and 30 miles respectively. That correction also compresses the time gained by the heavy glider to 3.4min, and from 5000ft it gains 5.2min. (I originally wrote 5.6 and 7.2min.) Still worth having, and the basic message is unchanged: the wets have it.

What made me ponder is a) why I didn't spot an obvious glitch immediately and b) why more people didn't write in. I suspect, apart from the dark suspicion that only one person read the column at all, most of us skate over numbers in articles with glazed eyeballs. Even the author's eyeballs glazed over as he proof read his own numbers.

The dreaded sink. I agree with Robin that there is some force in the "less time in sink

between thermals" argument, and I have not overlooked it. Months ago I created a sink-and-lift-between-thermals spreadsheet (in which the opportunity for Platyboobs was spectacular) and gave up because the deadline had passed and the editor was screaming for copy, any old copy, but now.

My conclusion is that if the sink between thermals is (say) 2kts the heavy glider gains 2secs/km. Why so little? Because - wait for it - the more sink there is, the more height needs to be regained after each run; the light glider climbs 30ft/min faster, wiping out most, but not all, of the heavy glider's gain in the run. Of course 2secs/km mounts up, though it's pretty terrible inter-thermal flying to be in such sink the whole time.

Conversely, the heavy ship loses when flying slowly in rising air between thermals, but the losses are smaller than the gains in sink. If on a 300km flight the air between thermals was rising at 2kts for a third of the distance, sinking at 2kts for the other third, and still for a third, the heavy ship would gain a net 3.7min. This gain can be added to the start height bonus of 3.4min, to give us a gain of over 7min. All this on a mediocre day when the light ship climbs at only 2kt and the heavy at 1.7.

The more the air between thermals fluctuates, even if the overall net movement is zero, the better it is for the heavy ship. Some of these gains are lost through the practical impossibility of instantaneously adjusting one's speed to the airmass; frantic dolphining is very wasteful - and it also lets the leeches behind you (people like Plat) know just where you are when you suddenly present them with your plan view.

With GPS logger analysis it is easy in principle to see how much inter-thermal lift and sink different pilots encounter*. Perhaps George Moffat will be proved right, and the skill of top pilots in picking their path between thermals will turn out to be more important then their climbing ability.

**Footnote*. If we have the groundspeed and the wind component from the logger we can estimate airspeed. From the polar we know how much sink there should be at that airspeed in still air: deduct the polar sink from the actual sink rate shown on the logger to get airmass movement. A truly fascinating project for the anoraks to get stuck into next winter!

BOTH EXCELLENT WINCHES

Dear Editor,

Having watched the saga of the Devon & Somerset GC Supacat torque indicator with interest (and sympathy) since 1985, it is good to see final success. (See the article by Gordon Peters in the last issue, p38.)

The demonstrator winch with a cable tension meter showed me a few years ago the potential excellence of torque control by giving my syndicate partner a superb launch at a site where several pathetic launches had been given by the driver of the local Supacat, which had no indicator.

I have always been astounded by the widespread resistance of many drivers to any sort of indicator on any winch type to optimise the launch. Perhaps the wider use of very powerful winches will create a more reasoned attitude. Without the power setting guides in the Skylaunch, for example, it would be impossible to expect the generally very satisfactory standard of launches that we experience at my club from any of our 50 or so winch drivers.

A better comparison of the Supacat and Skylaunch from the driver's viewpoint than Gordon's slightly inaccurate comment, is that the take-off is extremely simple to perform in the Skylaunch and usually requires no further adjustment at all until near the top of the launch, while the Supacat requires a more complex but not difficult series of actions.

On the other hand, any marked wind strength increase on the way up calls for no action on the driver's part in the Supacat, whereas with the Skylaunch the pilot has to signal for less speed if the driver hasn't cottoned on to the conditions. Both are excellent winches.

JOHN GIBSON, *St Annes-on-Sea, Lancs*

Dear Editor,

In the conclusion to the article by Gordon Peters he states that the launching guidance for the winch driver with the "Sky Launcher winch" (Skylaunch winch) only helps in the first 100ft. This is in fact **incorrect.**

The throttle guidance controls in the Skylaunch winches, which use responsive petrol type V8 engines (running on LPG for much reduced running costs, maintenance and pollution), actually help all the way up the launch.

Gordon may have been misinformed as the very first Skylaunch winch was to be used at the Midland GC by professional drivers only and was not fitted with this system. All subsequent winches (including retrieve winches) have throttle guidance for members driving.

We have found this system to be very successful. Also, being a pre-selected control that is driven by feel, safety is increased as the driver can keep a 100% focus on the glider and airfield.

MIKE GROVES, *D&M Engineering*

VARIOMETERS - WHO NEEDS THEM?

Dear Editor,

How important is it to have a variometer in a sailplane? Surely a competent glider pilot doesn't need one. After all, the pundits in the 1930s managed very well using the seat of their pants.

Are your hackles rising? I hope so, because the BGA doesn't think the variometer is important. It doesn't require a working variometer for a glider to pass the annual C of A, yet what could be more important to a soaring pilot? Although self-respecting pilots should be able to fly safely without instruments, I don't think they will get very far before coming down to earth again.

The BGA position is that a working variometer is not an airworthiness requirement. So must we cheerfully strap ourselves into our club glider and pay up, regardless of whether the aircraft is fit to go soaring? How absurd! Is the BGA trying to promote gliding - or what?

But don't forget to stick those vital numbers on the fin and pay £15 for the privilege - that's really important!

MIKE EVANS, *Hook, Hants*

PLEASE SAY "WELL DONE"

Dear Editor,

Please, all you experienced pilots, be generous in praising your early solo pilots when they venture on their first cross-countries. We at the bottom of the heap need encouragement and a kindly word of congratulation from the top makes all the difference.

TIM JOYCE, *London*

NOT FROM THE LOTTERY

Dear Editor,

Referring to Dick Dixon's comments in the December issue, p361, on his visit to Borders GC's ceremony to mark our move to Milfield and the handing over of our new hangar, workshop and clubhouse complex, I would like to clarify one point. The new facilities were the result of hard negotiations over many years with British Gas (now Transco), not from grants from the Foundation for Sport and the Arts or the National Lottery.

Although the weather was poor for the opening, shortly after Dick left we were able to go soaring for an hour or so in wave.

ANDREW BARDGETT, *Border GC's chairman*

Dick Dixon, BGA chairman, replies: Whilst my comments did not specifically attribute Borders' funding to a particular source, I can see that my phraseology was misleading. I do apologise to the club and to Transco, and am grateful to Andrew for putting the record straight.

Andrew's last paragraph gives me reassurance that at least I was right about one thing - I am delighted that my impression that the site had great soaring potential was so rapidly confirmed!

FROM A COMPETITION PILOT!

Dear Editor,

In reply to Paul Bramley's letter in the last issue, p7, it's 33in.

MIKE YOUNG, *Bourn, Cambridge*

PERHAPS THE EL NINO EFFECT!

Dear Editor:

According to the Annual Statistics in the last issue, p20, the 2885 gliders in the UK flew a total of 173 001hrs. That is an average of about 12min for each glider on each day of the year.

The Imperial College GC, which has only three gliders, reportedly flew a nice round 10 000hrs, for a daily average of 548min (more than 9hrs) per glider.

I always had thought soaring conditions were good here in Southern California, but they are not remotely as good as those enjoyed by the fortunate members of the ICGC. I am suitably jealous.

KARL KEATING, *San Diego, USA*

Barry Rolfe, BGA secretary, replies: *Oops!*

We welcome your letters but please keep them as concise as possible and include your full name, address and tel/fax number. We reserve the right to edit and select and point out that views expressed in letters and articles are not necessarily those held by the BGA.

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GLIDING AND UK AIRSPACE

Carr Withall , chairman of the BGA Airspace Committee, updates the airspace position. This year sees the freedom to cross airways having been withdrawn

Nineteen ninety seven was, without doubt, the year that saw the greatest loss to our freedoms in our history. In March the new areas that we are restricted to fly within Class B Airspace together with the new rules for flying within or through Class D Airspace were introduced.

At the beginning of July the CAA decided that our freedom to cross certain parts of airways was to be withdrawn. This agreement had been thoroughly worked out and approved by the Safety Regulation Group (SRG) less than two years earlier. Once again this decision was **not** based on any facts but perceptions. This further loss to our freedoms took effect from November 6, 1997. The most numerous crossings take place across airway A25. The base of this airway has been raised to FL105 from Talgarth northwards towards Oswestry.

However, in North Wales and at Camphill they had agreements to cross in two small areas which were withdrawn. A new agreement was to be in place to coincide with their loss, but after a meeting at Manchester there is no progress.

The Scottish clubs should (by the time you read this) have an agreement to cross airways B2 and B226 using R/T and segments of airway ceded to gliders for a given time. The Scottish ATC authorities are being most helpful with this and also with Class B Airspace operations.

Other changes in airspace are proposed all over the country and are listed later in this article.

May I remind pilots that;

All pilots wishing to fly in any Class D Airspace, Class B Airspace areas and for crossing sections of airways where there is a BGA signed agreement to do so, will need to have an R/T (restricted) licence. A clearance to enter and transit Class D Airspace will need to be obtained, as is required of all other aircraft.

The director of Airspace Policy envisages "such a clearance to be extremely straightforward and confined to essential detail to enable the flight to continue virtually without interruption. No ATC separation is required, traffic information may be provided and pilots would remain responsible for their own separation from other aircraft."

There is to be an ongoing education process to inform ATC units of our special needs and gliders' performance. A BGA team will be visiting the two civil ATC training schools and also the joint military school on a regular basis to give gliding presentations. This video and power point presentation detailing our operational capabilities and requirements will be available for any ATC unit to have and use as an educational package.

Airspace committee

The numerous changes in airspace all around the UK at the moment and the continuous demands for more controlled airspace by NATS (National Air Traffic Services) requires that the small committee be greatly strengthened.

All clubs have been asked to appoint an airspace representative who can keep his club members up to date on all airspace matters and who will be in a good position to hear if any local changes are being considered.

There will also be Regional Airspace Committee members who will either be practising or retired professional pilots or air traffic controllers. These regional members will have under their wing around ten clubs. They will receive all the latest CAA plans and will be available to accompany any club airspace representative to meetings with their local ATC unit or when airspace issues arise.

This change to a pro-active committee should ensure that any proposed airspace changes are known at an early stage and the BGA can put its case forward without delay.

The following is the annual reminder on airspace knowledge that all pilots should have.

Icao Airspace Classification. In November 1991 the UK adopted the new system of international airspace classification developed by the international Civil Airspace Organisation. The status of a piece of airspace is denoted by a letter which will be shown on all aeronautical charts, and it is this letter rather than the title of the airspace that will determine the rules applying to it.

Eg; in the UK airways will all be Class A, but in other countries they may be Class E. In order to fly within controlled airspace, gliders will often require legal exemptions, and the availability and nature of these will vary from country to country.

Class A Controlled Airspace

Cotswold CTA	**Daventry CTA**
London CTR	**London TMA**
Manchester TMA	**Worthing CTA**

All **Airways** (except where they pass through a TMA, CTA or CTR of lower status).

As from November 6 1997 **no** airways can be crossed by gliders.

Exceptionally, gliders may cross sections of Class A Airspace by virtue of a Letter of Agreement (LOA) which will have very detailed procedures to be followed. These LoAs will be specific to a club operation or as in the case in Scotland a group of clubs.

Class B Controlled Airspace. The entire airspace over the UK above FL 245, comprising the Upper Airspace CTA and the Hebrides Upper Control Area (UTA), is Class B Airspace.

Gliders are no longer allowed to fly in this airspace without restriction. Specified areas have been agreed that can be activated by clubs using the procedure for glider operations in Class B Airspace. These areas are to be looked at again this year. The Yorkshire areas might look large on the map, but most of the area is useless and the area where high climbs could take place are not included.

Class C Controlled Airspace. No UK airspace currently falls in this category, though it is possible some may be so redesignated in future.

Class D Controlled Airspace. Formerly Special Rules Airspace. All Class D Airspace now requires an ATC clearance to enter and transit this airspace. Pilots will also be flying in VMC conditions. Any pilot wishing to enter it must:

1. Contact the ATC unit and pass details of aircraft's position, level and proposed track.
2. Obtain entry clearance.
3. Listen out on the frequency whilst in that airspace.
4. Comply with ATC instructions.

The above rules apply to gliders in all Class D areas.

Aberdeen CTR/CTA	**Belfast CTR**
Belfast City CTR/CTA	**Birmingham CTR/CTA**
Bournemouth CTR	**Bristol CTR/CTA**
Brize Norton CTR	**Cardiff CTR/CTA**
East Midlands CTR/CTA	**Glasgow CTR**
Edinburgh CTR	**Liverpool CTR**
Leeds/Bradford CTR/CTA	**London Gatwick CTR/CTA**
Lyneham CTR/CTA	**London City CTR**
London Stansted CTR/CTA	**Manchester CTR/CTA**
London Luton CTR/CTA	**Solent CTA**
Newcastle CTR/CTA	**Teesside CTR/CTA**
Scottish TMA	
Southampton CTR/CTA	

There is a form to complete if flying through Class D Airspace and clubs should have copies. This will give the BGA and DAP statistics on how many gliders have been granted clearances to continue their flights and identify any ATC units that may be unhelpful. There is **no** restriction to asking any ATC unit in Class D for clearance to fly through their area. Most are only "busy" for short periods; usually early morning and late afternoon. Much of the traffic is transiting light aircraft or flying school traffic.

The code of conduct for glider flights through Class D Airspace is still relevant as it sets out good airmanship practice.

Most pilots who did ask for clearances obtained them from helpful controllers but a few were refused clearances With more education and visits from pilots to their local ATC unit, clearances should become the norm.

Class E Controlled Airspace. The Belfast TMA and parts of the Scottish TMA are notified as Class E and permits all aircraft (including gliders) to fly in this area without ATC clearance subject to maintaining VMC.

Visual Meteorological Conditions (VMC). VMC conditions for Class D, E and in the open FIR, are that an aircraft shall remain 1000ft vertically, and 1500m horizontally from cloud in a flight visibility of 5km. Below 3000ft amsl an aircraft shall remain clear of cloud in a flight visibility of 5km and in sight of the ground.

Local Agreements. A number of local agreements exist which modify the effects of some of the airspace listed earlier. Letters of Agreement (LoA) between a gliding club and a nearby airport can make airspace either more or less restrictive than described previously, depending on circumstances. These arrangements are too numerous to list in full but the principal ones are:
Luton - A large segment of airspace in the northwest of the Luton SRZ is delegated to London GC, up to 3500ft in summer and on request in winter, to permit gliding operations at Dunstable. London GC should be contacted for full details.
Airway Bravo 2 - At weekends, a section of this airway between Glasgow and Aberdeen may be de-regulated on request from the Scottish Gliding Union to permit wave soaring from Portmoak to proceed unrestricted within the confines of the airway.
East Midlands - There is a map on p73 of the new East Midlands Airspace together with the National LoA. Additionally Husbands Bosworth and Marchington have LoAs for their local requirements.

Class F Airspace. An Advisory Route (ADR) is a route used by airline type traffic but without the full protection of an airway. Although depicted only as a centreline on UK aeronautical charts it is nominally 10nm wide. Gliders may cross Class F Airspace without restriction but caution should be exercised.

Class G Airspace. This is the term given to the "open" Flight Information Region (FIR), which is the uncontrolled airspace not subject to any of the afore-going classifications. Within Class G Airspace there are various non-ICAO types of airspace which are described below.

Aerodrome Traffic Zone (ATZ). A glider pilot wishing to enter an ATZ must first call the airfield on the notified radio frequency. An ATZ is only active during the notified hours of operation of the airfield. Many military airfields are notified as permanently active though in reality this is not the case. Nonetheless the ATZs must be regarded as active at all times.

At an airfield with an Air Traffic Control (ATC) unit, that unit is able to give or refuse permission for any aircraft to enter the ATZ and to give clearances to take-off or land.

At an airfield with an Aerodrome Flight Information Service (AFIS) or Air/Ground (A/G) service, that unit is able only to pass information from which a pilot may judge whether or not it is safe to enter the ATZ or to take-off or land, *ie* the unit cannot issue clearances or withhold permission.

The following categories of airfield are protected by an ATZ: government aerodromes and licensed aerodromes with one of these types of service.

The ATZ comprises the airspace extending from ground level to 2000ft above the level of the aerodrome and within a radius of 2 or 2.5nm of the centre of the aerodrome, depending on the length of the main runway.

At airfields without ATZs, including most gliding sites, regardless of how busy they are, an itinerant aircraft may legally penetrate the airspace near and over the airfield, provided the pilot conforms to the traffic pattern or keeps clear of the circuit airspace, and observes the normal rules of good airmanship to avoid conflictions.

For landing at airfields with or without ATZs, it should be noted that any are listed in the **UK Air Pilot** as "PPR", "PPR to non-radio aircraft" or even "not available to non-radio aircraft". PPR (Prior Permission Required) means that landing permission must be obtained in advance of the flight, *eg* by telephone. All military airfields are effectively PPR and will not permit landings by civil aircraft, except where they have been prearranged, or in an emergency.

Military Aerodrome Traffic Zones (MATZ). The rules applicable to the penetration of a MATZ are not mandatory for civil aircraft and the same applies to the Lakenheath Military Control Zone. However, radio contact is advised and inside every MATZ there is an ATZ, the rules of which must be observed.

A standard MATZ comprises the airspace within a 5nm radius of the centre of the airfield extending from the surface to 3000ft above airfield elevation. In addition, projecting stubs 5nm long and 4nm wide extending from 1000ft to 3000ft above airfield elevation are aligned with the approach to the main runway at one or both ends. Some MATZ may lack stubs or form part of a combined MATZ (CMATZ).

Prohibited and Restricted Areas. A Prohibited Area (P-prefix) is prohibited to all aircraft, whereas a Restricted Area (R-prefix) permits limited access by aircraft under defined circumstances, *eg* landing at a nearby airfield. These areas include atomic energy establishments, security areas in Northern Ireland and sensitive military installations. Most Restricted Areas should be considered as prohibited to gliders but the following are exceptions:

The Restricted Airspace established around high security prisons is applicable only to helicopters and R105 at Highworth House, Glos. It applies only to helicopters and microlights.

R313 at Scampton exists for the purpose of protecting the Red Arrows' display training. The area is a circle of 5nm radius extending to 9500ft amsl and active only during Scampton's normal operating hours, which are weekdays and as notified by NOTAM. During these times, a glider may enter the area by permission of ATC Waddington.

Temporary Restricted Airspace. Major air displays such as Farnborough or Fairford are often protected by temporary Restricted Airspace. Local gliding clubs usually negotiate limited access routes to and from their sites to enable non-radio gliders to continue operating, but a glider equipped with suitable radio may fly in the area if it contacts the ATC unit designated by the NOTAM as the controlling authority.

Other types of temporary Restricted Airspace are effectively closed to gliders. They are established to protect Red Arrows' displays throughout the country, plus major flypast formations, over events of political significance and over the sites of major disasters. The duration and extent of the restriction can be quite short and will be published by NOTAM.

Purple Airspace. Purple Airspace is established from time to time on a temporary basis to protect Royal Flights in fixed wing aircraft. Full details are promulgated by special NOTAM. It is important that gliding clubs receive and publish this information because gliders are not permitted to fly within Purple Airspace, even by contacting ATC. Royal Flight NOTAMs also cover royal helicopter flights. These are not protected by Purple Airspace but all pilots are required to look out for and keep well clear of the royal helicopter.

Danger Areas. The UK is covered with Danger Areas of many types, shapes and sizes. They are active part-time, permanently or when notified by NOTAM. Full details will be found in the **UK Air Pilot**, RAC Section. The chart of UK Airspace Restrictions is also useful.

The **UK Air Pilot** lists only the type of activity most likely to be encountered, but in practice various hazards may be encountered manoeuvring outside the confines of the Danger Area, especially if it is a Weapons Range Danger Area.

Many Danger Areas contain areas over which flight is prohibited at times within the period of activity of the Danger Area by reason of bye-laws made under the Military Lands Act 1892 and associated legislation. It is also worth noting that the **UK Air Pilot** does not list Danger Areas with upper limits 500ft or less above the local surface, to which prohibiting bye-laws may also apply.

With these exceptions, flight through a Danger Area is not prohibited, but may be foolhardy.

For certain Danger Areas, a Danger Area Crossing Service, most notably for Salisbury Plain, is available. Call Salisbury Plain Control on 122.75Mhz. A Danger Area Activity Service is available in other cases: this should be viewed as a means of establishing the state of activity of a Danger Area at a particular time, not as a clearance to cross it.

A convenient summary of these two services and the ATC units to contact is printed at the foot of the 1: 500000 series CAA charts.

Particular care should be taken to avoid Weston on the Green (D129) which is used extensively for military paratroops training. Brize Radar on 134.3 will confirm activity status.

Other Hazardous areas. Other types of hazard include free fall parachuting sites. There are many of these sites around the country and ➡

some operate every day and are extremely busy. Treat them as a permanently active danger and **do not** fly over them. The airspace is contained in a circle radius 1.5 or 2nm from the centre of the drop zone up to a maximum of FL150. It may not be apparent to a glider pilot, observing the drop zone in flight, whether or not there is parachuting in progress: parachutists normally free fall down to 2000ft agl and are extremely difficult to see. **Beware!**

High Intensity Radio Transmission Areas contain powerful radio emissions which may cause interference with glider radios, electric variometers, electronic barographs and loggers. In particular Fylingdales is so powerful that prolonged exposure may be injurious to health.

Areas of Intense Aerial Activity. An AIAA is airspace which is not otherwise protected by regulated airspace, but where the activity of civil and/or military flying is exceptionally high or within which aircraft regularly participate in unusual manoeuvres.

Gliders may penetrate these areas but in view of the hazards, a sharp lookout is essential.

Military Low Flying System. Low flying by high performance military aircraft takes place in most parts of the UK up to 2000ft agl, with the greatest concentration between 250ft and 500ft. A chart is available denoting the system (**UK Air Pilot**, RAC Section).

Most gliding sites are notified to the MoD, which affords them the status of a Military Avoidance Zone, usually with a radius of 1.5nm.

Radar Advisory Service Area. A RASA is airspace in which pilots, if they choose, avail themselves of the services of a radar unit. There is no requirement to do so, and a glider pilot should not assume that other aircraft are being separated from him, nor even that the radar unit is aware of the glider's presence.

The Airprox System. An airprox may be filed by a pilot who considers his flight to have been endangered by the proximity of another aircraft. All airprox's are investigated by the Joint Airprox Working Group (JAWG), whose deliberations are confidential so as to preserve anonymity. The purpose of a JAWG investigation is to determine what lessons can be learnt, not to take punitive action.

Prompt airprox reporting is vital if the other aircraft is to be traced. If in radio contact with an ATC unit report to them at once, or if not possible, telephone straight after landing. Call 0800 515544 or call AIS (MIL) at LATCC West Drayton on 01895 426153, who will start tracing action at once and tell the Joint Airprox Section (JAS). Follow up with a written report on form CA1094 to JAS within seven days. Always use GMT (UTC is the same) in reports.

JAS can be contacted in working hours on 01895 276121/2/5 or fax on 01895 276124.

Glider Flights Through Class D Airspace. With the ever increasing size of Class D areas the need to fly through them on cross-country flights will become greater. Pilots can ask for a clearance to fly through **any** Class D Airspace. The Conduct set out below is a guide to good airmanship practice.

1. Glider pilots should plan to route their flights through Class D Airspace when it is clear that there are advantages from so doing, such as better weather and shorter track distance.
2. Flights should try to spend the minimum time in Class D Airspace. Pilots should avoid circling on or close to the runway extended centre lines, since this may well interfere with departing or arriving traffic.
3. Keep the controller informed if, for any reason, *eg* massive sink, you have to change your planned course.
4. Good lookout is vital at all times, and glider pilots should be prepared to initiate avoiding action notwithstanding their right of way priority. Gliders are not always visible on radar.
5. Competition tasks should **not** be set through Class D Airspace. Where a task leg has to be set close to Class D Airspace the ATC unit should be informed. When possible, photographic control point(s) should be established, to help ensure that gliders remain outside the airspace.

Use of Radio. A glider pilot possessing a radio operator's licence (R/T licence) is entitled to use all the available aeronautical frequencies of a 760 channel radio. This permits seeking access to the following types of airspace that may be otherwise closed to gliders - the new Class B Airspace areas, any Class D Airspace and Aerodrome Traffic zones. Some types of permanent and temporary Restricted Airspace. Some Danger Areas.

Radio cannot be used to request entry clearance into Class A Airspace (except by special arrangement) or into Purple Airspace.

All clubs have a copy of where and with whom one can take the R/T licence test. The licence will be valid for ten years.

NOTAMS. The NOTAM system has changed over the last few years. Essential flight planning information is obtainable from several different sources.

UK Air Pilot AIRAC supplements are the formal method of notifying permanent changes to airspace, but can only be obtained as part of a subscription to the entire **UK Air Pilot**. Airspace changes have also been announced by way of Aeronautical Information Circulars (AICs), major changes by way of a dedicated AIC and minor changes *via* six monthly summary AICs. A bi-monthly GASIL summary also covers minor changes.

Temporary Navigation Warnings (TNWs) are published twice weekly, giving notice of airspace warnings such as air displays, military exercises etc, and outline details of Royal Flights and Temporary Restricted Airspace.

Royal Flight NOTAMs. Postal distribution of NOTAMs has ceased. Information on Royal Flights and temporary Restricted Airspace is obtainable on the Freephone service (0500 354802).

All the above are available from CAA Printing and Publishing Services (01242 235151).

Airspace changes.

1. There have been changes to the East Midlands airspace, see map on opposite page.
2. A portion of the Daventry CTA near Bicester has been raised to FL65. Further raising of bases throughout the huge Daventry area are expected this summer.
3. A further fillet of airspace next to Booker has been agreed.
4. Airway N862, that is parallel to the airway A25, has been extended to the southern edge of airway B39, at high level. In summer, April 1 to September 30, the base will be FL195 and in winter, October 1 to March 31 the base will be FL215. This will allow Diamond heights to be achieved. The base of the evening and weekend airway, B39, is raised in that area to FL195 in summer and FL 215 in winter.
5. Airway A25, central portion, south of Talgarth up to south of Oswestry is raised to FL105 between 0700 to 2200hrs.

All these changes should be on the new Southern edition of the 1/2 million map due out at the end of March.

Other changes in the area south of Didcot, Luton extension, Stansted, Southampton and Prestwick are under discussion.

Maps. The current editions and expected dates of new editions for the 1/2 million maps are:-
Southern England and Wales, edition 23, with new edition 24 due at the end of March.
Northern England and Northern Ireland, edition 20, with new edition 21 due in March.
Scotland, edition 18, with the new edition 19 due at the end of May.

The new series of 250 000 maps are available and they are excellent. The England South covers most of southern England on one map.

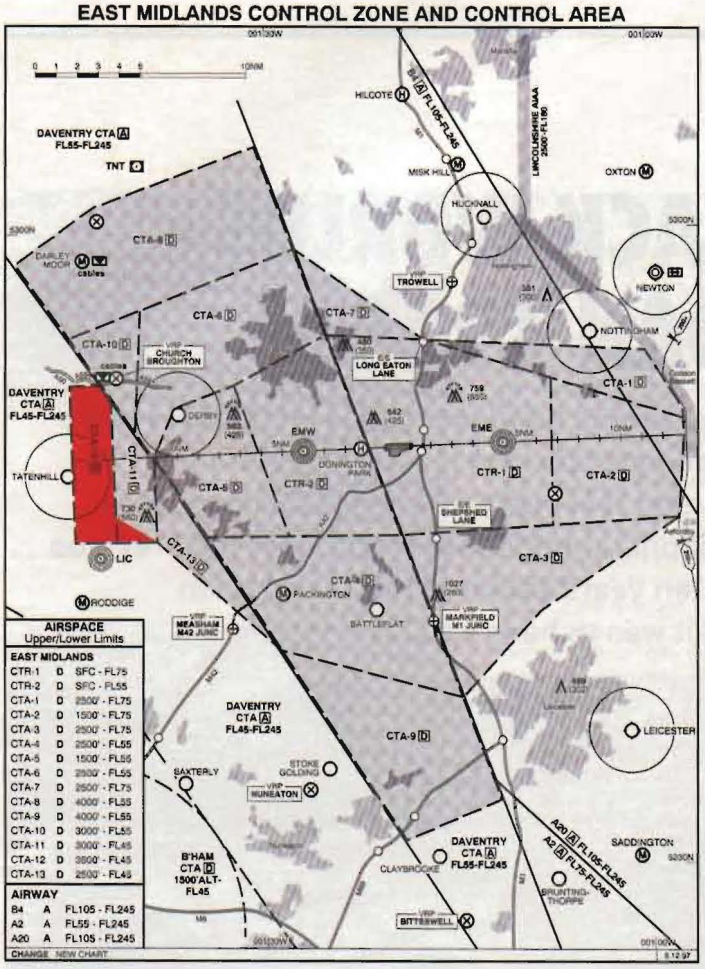
Airspace Infringements. Last year there were no reported infringements which is excellent and proves my point when having discussions with the CAA. With the requirement to obtain an R/T licence, to fly within Class D Airspace, pilots will become more confident to talk to other airfields that they may be flying close by. A brief courtesy call is very welcome by most controllers and will re-enforce the position that we are "professional" pilots.

If a pilot is lost there is a service to call on at any time. It is the VHF AUTO TRIANGULATION SERVICE on 121.5, the distress frequency. This service can very quickly find an aircraft as long as it is about 2-3000ft and anywhere south and east of Manchester to the South Coast. If in doubt that you may be lost in controlled airspace then give them a call. They are there to help and can locate you almost instantly on 121.5.

References. The information in this article is only a brief synopsis of the airspace rules as they affect glider pilots and is believed to be accurate at the time of writing. In case of doubt authoritative references should be consulted. These are: Air Navigation Order 1989; Rules of the Air Regulations 1991; **UK Air Pilot**, RAC section. **BGA Laws and Rules**, 12th edition, May 1996, reflects the current legislation and previous editions are obsolete.

Abbreviations. CTA= Control Area, CTR= Control Zone, TMA= Terminal Manoeuvring Area (the lower limit of a CTA or TMA is an altitude or flight level above the surface, whereas a CTR extends to ground level).

EAST MIDLANDS CONTROL ZONE AND CONTROL AREA



LETTER OF AGREEMENT

Operations within the East Midlands Control Area shall be subject to the following conditions.

1. That in respect of control area CTA-12 and part of CTA-11 (and referred to as "the Airspace" and coloured red on the map), BGA members will have use of the airspace subject to a request being made to East Midlands and will be dependant on the runway in use.
   When East Midlands are operating on runway 27, the airspace will be made available to BGA members between 0900 and 1800 local time, subject to a request to East Midlands approach on frequency 119.65Mhz. In the event that East Midlands requires to change the active runway to 09 during the course of the day, East Midlands may request all gliders to vacate the airspace.
   When East Midlands are operating on runway 09, use of the airspace by BGA pilots may be permitted, subject to a call to East Midlands approach on frequency 119.65Mhz from individual pilots, requesting clearance to carry out local soaring in the airspace for an agreed time.
2. It is further agreed by the BGA that this letter of agreement may need to be reviewed from time to time on request from either party to the Agreement and amended as/where necessary. If agreement cannot be reached then the matter will be referred to the Civil Aviation Authority's directorate of Airspace Policy for arbitration. Both parties agree to use their best endeavours to conclude any new agreement.
3. In allowing this gliding activity within East Midlands Control Area it is agreed that all activities shall be in accordance with the current Air Navigation Order.

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WAY BACK WORLDS - SAMEDAN 1948

Ann, who was the British manager, said it is hard to believe that 50 years have passed since this first historic Championships after five years of war. At the time it was called an International Competition in line with the previous one in Germany ten years earlier - 1948 would be in Switzerland. But it was to have a tragic outcome

We couldn't wait to go, not only because the Swiss had a reputation for good organisation but because the food would be wonderful. It was like escaping to a cornucopia full of all that was still rationed at home.

We had six pilots; two from the RAF in Germany, Jock Forbes and Pete Mallet flying Weihes, and four from the UK with two Elliott Olympias and two Slingsby Gull 4s. These were new and painted in a colour scheme created by Kit Nicholson, designer of the Dunstable clubhouse. Our "home" pilots were Kit, Philip Wills, Donald Greig and Charles Wingfield. For transport we had new Land Rovers, so new that they were pre-production models for which driving in mountains was seen as a fine operational test. The two BAFO pilots had Jeeps.

Samedan Airfield was a grass strip in the St Moritz valley which led to Italy through the Maloja Pass and none of our pilots had flown in such a vertical landscape. The entry list showed 37 pilots from ten countries, including Poland and Czechoslavakia from behind the Iron Curtain. They and most other countries had built new gliders in a post-way flurry of enthusiasm.

Sadly the Poles and Czechs were stopped from competing because of "technical difficulties" though one Pole, Kasprzch, slipped through the net wearing an OSTIV hat - and managed some flying as well. This left just 27 competitors to fly on the first day, July 20.

Briefing was tedious in three languages, but the organisation under director "Pirat" Gehriger (later FAI president) was excellent and also truly international; there were two French twin cable winches and for those who preferred aerotowing three Fieseler Storchs - one Swiss, one Spanish and one French. The first task was for both altitude and O/R to Davos but altitude would not count unless the goal was reached.

The height of the TP of the Weisfluhjoch at Davos was 8835ft and had to be circled at more than 1640ft (500m) above it. Up to four starts were permitted but the weather was now so good that just 33 starts produced 90hrs of flying.

All but two reached Davos but few got back due to a thunderstorm. Philip climbed to 20 000ft and would have been 2nd but for the cessation of his official barograph, so came 21st. The winner was Lambert, France, in his Air-100 with 15 450ft; Persson, Sweden, came 2nd in a Weihe with 12 893ft followed by Lorne Welch, Oly, with 11 975ft. This was the deep end for Lorne who had come as a reserve pilot and flew after Charles Wingfield became ill.



Ron Claudi and Peter Wilkes replacing Land Rover gearboxes.



Samedan Airfield: a Storch towing a Spanish Kranich with a British trailer in the foreground.

Next day, July 21, a 112km goal flight was given to Altenrhein (near Lake Constance) with the startline on top of the adjacent Muottas Muragl 8040ft mountain, to be crossed at no higher than 100ft. Restarts were permitted but only after a landing. This was just as well as the only lift was up the face below the startline and at one time there were 15 gliders circling up with those high enough to cross, diving through them at high speed. Eight reached goal including the evading Pole Kasprzch. Lambert was again top but no British pilots reached Altenrhein. Then came what could be a mortal blow.

Rover contacted us to say that a problem had been found with the Land Rover gearboxes which might seize without warning - great on hairpin bends - but that someone was already on his way with spares.

Peter Wilkes (later Rover chairman) arrived and we gave him RAF team crewman Ron Claudi and one car at a time, mine going to each bereft crew in turn. They would drive carefully! Ron and Peter built themselves shearlegs and in the open removed the bodies and replaced the gearboxes, becoming faster each time so that the last, mine, took only a few hours. I actually did quite well out of the peppermints, maps and even socks that had been left in it by the crews.

July 22 was a momentous day for gliding. FAI had officially approved triangle records and the first 100km triangle task was declared. The course was around three peaks; Muottas Muragl, Weissfluhjoch, 8835ft, and Piz Curver, 9030ft, then landing at Samedan.

All but two pilots completed this historic triangle, including the British, but fastest was Swiss Siegbert Maurer, Moswey 3 (who did it twice), his fastest time being 1hr 26min. He became the world's first FAI triangle holder at 69.6km/h.

Weak weather followed, so poor that only an altitude task was possible. Not unexpectedly two Swiss, Schachenmann and Kuhn, did best but with points only in hundreds instead of thousands.

July 24 brought a 110km circuit of surrounding peaks to be flown twice, first for altitude and second for speed. Of 26 starters, 16 completed the first circuit but only four the second. Philip



Ann flying the DC-2. Note the flying suit!

was our best in 7th place with Jock, Pete and Donald also finishing. Lambert, France, finally lost overall lead. A rest day followed because it was Sunday and also bad weather. This was as well, though certainly not a rest day for the crews.

Tiny sloping fields, grass covered rocks, and retrieving on mountain tracks had produced minor damages which were overdue for sorting out - Jock was flying with one red wing and one green and getting tired of ribald remarks about not knowing port from starboard.

The Italian pilot, Padova, departed with his team manager having run out of Swiss francs and Kasprzch was not able to further delay his recall to Poland. Then a Spanish team member mistakenly drove over Egypt's Air-100 wing. They immediately offered Kamil one of their own gliders, but Gehriger came to the rescue and loaned a Swiss machine.

Sunday was followed by a single task lasting three days. Pilots could choose one of 80 goals and the best flight over the whole period would win. Not much happened on Day 1 as only Torrel, Spain, managed to reach his goal of Sion, 200km, nor on Day 2 as only Kuhn managed to get away from Samedan; so everyone had high hopes - and ambitions - for July 28.

Some pilots decided to go north while others, including the British, chose to try south to reach and flatlands *via* the Maloja Pass. Cloud was low with clearances through the passes but the weather did not improve.

A few pilots, including Lorne, turned back and declared a new goal to the north but made only 43km. Jock reached Locarno, Mallett, Bellinzona and Philip, Como. Without news of Kit and Donald hopes rose that they had made it to the plains towards their ambitious goal of Naples.

It was not to be. Late afternoon brought garbled telephone messages about accidents in the mountains. Immediately the Swiss team manager, Eddie Lauber, offered to lead me to an Italian convent hospital where Kit was being taken and to act as interpreter. Kit was not there. There was no news of Donald Greig.

We, who had come to search, stayed the night with the kindly nuns and I set off at first light with helper Alan Clarke to the mountain where it was known that Kit had crashed. Lorne and crew set off to search for Donald.

Leaving the Land Rover at a farm we set off on foot led by a shepherd and after an hour's climb met two men coming down with Kit. He was dead. As we needed to find out what had happened we went on up to reach a tiny village where the shepherd's son now became our guide. At 6000ft he showed us a mass of boulders on the crest of which lay the Oly. It was in small pieces but with its planform still clear.

The only reason which seemed to fit was that Kit had been ridge soaring just below the crest and had been caught by a patch of rising orographic cloud. In trying to escape it he must have suddenly found the rocks ahead, pulled up and stalled square on to them. I checked things like control runs, rigging pins etc. It was all there except for the instrument panel which had disappeared!

No more could be done as already a thunderstorm was above us, so close that the lightning sizzled with a strong ozone smell. I took an identifiable bit of plywood and we left. At high speed our guide loped off down the mountain to a stable cave full of goats as the heavy rain began. He milked one to give us a drink.

It was late afternoon by the time we returned to the Land Rover and contacted Samedan for news of Donald. He had been killed when his wing was severed by an unmarked, invisible log line running up the opposite side of the same mountain. We drove there and then returned over the mountains to Samedan. It had been a long sad day.

The best goal flight on the 28th had been made by Persson to Geneva, almost 300km. It had taken him 6hrs 40min with three climbs to over 18 000ft with serious icing. It was a great but overshadowed achievement.

By general vote there was no flying the next day, which left the last contest day with a short triangle around three peaks with points for altitude. No one completed the circuit but Philip reached 10 960ft.

The prizegiving saw Pelle Persson a deserving winner, followed by the two Swiss, Schachenmann and Kuhn. If Philip's barograph had worked on the first day he would have been 4th.

The next day, August 1, was the Swiss National Day honoured at Samedan with an aerobatic display in their new WLM glider - and a DC-2 for some of us to fly around the Alps in the right-hand seat. Then we drove our faithful Land Rovers home.

NB. In "Way Back Worlds" in the last issue, p26, there was, as Ann elegantly put it, a keyboard slip and the RJ-7 mentioned should have been RJ-5.



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A GUIDE TO EARLY CROSS-COUNTRY FLIGHTS



This advice from Andy, a former Standard Class World Champion and a member of the British team squad, should help to give you confidence to strike out from the comforting area around your site

The new soaring season is just around the corner. The following notes are intended to help pilots with many hours of local soaring break the invisible string tying them to the airfield and to start regular cross-country flights.

Preparation

Advance preparation is a vital part of any cross-country flight. It falls under several headings.

1. Airspace. Familiarise yourself **now** with the airspace regulations in your likely cross-country area - a minimum of 100km radius around your home site. If you have a R/T licence learn the procedure for crossing Class D airspace.

There have been a lot of changes recently to controlled airspace. Buy the latest edition half million map and study the layout of the controlled airspace bases and level changes. **You must not fly in an airway** or any controlled airspace (other than Class D with a clearance).

The airway base is defined as an altitude or Flight Level (FL). If it is defined as an altitude, then you can climb up to that indicated on your altimeter as long as you set QNH (airfield elevation) for take-off. If the airway base is defined as a FL, you should set 1013mb on your altimeter subscale as you cross or climb under it. This is particularly important whenever the atmospheric pressure is lower than standard.

Don't forget to make a note of the QNH setting, so that you can reset your altimeter when leaving the airway base. (See also Gliding and UK Airspace on p70.)

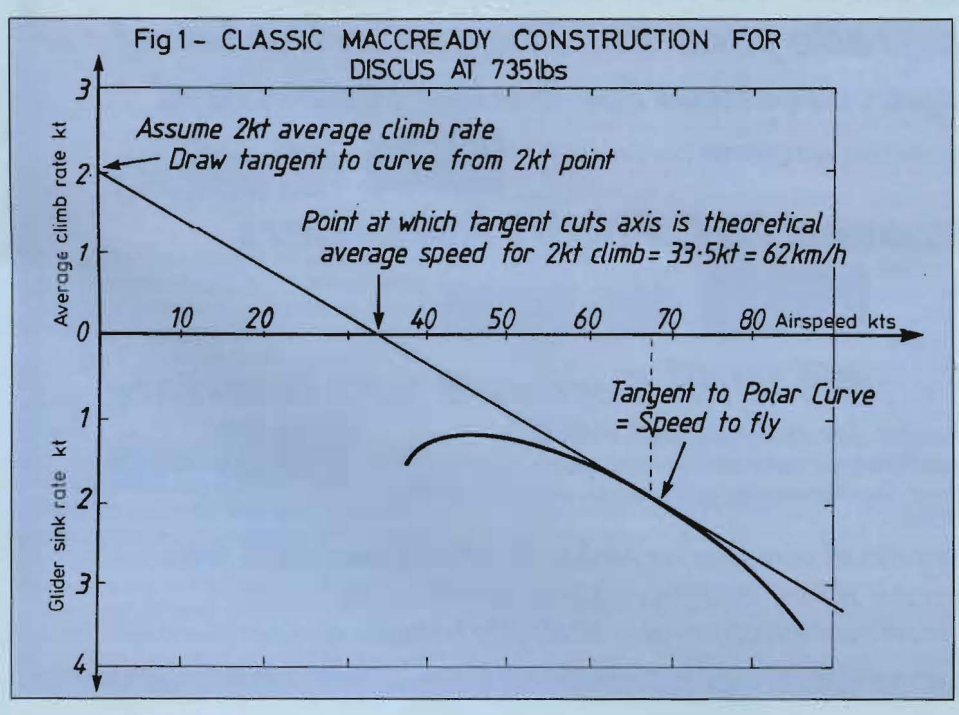
2. Speed/distance. It is useful to know how far you can expect to go in any given time. To do this you need to estimate your likely cross-country speed.

Obtain a polar curve for your sailplane and draw this on a large sheet of graphpaper extending the axes back to zero. Use the classic MacCready construction to find the theoretical cross-country speed for a range of climb rates (see Fig 1 below).

Reduce the speeds obtained by, say, 20% to allow for detours, buggy wings, wind effects, mistakes etc, to get the likely average cross-country speed for any given day. Make up a table of average climb rate versus likely average cross-country speed (Fig 2). Refer to this throughout the season when pre flight planning.

Fig 2.
Average climb rate vs average likely cross-country speed. Discus at 735lbs (unballasted)

Av climb rate (kt)	Theoretical av xc speed (km/h)	Likely av xc speed (km/h)
	44	35
1	62	50
2	77	62
3	87	70
4	94	75
5		



On a typical UK day, achieved climb rates average about 2.5kts throughout the day. From Fig 2, we might expect to average 56km/h. A good day with 4kt climbs might enable us to average 70km/h.

By combining the available soaring day (or length of time your syndicate or club allows you) with forecast climb rate, you can estimate how far to reasonably plan on any given day.

3. Routes. Aim to compile a file of routes from short to long so that on each soaring day you can tailor your flights to the conditions and time available. Your route selection should take into account the following:-

- The most efficient way is to arrange your cross-country downwind on the first leg while conditions are developing, into wind during the peak of the day and downwind on the last leg as conditions weaken. Most good soaring in the UK is associated with winds from west clockwise round to north-east. Try to plan a selection of routes at each distance to cater for different wind directions.
- Keep away from areas of poor soaring. Low lying areas are always bad early in the day - keep to higher and drier ground. In particular avoid coastal areas as sea air can penetrate far inland by late afternoon. The prevailing wind can by late afternoon drive sea air through the Cheshire Gap as far as Birmingham, from The Wash to Daventry and from the Bristol Channel to Salisbury, Devizes and Swindon.
- A small dogleg to avoid airspace causes few problems, but planning to operate under a low airway ceiling can bring difficulties, especially when the cloudbase is high.
- Select TPs for ease of navigation and identification. Two crossing line features are ideal for this purpose, *eg* road/rail or rail/river. If you use GPS, make sure that the most likely co-ordinates are loaded accurately into its memory using WGS84 data. Perform a gross error check by selecting Go To The TP from your club site. The indicated distance should be sensible.

4. Equipment. It is important that your sailplane and its equipment are well maintained and reliable. Inspect everything with a critical eye. ➡

Does the wheelbrake close? It is suicidal to fly cross-country without it being serviceable - you will need it in the event of a field landing.

Is there stowage for drinking water? Many inexperienced cross-country pilots suffer from a dramatic and visible (except to themselves - that's the danger) fall in performance and concentration after about 2hrs' flying on a hot day. This is almost always due to dehydration. The lesson is - **always carry** 1.5 litres of water and drink it.

Does the total energy variometer really work? Check the systems for leaks using a DIY kit. Pay particular attention to all plumbing between the vario and the total energy probe. Try sealing the probe/fin joint with a soft silicone tube - it is far more effective and convenient than using tape.

A complex vario/nav computer is really not necessary. It focuses too much attention inside the cockpit. A good total energy variometer with speed director and audio output is all that we require. Some kind of final glide computer is useful, but the John Willy calculator is more than adequate.

Is the cockpit draughty? Cold draughts can become very unpleasant on a long flight and are easily solved using modern draught proofing materials.

Is the trailer serviceable? Even the very best pilots get it wrong occasionally. You will need a serviceable trailer for the inevitable retrieve. Usually an afternoon spent with the grease gun, foot pump and spare bulbs is enough to fix it up for another year.

Weather

Try to watch a daily TV forecast. With practice and experience you will learn to recognise good weather patterns developing. It should be possible to spot a really good soaring day about three days in advance.

The evening before the TV forecast should give a fairly accurate picture of the coming day. Make a note of the forecast wind direction, cloud amount and maximum and overnight minimum temperatures. The "Bradbury rule" estimates that afternoon cumulus cloudbase will be 400ft for every 1°C difference between max and min temperatures. In general terms, UK average climb rates in knots are equivalent to cloudbase (or thermal tops in blue weather) in thousands of feet minus 1.

For example 4000ft cloudbase
->4-1 = 3kt thermals

From the previous evening's forecast it should be possible to make a provisional task selection for the following day.

On the day watch another TV forecast and use this together with any available specialist gliding forecast to revise and refine your picture of the day's weather. You should now have a good idea of the length of the soaring day, wind direction and lift strength. Compare your assessment of the day with an experienced cross-country pilot.

Pre flight planning

Check the temporary nav warnings for any activity that might affect your task area. Note that all times are quoted in UTC, one hour behind British Summer Time.

Estimate your likely take-off time, allow half an hour to climb up and settle down. Plan to be back on the airfield by 5pm or one hour before the end of usable thermals, whichever is earlier. This is to give you a safety margin in the event of a hold up *en route*. Use the resultant soaring time multiplied by likely cross-country speed from Fig 2 to set your task distance for the day.

For example:

Take-off at 1230, finish at 1700, 2kt thermals.
-> 4hrs cross-country soaring time.

From Fig 2:
2kt thermals -> 50km/h average speed.
->Task distance = 4hrs x 50km/h = 200km.

Now select a task at the appropriate distance from your pre prepared file to match the day's wind direction. Draw the track lines on your map and note down approximate latest times to arrive at each TP to complete the task on schedule. Load and check the TP co-ordinates in the GPS.

Watch how the day develops. If the start of convection is delayed, adjust your task length accordingly. However, be alert to significant changes in the weather which might require drastic changes to your plans. Danger signs are rapidly thickening cirrus, strengthening wind or very early development of towering cumulus.



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After take-off

Don't feel obliged to rush off on track straight away. Fly around locally to get the feel of the day. Sample several clouds and try to work out which part of the cloud works best. The lift tends to lie under the same part of the cloud throughout the day.

Don't start until you feel relaxed and the sky is reliable. Wait for good clouds to appear along the first leg before setting off.

Cloud selection

Be aware that the appearance of clouds from the side can be very misleading. The same cumulus can look completely different when viewed up or down sun. The top of a cumulus cloud is not a good indicator of thermal activity underneath. The appearance of the base is a much better indicator of potential lift than the cloud top.



Fig 3.

Fig 3 shows a side view of four cumulus clouds. All four have identical classic cauliflower tops, yet only clouds 1 and 2 are likely to produce good lift. Cloud 3 is starting to decay. Cloud 4 is in an advanced state of decay and likely to have sink underneath.

Generally a firm dark base is a good indicator of lift. If the base of the cumulus is "stepped" (Fig 4) this is a good sign of strong lift. The lift lies close to the step on the high side.



Fig 4

The key learning point is that the base of the cloud is the best indicator of likely lift.

The more clouds you sample the greater your chances of finding good lift. A common mistake amongst early cross-country pilots is to stick too rigidly to the track line. Weave from side to side of track to pass under as many likely looking clouds as possible. Your first priority is always to soar.

A deviation from track of 30° adds very little to the total distance flown. A 45° derivation can be justified if it takes you to exceptionally good looking clouds. In *extremis* fly at 90° to track or even backtrack if necessary to stay airborne.

En route

Take it easy at first, climb frequently and stay high. Navigate using major features, don't waste time trying to identify every small town or village. Remember that even large towns can disappear in a cloud shadow, especially in hazy weather.

As your confidence grows and conditions develop be more selective about your climbs. Do not be tempted to set a high MacCready. High average cross-country speeds are achieved by using strong thermals and not by flying fast. I tend to use only two MacCready settings in the UK - 2kts when conditions are good and 0 when poor or weak. Set a threshold at which you will discard thermals and leave any climb that falls below that threshold. Continually vary your threshold according to the situation. For example you may wish to lower the threshold if running into a poor patch of sky or getting too low.

It is always a mistake to remain with a dying thermal when not climbing. Keep a constant lookout for growing parts of your cloud or newly forming wisps a short way into wind and be prepared to move to this new activity. Very often a newly developing thermal core can be found just a few hundred yards from a dying thermal.

If spread out is cutting off the sun ahead, be prepared to deviate from track to soarable areas sooner rather than later. You are better off 20 miles from track at cloudbase than struggling on track at low level in weak lift.

Avoid the temptation to fly from airfield to airfield or to select outlanding fields from considerable altitude. I do not recommend selection of outlanding fields too early. For a start you are probably too high to spot obstructions and assess the slope. Secondly by concentrating too early on fields you are likely to increase the chances of outlanding by ignoring soaring possibilities. The first priority is always to concentrate on the clouds. Fly to good cumulus and soar.

I am often asked at what height I choose my outlanding fields. It all depends on the situation. If the sky is obviously completely unsoarable I have usually chosen a safe outlanding **area**, if not perhaps the individual field, by 1000ft. On the other hand if running at low level into an area of good active clouds I don't pay much attention to fields until well below 1000ft. To put it into perspective, most reasonable pilots could expect to climb away from a 1000ft winch launch on a normal soaring day.

Every so often compare your progress with the scheduled times of the various TPs. If you are falling behind schedule or there is a major weather deterioration, abandon your task and fly straight home. There is no point continuing to an unnecessary field landing.

If all goes well you will eventually realise with some pleasure that you are high enough to final glide to your goal. For your first few final glides carry a good safety margin; it is always better to spend an extra minute climbing a few hundred feet extra than to land half a mile short of the airfield!

Approaching your goal airfield, start planning your circuit well in advance. What are your options once you arrive over the airfield boundary? If fast? If slow?

Racing finishes are great fun, but you are likely to be tired, especially if at the end of a long flight. A lot of accidents happen at the end of a cross-country and avoid arriving at low level with no speed and no ideas.

Review

After landing spend some time reviewing the flight. What did you do well? What did you do badly? What would you do differently next time in the same situation. How could you go faster and further? Revise your likely average cross-country speed in Fig 2 to more accurately reflect what you are actually achieving.

Learn and above all enjoy your cross-country flying. I look forward to seeing you over the UK somewhere this summer.

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With the start of the season we have devoted the next few pages to meteorology with news on this page of an automatic station, followed by how to find out more about conditions by using the Internet. Then Derek Sear gives advice on interpreting his forecasts, ending with Tom Bradbury's popular series.

The Wendy Windblows Network

There is a new source of up-to-the-minute weather information aimed at those who fly for fun

Wendy Windblows is the nickname for a chain of hilltop based automatic weather stations you can ring up at low cost to find out what the conditions currently are on-site.

Rod Buck, a hang glider pilot who describes himself as an "electronics nut", created them simply because he was tired of driving miles to flying sites only to find the wind was totally different to the forecast!

As he said, fronts slow down or speed up unexpectedly, low pressure areas swerve away from their predicted tracks and highs dissolve or linger when they shouldn't. Clouds don't behave themselves, either.

Rod decided that pilots needed a network of automatic weather stations covering the country, which they could ring to get an up-to-the-minute weather report. They would want to know winds, temperatures, height of cloudbase, amount and depth of cloud cover and rainfall.



Wendy Windblows sited at Camphill. Rod says the reason it is painted in such a garish yellow is at the request of pilots to make it more visible.

The trends over the last hour-and-a-half or so would be useful, too, so they could tell if the wind was getting up, dying off, backing or veering.

Not only would this enable them to get the up-to-date weather at many places, it would make it possible to track fronts accurately and in real time. (The info is updated every 30secs!)

Three years ago he built his first station at Camphill, Derby & Lancs GC's site, but it is called Bradwell Edge simply because the hang glider and paraglider contingent know it by that name. Now after much refinement and redesign, there are ten stations at sites stretching from the south coast to the Yorkshire Dales.

Rod emphasises: "They are on ordinary BT numbers, not the dreaded premium-rate, so calls only cost about 5p a time. "

Because they're not premium-rate, you can also ring them from anywhere (remember, most businesses bar premium-rate calls, as do many mobile metworks). Not, he adds, that any pilot would be checking the weather whilst at work, heaven forfend!

And, of course, you don't need a fax or computer to access the info, just a touch-tone telephone. Fax and possibly internet access is being worked on at present.

Gliding sites with a weather station include Camphill (Sheffield), Carlton Bank (Middlesbrough) and Long Mynd (Shrewsbury).

Rod is expanding his network of sites as fast as time and finance allow. He raises the money for the network by charging a small annual subscription, which is currently £24/year. This gives you your own PIN number, which gets you into any of the stations.

You can try the system free of charge though. Test any of the following stations:

Devils Dyke (Brighton) 01273-857-002
Long Mynd (Shrewsbury). 01588-650-572
Camphill (Sheffield) 01433-621-602
Carlton Bank (Middlesbrough). . 01642-701-946

The station will answer after two or three rings, and say: "Please enter your code."

Tap in this number, on a touchtone telephone: 8544-6959 and the station will then let you in, and give you the weather!

Rod is interested to hear from pilots who can suggest other sites where a station would be in demand. If you have any suggestions, or comments on the service, please contact him at 106 Woodhouse Rd, Sheffield S12 2AZ, tel 0114-253-0372

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SOARING THE INTERNET

"Weather. It's everywhere. Just look out the window and you'll find some. The British spend lots of time talking about it, and glider pilots even more so. But on the Internet it's almost an obsession. A search engine returned 1 180 858 page hits to the word weather! (Sorry, but I didn't check them all out.) Many Internet service providers have a weather section for their clients and many individuals include a set of useful links. So", John asks, "exactly what's out there?"

The good news is there's masses of interesting stuff on-line, the bad news is it's not quite exactly what a glider pilot would want (thermal strengths, time of development, inversion level, 500km days, etc). But don't let that spoil your fun, there's enough to make it worth your while visiting many sites regularly.

Forecasts

A good all-round site for weather information is the Birmingham University Geography Dept's www.bham.ac.uk/geography/met This has many useful links covering topics such as British Isles Forecasts (add /uk/uk.htm to the URL), Weather and Climate Links, Educational Resources and Road Weather, which unfortunately isn't about current driving conditions.

The British Isles Forecasts page (which they claim includes every Web site offering a UK forecast) has an active map showing 39 locations for which you can get individual weather forecasts. Clicking here takes you to a list of the relevant links. This includes links to one, three and five day forecasts. Several sites pop up time and again whichever city or area you choose, including some American web sites. These US sites tend to give shorter forecasts than UK sites as obviously their main effort goes into providing local forecasts.

The current UK situation link at the top of the British Forecasts page leads to a set of up to date data. There's a Mid-Atlantic and European synoptic chart, several current satellite photos in infra-red and visible light, a cloud and current weather picture from Germany and surface station plots for the UK. These images also act as links to the sites supplying the data, so clicking on them gives you even more information.

One name that crops up a great deal under the Birmingham links is Impact Weather services at www.impactweather.co.uk/ This is a large commercial organisation based in Scotland and providing specialist forecasts nation wide. They also give lots of individual forecasts for a large number of cities and areas. Simply search out the (free) links to your areas of interest and make the appropriate bookmarks.

For a fee they will provide more detailed forecasts for your open day or school fete as well. Specialist reports are also available for sailing, mountains and roads (the latter is password protected unfortunately).

Two Scottish sites that pop up time after time on many Web pages are Fair Isle Weather at www.zetnet.co.uk/sigs/weather/links.html and Shetland News at www.shetland-news.co.uk/weather/weather.html Both are based in the Shetland Isles where people take a great interest in the weather due to the isolation of the islands and their dependence on aviation and the shipping industry. (Apparently they also have a greater percentage of Internet users than the rest of Britain!) These two pages have many excellent links to weather sites, a sort of best of the best. Synoptic charts for the UK and Europe, various satellite pictures at several wavelengths, the European Centre for Medium Range Forecasts, European charts, rain and pressure forecasts for the next three days, an excellent Scandinavian site, several shipping forecast sources, including interactive weather buoys, short and long range forecasts and links to several excellent German pages (some will need a German speaker to be fully appreciated, but don't be afraid to experiment as these links will provide lots of info) - all useful stuff.

One obvious place to visit is the Met Office at www.meto.govt.uk/ As they have now gone commercial, there's less free stuff here than at some sites.

There's a general forecast for the British Isles and under their Latest Weather button you'll find regional, shipping and three day forecasts, severe weather warnings, and yesterday's (?!!) weather. But they do offer a service called MetWEB where £10 buys you twenty 30min accesses to additional weather information, including specialist aviation forecasts - handy for a Comp perhaps.

Under the Information button to MetWEB, there's an Index link which shows examples of what you'll get for your money. Information is also available on the MIST and MetFAX Aviation services, and a host of other services by clicking on their Weather Services button. A new search facility brings up summaries of Met Office reports, publications and other documents.

The BBC, well known for the quality of their TV and radio forecasts, make them freely available on their site at www.bbc.co.uk/weather/ This includes lots of area forecasts but these tend to be a short three - five lines worth of information like most of the other sites, not the longer forecast you get on regional TV programmes.

Another popular source of reasonably good forecasts is the *Daily Telegraph*, and its on-line incarnation the Electronic Telegraph at www.telegraph.co.uk/ You need to register with ET, but it's free. Bookmarks bypass the password hassle. They offer a general report, and a few lines extra on several different regions, plus a nice synoptic chart. Much the same sort of data (but no synoptic) is also available from the Press Association at www.pa.press.net/weather/

If you fly or live abroad, then there is a very good collection of European forecasting sites on Tim Freegarde's pages at users.ox.ac.uk/~pclb0019/earth/weather/weather.html

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Apart from UK and US links, there are French, German, Dutch and Italian sites as well, along with the European Centre for Medium Range Forecasts. Many of these have satellite pictures and forecasts that are also relevant to UK pilots.

A major site that is quoted very often on weather pages is the giant American government site of NOAA (National Oceanic and Atmospheric Administration) at /iwin.nws.noaa.gov/ and www.nws.noaa.gov/ There is so much available here that I could fill the rest of the article with NOAA's pages. Definitely worth a look, but be prepared to spend some time on-line as there is a lot to examine.

The current British weather can be found at www.nws.noaa.gov/weather/GB_cc.html in case you miss it. Still in the States, the National Weather Service makes available a multitude of Met faxes at 205.156.54.206/fax/ and /fax/otherfax.shmtl as TIFF files.

These should be downloaded and viewed with a graphics program, and you'll need to enlarge them to see all the info on offer, which covers America, Mid Atlantic and European areas.

The final US giant worth visiting is the WeatherNet at cirrus.sprl.umich.edu/wxnet/ Like the other American sites mentioned there is lots of info and although it mainly specialises in American forecasts, within a couple of minutes I'd found the current conditions at RAF Brize Norton, and many other UK airfields.

WeatherNet has a list of several hundred other weather web sites (it claims to have one of the largest lists of such links), and you can usually find some useful info *via* them.

Some pages are aviation orientated and although biased to power pilots, still have information of interest. For British examples try *Pilot* magazine's UK Aviation page at vweb1.hiway.co.uk/aviation/pwx.html and AvNet's site at www.avnet.co.uk/weather.html

Both give many links, some of which are more useful for power and SLMG pilots, such as METARs, SIGMETs and TAFs (if you can read such data) and both link to Tom Dawes-Gamble's aviation weather page. This again is more power orientated and has international info available for those journeying across the Channel. Satellite sites, some forecasts and a link to LANDINGS' weather list are also included here.

Satellite images

The Internet is a great source of satellite images. One of the most often mentioned is the Dundee University Satellite Receiving Station at www.sat.dundee.ac.uk This is a major archive of freely available satellite pictures.

You're positively encouraged to drop in as often as you want after registering as a user. This will **not** put you on junk mailing lists or cost you money. Dundee is government funded and has to justify its funding by proving that lots of people use it.

Once registered, go to the Current Day's page for the latest satellite pictures in a variety of wavelengths to download. It would be perfectly practical for a club to log on in the morning, collect all these pictures, plus the entire previous 24hrs' worth, and display them as a continuous loop slideshow with a shareware graphics program. Then sit and watch the weather systems as they unfold across the area to get a good idea of what's coming and how fast.

You could update the pictures at midday if necessary. Some Internet software can even download files automatically throughout the night - even if you are not logged on. An alternative to the Dundee site is Nottingham University's www.nottingham.ac.uk/meteosat/ which deals in Meteosat images with the latest images being available within 5min of arriving!

Under their graphical interface there's satellite images at various wavelengths and a slideshow of the last 24hrs' images - very helpful for judging how fast a front is moving. Other interesting stuff is on their Info and Links page. The Met office site also has satellite pictures listed under Latest Weather.

Learning about Met

Advocates of the Internet make a great deal of fuss about its educational benefits. So I kept an eye open for sites to broaden your knowledge of this important topic. The Birmingham University site (above) has a link to Educational Resources - just add /observe.htm to the main URL given. Edinburgh University Met Dept has a series of good links starting at www.met.ed.ac.uk/calmet which may help you. This site offers you some educational software under their FTP option. Have a look in the Documents, Modules, and Toolbook sections for a wealth of freely available information, lessons and programs for those with the urge to learn. The CAL and Interactive sections might interest some of you.

The World Wide 2010 Project at ww2010.atmos.uiuc.edu/(Gh) provides a large number of educational pages. This large site improves on an earlier version (with a completely different URL at covis.atmos.uiuc.edu).

The WW2010 home page is reached by adding /home.rxml to the main URL.

For the on-line weather guides add instead /guides/mtr/home.rxml For advice on reading weather maps (this could be useful for new soaring pilots!) add /guides/maps/home.rxml to the main URL and for other educational Met pages just add /guides/home.rxml

These will all be helpful to those with little knowledge of meteorology, as they are not particularly difficult to understand, nor at too advanced a level.

The UK's Met Office site mentioned earlier also offers some educational information under the Weather Services and How We Forecast It buttons.

Reading long texts on a computer screen is an acquired taste and for some people it is no substitute for the traditional book.

So if you only use a computer when absolutely necessary, perhaps a trip to an on-line bookstore selling aviation and met texts at www.weather.com/bookstore/ would be more acceptable. Contrary to what you may read in the papers, buying *via* the Internet is no more risky than giving your credit card number to an unknown person at the end of a telephone line. The same safety nets are enforced by the credit company in both cases.

(Cut off the word bookstore from the above URL and you arrive at a giant American weather site with a special aviation section. Although mainly orientated at US power pilots there's also some UK and European information available.)

Everything else

The news archive site at ftp://rtfm.mit.edu/pub/usenet/sci.geo.meteorology/ lists several FAQ documents (Frequently Asked Questions) on meteorology, and includes long lists of where to get Met information of various sorts. These FAQs are updated regularly and the latest version is always available here to download and read at your leisure. (If you stop the URL after usenet/, you'll find a huge list of topics - newsgroups actually - which publish regular FAQs for you to read.)

Finally, if you want to read a monster list of links on every weather topic under the sun, visit Roger Brugge's well researched and often quoted site at www.met.rdg.ac.uk:80/~brugge/ If there's a topic you're interested in that I've not covered, Roger almost certainly has a link to it.

Apart from a potentially larger phone bill, you may feel that this survey has left you with a lot of typing to do. To avoid RSI, I've twisted an arm and persuaded Ken Sparkes to add all these links to his Web page at home.clara.net/eagle By the time you read this I will probably have added a few more weather pages to the list.

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FORECASTING SOARING CONDITIONS

Many will be familiar with the daily Soaring Forecast and the Three Day Soaring Outlook which complements it. Although the forecast, described in the July 1997 issue, p167, is basically straightforward, interpret it incorrectly and it loses its value. So at the start of this season I thought it worth giving some "decode notes" to help you get more from the forecasts

First, it is important to note that when I prepare the forecast I assume you will have the full current forecast information (*ie* cross-section graphics, notes and surface analysis and forecast charts) in front of you. Unfortunately too many users just look at the cross-section graphic, ignoring the text which modifies it and the charts which give the wider weather picture.

Taking any piece of information out of context increases the risk of misunderstanding and then the source (in this case me) gets the blame when things don't work out. Sometimes worse things happen. Competition tasks have been set using the wrong forecasts.

Timing

You want to plan your day early and will want the forecast as soon as possible. This forces a compromise between the data most representative of the soaring period and the need to meet this deadline. The data used for the standard daily forecast is gathered and issued by the Met Office between 0000 and 0600 UTC (Universal Time Constant) and has to be processed into a usable form before it is issued. For example tephigrams, the most important piece of information, are produced from radio sonde soundings every 6hrs starting at 0000.

Unfortunately the one at 0600 is too late to meet the deadline as it takes about two hours to gather and analyse the data and produce the forecast and graphic. As some important bits of information aren't issued by the Met Office until 0600, this makes 0830 local time the earliest you can get the forecast.

The standard forecast is good for every day club use but competitions demand the most up to date information possible, so I will only support competition forecasts based on post 0600 data. This is why the standard daily forecast carries a health warning during competition times.

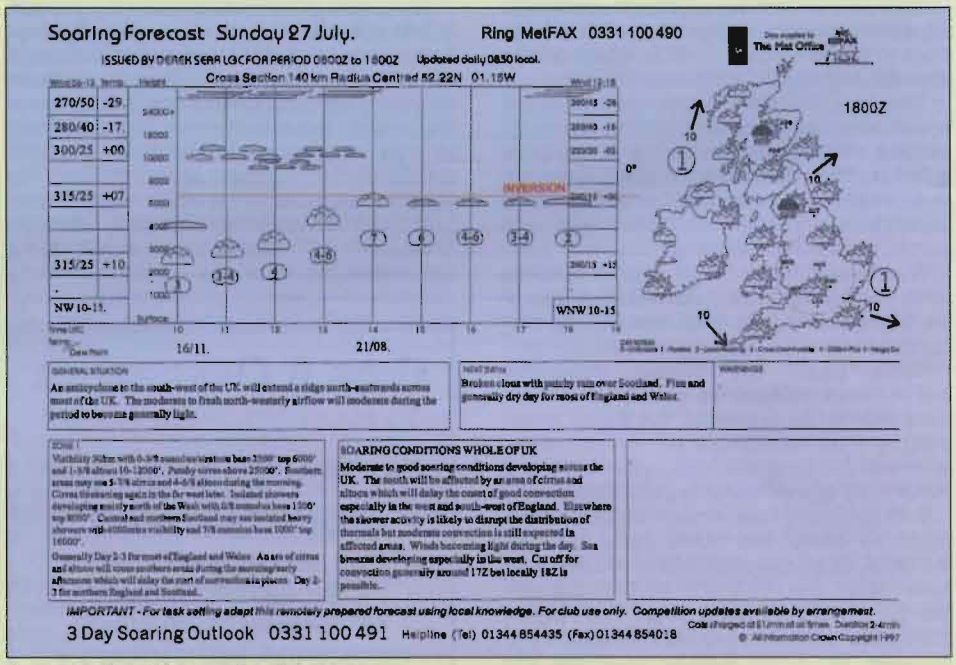
The validity time for forecasts as a whole is from 0800 to 1800 and the cross-section graphic is valid from 1000 to 1800. There isn't enough space to represent the full period but there are few days when it is really that good earlier than 1000. However, use the text to give an indication of the expected conditions before that time.

All the times shown on the forecast are UTC which is essentially Greenwich Mean Time. In aviation UTC is replaced by Z (Zulu) for brevity and clarity, so from now on in this article I will use Zulu.

Location

The text in the three zone boxes covers the whole UK or the section of the UK shown in the 1800Z graphic. The cross-section shows a circle with a radius of 140km centred on Rugby to cover the largest land area possible. The time factor makes it impossible to issue a cross-section for individual locations (unless it is the site of a competition), but modify the information using the text for the zone most relevant to a site or individual, the charts and local knowledge.

From March 1 a separate soaring forecast for Scotland and the far north of England became available by dialling 0331 100 489. The format, cost and availability times have not changed. The 140km radius cross-section is centred on Dunblane, giving the largest possible coverage of the land mass.



An example of the soaring forecast.

CROSS-SECTION

Timing of the weather

The cross-section grid indicates the expected conditions at the central location at any given time between 1000Z and 1800Z. Because the data used to produce the standard forecast is issued so early, a timing error of two hours should be allowed, especially in the afternoon. Timing is one of the most difficult aspects to get right which is one reason why the Met Office aviation forecasts are updated every six hours.

Heights

All heights on the cross-section are above mean sea level (amsl) and given in feet.

Winds

Two periods are given for wind velocities (speed and direction), 0600Z to 1200Z and 1200Z to 1800Z, allowing changes in wind velocity during the day to be noted. The wind velocities given are centrally located within the cross-section area. Again the surface charts should be used here to help refine this information for a specific location.

0 degree isotherm

The freezing level can vary over the cross-section area but is always shown at the lowest expected level. Early in the season it is not uncommon to have a convection cloudbase of 5000ft and a freezing level of 3000ft, which can be important for a pilot to know if intending to carry water.

It is shown on the cross-section by a thin dotted line with a 00 annotation on its extreme right-hand side.

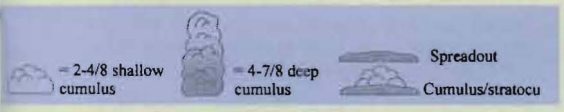
Inversion

This is an average. The inversion can also vary with height across the cross-section area; more so than the freezing level.

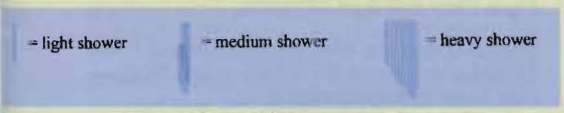
Once again by reading the text and noting changes in the pressure pattern on the accompanying charts an estimate of any likely local variation and its effect can be made.

Cloud

The base and top of the symbols used generally correspond to the expected base and top of the various cloud layers. The cumulo-cloud symbols give an indication of the amount of cloud. For example:-



A combination of symbols may be used to signify cloud types as in the cumulus/stratocu symbol above. Deep convection such as cunims, is represented by combining two or more of the 4-7/8 cumulus symbols. If showers are expected the strength of the shower is indicated by the amount and heaviness of the rain symbol. For example:-



As convection cloudbases can vary considerably over short distances, the indicated base height is an average across the area for any given time.

Thermal strengths

The thermal strengths shown are the average rates of ascent of the thermal in the prevailing airmass, **not** of the glider. Because the performance of gliders varies, not to mention the way any individual glider is flown, it is impossible to indicate actual rates of climb. There is, of course, a direct correlation between glider types and thermal strengths and a number of task setting programmes and formulae have been produced which give fairly accurate results. Generally, expect to see 3kts or more as an indication of soarable thermals.

A spread of thermal strengths, *ie* 3-5kts, is often given where variable soaring conditions are expected. For instance, in stratocumulus spread out conditions the lower figure is the expected thermal strength under areas of spread out whilst the higher figure is the thermal strength in more direct sunshine.

Temperatures and dewpoints

On convective days two air temperatures are given. The first is the trigger temperature for thermals to 2000ft, shown next to the time this temperature should be reached. The second temperature is the maximum expected. Again these temperatures are centred on the cross-section and are an average; local conditions will greatly influence the convection at any one location.

The surface charts and text will help to establish where there might be any variation across the area. Dewpoints can vary widely depending on local conditions. Again those given are an average for the area at the time indicated.

THE TEXT BOXES

An important part of the forecast is its text content. Descriptions of the general weather conditions as well as the soaring conditions are given.

Situation and outlook

The General Situation box gives a text description of the current pressure and frontal situation as shown by the accompanying 00Z surface analysis chart. There is usually an indication of how the situation may change during the period of the forecast. A brief description of the outlook is also given based on the accompanying T+24hr surface forecast chart.

For a more detailed soaring outlook fax or phone 0331 400 491. The outlook gives a guide to the expected trend of the weather for three days ahead. It is accompanied by surface forecast charts for the period T+24 to T+96, (up to four days ahead). The outlook is updated daily and available from 0900 local time.

Warnings

Such things as strong wind and thunderstorm warnings are given here, also warnings of specific interest to soaring pilots such as high cockpit temperatures or conversely a low freezing level.

Zones

The area covered by the forecast is divided into a maximum of three zones, each with text describing the expected weather conditions. At the very least it is important to read the text for the zone or zones most relevant to your needs; however, it is better to read all the information. The area of each zone is shown on the 1800Z outlook graphic to the right of the cross-section.

Often the weather can be described in less than three zones. Then, one box may be used to give more details of the soaring conditions.

I will always try to give as much detail as possible on the expected soaring conditions outside the cross-section area.

1800Z outlook

This gives a pictorial representation of the expected weather at 1800Z (or during the afternoon in winter). The zones are those referred to in the text boxes. The boundaries of the zone are those expected at 0800Z, but the weather symbols show how the weather is expected to run across the zone boundaries during the period up to 1800Z.

HOW TO GET THE FORECAST

To receive the forecast you will need a fax machine with polling facilities. Polling is usually accessed *via* the handset or by specific keys on the fax machine itself. Its handbook will give details. Once set up simply dial the number and follow the voice instructions.

If using a PC based fax system it is important that your software is compatible with the MetFAX system. Some fax software such as Windows 95 only receives page 1 of multipage faxes. The fax software recommended by the Met Office is Winfax Pro by Symantec. I use version 7.5 (the latest is version 8) and I have 100% success. Details of the product and a trial version of Winfax can be downloaded from the Symantec Web Site at http://www.symantec.com/

The forecast is a premium rate service charged at £1/min and takes approximately 4min to download the full forecast. If you have any problems receiving the MetFAX forecasts call the MetFAX helpline on 01344 854435.

FORECASTS FOR COMPETITIONS

Competitions need considerable forecast support to make the most of the weather. Because we are interested in the conditions over relatively small areas of the country, without close monitoring of the situation a soaring opportunity can be missed.

While the standard forecast is good for general club use provided you have all the information to hand, competitions demand the latest possible information on which to base a task and to update the standard forecast with data gathered much nearer the desired soaring period.

The weather must be monitored closely throughout the competition. This is not only necessary when attempting to get a flyable slot on any given day, but at all times. It is necessary to see how the general weather pattern is developing day to day; how today's conditions have actually developed compared to the forecast etc.

When you need forecast support for your competition, be it on site or remotely, contact me for details on 01582 663419 or write to me at the London Gliding Club, Tring Road, Dunstable Beds LU6 2JP or send me an e-mail on 101333.1656@compuserve.com

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WAYS OF THE WIND

This is an account of how the wind develops and the part it plays in the weather

The oldest and best known way of charting airflow is to draw isobars on a map. Isobars are lines of equal pressure, at a fixed level, usually sea level. The pressure is measured at station level and corrected to give amsl pressure by making an addition depending on station height and temperature. The temperature correction becomes increasingly inaccurate for high level stations and amsl isobars are of dubious value among the mountains and over high plateaux. A better indication of the airflow is given by drawing contours instead of isobars.

Introducing contour charts

An aircraft using a pressure altimeter to fly at a fixed height is actually travelling on a constant pressure surface. For example an altimeter height of 30 000ft is very nearly at 300mb. This surface is rarely exactly horizontal.

Radiosonde and satellite soundings provide data for drawing contours showing the slope of a pressure surface. Over the UK the slope seldom exceeds 1:1000 and is usually much less. Even on such gentle slopes gravity tends to pull the air down the slope. However, the air does not travel far before its track is deflected by the Coriolis effect.

The Coriolis effect

This is named after Gaspard de Coriolis who described it in 1843. Anything moving freely above the ground is deflected by the rotation of the earth. This produces the Coriolis effect. The air may travel in a straight line with reference to an inertial framework (such as the stars) but a straight track in space makes a curved trajectory over the Earth.

To an observer on the Earth the air seems to be influenced by a turning force. This deflects the trajectory to the right in the northern hemisphere. Ballistic missiles and long range artillery shells are also deflected by the Coriolis effect. It even turns slow moving ocean currents.

The local Coriolis effect depends on rotation in a horizontal plane parallel to the Earth's surface. It varies with the SINE of the latitude which decreases to zero at latitude 0° (the Equator). Imagine a huge gramophone record; if it were placed flat at the Poles the Earth's rotation would act as a turntable and an angel might play the record. If the record were moved away from the Pole the rotation would still allow the angel to play it, but the music would become slow and dreary. At the Equator the record would have been tilted through 90° and not even the angel could get any music from it. The rotation would have ceased.

Rotation shown by star trails

The stars provide a reference system which is (apparently) fixed in space. The Earth's rotation makes the stars seem to move; this shows up in time exposures of stars. A photo looking vertically upwards at the North Pole shows circular star trails which appear to turn clockwise (to the right). At the South Pole the star trails turn to the left.

The further one moves from the Poles the less the star trails curve. A photo looking vertically up from the Equator shows straight star trails going direct from east to west. They are straight because there is no horizontal rotation at the Equator. The curvature of the star trails shows how the Coriolis effect varies with latitude.

As latitude decreases the turning effect is converted into a centrifugal force which reaches its maximum on the equator. This outward centrifugal force reduces the pull of gravity near the Equator.

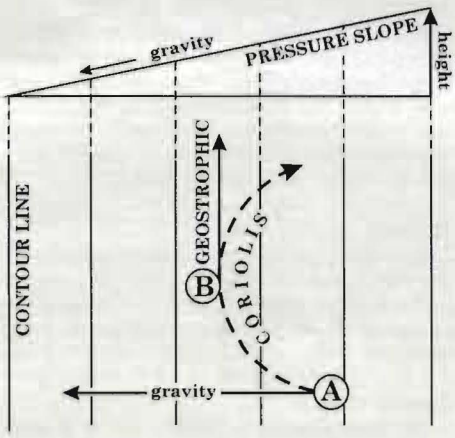


Fig 1. Evolution of the geostrophic wind.

How geostrophic wind develops

Fig 1 shows contours of a pressure surface in the northern hemisphere. Suppose the air was initially stationary at "A". When the wind is calm there is no Coriolis effect. Gravity tends to pull the air directly down the slope but as soon as the air moves the Coriolis effect (shown by a pecked line) begins to turn it to the right. The faster the air moves the more it is turned.

The Coriolis effect turns the wind until the flow is parallel to the contours at "B". At this point the pull of gravity is balanced by the Coriolis effect. This balanced flow parallel to the contour lines is a geostrophic wind.

If the wind turned any further to the right it would be climbing up the slope. This would slow it down and reduce the Coriolis effect. The whole process takes several hours and any rapid change upsets the balance. For example a sea breeze which develops quickly in late morning may never become geostrophic.

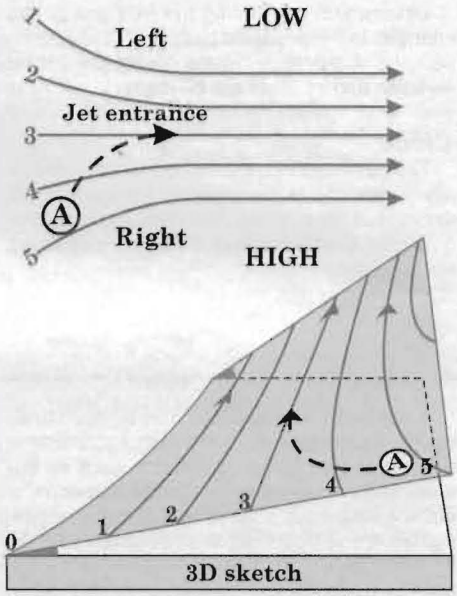


Fig 2. Flow into a jet entrance.

Unbalanced flow

Geostrophic balance is only maintained if the contours are parallel and straight. If the contours are not parallel it means that the slope is changing. When the lines get closer the slope is increasing in that direction. The pull of gravity is greater where the slope steepens so the air has to accelerate.

A glider accelerates by diving, converting height into speed. (Potential energy is turned into kinetic energy.) The air, travelling on a constant pressure surface, accelerates by diving down the slope. To do this the wind direction is temporarily deflected to the left (north hemisphere). Great acceleration requires considerable deflection of the wind. See Fig 2.

For example if the airflow at latitude 50°N had to accelerate at the rate of 40kts/120nm, then the wind would turn 40° left to dive down the slope. As the speed increased the Coriolis effect would increase too and the wind would be turned right untill the flow was along the contours again.

The opposite effect occurs where the contour lines fan out indicating a decrease in slope. Reducing the slope reduces the pull of gravity too so the wind should decrease. However, the fast moving air takes time to adjust to the new conditions. While the air is travelling too fast the Coriolis effect is greater than the pull of gravity so the wind is temporarily deflected to the right (which is up the slope). Thus in slowing down, the excess speed is converted into extra height until a new balance is achieved.

Surface winds

Surface friction reduces the windspeed near the ground. Less speed means the Coriolis effect is reduced but the pull of gravity remains the same. Consequently the flow is pulled down the slope at an angle to the contours.

For example: in the northern hemisphere a wind of 270/30 at 2000ft becomes more like 240/15 at the surface. The actual value depends on how rough the terrain is and whether air is unstable. In unstable air the turbulent mixing keeps the speed up. If there is a nocturnal inversion, turbulence is suppressed so much that the speed drops to 220/07.

Leaky pressure systems

When the surface winds blow across the contours like this they tend to fill up depressions and weaken anticyclones. In simple terms: friction makes the low level air leak out of highs and into lows. Highs and lows can only be maintained if this surface leakage is matched by a compensating flow aloft. The way that the flow aloft affects the surface pressure is described further on.

Curved contours alter the balance of forces.

This is shown in Fig 3. If contours are curved the centrifugal force enters the equations. The geostrophic wind is altered and becomes the gradient wind. Where the contours are curved anticyclonically round a high (lower diagram) the centrifugal force increases the pull of gravity down the slope so the gradient wind becomes stronger than the geostrophic wind.

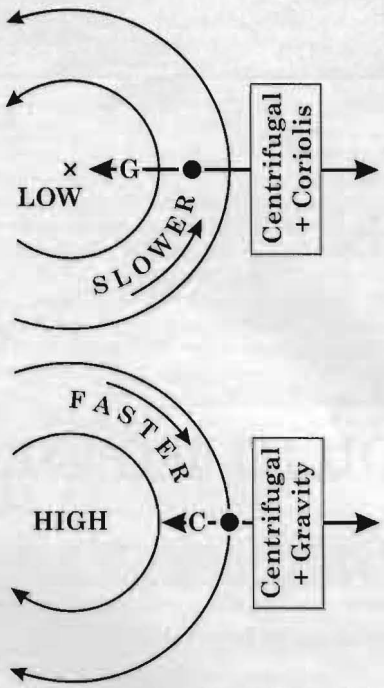


Fig 3. Effect of curved contours.

For example a geostrophic wind of 60kts along the straight would be increased to a gradient wind of 112kts when it rounded an anticyclonic curve of radius 600nm. The effect reaches a limit when the speed is doubled. Then the air can no longer follow the contours; the system goes out of balance and the flow gets turbulent. This is why one never finds closely spaced contours near the centre of a high where the radius of curvature is small.

Where the lines are curved cyclonically round a low (upper diagram) the outward centrifugal force acts against the inward pull of gravity. This effectively reduces gravity so the windspeed decreases round a cyclonic curve. The sharper the turn the slower the wind. For example a tight cyclonic turn of radius 120nm would reduce a geostrophic wind from 80kts along straight contours to only 43kts round the curve.

One usually finds the windspeed much reduced close to the centre of a low because the radius of curvature is small there, but cyclostrophic winds are an exception.

Cyclostrophic winds

There are certain tight vortices where the Coriolis effect is negligible in comparison to the centrifugal force. The wind is then termed "cyclostrophic".

A cyclostrophic wind occurs in little vortices such as dust devils and in dangerously big ones such as tornadoes. In both cases powerful lift first extracts the air and makes a tiny low. The surrounding air then converges on this low like water above the drain hole when the plug is pulled out.

Convergence increases the spin which becomes so rapid in a tornado that centrifugal force reduces the central pressure and forms a column of condensation extending from cloud to ground. Small vortices such as dust devils and tornadoes can spin in either direction because the Coriolis effect is insignificant.

Strong convergence can spin up big systems such as tropical cyclones, hurricanes and typhoons. These form at low latitudes where the Coriolis effect is very small. The cyclostrophic effect produces huge vortices hundreds of miles in diameter which often have an open "eye" marking the centre of rotation.

The slope of pressure surfaces

Many jet airliners fly at or above the 250mb surface where the standard altimeter (set to 1013mb) reads almost 34 000ft. The difference between the altimeter height and the true height depends on air temperature and sea level pressure.

1. Temperature effect.

A column of air contracts if it is cooled and expands when warmed. If the mean temperature was reduced by 10°C the 250mb surface would descend by 1350ft. The higher you go the greater is the effect. Flying at an indicated 34 000ft the true height could range from 35 500ft to 32 500ft, a range of some 3000ft due to temperature changes alone.

2. Changes of surface pressure.

If the surface pressure changes, the contour height will be altered too. For example if instead of the standard msl pressure of 1013mb there was a low of 977mb at sea level, all the pressure heights above it would fall by 1000ft.

Flying from tropical to polar regions at a constant indicated altitude of 34 000ft could involve a descent of some 4000ft by the time one reached the Iceland low. Such a slope would produce an average westerly wind of 50kts between latitudes 20 and 60.

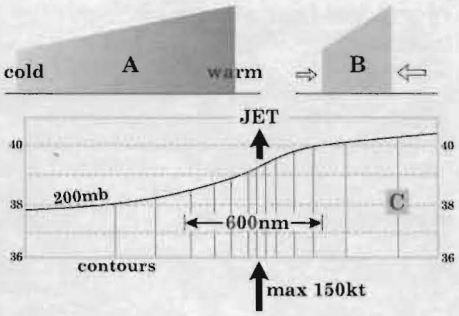


Fig 4. Warm and cold air form a jet when they get close.

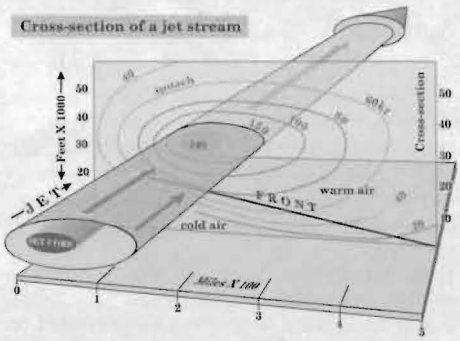


Fig 5. Jet stream above a frontal surface.

Frontal temperature gradients cause jets

The contour slope from tropical to polar regions is not usually so regular. When warm and cold airmasses are brought close together at a front the slope becomes much steeper and the wind aloft increases to jet stream speed.

Fig 4 (A) shows the gentle slope down from warm to cold air; 4 (B) shows how the slope steepens when the two airmasses come closer; 4 (C) shows a contour surface at 200mb dipping down steeply over a distance of 600nm to produce a jet stream of 150kts. On a chart this region is marked by very closely spaced contours.

Fig 5 shows a 3-D sketch of a jet stream. The black line marks the front with a series of isotachs from 60 to 140kts round the jet core. The jet core is usually found in the warm air several thousand feet above the frontal surface. ➡

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High level flow affects surface pressure

Where there are rapid changes of velocity the flow can get temporarily out of balance. Sudden slowing down tends to make the air aloft pile up (converge) like traffic approaching a roundabout. Rapid acceleration has the opposite effect and the air aloft diverges so fast that it tends to suck up air from below.

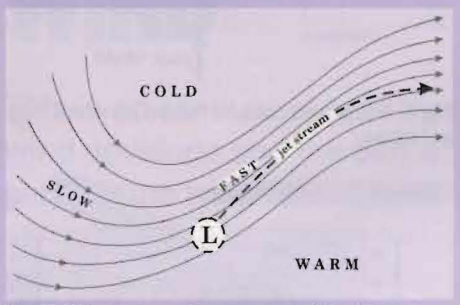


Fig 6. Where lows form near a jet entrance.

The effect is increased when there is an upper trough followed by a jet. Fig 6 illustrates what happens:-

1. Air approaching the trough slows down as it reaches the cyclonic curvature.
2. Once round the curve the air accelerates up the straight.
3. If the straight contours are closely spaced (indicating a jet) the speed increases even more. This results in strong divergence aloft which sucks up air from below.
4. Pressure then falls at the surface forming a depression marked by a dotted ring "L" below the right side of the jet entrance.

The deepest frontal lows occur in winter when the jets are strongest. In December 1986 an Atlantic low deepened to 915mb. Pressure can change extremely fast. An Atlantic weather ship once recorded a pressure fall of 17mb/hr in January 1972 followed by a rise of 22.6mb in 35min. That rise is equivalent to an altimeter change of about 655ft.

Jet exits and upper ridges

The effect is reversed at the far end of the jet where the air comes out. See Fig 7.

1. Air turns right and slows down as it leaves the jet exit. The pecked line shows it turning right up the slope.
2. This results in convergence aloft on the right side of the exit. The excess air makes pressure rise at the surface and produces an anticyclone in the region marked "H".
3. Air subsides above this anticyclone, becoming warmer and more stable in the process. The little vertical section illustrates this.

The descending air cannot sink through the ground so subsidence ceases low down. The warm subsided air forms an inversion which often traps a layer of stratocumulus beneath it. Above the inversion the warming dries out the air so higher clouds evaporate.

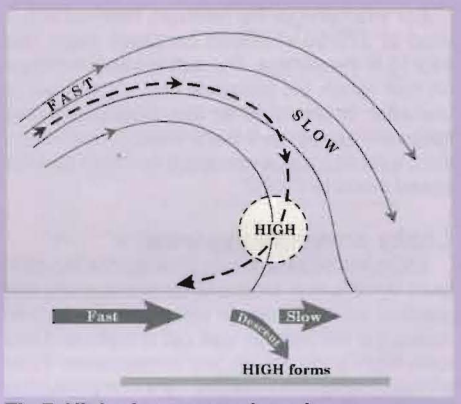


Fig 7. Highs form near a jet exit.

A link between lows and highs

A powerful jet can extract a vast amount of air to form a deep depression. This air is carried downwind to the jet exit where it may be dumped to build a large anticyclone.

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This makes for a fine spell in summer but cold, grey murky weather in winter.

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Two paintings by John Dimond. Above: Silver Dope and Dayglo (Slingsby Cadet Mk 3 - T-31) and on the right: Gorgeous Prefect.

Exhibition Of Aviation Art

As a reminder of the Guild of Aviation Artists' annual exhibition, to be held again this year at the Carisbrooke Gallery (behind Marble Arch) from July 21 to 31, we have printed John Dimond's beautiful paintings which were shown last year. The submission and selection of exhibits is on Sunday, May 17, at the Guild's headquarters. For more details contact Hugo Trotter, the Guild's secretary, on 0171 735 0634.

What Gliding is All About



Geoff Davey is the managing director of Notts County Football Club. He lives in Lincoln and flies with the Trent Valley GC.

One bright Wednesday morning last October I elected to have a day away from the pressures of work to spend a few hours with colleagues at the gliding club. I am one of a group of regulars who fly on Wednesdays, weather permitting, and enjoy the informality of mid week gliding.

A fortnight earlier I was one of 12 who had spent a week at Portmoak. Conditions weren't good but I think I enjoyed the week more than most because, with the encouragement and assistance from others, I had two aerotows, each of about 15min, and converted to the club Astir. Since returning from Scotland I had a couple more aerotows on type and was looking forward on this particular Wednesday to my first winch launch in the Astir.

It was an uneventful launch but pulling the release at 900ft I remember feeling that I had my hands full. I then picked up a weak thermal over the army camp adjacent to our site. Less experienced pilots will recognise the dilemma - do I stick with it or concentrate on getting this unfamiliar glider down? Feeling confident and comfortable, something inside said "go for it" and 10min later I had worked the Astir up to 1200ft.

I took my bearings (and a deep breath) and spotted a K-13 downwind considerably higher than myself. I joined him and averaging 3kts climbed to 3000ft, spending an hour gaining valuable experience thermalling the Astir and familiarising myself with its characteristics.

I later learned that I was one of only three or four who had managed soaring flights during a brief window of opportunity on a day which promised nothing.

My flight had been extremely enjoyable and memorable, not least for having flown 1hr 20min from my first wire launch in glass in October. I am sure it is experiences such as this that attracts and encourages pilots in the early stages of the learning curve to continue gliding.

Whilst having some experience with the ATC as a teenager, I really began gliding three years ago when my wife bought me a trial flight for my 50th birthday. Since that October Wednesday I have bought my own Astir and am looking forward to this summer with great anticipation!

Club's Birthday Celebration Combined With Launch Of Glider To Teach Disabled

Three seasons ago a young man in a wheelchair went to Portmoak for an air experience flight and his ordeal has led to a K-21 being bought and fully equipped to train wheelchair pilots to instructor level. Graham Stevenson-Lawrence, the chairman of the Walking On Air charity and instigator of this ambitious scheme, told us more about the day that changed his life.

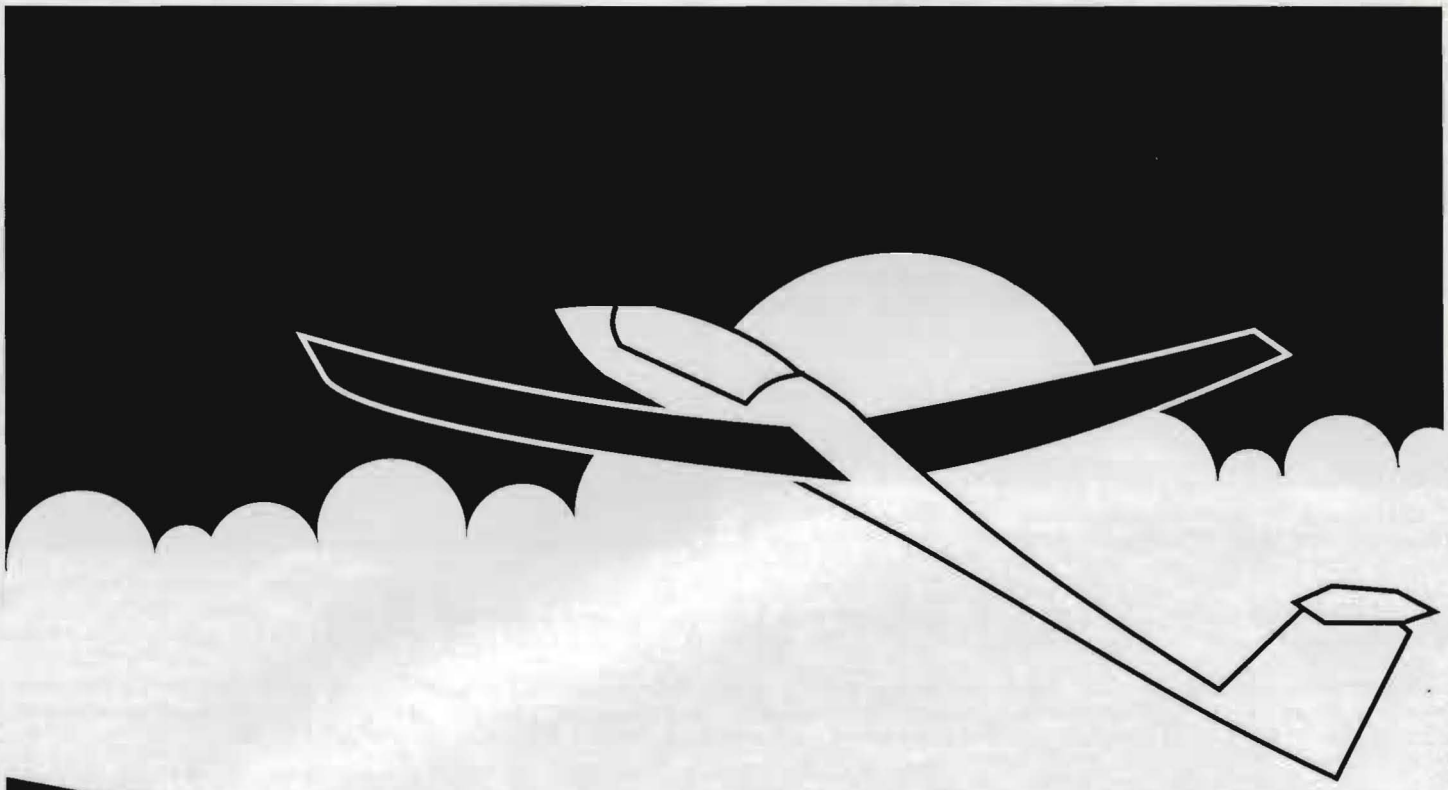
"We were able to get the young man into a K-13 and fly him quite successfully, but it was a horror story to get him out. I was appalled that in an age that puts men on to the Moon we couldn't get that young man in and out of a glider with dignity - his manner showed his desire to fly, but the look of resignation on his face also showed he would not be back." It was then Graham made up his mind to see what could be done to bring gliding to the disabled.

The Scottish Gliding Union (now only the registered name since the Union has been changed to Centre) agreed to support the charity, and made the first donation. Dedicated work by the charity's treasurer, Richard Hungerford, has led to grants from the Scottish Sports Council National Lottery Fund and the Allied Dunbar Foundation. Richard also beavered away to get donations from other sources.

For instance two club members who are Rotarians have made some fine after dinner speeches to raise funds and a member's wife, a headmistress, added nearly £600 from a school coffee morning. But they would still appreciate any donation, however small. Apart from buying the glider, the funding is needed to provide the necessary access ramp and toilets.

The new K-21, chosen because of its ideal height for wheelchair access, will arrive in the spring, complete with the modifications for hands on rudder controls. The official launch of the project is timed to coincide with the club's 60 year anniversary celebrations from June 27 to July 5. There are plans to fly vintage gliders during the week, so if you are an owner and would like to come, please contact the club on tel/fax 01592 840549.

Graham adds: "Nearly three young people per day are disabled and this is one positive way towards helping to give them a new dimension in life."



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SILVER, GOLD, NORTH AND IRISH

Mike is a member of the exclusive Goldfish Club and recalls how he qualified for this rather dubious honour!

It was the exaggerated comments by Platypus (August issue, p204) on the past activities of the Cambridge University Gliding Club (as it was then known) that brought forth the clarification by Anthony Edwards (October issue, p263) and also a thinly veiled suggestion that I should tell you about the Irish Sea episode.

Great Orme's Head is a promontory on the coast of North Wales, just by Llandudno. Its highest point is nearly 700ft asl and its seaward cliff face falls more or less vertically to the sea.

It was, I suppose, inevitable that it had become something of an attraction for the small CUGC expeditions that had been basing themselves at the Clwyd Gate, a roadside hostelry owned by another gliding enthusiast, the late Bill Crease (father of Tony Crease - Lasham member before emigrating to South America).

Launch by auto-bungy* out of Bill's chicken run on the side of the Clwyd range was the start of a fair number of flights along the Clwyds including some in wave. There were also forays leading to launches from other Welsh hillsides.

I was sinking almost below the top of the headland

My first flight from the top of the Great Orme was in a Skylark 2. I spent an entertaining hour or so over the sea mostly at 1000 to 1200ft. Perhaps nothing very remarkable about that but it was something new and spectacular as far as I was concerned, and each time a bus drove along the road that traversed the cliff face halfway down, I would amuse myself by diving down and flying alongside it for a little way before climbing back up again. Landing back on top created no problems provided you crossed the threshold (a half-metre step) at zero height.

But that was the year before. In 1958, we had an Olympia 2B with us which we took one day to the Great Orme. I was the lucky (?) one when we drew lots to see who would have the pleasure of the first launch of the day The wind direction was somewhat different from that on previous Orme flights. The "no lift" procedure



Mike's photo of the Great Orme, taken during his first flight there.

was rehearsed: after the launch, turn right and, if there is no lift, continue round the corner, fly across the small bay towards the town and land in *that* field over *there*.

So I turned right after the launch and found only reduced sink. It was at that point that I lost my presence of mind; I somehow persuaded myself that had I turned the other way after the launch I would have found lift, so I turned back. The die was now cast.

With no lift, I was sinking almost below the top of the headland, heading away from the field and there was a miniature Gibraltar between it and me. In retrospect, it is difficult to understand how one could have been so imprudent (but it had been all right on previous occasions).

At last, I was heading towards the town and the field but it was apparent that I would never get there because I was sinking like a brick. Then I had my next brilliant idea. I decided that although I could not reach the field, there was a chance that the lifeboat slipway might just be within range! A short uphill landing would bring me up on to the wide promenade where I could grind to a more or less dignified halt.

However, it could be said that my appreciation of the situation was changing rapidly and it became obvious that I was in for a ducking. Just to make sure that I did everything wrong, I managed to misjudge the "landing" on water - perhaps it was because the sea was so calm.

Just when I expected to hear the sea hissing past the skid, there was a loud bang and I was up to the eyebrows in water. In something less than two seconds, I was out of the cockpit and sitting on the centre-section surveying the shore probably a hundred or so yards away. To add to my embarrassment, the promenade, which only moments before had been empty, was now absolutely packed with spectators.

When I confessed afterwards to my brainwave about the slipway, I was told it was just as well that I had not reached it because had I done so, I would probably have met the lifeboat coming down. Because the same glider had descended into the North Sea a few years previously, someone else suggested that the nose of the Oly should be decorated with the names of all relevant Cs. (C title above.)

I feel sure that there was no connection between this incident and the invitation that I received at about that time to join a private owner syndicate (which I accepted), only to be struck by lightning three years later while flying from Lasham. But that's another story.

*A lowish (100-150ft) jeep-assisted bungy launch



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TAIL FEATHERS

Omarama nirvana

I return from New Zealand full of regret. Why hadn't I gone there 20 years earlier? Why do I only discover this wonderful place when I'm on the brink of collecting my old age pension? Well, there is no point in fretting about lost opportunities, Plat, just get yourself organised to go again every December from now on while you can still tell your port from your starboard.

I flew Justin Wills's ASW-17, one of the few Schleicher designs that I hadn't flown before, and a delightful machine it was, too. Justin flew his much loved Libelle 301 - that's the flapped version - and I should have been out-flying him at every point with my 20 metres to his 15.

"Keep your speed up and always have your escape route in mind"

Mysteriously this was hardly ever the case. In fact there is a consensus amongst the local pilots that we should get him a more modern machine - one with top-surface brakes only. That way we would be spared the humiliation, as we struggle to get to his altitude, of seeing his lower brakes sticking out while he waits for us to catch up. We could instead delude ourselves that we were truly gaining on him.



"Wa-a-ait for me-e-e, Justin." Justin in a lead-and-follow exercise on his farm.

While chasing Justin round the unfamiliar rockscape I would watch the Libelle gradually shrink in the distance until he heard on the radio a sound that must be familiar to the owner of 10 000 sheep - the bleating of a lost lamb, "Ju-u-usti-in, whe-e-e-ere a-a-are yo-ou?" - at which point he would throw a circle so I could see him.

Since the ASW-17 outflew the Libelle in level flight in the wave, and is obviously the better straight-line performer, I can only conclude that Justin was getting more lift off the rocks than I was, and accordingly that he was flying much closer to them than I dared.

Day by day, however, this old and very unbold pilot acquired more confidence as he got lost less often, identified the best outlanding strips by eyeball, and applied the lessons learnt from Jacques Noel at Gap last spring, in particular: "Keep your speed up and always have your escape route in mind".

Soaring the face of Mount Cook, 100kms north of Omarama, was the most enduring impression. The second most enduring impression was when I decided to take some pictures for *S&G*, threw a lazy circle over the great tent shaped peak, forgot that the westerly winds at 13 000ft were 70kt, and plummetted 2000ft into the vicious leeside downdraught in the dark shadow of the mountain. I made six trips to Mount Cook, and every time it was different, sometimes wearing a teardrop cloudcap like a racing cyclist's helmet.

New Zealand air is clean. Not only is it free of bugs, it is free of dirt. Industrial filth does not pollute the leading edges, or the pilot's lungs, the way it does in England. The air that sweeps across the Tasman Sea or the Pacific has not touched land for thousands of miles.

Take a little ride up in the wave, not very high, and you can see both oceans at the same time. The visibility is virgin vodka: on a 1000km O/R the only thing that would stop you seeing both the start and the TP when half way down the first leg would be the curvature of the Earth.

Below: The narrow green valleys. Photos: Platypus.







Collecting my old age pension.

The South Island is about the same area as England and Wales, but with less than a fiftieth of the people. The mountainous west is truly unspoilt. It looks as the European Alps must have looked in the days before somebody decided that an Alp wasn't a proper Alp unless it sported a television mast or a funicular railway or a hotel or a ski-station or a massage parlour or something ugly that made money.

The sense of wildness and wilderness amongst the dazzling white New Zealand peaks is total: there are hardly any roads or even tracks down in the narrow green valleys; if there are I couldn't see them. And since there is nobody down there to watch television there are no masts. I wonder for how long?

I may have just been lucky, but every day of the two weeks I was there I could have soared in wave, thermal, convergence or ridge lift. The only reason for my choosing to stay on the ground for four days was for recuperation, especially after one eight hour bout of polishing rock and pursing every variety of rising air.



Bleating of a lost lamb.

Navigation in New Zealand is easy, so long as you can see the ground. Mountain ranges and distinctive lakes make GPS unnecessary for the experienced local. However it is a great comfort to the newcomer to have the GPS tell him that he is in easy gliding range of a scrap of ground that is occasionally used as a crop-dusting strip.

I wouldn't have noticed the strips at all without the satellites calling out "Look down now, stupid!", although some strips are said have a tell-tale patch of white chemicals at the uphill end, towards which the busy Pawnee driver, or the failed soaring pilot, points himself on the approach. GPS-linked glide computers are not idiot-proof, or at least not yet, and you do need to look at the terrain intelligently: the computers have not been trained to say "You can reach this field, sir, but ONLY if you can drill through nine miles of solid rock. Would you mind if I suggested an alternative place to crash?" We'll have such gadgets soon, don't worry.

"Come on, what about the famous Kiwi wave?" you are asking. You know, I think that the damn wave has got the country typecast in



For recuperation.

the minds of the world gliding fraternity, like an actor that is only expected to play swashbuckling parts when he can do a hundred other more interesting characters. Thus visiting Australian pilots, and a lot of Poms too, come to Omarama solely for their height Diamonds and head home the moment they have their badge. If a doctor said to me "Your softening brain must never be taken above 12 000ft again except in an airliner" I would still want to glide in New Zealand as often as possible. Yes, some day I'd like to take some expert advice and try a really big distance flight that used the wave, but solely for the vast speed that it offers, not for altitude.

When you think of Kiwi gliding, don't think of height: think of beauty, variety, solitude and unlimited possibilities for exploration and adventure.

Let's Learn From This

A true account written by a member of the team of accident investigators

The tug engine had coughed a couple of times. So much so that at one stage they took out, cleaned and inspected the plugs. They looked fine so they carried on towing.

The tug had just completed a tow and was now on base leg returning to the airfield when the engine suddenly lost power. Carb heat had recently been applied and was immediately reapplied, but to no avail.

Then the engine just stopped. The aircraft was now at about 100ft and the pilot decided that he was unable to glide into the airfield so selected the field adjacent to the airfield and turned into wind.

Basic emergency landing check completed, speed 60kts, full flap. All lined up and gliding comfortably over the powerlines across the middle of the field when the plane suddenly seemed to stop flying. It hit the ground hard and turned over on to its back.

The pilot gently unfastened his harness, lowered himself to the ground (roof) and climbed out of the wreckage unscathed.

Inspection after the accident showed the tow rope had remained attached to the tug but had fouled the powerlines. Neither the rope nor the powerlines had broken, both being strong enough to arrest the plane and bring it crashing to the ground.

This gives a whole new meaning to "E" for Eventuality!

Charity Sponsorship to Celebrate 25 Gliding Years



Al Eddie, CFI of Deeside GC, is planning to celebrate his first 25 years in gliding by giving himself a challenge and raise money for the Royal National Lifeboat Institution and the Philip Wills Trust.

He aims to get sponsors and has set himself the task of flying the 59 types of glider (including variations) he has in his logbook. This has already meant a lot of tracking down but the only gliders still not rediscovered are the K-2 and the Slingsby Sky.

Al, a former RAF engineering technician who now works in North Sea oilfield operations, started gliding in 1973 with Angus GC. As a RAFGSA member, he flew with Humber, Pegasus (founder member) and Four Counties and has been involved in club management at all levels since 1976. Al was founder/CFI of Grampian GC from 1990-1993, has all three Diamonds and been chairman of the SGA's Operations Committee since 1995.

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LICKING OUR WOUNDS

Roger, BGA development officer, reflects on the BGA's rejection from the Lottery Sports Fund's World Class Performance Plan and is still smarting!

The Lottery has always held great promise for sporting organisations and the BGA has been determined to maximise the potential benefits to gliding, arising out of the National Lottery. When the Sports Council was appointed to administer the Lottery Sports Fund (LSF), we made it our business to keep up to date with application procedures and to help and advise member clubs accordingly.

Sports Council grants have always been an important source of operating income for the BGA as gliding's governing body. When BGA officers attended a Sports Council funding panel in 1996, it was made very clear that future support would increasingly need to be based upon LSF revenue grants, as the present source of "exchequer" funding direct from the government would be unlikely to continue at its former level.

The initial phase of LSF activity dealt only with capital projects. Since applications opened early in 1995, the BGA and member clubs have made good use of the opportunity, between them receiving capital grants of more than £1 million.

The long awaited LSF grants for revenue funding were not available until early in 1997. Applications were invited from governing bodies of sport but, out of the four programmes, the BGA was only eligible to apply for one, the "World Class Performance Programme" which involves preparation and training of competitors to win medals at international competitions.

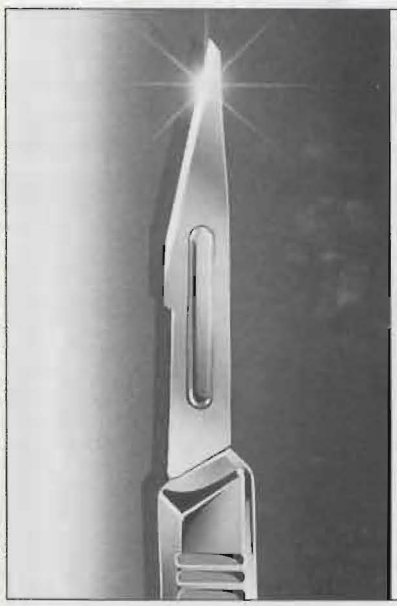
Pre-brief

Plans for the new programmes were announced at a Governing Body Seminar, held in London in December, 1996. The briefings and workshop sessions emphasised the need to design applications for novel projects to attract new money rather than to replace current levels of "exchequer" funding.

Sports Council grants had in the past helped to contribute towards the cost of sending British teams to World Gliding Championships, in addition to supporting the administrative costs of the Association.

A scheme was therefore devised to qualify for new money by arranging squad training camps for the British teams, both at home and in the country and terrain where the next international competitions were to be held.

The overall impression given by the United Kingdom Sports Council (UKSC) Performance Development Directorate was that substantial sums of money were available to any governing body that could produce a convincing case for funding, based upon a performance plan for the sport. At that stage, the appointment of a director of performance for British gliding was encouraged and adequate supporting funds appeared to be available.



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Application and conditions

A draft "Performance Plan for British Gliding" was discussed with UKSC and approved, in principle, during February 1997, and the final application was submitted within a week of the official starting date.

Each member of the 31 strong, British squad had to be contacted for personal details and to agree individual performance objectives and targets. Unfortunately, a comprehensive list of disclaimers, effectively allowing the LSF case officers to apply their own priority criteria in deciding the final allocation of funds, had to be acknowledged and signed before the application could be accepted.

Rejection!

Nine months later, after a protracted process, the decision was made. We were told that although our performance plan had been approved and recommended for acceptance by each of the home countries, the application had been rejected on priority grounds and because "gliding is not an internationally significant sport".

Astonishment and disappointment turned to anger and resentment. Plans of campaign were formed and letters of protest were written. Eventually, a BGA working group revisited the rule book and accepted the Sports Council's invitation for an informal discussion.

Officers of the UK Sports Council and the English Sports Council (ESC) explained that since the government had created a "Sixth Good Cause" for Lottery funding in the form of Healthcare and Education, the money available to the LSF had been reduced by £60 million a year.

Applications now exceed the sums available for funding and many sound projects which would formerly have been approved for grant aid are now being rejected on priority grounds.

Appeal? Challenge? Re-apply?

There were no grounds for appeal. Unlke the capital grants, no provision exists for re-application and we were advised that even if a suitable alternative performance plan were devised, the same priority criteria would be brought into play, leading to rejection. For a sport to be classed as "internationally significant", three criteria must be met:-

1. Large numbers of nations competing in the international arena, for example:- athletics (over 200 nations competing), swimming (over 180) and gymnastics (over 120 nations), whereas World Gliding Championships involved 17 nations in France, 1997; 21 in New Zealand, 1995, and 29 in France in 1978.
2. Established success of the British team was not disputed with five World Champions and 11 medals at World Championships since 1976.
3. Public perception of the sport. Public attitude surveys indicate that gliding is not a popular sport and only a remarkably small percentage have even heard of gliding.

Future BGA funding policy

The BGA is not eligible to apply for LSF revenue funding under any of the remaining programmes and the present grant support from the Sports Council's exchequer funding is not confirmed beyond the year 2000.

The BGA has no option but to raise funding elsewhere, not only in order to train, equip and send teams to international competitions, but also to survive in the long term.

Options available

The BGA Executive Committee is anxious to avoid increasing members' subscriptions unnecessarily and the working group is exploring all possible opportunities for raising external funds.

Commercial sponsorship is considered the best short term option and a document is being prepared for presentation to businesses, particularly those with aviation interests.

Funding provided by sponsors will immediately be the subject of an application to double-up the money through Sportsmatch, the government funding agency which provides £1 for every £1 obtained through commercial sponsorship.

Future strategy

In the long term, publicity for gliding requires more direction and focus from the governing body. Although BGA policy has previously left publicity to member clubs, the Executive is now considering a national publicity campaign to attract more favourable media attention to gliding. This could entail a team effort with media material being designed and produced centrally, both for national distribution and for local campaigns by member clubs.

The government's decision to channel Lottery funds away from sport and towards further good causes, perceived by the electorate as more deserving, will reduce the money available for capital grants. The cake is getting smaller. The Sports Council's policy is to divide the cash into thick, juicy slices, each with high publicity value, rather than to slice the cake more thinly and distribute the crumbs more widely. We must expect the LSF to employ priority criteria in rejecting capital grant applications from member clubs.

If gliding clubs are to be successful, future applications for capital projects must not only present a sound project brief and business plan, but must also place much greater emphasis upon demonstrating positive community benefit and sporting gain.

At home, our sport is regarded by the CAA as being well run and our international competitors respect the prowess of our pilots. Nevertheless, we have not been successful in attracting sufficient new members, nor in creating an adequate public profile to win Lottery funding.

Although the BGA Executive is taking the actions mentioned earlier, everyone in the movement is involved in helping us to achieve the funding we deserve. We particularly need help in improving our public profile and to win sponsorship for a wide range of activities. Anyone with expertise in these skills is invited to contact me at the BGA office.



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GUY WESTGATE

ADVENTURES WITH A DG-400 - and a toothbrush

Part 1

Guy, who has recently started flying a DG-400, describes the freedom he found having a power assisted sailplane to help him over the Channel on a soaring safari to Spain



My companion. Photos by Guy.

I started to wonder if I was doing the right thing when after only a few minutes on the telephone to Heathrow Flight Planning, they told me I had just won the "crazy request of the week" prize. Not bad considering it was only Monday!

To describe my planned adventure was relatively simple, to soar my motor glider from the UK to Spain. However the man from Heathrow was first quite perplexed, (why should I want to do such a thing?) and then completely flummoxed by a few of my questions. What do you put on a flight plan when your endurance is only half your planned flight time? And what do you write if you have no fixed destination?

My airborne chariot and companion for two weeks was to be my DG-400. A very capable glider with a quoted glide of 44:1 but with an additional 43hp "steel secret" tucked away behind my head. My own "iron thermal!" I have not been flying the glider for long but I have always dreamed of crossing the Channel and flying glider safaris. With this glider I could finally realise my dream.

Much of my pre-flight planning time was spent investigating the problems I might encounter crossing to France. After hours on the phone I couldn't find any serious obstacles. I would need to file a flight plan and to make an international flight I would require the glider's certificates of registration and airworthiness, my personal licences and the radio licence for the glider.

Below: Building cumulus over Dover just before the crossing.



I had seriously over-estimated the cargo potential of my glider

Customs was also going to be a doddle. A Plymouth customs' officer spent a few minutes explaining the difference between "Inter" and "Intra" EEC travel to me and then, when I was totally confused, he confirmed that so long as I was not going to be exporting anything, I need do nothing further.

International flight sounded far too straightforward to be true. So if flying across the Channel was so easy, was I the only person who hadn't realised it before? There must be a catch? A hidden sting?

I still hadn't found the catch and it was the day to go. My first problem came just before my departure. I still hadn't packed, but a quick look at my "useful" and "must have" piles together on the grass lead me to the conclusion that I had seriously over-estimated the cargo potential of my glider. After a depressing half an hour discarding most of my supplies, I finally managed to get my sleeping bag and maps wedged in and, of course, my toothbrush!

My departure point was Parham Airfield, home of Southdown GC, in West Sussex and from there I headed for the coast, planning to fly along to Dover to cross the Channel at its narrowest point. A hang glider over the South Downs marked my first strong thermal north of Eastbourne and there I found a line of sea breeze convergence which got me past Hastings quite quickly. The convergence lift stopped just east of Bexhill and left me wondering what to do next. I tried flying north but the north-easterly wind was bringing a very cold, clammy airmass off the North Sea and it quickly became completely unsoarable with a lot of low stratus cloud. There was no way I could soar to France with this weather, so still harbouring a puristic wish to cross the Channel without using the engine, I diverted into Challock to wait for an improvement.



A map showing Guy's r Longland.

There was fog over most of Kent the next morning. It lifted from the field quickly but showed no sign of breaking until almost lunchtime. The students on the gliding course there were good company and listened to my plans with a certain incredulity, but they unnerved me a little by asking all the hard to answer questions I had chosen not to dwell on. What happens if you land in a field and your trailer is in England? What if the engine doesn't start Mister? Had they been talking to Heathrow?

As the cloud burnt off I decided nothing was going to stop me from crossing the Channel this time. After take-off, I climbed through the last wispy remnants of the morning fog then, just when I had given up all hope of finding lift, I

Guy with the Gral GC members at Rouen. What a send o





route. Drawn by Steve

cleared the hazy inversion layer to find a ring of cumulus 30km away, stretched along the coastline near Dover. I shut down the engine and glided towards them.

After my previous discussions with Heathrow Flight Planning about possible flight plan ambiguities, I decided to file an airborne plan by calling London Information. As they were initially too busy to help, I entered the cloud over Dover to try to gain some height. The base was less than 2000ft and the lift inside the cumulus was disappointing. It was also very wet and I could see rain pouring off my wings. Just as the lift petered out at 4500ft, I managed to pass my details to London and I could start my crossing.

From overhead Dover, I could see a new line of cumulus over France but the visibility below the inversion was not good. My glide computer told me I could make Calais, but I was not happy with my height considering I now had wet wings and a rather conspicuous lack of anything in the life jacket department. I could not gain any more height in the clouds around Dover so I had to swallow my pride and climb an extra thousand feet with the engine.

Thankfully the crossing was uneventful but my first view of France was not quite what I had expected. I looked down long after I had expected to see ground and saw only the cranes of Calais harbour, just clearing the tops of a shallow bank of sea fog! A mile or two further inland, Calais Airport's tower were reporting a visibility of 6km and sure enough the fog was clear of the field when I arrived overhead.

I had only planned to land at Calais to clear customs, but as I had arrived unannounced I couldn't find anybody who was even moderately interested. Eventually I gave the local gendarme my details and went to pay for the landing.

The gentleman behind the arrivals' desk just smiled inscrutably when I pointed out my ridiculously small aircraft and then wrote out a receipt as I fumbled my way through my money belt. I finally found my francs and triumphantly handed over the biggest note I had. After looking up and down the glider for a second time, he just grinned, then passed my note back saying "Keep your money for France". A fantastic gesture, but was it generosity or just pity?

Now I had crossed the Channel, I planned to travel through France as quickly as possible. I was sure Spain would offer superior soaring conditions and I wanted to maximise my time there. The cumulous started a few kilometres south of Calais, cloudbase rising from a rather miserable 2000ft near the coast to around 5000 by the late afternoon.

My second day's soaring, however, came to rather an abrupt end. As I flew round the Paris zone, I entered a wedge of damp sea air which made soaring impossible and a diversion to Rouen the only safe option.

I realised the adventure was going to be the journey and not my arrival

The visibility in the sea air was down to 3km and I found the airport only thanks to my GPS. In hindsight, I couldn't have chosen a better night stop and once I had found the glider strip and hangar, the members of Gral, the small gliding club on the airport, were the perfect hosts.

Over the next few days I was to encounter a range of weather conditions which challenged both me and my machine.

The conditions were never classic but the perpetual variability kept me on my toes. I also realised quite quickly that the adventure was going to be my journey and not my arrival as nothing was quite as clear cut as I had imagined.



A Pegasus was my escort as far as Blois on day five.

The next day's soaring was distinctly average. The sea air was still very evident but by early afternoon it was unstable enough to produce weak thermals, despite cloudbase being between 2-3000ft and visibility not much better than the day before.

Progress was slow and soon after the conditions improved a little near Alencon, it went blue. I continued south and ended up at Le Mans Airfield, only a stones throw from the famous racing circuit.

A weak front was on the horizon and as it passed the next day, I was forced to take a rest day. Again, I had chosen well and the club members here, like Rouen, simply could not do enough for me. During my second wet evening, one of the instructors told me of the many chateaux up and down the Loire Valley only 60km away and offered to keep me company if I felt like taking in the sights.

The front had passed by the next morning but the weather was still not fantastic as a blocking high in central Europe was starting to wave the front back towards us. Initially the cloudbase did not give much confidence and the thermals were irregular. My guide had borrowed the club's Pegasus and told me he would go as far as Blois. We chased each other out 50km to the south-east but the sky did not look promising and I sensed my escort was not keen on a "cowing". Once over the town, with a waggle of his wings, he turned for home. I was once again on my own.

I should explain that many glider pilots have different names for an impromptu field landing. We tend to say, "landed out", but the French phrase literally translates to "a cowing", a landing with the cows!

Past Blois the conditions deteriorated and the clouds looked thicker and heavier. I found a good cloud street over the Loire river which took me

l off!



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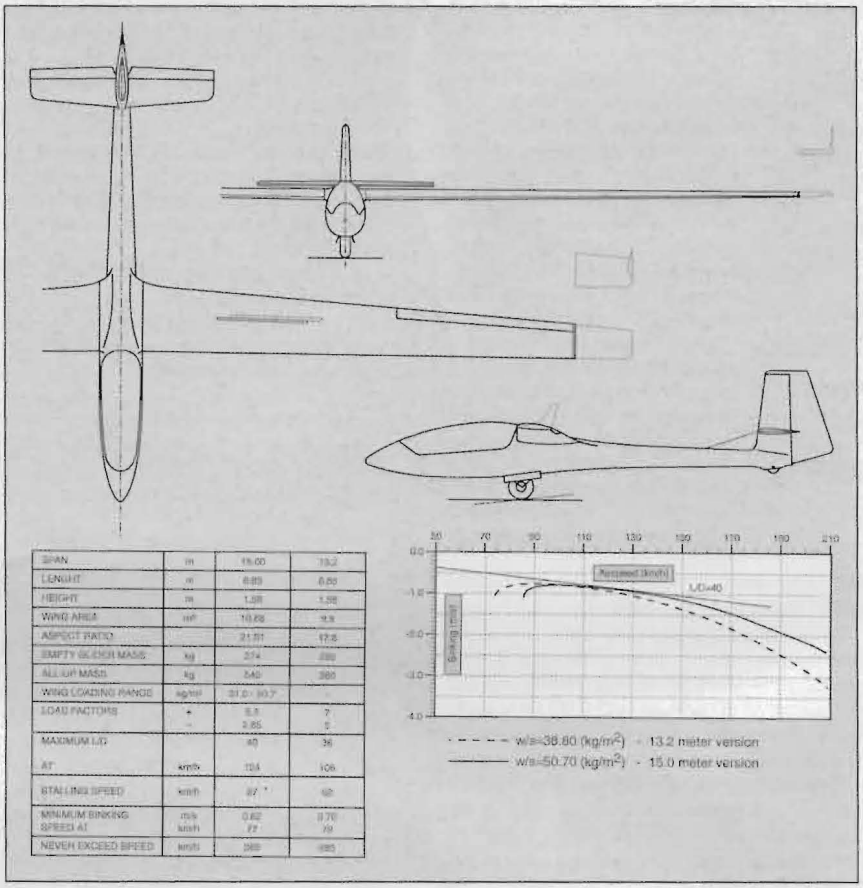
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to the first of the castles, Chateau Chambord. Chambord is, in a word, huge! I lost count of the endless turrets, gables and belfries. But not only is the chateau quite formidable, so too are its grounds; tens of thousands of acres of medieval hunting grounds, all surrounded by a the longest wall in France.

A few heavy spots of rain hit the canopy like hail and over the castle it was raining quite hard. I couldn't afford to hang around and did a quick turn around back down the cloud street, west. I gained a 1000ft flying towards Amboise but broke left to find first the slightly smaller castle at Cheverny, and then Chaumont, one of the few chateaux set directly on the Loire river.

I have since discovered that many of the chateaux in the region have a linked history, the ties mainly involving the royalty of the 16th century and a host of their jilted and jealous wives and mistresses. My last chateau was probably as involved as any in the sordid antics of the Royals but it was also, in my opinion, the most beautiful, Chateau Chenonceaux.

Away from the Loire I could see cloud building up to the west and a cu-nim had already reached the tropopause to the east. The clouds to the south looked higher and drier and I spent the rest of the afternoon ambling south towards Le Blanc, home of the European Soaring Club.

The gliders which had been flown from Le Blanc that day had all landed hours before and the place looked deserted. I borrowed an old tent from a fellow Brit and slept under my wing in the corner of the field.

The forecast for the next day was much better as the front had cleared completely and a ridge of high pressure was building. The sky looked epic at 1100hrs with little puffy cumulus all the way to the horizon, but the day proved more difficult than it first appeared. Forty-five kilometres south of Le Blanc the cumulus stopped without warning - I hate blue days with a passion!

Flying was hard work; the thermals were not strong and a weak inversion at between 2000 and 2500ft slowed the progress of each climb. As if I didn't have enough misgiving about the thermals, soon I had another problem, a new band of cirrus on the horizon.

Just before St Junien things were looking pretty desperate. I cruised over the airfield there at 1000ft hoping the baking concrete on the runway would give some lift. A single cumulus about three miles away was very tempting, as was a factory chimney to the west, down the winding river valley.

Both options would be risky with little height in hand. If they didn't work and the engine failed it would be a certain "cowing" for me in a very small field. I pinned my hopes on the chimney and arrived even lower than I had hoped. I tentatively cruised over the top with everything crossed, not daring to turn.

Then "boom", the vario swung round to peak ➡

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Chateaux Chenonceaux, built on the Cher river.



Le Blanc, camping with style.

at 1200ft/min. Good choice! I had been far too low to start the engine safely anyway! After some roughness around 2800ft where the other thermals had completely stopped, I punched up to the dizzy height of 4500ft. To call the wispy cloud capping my thermal a "cumulus" would be an gross overstatement, but it renewed my faith in the day.

The next 3hrs was a slow grind - monotony, interspersed with a few sweaty palm moments in frantic searches for lift below 1000ft. At Chalais I could see the Gironde estuary and Bordeaux to the west and after crossing the Dordogne I decided I could final glide as far as Marmande on the banks of the Garonne.

I landed at Marmande with a slight tailwind on a perfectly manicured grass strip and rolled up to a solitary parked glider. A group of a dozen pilots or so arose from their comfy chairs and came over rather startled. It had not been soarable all day. Within minutes I had been shown the caravan I could sleep in overnight and again they found some space in the hangar for my glider. What another fantastic welcome. I was beginning to love the French!

The cirrus I had seen in the south was yet another front and the next two days proved very frustrating. The conditions were so poor on the first day, the hangar door didn't get opened. By the second day, I was so desperate to get airborne that, with only marginally better conditions, I ended up using the engine almost all the way to Nogaro, 80km to the south and just north of the Pyrenees.

Nogaro's grass runway looked very wet. Big puddles around the buildings also confirmed that it had rained recently. The main hangars were locked shut and the airfield looked quite dead. I did eventually find someone working in a side hangar and again I was offered hangar space and a bed in the club dormitory.

There was a flying course here which had been weathered off for the last three days. The students were keen to speak some English and in return taught me the French words for thunder, lightning and storms. Thanks guys!

The next morning's forecast was for more rain with an improvement at lunchtime, so I took the opportunity to pick the brains of some of the instructors about the local conditions. They told me that the current synoptic situation was fairly typical and if I was to fly south to the mountains, I could expect big clouds on the northerly facing slopes with rain and storm activity. In complete contrast, on the Spanish side the air would be dry and a warm föhn wind would be blowing off the mountains into Spain.

They also pointed out that it was very rare to have good weather on both sides of the mountains at the same time. I had never appreciated what a massive climatic barrier the Pyrenees mountains are to the local weather here.

It was looking increasingly unlikely that I would get to Spain as there was little change in the forecast. My heart sank; how could I cross 10 000ft mountains when the cloudbase was only 2000ft? I decided that Nogaro was the worst place I could be if the present synoptic situation was likely to persist and planned to turn back north, to make my vacation a "Tour de France" instead of committing to a Spanish destination.

"A few minutes after circling the field I was defeated..."

The air dried a little and I set off after lunch now with my "tourist head" on, all sense of my earlier rush to press-on south had gone. Initially the air was still cold and clammy giving a cloudbase little over 2000ft and, combined with a stiff wind, this made progress very difficult. The air had warmed a little by the time I reached Agen and conditions steadily improved all day as I criss-crossed the Garonne, the Lot and the Dordogne, heading back north.

Late in the afternoon I dropped into the Isle valley and followed it north-east, arriving at Perigueux just after 1800hrs. I took a long lazy climb before the airfield and from cloudbase, now at 5000ft, I thought I could probably get as far as Brive on the edge of the Massif Central.

When I could finally see Brive, the French controller asked me to call in the circuit, but I had a problem; I didn't have a map of the airfield and I couldn't work out which grass strip the gliders were using to land. After a few minutes circling

Nogaro's main hangar, complete with my DG-400.



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The French countryside with a typically low cloudbase.



The power station at Agen - another low save.

the field I was defeated. Just before broadcasting my confusion, I spotted a Twin Astir thermalling a couple of miles away. I had a cunning plan! Even though I was tired and needed a pee, I would wait to see where the local landed, then follow him in. I was sure he wouldn't be up long as the day was all but over. An hour later I was tired, hungry and now really needed to land.

The Astir finally had enough and we glid off over the city together in the setting sun and almost landed in formation. Once again, I did not want for anything that night. The students and club members were wonderful hosts and laughed heartily on hearing my story of the Astir.

Guy continues his journey in the next issue.

New Super Glider

We have more news from Jochen Ewald of the world's largest glider, mentioned in the last issue. The 30.4 metre span ETA (meaning efficiency) is being built in Germany and yes, all those who noticed, the glide angle isn't 51:33! That is its aspect ratio.

It is intended for pilots chasing records and Hans-Werner Grosse, Erwin Müller, Hartmut Lodes and Jan Krüger initiated the project with the idea of four gliders being built, but now Bruno Gantenbrink and Umberto Mantica have joined the team. We now know the designer and co-ordinator is Alter Herr, a former member of the Akaflieg Braunschweig, and the construction, under the direction of R. Kickert and H. L. Meyer, is being shared.

As it is such an innovative glider it isn't possible to borrow many features from proven designs. Just the front of the fuselage and the cockpit will be very similar to Schleicher's ASH-25 and the elevator rig comes from Schempp-Hirth. New materials and ideas are being used with extremely stiff carbon fibre for the wing D-box and high tension carbon fibres for the spars. The materials will be hardened under a pressure of 6 bar at 130°C to allow for the enormous aspect ratio and large wing span.

To reduce elevator drag, fore and aft trim is effected by a moving tailplane. New profiles have been designed by a team from the Institute for Aerodynamic Design and Research led by Karl-Heinz Horstmann and now joined by Claas-Hinrik Rohardt. The profiles, called HQR 1 to 5, are claimed to give improved performance as well as good and safe handling qualities.

The ETA is designed for a maximum take-off weight of 920kg, but will be certified at 850kg, the weight limit of the JAR motor glider certification base. The higher weight might be used for record flights with a permit to fly, or if the JAR limits are increased.

While the glider is being designed for record breaking pilots, R. Kickert can't at this stage have any idea of its possible performance, though at this size it has every chance of out performing today's Open Class gliders.

The moulds are being built and it should be ready to fly before the end of the century.

The technical data is compared with the Austria, until now the largest glider ever built and being flown by Robert Kronfeld when it broke up in cloud in 1932 leaving him to parachute to safety.

ETA	*Ku-4*	*Austria*
Span (m)	30.84m	30m
Length (m)	9.75	9
Wing Area (m)	18.53	35
Aspect ratio	51.33	25.7
Empty weight (kg)	600	392
AUW (kg)	690-920	482

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THE EVIDENCE, M'LUD

Ian reports on GPS accuracy test results

In the recent South African Nationals, some pilots were recorded as turning ten metres short, and at the World Champions at St Auban last year some pilots failed to be recorded across a startline which was 6km long.

Although piloting factors will have contributed, so might the use of GPS recording. You may think "GPS will see me all right" but as you don't have to do anything to get a GPS fix, there is no motivation to do something special like point a wingtip at the TP or start point, unlike photography. So, some hard evidence on GPS performance and accuracy may be of interest.

The IGC GPS Flight Recorder Approval Committee (GFAC), to which I was "volunteered" (in other words, "suckered in"), keeps the results of accuracy tests which started in 1995. Tests are made from a car which turns at a right angle at an accurately surveyed crossroads. Then the point of turn on the GPS recording is compared to the true position of the crossroads, using the standard IGC data file format.

Unlike static testing, this takes into account the dead reckoning and averaging algorithms built in to GPS boards, in order to simulate airborne movement. These results are periodically reported to IGC and also on the Internet soaring newsgroup (r.a.s.), and for analysis buffs are available as an Excel spreadsheet from ian@ukiws.demon.co.uk. The results are not entirely academic as they can affect your tactics in ensuring that you are credited with presence in an Observation Zone (OZ).

Airborne results with the antenna in a good position can be expected to be better, but exact measurement from the air isn't possible without military range facilities. These figures are with reference to the surveyed point on the ground. However, if you have a recorder which will be used for flight validation and has a cockpit read-out with the TP or OZ accurately entered, any variations of fix accuracy will automatically be compensated in the cockpit read-out.

For instance, if at the time of reaching a TP the fix accuracy is 50m at 090° with respect to the point on the ground, this will also be reflected in the cockpit read-out which will show "at the TP" when actually at a ground position of 50m at 090°. On analysing the flight data file after the flight, this will also show "at the TP", not 50m out. It is self compensating, but only if you have a cockpit read-out with respect to the TP or OZ from the same GPS which will be used later for flight validation.

Problems arise if the TP co-ordinates are not accurately entered (or were listed wrongly, like Burbage...), the recorder is set to the wrong geodetic datum, or if the lat/long grid on the map used for plotting the TP co-ordinates is inaccurate. For IGC flights, recorders should be set to the WGS84 International Geodetic Datum (IGC rule, 1996), and to avoid datum errors, TPs should be in lat/longs calculated with respect to the WGS84 Datum. Fortunately, BGA TP lat/longs were changed to WGS84 in the 1997 list. A less than accurate lat/long grid exists in some areas of world mapping, but this is being slowly corrected by national mapping authorities. In the UK the Ordnance Survey tells me that grid accuracy should be to better than 8m with respect to ground features.

If you use a recorder without a cockpit read-out for the TP or observation zone, you will not know whether the fix accuracy is 1m, 100m or 250m when the TP or OZ is reached. You will have to decide how far to penetrate the OZ to allow for this. If a different GPS (such as a hand-held) is used as a cockpit read-out, the US DoD-imposed selective availability error should be similar for both, but other factors will cause the results not to be identical.

With a very small zone penetration it is entirely possible that one GPS will indicate "in zone" and the other, "not in zone". It is vital that the "in zone" one is used later for flight validation. In the GFAC tests, up to four different units were in the car at any one time, and results are normally in the same general direction but certainly not identical. After all, different receiver/antenna combinations will lock on to different numbers of satellites.

Also, as well as accuracy considerations, a short time interval between fixes will help, and many recorders have a button press for a number of rapid fixes, others giving automatic quick fixing at TPs. The minimum requirement is either one valid fix in the zone, or a straight line joining two adjacent valid fixes must pass through the zone. Unlike photos, there is no scope for subjective judgment. Cutting it too fine could cost you the TP!

The overall test results (Table 1) indicate that to allow for the "worst case", you should penetrate the zone by more than 248m. For a 99% chance (Table 2), penetrate by more than 184m, 130 m for 95% and so forth. Table 3 shows the enhanced accuracy of the newer 11 and 12 channel GPS boards. The diagram above shows that an additional root 2 factor applies if the glider is aimed exactly at the TP and central to the zone (the same diagram used by Julian West in his article in the April 1996 , issue, p86).

Multiplying by 1.414 gives 351m for the worst case, 260m for a 99% chance of being recorded in the zone, 184m for 95%, and so on. Of course, in the air such exact figures are meaningless, but they do help to understand the scale of the problem. The diagram is for a 90° TP zone, but the error circle can be applied to other shapes such as a startline, beer barrel and thistle.

The moral - understand both the advantages and the limitations of GPS, apply this to the set-up in your glider and may all your starts and TPs be good ones!

TABLE 1
GPS Accuracy Summary

	Sample size	Av Accuracy (m)
Overall	1346	51.5
Worst result (a Series RX)	1	246
Single Channel Series RX	183	78.1
11/12 Channel Parallel RX, average	425	39.3
11/12 Channel worst result	1	170

Notes: RX = Receiver. Parallel systems can receive signals from different satellites at the same time, series systems scan from one satellite to another. "Average" is the arithmetical mean. Figures are from 11 models of recorder from 7 manufacturers. They use 8 types of GPS board and a total of 23 individual recorders have been involved.

TABLE 2
Fix Accuracy Probability, all Recorders

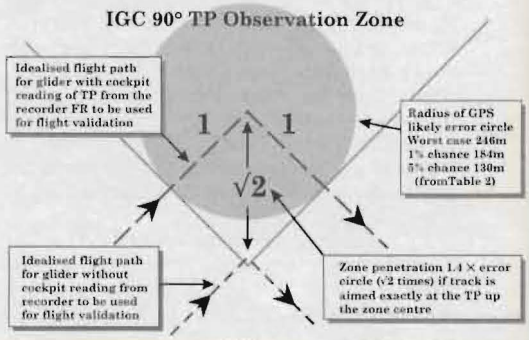
Probability, percent	Of being within (m)	Av within sample (m)
99.9	227	51.4
99.5	194	50.7
99	184	50.1
95	130	45.8
90	98	42.2
80	68	37.5
70	56	33.9
60	49	30.8
50	42	27.9

Example: There is a 90% chance of being within 98m, and within the 90% sample (*ie*, discarding the 10% of results which are worse than 98 m), the average is 42.2 m.

TABLE 3
Fix Accuracy Probability, Recorders with 11/12 Channel GPS

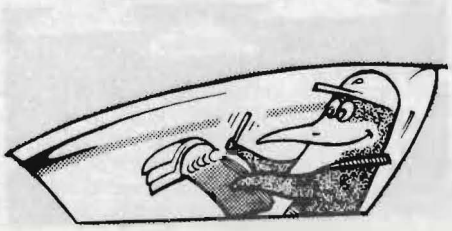
Probability, percent	Of being within (m)	Av within sample (m)
99.9	162	39.2
99.5	144	38.8
99	126	38.3
95	74	36.2
90	63	34.5
80	54	31.6
70	46	28.9
60	40	26.5
50	36	24.0

Example: There is a 90% chance of being within 63m and within the 90% sample (*ie*, discarding the 10% of results which are worse than 63m), the average is 34.5m.



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WAY OFF TRACK



Can you believe the world of make-believe?

I read it on p60 of the last *S&G* and immediately flipped back to the impressive cover to check the date. Yes, it was the February/March issue, not April's, and my leg wasn't being pulled. This wasn't a spoof, this was real and we're all to welcome the birth of a new air "sport".

The FAI really *is* to lend its muscle to develop rules for simulated flying and to encourage the formation, within its national member organisations, of simulated flying groups.

Do I have to conclude reluctantly and at an age of three score years and more that the world has gone finally, irrevocably, and completely mad?

Did the the FAI really invite delegates from around the world to a meeting in Paris in December to discuss the proper formulation, encouragement and development of this "sport"?

Did the representatives of Germany, Italy, Spain and the host nation, France, travel to it in simulated aeroplanes, imaginary trains and make-believe cars driving along pretended motorways? Did the delegates, when they arrived, prove to be real people or only images?

Did the organisation whose remit is to encourage, monitor and record aeronautical achievement and aeronautical sports, the triumph of human spirit, inventiveness and endeavour over gravity, really think it has any business encouraging anyone to sit in a darkened room before a VDU and manipulating something called a mouse or, laughably, a joystick?

It would make as much sense to have simulated athletics, then one could strive to be selected for simulated Olympics. It would be so much more convenient and comfortable than having to expend over years *real* effort and sweat.

I don't want to sound xenophobic but I wasn't surprised to note the nations from which the founding meeting delegates arrived. One could always put up a convincing case for continental Europe being the heart of trendy madness.

The fact that the UK wasn't represented can be interpreted, one hopes, as evidence not that the RAeC doesn't have the money but that it has more sense.

How much space do you need?

I read Derek Abbey's narrative "In Pursuit of the Seaside Trophy" in the last issue, p12, with great interest and enjoyment because it strengthened in me the growing conviction that two-up is the most enjoyable way to fly cross-country - and because, looking as well as ever, was my club's old Blanik, G-ATRA, in which I logged hundreds of flights in my early gliding years.

The Ulster GC bought the aircraft brand new in the 1960s at some ridiculous sounding price like £2400. Ironically, we sold it in July 1978 only because we had moved to seaside Bellarena and feared saline corrosion. Yet here was Derek, with his co-pilot Doug Sadler, deliberately seeking the briny and flying seaward in it again.

But over here, Derek's comment "We found a suitable field. Just the right size, nice and level and on the cliff top" will be greeted with near derision.

For his picture shows a vast expanse of stubble disappearing into infinity - big even by English standards and the kind of prairie which only East Anglia and hedge-hating EU agricultural hand-outs in combination can provide.

Just the right size, Derek? You should see some of the fields which make every cross-country flight an adventure over here. Bring G-ATRA back for a holiday safari (she knows the way and will be very welcome) and get some *real* field landings in.

Cold comfort

As glider pilots we're generally all in favour of more meaningful information in the TV weather forecasts, particularly fuller use of synoptic charts.

But one has to question what it all means to the viewing public at large.

My oldest daughter, Tamzin, works for a charity concerned with the resettlement at home of the recently hospitalised elderly. During a freezing spell in January she was leaving the home of a very frail client.

The old lady was extremely solicitous and bade her to be cautious.

"Drive very carefully. The forecaster on the telly said there'll be lots of them nasty icybars on the roads today," she said.

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BGA & GENERAL NEWS



FROM THE BGA CHAIRMAN

Dick Dixon reports on the Executive Committee's latest efforts to ensure the BGA gives members the very best service

Every organisation has a need, and indeed a duty, periodically to review its structure and terms of reference if it is to continue to carry out its role efficiently, and to deliver the type of product or service which its customers or members expect of it.

The BGA is no exception to this rule. Your Executive Committee has resolved to carry out a far reaching review of its operations and the services it delivers to its members.

To this end on January 29 the Executive met in London for an all day strategic planning session. Our objective was to analyse the current activities of the BGA and to identify those areas on which it should be concentrating over the next 12 to 24 months and which will be of greatest benefit to the gliding movement as a whole.

We started with a brainstorming session to decide on the most significant aspects of our operations and those activities which will have the maximum impact on the welfare of our clubs and membership as we approach the millennium. We wrote headings on a flip chart, then arranged them into two groups - 1. Constitution, Organisation and Service and 2. BGA/Membership interface, Communication, and Marketing and Development of the gliding movement.

The meeting divided into two "breakaway groups", each with the objective of carefully analysing its own topics and reporting back to the plenary session with ideas, recommendations and time scales for action.

As a result of the findings we have established two task forces whose objective will be to drive the initiatives forward, and draw up action plans in order to achieve the various objectives.

The Executive has resolved that the task forces will need to co-opt representatives from clubs involving various specialists to ensure our ideas really are relevant to current needs.

This will mean that professional help is available when appropriate. In this way we will be working to reverse the current trend of declining membership and to provide guidance and support to gliding clubs in a project to revitalise our sport.

We have given the initiative the title of "Project 2000" and despite the enormous amount of effort which will be demanded from all those involved, I am confident the proposed action will re-focus the BGA and help to ensure that it will deliver the service which our members rightly expect from us.

NEW EDITOR FOR *S&G*



We are pleased to announce that Le Forbes will be the editor of *S&G* from June 1 with August-September being her first issue.

Le, who is 27 years-old, flies from Southdown GC though she has tried out eight other sites. She admits her gliding experience is somewhat unconventional - she has acquired nearly 36hrs from 63 launches thanks to cross-countries and ridge bashing.

"I suppose" she says "I'd rather be presented where I belong - underneath the fuselage with a roll of wing tape in my mouth. The most important thing I do in gliding is crew (devotedly, of course) for Les, who flies an LS-3A."

Le's partner, Les Blows, will also be involved with *S&G* so we are really getting two editors for the price of one! They enjoy expeditions and you will no doubt be seeing them around the gliding clubs this season.

Le is also well up in BGA matters as she is responsible for feeding the BGA's Internet site.

Her other interests include crosswords, stitching tapestry, walking, reading and fishing.

To contact Le to discuss the August-September issue, tel/fax 01798 874831, e-mail le@blot.co.uk

NEW BRONZE PAPERS

The BGA Instructors' Committee have prepared a new set of Bronze papers, mainly due to Ron Smith's hard work. They have been distributed to your CFI for immediate use. There are additional sections referring to the use of radio and a new section on navigation, reflecting the changing environment in which we fly. We have also issued answers this time!

To help you prepare we have issued the "Confuser". Here you will find all the questions listed in one book. A second book gives all the answers. With no past papers available candidates found it difficult to know what the questions were like. Now you have no excuse. All you have to do it learn all the answers.

Chris Pullen, *Instructors' Committee chairman*

AIR LEAGUE SCHOLARSHIPS

Thirty-five flying scholarships are being awarded by the Air League Educational Trust to British citizens living in the UK who will be over 17 and under 22 on June 30. The winner will have up to 15hrs flying instruction during the spring and summer of 1999.

Selection will be based on a formal application by June 30, with those shortlisted having aptitude and medical tests and an interview at RAF Cranwell in August/September.

Application forms are from The Secretary, The Air League Educational Trust, Broadway House, Tothill St, London SW1H 9NS, tel 0171222 8463, fax 0171222 8462, e-mail airleague@compuserve.com

FAI SPORTING CODE

The 1998 edition of the general section of the FAI Sporting Code has been published and can be consulted on the FAI web site at: http://www.fai.org/~fai/sporting_code/scg.html

BGA 1000 CLUB LOTTERY

The **January** draw results are: First prize - R. Q. Barrett (£49.25) with the runners-up - A. D. Mattin, W. Gordon, S. J. Hill, Dr D. Symon and M. J. Woodridge - each winning £9.85.

February: First prize - H. S. Henderson (£48.50) with the runners-up - R. H. Hanna, D. Jones, N. G. Oultram, Dr D. Symon and B. Elliott - each winning £9.70.

OBITUARY

CHARLES WINGFIELD

Charles Wingfield died, aged 80, on February 1 whilst on a fishing trip to Tierra del Fuego. He was born in North Wales but lived at Onslow near Shrewsbury on the estate owned by his family since 1753.

From Eton he went up to Trinity College, Cambridge where it seems he concentrated mainly on flying. He joined the Midland GC in 1936, gained his A, B and C in 1937 and Silver badge No. 53 in 1939. Commissioned in the army, he served in France on the Maginot Line, at Dunkirk and in Africa. He applied unsuccessfully to become a glider pilot in the Airborne Landing Division. Demobilised in 1946 he returned to farm, ski and glide.

In 1946 Charles became chairman of the Midland GC, serving for four years. In July 1946, in his Slingsby Kirby Kite "Gracias" (hidden during the war from officialdom) he flew 147 miles to Redhill, a worthy flight in such a glider. In July 1947 he completed the second British Gold badge flying 216 miles from Wichita Falls to Buffalo Lake, competing in an Olympia in the US Nationals. This flight gained him the British distance record. Three days later he set a new British goal and return record at 147 miles (again) flying the Olympia from Wichita Falls and Quanah and back.

Selected for the 1948 World Gliding Championships' British team he travelled but

DEVELOPMENT NEWS

In this issue Roger Coote, BGA development officer, concentrates on "Planning to get the message across"



Planning permissions for flying sites are never easy to obtain. The application always requires careful thought and preparation and frequently needs appropriate consultations with local planning officers before approval is granted.

We have a "plan-led system" and the decisions made by local authorities are largely determined by a development plan which has already been the subject of consultation and negotiation. Each local authority operates under a development plan which is structured at two levels:-

- County structure plan.
- District local plan.

If either plan contains policies which preclude or inhibit flying activities, then the job of obtaining planning consent for gliding is made much more difficult. Some county structure plans contain policies which state that planning permissions for new airfields will not be granted because it is county council policy to relocate all flying activities to the nearest airport. Others consider gliding under the group heading of "noisy sports". In such circumstances, an individual gliding club's application for a new flying site is already at a disadvantage.

On the other hand, if the development plan contains a policy to "support flying activity in appropriate locations", the gliding club has a head start and a much better chance of success.

For three years now the BGA and GAAC have been working to ensure that our views are properly represented when each county structure plan comes up for review. The five yearly window of opportunity for changes to planning policies has been used to full advantage by Anna Bloomfield, a chartered town planner and GAAC's planning co-ordinator. Anna has now completed representations on behalf of general aviation to 23 county structure plan reviews and is embarking on a programme to adopt a similar approach at district local plan level.

All this has been tedious and thankless work, but at last there are indications that the message is getting across. The latest county structure plan for review contains a draft policy stating:-

"Development of small scale business aviation or recreational flying at existing airfields or the development of new airfields for such purposes, may be permitted provided there are no significant adverse impacts on the local environment and the amenity of local residents."

That might not sound very exciting, but after three years' slog that is progress! To quote the national coach, "It's not what you tell Bloggs, it's what he remembers that matters".

---

did not fly being ill with sinusitis. This complaint was the cause of his giving up gliding in 1952. He took to hunting, becoming joint master of the South Shropshire Hunt, but after a bad fall in 1957 did not hunt again until 1982.

Resuming gliding in the late 1970s, he gained his Diamond height from the Mynd where he syndicated in a Dart 17 and later in a turbo Ventus. In February 1982 he went to Waikerie seeking his third Diamond. By chance I was there for the middle week of his stay and helped him load the LS-4 with water. "They (the Aussies) seem to think it helps" he mused and then flew his 500km. The Aussies smiled at his eccentricity (especially his 110 mile taxi trip from Adelaide) but were impressed by his soaring.

Charles's other interests include music, skiing and country sports. He was a serious gardener, journeying to remote parts of the world in search of rare trees and shrubs. He was High Sheriff of Shropshire for 1953 and was for many years a JP, eventually becoming chairman of the mid-Shropshire Bench.

He had restored his father's 1903 Argyll car and had competed in it in the London-Brighton run. Arriving at the Mynd in the Argyll he looked every inch the Edwardian motorist, but he looked equally at home in his Ventus which he sometimes towed to the launch point behind the Argyll.

In 1956 Charles married Maxine Meighar-Lovett. They had three children, Helen, Elisabeth and John. Charles will be much missed.

Keith Mansell

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	*Name*	*Club*	*1997*
542	Simpson, Robert	Bristol & Glos	1.11

DIAMOND GOAL

No.	*Name*	*Club*	*1997*
2/2591	Bland, Malcolm	London	8.8
2/2592	McKillen, Alan	Ulster	8.10

DIAMOND HEIGHT

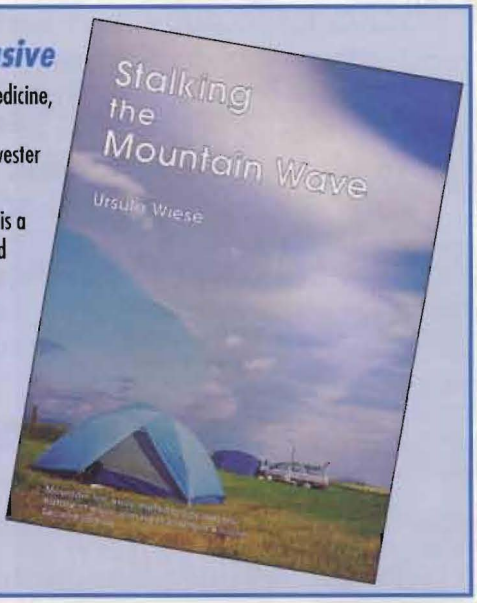
No.	*Name*	*Club*	*1997*
3/1420	Lowe, Peter	Staffordshire	17.10
3/1421	Fogden, David	Booker	3.10
3/1422	Lamb, Danny	Booker	3.10
3/1423	Simpson, Robert	Bristol & Glos	1.11
3/1424	Ockleton, Dave	Wyvern	23.10
3/1425	Render, Tina	Lasham	5.10
3/1426	Brooker, Stephen	Lasham	12.10
3/1427	Roff-Jarrett, Michael	Lasham	3.10
3/1428	Lee, Geoffrey	Lasham	3.10

This is a book that covers a lot of territory ***£16.00 inclusive***

"Stalking the Mountain Wave" is a book of soaring aviation history and politics, of geology, meteorology, and aviation medicine, of great campfire tales and a little poetry, and piloting technique in making use of a unique phenomenon of nature – the awesome and powerful mountain wave wind that often sets up in the lee of the Rocky Mountains in Alberta when a southwester comes blowing in all the way from the Pacific Ocean.

To powered craft, the mountain wave is often a little understood danger to be avoided at all costs, but to sailplane pilots it is a source of immense energy that can provide no less than a free ride into the stratosphere to those who both understand and respect the strength of this wind and accept its challenge.

Ursula Wiese, who wrote and compiled this book, is a historian for Alberta and Canadian glider pilots and a respected pilot in her own right. She holds several Canadian soaring records and earned the first Diamond Badge in Canada to be held by a woman.



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3/1429	McVey, Geoffrey	Lasham	3.10
3/1430	Sinden, Bob	Booker	3.10

GOLD BADGE

No.	Name	Club	1997
2012	Whiting, John	Shenington	2.10
2013	Simpson, Robert	Bristol & Glos	1.11
2014	Ockleton, Dave	Wyvern	23.10
2015	Nash-Wortham, Michael	Lasham	3.10
2016	Short, David	Deeside	22.8
2017	Prossor, James	Wrekin	14.9
2018	Thorne, Mike	Bath, Wilts & N Dorset	21.10

GOLD HEIGHT

Name	Club	1997
Whiting, Tessa	Shenington	5.10
Whiting, John	Shenington	2.10
Lowe, Peter	Staffordshire	17.10
Simpson, Robert	Bristol & Glos	1.11
Porter, John	Booker	3.10
Dent, Leonard	Midland (in USA)	7.8
Crawford, George	Oxford	1.10
Sermanni, Charles	SGU	9.9
Ockleton, Dave	Wyvern	23.10
Burnett, Michael	Deeside	5.10
Nash-Wortham, Michael	Lasham	3.10
Render, Tina	Lasham	5.10
Segal, Tony	Lasham	8.10
Brooker, Stephen	Lasham	12.10
McVey, Geoffrey	Lasham	3.10
Nisbet, David	Oxford	10.10
Short, David	Deeside (in USA)	22.8
Prossor, James	Wrekin	14.9
Northern, John	Kent	29.9
Johnstone, Donald	Fenland	12.10
Thorne, Mike	Bath, Wilts & N. Dorset (in New Zealand)	21.10

GOLD DISTANCE

Name	Club	1997
Bradbury, John	Portsmouth Naval	15.8
Ockleton, Dave	Wyvern	15.8
Bland, Malcolm	London	8.10
Prossor, James	Wrekin	27.7

SILVER BADGE

No.	Name	Club	1997
10 362	Fidler, David	Cranwell	14.8
10 363	Mann, Graham	Deeside	22.12.89

UK CROSS-COUNTRY DIPLOMA

Part 1

Name	Club	1997
Watson, Andrew	Cambridge	7.8
Woolcock, Stephen	Cambridge	16.8
Babic, Rad	Bicester	21.7
Crawshaw, Stuart	Cambridge	9.8

Part 2

Name	Club	1997
Crawshaw, Stuart	Cambridge	9.8

ALPS DEFENCE APPEAL

The following donations were received by the BGA after December 18:- K. Stephenson, G. Corbett, N. Clements, Shropshire Soaring Group, R. Dann, Mr & Mrs E. A. Coles, N. Hackett, Lakes GC, B. Zijp, N. Clements, J. Trenchard, Sackville GC, D. Steed, I. Harding, Maple Group, M. C. Costin, Cornish Gliding & Flying Club, Mrs & Mrs M. Segal, A. Clifford, R. Nichols, The Soaring Centre, H. Middleton, Bath Wilts & North Dorset GC, C. Barnfather, Ulster GC, M. Heneghan and Dr A. E. & Mrs S. M. Gee.

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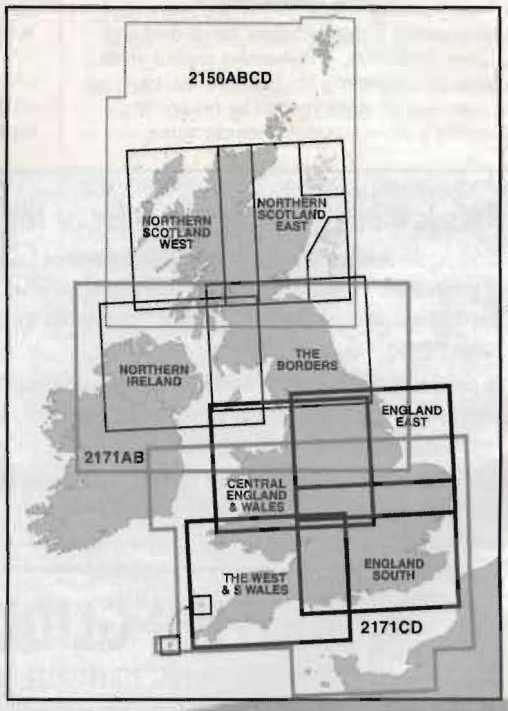
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Ratings And UK Weather

Nice theory, shame about real life

Some of you may even have read my article on the rating system (June 1997 issue, p164) to the end. Well I did. Anyway, at the end I said that the system didn't really work because the scoring system doesn't compare good competitions with bad ones very well. I was right.

Having run through several years of scores, tweeking numbers and generally getting good results, this year I hit the brick wall. Actually I (along with large numbers of fellow competitors) hit fields not very far from Syerston. At the same time (or at least the same year) large proportions of competitors were racing round the south centred on Lasham.

The system, based on the proportion of winner's points, also relies upon the scoring system giving consistent results across all competitions, irrespective of the weather. This year it failed to do so in competitions where the calibre of the field was pretty consistent. Pilots coming in the low 30s of the Standard Class were rated the same as around 10th in the 15 Metre Class. Not quite right.

The operation was a failure but the patient survived

We then spent some time looking at ways of correcting the problem. However, any complicated system for compensating for the scoring system being wrong would also "compensate" for when the scoring system was right, accurately comparing a good field with a poor one. So we gave up.

But we didn't give up entirely. We still need a better way to cater for the new Championships and rate Regionals more on quality than on size. So rather than throwing it all out, we kept all that but changed the pilot's rating score to be based on the pilot's position rather than the pilot's score. Literally one line of code. This way it stays simple(ish) and stays closer to what we are used to.

Two other minor changes were added. You can't get a negative effect on your rating from a bad competition, and the size of benefit you get from second or third good performances is reduced.

The proof of the pudding

The final results of the top 200 places have been drawn up with the pilot's priority and promotion positions for comparison. (For a copy either contact the BGA or find them on the BGA web site, http://www.gliding.co.uk) There are some significant differences in position. Mostly these are due to:-

- Good performance in more than one competition improving a pilot's position. (For example, Tim Scott and Russell Cheetham.)
- Members of the World team getting middle order places and not good Nationals places.
- Changed priority of competitions. (18 Metre goes down, Club Class comes up.)

For guidance, I expect the top 100 to be likely to get into the 15 Metre or Standard Classes. Generally speaking, this makes the list look pretty fair to me, being close enough to the current list to make sense but better able to accommodate all types.

I am very pleased that the anomaly showed up before, not after, we started using it. Unless we have missed a huge anomaly, it will be used to rate this year's competitions, so if you see any please let me know soon. Also included on the web site and from the BGA office, as well as being printed in the Competitions' Handbook, are the definitive rules for creating the list. Again any comments will be gratefully received, either through the BGA office or at EdJohnston@Compuserve.com.

Finally thanks very much to everyone who has participated in getting the rating system to this point. It has been five or six years since I started looking at this and I really appreciate the input from everyone who put up with me reminding them of this sad fact. The next job is to look at the scoring system. We need to fix this anomaly because it distorts competition results, putting too much value on the days we would rather forget. But that is for another day. Year. Decade.

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CLUB NEWS



Clive Stainer, departing CFI of Buckminster GC after more than three years, being presented with a "certificate of excellence" and a tankard by a group of the Wednesday "wrinklies".



Above: Erica Keys having completed her first solo in Sackville GC's Bocian. Below: John (CFI) and Julie Hull (soup dragon) of Fulmar GC being presented with a decanter at their farewell party by Angie Veich (far left) of Highland, their sister club.



Copy and photographs for the June-July issue of S&G should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 01223 247725, fax 01223 413793, to arrive not later than April 14. Or send e-mail gbs.sandg@virgin.net

GILLIAN BRYCE-SMITH *February 11*

AQUILA (Hinton In The Hedges)
For the first time we are running weekly aerotow courses to give maximum flying at a price competitive with winch courses, aimed at newcomers as well giving post-solo boosters.

Our second tug should be in service by April, thanks to generous funding by the Foundation for Sport and the Arts.

The private fleet continues to grow and to increase use of the club fleet we have introduced the option of a single payment for unlimited flying - but the ASW-19 is still under used.
M. P. E.

BANNERDOWN (RAF Keevil)
At the end of 1997 we were busy training with Martin Simpson, Pete Shaw and Ken Bryer going solo and Shaun Wickham resoloing. All the gliders flew on New Year's Day with 5000ft wave.

At our AGM Arthur Huskie became deputy chairman.

Although launches were down our finances are sound and we have had an accident free year. Trophies went to Ritchie Arnall, Rick Fretwell and Chris Waller. Chris's was for his work on club aircraft and our LPG project on which "Builder" Brian also did much hard work.

Our K-8 has been refurbished.
D. C. F.

BATH, WILTS & NORTH DORSET (The Park)
There is much activity in the workshop getting ready for the season. Our Pawnee is back from a protracted and expensive C of A. Our much loved K-6E we have owned for 25 years is having its fuselage repainted.

We have had a few wave and ridge days and a large expedition is going to Sutton Bank. We have plans for several club gliding weeks.
J. L.

BICESTER (RAFGSA)
The year started unusually well with either wave or thermal soaring during the first three weekends in January. We have planned 49 midweek courses. Visitors are welcome as usual - office phone 01869 252493 and clubhouse phone 01869 243030.

Please may we remind BGA course candidates to deal directly with the BGA office.
P. S.

BLACK MOUNTAINS (Talgarth)
Derrick Eckley resigned as chairman at the AGM in December and was made a life president in recognition of his work establishing and running the club. New committee members are Martin

Brockinton (chairman); John Clark (secretary); Don Gosden (treasurer); John Rogers (technical officer) with the rest of the committee re-elected.

After a false start last year, we are buying the airfield and tugging operation from Derrick Eckley. We envisage a seamless change-over and will continue to welcome visitors.

The last weekend of January saw our first good flying of 1998 with NE wave. Ivor Shattock topped out at over 16 000ft, closely followed by Mike Tomlinson at over 15 000ft for Gold height.

Keith Richards's Falke has flown after being re-covered during the winter.
J. C.

BOOKER (Wycombe Air Park)
From February 26 we have another airspace improvement; 3000ft asl over the airfield at last. If visiting us by air please look at the airspace chart carefully as we are now operating quite close to some easterly bound Heathrow traffic.

Entries to our free Regionals, held from July 18-26, can be made *via* our web site at http://homepages.nildram.co.uk/~bookergc/ and then *via* the "Competition Diary" heading.

Two of our most experienced competition pilots, Dave Watt and Alister Kay, are organising a comprehensive self-help scheme to improve member's cross-country and competition performances.

Their general aim is to act as a catalyst to assist members to fly faster, whether they want to cover bigger tasks or win races. They hope to enlist the help of other experienced Nationals pilots, such as Tim Scott.

They aim to help members to get the most out of each flight, task and day. There will be classroom training seasons followed by coaching, including using the Duo-Discus.
R. N.

BORDERS (Galewood)
Three of our full Cat instructors spent a weekend learning aerobatics in the K-21 with Dietmar Poll. The K-21, which is very popular, is being fitted with oxygen for wave days. Over the winter months we have had some excellent wave with climbs up to 15 000ft.

We are settling into our new site and are trying to arrange some extra wave weeks as the initial ones are all booked.

We are still developing our web site on which we will put our calendar of flying weeks. The site address is http://www.desim.uk/bgc/bgc.html
B. C.

BRISTOL & GLOUCESTER (Nympsfield)
Chairman James Metcalfe was re-elected at the AGM. The committee is now Chris Osgood (secretary); Gordon Davies (treasurer); Ken Mohana (vice-chairman) and Tony Gillett, John French, Stuart Chalmers, Russ Francis, John Leach and Paul L'Allier. Our thanks to the outgoing officers Sid Smith, Chris Edwards and Geoff Lloyd.
B. F. R. S

BURN (Burn Airfield)
The club has imported a very smart Std Cirrus from Germany. We have formed a cross-country co-operative under the guidance of DCFI Bob



Booker GC's fleet with the members who got up early to get the aircraft ready for Paul Mellor to take the photograph.



Above: Three North Devon & Somerset GC members who soloed on the same day. From left to right: Fred Marks, Pete Smith and Owen Hill. Below: Jonathan Meyer, who went solo at 16 at Bristol & Gloucestershire GC, with his father, Bill, who is also a glider pilot, and instructor Ray Lemin. Photo: Bernard Smyth. ➡



Baines who's aim is to develop a more structured approach to badge claims as well as to simplify retrieves and task planning. Awards will be made to the season's achievers.

The annual panto, produced by Alison Jepson and Pat Stirk, was superb with a talented cast.

Club trophies went to Dave Peters, Tony Flannery, Paul Wrightson, Martin White and Martin Ellis. Mike Howey has a SLMG PPL. Peter Hobson, Dave Bell and Dave Slocombe have flown solo.
S. J. K.

CLEVELANDS (RAF Dishforth)
Christmas Eve night brought our highest ever recorded winds (91mph), overturning trailers and caravans and sadly damaging two visiting gliders. Members tried their best to save them until driven back by a deadly rain of slates from the hangar roof. Dawn revealed a scene of devastation. Although flyable, we spent Christmas Day salvaging and repairing what we could, before enjoying our traditional dinner (thanks to Mike Langton they are become traditional too!).

"Mac" MacKenzie, Tor Taverner and Mark Tolson have become AEIs. Our thanks to Bob Spiller for running their course.
J. P.

CORNISH (Perranporth Airfield)
A number of clubs came to our annual dinner-dance in January - great to see so many! The trophies were presented by Jack Alcock.

We start our seven day week operation in May and remember that we welcome reciprocal membership with any BGA club.
S. S.

COTSWOLD (Aston Down)
Adrian Midgley and Thomas Gay have soloed, Thomas on his 16th birthday after intensive training from his instructor father, Malcolm.

Brian Birlison, aged 19, has an AEI rating, while Howard Johns has retired from instructing with thanks from us all for his decades of dedicated hard work. Dick Goldup, our oldest regular flying member, has passed his 80th birthday.

Entries are coming in fast for the first Cotswold Regionals - hurry if you want to join us!
M. S.

Obituary - Jim Rodgers
"Lucky" Jim Rodgers, our safety officer, died suddenly at home in November, at the age of 50.

Jim devotedly shared his time between his family, his work as a BA 747 flight engineer and his passion for gliding. He was always there to help with organising competitions and he was a great competitor, too.

As Cotswold's famous "most experienced novice" Jim gained many points in Rockpolishers competitions, thanks to his apparent inability to successfully photograph the TPs of a 300km!

Nicknamed "Lucky Jim" by his syndicate partner, after a series of scrapes with his Std Cirrus, the name stuck, but Jim did not mind for he was a big and gentle man, whose skill and enthusiasm for the sport will be sadly missed.

We send our sympathy to Jim's wife, Mavis, and their children, Christopher, Nick and Jackie.
Richard Burgoyne (*Jim's syndicate partner*)

DARTMOOR (Brentor)
Early in the New Year the airfield became as waterlogged as the rest of Devonshire. Once it had dried out Mark Arnold and Geoff King went solo.

This winter we have had winch launches close to 2000ft thanks to having the use of a field at the end of our runway. When the wind turned easterly, Paul Franz reached Gold height in wave. A number of members are thinking about fitting oxygen and barographs.

Having changed our constitution, by April we will become a Company Limited by Guarantee.
P. W. W.

DEESIDE (Aboyne Airfield)
With the absence of snow and plenty of wave there has been little interruption to winter flying.

Graham Mann is an assistant Cat and Martin Clark and Lynsey McMillan have started to spend their youth scholarships received with thanks from the Scottish Sports Council.
J. D.

DERBY & LANCS (Camphill)
Our new workshop was officially opened in December by Dick Dixon, BGA chairman, with Barry Neville, East Midlands Sports Council, as a guest. The workshop was made possible due to a £64 500 Lottery grant. To celebrate we held a games evening in it, which including bowling and darts, and the proceeds went to charity.

Noel Kerr has gone solo. We have had some good wave days of over 10 000ft.

We have had a bonfire party, a Greek evening, Christmas dinner, medieval evening, Valentine's dance, neighbours night and a quiz night. Many thanks to Miranda for the excellent food and to Carol Velnoweth and Miranda for organising these successful events.

We are going to buy a seat for our courtyard in memory of Bernard Thomas who died in November.
W. T.

Obituary - Ken Blake
It is with great sadness we report the sudden death of Ken Blake. Ken devoted much of his time to all aspects of flying and club development. He spent many years on the committee and was CFI from 1984-90. His great love was competition flying and in the last 11 years was a regular and successful competitor in the Wolds GC's Two-seater Competition at Pocklington.

In his memory we will buy two trophies, both to be called the Ken Blake trophy. One will be awarded to the best novice cross-country pilot and the second to the Wolds GC for the best wooden glider in their competition.
Wendy Thompson

DEVON & SOMERSET (North Hill)
The Lottery Sports Council has confirmed a grant of £60 000 grant towards a glider store and a two-seater trainer (DG-505 Orion), which will be collected from Germany in March by our CFI, Ron Johns, and safety officer Malcolm Chant.

The lack of easterlies has robbed us of our January ridge soaring but there have been several wave flights. Simon Leeson and John Pursey are now assistant instructors and Gordon Bonny has an AEI rating.

We are running four courses and two open weeks for solo and cross-country flying. With our reciprocal membership scheme we welcome visitors. For details call 01404 841386 on Wednesdays and Thursdays and at weekends.
S. C. L.

DUKERIES (Gamston)
James Gibson, aged 17, has soloed and we had our first 30min flight of the year on January 25 with our Janus reaching 2600ft from a winch launch. New solo pilot Trevor Pond has flown 20min in the K-8.

The canteen in the control bus serves hot food and drinks throughout the winter.
D. P.

FOUR COUNTIES (RAF Syerston)
The year started well with thermals to 3500ft on January 25 and 31. We now have 18m tips for our LS-8. The fleet is all set for the season and the Motor Falke has had a major CAA servicing.

Derek Coker is now secretary and Martin Goodwin the aircraft member. Many thanks to Sam Heyes and Ian Tunstall for their services. Annual trophies went to Richard Hood, Ian Tunstall, Al Garrity, Pete Dixon, Trev Gorley, Matt Kelly, Ben Beniston and John Wilton.

An ASW-20 and another LS-4 have joined the private owners' fleet.
R. S. H

FULMAR (RAF Kinloss)
Once again we started the year with two excellent soaring weekends and a great party.

Ian Bright and Bruce Evans have gone solo.

We are sorry to be losing John and Julie Hull (CFI and soup dragon), Mark Whittaker and Kevin McKiver.
J. P.

HEREFORDSHIRE (Shobdon)
We have had more flying than is usual at this time of year. There have been a few climbs in wave above 10 000ft, the best being Phil King's 15 000ft at the beginning of December.



John Bastin has taken over as chairman from Leslie Kaye, to whom our thanks are due for all his hard word. A feature on the Holiday programme in December has brought a flurry of trial lessons and course bookings.
A. C.

HIGHLAND (Easterton)
Roger Christie went solo on January 4; is this a first for the new year? We have been very lucky, being in flat calm while the rest of Britain was being blown away.

Any club who would like reciprocal membership will be most welcome.
A. G. V

LAKES (Walney Airfield)
As usual we have been flying throughout the winter with a fair amount of wave, ridge soaring and thermal activity. On December 31 several gliders thermalled for one hour.

Roy Jones, Alan Meadows and Graham Sturgeon are assistant instructors and David North has his full Cat rating.

All the club gliders have Cs of A thanks to our chairman, John Martindale, and CFI Peter Lewis.
A. D.

LASHAM (Lasham Airfield)
Alan Meredith has taken over from Andy Aveling as tug master. We thank Andy for three highly successful years.

An expedition to Ontur, Spain, in May is heavily over-booked, and there is a long waiting list for the Lasham Regionals.

Ian Smith and Keith Green of the Vintage GC have devised a modification to the Oly 463 that has been passed by the CAA and the BGA: the wingroot area is opened up and the spar booms checked for corrosion. If no corrosion is found, three bolts are inserted into the upper spar boom.

Ray Whittaker is renovating a K-4 and Ray and Julian Ben-David, who flew their T-31 to Keevil last year, hope for a similar trip this year.
A. M. S.

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MARCHINGTON (Tatenhill Airfield)
The proposed move to our new site at Cross Hayes is pencilled in for October. The essential permissions are in place including detailed planning permission for the buildings.

Going from being an all-aerotow club to having a single Skylaunch winch will cause a great change. There are plans for our K-21 to spend a few weeks at Camphill for members to reconvert to winch operations.

We hope to offer launches of between 1400 and 1800ft for £5/launch, hence increasing our attractiveness to new members.

We are sad to report the death of John Ashton, who had been a member for many years.

The annual dinner-dance saw awards going to Ken Lawrence, Andy Chapman, Paul Juffs, Garth Lawley and cadets R. Shand and C. Lanham.

We will be flying (aerotow only) at Tatenhill all summer, on Wednesdays and at weekends, and visitors are always welcome.
I. R.

MENDIP (Halesland Airfield)
While the usual appalling weather has restricted flying, it has given our new weather station a baptism of fire with windspeeds above 85mph recorded. Fortunately, only minimal damage was caused to the hangar.

Local wildlife film makers have been using our site to film an "imprinted" raven in flight. Their converted 2CV has been racing up and down the cable track with a cameraman filming from the open back. A woman the bird thinks is its mother stands facing backwards from where the passenger seat once was.

Several more recordings are planned with the possibility of a golden eagle also being flown.
K. S.

MIDLAND (Long Mynd)
After scenic Christmas flying above the valley fog, the premature start to spring has induced wave cross-countries and thermal soaring.

We were saddened by the death of Jack Minshall, a lynchpin of the club in its formative years.

We have a new K-23 and the single-seater fleet is back up to strength after some late season mishaps. Course bookings are up.
P. A. S.

Sidney John (Jack) Minshall
Jack Minshall died on January 16 three days short of his 78th birthday.

Jack showed an early interest in aviation *via* model aeroplanes. Throughout the war he served in the RAF as an aircraft flight mechanic and became an instructor on engines. He later set up a motor-cycle repair business at Bridgnorth and it was whilst riding his Vincent-HRD Black Shadow over the Long Mynd in 1955 he discovered the Midland GC. This changed his life.

He joined the club and from then on was heavily involved in gliding. By late 1957 he was a very skilful glider pilot and closed down his business to accept the newly created post of resident instructor at the club, where he lived in an old gypsy caravan until in 1960 he married Ruth, who was in charge of the club's catering.

He flew five days a week from spring to late autumn and was key to the development of the club's seven day week operation. He retired in 1985 after 27 years, 85 000 flights and some 15 000hrs.

Jack extended his duties as senior professional instructor to become the ground engineer responsible for the annual overhaul of the fleet. He combined these roles with great success and tackled almost any maintenance task at the club.

National recognition of his services to gliding (which were often well above and beyond the call of duty) came in 1979 with the award of the BGA diploma and, following his retirement in 1985, the Royal Aero Club's bronze medal presented by Her Majesty The Queen. The club also made him a life member.

Jack had many interests in later life and received a long-service medal for his 13 years as a special constable.

Ruth died in 1985 and nine years ago Jack married Barbara who survives him.

He will be missed by Barbara, daughter Janet (who runs the club's office), brothers Pete and Geoff and by the thousands of pilots whom he taught and to whom he passed his enthusiasm for gliding. Those pilots owe him a great debt.
Keith Mansell

NORTH WALES (Bryn Gwyn Bach Farm)
The exceptionally wet and stormy weather prevented us from flying for virtually the whole of December and January; it was our longest ever lay-off. The gloom was partly relieved by our annual dinner-disco at which club trophies were awarded to Steve Butler (2), Tony Cooper (2), Alan Hunt, Mike Carlin, Ken Payne and Paul Cassidy. Coincidentally, all the winners were members of the committee which may be a good incentive for more to take on club duties.
N. D. J. C.

NORTHUMBRIA (Currock Hill)
Newcomer Joost Clemens has completed the validating procedure for the transfer of his Dutch instructor's rating and is a welcome addition.

Our first intake of cadets have completed their two years and we have five replacements. Colin Tweddell, immediate past chairman, remains involved with the scheme and has organised a celebratory expedition to Portmoak in July.
D. W. H.

PETERBOROUGH & SPALDING (Crowland Airfield)
After a poor late December we had a busy start to 1998. Reg Glenn went solo and 16 year-old David Leggett completed his Bronze badge.

Members kept winter spirits high with an enjoyable by go-karting outing.

We are selling our K-6E.
D. R. L.

SACKVILLE (Riseley)
Due to an oversight regarding licence extensions, the annual dinner was cut a little short, however, there was enough time for Platypus to hand awards to Barry Thompson, Martin Langford, Dave Spillane, Erica Keys, Zillah Good and Kish Kiteley. An auction and collection raised £330 for the Alps Defence Fund. ➡



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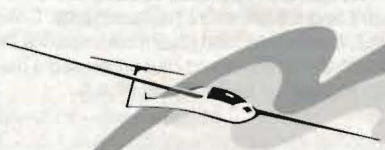
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As soon as we have assembled the kit of parts recently collected from Scotland we will have a large new clubhouse.
C. W.

SCOTTISH GLIDING CENTRE (Portmoak)
Flying continued steadily through the winter

We are celebrating our 60th anniversary with a flying week from the June 27 to July 4. The vintage GC will be here all week and be a feature of the open day on the 28th. Friends of the SGU will be warmly welcomed. The open day will also provide a high profile for the official launch of Walking on Air, a programme to provide gliding facilities for the wheelchair bound people of Scotland. (See also p89.)

Neville and Richard Allcoat have won the National Open Ladder (a first for Scotland?).
G. S. G.

SHENINGTON (Shenington Airfield)
Paul Hann has gone solo and Dave Gould has a PPL. Over Christmas we had a mix of good ridge days and gale force winds with rain - luckily having both hard and grass runways we were able to fly on every possible occasion! This persistence pays off as you can see from the BGA club statistics; we were 4th in the country with 9700 winch launches in 1997.

The winter maintenance continues well, with the refurbishment of the K13s complete. Our second winch has been converted to use gas, and we have invested in a trike "glider retrieve" bike which has been especially welcome while our grass runways have been soggy.

At our recent annual dinner prizes were awarded to Paul Ward (sadly posthumously - see obituary), Gary Brightman, Frank Broom, Paul and Kath Barnes, Kevin Poyser, Paul Mullis and John Vella Grech.
T. G. W.

Obituary - Paul Ward
It is with great sadness that we report the death of Paul Ward (affectionately known to us as "Chubby"). Although Paul was a paraplegic, he demonstrated that this was no hindrance to flying gliders. He was a continued source of inspiration to us all, exhibiting a very positive attitude and always full of spirit.

Prior to the illness, Chubby was a keen sportsman. It was a measure of his temperament that he ran in the New York marathon only a couple of weeks before he was hospitalised and his illness claimed the use of his legs. In his search for a new sport, Chubby had an air experience flight, learned to glide with The Gliding Centre and joined Shenington in 1993.

Flying his modified K-6 he quickly demonstrated just how good a pilot he was. Paul attempted his Silver badge and was only just short of his 5hr flight.

Such was his determination to show to others what could be achieved by disabled people, he often took his glider to events to show and demonstrate the sport to all.

Paul leaves us with many happy memories of his flying exploits, especially winter check flights when "flying by committee" meant the instructor in the back was told what to do with the rudders. To me he was more than just a syndicate partner; he was a great friend who shared in many special memories.
Tim Donovan



"Oops", wrote Derek Findlay of Bannerdown GC, "no sign of this fella and his ladies when I landed - but they stood quietly by while I removed the elevators".



Chris Barry of White Horse GC photographed at 21 000ft on Mt Mera in the Himalayas. "Do I qualify for my Diamond height?" he askes.

SOUTHDOWN (Parham Airfield)
We have a new ASW-27 on site. The Super Cub is in superb condition after a major service. We have bought a six-wheel diesel "Gator" mule which can be used, among other things, for cable retrieving.

Our four bursary students will be awarded their "wings" by a representative from the local district council which has supported their course. We will offer a bursary scheme again this year as it has given local teenagers a first-class introduction to aviation and gliding in particular. The successful two-day Bronze lecture courses brought in 30 members; we now have a record number of candidates for the next exam.

Early airborne visitors will be interested to ➡

Below left: A Lasham Gliding Society winch which has been renovated and given a more powerful engine, a General Motors 8.2 litre V8, by, from left to right, Geoffrey McVey, David Dripps (in charge) and Keith Blount. It is photographed outside the Tony Norrie MT workshop built with funds left to the club by Tony who was sadly killed in a terrorist aircraft disaster. Right, Lynsey McMillan at Deeside GC at the start of her youth scholarship from the Scottish Sports Council.





know of our new (temporary) landmark: a 150ft oil-rig built inside the circuit. We will operate seven days a week between April and August.
P. H.

STAFFORDSHIRE (Seighford)
January has been a sad month with the deaths of three long serving members. Mike Ruttle, Tony Edwards and Ted Barker. Each have made their own unique contribution to the club and their deaths have triggered fond memories. Mike for his involvement in the design of our logo, Tony for his courage in the face of disability while contributing to the club activities and Ted for his outstanding skill as a vehicle engineer, as well as his trademark wellies and GPO donkey jacket, his ready smile and good old fashioned sense of humour. They will all be sadly missed.

We have an *ab-initio*/early solo course in July and the BGA young persons' soaring course and our task week in August. We hope for a repeat of last year's successful Milfield wave expedition in October when Don Craven achieved Gold and Silver heights with 13 000ft, Simon Watson completed his Gold badge with 14 000ft and CFI Peter Lowe gained 23 000ft for a Diamond.

Glyn Yates has his SLMG PPL and an AEI rating and several have VHF R/T licences as a consequence of the course run by Kevin Edmunds.

We are having an unusual aircraft on site; a temporary agreement with the Lightship Group of Telford (part of the Virgin Group) will bring the short term masting of one of their airships.
C. J.

SURREY & HANTS (Lasham Airfield)
Winter maintenance has been carried out on the fleet and logger-barographs have been bought for the Ventus, Discuses and DGs.

Our intake of new members is very good and an unlimited flying scheme has been introduced. The committee is also considering proposals for a Lottery grant application.
R. J. B.

SURREY HILLS (Kenley Airfield)
The wet weather In the first part of January put paid to our hopes to fly on every weekday through the winter. However, our new duty pilot roster has helped to ensure that the kit has been ready at a reasonable hour to make the most of the short days.

The successful tail wheel conversion on one of our K-7s has enabled us to make better use of the runways while the grass has been soft, so the next K-7 to emerge from Peter Poole's workshop will have a tail wheel and a nose wheel.

Other winter projects have seen the virtual completion of our new operations trailer and a new K-8 trailer in time for the 1998 season.
P. B.

ULSTER (Bellarena)
We would have hit 2000 launches in 1997 but cancelled New Year's Eve flying as a mark of respect (see below) 21 launches short. But, with a mere 1979 it was still a record year for launches and hours, if not cross-country flying too.

Having put a 60 x 25ft workshop in place we have now bought the steelwork to erect an additional 4700ft² hangar next to our original 13 500ft² Boyle's Blister.

British team manager Bob Bickers, and his wife Joan, were chief guests at our annual awards dinner on February 7. Bob presented the trophy for exceptional service to veteran pilot Tommy "Sailor" McFarland for keeping our fast developing site in such good shape since we bought it.
R. R. R.

Obituary - Reg Browne
What should have been a happy end to a record year proved to be a sad occasion with the death, in hospital on December 29, of club stalwart Reg Browne. The back pain which Reg had suffered since his last Kerry expedition in September was something far worse than mere rigger's spine; but when Reg's end came, at the age of 73, it was peaceful and without pain.

Learning to fly as a wartime ATC cadet in 1942, and a full Cat at 18, he was a figure in Irish gliding, both north and south, over five decades. He was a very active soaring pilot, particularly in retirement, stopping instructing at 70, but continuing to fly solo and dual.

He flew his K-6E almost every weekend to within a few weeks of his death. He had a particularly good Kerry safari last year when he enjoyed life at 12 500ft again. He also flew in Spain, USA, Switzerland and Lithuania in recent years and was actively planning another safari to Minden this summer.

His enthusiasm for gliding was matched with his prowess as a horseman and showjumper, and he was a gifted artist and cartoonist too.

Tall and lean, Reg Browne was, in all other respects, a very well rounded clubmate and we shall miss him.
Bob Rodwell

VALE OF WHITE HORSE (Sandhill Farm)
Like everyone we have been suffering from the very wet conditions in the early part of this year.

We held our AGM in January and now have a new committee, chaired by Ed Foggin, with a mandate to focus even more closely on the various activities which we need to undertake to run an efficient operation. We are also in the process of setting up a web site.
G. N. T.

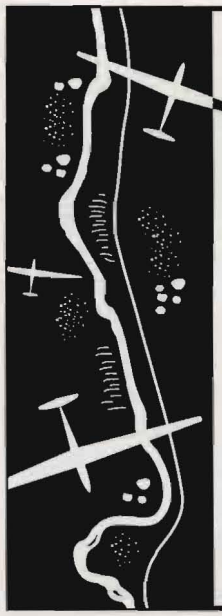
YORK GLIDING CENTRE (Rufforth)
Some welcome wave and thermal days in early February gave cheer and allowed some pre-season soaring. We were sorry to see the BGA's DG-500 go, but we are still hoping to get a Lottery grant for a flapped high performance two-seater for advanced training, as well as another single-seater.
M. C.

YORKSHIRE (Sutton Bank)
Liz and Derek have kept us entertained during the winter months with dining-in nights. The winch has been refurbished and Gavin Ward has his Silver height. Visitors are most welcome to join our Slingsby week from August 22 to 31.
C. L.

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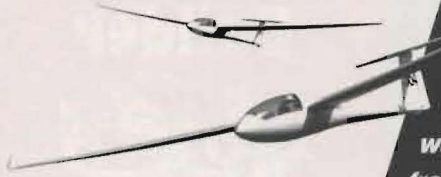
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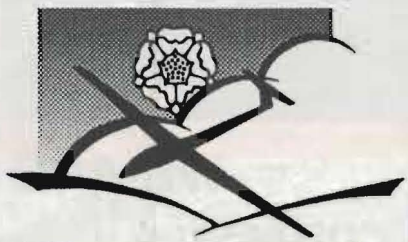
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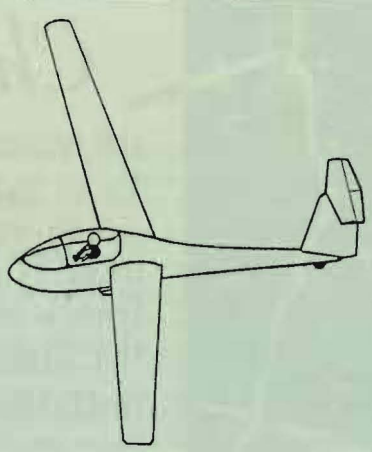


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KEITH SIMMONS

CLUB FOCUS

Keith writes about Mendip, a gliding club with a view, and emphasises the point with a set of his photographs



Early morning mists on the Somerset Levels with Glastonbury Tor in the background.

The club was founded as Woodspring GC in the mid 1970s and based at the historic airport in Weston-super-Mare.

In common with many clubs at that time the primary trainer was the faithful Sedburgh T-21 before the acquisition of a Bocian, which set a trend continued to the present day.

There was more than a suggestion of politics in calling the original club Woodspring - this was the name of the local authority. We became the Mendip GC with our move in July 1988 to the hilltop Halesland site vacated by the ATC.

One has to admire the resolution and dedication of the members because although there was a hangar on the site they were not allowed to use it. Consequently all flying meant having to rig and de-rig on to open trailers stored in cowsheds. It is a miracle the club survived.

Gradually the situation improved with the hangar being made available and the old ATC hut was refurbished by members with drainage and a generator installed.

The narrow site lies roughly east-west at the top of a 900ft west facing ridge. Diagonal stone-chipping tracks are used to tow out the cables to one or other of the corners giving a launch which is rarely directly into wind. The main landing "runway", parallel to the dry-stone wall, gives plenty of practice at crosswind landings, particularly on good ridge days. The only airspace restrictions are to the north of us in respect of Bristol Airport where our CFI just happens to be an air traffic controller. (Lesson one, never ever violate Bristol airspace!)

Wave flights to over 12 000ft above site and 300km triangles have been flown during the last year.

The club is thriving with around 70 active members and a fleet of three Bocians, a K-8, K-18 and a syndicated Motor Falke. The private squadron includes three Kestrels, three Skylarks, a PIK, Astir and a Dart 15.

The club is operated on a completely voluntary basis and is open on Thursdays and weekends all year round. There is a close association with the Devon & Somerset GC whose North Hill site is a convenient Silver distance away.

Being in a holiday area we are often able to supplement our funds with air experience flights on normal flying days. We also run group air experience evenings during the summer.

Most hill sites claim to have the best views in the land but even from ground level ours are spectacular. The Bristol Channel and its islands, North Devon and Exmoor, the south coast of Wales and the Brecon Beacons are usually in sight as is nearby Glastonbury Tor. Once airborne Bristol comes into view and the two Severn bridges. A normal AEI flight would take in Cheddar Gorge or alternatively the city of Wells.

We pride ourselves on being a friendly club, so the next time you are heading along the M5 why not come and check us out. Just peel off at junction 22 and follow the signs for Cheddar.



Above: Cheddar Gorge.

Below: Left, the Halesland site looking north. Right, the winch drivers' view looking west with Cheddar reservoir (A VRP) prominent.





RECORDS

Up to October 1997 the Classes for world records were single-seater, two-seater, single-seater motor glider and two-seater motor glider. From October 1997 the Classes for world records were changed by the International Gliding Commission. A sub committee had previously been set up and they reported that the Classes of two-seater and motor glider should be dropped and a 15 Metre Class introduced. They felt that similar Open Class gliders could be flown in several Classes. For instance a Nimbus 3DM could be flown solo with the engine disabled for Open Class records or with the engine enabled and dual for two-seater motor glider records. On the other hand the large number of 15 Metre and Standard Class gliders could not attempt any Class of world records because of the large performance disadvantage. The BGA Competitions Committee felt that the above changes were sensible (we already had Standard and 15 Metre Class UK records) and anyway we had to adopt a similar structure for British National records since a flight cannot be put forward as a world record unless it has been ratified as a National record.

However, the change to world records causes a reduction in the overall number of records and the committee felt that for UK records, where we can do more or less as we choose, it wouldn't be necessary or desirable to reduce the opportunity for pilots to break records in their home country. We therefore decided to retain the Standard and 15 Metre Classes and to introduce a further span Class between 15 Metre and Open Class. After some discussion the additional Class was chosen at 20 Metres to encompass 15m gliders tipped to 18m, smaller than Open Class two-seaters like the Janus (18m and 20m) and Duo-Discus (20m) and older Open Class gliders like the Kestrel (19m) and ASW-17 (20m). To summarise, the Classes for world and British national records are Open Class and 15 Metre Class.

The Classes for UK records are Open, 20 Metre, 15 Metre and Standard. All the above are duplicated in the feminine category. In this issue we give the complete list of records including those where there is no existing record holder. **Basil Fairston**, *FAI certificates' officer*

INTERNATIONAL GLIDING RECORDS (as at 4.2.98

OPEN CLASS

Height Gain	12 894m	P. F. Bikle (USA)	SGS 1-23RT	25.2.1961
Absolute altitude	14 93 m	R. R. Harris (USA)	Grob G1021	7.2.1986
Straight distance	1 460.80km	H. W. Grosse (Germany)	ASW-12L	25.4.1972
Goal Distance	1 383.00km	G. Herbaud & J. Herbaud (France)	ASH-25	17.4.1992
O/R Distance	1 646.68km	T. L. Knauff (USA)	Nimbus 3	25.4.1983
Triangular Distance	1 400.19km	K. Holighaus (Germany)	Nimbus 4	7.1.1993
Free Distance	2 049.44km	T. R. Delore (New Zealand)	ASW-20	5.11.1994
Free O/R Distance	1 261.65km	J. Good (USA)	Discus	18.4.1997
100km Triangle	217.41km/h	J. Payne (USA)	Discus A	4.3.1997
300km Triangle	176.99km/h	B. Bunzli (Switzerland)	DG-400	14.11.1985
500km Triangle	171.10km/h	H. W. Grosse (Germany)	ASH-25T	31.12.1990
750km Triangle	161.33km/h	H. W. Grosse (Germany)	ASH-25	10.1.1988
1000km Triangle	169.72km/h	H. H. Fischer (Germany)	Ventus	5.1.1995
1250km Triangle	143.46km/h	H. W. Grosse (Germany)	10.1.1987	
500km O/R	No record registered yet – minimum achievement for the first record:			170km/h
1000km O/R	No record registered yet – minimum achievement for the first record:			147km/h
1500km O/R	No record registered yet – no minimum achievement for the first record			

15 METRE CLASS

Straight distance	No record registered yet – minimum achievement for the first record:	1289km
Goal Distance	No record registered yet – minimum achievement for the first record:	1289km
O/R Distance	No record registered yet – minimum achievement for the first record:	1299km
Triangular Distance	No record registered yet – minimum achievement for the first record:	1363km
Free Distance	No record registered yet – minimum achievement for the first record:	1434km
Free O/R distance	No record registered yet – minimum achievement for the first record:	1262km
100km Triangle	No record registered yet – minimum achievement for the first record:	159kmh
300km Triangle	No record registered yet – minimum achievement for the first record:	149km/h
500km Triangle	No record registered yet – minimum achievement for the first record:	144km/h
750km Triangle	No record registered yet – minimum achievement for the first record:	131km/h
1000km Triangle	No record registered yet – minimum achievement for the first record:	136km/h
1250km Triangle	No record registered yet – minimum achievement for the first record:	110km/h
500km O/R	No record registered yet – minimum achievement for the first record:	201km/h
1000km O/R	No record registered yet – minimum achievement for the first record:	147km/h
1500km O/R	No record registered yet – no minimum achievement for the first record	

OPEN CLASS (WOMEN)

Height Gain	10 212m	Y. M. Loader (New Zealand)	Nimbus 2	12.1.988
Absolute altitude	12 637m	S. JackintellL (USA)	Grob Astir CS	14.2.1979
Straight distance	949.70km	K. Karel (UK)	LS-3	20.1.1980
Goal Distance	951.43km	J. B. Shaw (USA)	Nimbus 2	2.7.1990
O/R Distance	1127.68km	D. F. Grove (USA)	Nimbus 2	28.9.1981
Triangular Distance	928.29km	H. Zejdova (Czech)	LAK-12	20.1.1997
Free Distance	1025.10km	H. Zejdova (Czech)	Nimbus 4DM	4.1.997
Free O/R Distance	860.46km	H. Zejdova (Czech)	Nimbus 4DM	4.1.1997
100km Triangle	151.12km/h	J. B. Shaw (USA)	Nimbus 3	17.7.1997
300km Triangle	143.90km/h	S. P. Beatty (S Africa)	ASW-20B	26.12.1990
500km Triangle	135.38km/h	H. Zejdova (Czech)	Nimbus 4DM	2.1.1997
750km Triangle	131.39km/h	H. Zejdova (Czech)	Nimbus 4DM	5.1.997
500km O/R	No record registered yet – minimum achievement for the first record :			137km/h
1000km O/R	No record registered yet – no minimum achievement for the first record			
1500km O/R	No record registered yet – no minimum achievement for the first record			

15 METRE (WOMEN)

Straight Distance	No record registered yet – minimum achievement for the first record:	950km
Goal Distance	No record registered yet – minimum achievement for the first record :	807km
O/R Distance	No record registered yet – minimum achievement for the first record :	671km
Triangular Distance	No record registered yet – minimum achievement for the first record :	843km
Free Distance	No record registered yet – minimum achievement for the first record :	750km
Free O/R Distance	No record registered yet – minimum achievement for the first record:	750km
100km Triangle	No record registered yet – minimum achievement for the first record:	140km/h
300km Triangle	No record registered yet – minimum achievement for the first record:	130km/h
500km Triangle	No record registered yet – minimum achievement for the first record:	134km/h
750km Triangle	No record registered yet – minimum achievement for the first record:	96km/h
1000km Triangle	No record registered yet – no minimum achievement for the first record	
1250km Triangle	No record registered yet – no minimum achievement for the first record	
500km O/R	No record registered yet – minimum achievement for the first record:	123 km/h
1000km O/R	No record registered yet – no minimum achievement for the first record	
1500km O/R	No record registered yet – no minimum achievement for the first record	

The records will be updated regularly on the Internet by Le Forbes. Find them on the BGA site:- http://www.gliding.co.uk

BRITISH NATIONAL RECORDS (as at 4.2.98)

OPEN CLASS

Height Gain	10 545m	C. C. Rollings & B. Hicks (in UK)	DG-500-22	8.10.1995
Absolute Altitude	11.500m	H. C. N. Goodhart (in USA)	SGS1-23	12.5.1955
Straight Distance	949.7km	K. Karel (inAustralia)	LS-3	20.1.1980
Goal Distance	892.1km	R. C. May & P Rackham (in USA)	ASH-25	6.7.1995
O/R Distance	1127.68km	M. T. A. Sands (in USA)	Nimbus 3	7.5.1985
Triangle Distance	1362.68km	R. L. Robertson (in USA)	Ventus A	2.5.1986
Free Distance	1015.0km	V. Spencer & J. M. West (in Spain)	ASH-25E	27.7.1994
Free O/R Distance	1015.0km	V. Spencer & J. M. West\(in Spain)	ASH-25E	27.7.1994
100km Triangle	166.38km/h	B. Cooper (in Australia)	LS-6B	4.1.1991
300km Triangle	157.96km/h	B. Spreckley (in S Africa)	Nimbus 3	10.12.1997
500km Triangle	141.3km/h	B. J. G. Pearson (in S Africa)	ASW-20	28.12.1982
750km Triangle	114.18km/h	B. T. Spreckley & P. Rackham (in Australia)	Nimbus3DT	7.2.1987
1000km Triangle	112.15km/h	D. G. Lee (in Australia)	ASW-20B	25.1.1989
1250km Triangle	109.01kmh	R. L. Robertson (in USA)	Ventus A	20.5.1986
300km O/R	159.20km/h	B. Spreckley (in S Africa)	Nimbus 3	12.12.1997
500km O/R	152.7km/h	M. R. Carlton (in S Africa)	ASW-17	24.12.1980
750km O/R.	No current record			1.10.1997
1000km O/R	105.79km/h	M. T. A. Sands (in USA)	Nimbus 3	7.5.1985
1250km O/R.	No current record			1.1.998

15 METRE CLASS

Straight Distance	949.7km	K. Karel (in Australia)	LS-3	20.1.1980
Goal Distance	680km min	No current record	1.10.1997	
O/R Distance	617km	C. Garton (in UK)	LS-6	28.8.1989
Triangle Distance	1362.68km	R. L. Robertson (in USA)	Ventus A	2.5.1986
Free Distance	774km min	No current record		1.1.1997
Free O/R Distance	617km	C. Garton (in UK)	LS-6	28.8.1989
100km Triangle	166.38km/h	B. Cooper (in Australia)	LS-6B	4.1.1991
300km Triangle	140.36km/h	B. T. Spreckley (in S Africa)	Ventus 2	20.12.1997
500km Triangle	141.3km/h	B. J. G. Pearson (in S Africa)	ASW-20	28.12.1982
750km Triangle	112.38km/h	G. Spreckley (in S Africa)	LS-8	15.12.1996
1000km Triangle	112.15km/h	G. E. Lee (in Australia)	ASW-20B	25.1.1989
1250km Triangle	109.01km/h	R. L. Robertson (in USA)	Ventus A	2.5.1986
300km O/R	134.33kmh	G. Spreckley (in S Africa)	Ventus 2	12.12.1997
500km O/R	119.76km/h	G. Spreckley (in S Africa)	Ventus 2	9.12.1997
750km O/R	No current record			1.1.1998
1000km O/R.	No current record			1.1.1998
1250km Triangle	No current record			1.1.1998

OPEN CLASS (WOMEN)

Height Gain	9119m	A. Burns (in S Africa)	Skylark 3B	13.1.1961
Absolute Altitude	10 550m	A. Burns(in S Africa)	Skylark 3B	13.1.1961
Straight Distance	949.7km	K. Karel (in Australia)	LS-3	20.1.1980
Goal Distance	528km	A. Welch (in Poland)	Jaskolka	20.6.1961
O/R Distance	620.31km	J. Burry (in Australia)	Mosquito	4.1.994
Triangle Distance	814.01km	K. Karel (in Australia)	LS-3	9.1.1980
Free Distance	949.7km	K. Karel (in Australia)	LS-3	20.1.980
Free O/R Distance	620.31km	J. Burry (in Australia)	Mosquito B	4.1.1994
100km Triangle	123.64km/h	J. Burry (in Australia)	Nimbus 2C	6.1.997
300km Triangle	132.54km/h	G. Spreckley (in S Africa)	Ventus 2	12.12.1997
500km Triangle	134.07km/h	G. Spreckley (in S Africa)	Ventus 2	22.12.1997
750km Triangle	110.53km/h	P. Hawkins (in Australia)	ASW-17	17.11.1984
1000km Triangle	No current record			1.1.1998
1250km Triangle	No current record			1.1.1998
300km O/R	134.31km/h	G. Spreckley (in S Africa)	ASH-25	26.11.1994
500km OR	119.76km/h	G. Spreckley (in S Africa)	Ventus 2	9.12.1997
750km O/R	No current record			1.1.1998
1000km O/R	No current record			1.1.1998
1250km O/R				

15 METRE CLASS (WOMEN)

Straight Distance	949.7km	K. Karel (in Australia)	LS-3	20.1.1980
Goal Distance	402km min	No current record		110.1997
O/R Distance	620.31km	J. Burry (in Australia)	Mosquito B	4.1.1994
Triangle Distance	814.01km	K. Karel (in Australia)	LS-3	9.1.1980
Free Distance	814.01km	K. Karel (in Australia)	LS-3	9.1.1980
Free O/R Distance	620.31km	J. Burry (in Australia)	Mosquito B	4.1.1994
100km Triangle	134.93km/h	G. Spreckley (in S Africa)	LS-8	16.12.1997
300km Triangle	132.54km/h	G. Spreckley (in S Africa)	Ventus 2	21.12.1997
500km Triangle	134.07km/h	G. Spreckley (in S Africa)	Ventus 2	22.12.1997
750km Triangle	112.38km/h	G. Spreckley (in S Africa)	LS-8	15.12.1996
1000km Triangle	No current record	1.1.1998		
1250km Triangle	No current record	1.1.1998		
300km O/R	134.33km/h	G. Spreckley (in S Africa)	Ventus 2	12.12.1997
500km O/R	119.76kmh	G. Spreckley (in S Africa)	Ventus 2	9.12.1997
750km O/R	No current record	1.1.1998		
1000km O/R	No current record	1.1.1998		
1250km O/R	No current record	1.1.1998		

UNITED KINGDOM RECORDS (as at 4.2.98)

OPEN CLASS

Height Gain	10 545m	C. C. Rollings & B. Hicks	DG500 22	8.10.1995
Absolute Altitude	11 570m	C. C. Rollings & B. Hicks	DG-500	8.10.1995
Straight Distance	827.9km	T. J. Wills	LS-6	29.5.1986
Goal Distance	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
O/R Distance	801.3km	C. Garton	Kestrel 19	22.7.1976
Triangle Distance	770.5km	C. C. Rollings	Jantar 2A	28.5.1985
Free Distance	1008.54km	C. Pullen & C. C. Rollings	ASH-25	22.7.1995
Free O/R Distance	801.3km	C. Garton	Kestrel 19	22.7.1976
100km Triangle	133.97km/h	P. Jeffery	LS7-WL	1.8.1995
200km Triangle	119.07km/h	R. C. May & P. Townsend	ASH-25	18.7.1990
300km Triangle	117.14km/h	R. Jones	Nimbus 3	28.5.1985
400km Triangle	114.3km/h	R. Jones	Nimbus 3	1.8.1984
500km Triangle	106.9km/h	R. Jones	Nimbus 2	31.5.1975
600km Triangle	94.94km/h	R. C. May & S. Lynn	ASH-25	19.7.1990
750km Triangle	98.46km/h	A. E. Kay	LS-6C-18W	21.4.1995
1000km Triangle	No current record	1.1 1998		
1250km Triangle	No current record	1.1.1998		
300km O/R	114.5km/h	D. S. Watt	ASW-22	18.8.1983
500km O/R	111.83km/h	R. Jones & S. Marriot	Nimbus 3DM	13.8.1994
750km O/R.	No current record	1.1.1998		
1000km OR.	No current record.	1.1.1998		
100km Goal	173.32km/h	D. Hill & J. Gorringe	ASH-25	8.4.1990
200km Goal	127.1km/h	A. H. Warminger	Vega	12.5.1984
300km Goal	132.8km/h	A. H. Warminger	Kestrel 19	24.4.1976
400km Goal	98.36km/h	A. H. Warminger	Ventus 16.6	7.4.1990
500km Goal	90.7km/h	H. C. N. Goodhart	Skylark 3	10.5.1959

20 METRE CLASS

Straight Distance	827.9km	T. J. Wills	LS-6	29.5.1986
Goal Distance	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
O/R Distance	801.3km	C. Garton	Kestrel 19	22.7.1976
Triangle Distance	801.3km	C. Garton	Kestrel 19	22.7.1976
Free Distance	827.9km	T. J. Wills	LS-6	29.5.1986
Free Distance O/R	587km	No current record		1.10.1997
100km Triangle	133.97km/h	P. Jeffery	LS-7WL	1.8.1995
200km Triangle	96km/h min	No current record		1.10.1997
300km Triangle	95km/h min	No current record		1.10.1997
400km Triangle	93km/h min	No current record		1.10.1997
500km Triangle	87km/h min	No current record		1.10.1997
600km Triangle	88.8km/h	C. Garton	Kestrel 19	10.6.1976
750km Triangle	98.46km/h	A. E. Kay	LS-6C-18W	21.4.1995
1000km Triangle	No current record			1.1.1998
1250km Triangle	No current record			1.1.1998
300km O/R	93km/h min	No current record		1.10.1997
500km O/R	101.46	M. B. Jefferyes	DG-600	17.8.1983
750km O/R	No current record			1.1.1998
1000km O/R	No current record			1.1.1998
100km Goal	150km/h	T. J. Wills	LS-4	12.5.1984
200km Goal	127.1km/h	A. H. Warminger	Vega	12.5.1984
300km Goal	132.8km/h	A. H. Warminger	Kestrel 19	24.4.1976
400km Goal	98.36km/h	A. H. Warminger	Ventus 16.6	7.4.1990
500km Goal	90.7km/h	H. C. N. Goodhart	Skylark 3	10.5.1955

15 METRE CLASS

Straight Distance	827.9km	T. J. Wills	LS-6	29.5.1986
Goal Distance	No current record			1.1.1998
O/R Distance	617km	C. Garton	LS-6	28.8.1989
Triangle Distance	No current record			1.1.998
Free Distance	No current record			1.1.1998
Free O/R Distance	633.27km	T. M. Macfadyen	ASW-20WL	13.5.1996
100km Triangle	133.97km/h	P Jeffery	LS-7WL	1.8.1995
200km Triangle	114.95km/h	D S Watt	ASW-24	3.8.1990
300km Triangle	115.85km/h	J Gorringe	LS-7	3.8.1990
400km Triangle	99.39km/h	P Jeffrey	LS-7	13.8.1991
500km Triangle	106.06kmh	D Watt	ASW-24	21.4.1995
600km Triangle	88.1km/h	A. E. Kay	ASW-24	9.5.1991
750km Triangle	No current record			1.1.1998
1000km Triangle	No current record			1.1.1998
1250km Triangle	No current record			1.1.1998
300km O/R	No current record			1.1.1998
500km O/R	96.09km/h	C. C. Rollings	Discus Bw	13.5.1996
750km O/R	No current record			1.1.1998
1000km O/R	100km Goal			
200km Goal	127.1k/mh	A. H. Warminger	Vega	12.5.1984
300km Goal	400km Goal	500km Goal		

STANDARD CLASS

Straight Distance	718km	T. J. Wills	Std Libelle	1.8.1976
500km O/R	O/R Distance			
Triangle Distance	609.9km	A. E. Kay	ASW-24	9.5.1991
Free Distance	Free O/R Distance			
100km Triangle	133.97km/h	P. Jeffery	LS-7WL	1.8.1995
200km Triangle	114.95km/h	D. S. Watt	ASW-24	3.8.1990
300km Triangle	115.85km/h	J. Gorringe	LS-7	3.8.1990
400km Triangle	99.39km/h	P. Jeffrey	LS-7	13.8.1991
500km Triangle	106.06kmh	D. S. Watt	ASW-24	21.4.1995
600km Triangle	88.1km/h	A. E. Kay	ASW-24	9.5.1991
750km Triangle	1000km Triangle	1250km Triangle		
300km O/R	104.09km/h	A. E. Kay	ASW-24	28.4.1989
500km O/R	96.09kmh	C. C. Rollings	Discus Bw	13.5.1996
750km O/R	1000km O/R			
100km Goal	150km/h	T. J. Wills	LS-4	12.5.1984
200km Goal				
300km Goal	131.1km/hT	T. J. Wills	Std Libelle	24.4.1976
400km Goal	73.8km/h	T. J. Wills	Std Libelle	7.6.1976
500km Goal				

OPEN CLASS (WOMEN)

Height Gain	7833m	A. Jordan	Astir CS	8.10.1978
Absolute Altitude	8701m	A. Jordan	Astir CS	8.10.1978
Straight Distance	454km	A. Burns	Skylark 3A	10.5.1959
Goal Distance	324.4km	J. Nash	Ventus B	15.4.1989
O/R Distance	386.3km	G. Macfadyen	Sport Vega	30.6.1994
Triangle Distance	524.5km	G. Macfadyen	Sport Vega	22.7.1995
Free Distance	569.93km	G. Macfadyen	ASW-20F	13.6.1996
Free O/R Distance				
100km Triangle	98.64kmh	S. Harland	SZD 55	15.8.1994
200km Triangle	93.38kmh	G. Macfadyen	ASW-20F	19.8.1996
300km Triangle	83.57kmh	G. Macfadyen	ASW20F	4.81996
400km Triangle	89.00kmh	J. Angel	Duo-Discus	13.6.1996
500km Triangle	86.21kmh	S. Harland	ASW-24	15.8.1997
600km Triangle	750km Triangle	1000km Triangle	1250km Triangle	
300km O/R	84.80km/h	G. Macfadyen	ASW-20F	15.8.1997
500km O/R	750km O/R	1000km OR		
100km Goal	135.39kmh	J. Nash	Ventus B	11.6.1989
200km Goal	85.5km/h	A. Burns	Olympia 419	2.6.1963
300km Goal	93.16km/h	J. Nash	Mini-Nimbus	7.4.1990
400km Goal	500km Goal			

20 METRE CLASS (WOMEN)

Straight Distance	454km	A. Burns	Skylark 3A	10.5.1959
Goal Distance	324.4km	J. Nash	Ventus B	15.4.1989
O/R Distance	386.3km	G. Macfadyen	Sport Vega	30.6.1994
Triangle Distance	524.5km	G. Macfadyen	Sport Vega	22.7.1995
Free Distance	569.93km	G. Macfadyen	ASW20F	13.6.1996
Free O/R Distance				
100km Triangle	98.64km/h	S. Harland	SZD 55	15.8.1994
200km Triangle	93.38kmh	G. Macfadyen	ASW-20F	19.8.1996
300km Triangle	83.57km/h	G. Macfadyen	ASW20F	4.8.1996
400km Triangle	89.00km/h	J. Angel	Duo-Discus	13.6.1996
500km Triangle	86.21km/h	S. Harland	ASW-24	15.8.1997
600km Triangle	750km Triangle	1000km Triangle	1250km Triangle	
300km O/R	84.80km/h	G. Macfadyen	ASW-20F	15.8.1997
500km O/R	750km O/R			
1000km O/R	135.39km/h	J. Nash	Ventus B	11.6.1989
100km Goal				
200km Goal	85.5km/h	A. Burns	Olympia 419	2.6.1963
300km Goal	93.16km/h	J. Nash	Mini-Nimbus	7.4.1990
400km Goal	500km Goal			

15 METRE CLASS (WOMEN)

Straight Distance				
Goal Distance	324.4km	J. Nash	Ventus B	15.4.1989
O/R Distance	386.3km	Geralyn Macfadyen	Sport Vega	30.6.1994
Triangle Distance	524.5km	G. Macfadyen	Sport Vega	22.7.1995
Free Distance	569.93km	G. Macfadyen	ASW-20F	13.6.1996
Free O/R Distance				
100km Triangle	98.64km/h	S. Harland	SZD 55	15.8.1994
200km Triangle	93.38km/h	G. Macfadyen	ASW-20F	19.8.1996
300km Triangle	83.57km/h	G. Macfadyen	ASW20F	4.8.1996
400km Triangle				
500km Triangle	86.21km/h	S. Harland	ASW-24	15.8.1997
600km Triangle	750km Triangle	1000km Triangle	1250km Triangle	
300km O/R	84.80kmh	G. Macfadyen	ASW-20F	15.8.1997
500km O/R	750km O/R	1000km O/R	1250km O/R	
100km Goal	135.39km/h	J. Nash	Ventus B	11.6.1989
200km Goal				
300km Goal	93.16km/h	J. Nash	Mini-Nimbus	7.4.1990
400km Goal	500km Goal			

STANDARD CLASS (WOMEN)

Straight Distance	Goal Distance			
O/ R Distance	386.3km	G. Macfadyen	Sport Vega	30 6.1994
Triangle Distance	524.5km	G. Macfadyen	Sport Vega	22.7.995
Free Distance	Free O/R Distance			
100km Triangle	98.64km/h	S. Harland	SZD 55	15.8.1994
200km Triangle	300km Triangle	400km Triangle		
500km Triangle	86.21km/h	S. Harland	ASW-24	15.8.1997
600km Triangle	750km Triangle	1000km Triangle	1250km Triangle	
300km O/R	500km O/R	750km O/R	1000km O/R	
1250km O/R	100km Goal	200km Goal	300km Goal	
400km Goal	500km Goal			

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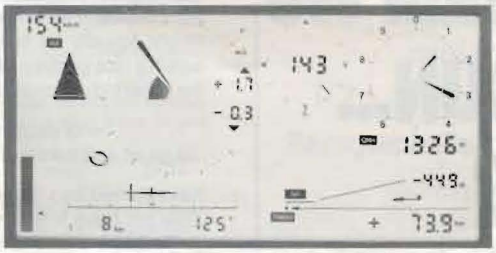
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How Shall We Spell BUN... Today?

First problem: I cannot write about how to spell BUN**(*) without spelling it, so I will start with the editor's spelling BUNGY and then demonstrate that however it should be spelt, it is not like that. A bungy is, of course, that marvellous means of launching gliders which was originally called an elastic launching rope, or shock cord. Then someone coined the word bungy and it stuck. Who? When? Why?

To take the last question first, Oxford doesn't know (well, they wouldn't, would they?). **The Oxford English Dictionary** records "origin unknown" and offers the spellings bungie, bungy, "also" bunje, bunjee, bunjie, bunjy. Just to be different, the **Shorter Oxford English Dictionary** offers bungee, "also" bungie, bungy, origin still unknown. In Cambridge at least we know the immediate source. "Bungy" was schoolboy slang for a rubber, an "India-rubber", for rubbing out pencil. (Now they presumably press *delete* instead.) Could the origin of this be no more complex than similar slang for a bung, that is, a stopper for flasks used in chemistry lessons, originally made of cork but later of rubber?

Of course we could settle it by calling it a shock cord instead of a bungy!

When was the word first applied to a glider launching rope? According to Ann Welch in **The Story of Gliding** the first bungy launch took place on the Wasserkuppe in 1920. In the early books which I possess the bungy is either a starting-rope (1930), a launching cord (1932), a rubber shock-absorber cord or launching rope (1932), or a shock cord (1935). The earliest book in my collection which uses the word bungy, Terence Horsley's **Soaring Flight** (1944), spells it *bunje*, but before World War II the word had appeared regularly in *Sailplane and Glider*. The Midland GC then (1935) favoured *bunjy*, whilst London, Derby & Lancs, Yorkshire and Ulster all favoured *bungy*, as did Ann Welch ("A.C.E." at the time) of the Surrey Club. Cambridge University, discovering wave at the Long Mynd in 1937, used a *bungy*, presumably out of deference to their hosts, but the author, John Simpson, had changed to *bungey* by the time he wrote **Tackle Gliding This Way** in 1961.

We find *bungee* in a 1939 advertisement seeking a second-hand one, and my earliest sighting so far in *Sailplane and Glider* is the plural *bunjies* (December 1934) whose singular might equally be *bunjie, bunjy or bunjey*. The setting is a parody of Hamlet's *To be or not to be*, where the "fardels" in

who would fardels bear,
To grunt and sweat under a weary life,

have turned into "bunjies". So what's a "fardel"? That will have to wait until another day.

Perhaps it is time to sort the wheat from the chaff and let some of our literary bungy authorities be heard. Pride of place must surely go to Laurence Wright's immortal "Alice in Bunjyland" (July 1938). That is how he spelt it, *bunjy*, and woe betide anyone who changes it. *Mea culpa!* Well, not really. It was the editor's fault. When we - she and I - reprinted it in our - my series of *S&G* Classics (December 1988) we - she - changed *bunjy* to *bungy* and I - yes, me - have only just noticed. Bungyland indeed. Where on earth is that?

Next, let us consult Philip Wills's immortal volume **On Being a Bird** (1953). Here we find *bunjie* for the first time (in the singular), which makes me wonder whether Philip might not have been our anonymous 1934 bard. But by the time of his next book (1961) he had joined the *bunjy* crew, perhaps because the launch which he depicts took place at the Midland GC. By 1955 Ann Welch had moved on to *bungey*, no doubt influenced by her co-authors Lorne Welch and Frank Irving in their classic **The Soaring Pilot** first published in that year. In subsequent books from the same stable, including **The Story of Gliding** (1965, 1980), *bungey* continues to be the norm.

David Carrow wrote his invaluable "Some Thoughts on Bungeymanship" for S&G in 1958, based largely on his Cambridge University GC hill expedition experience, and the very next article (December issue) is "Priest's Crag; Being an account of the travels of four gentlemen and a Skylark from the University of Cambridge amongst the Cumbrian Mountains" by me in my pre-Arm-Chair-Pilot days. We also used a *bungey*, I imagine because I had learnt **The Soaring Pilot** off by heart. Come 1967 in "The Freedom of the Hills" I quite unintentionally coined *bunjey*, and in 1969 I equally unintentionally shortened it to bunjy in "Huish Revisited". The editor then was Doc Slater, who had also been editor before the war, and he evidently allowed his scribes complete freedom in the spelling of bungy (though *bungy* was indeed how he spelt it himself, at least in the early 1950s).

Gillian Bryce-Smith became Editor in 1973 and did not censor *bungey*, to which I reverted in "How We Bungeyed To The Bottom from Bincombe Bumps". In 1979 I thought it time to hang up my bungy and was persuaded to write a "how to auto-bungy" article before I forgot all about it. This "Instant Gliding" appeared in June 1979, and I still possess the typescript with its spelling *bunjey* - which Gillian changed to *bungey*, unobserved by me at the time. Since 1987 she has been changing all spellings into *bungy*, which, you will remember, is the fate that befell Alice.

Enough is *enough*. It remains to mention, for completeness' sake, that the rare *bungee* was favoured by two books I possess from the 1950s, one of which is Derek Piggott's **Gliding**.

So how shall we spell it? I am tempted to offer *bungie* on the Euro-compromise principle that it hasn't been tried yet (though it is recorded by the Oxford dictionaries), but it is easy to resist that temptation. Let us proceed by elimination. *bungee* can go because it invites too much stress on the second syllable. In the *-g-* versus *-j-* competition I favour *g* simply because it is the more usual English way to represent the required sound when it falls in the middle of a word, so *bunjy, bunje, bunjie* and my own *bunjey* are eliminated. That leaves *bungy* and *bungey*. There is no etymology to guide us, so we might as well chose the more phonetic spelling, thus eliminating *bungy* with its potentially hard *g*. (Yes, I do know that the English put an *h* in *dinghy* to distinguish its pronounciation from *dingy*.) The plural *bungeys* is easier, too, for the plural of *bungy* would have to be *bungies* with its potentially hard *g*.

The Arm-Chair Pilot's prize therefore goes to Ann Welch with *bungey* in **Come Gliding With Me** (1955) and in **The Soaring Pilot** (also 1955, with Lorne Welch and Frank Irving). We must remember to tell them in Oxford that it has been in use for more than forty years.

(I was bothered at the various ways we had been spelling bungy and, anxious to have a consistent house style, discussed it with Rika Harwood, a consultant editor of S&G for many years. She came up with the sound advice that bungy was the shortest version and saved space! Ed.)

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BGA ACCIDENT SUMMARY

Compiled by DAVID WRIGHT

Ref. No.	Glider Type	BGA No.	Damage	Date Time	Place	Pilot/Crew Age	Injury	P1-Hrs
74	Astir	3902	Write-off	15.6.97 1512	Kitson Field	45	Fatal	13

After a briefing the pilot took his first winch launch in this type. At about 250ft the weak link broke so the pilot lowered the nose and released the remaining cable. While some 700 yards of field were still ahead he decided to turn left through 360°. During the last part of this turn the glider's wing hit the ground and the pilot was killed.

75	Monnett Monerai	3108	Minor	8.6.97 1200	Eaglescott	66	Minor	216

After a period of bad weather the pilot took off in a slight crosswind. While he normally would have had no problems with this, he failed to notice long grass by the side of the runway. When a wing dropped it caught in the grass and the glider groundlooped before the pilot could release. The glider was prone to drop a wing at low speed.

76	SZD Jantar Std	2152	Subst	9.6.97 1400	Abbots Bromley	39	Minor	67

During a cross -country the pilot had to make a field landing. The field chosen was 400 yards long but surrounded by ground about 150ft higher. He approached too high and allowed the speed to increase to 70kts. The glider touched down just before the far hedge which it hit at speed.

77	Kestrel 19	1853	Subst	15.6.97 1043	Upavon	64	None	3800

After rigging and positive control checks the pilot took a winch launch. At about 60ft the tailplane, wrongly fitted and not wire locked, flew off and the glider pitched up. The pilot released and as the left wing dropped found the ailerons were jammed. The glider hit wing first and spun around, breaking the fuselage. The pilot escaped injury.

78	SF-27A	4057	Minor	4.6.97 1525	Kenley	55	None	180

The pilot was offered the remaining winch cable and started his checks, but the cable was used by another glider. When the new cables arrived he assumed he had completed his checks and launched. The airbrakes came open as the glider was launched and at 400ft the canopy came off. The pilot closed the brakes then landed safely.

79	PA25 Pawnee Tug	–	Minor	–.5.97	Incident Report	49	None 649	

While landing after a ferry flight, the Pawnee tug was caught by a strong gust and the pilot was unable to prevent a swing to the left and the left wing hit a runway marker board.

80	K-8B	2465	Minor	15.6.97 739	Snitterfield	None	3.5	

This was the pilot's first flight on type. Prior to the launch two club members herded sheep away from the runway. The circuit was good, if a little high, and a full airbrake was flown. After making a cautious landing, well into the field, the pilot saw a number of sheep running away. One ran into the path of the glider and was hit.

81	Blanik	2829	Minor	7.6.97 1700	Kitson Field	57 47	None None	675 8

During a Bronze test P2 was making a simulated field landing when the glider touched down just before a depression in the ground. The glider became airborne and then contacted the other side of the dip heavily on the mainwheel. This damaged the fuselage around the wheel structure.

82	K-13	N.K	Minor	4.6.97 1900	Kirton in Lindsey	49 57	None None	225 35

After an apparently normal landing, across an area of the airfield that had been cut for silage but not normally used, the glider's tailplane was found to be damaged. A search of the landing run found a piece of fence post laying in the grass some 100ft from the fence. The glider had run over it and flipped it up into the tailplane.

83	Vega Sport	2672	Subst	24.6.97 1430	Membury	27	None	67

Prior to a cross-country the pilot had been briefed that the disused airfield TP could be used for field landing if required. This was the case and the pilot chose to land on the grass alongside the runway. The grass had not been cut for some time and the glider groundlooped as a wing hit a clump of weeds.

84	Not Known	N/K	Minor	29.6.97 1130	Rufforth	39	None	

The glider overran the winch cable so the pilot released. The winch driver failed to see the stop signal and continued the launch. As a result the cable hit and damaged the inboard trailing edge of the aileron.

85	K-6CR	2674	Write-off	9.7.97 1625	North Hill	51	Minor	76

After a short flight the pilot was seen to make a low circuit, turning on to final approach just inside the airfield boundary at about 80ft and rather fast. With no airbrakes open the glider entered a PIO and "porpoised" into the ground. The first impacts broke the fuselage and the glider disintegrated, somersaulted forwards and stopped inverted.

86	Me-7 Metcha	4102	Subst	6.7.97 1608	Long Mynd	67	None	93

The pilot was distracted by another glider ahead in the circuit and got too low and slow on final approach. As a result he landed in the rough undershoot area and the glider's right wing hit a tree stump. The ground slopes downhill and it is thought that the visual effect produced aided a flat approach to the strip.

87	DG-202.-17	4356	Write-off	12.7.97 1500	Nr Tibenham (53	Minor	685	

While local soaring the experienced pilot had to make a field landing. A field was selected and a normal approach made but the left wing caught in the top of a bush which caused the pilot to lose control and crash.

88	ASW-19B	2727	Subst	15.7.97 1430	Nympsfield	34	None	97

The pilot was briefed (away from the glider) for his first flight on type. After a satisfactory flight he made a normal circuit until during the final stages of the approach. With full airbrake and flying at 52-55kts he started to roundout, but apparently allowed the speed to fall and the glider stalled into the ground.

89	K-21	3586	Minor	24.6.97 2020	Long Mynd	63 77	None None	1450 0

After clearing the airfield of sheep earlier in the day a small flock of about 30 moved across the landing area while a glider was on final approach. The pilot managed to avoid all but one which jumped up as the glider passed over it and was hit by the wing. The sheep was killed but the glider landed safely.

90	LS-3A-17	2621	Subst	12.7.97 1405	Nr Salisbury	51	None	237

During a cross-country the pilot had to make a field landing. He found two large fields and chose the one without power cables and flew around it and it appeared suitable. However during his roundout he noticed patches of 3ft high grass so rounded out on to the top of this. The left wing caught a patch and spun the glider around.

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91	K-23	3164	Write-off	26.7.97	Long Mynd	59	Fatal	1749

This **fatal** winch launch accident took place when at about 300ft the pilot released the cable and lowered the nose to push ahead to the local ridge. The cable parachute wrapped itself over the left wing and when this tightened it pulled the glider into an inverted spin and the glider crashed killing the pilot.

92	K-8	2543	Write-off	25.7.97	Rivar Hill	35	Serious	1700

The early solo pilot was being winch launched when, before rotating into a full climb at about 50ft, the nose was lowered as the pilot abandoned the launch. The winch driver cut the power and the glider was then seen to overcontrol the landing ahead. The brakes were not opened and the glider drifted in the crosswind, hitting a tree.

93	ASW-20	2864	Subst	5.7.97 1450	Aston Down	49	Minor	1170

A pilot on a cross-country had to land so chose Aston Down Airfield. Following another glider he aimed to land short and set up a half airbrake approach "concentrating on the view ahead". As he crossed the boundary the glider's wing caught in a 13ft high bush spinning the aircraft sideways into the ground.

94	K-21	–	Subst	–7.97	Incident Report	None	–	

The club member waited in the Landrover before going to retrieve a glider. Having approached the glider from behind he had not noticed that a glider had been parked with the wing on the ground in front of the vehicles wheels. As he drove off there was a "horrible sound of splintering glass-fibre" as the wheel broke the glider's wing.

95	K-6CR	2314	Write-off	14.7.97 1444	North Hill	65	Minor	15

During the winch launch the airbrakes were seen to come open and the pilot did not recognise that theis was causing the "strong sink". The glider was turned back to the airfield but crashed into trees before it was reached.

96	Jantar 1	–	None	–.6.97	Incident Report	46	None	139

As the aerotow started the glider's wing dropped and the pilot failed to release quickly enough to prevent a swing to the left. The pilot did not open the airbrakes or apply the wheel brake before the glider's wing hit a parked vehicle at low speed.

97	SZD Junior	4127	Subst	24.5.97 1420	Husbands Bosworth	31	Minor	24

The pilot had drifted downwind during a 5hr duration attempt when lift began to fail. He started back to the airfield but deviated to look for lift. Despite poor penetration he continued, believing he could make it straight in, but hit heavy sink. With no height to spare, he sank into a rape seed crop and substantially damaged the glider.

98	Std Jantar	–	None	–.7.97	Incident Report	46	None	

While local soaring the pilot found a sudden resistance to aileron movement. With stiffening controls the pilot made a successful precautionary landing. Investigation revealed corrosion in bushes at the aileron actuator. This is entirely enclosed in the wing and has no external parts. Being a good fit, only a slight rust build up made it tight.

99	Discus	4051	Subst	12.7.97	Husbands Bosworth	29	Minor	348

After final gliding to the airfield the pilot forgot to lower the wheel. At 30ft a warning was heard on the radio. She took her hand off the stick to move the undercarriage lever resulting in the glider, which was trimmed fully forward, nosed down rapidly. Despite grabbing the stick and pulling back the glider hit the ground very heavily.

100	Libelle 201B	3969	Minor	12.7.97 1720	Desborough	32	None	220

A competition pilot had to make a field landing so chose a disused airfield's concrete peritrack. There was a horse and rider moving along this so he lined up past them. In doing this the glider lost speed and the pilot was unable to roundout. The undercarriage collapsed in the heavy landing that resulted.

STOP PRESS - AIRSPSACE. Since my airspace article on p70 was written I have been sent the new 1/2 million Southern England map which does **not** show the **new** airway base heights on Airway A25. There is a reference to look at the **UK Air Pilot** section ENR 3-1-1-7. This is what it says:-

Daily from 0700 to 2000 the lowest vertical limits of Airway A25 between 525900N and 514831N are as follows: A. Between 5259N and 5248N base is **FL85**. B. Between 5248N and TALGA (line just south of Talgarth) base is **FL105**. C. Between TALGA and 5153N base is **FL85**. D. Between 5153N and 5148N base is FL75.

These higher levels could be marked on your new maps and the boundaries are coincident with the lines on the map.

Carr Withall, *chairman of the BGA Airspace Committee*

Robert Kronfeld article: A reader says that as much as he enjoyed the article by Wally Kahn in the last issue, p9, his memory was at fault in one detail. Orville Wright died in 1948, aged 77. "Wilbur" he adds "died of typhoid fever in 1912, aged 45. Thus the two men who took some of the greatest risks in discovering how to fly both died of natural causes".

Gliders - A to Z: Alan Self thanks readers who have sent information. Corrections to the list of names published in the December issue, p350, are as follows:- Bonaventura - Not the levitating saint, but a cartoon character. Fauconnet and Mesange - licence-built but not powered. Katydid - North American bush cricket. Zwergreiher - Little Bittern. The complete list is now on the Internet at:
http://www.netcentral.co.uk/~agself/HOME.HTM
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