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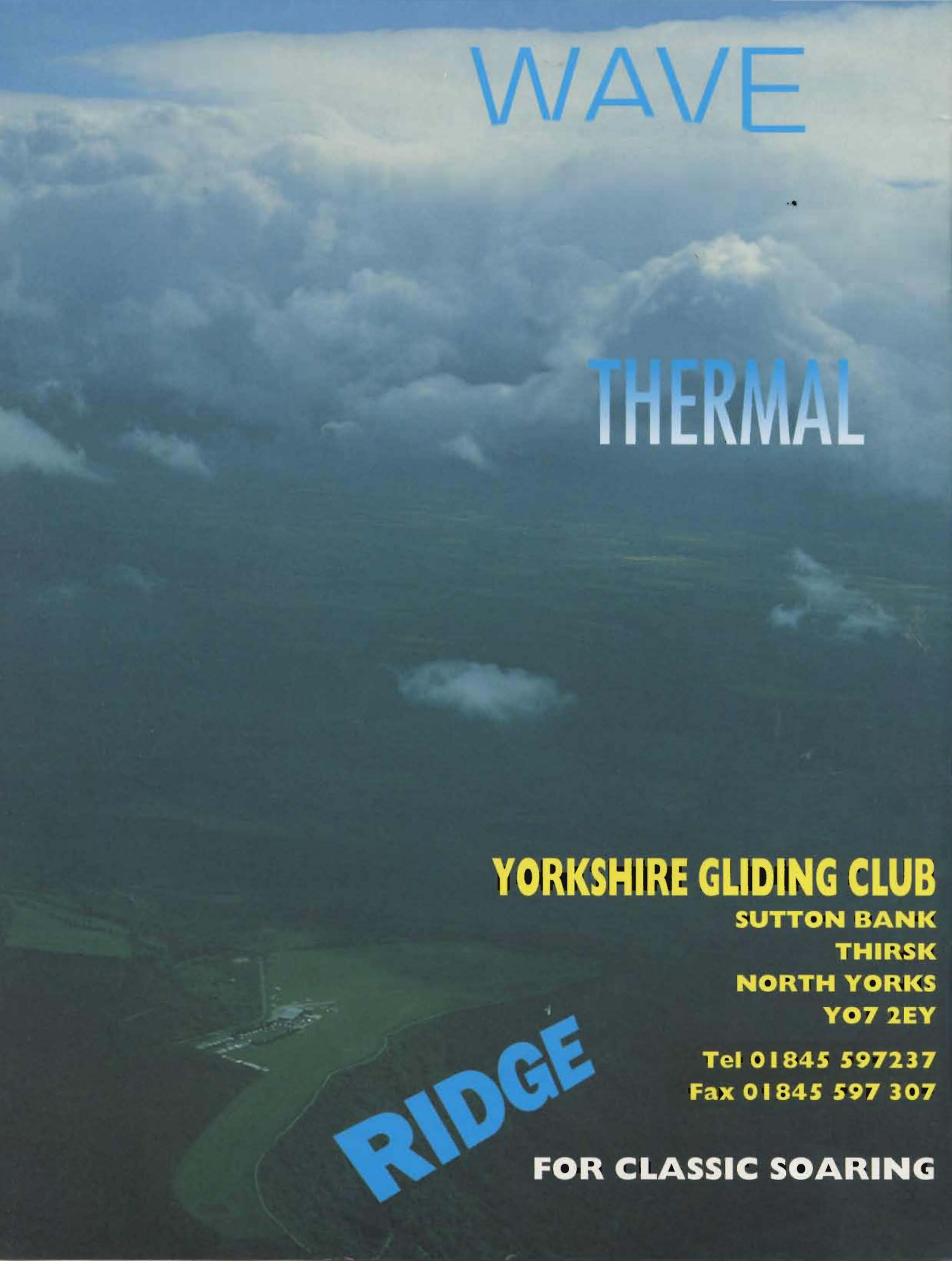
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Cover: Michael Murfin went to Gransden Lodge several times to soak up the atmosphere, had a flight to study the clouds and took loads of photographs before starting work on this 60 by 48in oil painting which was exhibited in the Piccadilly Gallery, London, before being sold. As this is the Cambridge University GC's 60th anniversary year we thought it an opportune time to use this beautiful painting on our cover. John Habgood photographed Paul Little flying his Nimbus 3DT with Chris Taylor over the River Severn.

SAILPLANE & GLIDING

69 YOUR LETTERS
A. H. G. St Pierre (reply by E. R. Smith), P. Bailey, J. Garrett, D. Wardell, T. Newport-Peace, M. Hayes, G. Tilley, C. A. P. Ellis (reply by C. O. Vernon), J. Morris

72 GLIDING AND UK AIRSPACE
C. Withall

76 BRITISH WORLD CHAMPIONS
Natasha Spreckley

80 EVOLUTION OF CUMULUS CLOUDS
T. A. M. Bradbury

84 STRATTON'S SAFARIS
I. Atherton

85 GO SOLAR!
G. Lohner

86 TAIL FEATHERS
Platypus

87 OVERSEAS NEWS

88 24TH WORLD GLIDING CHAMPIONSHIPS
M. C. Russell

94 FINAL RESULTS

97 SILENT IT IS
Ann Welch

98 BGA & GENERAL NEWS

101 CLUB FOCUS
April Considine

102 GLIDING CERTIFICATES

103 BGA ACCIDENT SUMMARY
D. Wright

104 CLUB NEWS

116 ANNUAL RECORDS

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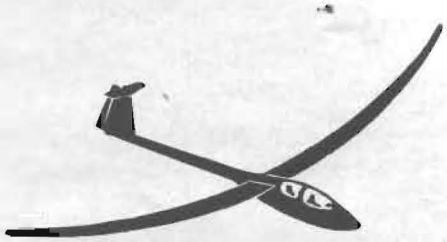
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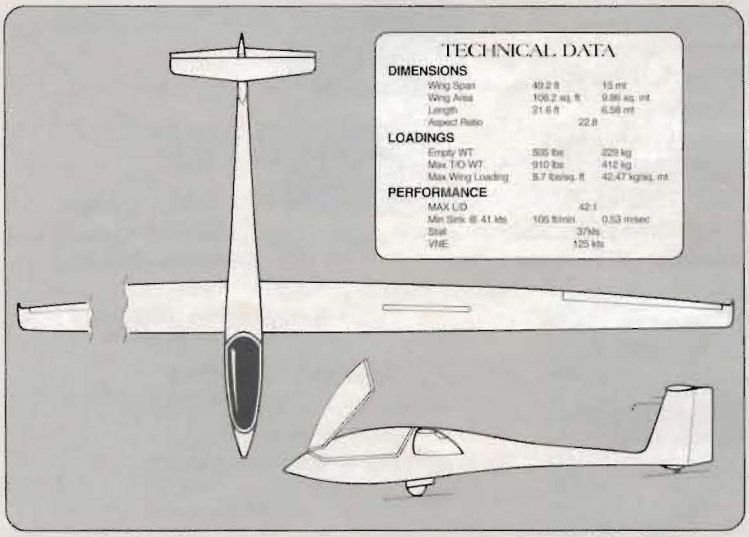
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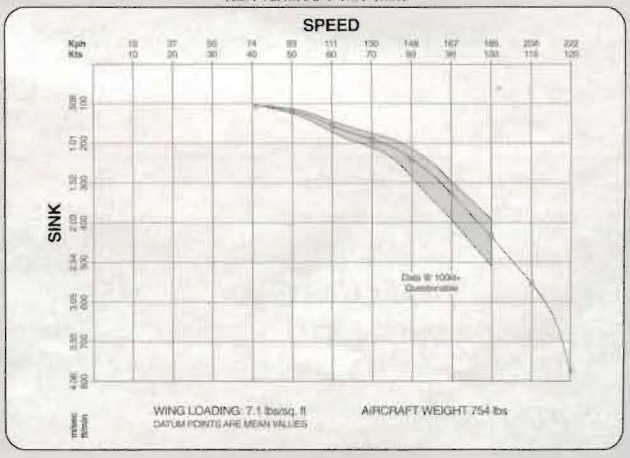
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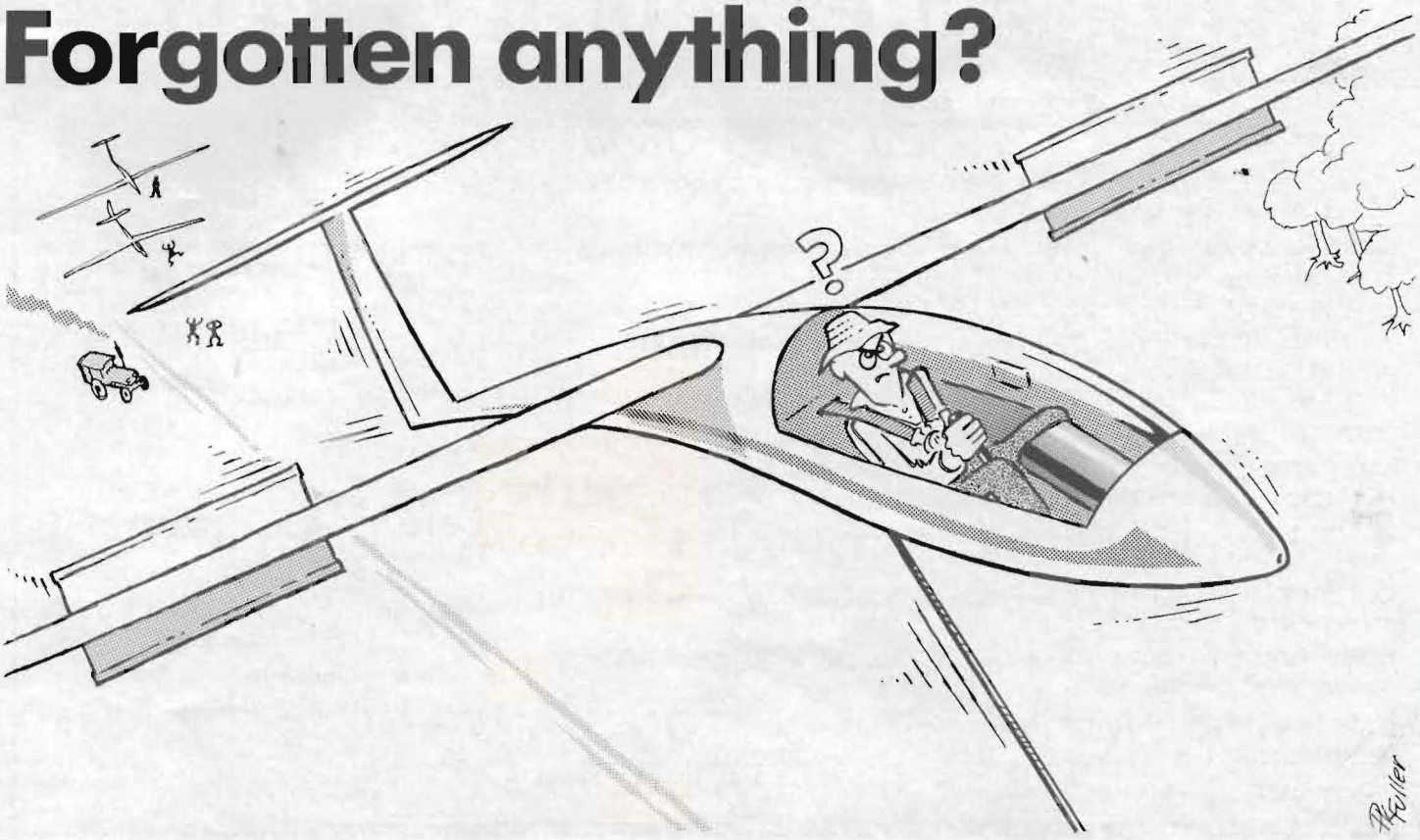
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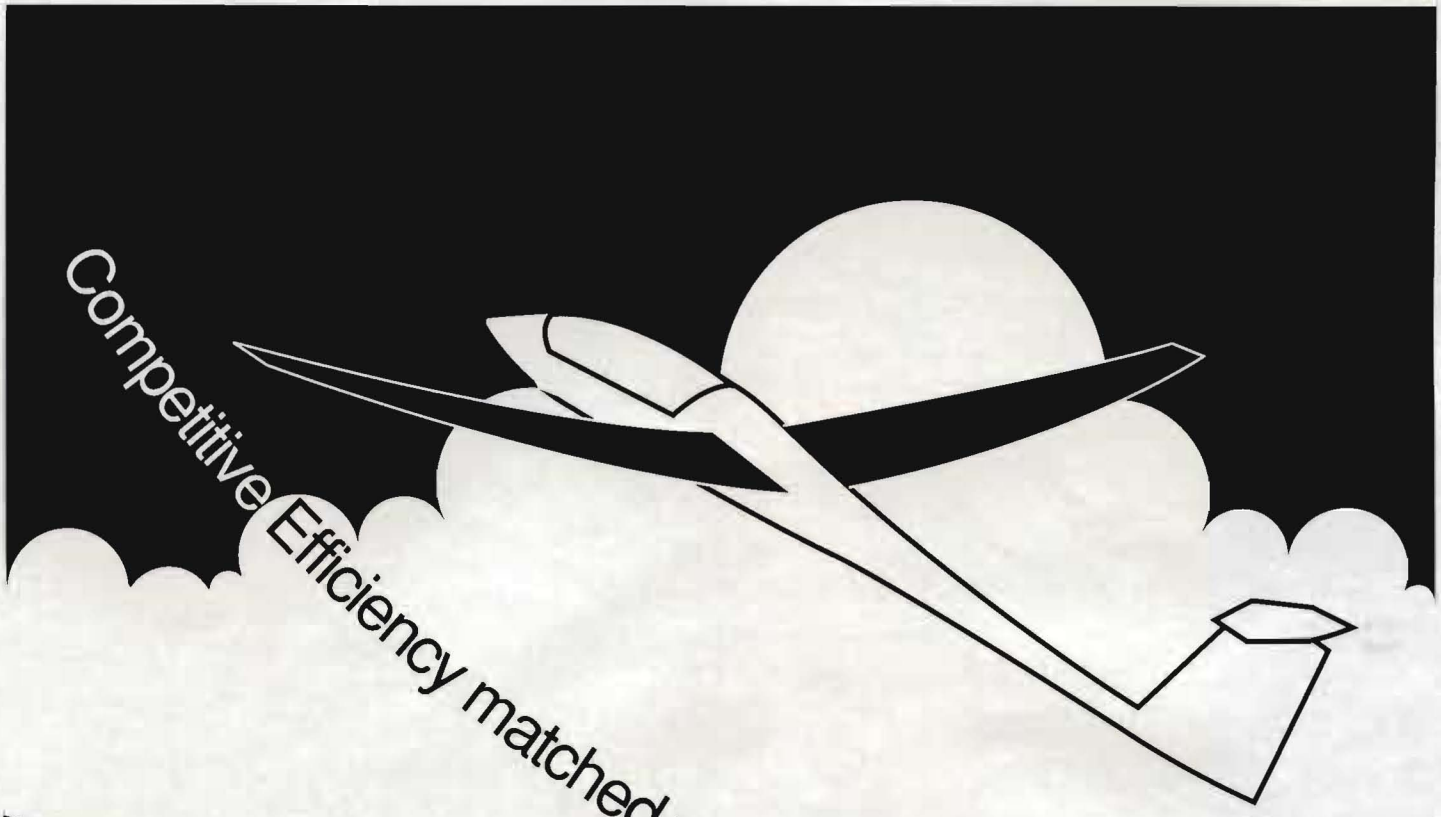
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YOUR LETTERS

GPS USERS DISADVANTAGED

Dear Editor,

There is indeed a curious anomaly in the GPS TP requirement when compared with photographic evidence. (See "Overheard on the grid" in the December issue, p341.) It would almost seem that what was intended to be a concession to the GPS user somehow became a requirement.

If a TP is rounded quite properly, but very close to the TP, two consecutive GPS logged positions could easily lie one either side of, but both outside, the zone. At 60kt, with a 10sec interval, the glider would have to be at least 500ft horizontally away from the TP to ensure that one logged position was within the zone, since the pilot has no way of knowing exactly what positions are being recorded. It is also not unknown for the odd GPS position to be missed, particularly when banking steeply. So consecutive logged points either side of the bisector, both on the far side of a line through the TP at right angles to the bisector, even when both are outside the zone, as an **alternative** to one point within the zone is logical.

Photographic evidence never did show that a TP had actually been rounded. On many occasions it can be advantageous to nip inside the zone, take a photograph without crossing the bisector and then depart on the same side. For example, when there is rain on the next track side of the zone, or when the gods smile and the wing down for a photo co-incides with a thermal in which you drift back almost down the last track but on the wrong side of the TP. You can then cut the corner to converge with the next track. Under the present rules, using GPS, you'd have to go back to the TP again.

For so long as we can use either camera or GPS as evidence, it would seem reasonable to allow "one in **or** one either side" for GPS. There's no reason why the second alternative should not be allowed for photos as well. One photo just too early, with another just too late, should be acceptable. The function of TPs is to set a task length in a specified area, not for pilots to show their ability to judge exactly when to press a camera button.

When (if?) GPS becomes mandatory it may be time to alter the TP rules to make pilots actually go round TPs without looping back (as in yacht racing). At the same time perhaps we could do away with the requirement to pass the TP within a maximum distance. Understandably this is not practicable with photographic evidence - there would be great difficulty identifying an obscure point without the TP or something near it in the frame. At present if there is rain or other adverse conditions in the TP area, the options are to risk being brought down or to wait around for a clearance. With GPS and an unlimited zone length the option of going further would to some extent mitigate the luck factor of time of arrival at the TP.

SAM ST PIERRE, *Bedale, North Yorks*

Eric Smith, BGA Competitions and Awards Committee chairman, replies: The use of GPS dataloggers in competitions to validate the successful rounding of a TP is part of an ongoing trial being carried out under the control of the Competitions Committee. As Sam describes, for 1994 the Committee decided to use the criteria of a line joining two consecutive recorded GPS fixes crossing the extended bisector as evidence of a successful rounding at a TP. This gave rise to a few problems such as Sam has highlighted and considerable feedback from organisers and competitors.

For 1995 the rules for GPS dataloggers TP evidence in UK competitions have been changed to either a line joining two consecutive recorded GPS fixes crossing the extended bisector, or a single GPS fix within the observation zone. The size of the observation zone has also been changed to a 3km radius to fall in line with the **Sporting Code**. Similar rules also apply to the use of GPS datalogger evidence at the start.

The use of GPS datalogger evidence has opened up a whole range of possible developments in competitions. Sam has suggested some and I'm sure many more will be tried.

The international rules for badge claims and GPS data are being drafted at this time and the BGA Competitions Committee is fully represented in the process.

CROSS-COUNTRY AND GPS

Dear Editor,

I would like to make the following comments about two letters in the December issue, p313.

It would appear that the most brilliant of solutions are also the most simple. I refer to Peter Wright's method of calculating cross-country distances before the flight by cutting a piece of string to the required length and using pins to determine the relevant TPs. I am probably one of many who have entered the TPs for an approximate route into the GPS only to find it might be 100 or so metres too short - a most frustrating exercise.

The second letter was by Caroline Whitbread with respect to GPS. While I do not wish to offend anyone, the resistance to change in the form of GPS seems to be absurd. GPS is a tool which for the social cross-country pilot helps in navigation and for the competing pilot helps in speed. Should the GPS break down, the worst case scenario should be more time spent in doing the retrieve due to the pilot not knowing precisely where he is (a short walk to the nearest living person or telephone should resolve that problem). GPS should not affect the choice of one's landing field and therefore should have absolutely no bearing on the safety of a cross-country flight. In a similar vein, perhaps we should also make mandatory cross-country flights without variometers just to cater for the unlikely event of a failure.

There are obvious advantages to flying without instruments such as variometers and GPS, but this is a personal choice and may assist in honing the particular pilot's skill levels. There is, however, an obvious need to fly with a blank ASI in a dual aircraft with a suitably qualified P1 as the AS1 is arguably the most important safety instrument in the aircraft (all other instrumentation in the aircraft should merely be for assistance - not taking into account cloud flying, which is not permitted in South Africa).

It is not my intention to provoke a lengthy debate about merits and demerits of GPS, data loggers etc, but merely to point out that the imposition of a compulsory flight without GPS would set an unbearable precedent. (Compulsory cross-country flights without maps, compasses, variometers etc could follow.)

Finally, I would like to thank Platypus for many a chuckle whilst reading his column.

PAUL BAILEY, *South Africa*

COMPETITION PILOTS

Dear Editor,

David Williams' concern for the dangers of low final turns, especially into unknown fields, remains valid despite Ray Payne's protestation that his altimeter was set on Dunstable's QFE, thus giving him a safety margin when field landing in Cambridgeshire. At least, that is what Ray says in his response to David's letter in the December issue, p313, and I quote "First, could I point out that I was 100ft indicated Dunstable QFE".

David Williams' concern was based on Warren Kay's excellent 15 Metre Nationals report in the October issue, Day 4, p166, where he states that Ray Payne produced a memorable barograph trace at 100ft finals into a field.

Surely the nub of the matter must be that if Ray's altimeter was in fact set to Dunstable's QFE, then may I humbly suggest, even though I am not a bold pilot but certainly an old pilot, that he sets QNH when intending to fly cross-country. This will save vital time spent doing mental arithmetic when relating to spot heights and heights above obstructions as shown on his aeronautical chart as well as being good and normally accepted aviation practice.

JOHN GARRETT, *South Petherton, Somerset*

DO YOU WANT TO BE INCLUDED?

Dear Editor,

At Enstone Eagles GC we have for several years operated a reciprocal membership scheme with two or three other clubs in the area, whereby members of one club can fly at others without having to pay daily/weekly or monthly membership fees, and I am sure similar arrangements must abound throughout the country.

However, we have decided to go one step further and offer **free** daily membership to **any** fully paid up member of **any** BGA club.

Whilst not claiming credit for a new idea (having read in the Club News of others offering the same facility), I feel it would be useful if a list of such clubs could be published. This might encourage more pilots to fly at different sites with different conditions etc. How many clubs think the same?

DAVID WARDELL, *chairman of Enstone Eagles*

(If clubs would like to send in their names we will print a list in a future issue. Ed.)

MORE ON COMP SCORING SYSTEMS

Dear Editor,

In response to Simon Redman's letter in the last issue, p9, and Platypus' October article, p258, regarding the True rather than Handicapped/Windicapped performances, while I agree that their arguments do have some merit, there is an alternative view that as ➡

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points are awarded on handicapped performance, the score sheets should show the handicapped performance. When I started in the scoring business, I sought the advice of a (then) member of the BGA Competitions Committee and he expressed this view.

Personally I don't mind which figures are used, and following Plat's article I have made this a configurable option, throwing the problem over to the director. But Simon is quite right in asking that the Comps Committee make a judgment of what figures should be used, and put it in the handbook. Then, even if the figures do not suit everyone, they would at least be consistent!

TIM NEWPORT-PEACE *(for Specialist Systems Ltd)*

SOME STONKING REPLIES

Dear Editor,

I don't know whether it will help John McCullagh in his research into the derivation of the word "stonking" (see December issue p311), but my glossary of Royal Navy slang-usage - "Jackspeak" - in addition to the usual definition of a heavy artillery or mortar barrage, also lists "stonker" as being the state of male sexual arousal!

MURRAY HAYES, *Market Rasen, Lincs*

Dear Editor,

In response to John McCullagh's inquiry about the origin of "Stonking", I have always supposed it derives from the Royal Artillery fire order.

The largest concentration of gunfire that an observation post officer could call down on a target without prior authorisation was that of the whole regiment (usually three batteries, say 24 guns). The code word for this was "Stonk", which resulted in the biggest bang available.

Perhaps it was Air OP pilots who transferred from Austers to Olympias after WW2 who also transferred the epithet for the biggest and best bang to the biggest and best thermal.

GEOFF TILLEY, *Hailsham, Sussex (ex 2nd Lt RA)*

SPINNING

Dear Editor,

Like Plat's correspondent John Anon in the last issue, p24, I too have become disenchanted with *S&G's* excessive coverage of spinning accidents and their avoidance. Since it does not appear to have reduced the statistics, perhaps we should try a different tack.

If a glider has a C of A it can be assumed that it conforms to airworthiness requirements, and if this includes OSTIV standards, stalling should not initiate a spin **unless the rudder has been misused**. If the BGA test pilots, who have the final say in these matters, are aware of wide divergences in behaviour among the numerous types on offer, I consider it a duty of the BGA to make this more widely known, so that our tiros (and club committees) do not make purchases solely upon the basis of published performance figures. I suggest test pilots' reports could be used to formulate a new categorisation appearing upon the C of A document.

The BGA may realise that if civilian clubs are to accept Mr and Mrs Joe Public into our sport the intake will inevitably include significant numbers who will not tolerate the cost and frustration involved in carrying out the spinning exercises now being advocated.

Training must include experience that will enable the most simple soul to recognise an incipient spin and its treatment, but I question the need in time and money involved before every pupil is happy in a fully developed spin. This should be necessary only if he intends to fly those gliders in which the C of A tells him (as I have suggested) are likely to put him into such a situation.

There is another aspect of spinning that has never been aired: if this occurs near the ground the glider will impact at a lower speed if still spinning than if it is accelerating in the recovery attitude (I find it difficult to accept the figure of 60kt for the vertical speed when spinning as quoted in recent *S&G* articles).

This raises the question;- Can we construct gliders with cockpits that can protect the pilot from fatal injury if it hits the ground while still spinning?

CHARLES ELLIS, *Ilford, Essex*

Cedric Vernon, a member of the OSTIV Sailplane Development Panel, replies:

Regarding the idea of stronger cockpits, Charles and others will be interested to know that during the last few years a vast amount of work has been done in Germany both on the analysis of accident statistics and on crash tests on cockpit structures, by TUV Rheinland and Fachhochschule Aachen, under contract from the German Ministry of Transport. Design work on strengthened cockpits has also been done by at least one manufacturer.

The results of all this are being intensively studied by the Sailplane Development Panel with a view to raising the OSTIV crash-case standards, and it is anticipated that decisions on these will be taken in the relatively near future.

One interesting and important result of the above tests was that the extreme nose of the cockpit should not be as strong as the part the pilot sits in, but should act as a crumple zone and absorb much of the energy of the crash as possible, thereby reducing both the likelihood of a bounce and second impact and the forces on the pilot, particularly the spine.

SACKVILLE

Dear Editor,

I was pleased to see such a favourable response by Penguin in the last issue, p12, to Tim Wilkinson's article on our club, Sackville, in the December *S&G*, p334, but rather disappointed that he had such difficulty in finding us.

Perhaps it may aid him in future sleuthing if he refers to the CAA half million map where he will find all clubs with an exemption for wire launching clearly marked including Sackville Farm. We welcome any visitors, by road or air, at any time - and the tea and coffere are free!

JOHN MORRIS, *ex CFI of Sackville GC*

(Incidentally Tim tells us the site isn't on set aside land as Penguin presumed. You aren't allowed to use set aside for any money raising purpose, not that the club makes a profit.)

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GLIDING AND UK AIRSPACE

Carr Withall, chairman of the BGA Airspace Committee, updates the airspace position

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).

The airspace is effectively closed to gliders, since it is subject to permanent Instrument Flight Rules, whatever the weather, and there are requirements relating to filing of flight plans, standard of equipment, pilot qualifications and adherence to ATC clearances. Gliders cannot comply with these. However, specified airways may be crossed by gliders under the provisions of Rule 21(2) which stipulates:

1. The crossing must be carried out in the most expeditious manner and, as far as is practicable, at right angles to the airway centreline.
2. The crossing must be carried out in VMC, by day.

The **UK Air Pilot** contains a map showing the crossable airways and maximum permitted crossing levels. In summary, these are:
Crossable below FL245: A25, B2, B3 (NW of Manchester), B226, R1, R14, R39.
Crossable below FL95: A1, A2.
Crossable below FL55: B3 (NW of Luton), R8 (west of Midhurst)
Airway G1 is crossable below FL195 to the west of A25. To the east of A25, it is crossable below FL165 and FL105 as denoted by the base of the Cotswold CTA.
Exceptionally, gliders may fly in other Class A airspace by virtue of a Letter of Agreement or other pre-arranged permission.

Class B Controlled Airspace. The entire airspace over the UK above FL245, comprising the **Upper Airspace CTA** and the **Hebrides Upper Control Area (UTA)**, is Class B Airspace. Gliders are permitted to fly in this airspace without restriction. Since the upper airspace contains Upper Air Routes and Military training Areas, glider pilots intending to fly at high altitude would be well advised to acquaint themselves with these areas, since jet aircraft speeds are much greater than at lower altitudes, and their pilots may not be aware of the presence of gliders.

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, there are effectively two types of Class D airspace for glider pilots – those areas in which they need ATC clearance to fly and those in which they may fly without ATC clearance subject to maintaining VMC. Class D airspace is subject to Rule 27 which stipulates that any pilot wishing to enter it must:

1. Contact the ATC unit and pass details of the flight.
2. Obtain entry clearance.
3. Remain on the ATC frequency whilst in that airspace.
4. Comply with ATC instructions.

The above rules apply to gliders in the following Areas:

Belfast CTR
Belfast City CTR/CTA
Birmingham CTR/CTA
Bristol CTR/CTA
Brize Norton CTR
Cardiff CTR/CTA
Edinburgh CTR
Glasgow CTR
Liverpool CTR
London Gatwick CTR/CTA
London Stansted CTR/CTA
London City CTR
Luton CTR/CTA
Manchester CTR/CTA

Gliders are exempted from the provisions of Rule 27 and may fly in the following airspace without ATC clearance in VMC:

Aberdeen CTR/CTA
Bournemouth CTR
East Midlands CTR/CTA
Leeds/Bradford CTR/CTA
Lyneham CTR/CTA
Newcastle CTR/CTA
Southampton CTR/CTA
Southend CTR
Teesside CTR/CTA
Scottish TMA
Solent CTA

Guidelines for the use of this airspace by gliders in VMC have been drawn up by the BGA and approved by NATS. These are set out at the end of this article.

Class E Controlled Airspace. The Belfast TMA is 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). To comply with VMC in order to cross Class A airways in accordance with Rule 21(2), or to use the exemption described above to fly in certain Class D airspace, a glider shall remain at least 1000ft vertically, and at least 1500m horizontally from cloud in a flight visibility of at least 8km. In Class E airspace, the visibility requirement becomes 5km when below FL100.

Local Agreements. A number of local agreements exist which modify the effects of some of the airspace listed above. Letters of Agreement (LoAs) between a gliding club and a nearby airport can make airspace either more or less restrictive than described above, 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. (See *S&G*, June 1987, p141.)

Brize Norton – The LoA concerning glider transits of Brize Norton CTR has been discontinued. HQ Strike Command have assured us that requests from glider pilots for transits of the zone will continue to be accommodated, subject to operational requirements. At weekends the chances of a glider pilot obtaining transit clearance are good, though it may not always be possible midweek.

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.

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" FIR (Flight Information Region), 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.

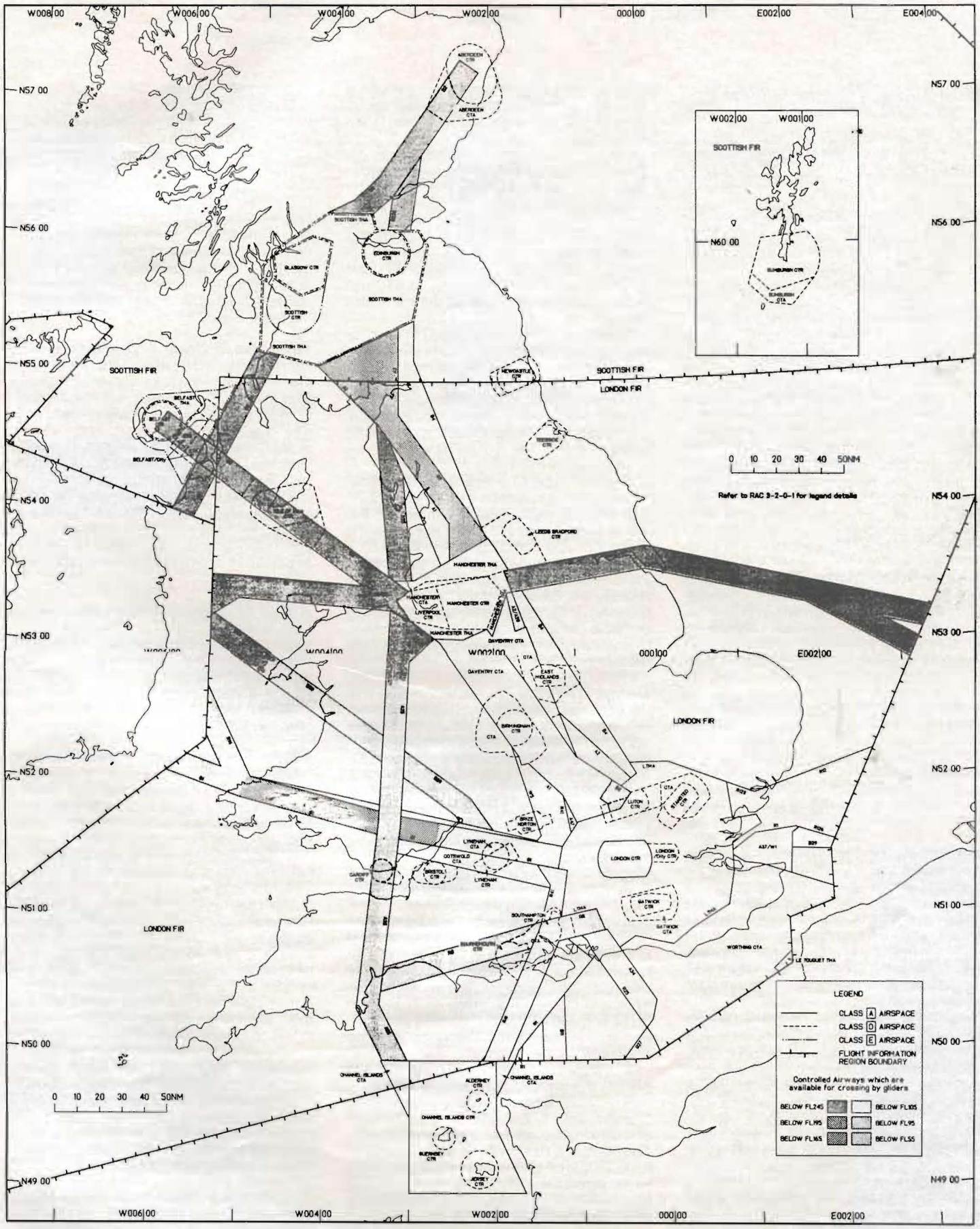
Aerodrome Traffic Zone (ATZ). A glider pilot wishing to enter an ATZ must first call the airfield on the notified radio frequency. An ATZ is only active during the notified hours of operation of the airfield. Many military airfields are notified as permanently active though in reality this is not the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

Controlled areas (Airways) available for crossing by gliders

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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 the above 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 2½nm 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 many 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 Highgrove House, Glos, applies only to helicopters and microlights.

R313 at Scampton exists for the purpose of protecting the Red Arrows' display training – not normally more than two periods of 20-30min/day. 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.

The Highlands Restricted Area is a large piece of airspace over NW Scotland used for military low flying and weapons training, up to 5000ft. It is outside of the area of current glider operations, and access to it is set out in the **UK Air Pilot.**

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 the 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 in one area simultaneously. Furthermore high performance military aircraft may be encountered manoeuvring outside of 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** is available, most notably for Salisbury Plain. (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 extensively used for military paratroop training. Brize Radar (134.3MHz) will confirm activity status.

There are two new danger areas.

1. EG DO15 Bovington just north of Bovington Camp, Dorset. Hours 0800-1600 Monday to Friday or when notified. Height up to 3600ft agl, 1km diameter. 2. EG D508 Risedale N 5508. 74 W00210.03 to the east of Spadeadam AIAA, diameter 2.4km, height 4100ft amsl. Monday to Friday 0800-1600. Newcastle ATC will provide pre flight information on 0191 0260966 ex 3251.

Bedford airfield has been closed.

Other Hazardous Areas. Other types of hazard include **free fall parachute sites.** The airspace is contained in a circle radius 1½ 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 and electronic variometers. 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).

All gliding sites are notified to MoD, which affords them the status of a Military Avoidance Zone, radius 1½nm.

The Low Level Civil Aviation Notification Procedure (CANP) enables civilian aircraft operators to give advance warning to MoD of any activities that could conflict with low flying military aircraft. In the case of winch launching permission this is done automatically, but clubs planning to make use of a temporary aerotow or motor glider site, especially midweek, may wish to take advantage of CANP.

Radar Advisory Service Area. A RASA is airspace in which a pilot may, if he so chooses, avail himself 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 Airmiss System. An airmiss may be filed by a pilot who considers his flight to have been endangered by the proximity of another aircraft. All airmisses are investigated by the

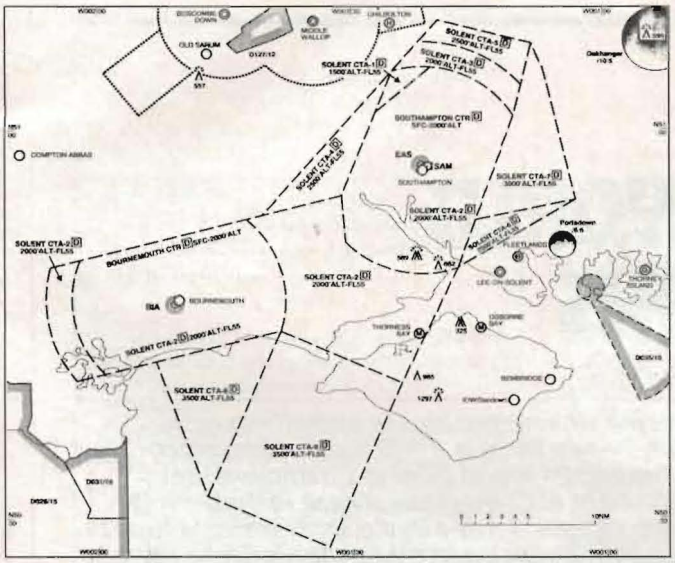


Fig 1. Revision to Bournemouth and Southampton controlled airspace.

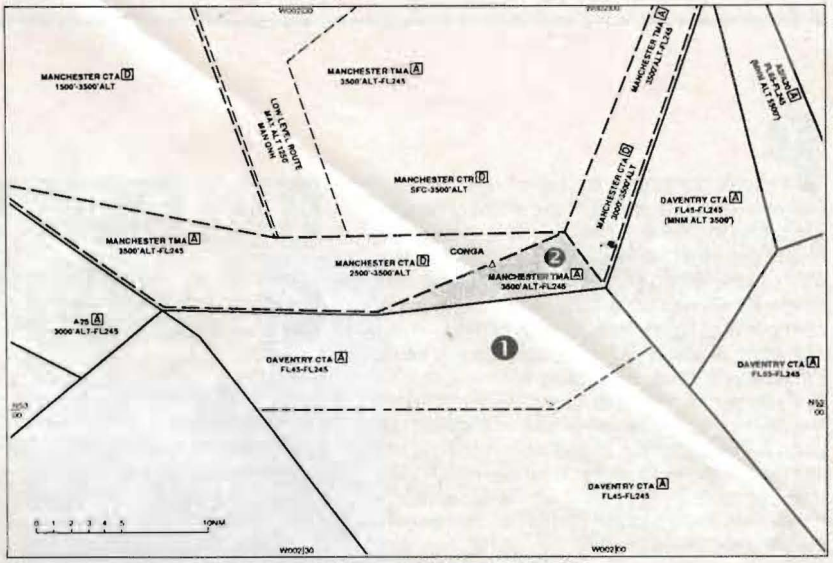


Fig 2. Revisions to the Daventry CTA and Manchester TMA.

Joint Airmiss 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 airmiss 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. Either call the nearest ATS unit or Freephone 2230 (on Monday for a weekend incident) to speak to AIS (MIL) at LATCC West Drayton, who will start trace action at once and tell the Joint Airmiss 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 0895 76-121, 122 or 125, or fax 0895 76124.

Code of Conduct for Glider Flights Through Class D Airspace.

1. Glider pilots should plan to route their flights through Class D airspace only when it is clear there are significant advantages from so doing, such as better soaring weather and shorter track distance.
2. Flights should be arranged so that the minimum amount of time is spent in Class D airspace. Pilots should avoid circling on or close to the runway extended centre lines, since this may interfere with aircraft carrying out instrument approaches or departures.
3. 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, and other aircraft, including commercial jets, may not have been warned of a glider's presence.
4. Pilots of gliders equipped with suitable radio should listen on the appropriate frequency for information on other traffic in their vicinity.
5. Competition tasks should only be set through Class D airspace after consultation with the appropriate ATC unit. Where a task leg has to be set close to but not through 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: Class D airspace not subject to glider VMC exemptions.
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 or B controlled airspace (except by special arrangement) or into Purple Airspace.

Notams. The NOTAM system has changed significantly 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 **Air Pilot.**Recently 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 monthly *GASIL* summary covers minor changes also.
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.
UK Air Pilot Supplements (green pages - obtainable separately from whole **Air Pilot**) give full details of Temporary Restricted Airspace arranged well in advance for (*eg*) major air displays plus the dates but not the times of Red Arrows' displays.

Full details of Royal Flights are to be found in **Royal Flights NOTAMs.** A daily update of Royal Flights and Temporary Restricted Airspace is obtainable on the Freephone service (0500-354802).

All above are available from CAA Printing and Publication Services (0242-235151) except Royal Flight NOTAMS from AIS Heathrow (081-745-3464).

Airspace Changes. The following changes have occurred since the publication of the article in the April 1994 issue, p66.
Bournemouth and Southampton controlled airspace redesigned, see Fig 1.
London TMA south-east of Stansted, fillet of airspace, base raised to 3500ft.
Worthing control area revised, giving a base of FL65 in east Kent.
Manchester CTA. A large area south of Manchester base raised to FL45 from 3500ft. See Fig 2.
All these changes should be on the new 1/2 million map.

Maps. The publication dates for the new 1/2 million maps are; Southern England and Wales, March; Northern England and Northern Ireland was November 1994; Scottish, January 1995.

Again may I remind pilots that using the low level 1/2 million maps can very easily lead to the belief that most airspace has disappeared. **It has not** and I do not recommend their use for cross-countries.

Airspace Infringements. 1994 saw an unusual number, some genuinely lost, but many quite blatant.

If a pilot is lost there is a service that he/she can call on at any time. It is VHF AUTO TRIANGULATION SERVICE on 121.5, the distress frequency. This service can very quickly find an aircraft as long as it is about 3000ft or 2000ft anywhere near the London TMA. It covers from south of airway B1, Manchester to the east coast and east of airway A25, North Wales to Devon and down to the south coast. In 1994 they received 89 genuine calls and 1666 practice calls, which they welcome. If in doubt that you may be lost in controlled airspace they are there to help and can locate you almost instantly on 121.5. **We must all obey the rules or we may well lose freedoms that we presently enjoy.**

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**, Edition 13, July 1992 reflects the current legislation, but previous editions are now 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).

BRITISH WORLD CHAMPIONS

Competing in the World Gliding Championships is something most pilots can only dream about. To win them is the highest achievement attainable in gliding. Over the last 24 World Gliding Championships Britain has produced its fair share of Champions. These include Philip Wills, George Lee, Brian Spreckley and Andy Davis. Over the next four issues, Natasha Spreckley writes about these pilots respectively, revealing their philosophy and tactics about competition flying and the contribution each individual has made to their sport. And we are delighted to have persuaded Nick Goodhart, the 1956 Two-Seater Champion (with the late Frank Foster) flying an Eagle, to end with his recollections.

Philip Wills was the Champion of British gliding for over 40 years. From the moment he flew a Zögling for the first time in 1933 he became one of the most dedicated and passionate pioneers of the British gliding movement. A remarkable man, he was not merely concerned with his own personal gratification from gliding; Philip was concerned with every chain of gliding being - from pilot to glider manufacturer.

Philip began gliding at a time when motorless flight was practically unrealised in England. (A short burst of interest in gliding in 1922 did not lead to the gliding movement proper until 1930.) It was a revolutionary period for the sport, where conflicting views on the role and purpose of gliding were still being established.

At that time, the chairman of the BGA and his colleagues thought that gliding would develop as a cheap introduction to "real" powered flying. Fortunately, there were members of one or two large gliding clubs who had quite different horizons. They believed gliding should become a sport in its own right, with immensely wider possibilities and fascinations.

In 1934, a general meeting was called. Chaired by Philip, the BGA was restructured in such a way as to develop and encourage more advanced gliding in the clubs. At this meeting, under the guidance and direction of Philip, the ground rules and *raison d'etre* of the British gliding movement were established.

To put these new principles into practice, Philip put immense effort into setting up a National Gliding Centre at Sutton Bank. Here he hoped to encourage more cross-country and altitude flying, essential to the progress of British gliding. But Philip's commitment to establishing the British gliding movement did not stop at gliding *per se*. He believed that the only way to put the British gliding movement on its feet was to have its own reliable source of British made gliders. This led to his active involvement with Slingsby Sailplanes Ltd.

Philip asked the wealthy landowner Jack Shaw to invest in a factory at Kirkbymoorside. On Jack's death in 1955, when the factory was in danger of a change of ownership, Philip took it upon himself to get the capital together to buy his share. This he did with the support of gliding clubs and bodies such as the Air League, the Royal Aero Club and the Kemsley Flying Trust.

In between his active involvement with the BGA, setting up a soaring centre and organising the future of the British gliding manufacturing industry, Philip was making gliding history. On March 18,1934, 41 launches after his first solo glider flight less than a year before, Philip flew 55 miles from Dunstable to Latchingdon in a Professor. He was the second pilot to obtain a Silver badge. (Eric Collins was the first. Eric promised to be an exceptional pilot, but tragically died in 1935, while doing aerobatics.) Philip was exceeding all the limitations and expectations people had of gliding in this country. But then, British gliding had a lot of catching up to do - flights of up to 300km had already been achieved in Germany and by 1935 four German pilots had completed 500km tasks.

Aware of the progress being made abroad, two German pilots were invited to Britain to demonstrate their flying capabilities. Robert Kronfeld and Carli Magersuppe. Kronfeld, who had flown a 164km in 1930, would have been a strong influence on Philip. Germany was a further influence on him when he competed as part of the British team in the 1937 World Gliding Championships at Wasserkuppe.



The 1952 World Champion relaxes with his trusty pipe!

"We did not do very well, but we learned how important, as a means of measuring pilot ability, was a marking system. We came back just in time to go to our own Nationals at Camphill, and the day before ran up a marking system of our own...The result was 43 cross-country flights with an aggregate of 1489 miles: an unbelievable advance on anything which had happened before," Philip wrote in his book **Free As a Bird**, p11.

The British gliding movement was now on a roll. Long distance cross-country flights were being achieved and a competitive structure to gliding events had been introduced. It was a terrible interruption to the proceedings then when Britain declared war on Germany. Just when it was all going so well, gliding was banned. (Philip did in fact fly once during the ban. He took part in a special duty flight to test whether the British radar system, Radio Direction Finding (RDF), could detect gliders. He was towed from Christchurch in his Minimoa to 10 000ft, 20 miles from the French coast. He then flew back to England. The flights were successful, as the RDF detected him in flight and confidence was restored that the enemy could not carry out a successful attack on Britain with troop carrying gliders.)

It wasn't until 1946 that gliding resumed and a happy time it was, no more so than for Philip.

Roarsby-Detling,120m, April 21, 1946

In an account of this flight in the 1946 issue of *The Sailplane*, Philip wrote: "This was a flight of rather small general interest, but to the performer a great joy, being his first cross-country in a sailplane for over six and a half years...once more at last the sky looked properly furnished with circling sailplanes hanging beneath each cumulus cloud."

This long absence from the sport didn't seem to have a devastating affect on Philip's gliding performance. Only two years later he came 10th in his second international competition at Samedan, Switzerland and four years after that he became World Champion.

It was a victory that proved Britain was capable of producing World Class pilots who could compete at international level and win. Philip proved this, not just to the other competing countries but, most importantly, to the British pilots as well.

"Looking back over the formative pre-war decade, I think now that our collective attitude (not any one individual person's attitude, but our collective one) of a kind of determined mediocrity was due possibly to a kind of mass inferiority complex induced by the tremendous lead that the Germans had over us and all the rest of the

GRIM TIMES

The following letter from the Air Ministry, dated January 5, 1940, has been received by the secretary of the BGA:

Sir,

I am directed to refer to the semi-official letter, addressed to you by the Director-General of Civil Aviation on September 26, 1939, on the subject of gliding.

In this matter it has been brought to the notice of the Department that some gliding Clubs are under the impression that certain forms of gliding are permissible. I am accordingly to inform you that the prohibition of flying or attempting to fly under the Air Navigation (Restriction of Time of War) Order, 1939, covers all forms of gliding, and that it is has not been found practicable to grant a dispensation for gliding of any kindred activity. This decision applies to the form of gliding known as "ground hopping".

I am to ask you that you will be good enough to convey this information to the Gliding Clubs and to say that, after careful and sympathetic review of all aspects of the question, the, Department regrets that the National requirements leave no alternative to a cessation of the activities of the Gliding Clubs, other than those of a social nature.

I am Sir,

Your obedient Servant,

Director of Home Civil Aviation

Published in The Sailplane and Glider, January/February 1940.

world. This induced, I suggest, the classic reaction of 'Oh well, we don't really want to be good, we only want to Have Fun'. Now we have climbed out of it, and it is up to us to ensure that what we have reached is not a peak, but a plateau."

This quote was taken from Philip's article in the 1952 autumn issue of S&G "The 1952 World Championships", p106.

Philip winning the Worlds meant that for the first time British pilots had a British role model.



The German soaring expert Carli Magersuppe, who was invited to Britain to show us how it's done, leaning against a Professor while talking to Fred Slingsby's wife, Fluff.

YEAR	COMPETITION	GLIDER	POS
1933	**April 9** *(Second and third flights)*	**Prüfling**	**A&B Certs**
	June 17(Fourth flight)	**Prufling**	**C Cert**
1935	**Sutton Bank Competitions**	**Hjordis**	
	Arncliffe Hall, 24 mile O/R,		*1*
	Altitude--5400ft		*1*
1936	**British distance record**		
	(104 miles), Dunstable, Pakefeld (near Lowestoft).		
1937	**International Gliding Competition - Wasserkuppe**		**?**
	National Gliding Competitions	**HJordls**	**1**
	Bradwell Edge, Derbyshire		
1938	**Became the third Gold badge pilot in the World.**		
	National Gliding Contest, Dunstable	**Minimoa**	**4**
1939	**National Gliding Contest, Dunstable**	**Minimoa**	**2**
	Also won an award for best height during the year (14 170ft).		
1946	**Height record - 5 247ft**	**Weihe**	
	Long Mynd, June 23		
1947	**National Gliding Contests, Bramcote, Northants**	**?**	**1**
1948	**World Championships - Samedan, Switzerland**	**Gull 4**	**10**
	At these Championships, Philip broke the British speed record with a triangle at 47km/h.		
1949	**National Gliding Contest, Camphill ~**	**Weihe**	**1**
	British distance record - 232.6 miles		
	Hatfield Aerodrome Herts-Gerrans, Cornwall		
1950	**National Gliding Contest, Camphill**	**Weihe**	**1**
	World Gliding Championships, Orebro, Swedon	**Weihe**	**27**
1951	**National Gliding Championships**	**Weihe**	**4**
1952	**World Gliding Championships, Madrid, Spain**	**Sky 34**	**1**
1953	**National Gliding Championships, Camphill**	**Sky**	**3**
1954	**World Championships, Camphill**	**Sky**	**2**
1955	**National Gliding Championships, Lasham**	**Sky**	**1**
1956	**World Championships, St Yan, France**	**Skylark 3**	**10**
1957	**National Gliding Championships, Lasham**	**Skylark 3**	**5**
1958	**World Championships, Leszno, Poland**	**Skylark 3**	**13**
	Borlänge, Standard Class		
1960	**Became second British pilot with all 3 Diamonds**		
	National Gliding Week	**Skylark 3F**	**1**
	Cornish Gliding and Flying Club		
	US National Championships, Boulder, Colorado	**Skylark 3F**	**4**
1961	**National Gliding Championships, Lasham**	**Skylark 3F**	**3**
1962	**National Gliding Championships, Aston Down**	**Skylark 4**	**3**
1963	**National Gliding Championships, Lasham**	**Skylark 4**	**23**
	The Northerns	**Skylark 4**	**1**
1964	**National Gliding Championships, Lasham**	**Skylark 4**	**23**
1966	**National Gliding Championships,**	**Dart 17R**	**7**
1967	**National Gliding Championships**	**Dart 17R**	**32**

The above results do not include all the competetions Philip competed in. They, however, indicate Philip's performance over the years. All results taken from S&G since 1930.

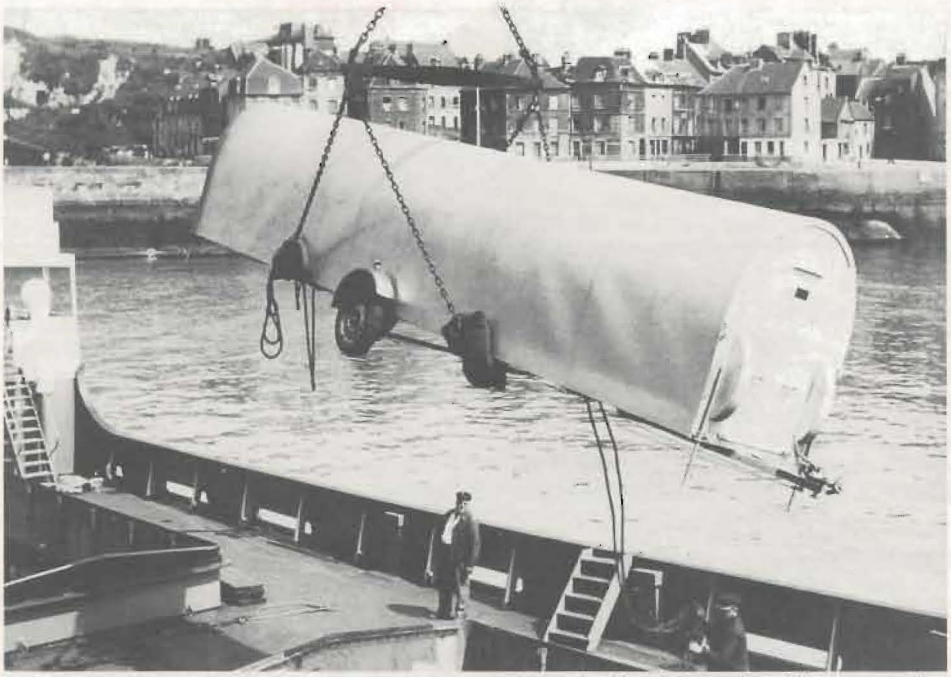
From this time, competition flying would never be the same again. Nick Goodhart recalls in *Flight International*, February 4, 1978, that it was probably from about that time onwards that the post-war crop of glider pilots began to assert themselves and competition flying began to move inexorably towards closed-circuit racing."

But for Philip competition flying was more than just about racing. Indeed, he was not in favour of the type of competition that was to develop years later - speed flying over a set course. He described himself in **Free As A Bird**, p123, as a Romantic and that "it was undoubtedly the romantic appeal of real flight which captivated me, and which has remained my main pleasure through the years."

It was probably the pleasure of flight, that led to his setting up Competition Enterprise years later in 1974. Here, Romantic pilots like himself could engage in free distance flights, which he confessed are "a gliding Romantic's favourite competition." (**Free As A Bird**, p124). For Philip, competition flying was "the focal experience of the whole sport of gliding. It brings together at one time almost all the many strands of interest which make our art the most fascinating and absorbing adventure of the twentieth century.

"Competitions are won by the most skilled pilot flying the best machine, using the best equipment, possessed of a faultless ground crew, and added to all a tantalising spice of good luck. Only by flying in competitions can a comparison be made of this extraordinary synthesis of technical skill, human personalities, and mechanical perfection." (**Where No Birds Fly**, p85.)

Possessing a fine balance of all of the above qualities, Philip won numerous competitions world-wide. He was indeed a very skilled pilot ➡



Shipping the Weihe out to the 1950 World Championships in Sweden.

but most of all it seems he was a very modest one. He was reluctant to accept praise for his successes, particularly on winning the Worlds in 1952. This he believed to be a success of the whole British team. He was keen to promote this view, as his main concern was not of his individual success but of the success of the British gliding movement as a whole.

"It is probably possible for a single pilot with adequate backing to produce an isolated triumph which, in itself, proves nothing about the soundness or otherwise of his home gliding movement. But when a whole team of four pilots finishes lst, 3rd, 9th and 11th such a result can spring only from a home movement thoroughly virile and sound in every way. The best flowers only grow in the right soil." (Also from Philip's 1952 article in *S&G*.)

This exposes Philip's true dedication to providing for and supporting the British gliding movement. Competition and recreational flying was the only time he allowed himself to indulge in the selfish pleasures of the sport. But even then he recognised that his personal experience was a product of the collective whole.

In addition to directing the course of gliding history in terms of competition flying, Philip was instrumental in organising and initiating new structures that still exist today. The most important of which has to be his part in changing the whole air traffic control planning of the military and civil aviation authorities.

In the 1960s Philip, along with Nick Goodhart (author of **The Probability of Collision Between A Commercial Aircraft and A Glider**), were engaged in a lengthy battle with the National Air Traffic Control Services to try and preserve some airspace for gliders. As gliding had been banned during the war it had to start from scratch, establishing itself in 1946. Because of this, the military and commercial aviation authorities did not take gliding or any other sporting flying into account when they were mapping out controlled airspace across the British Isles. The crisis came to a head in 1967 when Lyneham proposed a glider exclusion zone of up to 300 square miles around the airfield.

To try and put a stop to this, Philip and Nick instigated a huge meeting involving two Ministers, the Chief of the Air Staff, the Director of Air Traffic Control Services and the entire hierarchy of commercial aviation. It was at this meeting that they changed the whole course of the implementation of restrictive airspace imposed by the military and commercial aviation authorities. Unfortunately, they could not stop the restrictions planned for Lyneham, but it was probably their tenacity that prevented there being any more Lynehams to date.

BGA chairman for 19 years and involved in its council for over 30, there is probably nothing Philip did not achieve for the establishment and success of the British gliding movement including playing a large part in the development of *S&G*. His name, enthusiasm and devotion to the sport can be associated with gliding from its infant years right through to the early 1970s. He was a man whose life is a whole list of accomplishments, who worked hard to make the British gliding movement a success because he believed "life will only remain worth living, if the kind of thing we do remains available to human beings" - (**Free As A Bird**, p77), and whose philosophy on life should be an inspiration to us all. "Man must go on exploring or he is no longer man" - **Where No Birds Fly, p127.**

My only regret in writing this article, is not being able to meet Phillip Wills. **Where No Birds Fly, Free As A Bird** and **On Being A Bird** were clearly written by a very genuine and remarkable man passionate about his sport. Each book gives an enjoyable and personal account of gliding. Read them If you haven't already. My thanks to Chris Wills who was an endless source of information on his father's gliding career.

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EVOLUTION OF CUMULUS CLOUDS

To get the best out of a promising sky it is vital to understand just how clouds are formed

Cumuli evolve into many different shapes depending on the stability of the atmosphere, the distribution of moisture, the variation of wind velocity at different levels and how the air is heated. This article describes some of the patterns which appear.

Basic thermals

Fig 1 illustrates five stages in an idealised thermal. The initial stage (A) consists of a shallow layer of air resting on a flat area about the size of an airfield which has been warmed by sunshine. The air in contact with the ground takes up heat and becomes less dense. At first the heat is distributed upwards by small scale turbulence.

This process can sometimes be seen as a shimmer in the air which makes distant objects blurred, especially when viewed through binoculars. The shimmer is due to variations in refraction of light where different densities of air lie along the line of sight. The effect is common over tropical deserts but may also be seen over England on hot days.

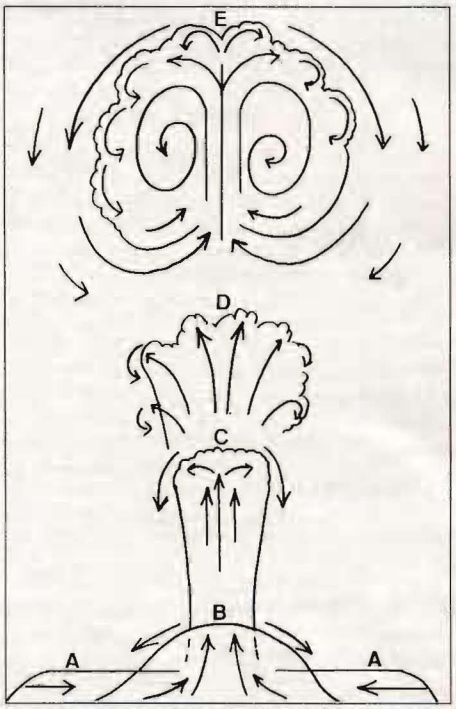


Fig 1. Stages in the development of a thermal bubble.

Small scale turbulence is inadequate to distribute the heat fast enough so eventually a large mass of air breaks away from the surface. The whole mass of air cannot rise simultaneously; the drag would be enormous. Instead a part rises into a dome (B). As the heated dome rises the air above it is pushed aside while near the surface a horizontal inflow starts. On a calm day this inflow may be shown by windsocks or smoke trails.

A broad dome of rising air still produces too much drag so the lift becomes concentrated in a relatively narrow column (C) and (D) which soon develops its own circulation (E). This circulation is often called a thermal bubble.



Photo A. A heavy cu consisting of several bubbles.

Circulation in a thermal bubble

As the thermal rises the top and sides are slowed down by the drag from its passage through the environment. The central core is protected and usually rises at twice the speed of the summit.

The difference in ascent speeds sets up a circulation rather like a vortex ring. Fig 2 illustrates the direction of flow round the side of the rising bubble. Underneath the bubble there is an inflow with some of the air from outside dragged into the circulation.

Below: Photo B. A thermal bubble growing out of lesser cu.





Photo C. Massive cumulus congestus formed from numerous large bubbles.



Above: Photo D. Tall and narrow turrets of short lived thermals. Below: Photo E. Narrow turrets tilted by wind shear when the lift ceases.



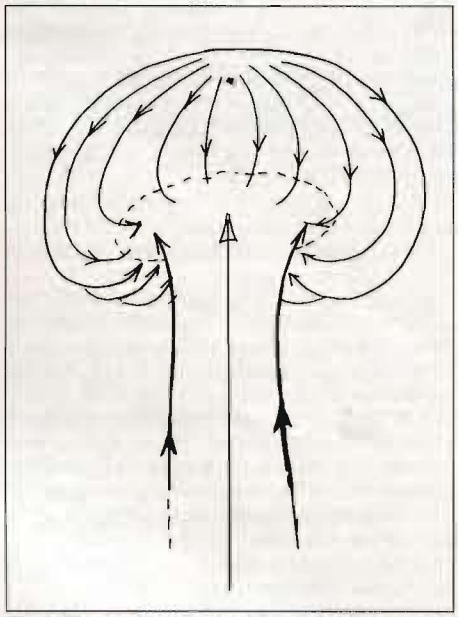


Fig 2. Flow pattern round the outside of a very powerful thermal bubble.

Size of thermal bubbles

In recent years people have noticed that clouds have no natural scale length. Clouds and their constituent parts come in many sizes; clouds (like coastlines and mountains) can be represented by fractals whose outline looks the same at many different scales.

When satellite pictures became available it was found that the cloud patterns had the same fractal dimensions over seven orders of magnitude. The swirls and eddies associated with thermals range in size from centimetres, when modelled in a water tank, to kilometres in a cunim.

Thermals do not invariably form bubbles. Weak or sluggish thermals never seem to develop the full circulation. A well formed thermal bubble usually needs vigorous ascent with a big initial difference of density between the bubble and the outside air. Winter thermals are often too weak to develop a proper bubble; their feebleness is revealed by a lack of proper domes on the cu tops and a general tendency for fuzzy edges to the clouds.

Great contrasts of temperature seem to produce the best shaped bubbles. Some of the finest examples can be seen in early atomic bomb photos. (Fig 2 was based on such a photo.) Bangs caused by smaller ground explosions, for example a petrol tank blowing up, sometimes produce a perfect vortex ring with a clear centre in the rising cloud of smoke.

The smoke and ash from a volcanic eruption generally circulates like thermal bubbles. Eruptions often produce a mass of clouds consisting of numerous overlapping bubbles churning over and over. The motion looks very similar to a time lapse film of a big bank of cumulus.

Entrainment

Thermals normally expand as they rise. This is partly due to the reduced pressure aloft but mostly due to outside air becoming mixed with ➡

the thermal. The mixing, called entrainment, occurs chiefly near the top of the thermal but also round the sides and sometimes near the base. The originally smooth shape of the dome changes into a mass of smaller domes where the outside air is engulfed by the rising thermal. Drawing colder air into the thermal dilutes it and reduces the difference in density and hence the lift. The mixing spreads in from the edge so the larger the bubble the longer it takes for entrainment to make the thermal too dilute to continue rising.

Entrainment not only cools the thermal but adds to its mass. This additional mass has to be accelerated to the speed of the thermal. Thus entrainment has a double effect; it dilutes the warm air inside a thermal reducing its buoyancy and increases the weight to be lifted. As a result many thermals fail to reach the top of the unstable layer. However a big thermal has considerable momentum so that it can continue to rise for some time after it has lost its buoyancy. How far it overshoots its level of equilibrium depends on whether there is an inversion above it. The top of an overshooting thermal is colder than its environment and very ready to sink when the momentum has been expended.

Multi-cored thermals

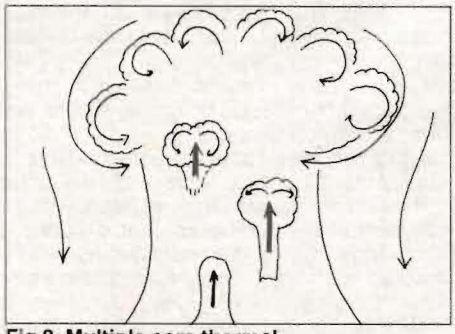


Fig 3. Multiple core thermal.

In the early morning, when there is only just enough heat to set off a thermal, there is usually only a single core of lift and this is drawn up into the bubble as soon as the limited amount of warm air near the surface is exhausted. Such thermals are generally short lived. Unless the air is very unstable and moist any cu dissolves rapidly. Later in the day, especially in hot continental areas, thermals can draw on a large supply of hot surface air. Then they become big and broad and long lasting. These thermals may have several cores. Fig 3 illustrates a broad thermal with several much smaller bubbles moving up inside. The pattern in Fig 3 is based in part on the behaviour of smoky bonfires. These often produce surges of activity sending beautifully formed thermal bubbles shooting up within the main smoke column. The bonfire bubbles are of course tiny compared to real thermals and being so small are rapidly eroded. Their whole lifetime is over in a matter of seconds but their circulation looks identical to that of full sized thermals.

Photo A shows a big cu with several domes formed by separate bubbles. Photo B is a shorter lived cloud with a thermal bubble rising out of the centre. C shows a bank of cumulus congestus consisting of a great many bubbles.

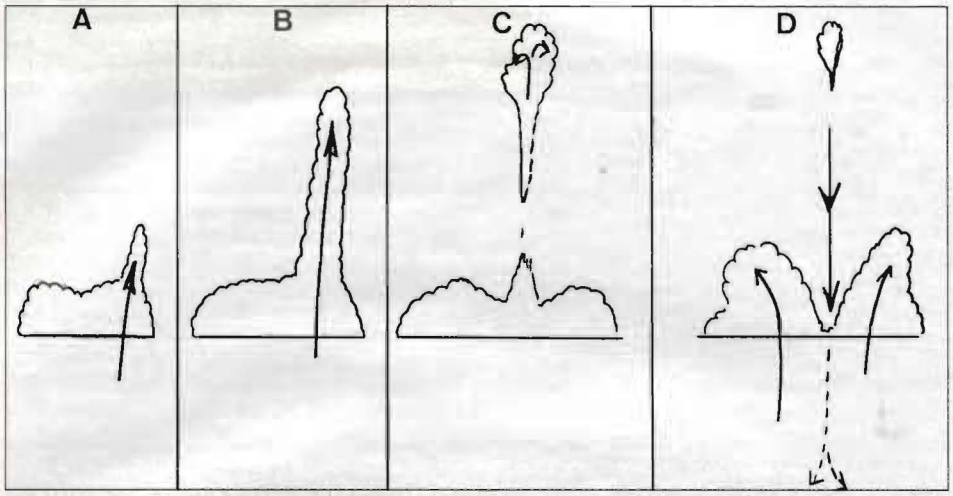


Fig 4. A very narrow thermal shooting up as a short lived tower and changing into a column of sink.

Cloud profile and rates of ascent

The rate of rise of a thermal depends on the difference in density between it and the environment and the drag due to its passage through the surroundings. A wide blunt dome of cu has to push more environmental air out of its way than a thin narrow thermal. Fig 4 shows a very thin thermal rising out of a clump of cu. It quickly grows into a tall column (B) which ascends much faster than the fatter clouds. Unfortunately this process has its own defects. A tall thin column of cloud suffers from severe erosion at the edges, especially if the cloud shoots up into much drier air. Erosion is often so rapid that several thousand feet of cloud evaporate in five minutes or so (C). The bubble at the top, which is often the widest bit, lasts longest but the stalk quickly vanishes.

Now the brief surge of lift changes to sink (D). Formation of cloud released latent heat which added to the energy. Evaporation takes back this latent heat leaving the air colder and denser than its environment. A column of sink soon develops below the broken pillar and on some occasions the sink goes on down into the original clump of cloud and eventually out below the base.

Even wide domes of cumulus lose lift and start to subside, but not as rapidly as the narrow towers. Descent results in evaporative holes developing which increase the sink. Unless further bubbles rise up to maintain the cloud it starts to degenerate. One cannot always see this when looking at a clump of cumuli but the cloud shadow often reveals these holes before they show in the profile of the cloud.

Photo D shows two narrow towers which shot up from the smaller cu. The translucence near the cloud top shows how thin it became. In photo E the two tall turrets had stopped rising and the wind shear began to topple them over. The fatter cloud on the far right was too massive to respond to the wind shear.

Inversions and bubbles

On many good soaring days cumulus tops are limited by an inversion. When the thermal bumps into the warmer air it quickly stops rising and the upward flow in the core is deflected sideways.

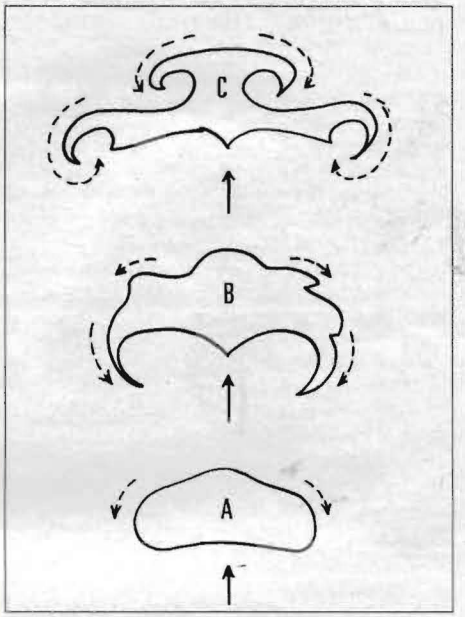


Fig 5. Hooks developing on the top of bubbles which were stopped by the inversion.

This sideways deflection may produce a temporary wind shear at cloud top. The effect of such a shear has been modelled mathematically; one result is shown in Fig 5. A is the original bubble, B shows how the outward shear starts to distort the bubble and C shows how continued shear produces hooks. The model traces the moisture in the bubble but does not allow for evaporation in regions of descent. In real life one may see such small hooks on the cloud top but they usually dissolve in strong sink at the edges. If there is already a wind shear above the inversion the hook pattern loses symmetry and only one side shows the curl over.

LIDAR flow patterns

LIDAR works on the same principle as radar except that it uses a laser beam. It can detect motions along the line of sight by the doppler principle and can often follow minute particles in cloud-free air. Fig 6 shows the flow under lines

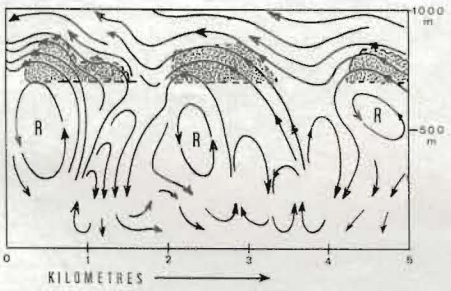


Fig 6. Lidar pattern of flow below lines of shallow cu.

of cu at an inversion. It is much less detailed than the mathematical model in Fig 5 but gives a more comprehensive picture. Above the cloud tops there was a wind shear from right to left so the flow did not form thermal bubbles. Instead a kind of wave motion occurred above the cloud tops while below the up and down flow was separated by regions of rotation marked R.

Influence of moisture

The water vapour in the atmosphere can provide much extra energy once the thermal has cooled enough to start condensation. Condensation releases latent heat which makes the thermal warmer. The added energy allows cloudy thermals to rise further and faster. Too much moisture makes thermals harder to use, partly because the cloudbase lowers if the air becomes more moist. An approximate rule is that the base of cumulus (in feet) is 400 times the difference between dew point and surface temperature in Celsius. Thus with a dew point of 10°C and an air temperature of 20°C one should find the cloudbase at about 4000ft. The cloudbase usually rises during the day reaching its maximum in mid afternoon when the surface temperature is highest.

Entrainment of outside air into a cloud dilutes the thermal. If the environment is very dry the edges of the cloud start to evaporate while it is still building. This is usually a good thing for soaring pilots because evaporation produces gaps for the sun to come through and keep thermals going. When the air aloft is very moist the cloud from old thermals persists and the sky becomes full of decayed cumuli which provide no lift but restrict the sunshine.

Spread out

On most fine days there is a temperature inversion with its base several thousand feet above the surface. The warm air aloft acts as a lid preventing thermals rising much beyond the base of the inversion. The rising cu spreads out into a layer when it bumps into the inversion. Provided that the air is fairly dry the sky becomes dotted with well spaced flat cumuli. Each little cu evaporates in the dry air before it can spread far. Unfortunately air which has had a long sea crossing tends to become progressively moister. The British Isles and parts of NW Europe are often covered by such moist air.

Each thermal carries extra moisture from the surface up to the inversion. There it merges with the moist air already aloft. The flattened cumuli spread out to form an almost continuous sheet of cloud which eventually cuts off the sun and halts the production of thermals. Sometimes the cloud develops gaps through which the sun penetrates to start up more thermals, but on a bad day the gaps are quickly filled in again by fresh thermals. Ireland is even more troubled by spread out than England. Not only is it nearer the Atlantic but the land is greener and moister so that thermals carry up extra moisture to thicken the cloud layer. Photo F, from Dundee University, shows an example of spread out. It was taken at 1538 on August 13, 1994, a day when most of the British Isles was under a cool northerly airflow with a high centred south-west of Ireland. Ireland was almost completely covered with the spread out stratocu which consisted of large cells with hardly any cracks between them.



Photo F. Dundee University's satellite picture of August 13, 1994, showing variations in spread out. Printed by kind permission of the University.

Over central and southern England the cloud cells were much smaller with better gaps between them making it possible to go cross-country. Clear areas over the SW of England and Wales, Norfolk and inland of the Cheshire Gap show where the sea air did not warm up enough to form cu.



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STRATTON'S SAFARIS

Dick Stratton might keep a low profile as the BGA chief technical officer but he casts his eye over the whole country, visiting clubs and giving help and advice, as this article by Ian illustrates

I first met Dick Stratton in July 1993 while on a task week at Bicester. Since then I have bumped into him many times at the club. As I'm sure those of you who know Dick will agree, he's a true enthusiast when it comes to gliding, especially for club flying and training. It's obvious that he's genuinely interested in the people he deals with. Dick is one of those extraordinary people who seems to know everyone and everything to do with gliding.

He started his career as a Flight Engineer in the RAF during WW2. Later he rose to become chief test engineer at Saunders-Roe and worked on the Princess Flying Boat test programme. He has flown at Bicester for many years and still regularly instructs there.

It was a Sunday afternoon in late April (1994) when it all began. I had just finished flying the Astir at Bicester when Dick turned up. We got chatting and Dick mentioned that he was hoping to visit Scotland for three days over the May Bank Holiday in his capacity as BGA chief technical officer.

He explained that he normally takes someone with him to share the driving, but his usual co-driver, Norman Smith, was busy demonstrating the new Solo Blanik. Then he asked if I would like to drive. Well, a free trip around Scotland visiting gliding clubs - how could I refuse? The following Friday we set off north on what Dick called his "Scottish Safari".

Scottish Safari

Our first port of call was Portmoak. I had never been there before but was delighted to see Eoin Macdonald again, a senior instructor at the SGU, whom I'd previously met at Bicester in 1993.

Dick quietly went about his business of inspecting the operation, including the new Supacat winch which never seemed to fail to ping every glider straight on to Bishop Hill.

The tugmaster, Ian Dandie, was kind enough to show me the site from the air in his lovely little Jodel. It was a spectacular view that had me wishing I could stay all day to soar the ridge, but time was pressing on and we had to be on our way.

Next we called in at Drumshade, home of Angus GC. They had recently moved to Kirriemuir from their old site at Arbroath (HMS Condor). Excellent sign posting made it easy to find and at £1.50 per winch launch their CFI, Alan Black, reckoned it must be the cheapest in the UK.

Soon we were back on the road, this time bound for Aboyne. It was late when we arrived and that, coupled with a recent shower, meant that most of the members were in their luxurious new clubhouse. Dick inspected the tugs and we moved on to our second stopover, Elgin.

Sunday morning found us at the nearby site of Easterton, where they were busily preparing to fly. As always, we received a warm welcome and they offered us flights. Unfortunately we didn't have time to take up their kind offer and we were soon back on the road, heading west towards the Cairngorms and Feshiebridge.

The mountain peaks were still snow-covered and splendidly picturesque. I looked up in awe at the ridge at Feshie; it seemed to dwarf Bishop Hill at Portmoak (itself over 1000ft). They could only winch their Puchacz (recently acquired from Mike Cuming at The Gliding Centre) and, therefore, couldn't quite contact the hill when we visited, as Barry Meeks was away completing the C of A on the tug. Nevertheless, they were enjoying themselves on this crisp, sunny morning.



Dick photographed at Culdrose with Ian on the right. Ian, who has 140 gliding hours and nearly 200 power, is a member of Bicester, Burn and Shenington GCs. He has a Silver badge and an AEI rating and was founder member and chairman of the Sheffield Polytechnic GC.

Eventually, after a welcome cup of tea, we made our way through the Highlands and on towards Connel Harbour, near Oban, on the west coast. It's hard to imagine a more atmospheric place to aviate than this former WW2 airfield on the water's edge, now inhabited by gliders, microlights, and just the odd spamcan. You can almost see the ghosts of war-weary old flying boats anchored in the harbour, resting from the Battle of The Atlantic.

This was the first time I had seen reverse pulley autotow used in anger, and it seemed to be ideal for the site. The integration with powered aircraft caused no confusion at all - probably due to the lack of any form of ATC and pilots who look out of the window! Dick was greeted with the usual affection. Everywhere we visited someone seemed to have an old story involving him. We had our by now customary look around before departing southwards.

Further south we had a look for Strathaven, but it was getting dark and we had no luck in finding it. (Sorry guys!) On Monday, May 2, we attempted to visit a little known club at Falgunzeon (Dumfries & District GC). They were not at home. I flew there many moons ago after a Saturday night party in Carlisle, and it would seem that the legend that they only fly on Sunday afternoons may have some truth in it. After that we headed back south to Bicester, taking in the Lakes GC at Walney Island (very cheap aerotows) and Blackpool & Fylde (Whoops, I forgot, it's Bowland Forest now isn't it!!) on the way.

It was an extraordinary three days taking in eight sites and 1500 miles. I enjoyed it immensely. So much so, in fact, that several weeks later Dick and I set out on our next safari.

The South-West Safari

Bicester, Saturday May 28. It was an overcast start to the day and only modest activity on the airfield as Dick and I drove off, heading south-west towards deepest Cornwall. By midday we were at Perranporth. Formerly a WW2 RAF station, its concrete runways stretch out towards a spectacular cliff edge that gives way to a breath-taking view of the coastline and the Atlantic.

As always we were greeted enthusiastically. The Pawnee roared into life and towed a glider skyward as we were offered tea and coffee. Dick asked his usual questions about the operation and offered his advice. All too soon, we were back on the road and travelling even further south.

We popped into Land's End Aerodrome for a nosy, and then moved quickly on to RNAS Culdrose to visit the RNGSA club there. We were met at the gate, then escorted into the base and around to the launch point. Dick received his customary warm welcome and I was delighted to be offered a flight in one of their wonderful old Capstans. Meanwhile, Dick was investigating the specially modified autotow truck which had recently come into service with the club following the MoD's decision to retire the faithful old Chipmunks (including tugs) from service.

The launch felt rather like an aerotow which turned into a winch launch at about 20ft from the ground. It felt a bit odd to me the first time, but it worked well. It is an amazing view from 1000ft. You find yourself surrounded by water, with just a thin sliver of land below you. It was a most en-



Bishop Hill at Portmoak with the K-13 and K-8 in the foreground. Photo by Ian.

joyable visit.

Sunday morning found us at Brentor, Dartmoor GC. I was surprised to see how much the club had improved its site and facilities in the year or so since I had visited.

Then it was north to Eaglescott, home of North Devon GC, which is an interesting airfield with a true mixture of light aviation. There is a lone female tuggie and a small band of glider pilots willing to check out anyone who wants to fly. The site has everything from motor gliders and microlights to Tiger Moths, and would make an interesting expedition for the private owner.

We then made for home, briefly stopping off at Devon & Somerset GC at North Hill, although I don't think anyone there noticed us. On the way back to Bicester, Dick mentioned something about a trip to South Wales.

The South Wales Safari

This was to be a relatively short expedition and we set off on Saturday, July 23, with the first stop South Wales GC at Usk, a pleasant site offering both winch and aerotows. It was a hot summer's day and there were lots of visitors. We also took in the Vale of Neath GC at Rhigos, where the TA were helping with airfield renovations, before ending up at St David's for the night.

Sunday morning was a lazy start, following severe thunderstorms that sounded like shellfire in the night. We ended up following them eastwards towards Bicester all day.

Our first visit of the day was to Haverfordwest Airfield, where there is a small operation involving a tug and a single glider. There was little activity due to the storms, and we didn't get to see the Blanik. As we were in the area we also took the opportunity to visit Pembroke Dock. The old Admiralty buildings are now all that remain of its military history and the only trace of the RAF Sunderlands that were once stationed here are in Dick's fond memories.

On to visit the small but friendly band of folk at West Wales GC, Templeton. The members were all busy working on their T-21 and Dick inspected their recently acquired winch.

Since the "Safaris" I have revisited and flown at Walney Island and Portmoak, the latter for a week of excellent ridge soaring in late October. I would like to thank everyone we visited for their warmth and hospitality.

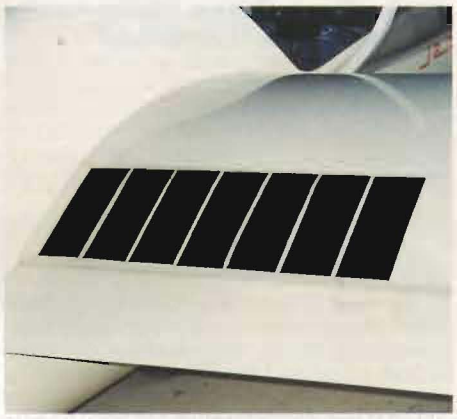
And I would most like to thank Dick for offering me the chance to tag along, have such a good time and learn so much.

Ian discovered that the gliders at Culdrose share the hangar with spare RN Gazelle helicopters.



GARY LOHNER

GO SOLAR!



Solar panels fitted to the trailing edge of a Janus.

Nothing is more frustrating than flying along in your pricey flying machine, carrying round a package of electronic gadgets, then when you need it most your cheap battery lets the GPS and E-vario go crazy. Or you put your faith in your motor glider when the starter motor goes clonk-clonk and that's it.

The solution - second batteries, more switches, more fuses, more weight and more to go wrong, or you go solar.

That hasn't been easy up to now because the panels weren't flexible and had to be glued on to a sheet of glass or aluminium, were bulky, not easy to fix and therefore rarely used.

But now a 0.2mm thick solar panel has been developed. Produced in Japan, it will fit anywhere in your glider - the trailing edge, tailplanes, fuselage etc.

They are UV and weatherproof, put on with doublesided sticky tape and sealed around the edges with clear tape. One panel, 90x230mm, weighs 5gm and delivers 3.45v and 350mA. That means with six panels hooked in a row you have enough power to operate your electronic gadgets with enough power to hold and even charge your battery.

If you need more power, just add more panels. But you need a regulator to keep the charge at 13.75v as the panels deliver up to 22.5v idling. And regulators have been especially developed for gliders and weigh less than 50gm with hardly any internal voltage drop and a non return diode. The whole weight of a typical six panel installation is less than 200gm with wiring, tapes and so on.

The increase in resistance isn't measurable and totally negligible.

And the price? Each panel costs A$55 and A$60 for the regulator, adding up to A$390 for a typical six panel installation. For further details contact me at PO Box 176, Lyndoch 5351, Australia.

TAIL FEATHERS

Soaring voices

Gliding people have a pretty relaxed attitude towards culture. They don't go quite so far as Göring, who said that when he heard anyone mention culture, he took the safety catch off his revolver, but most of my mates can take it or leave it alone, shall we say.

(What you mean is they're a right bunch of Philistines? Ed.

You said it, not me. Plat.)

Nevertheless, art in nearly all its forms has put itself at the service of our great sport. Poetry, songs, novels, oil paintings, sculpture, etchings and graffiti have celebrated the whole gamut of gliding experiences: competitions, cloud flying, crashes and the deflowering of farmers' daughters. I have (he coughs modestly) even written a trilogy of short plays, humorous in style, but deadly serious in their moral message. But there



"Your tiny pitot is frozen."

is one supreme art which has failed, so far as I know, to take gliding as its theme. Yes, I mean *opera. Grand* opera. What an ambition it would be, to celebrate the start of the new millenium, to hear Pavarotti sing "Your tiny pitot is frozen" before a royal audience (assuming we have any royals left by January first 2001[1]) enthralled by a simple, but magical and moving, tale of noble gliding folk and their ungovernable passions.

"What's he talking about, Fred?"

"The ungovernable passions of us noble glider pilots, Bert."

"You could've fooled me - another pint of Theakstons, Mabel - as I was saying, Fred, the trouble with grommet-knurdling rings is..."

[1]Connoisseurs of pedantry will appreciate that mathematical millenial detail

Well, you can't please them all. This project will go ahead.

The ingredients

First, I want to make it clear that I shall not sneakily borrow tunes from famous and popular operas. I shall steal them wholesale. Composing is not my forte, but any idiot can write a *libretto* (that's Italian for a little book). All you need for a plot is an assortment of Babylonian kings, inquisitors, sorcerers, assassins, bands of brigands, gods, ghosts, torturers, gypsy temptresses, dungeons, secret trapdoors, magic bullets, love potions and fire-breathing serpents - the sort of thing you can easily find around any gliding site on a damp Sunday afternoon. You stir up this brew, mixed together with the six deadly sins, some incredible coincidences and some utterly self-defeating behaviour, and there you have your little book. I shall become a *librettist* (that's Italian for a little bookie).

The more alert among you, or at least those who know a thing or two about sin, will have observed that I seem to be one deadly sin short. Well, I have never considered sloth a sin, especially not a deadly one. If it had been a deadly sin, somebody would certainly have attempted an opera about sloth. If somebody did, then he was too idle to get around to finishing it. It's Lust, Gluttony (which includes excessive drinking), Pride, Avarice, Envy and Rage that I shall depict.

Massed throats

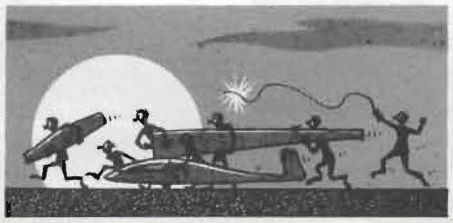
What a gliding opera needs is some good choruses. Well, let's not be too fussy. I mean *large* choruses, masses of bodies all bellowing forth on the stage. I'm talking quantity, not quality. Why? Because for every person appearing on the stage half a dozen friends and relations will buy tickets. Choruses mean solvency, so long as the stage doesn't give way in the over-zealous pursuit of profit.

In act one the Anvil chorus from *Il Trovatore*, for example, will be belted out by Ralph Jones's team performing a delicate fuselage repair with seven pound sledgehammers. Pilots below World team standard will be rounded up as an amorphous mob for mystical, religious get-togethers such as briefings and prizegivings. Crews get specially brutal treatment, but also the best choruses.

El plot

I only have space here to describe the last three scenes in rough outline.

Lucy (I suggest Suzy Edyvean) is a strapping, ambitious, newly-joined member of the Lammermoor gliding club. She has today been given a wizard forecast by the High Priest Zarastro (played by Tom Bradbury). Zarastro, being a top Freemason, has had a hot tip from God (played by Barry Rolfe, if we can get him to stop dyeing his whiskers black and let them revert to their natural, distinguished, snowy white) that the morrow will be her 1000km day. Lucy only has to get airborne before 10 o'clock and the diploma is guaranteed by sorcery - but for that one day only. Let slip that chance and she will never get another. This opportunity, says Zarastro, is her divine reward for guarding her



A sweating, toiling mob.

virtue for 15 years and still being intacta, though none of the two dozen gliders she has flown is intacta.

(There's not a huge amount of room for humour in opera, but knowledgeable members of the audience will get a chuckle out of the subtle way in which I hint at the name of the club in the south of England where she spent the previous 15 years. The *cognocscenti* will know that she was in no danger whatever on that site, and that Zarastro, for all he is a fount of spiritual wisdom, is, on the worldly plane, a pretty naïve guy.)

The dawn breaks. A sweating, toiling mob of Soaring Crew Union Members (SCUM) sing the Chorus of Hebrew Slaves from *Nabucco* while rigging their masters' and mistresses' sailplanes, as the ferociously mustachioed slave driver (British team manager Bob Bickers) lashes their naked backs to encourage them.

At Zarastro's briefing the other pilots are amazed at Lucy's calm, Mona Lisa-like half-smile, as if she knows something the others do not. She seems positively nonchalant, while they are possessed and made frantic by all the five deadly sins. (Just five? When it's a possible 1000km day, they have no time for lust, so the remaining five passions boil over in a tremendous scene in which most pilots call upon God, but another, played by Brian Spreckley - in a Faustian subplot which I have no time to describe here - privately sells his soul to the Devil, played by Derek Piggott.)

At only half past nine Lucy strolls across to her trailer. Nothing like this has been seen since Sir Francis Drake played bowls as the Spanish Armada swept up the English Channel at all of two knots. But a restless, shimmering undercurrent of violins in a minor key suggests trouble. The stuff is about to hit the fan.

The letter

Suddenly, Lucy spots a note nailed to the trailer door. The reading out of a letter is a great dramatic device in grand opera. Everything else is sung: even such banalities as "Be so good as to pass the peebags" and "Where the hell are my quarter-mill maps?" will have to be sung *recitativo*, but letters are read out straight, which makes a gripping contrast. She goes ghastly pale as she declaims the hideous contents: "Darling Lucy, You will be so pleased to know that I have decided to fix that little chip in the gel coat on the starboard wing. I have taken the outer panel back to my castle and it will be back in 24 hours. Your adoring partner, Edgar." The ensuing shriek cuts through the Hebrew Slaves' Chorus with stunning effect.

Lucy departs precipitately, or at least as quickly as convention allows. It being an opera, she is compelled to reiterate the line "I must

haste away, for my thousand-k" about 20 times, while the mixed emotions of a whole quintet interweave other lines such as "Edgar is a nice chap, his heart's in the right place" (sings Justin Wills) and "It won't be when she gets to him" (replies Martyn Wells) and more of a similar kind appertaining to the folly of being a member of a syndicate of more than one.

Finally, at the climax of the quintet, Lucy gallops off to the castle. (She hasn't got a horse, she just moves like that naturally.) Andy Davis sings "That woman sure does move" *(La Donna e mobile)* as a furious cloud of dust heads towards the battlements which dominate the horizon.

The confrontation

More dramatic and tragic irony will be wrung out of the mistaken belief on the part of Edgar (Jed Edyvean) that Lucy has rushed to his workroom high in the castle solely in order to reciprocate his passionate love for her. All she wants is the starboard outer panel, and he teasingly keeps getting between her and it in the hope of catching a kiss, or maybe a bit more. And so he does. Donizetti does not show this particular scene at all, only its terrible aftermath, and maybe Donizetti was right. He knew about women, though not a lot about gliding syndicates.

The mad scene

What follows, of course, is the inevitable Mad Scene. Lucy slowly descends the wide, curving staircase before a horrified crowd. Under her left arm a white wing panel spattered with blood, in the other hand a Schempp-Hirth main wingpin. (With respect to Suzy, I believe that only someone with the power of Joan Sutherland could carry off this part. I don't mean the role of Lucy, I mean the 100lb wing panel.) From a gothic window a shaft of sunlight falls on her face. In that very instant she calculates, without benefit of any clock, from the azimuth of the staircase and right declension of the window and the lat and long of the castle (I hadn't mentioned she was a mathematical genius, had I? Just another little surprise in the plot) that it is 10 o'clock. She has blown it. The *pianissimo* way that she launches into her simple, almost childlike, aria *(Due Cappucini Per Favore)* indicates that she has totally flipped. A chorus of men in white coats move forward and gently lead Lucy off to the funny farm (Booker GC).

The inquisition scene and a surprise happy ending

The drama has yet another climax, however. The last act is a trial, presided over by the imposing figure of the Grand Inquisitor (played by Bill Scull). He sneeringly asks Lucy if she has anyone to defend her on a charge of premeditated murder. Her aria en route to the castle "I'll do him in, I'll do him in" (Sigmund Romberg's *Desert Song* will do nicely here) had been cited convincingly as evidence of premeditation. A mystery figure swathed in black - it's like Verdi's Masked Ball, except that every part of him is masked - steps forward as the lawyer for the defence. After a moving address in which he extols Lucy's virtue and beauty to a packed jury (I don't mean rigged or corrupt, I just mean the jury box is crammed with pilots and peasants and glider repairers to help the opera break even) he reveals himself as Edgar himself! His head wound had indeed bled profusely from a glancing blow with the wing pin, but he had only been momentarily concussed.

The GI (Grand Inquisitor) forgives Lucy, on condition that she marries Edgar that afternoon and promises to retrieve for him uncomplainingly for 100 successive soaring days. She begins wistfully to eye the wing pin again, but it is removed from her reach, and with a sigh she eventually submits.

The jurors all dance with the slaves and the men in white coats, and the final drinking song by members of the RAFGSA led by Mick Boyden, energetically swinging great foaming tankards of ale, serves to remind the audience that there is something more to life than gliding and sex.



OVERSEAS NEWS

EUROPEAN MOUNTAIN GLIDING CENTRE

Following Graham McAndrew's account of the European Mountain Gliding Centre (EMGC) activities at Gap in the last issue, p33, comes news of a new initiative reflecting the European nature of the operation.

Peter Hearne tells us that glider pilots in the UK, France, Germany, Holland and Belgium have joined together to buy an additional Janus two-seater for the centre's operations.

With up to three Janus available for advanced instruction EMGC is now in a position to start its planned expansion into such new activities as training packages for visiting club parties and most importantly in view of the 1977 St Auban World Championships, advanced competition training in the southern Alps for visiting National teams or team members.

MOTOR GLIDER MEETING

The 11th motor glider meeting at Hilzingen, near Singen, Germany, close to the Swiss border, is from August 12-13 when most German manufacturers send their newest aircraft. For more information contact Segelfliegergruppe Singen, PO Box 752, D-78207 Singen, tel 010 49 7731/12422, fax 010 49 7731 12423

LITHUANIAN COMPETITIONS

The Lithuanian Gliding Federation is inviting pilots to compete in three of its competitions - Open Nationals (June 10-25), Baltic Sea Counties Competition (July 2-12) and Open Seniors - 50+ with Blaniks - (July 27-August 4).

Contact Baltic Sailplanes (see tel/fax Nos. in their advertisement in this issue) for more information and entry forms.

WORLD RECORD CLAIMS FROM SA

Just five days into this year Helmuth Fischer, flying a Ventus 17.6m from Hendrik Verwoerd Dam Airfield *via* Rouxville, Hotazel and Britstown, South Africa, is claiming the world 1000km triangle record with a speed of 169.7km/h. The total length of the flight was 1007.93km.

The previous day Helmuth broke the South African national free distance record with a flight of 1111km over a similar route, with the second TP close enough for him to assess the area weather expected for the following day. There was percipation which is a clear sign of deeping of the "heat trough" which has permitted many specacular flights. Sure enough on January 5 the maximum cloudbase was around 18 000ft and the best climb rate 8.4m/sec. He left anything not giving 5.5m/sec.

A further 15 1000km flights are being claimed in South Africa over this period as well as 15 Japanese, eight Austrian and five German national records and three unspecified world records.

The information was sent by Michael Russell and this news greeted pilots being briefed on the first day of the World Championships.

MAIDEN FLIGHT OF THE DG-505 ELAN ORION

This glider, which we reported on in the December issue, p316, had its maiden flight on Christmas Eve. The enthusiastic reaction from test pilot, Sreco Mohar, was: The Orion has the best handling qualities of all DG-500 versions. I am sure it will be a big success."



24TH WORLD GLIDING CHAMPIONSHIPS

Omarama, New Zealand, January 7-22

Michael describes an exciting contest where the British team did extremely well and came within a whisker of bringing home more than one Champion. As it was we had two pilots in 2nd place having led the field on several days, one 4th and one 6th





Left: The British team parading at the opening ceremony. Right: The Maori challenge. All photos unless otherwise credited are by Michael Russell.

The World Championships opened on Saturday, January 7, under a vast lenticular canopy with 91 competitors and their crews from 23 nations, a veritable army of Kiwi helpers and some 8000 members of the public assembled for the traditional opening ceremony. A burst of sound heralded the guest of honour, Sir Tim Wallis, a prominent NZ businessman, in his Spitfire, the Championships director, John Roake, arrived by heli-bungy-jump and Air New Zealand's GM International Affairs, Graeme McDowall, glided in from the South Canterbury GC.

After the team parade John Roake said the Championships would open the secret of Omarama to the world's gliding fraternity; Graeme McDowall spoke of his airline's sponsorship and Sir Tim declared the contest open. A Maori challenge was followed by a pleasing flying display.

The British team flew out in mid December following the shipment of their gliders and travelled to Irishman's Creek, north of Lake Tekapo, for practice as guests of Gillian and Justin Wills. Steve Jones was flying his Discus BT with a borrowed wing after an unfortunate landing damaged his glider, Gerard Lherm (France) replaced his lost Nimbus 4, which broke up during a practice flight leaving him to parachute to safety, with a DG-800 and Dick Bradley (South Africa) borrowed an LS-4. Practice highlights included flights over 1000km and the breaking of the Australian height record with a climb to 37 000ft, almost equalling the present Kiwi record.

At the first contest briefing on Sunday, January 8, we stood in silence in memory of Klaus Holighaus. The contest director, Bob Henderson, and Met man, Peter Knudsen, called for a rebrief hoping the front would clear to the north, but eventually the day was scrubbed.

Day 1, Monday, January 9

Monday was overcast but dry and eventually launching started at 1330 with the 91 competitors airborne in little under an hour. The tasks were each five sectors staying fairly close to Omarama, the late start restricting racing to an expected 3hr 30min flight. The 44 strong Standard Class went first, the 31 15 Metre pilots next with the 15 "big wings" last.

The weather at first improved but later deteriorated from bright sunshine to over-development, and as the pilots started to return, rain was seen approaching over the hills to the west. So it became a race against time before the bad weather closed in - and as the last finisher landed down it came with many landing out. In doing so, David Jansen, the Australian 15 Metre Champion, damaged his LS-6B forcing his withdrawal.

A record 46 out of 91 pilots were warned or penalised, mostly for startline procedures, and this cost Steve Jones 50pts and a drop of nine places. Also this highlighted early on in the competition both the GPS recording accuracy and the complexity of startline rules.

In the Open Class Robert Schroeder (ASW-

22B) and Uli Schwenk (ASW-22L), both from Germany, whizzed around together only seconds apart and showing the benefit of pair-flying, with local hero, Ray Lynskey (Nimbus 4) 16km/h behind. The Brits, Justin Wills (LS-6), Alister Kay (LS-6cw) and Chris Garton (LS-6c) finished 5th, 18th and 23rd in the 15 Metre Class and Martyn Wells (LS-8), Andy Davis (Discus),

TASKS

Open Class: Day 1, 345km, C, 41, 28, 4, 18; Day 2, 393.2km, A, 43, 8, 28, 18; Day 3, 436.7km, B, 16, 19, 18, 3; Day 4, 452.5km, B, 8, 19, 20, 15; Day 5, 613.9km, B, 10, 6; Day 6, 438.6km, B, 39, 45; Day 7, 675.3km, B, 16, 31, 9; Day 8, 428.8km, B, 41, 2, 28, 20; Day 9, 505.4km, B, 27, 8, 24, 45; Day 10, 522.4km, B, 25, 30.

15 Metre Class: Day 1, 315.7km, C, 38, 28, 42, 18; Day 2, 370.6km, A, 43, 17, 28, 18; Day 3, 367.2km, B, 16, 19; Day 4, 426.6km, B, 36, 19, 20; Day 5, 561.2km, B, 4, 28, 9; Day 6, 342km, B, 2, 33; Day 7, 628km, B, 14, 37, 12; Day 8, 388.5km, B, 38, 8, 46, 20; Day 9, 451.6km, B, 34, 39, 46, 33; Day 10, 477.3km, B, 8, 24, 12.

Standard Class: Day 1, 299.8km, A, 40, 28, 42, 18; Day 2, 330km, B, 38, 10, 28, 18; Day 3, 354km, A, 16, 19; Day 4, 392.5km, A, 10, 19, 20; Day 5, 536.7km, B, 10, 6; Day 6, 318.9km, C, 8, 15; Day 7, 524km, C, 25, 36, 30; Day 8, 349.8km,A, 44, 17, 24, 43; Day 9, 411.9km, C, 31, 28, 20, 33; Day 10, 438.8km, C, 17, 30.



Chris Garton with his crew, Annabelle Lucas, and New Zealander Robbie Lee.

Steve Jones and Brian Spreckley (LS-8) ended 3rd, 4th, 14th and 23rd. Brian got his worst day over quickly - but oh, had his 769pts been 969...read on! Ray said it was "a day to be cautious: it would have been very easy on the ground," and from Justin we heard "nice to get the first day under my belt."

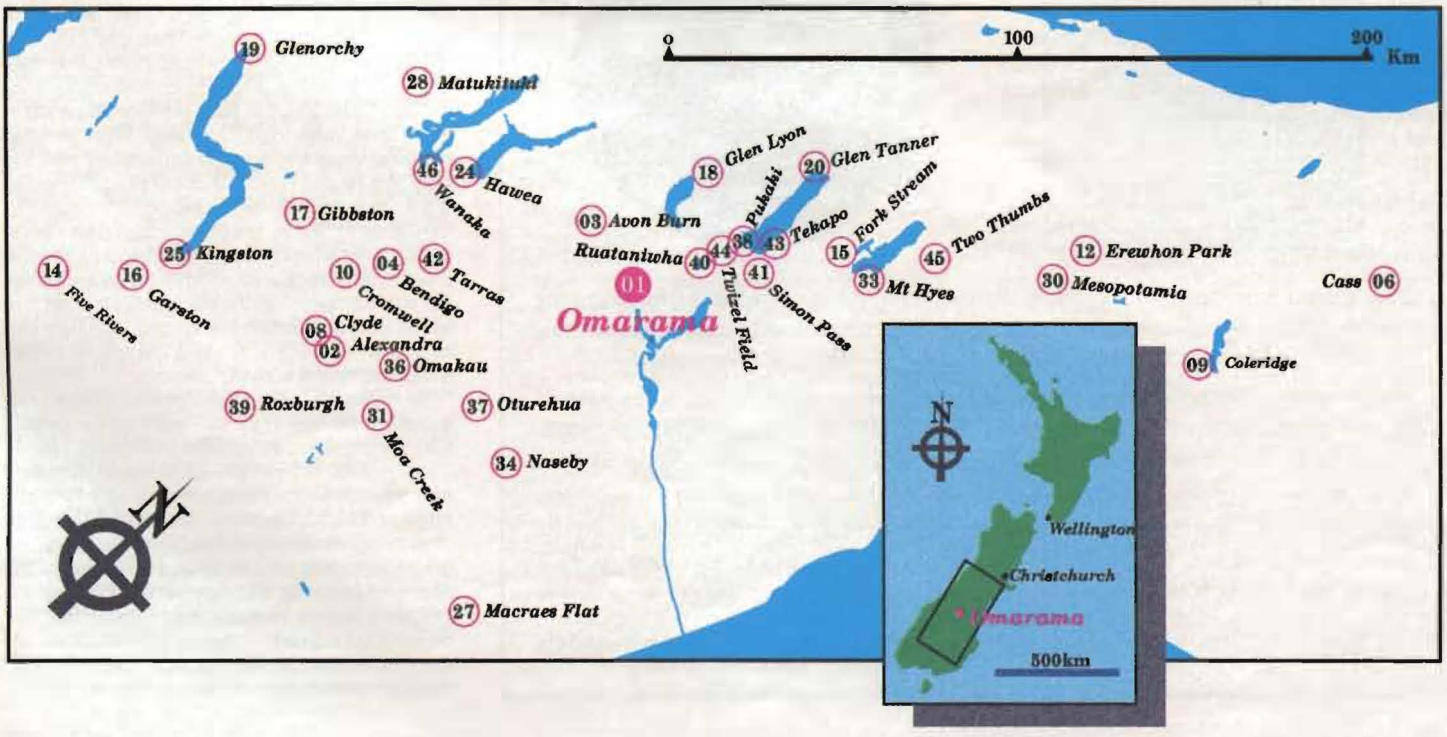
Day 2, Tuesday, January 10

Tuesday started much brighter and "church notices" included compliments about circuit discipline and airmanship during yesterday's gusty finish conditions. The first launch was delayed 30min, but the skies were looking better by the minute, though with rain evident. The tasks were similar in shape to Day 1 with a short O/R to Tekapo (47km) or, for the Standard Class, Pukaki (22km), with overflying close to Omarama on southward legs between 120-140km.

All then continued westward into the mountains to join up, turning Matukitiki and N to Glen Lyon and home. An anticyclone was moving east over the central Tasman, extending a ridge over the south of South Island (SI). With that rain seen to the south Brian Spreckley summed up: "Well, we're gonna have a right grovel today!"

The 15 Metre Class went first and the Open last. And so it was: over-development, rain all around and cold wind funnelled from the east so that towards the late afternoon many were seen hill soaring Diadem ridge just across the flats to the west - easy to come home, of course, but not so easy *via* that last elusive TP. ➡

A map drawn by Steve Longland showing the task area.



And many were very determined; at 8.30pm three were still airborne, yet to join the 85 who by then had landed out. In the end the LS was flavour of the day with only Terry Delore, LS-6A, (local knowledge) in the 15 Metre and Tony Van Dyk, flying an LS-8 in the Standard Class (more local knowledge) making it home. Others saw it differently. Canadian Brian Milner (Nimbus 3) - last in the Open- said "Difficult, ecstasy to despair. I'm home, I'm alive and nothing's broke!" Also in the Open Class Ray Lynskey (even more local knowledge) made 373.1km to be among the 88 landouts. Many had long retrieves, including Standard Class pilot Eduard Inaebnit, (Switzerland) , whose trailer was heli-lifted to a tiny lakeside paddock to retrieve his Discus B.

Day 3, Wednesday, January 11

Overnight the weather cleared and Wednesday started warm and sunny. There was an intensifying ridge over the south of SI between high centres over the central Tasman and to the east of Otago. Winds were light southeasterly, with the weather generally fine with isolated showers mid to late afternoon; moderate thermals and the max temperature 16°C at 1600.

At the briefing pilots were congratulated - two for completing and the other 88 for not breaking anything outlanding. And Eduard Inaebnit made it back just in time to have another go.

Various gaggles were seen prior to the startline opening with up to 20 orbiting over St Cuthbert's, then all went their way on southerly tasks; four legs and 438km for the Open and three of 368 and 355km for the 15 Metre and Standard Classes respectively.

The German duo again made it 2nd and 3rd, a second apart and less than 1km/h behind Bruno Gantenbrink (Nimbus 4), an ex World Champion from Germany who was flying as an "invited pilot". Justin Wills moved up a place to 3rd, Chris Garton similarly to 22nd but Alister Kay failed to make it home from the Lindis for a relight. Eric Napoleon (Ventus 2), France, stamped his authority on the day and the 15 Metre Class at 104.9km/h, and in the Standard Martyn Wells moved up to 1st, Andy Davis maintained 8th with Brian Spreckley 13th and Steve Jones 17th.

Day 4, Thursday, January 12

Summer was back with a vengeance! It was hot, almost cloudless with light breezes and so brought tasks of 453, 425 and 392km - and the buzz was stay high and look hard for lift from the sunlit northern slopes. The slow moving anticyclone continued to straddle NZ, lake breezes would develop early with thin cirrus late afternoon, isolated strong thermals mid afternoon and a moderate east wind at the site late afternoon as the thermal low developed in the plain.

At briefing it was good to hear John Roake compliment the 73 out of 90 crews checked for completeness of their survival packs, though 21 were suspected of dieting as no food was found.

It was New Zealander Pat Driessen's turn to be late on the grid following his early morning heli-lift of his DG-800s: more good business for the heli-boys! The launch was delayed 30min to allow the day to develop a little further. Four hours later we enjoyed really spectacular finishes as many raced to the line. At one time 12 were counted beyond the line, dumping and lining up for a westward stream landing.

There was excellent news for the Brits. Initially 1,2,3,4 in the Standard - later revised to 2,3,4,5, as Karl Striedieck, USA, scored a late 1st in his ASW-24 with a speed just 0.53km/h faster.

All the Open Class completed with the double act of Schwenk and Schroeder finishing 6th and 7th to maintain the 1st and 2nd separation by a single point. There was excellent racing at spectacular speeds with only two failing to finish. The total distance flown was about 36 738km. Janusz Centka, Poland, was a very close 3rd with his usual spectacular graceful vertically banked water streaming pull around in his ASW-22BL. Italian Stefano Ghiorzo (Ventus 2A) and Frenchman Gerard Lherm (DG-800s) made their mark in the 15 Metre Class with a 1st and 2nd and our pilots were consistent. All maintained or held their places with Alister Kay fighting back with a 12th.

Day 5, Friday, January 13

We had yet more high summer with the great Tasmanian anticyclone still with us and hopes of a good day. But first it was the team managers' turn to travel. They were detailed to atone in person to a rather deaf and elderly Mrs Wetherall who had 18 pilots landing on her property close to Lake Ohau on the Wednesday, all of whom apparently failed to say "Thank you Ma'am". Firm director John Roake added "And personally come and tell me when you have been and done so"... and they all did.

The field set out, expecting blue thermals under a near cloudless sky with far to go - 612, 557 and 534km, mostly northwards and out over the Canterbury plains.

The first reports were of cruising at 10 000ft and 8kt thermals. But it was a large task and at 7pm we were still waiting. Then bad news - a "Mayday" from Tomasz Rubaj (Poland). But soon we learned that he was unhurt, crash landing his SZD-55 on the back ridge of Mt Hutt facing Lake Coleridge. He was high on the mountainside and again a heli-rescue was the only exit route. Then the outlanding list on the flight office door started to fill.

Suddenly there were fast, silent finishers. Justin Wills was 1st and then after a pause the Open Class appeared, skimming down the far Benmore slopes with the inevitable German duo in the lead and then a few singletons. Tugs departed on short retrieves and the results began to appear on the screen.

A helicopter brought Tomasz home, his sailplane being left for the night on the mountain, and late headlights were for Fridolin Hauser (Switzerland) in his ASW-24. Gradually the picture emerged - the tasks had proved a little too large and eight finished in the Open Class (the shortest distance being 469.9km), ten in the 15 Metre (shortest 136.4km) and only two in the Standard (shortest distance being 131.5km).

Owing to very long retrieves for many of the 68 landouts and after five hard contest days, we then had a rest day. With a maximum of seven days to come we were close enough to half way

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to evaluate the British position - and not without considerable satisfaction.

15 Metre Class: **Justin Wills** flying consistently with a brilliant win on this day, 2nd position overall and only 151pts off the lead. **Alister Kay**: 10th this day, 25th overall after his low score following his landout. **Chris Garton:** 12th on this day, flying consistently, overall 18th.

Standard Class: **Andy Davis**: a brilliant Day 5 win, 2nd and only 86pts behind Markku Kuittinen (Discus A) of Finland. **Brian Spreckley:** short only by 28km, 5th this day rising to 7th overall. **Martyn Wells:** short by 130km, dropped from 1st to 4th but only 179pts behind the leader. **Steve Jones:** 130km short at 26th, overall 13th and only 515pts behind the leader. A sound and robust first effort. With the possible exception of Alister, all were poised to pounce on anyone falling by the wayside. Certainly one couldn't forecast a winner. Anyone could get there and no one could afford to drop a day.

Saturday was calm, hot and cloudless. That evening I met Andy Davis in Twizel and heard how it's really done. "I haven't got any high-tech in my glider - just a little needle that goes up and down. I reckon the money's better spent on aerotows." So now I know too: just hard practice.

Day 6, Sunday, January 15

We gathered under a grey sky and learned that the "great NZ high" was still around to the north-east but Bob Henderson told of new influences. A weak front was moving north-east over the south of SI and weakening further. Eventually the third set of tasks were flown, 442, 344 and 320km orientated north-south to take advantage of the improving weather. Canada's Wilfried Krueger (LS-6B) pulled out, apparently unhappy about the terrain. Later we saw gliders speeding high overhead northbound about halfway round the course.

Fortunes were mixed. Early wave far away was only of use to those above the start gate maximum of 10 000ft. Thermals were reported good, though not everywhere, but beneficial convergence was expected later when the sea breeze took effect. First, we had a fast flush of four finishers in fine formation, then singletons. Two, Hans Obermayer, Germany (Ventus), and Guido Achleitner, Austria, both landed a kilometre out, the latter badly damaging his ASW-24. All nearby became aware of Guido's noisy displeasure! At the bottom of the Standard Class, Roberto Sada Salinas, Mexico, landed back in his LS-7, failing to add to his 730pts.

From the British standpoint it was quite a good day, for in both the 15 Metre and Standard Classes the first three were from well down the list so Andy held 2nd and Justin dropped a place to 3rd. Brian and Steve went up two to 5th and 11th while Martyn yielded four places. Alister fell two to 27th and Chris held steady on 18th.

Day 7, Monday, January 16

Safety officer Roger Read warned: "Please listen to what we say about the aerodrome wind; bring 300ft more on the final glide and do not try to fly a circuit after a low energy finish. Today will be high so put your oxygen on early and use it."

We had wave at last with tasks of 675, 628 and 524km. Soon I heard in German "Lift starting at 1900m, first 6.8, then 8.8 and now I climb 9.2m"...18kt!



Carol Clifford, manager of the South African team, who will be remembered by many at Dunstable during the 1950s. Her father, Frank Foster, who died in a jet fighter collision, was the World Two-Seater Champion with Nick Goodhart in 1956.

Gliders gained great heights and Terry Delore streaked in fast at 148km/h, even beating Ray Lynskey's Open Class effort by 14km/h. "Good wave all the way," he recounted, "but a little iced near the 2nd TP and I had to descend to about 12 000ft to dry out - then a long 190km 80kt final glide from 17 000ft from Mt Cook." Andy told of getting " a shade behind with an early wrong turn; catching up all day but I left the south end of the Ben Ohau range at 20 000ft needing 14 000ft at the last TP, so I knew I was home when I passed it with 800ft to spare - a long glide in with no problems."

In the Open Class the Schroeder/Schwenk duo were at last shaken off by Ray Lynskey, still finishing together though 5th and 6th. Justin held on to 3rd place, Chris and Alister gained a place to 17th and 18th. In the Standard Class Markku Kuittinen was 23rd, yielding 1st place overall to Andy by a mere 37pts. Brian held steady at 5th, Martyn's win brought him from 8th to 4th but sadly it wasn't Steve's day - a 40km outlanding at 35th dropped him from 9th to 20th. Four landed out in the Open and eight in both the other Classes. But there were no energy finishes or reported damage: a pretty good day!

Day 8, Tuesday, January 17

After the Mexican 's performance the day before, Roberto Sada Salinas withdrew, uncomfortable flying in such exacting conditions. It was a safe, honest, responsible and respected decision. A friend went home, leaving a parting gift for each team.

Martyn, after receiving a prize for Day 7, said of the wave "a really brilliant day, but I haven't the foggiest idea what I was doing!" Karl Striedieck added that "going into rotor near Mt Cook was like a Rugby scrum - arms and legs everywhere." Then we heard of "speed over an assigned course" - 430, 391 and 349km. This was becoming an endurance test where only the fit survived and none could afford an off day.

They launched at 2pm under a good sky well clear of the mountain tops. I then heard that the day before Ron Davidson from Husbands Bosworth - Martyn's crew - sneaked away among the wave to complete his Diamond trio. Well done Ron, I'm envious!

Then we saw white wings and water trails too numerous to count, the Classes intermingling. The Standard Class was devalued to 917pts and soon Brian appeared at 125.51km/h, taking him to 3rd overall. Martyn yielded a place to 5th and Andy, 13th, clung to 1st place by just 9pts, saying it "was wrong to ridge run, the thermals were better." Steve moved up to 19th.

The 15 Metre Class was devalued to 933pts. Ray Gimmey, USA (LS-6E), held Justin to 2nd . Chris' fast 4th place brought him up two to 15th and Alister at 10th held 26th place. Among the Open Class, Schwenk and Schroeder were separated at last but still at 1st and 2nd. Brian said: "A piece of cake - riding the crest and surfing down the big one." With four days to go the tension was mounting.

Day 9, Wednesday, January 18

We woke to thick fog but warm Kiwi fog doesn't linger, and there was gentle speculation as to how the Maoris found these beautiful isles by canoe from the mythical land of Hawaikiki...without GPS and radar.

At briefing the numbers for the "speed over an assigned course" were 507, 454 and 411km. Launching was delayed as small puffs of cu formed but when it eventually got going most of the Standard Class accumulated in a vast rotating and slowly descending gaggle over Mt 'orrible. Perhaps it wasn't so 'orrible, for they held on and soon all were away. First was Terry Delore racing in, then others streamed home. Justin at 6th still clung to 2nd, 78pts behind Eric Napoleon, now 1st after 4th this day. Chris had another good day at 9th, up three to 12th.

But this was Steve's day: 6th and oh the modesty! "We decided at briefing it was my turn to do well, but that the others wouldn't do badly deliberately!" His 952pts lifted him two places to 17th. Martyn, 9th, moved up a couple to 5th overall and Brian, 12th, went to 2nd, 143pts off Markku Kuittinen, again 1st. It was a good day for Alister at 7th, up three to 23rd, but still paying for last week's landout. Sadly, this wasn't Andy's day for he made only 68.50km/h and 550pts, dropping to 5th, yet only 419pts behind No. 1.

Among the big wings Ray Lynskey hammered it home hard to take 1st place, just 10pts behind Uli Schwenk, with his pal Robert Schroeder another 214pts astern. It was getting exciting: fingers well crossed.

Ray called it a "great day with a great task" and Michael Oakley, a New Zealander flying a Discus in the Standard Class, said "When you do 150km without a turn it must be a good day". Evidently Göran Ax, Sweden, lying 33rd, liked it too, gaining 988pts to fly his ASW-24 into 2nd position. Poor Andy struggled "I wished for a very fast time with aggressive flying. It was fine to the second TP but I went low into Matukituki and dropped about 10min behind the rest. Going into wave at Glentanner cost me 5000ft and I missed the main wave, spending ages trying to get up from about 3500ft agl. I eventually climbed slowly in the secondary wave until I reached final glide profile which cost me about 2hrs. It's what the sport is all about, you know..." Philosophical, that, when you know you've just blown it. ➡

The next day, Thursday, the high was off the SW of South Island, which wasn't good news as it would give weak thermals. At 1300hrs it was declared a no contest day and, waking to a grey overcast sky, it was the same the following day.

Day 10, Saturday, January 21

So came the final day, clear as a bell with a light northerly. The inevitable high was now east of South Island and 524, 478 and 438km of speeding over assigned courses were set. Bob Henderson was given a standing ovation - quiet, calm, efficient, courteous yet firm throughout, he was respected by all - the man who led the Kiwi contingent in the Gulf War. Responding, he asks us to remember an absent Kiwi, young Greg Buckland who died in a tragic diving accident just after Kiwiglide - "otherwise he would have been here, so in his memory fly well, fly hard and, above all, fly safely."

In a fair breeze the final grid rolled and we thought of Justin and Brian, so near and yet...? The hours passed, the wind increased and the dust started to lift. Clearly it was a difficult day and long tasks had been set. Cumulus? Yes, over the mountains. Wave? Clearly, for there were lenticulars about? But not a word until hours later the radio commentator told us there was "10km out" from Ray Lynskey.

A cheer went up but Ray had only a 10pt lead. Soon he raced over the line but behind him by only a few hundred metres glissading down the slopes of Benmore was fellow countryman Theo Newfield (ASH-25). But where were the Germans last seen setting out in formation with Ray? After the necessary time lapse of 4min the Radio Omarama man declared Ray the new World Open Class Champion.

Still there was no sign of the 15 Metre and Standard Classes, though we learned that Steve Jones was coming out of the Lindis, northbound. Then more of the Open streamed in, among them Robert Schroeder, too late to win - Ray was already telling on the radio how he did it.

Gradually the other Classes came home. There were fast French finishers - Eric Napoleon, Gerard Lherm and Gilles Navas. Then Justin and the radio chatter suggested that he had just held on to 2nd place.

Among the Standard finishers Markku Kuittinen was obviously a popular winner having flown consistently through the contest. Brian had to be content with 2nd - an excellent result, and Martyn did well to keep the 4th place. And credit to Andy Davis for staying 6th. Steve's robust performance gave him 18th place in his first World Championships. That night was party night for all - great!

Sunday dawned overcast with light rain and a soft warm breeze as we gathered for the closing ceremony. The results were seen by all as very satisfactory in a contest where local knowledge played a big part and the winning margins were tiny. At an auction during the contest two fine sculptures were bought by Sir Tom Wallis for a special reason. "Cloud Spirit" went to Ray Lynskey and the "Eagle" to Bill Walker (co-chairman, executive director - airfield) for his outstanding work in developing the airfield to a level where it was an appropriate location for a World Championships. Then John Roake renamed Omarama Airfield and from now on it is to be known in gliding circles as "Walker Field".



The grid with an inviting sky.

The World Soaring cup (an imposing new trophy donated by 17 New Zealand gliding personalities) went to France with three of their pilots in the top three; the Kees Musters trophy was won by Terry Delore for the fastest race speed in the 15 Metre Class (Day 7, 148.4km/h over 625.60km); Ray Lynskey won the Robert Kronfeld trophy for the fastest race speed in the Open Class (Day 7, 134.90km/h for 674.30km) and the FAI's Diploma of the Companion of Honour was presented to John Roake in recognition of over 35 years' contribution to New Zealand gliding.

From a technical standpoint we saw the complete and unqualified success of David Ellis' Cambridge GPS-NAV unit in navigation, rule compliance, violations and infringements as well as scoring. Several pilots bought ex-contest kits to take home. The days of the old TP camera must surely be numbered and we must also be moving towards the era of glider glass cockpits.

We also saw an array of "tip sails" of bewildering complexity of shape and size, but do they generate benefit? A survey noted most of the craft so fitted being flown by pilots expected to finish high anyway, so is it the pilot or his topical trendy tiplets? Perhaps we should try one on one side only. If the ship turns towards the fancy tip, take it off; if away, go fit the other!

So a splendid World Championships, superb flying, no injuries and reasonably little damage to the 91 competing aircraft. So farewell Kiwis, long will we remember your beautiful land and the warmth of your friendly welcome.



Donald Lamont's photograph of Omarama.



The briefing on the first day. Photo: Donald Lamont.









The 15 Metre Class Champion, Eric Napoleon in the centre, with Justin Wills, 2nd, on the right, and Gilles Navas who came 3rd.



Above: The Open Class presentation with the Champion Ray Lynskey centre, Uli Schwenk, 2nd, on the right and Robert Schroeder 3rd. Below: The Standard Class line up - the Champion Markku Kuittinen, centre, with Brian Spreckley, right, and Jaques Aboulin on the left. ➡



FINAL RESULTS

Open Class

Pos	Pilot	Country	Glider	Day 1.9.1 345km	Day 2.10.1 393.2km	Day 3.11.1 436.7	Day 4.12.1 452.5km	Day 5.13.1 613.9km	Day 6.15.1 438.6km	Day 7.16.1 674.3km	Day 8.17.1 428.8km	Day 9.18.1 505.4km	Day 10.21.1 522.4km	Total Points
1	Lynskey, R.	NZ	Nimbus 4	714	1000	937	984	991	919	1000	966	1000	1000	9511
2	Schwenk, U.	D	ASW-22L	999	949	993	929	999	945	814	1000	892	695	9215
3	Schroeder, R.	D	ASW-22B	1000	949	992	928	999	942	814	924	748	908	9204
4	Centka, J.	P	ASW-22BL	*670	878	855	989	992	717	882	939	979	657	8558
5	Gantenbrink, B.	IP	Nimbus 4	673	949	1000	1000	1000	762	770	987	657	609	8407
6	Newfield, T.	NZ	ASH-25	515	900	739	828	519	727	*901	*844	930	874	7777
7	Barrois, J.	F	Nimbus 3D	*548	949	850	939	519	871	517	855	928	680	7656
8	Tabery, R.	USA	Nimbus 3	*626	916	802	797	873	849	776	*751	673	484	7547
9	Harrison, G.	NZ	ASH-25	*517	884	724	776	508	1000	897	644	*745	744	7439
10	Mander, P.	AUS	Nimbus 3	*572	937	508	818	792	667	510	726	869	574	6973
11	Giles, M.	AUS	ASW-22	*699	937	404	943	795	*619	703	609	574	498	6781
12	Haggenmüller, R.	A	ASH-25	360	949	774	917	519	804	448	815	629	525	6740
13	Griffith, S.	USA	ASH-25	478	938	719	780	520	612	*494	846	753	543	6683
14	Bush, D.	USA	Nimbus 3	581	936	545	786	514	765	495	*837	642	503	6604
15	Milner, B.	C	Nimbus 3	589	862	330	678	*489	*273	494	*471	571	237	4994

15 Metre Class

Pos	Pilot	Country	Glider	Day 1.9.1 315.7km	Day 2.10.1 370.6km	Day 3.11.1 367.2km	Day 4.12.1 426.6km	Day 5.13.1 561.2km	Day 6.15.1 342km	Day 7.16.1 628km	Day 8.17.1 388.5km	Day 9.18.1 451.6km	Day 10.21.1 477.3km	Total Points
1	Napoleon, E.	F	Ventus 2	711	909	1000	980	945	870	917	823	868	815	8838
2	Wills, J.	GB	LS-6	887	827	947	926	1000	802	795	913	847	865	8809
3	Navas, G.	F	Ventus 2	753	900	980	983	946	594	917	824	962	860	8719
4	Ghiorzo, S.	I	Ventus 2A	986	876	916	1000	960	849	626	841	789	653	8496
5	Lherm, G.	F	DG-800S	828	909	796	990	984	781	448	906	866	842	8350
6	Delore, T.	NZ	LS-6A	924	1000	730	984	602	323	1000	765	1000	1000	8328
7	Grund, M.	D	Ventus 2B	1000	789	770	863	979	834	772	776	748	765	8296
8	Theisinger, M.	D	LS-6CW	998	908	796	964	601	875	610	709	651	768	7880
9	Janowitsch, W.	A	Ventus 2B	789	827	852	644	731	780	770	731	817	792	7733
10	Rabeder, K.	A	Ventus C	797	813	858	822	601	687	774	786	717	805	7660
11	Gostner, T.	I	Ventus 2B	443	863	961	899	865	719	673	718	880	638	7659
12	Demmerer, H.	A	Ventus B	719	827	715	663	856	817	774	705	629	779	7484
13	Ittner, G.	USA	Ventus C	725	775	250	764	602	937	766	862	749	804	7234
14	Garton, C.	GB	LS-6c	667	843	666	757	736	744	661	887	809	327	7097
15	Cubley, T.	AUS	ASW-20	734	864	939	797	584	784	596	695	672	346	7011
16	Obermayer, H.	D	Ventus	816	863	811	943	968	418	413	693	758	301	6984
=17	McPhee, N.	NZ	Ventus A	524	806	767	774	601	1000	655	722	237	894	6980
=17	Edwards, B.	AUS	LS-6B	752	835	881	837	601	665	643	789	237	740	6980
19	Raimond, S.	NL	LS-6	760	827	745	847	594	791	485	789	238	833	6909
20	Gimmey, R.	USA	LS-6B	842	775	748	547	602	746	688	933	371	633	6885
21	Petterson, A	S	LS-6	766	843	658	834	451	659	479	599	767	717	6773
22	Dedera, M.	CZ	Ventus C	606	863	834	775	723	520	661	808	238	634	6662
23	Kay, A.	GB	LS-6CW	741	498	33	838	856	658	733	810	820	288	6275
24	Anderson, G.	SA	Ventus CT	422	770	241	777	497	943	778	812	494	324	6058
25	Polzl, H.	CAN	LS-8B	753	789	657	452	723	348	580	734	774	188	5998
26	Hansen, J.	DK	Ventus B	771	770	779	629	556	852	468	737	341	0	5903
27	Masak, J.	USA	Scimitar	365	814	632	507	601	759	777	794	238	195	5682
28	Driessen, P.	NZ	DG-800S	248	862	229	581	863	532	479	595	202	334	4925
29	Reynoso, M.	ARG	Ventus CM	422	266	228	668	532	577	410	655	238	0	3996
30	Schmitt, C.	ARG	ASW-20	260	215	763	227	350	422	94	220	181	0	2732
31	Krueger, W.	CAN	LS-6B	859	189	812	135	186	106	DNF	DNF	DNF	DNF	2287
32	Jansen, D.	AUS	LS-6B	113	DNF	DNF	DNF	DNF	DNF	DNF	DNF	DNF	DNF	113



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Pos	Pilot	Country	Glider	Day 1.9.1 299.8km	Day 2.10.1 330km	Day 3.11.1 354	Day 4.12.1 392.5km	Day 5.13.1 536.7km	Day 6.15.1 318.9km	Day 7.16.1 524km	Day 8.17.1 349.8km	Day 9.18.1 411.9km	Day 10.21.1 438.8km	Total Points
1	Kulttinen, M.	FIN	Discus A	954	799	920	920	997	897	738	817	979	927	8948
2	Spreckley, B.	GB	LS-8	*769	814	850	991	917	796	934	917	890	880	8758
3	Aboulin, J.	F	Discus	811	*871	850	949	*933	865	712	817	914	961	8683
4	Wells, M.	GB	LS-8	1000	814	886	977	734	689	1000	793	901	875	8669
5	Van Dyk, T.	NZ	LS-8	903	1000	753	917	753	724	920	709	1000	880	8559
6	Davis, A.	GB	Discus	920	759	863	962	1000	825	933	790	550	862	8464
7	Karow, H.	D	Discus B	*516	905	760	899	753	933	948	790	964	*916	8384
8	Schramme, R.	IP	Discus A	*885	869	886	916	753	846	946	806	784	437	8128
9	Gerbaud, G.	F	Discus	982	*870	743	809	*753	870	417	757	898	954	8053
10	Fischer, P.	D	Discus	*842	869	900	865	753	897	626	803	408	*917	7880
11	Buchanan, J.	AUS	Discus A	912	782	743	912	753	463	921	647	901	791	7825
12	Striedieck, K.	USA	ASW-24	*720	*737	1000	1000	938	730	786	785	638	347	7681
13	Oakley, M.	NZ	Discus	920	758	626	863	550	709	978	695	982	458	7539
14	Sorri, J.	FIN	Discus	*900	799	712	941	723	763	759	387	550	1000	7534
15	Walters, R.	USA	Discus B	*765	798	679	910	744	616	840	795	862	441	7450
16	Leutenegger, S.	CH	DG-303	912	905	698	828	915	356	820	641	850	403	7328
17	Renner, I.	AUS	Discus A	*878	750	765	713	753	366	451	669	937	976	7258
18	Nordh, J.	S	Discus	*724	493	640	868	744	435	935	*737	873	791	7240
19	Selen, B.	NL	ASW-24	530	869	861	598	744	639	945	874	888	272	7220
20	Jones, S.	GB	Discus BT	*896	754	725	965	735	765	440	*670	952	237	7139
21	Stogner, G.	A	Discus	915	787	593	871	753	714	690	688	819	245	7075
22	Inaebnit, E.	CH	Discus B	918	903	584	853	753	493	844	474	796	403	7021
23	Øye, S.	DK	Discus CS	473	814	739	875	694	497	829	710	*550	824	7005
24	Garner, J.	USA	Discus A	*270	822	498	892	753	651	635	839	840	733	6933
25	Taylor, B.	AUS	ASW-24	*786	622	945	855	555	730	440	759	794	421	6907
26	Stevens, M.	NZ	Discus B	912	754	565	657	736	638	476	719	814	472	6743
27	Siebert, K.	D	Discus	*884	814	257	861	753	899	889	518	364	458	6697
28	Hauser, F.	CH	ASW-24	878	814	398	857	735	547	688	661	*500	437	6515
29	Stephens, L.	NZ	LS-4	530	*750	828	879	*753	479	260	*165	830	970	6444
30	Lassen, H.	N	LS-7	*266	869	683	520	*717	882	637	715	408	*346	6043
31	Ichikawa, M.	J	SZD-55	560	781	588	490	740	491	614	642	511	455	5872
32	Ponte, C.	VEN	ASW-24	*240	750	250	866	740	471	695	240	682	722	5656
33	Demzcenko-Grzelak, B.	P	SZD-55	192	750	839	837	514	507	780	722	255	178	5574
34	Timmermans, A.	TUR	Discus B	*315	791	485	642	694	499	731	532	364	403	5456
35	Bjørø, J.	N	LS-7WL	397	813	747	626	*501	352	770	600	0	415	5221
36	Janowitsch, J.	IP	Discus A	*66	197	799	602	*465	374	799	670	887	269	5128
37	Jørgensen, T.	DK	Discus CS	*400	814	220	487	420	708	901	374	359	403	5086
38	Ax, G.	S	ASW-24	110	553	130	833	420	460	815	683	988	3	4995
39	Achleitner, G.	A	ASW-24	*912	798	837	923	915	424	DNF	DNF	DNF	DNF	4809
40	Thomsen, E.	DK	Discus	378	*700	217	820	420	106	428	588	553	403	4613
41	Bradley, R.	SA	LS-4	*772	195	215	662	433	483	602	387	550	266	4565
42	Morinaka, Y.	J	DG-300	148	596	220	348	651	427	417	364	364	*272	3807
43	Rubaj, T.	P	SZD-55	440	750	890	947	667	DNF	DNF	DNF	DNF	DNF	3694
44	Sada Salinas, R.	MEX	LS-7	*54	*100	20	556	DNF	DNF	26	DNF	DNF	DNF	756

* = Penalty; DNF = Did Not Fly; IP = Invited Pilot

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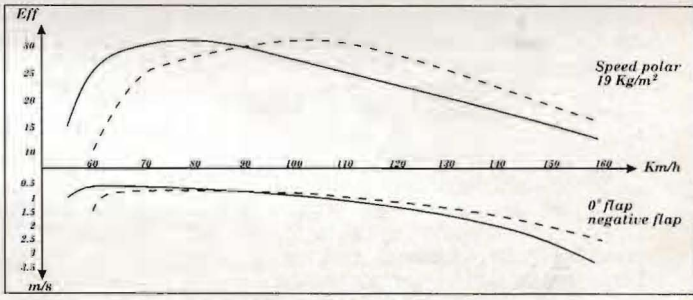
ANN WELCH

SILENT IT IS

Ann has discovered a new Italian glider which is light, small and with great potential



Above: The SILENT on tow.
Right: The polar curve.



Gliders have been becoming heavier for so long that the idea of a light, even ultralight, glider is perceived as inevitably having a poor performance. Worse, it probably could not be launched by ordinary club equipment. But a new Italian glider with an empty weight of just under 100kg which overcomes such problems is about to go into production. Gliding's Section 3 of the **FAI Sporting Code** provides for an ultralight glider of max empty weight of 100kg and also for a whole range of world records for this category, none of which have yet been established.

A week before Christmas I was invited to the official presentation of this glider at Alzate, near Milan, where it was flown by its designer and some 20 pilots used to heavy gliders. The SILENT, named because even when flown at high speeds it is really almost silent, appears at first glance to be a conventional white glass glider. It has a span of 12m, like the World Class glider, but its light weight and sophisticated design gives it a very interesting performance range. At the slow end of the scale it stalls (with a 90kg pilot) at 52km/h, and has a min sink of 0.60m/sec at 65km/h, so can circle well into the cores of thermals. Best glide is 1:32 at 95km/h and VNE is up to 200km/h with a -6° flap.

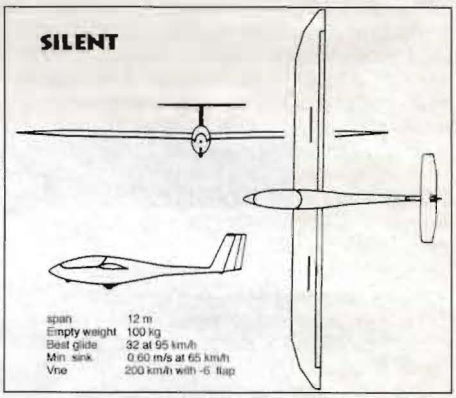
The SILENT has flaperons for lateral control, the flap function being used only in the negative sense at higher speeds. Good Schempp-Hirth airbrakes are there for the approach, and the landing gear is fixed, has a wheel brake and is neatly faired. The SILENT is positive *g* aerobatic (+6 -4*g*).

Comparison performance flying with a DG-101 was carried out which showed little difference in performance up to 150km/h when the DG started to pull away. Its pilot reckoned the SILENT's glide ratio to be about 1:35, but the design team prefer to claim 1:32. This sort of performance is entirely acceptable for the middle level club pilot whose beady eye is more on a good weekend cross-country soaring than World Championships, particularly as the SILENT is very field landable.

At Milan, in no wind, the braked landing distance varied from 50-70m with pilots who had not flown the glider before. In a good British breeze the landing run could be really short, bringing outlandings into the skill range of club pilots who may feel a bit scared of putting a great ship into some flowery meadow. The low stall speed and small circling diameter also allows lift to be utilised at a lower height over good fields than with a big heavy ship.

The SILENT design team have good credentials both in aerodynamics and end results. These include designing the elegant STOL Storch ultralight aeroplane - which I have flown - a high performance hang glider and two test flown prototypes of the SILENT before finishing the configuration.

The 20 plus aerotows during the presentation day were made by a very efficient Slovenian 60hp trike microlight. Such trikes accelerate fast so the take-off runs were short. With four blade prop and effective muffler it is remarkably quiet and having a water cooled engine was able to descend rapidly so that 500m tows were completed, ground to ground, in under 5min. Pawnees, Super Cubs etc can also be used for towing and the SILENT is stressed for winch launching.



Some good practical thinking has gone into the SILENT as it can be rigged on its trailer single handed, and safely taken off in no wind without a wingtip runner. After extensive development and testing, the design of this little glider is now frozen and ready to go into production as soon as bureaucracy allows. It may well come to Britain in the spring seeking a BGA C of A.

Ann adds that the SILENT is a fun glider with a serious performance. The price is currently estimated at £13 000 ex VAT, but if produced as a kit (largely an assembly kit with the buyer fitting controls, instruments etc) the cost could come down to £10 000.

Below: The SILENT is rigged on its trailer and wheeled off single handed. Photos by Ann.



THE NATIONAL LADDER 1994/95

Your new steward



As reported in the December issue, Ed Johnston, national ladder steward for the last eight years, stood down after the 1993/4 season and passed the controls on to me, John Bridge, a married 39 year-old computer consultant *(oui, bien sur, ma femme fait du vol à voile aussi...)*. After learning to glide during 1979 at Weston-Super-Mare and soloing on a K-4, I graduated *via* an Oly 463, a Jantar 1 and an astonishingly forgiving syndicate to my current glider, an LS-6c, a burden I carry personally for a variety of reasons, all of them selfish. I also have a small share in a large Nimbus which attempts ambitious tasks and quite often nearly makes it home. Occasionally I disappear to the French Alps for some ridge scraping but my home base is the Cambridge University GC at Gransden Lodge. I enjoy long distance cross-country flights but, most of all, I enjoy getting back, especially if the bar's open.

The ladder

Who can take part? This is primarily a local competition and all pilots may participate, provided the flight originates in the UK and is not the subject of a formal BGA competition. There is no entry fee, you do not need a rating or a competition licence and it is open to everyone from Bronze badge pilots to veterans of World Championships (*ie* there will always be someone to beat...).

You don't have a club ladder? Then set one up. It's easy - just appoint a steward (how about you?), persuade him/her to contact me for a set of rules and get your pilots flying. All I need from the stewards every two months between April and September is a list of pilots and scores which will then be collated in time for the next issue.

Haven't got a competitive glider? Actually, if it soars, it's competitive. Handicaps exist to blunt the pointy gliders and to sharpen the stubby ones, so a modest, fast, wooden flight may quite easily beat a hypersonic Kevlar one. Pole-squatters are kept happy with a further set of rules (the higher you go, the more points you get).

Can't fly every day? You don't have to - only the best four flights will count towards a ladder placing so if you can get out on the four stonking days that make a British summer you will have as much chance as anyone else for a good final score. There is also a weekend ladder so that those unable to fly midweek may have an equal chance to participate.

Where are the ladder rules? Full details of the current rules are in the April 1994 issue of *S&G*, p95. They were changed for the 1993/4 season to allow de-rated speed points to be scored for uncompleted or undeclared flights and, from the correspondence I have seen so far, your response appears to be generally favourable (coincidentally, the number of Gransden pilots submitting claims increased by 30% over the previous season). I would appreciate further feedback on this and all other aspects of the competition, ideally channelled through your club ladder steward, or *via* the BGA office.

Is there a prize? At the end of the year, the pilots at the top of the national ladders are awarded big pots, there's a lot of back-slapping and we start all over again in a new season. All very informal. As an added bonus, certain exceptional flights are plucked from the submissions and fired off towards the BGA Comps Committee who then decide whether any of them qualify for other BGA prizes.

In summary: This is really a competition to be taken as casually or as seriously as you choose. In the previous few seasons the top scores in the open ladder have totalled between 7700 and 12 000pts (depending on whether that man A**y D***s had been able to compete) and as a pre-season exercise, those who didn't take part last season might score their best four flights last season to see how they might have performed had they done so. Ladder stewards should have received further information by the time this issue goes to print. If they haven't, or if new clubs wish to join, please contact me *via* the BGA office. In the meantime, rig and go. Enjoy it!

COACHING AND COURSES

Avid readers of the BGA Executive Committee minutes will have noticed a decision on December 7 to recruit a new national coach to replace Graham McAndrew. Regrettably at the end of January I have to report that we have not yet succeeded in attracting a candidate who meets all our exacting requirements. The search continues, but it now seems quite probable that we will have to face the season with the post unfillled.

With a careful rearrangement of the allocation of my time, and considerable help from honorary national coach, Chris Pullen, and a host of regional examiners and other senior instructors, it has been possible to keep the programme published in the December issue, p344, intact. However, this does not leave very much national coach time available for the increased number of club visits we had planned and the bulk of this important task will have to be undertaken by the regional examiners. It is our intention to try to arrange a visit by either a coach or regional examiner to almost every club in the country before the end of the year.

On a very positive note, if we are starting 1995 short of men, at least we will be better off for material than ever before. By April, the DG-500 and the Falke will have been joined by a new Discus to replace the one lost in 1994 and a Puchacz two-seater. The primary task for the Puchacz will be for stalling and spinning training on instructor and completion courses, but it will also be used extensively on cross-country and wave courses, be available for advanced aerobatic training and is a particularly useful machine for coaches and regional examiners to take along on club visits.

Talking of courses, the instructor's course bookings at the time of writing are 70% up on the same date last year; five of the seven courses in the early part of the year are already full and the others are filling up fast. It will be possible to put further instructor's courses into the programme if required but not at short notice. So if you are planning on coming on one this year please book as soon as possible to avoid disappointment.

We have now passed the deadline for reserving places on cross-country courses for instructors. The remaining places are now available to be taken by any BGA member. Normally pilots should be of Bronze badge standard with club approval to fly cross-country and some of the courses are targeted at pilots of much higher levels of experience. Courses with places still available are:- Husbands Bosworth, May 15-21; North Hill, May 28-June 3; Dunstable, June 12-18; Bicester, June 24-30; Booker, July 2-7; Bicester, July 16-21 and Long Mynd July 23-29.

Call the BGA office to book a place on any of these courses, or call me direct on 01494 450197 if you want more information before booking. Also, it is not too early to book a place on the wave courses at Aboyne in October. After last year's success they are likely to fill quite early on.

Looking forward to flying with as many of you as possible in the coming year.

Chris Rollings, *senior national coach*

AIRFIELD MARKINGS

The CAA have recently reminded us that clubs with winch or autotow permission must comply with the requirement for ground conspicuity markings as specified in Rule 45(8) of the **Rules of the Air**. This relates to the display of the white double cross symbol which should measure a minimum of 12 metres x 6 metres.

This was referred to in the recent BGA Newsletter and an alternative smaller sized symblol was published in error. All clubs should note that the minum size of the white double cross should be 12 metres x 6 metres.

Barry Rolfe, *BGA secretary*

BGA TURNING POINT BOOKLET - 1995 UPDATE AND WORLD SOFTWARE

A new 1995 edition of the BGA TP booklet will not be issued since few changes have been needed since the 1994 edition was produced. Therefore, the 1994 version is still the definitive edition with just two amendments. AL 1/94 was dated May 12, 1994 and distributed to all clubs; it consisted of minor corrections with the exception of NEW (1° in error) and KSB (W of Abingdon) was re-located to a new and prominent road junction.

Amendment 2, summarised in the next paragraph, was distributed to clubs in February

and is available from the BGA (please send a sae) as is the complete booklet (postage 90p). Until the booklets are reprinted the amendments will be on separate pieces of paper. It is also available in Word Perfect 5.1 or ASCII from me (Bentworth Hall West, Bentworth, Nr Alton, Hants GU34 5LA) - please send a PC-formatted 1.4Mb disc and a sae or address sticker and stamp. In the case of discs, any other corrections or refinements are added to the files as soon as they are decided.

AL 2 to the 1994 edition (AL2/94) dated Feb 1995. An important correction is to Mursley water tower (MUR) on p19. This point was originally plotted to the wrong feature since I was assured that the water tower was situated at the Trig Point. It wasn't - the Trig Point was some 650m out. The corrected grid refs and Lat/Long are 481.66 229.25; 51°57.320 0°48.693W and the correct description is "N side of village, just E of minor road to Whaddon". More minor corrections include some typos and some changes of road numbers at the following points: DED, DNE, GRM, HEY, LFN, MIT, SAW, ULL. New points requested were Colchester West (COW), East Dereham (EDE), Kettering South (KES). KES is just south of the existing KET and it is expected that eventually KET will fall into disuse since it is more difficult to find. KET was established before the dual carriageway bypass was built south of the town, and rather than delete it from the list it was decided to list KES as an extra point.

Future developments - world software format. Discussions are taking place internationally on a world software format for TP data, so that data inputs into devices such as GPS units can be to a common format in all nations. The issue is larger than just the gliding world since virtually all branches of aviation are now using GPS and other features are involved as well as TPs and gliding sites. These include radio beacons (VOR, ADF, NDB, etc), reporting points, airfield and runway datums. In such discussions I am trying to sustain the BGA ASCII-based TP format as far as possible, but changes may be inevitable in the future if the BGA is to keep up with these developments.

Manifestly a "field" will have to be added for the geodetic datum (the BGA system uses OSGB 36). Another change may be that the TP identifier (trigraph) has to become more complex if the BGA is to "join the international club".

One possibility being discussed is to use a prefix of a National identification letter such as those used for aircraft registration, *ie* G for the UK, N for the USA, etc. And to avoid ambiguity with, for instance, VOR codings, a fourth digit may be added to the existing BGA trigraph. If this system was adopted by the BGA, LAS would become LASH (G-LASH internationally), Portmoak would become PORT (G-PORT), and so forth. Watch this space. If you are on the Internet, look under UseNet newsgroup rec aviation soaring for various discussion on this and other gliding matters.

Ian Strachan, *BGA TP co-ordinator*

BGA 1000 CLUB LOTTERY

The **January** draw results are: First prize - T.J.Mitchell (£64.75) with the runners up - K.W.Balcombe, J.F.Green, Mrs O. Masters, V.C.Carr and D. Oddy - each winning £12.95.

February. First prize - M.J.Wilshere (£63.75) with the runners up - S.F.Duerden, P.Majury, N.C.Morland, F.Thomas and A.Poundsbery - each winning £12.75.

ENVIRONMENTAL COMMITTEE

At very short notice during the Christmas holidays the House of Commons announced that their Select Committee on Environment would be holding an inquiry into the environmental impact of sports and leisure activities in rural and coastal England. On behalf of the BGA Chris Nicholas prepared written evidence in support of gliding and gliding clubs which was then submitted to the Select Committee. Any clubs wishing to have a copy of this paper should apply to the BGA office.

Barry Rolfe, *BGA secretary*

AVIATION ARTISTS' EXHIBITION

The Guild of Aviation Artists has their 25th annual exhibition from July 10 to 21 at the Carisbrooke Gallery, 63 Seymour Street, London W1 when the major award will again be £1000 for the aviation painting of the year.

It is an open competition and entries are invited. Entry forms are from The Guild of Aviation Artists, 71 Bondway, London SW8 1SQ and the contacts are Richard Gardner (0252 515562) and the Guild secretary, Hugo Trotter (071 735 0634).

GLIDING FOR THE YOUNG

Once again British youngsters are invited to join the subsidised gliding courses run by the German Aero Club's youth organisation. This year they are at Laucha, near the Harz mountains, and the entry age has been extended to14 to 27 year-olds. If you would like more details, write to *S&G* enclosing a sae.

FAMILY BUSINESS

Husband and wife glider pilots, Neville and Lynn Cawte who fly at Saltby Airfield with the Buckminster GC, were so convinced they had found a niche in the glider equipment and accessory market they set up their own business in the autumn. They are trading as Nevynn International and feel the early enthusiastic reaction of their customers proves their hunch was right. See their advertisement in this issue for an idea of the range of their products.

EDITORIAL CONTRIBUTIONS

If sending articles or photographs to *S&G* please include your full name, address and telephone number. We often have anonymous contributions.

Corrections. The World Glass design is fixed for 15 years, not five as we stated in the December issue, p344.

Due to a line being dropped in printing the 'phone number for Matt Abell, the contact for the Inter-University task week, see last issue p38, was wrong. It should be 0115 9784170.

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APRIL CONSIDINE

CLUB FOCUS

With the Cambridge University GC 60 years old this February we take a look at a day at the club through the eyes of one of their cadets.



The site. Photo: Martin Boycott-Brown.



April photographed by Mike Langton.

It was Sunday morning and I was awakened by a murderous shout from my father "Get out of bed! It's seven o'clock and flyable". No sympathy was given to the fact that I only got home at 1am from working at the local pub as a waitress to subsidise my gliding.

By eight o'clock I was at the airfield which is the advantage of living on the doorstep. The first task of the day was to put the kettle on. Then we sat down and discussed the latest news (*ie* those homing pigeons who forgot where the airfield was although it is 100 acres).

When the instructors arrived and gave permission we got the gliders out. We have two K-13s, two K-8s, a Junior, Astir, Discus, Grob Acro and, on a good day, bring out our venerable T-21, "Bluebell", which has almost as long a history as our club.

As cadets we were launching by 9am due to our enthusiasm which has continued since we joined the club in January 1993. Since then we have all gone solo and with a new intake of six cadets we have been able to concentrate on our Bronze and Silver badges.

As the morning progressed, I decided it might be worth smoking a barograph. But while heading towards the workshop I heard a familiar cry, "April, is there any chance of helping me rig my glider?" This I enjoy but with 56 private owners it can get quite hectic in the mornings.

Finally back at the launch point, barograph in hand, it was my turn to fly. So after getting permission and a briefing, I jumped into the K-8 and was given a fantastic 2000ft launch by our Supacat winch and off I went in search of thermals. After finding a 4kt climb I was joined in the thermal by the club Astir. I gazed down longingly trying to calculate how many more flights I needed before I could fly that lonesome dove but my thoughts were gone once the little K-8 starting outclimbing the Astir.

After a while I decided to go back and land. Luckily at Gransden Lodge I am spoilt for choice with three grass runways. This is helpful on good days as, wind direction permitting, we can aerotow from one runway and winch launch on another.

After landing I helped at the launch point and then took a turn driving one of the Range Rover tow-out vehicles, one being manual and the other automatic. Learning to drive these vehicles has been a great advantage to me, as it will help my driving when I am old enough to go on the roads.

When dusk fell it was time to start the jigsaw puzzle. All the club fleet and the two tugs have to go back into the hangar and this is one time when a wise head keeps a still tongue. Just as the hangar doors were closed the club Junior returned home after completing another Silver distance.

Then once again it was time for the last task of the day - to navigate back to the kitchen to put on the kettle and, if lucky, grab a piece of Janet's chocolate cake (this helps to keep the cockpit weight up). Meanwhile some of the other members navigated to the bar to have a post-mortem on the day's events over a pint of beer.

Since joining the club, thanks to the cadet scheme, I have enjoyed every day. The members have been so helpful and most welcoming to all the cadets.



A typical day. Photo: Martin.

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	Name	Club	1994
437	Taylor, M.A.	Rattlesden	17.7
438	Starling, R.T.	Bristol & Glos	18.10
439	Lemin, R.	Bristol & Glos	18.10
440	Fujimoto, S.	European SC	14.8

DIAMOND DISTANCE

No.	Name	Club	1994
1/659	Faleke, G.	Cambridge Univ	13.8
1/660	Mulholland, S.	Four Counties	13.8
1/661	Welford, R.J.	Cambridge Univ	14.8
1/662	Mee, M.P.	Booker	13.8
1/663	Baker, I.C.	Cambridge Univ	14.8
1/664	Welsh, S.J.	Wyvern	14.8
1/665	Cheetham, H.	Buckminster	30.6
1/666	Shelton, P.M.	Marchington	14.8
1/667	Emson, C.R.I.	Oxford	14.8
1/668	Britton, N.A.	Bidford	14.8
1/669	Jelden, A.	Booker	14.8
1/670	Bowes, D.	Wolds	14.8
1/671	Pullen, C.	London	30.6
1/672	Taylor, M.	Rattlesden (in Spain)	17.7
1/673	Stringer, M.G.	London	14.8
1/674	Fujimoto, S.	Cambridge Univ (in France)	14.8

DIAMOND GOAL

No.	Name	Club	1994
2/2310	Mills, J.F.	Cranwell	21.8
2/2311	Maskell, A.	Cambridge Univ	14.8
2/2312	Fujimoto, S.	European SC (in France)	14.8

DIAMOND HEIGHT

No.	Name	Club	1994
3/1161	Davies, R.	Pegasus (in France)	8.4
3/1162	Hallum, A.D.	Booker (in New Zealand)	2.1
3/1163	Hornsey, L.	Chilterns (in France)	17.3
3/1164	Arkle, R.	Deeside	30.7
3/1165	Trotter, I.M.	SGU	16.9
3/1166	Hibberd, K.	Glyndwr (in France)	25.8
3/1167	Jeynes, F.B.	Stratford on Avon	30.9
3/1168	Brackstone, K.	Bidford	28.9
3/1169	Phillips, M.J.	Yorkshire	28.9
3/1170	Foster, I.	Cornish	6.10
3/1171	Kosak, J.G.	Culdrose	30.9
3/1172	Hunter, G.A.	Culdrose	6.10
3/1173	Nunn, A.V.	Deeside	30.9
3/1174	Shaw, J.S.	Cornish	30.9
3/1175	Shaw, S.V.	Cornish	6.10
3/1176	Hutchinson, M.G.	Black Mountains	6.10
3/1177	Passmore, N.J.	Wyvern	30.9
3/1178	Green, A.A.	Highland	30.9
3/1179	Large, R.J.	Welland	6.10
3/1180	Matcham, K.S.	Lasham	6.10
3/1181	Dungey, D.	Essex	30.9
3/1182	Westgate, G.C.	Southdown	27.9
3/1183	Burdett, J.C.	Lakes	10.10
3/1184	Darlington, A.	Imperial College	28.9
3/1185	Lewis, J.	Imperial College	30.9
3/1186	Wright, J.P.	Booker	6.11
3/1187	Hughes, A.R.J.	Booker	6.10
3/1188	Brown, P.D.	Portsmouth Naval	18.10
3/1189	Stewart-Smith, J.	Cornish	6.10
3/1190	McKay, D.S.	Aquila	24.10
3/1191	Starling, R.T.	Bristol & Glos	18.10
3/1192	Armstrong, A.	Essex	6.10
3/1193	Wahlberg, A.A.	Portsmouth Naval	18.10
3/1194	Gilkes, N.J.	Portsmouth Naval	24.10
3/1195	Edwards, T.R.	Portsmouth Naval	18.10
3/1196	Robinson, A.C.	Deeside	16.11
3/1197	Foster, P.S.	Yorkshire	19.10
3/1198	Lewis, P.A.	Lakes	10.10
3/1199	Lemin, R.	Bristol & Glos	18.10
3/1200	Meacham, G.W.	Two Rivers (in France)	8.4
3/1201	Fujimoto, S.	European SC (in Spain)	7.4

(Thirty of the heights were flown from Aboyne.)

GOLD BADGE

No.	Name	Club	1994
1783	Bateman, S.	Four Counties	18.10
1784	Evershed, M.D.	Cambridge Univ	6.10
1785	Maskell, A.	Cambridge Univ	14.8
1786	Wright, J.P.	Booker	6.10
1787	Bushell, B.T.	Upward Bound	24.10
1788	Limb, A.	Aquila	24.10
1789	Starling, R.T.	Bristol & Glos	18.10
1790	Drury, G.K.	Kent	24.10
1791	Clark, G.R.	Portsmouth Naval	24.10
1792	Bramwell, D.S.	Upward Bound	24.10
1793	Hoskins, J.W.	Lasham	24.10
1794	Eastburn, M.P.	Aquila	24.10
1795	Grieve, R.D.	Four Counties	6.11
1796	Cooper, M.D.	Oxford	4.8

GOLD HEIGHT

Name	Club	1994	
Luxton-Smith, H.		Booker	6.10
Bateman, S.		Four Counties	18.10
Baker, E.		Cambridge Univ	6.10
Evershed, M.D.		Cambridge Univ	6.10
Wright, J.P.		Booker	6.10
Hughes, A.R.		Booker	6.10
Hill, A.R.		Anglia (in France)	13.3
Stewart-Smith, J.		Cornish	6.10
Evans, H.C.		Bristol & Glos	29.9
Bushwell, B.T.		Upward Bound	24.10
Limb, A.		Aquila	24.10
Starling, R.T.		Bristol & Glos	18.10
Armstrong, A.		Essex	6.10
Johnson, P.T.		Essex	29.9
Drury, G.K.		Kent	24.10
Clark, G.R.		Portsmouth Naval	24.10
Moorcraft, W.J.		Buckminster	7.10
Taylor, P.A.		Portsmouth Naval	24.10
Bramwell, D.S.		Upward Bound	24.10
Wahlberg, A.A.		Portsmouth Naval	13.10
Roebuck, W.P.		Portsmouth Naval	18.10
Searle, C.		Booker	6.10
Gilkes, N.J.		Portsmouth Naval	24.10
Hoskins, J.W.		Lasham	24.10
Eastburn, M.P.		Aquila	24.10
Grieve, R.D.		Four Counties	6.11
Smith, R.L.		Booker	6.10
Robinson, A.C.		Deeside	16.11
Turnbull, M.J.		Bicester	18.10
Lambert, G.E.		Lasham (in Spain)	6.4
Nicolson, K.		Kent	24.10
Tanner, J.A.		Deeside	19.11
Ragouhans, N.		Booker	26.9
Clark, J.		Black Mountains	15.11
Ford, K.		Booker	6.10
Holt, R.		Deeside	28.11
Hatton, C.B.		Cornish	29.9
Roe, G.S.		Lasham	7.10
Mann, P.A.G.		Eastone (in France)	25.8
Cooper, M.D.		Oxford (in USA)	4.8
Perley, A.J.		Booker	6.10
Lievem S.		European SC (in Spain)	6.4
Fujimoto, S.		European SC (in Spain)	7.4

GOLD DISTANCE

Name	Club	1994
Mills, J.F.		Cranwell 21.8
Maskell, A.		Cambridge Univ 14.8
Fujimoto, S.		European SC (in France) 14.8

SILVER BADGE

No.	Name	Club	1994
9653	Walters, O.J.	Bicester	30.5
9654	Bayford, J.	Cambridge Univ	14.8
9655	Purkins, H.W.	Yorkshire	5.8
9656	Potter, B.S.	London	20.7
9657	Russon, R.	Shenington	14.8
9658	Stewart, Z.A.	Clevelands	30.5
9659	Tanner, J.A.	Deeside	27.11
9660	Archer-Jones, S.E.	Bicester	20.7

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9661	Clarke, J.	Black Mountains	15.11
9662	Lewis, S.	Midland	16.11
9663	Fogden, D.	Booker	13.8
9664	Ennis, J.C.	Southdown	1.5
9665	Mann, P.A.G.	Enstone	25.8
9666	Fujimoto, S.	European SC	14.8



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BGA ACCIDENT SUMMARY Compiled by DAVID WRIGHT

Ref No.	Glider Type	BGA No.	Damage	Date Time	Place	Age	Pilot/Crew Injury	Hrs
122	SZD Junior	3847	Minor	27.8.94 1110	Aboyne	58	None	46

The pilot made a fast approach to allow for turbulent conditions. However, he failed to commence his roundout in time to arrest a high rate of descent resulting from the speed, a severe wind gradient and significant airbrake. The heavy landing resulted in splits to the rear fuselage.

123	Nimbus 2c	2505	W/O	2.9.94 1420	Preston Candover	46	None	480

While thermalling the stick jammed laterally. The pilot tried to free it, but could not and decided to bale out as the glider entered a spiral dive. He jettisoned the canopy, pulled his feet up, released his straps, held the D ring, jumped and made a safe descent. The outer end of the control rod had unscrewed and jammed between the wing ribs.

124	Olympia 460	2660	Minor	13.8.94 1100	Seighford	42	None	36

After weathercocking during his first winch launch the pilot held the stick fully back to hold the glider straight on his second attempt. As soon as "all out" was given the glider was snatched and climbed to about 20ft with minimal airspeed. The cable went slack and the glider, still nose up, sank rapidly on to the ground and the gear collapsed.

125	Olympia 2B	512	W/O	24.8.94 1345	Lenham	55	Serious	145

The pilot became low while ridge soaring and turned away from the ridge to make a field landing. Rather than turning slightly and landing in a field in which a glider had already landed the pilot tried to make a circuit into another. Airspeed was lost and the glider stalled in from about 40ft and impacted in a very nose down attitude.

126	LS-3A	2668	Minor	27.8.94 1555	Aston Down	45	None	819

Returning from a cross-country into a strong headwind the pilot decided to divert to another airfield. The landing area was congested so he decided to land on the crosswind runway. Distracted by other traffic he failed to allow for the severe wind gradient in the lee of buildings and the glider had insufficient airspeed to round out before impact.

127	Olympia 2B	1692	W/O	10.9.94 1155	Arbroath	64	Minor	6

The pilot, on an early solo on type, had a winch launch failure at about 25ft during rotation. The pilot did not lower the nose significantly and the glider stalled on to the ground and was W/O. Serious injury was avoided as the pilot had 3in of energy absorbing foam behind and 1.5in below him.

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Rob Palfreyman of Stratford on Avon who went solo on his 16th birthday, photographed by Jo O'Brien with his instructor father, Tony.



Above: Ann Fewtrell of Sackville GC who was presented with the pilot of the year trophy by Tim Wilkinson (in the background). Photo: Derek Wales. Below: Award winners at Nene Valley's annual dinner, from l to r, Ted Dickerson, Charles Thorogood, Clive Winn, Roger Emms, Martin Short, Ron Sibley and Martin Reynolds.

CLUB NEWS

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 11 and for the August-September issue to arrive not later than June 13.

GILLIAN BRYCE-SMITH
February 8

ANGLIA (Wattisham)
Suzanne Salter, Tomo and Shep have gone solo. Alan Elliot and Keith Shearer completed their Silver badges with 50kms and Ian Bentley has a Bronze badge.

We have another K-13 and a K-8 is expected in April, bringing our fleet up to five dual and six solo gliders.

With the pending arrival of 1000 plus personnel from Germany we are hoping to recruit many more members.
M.A.T.J.

AQUILA (Hinton in the Hedges)
Bernard Bateman is caretaker chairman until our February AGM when Tony Limb becomes CFI. With plans to develop the club we are thinking of replacing a two-seater or extending the hangar.

We had an enjoyable skittles evening and Doug Edwards is giving a series of winter lectures on a variety of subjects.
S.K. (01784 240557)

BATH, WILTS & NORTH DORSET (The Park)
With the advent of our new rebuilt Pawnee, we have flown on Wednesdays throughout the winter (weather permitting!) and hope to extend this during the summer.

We have expeditions planned to Le Blanc and the Long Mynd. Our third winch will soon be running, thanks to Graham Callaway and helpers, enabling us to use six cables.
J.L.

BIDFORD (Bidford Airfield)
The season got off to a good start at the annual dinner-dance with trophies going to Dave Lloyd, John Watson, Ed Doyle, David Findon, Bob Stamer, John Scott and Andrew Reid. A special mention goes to Roger Hucklestone for his epic flight to France in a PIK 20E.

We have events planned for most weekends during the season. We are hosting the Junior Nationals for the third time, so if you're 25 or under, enter now for the gliding bash of the year and don't forget the practice week!
R.T.

Obituary - Douglas (Barney) Banks - who was associated with both Bidford and RSRE (Pershore)
Barney died suddenly in December aged 72. He was an instructor for over 40 years, in the second half of this period making his presence felt at Bidford, Shobdon, Talgarth and as the long serving CFI at Pershore. In 1982 he was awarded a BGA diploma in recognition of his contribution to the gliding movement.

With his handlebar moustache, infectious enthusiasm for flying, his unfailing rapport with pupils and a not infrequent lack of it with others, Barney was one of gliding's characters who will be long remembered during his colourful career.

Respecting his attitude towards church parades, at his cremation the conventional service was replaced by a reading of the poem "High Flight" and his favourite piece of forties swing music. This was followed by a reception and a celebration of his life held appropriately in the Bidford clubhouse.
Allan Bland

BLACK MOUNTAINS (Talgarth)
Despite quite awful road conditions on the way, a contingent of 23 German pilots with nine gliders joined us on Boxing Day for two weeks. They had many good soaring days (and some their first wave flying), and the workshop became a barbecue centre serving Bavarian beer

Below: Surrey Hills GC's site at Kenley Airfield.





Some reporters have given the telephone number of their club or a contact which we have printed on the same line as their initials. Others may like to follow in future issues.

and sausages. We all enjoyed their company and look forward to the next expedition.
M.B.

BOOKER (Wycombe Air Park)
The Saturday morning "Solo factory" group seem undeterred by snow, rain or fog, with 15 or more gathering at, or before, dawn; their first aerotow is sometimes just before 8am.

The year started well with several north-westerlies. John White climbed to 4000ft in the Chinnor wave and Alan Smith claimed the first outlanding of the year (in the ridge field); all in early January.

Winch training this winter is for three weekends at the Long Mynd. We have a Cobra trailer for our Discus.

Annual award winners include "Shep" Sheppard, LS-6c (mid-week ladder); Dave Caunt, Nimbus 2 (weekend ladder) and Julie Angel, Discus (biggest triangle).

Our first free Regionals, with Pete Harbourne as director, is already all but full.
R.N. (01494 442501/529263 fax/438262)

BORDERS (Galewood)
A high pressure system spoiled our August task week. We flew over 100 Guides during their international rally in Northumberland.

On one good cross-country day over 1200km were flown by the private fleet. Leon Adamson (Eagle) has Silver distance and Mike Charlton and George Hall have re-soloed after long breaks. Martin Cummings and Dave Hodgson have Bronze legs after soloing last season and Andy Bardgett and Ian Simms are full Cats.
B.C.

BOWLAND FOREST (Chipping Airfield)
The poor weather has left us with a waterlogged airfield, but has given time for our winter projects. The DP van has been refurbished and

Suzanne Salter of Anglia GC photographed with her father (r) and CFI Chris Webb after going solo.



Peter France, founder member and CFI of South Wales GC, photographed a group of members on the 25th anniversary of being at Usk. They are from l to r (*=founder member), John Barry, David Fletcher*, Denis Bryan*, Huw Evans, Roger Holder, Adrian Thomas*, Earl Duffin, Ivor Shattock* and Norman Evans.



Above: Graham Turner after flying to Lasham to complete his Silver badge from his club, the Vale of White Horse. Below: Trent Valley GC's club fleet photographed from their new hangar. ➡





the new entrance to the clubhouse started.

At the AGM Bob Pettifer was replaced as chairman by John Wood, Carrie Wright replacing John as secretary. Our thanks to Bob for his dedication and guidance during a very difficult few years. On January 2 our new twin drum Skylaunch winch arrived, the first dry flying day for two months. We were very pleased with the resulting launches.

As always a warm welcome and a high winch launch awaits all visitors.
S.R.

Obituary - Stanley Race
It is with great sadness that we learned of the sudden death of Stanley. He was our president from 1979 until shortly before his death when we reluctantly accepted his resignation.

A borough surveyor before his retirement he will be remembered for his dedication and hard work in helping us move to our present site. He drew up the plans for our barn conversion and handled all the club planning and grant applications. He did not often talk about his war but he was a captain in the Airborne Forces, serving as an engineering officer with the RAF. He was a glider pilot and parachutist and flew in Hotspurs and Stirling's which were used as glider tugs.

As a club member he was seen as a steady glider pilot, a helpful hand and a great contributor of his own time.
Steve Robinson

BRISTOL & GLOUCESTERSHIRE (Nympsfield)
Appalling weather has prevented much flying but enabled remedial work on fleet and facilities by Les Bradley and his team to progress apace.

Our winch track is to be resurfaced to enable faster turn-round times and less wear and tear on vehicles and drivers. The long awaited quiet prop for our Scout tug is now in use and assisting with public relations.
S.I.D. (01453 860342/860195)

Arthur "Hobby" Hobkirk
"Hobby" died in November after a short illness aged 86. I first met him in 1946 when we were ATC instructors at Yate aerodrome. After time at Charmy Down and Colerne, he went on to become a senior instructor at the Advanced ATC Gliding School at Halesland.

His life was devoted to aviation - professionally with the Ministry of Defence Aeronautical Inspection Directorate. His engineering skills were always evident. He was a BGA and PFA inspector, a keen and expert model engineer constructing steam locomotives and he built a winch for us at Nympsfield in the early days.

During his gliding career of more than 15 000 launches, many hundreds were taught to fly through his safe and cautious approach to flying training. He ran our summer courses for several seasons during our days at Lulsgate in the 1950s and in recognition of his services to the club he was made an honorary life member.

"Hobby" also enjoyed flying in the Dart 409 syndicate in the 1960s and in his Rhönbussard which he restored. He also founded the Taunton Vale GC in the early 1960s to bring more gliding opportunities to the south-west.

Our club and the gliding movement have lost a valuable contributor to the earlier days of gliding development - we are grateful for "Hobby's" contribution and extend our sympathy to his wife and family.
Doug Jones

BUCKMINSTER (Saltby Airfield)
Brian Harvey has Gold height. A syndicate is renovating a T-31 and the club tug is having a major overhaul.

Neil Scully and Les Merritt are BGA inspectors and Les and John Sentence (full Cats) and Jayne Merritt (assistant Cat) have joined us.

Our annual grand spring ball is being held at Stoke Rochford Hall on April 8. Contact Clive Stainer, manager, for tickets - 'phone No.below.

We are open every day of the year and there are vacancies for most courses including SLMG. We have a cross-country course from June 17-23 which will cost £50.
N.R.C. (01476 860385)

BURN (Burn Airfield)
Our substantial sum in VAT refunds is going into the fund to help to buy our site when our lease expires.

Dave Peters has brought a Nimbus 2 from South Germany, trailing it non-stop to the ferry.

February 5 was unusual, producing wave climbs starting from as low as 1000ft above the site in a moderate SW wind.

Two of our veteran and indefatigable instructors, Bernard Wilson and Jack Sharples, have retired from two-seatering after a half century of instructing between them. Bernard was a founder member of our predecessor, the Doncaster GC, and Jack joined shortly afterwards. We are all very grateful to them for the many hours of unstinting work they have put in to help others to enjoy our sport.

On a sadder note we have to report the death of John Thompson on January 30, aged 81. He proved that (gliding) life really can start at 65, when he first joined the club. He made steady progress and still flew solo when he was 80.
P.N.

CAIRNGORM (Feshiebridge)
The club T hangar has been completed and we have plans for a new clubhouse and workshop.

We had a successful Oktoberfest with Barry and Mo Meeks providing the aerotow and the SGA ASH-25 was much utilised by members. Sinclair Bruch has a Silver badge. Nick Norman, our hard working CFI, has handed over to Trevor Wilson. We have a new ASW-20 syndicate.

Visitors are welcome to our task week starting on May 6.
T.C.

CHILTERNS (RAF Halton)
There were many changes and achievements in 1994 with Neil Beattie, Michelle Davidson, Mike Fogarty, Keith Jackson, Don Knight, Johnny Koestveld, Tony Long, Angela Marriner, Jeroem Matthysse, Julie Pead, James Roberts, Caroline Elgin and Louise Wilford (on her 16 birthday) going solo. There were Silver legs for Keith Beatty (5hrs); Dennis Bell, Peter Mann and Dave Sale (height) and Mike Burrows (distance). Gold heights went to Dave Densham and Serena Brunning; Gold distance to Steve Wilford and Diamond height to Luke Hornsey.



Rex Vinson, Cornish GC's publicity officer, drew this cartoon following the club's successful autumn wave expedition.

Serena, Bernie Anson and Steve Wilford became AEIs, Ed Weaver an assistant instructor with Kev Baxter and Lawrence Weeks gaining full ratings.

The fleet is up to 17 gliders with space for more in our nice new hangar. We are running *ab-initio* courses this summer.
I.P.

CORNISH (Perranporth)
Although it has been wet and windy we have flown more than last year. Dick Dixon joined us for our annual dinner-dance in January as well as members from Culdrose and Dartmore GCs, and the weather was good enough to fly.
S.S.

COTSWOLD (Aston Down)
Margaret Millerchip, Michael Platt and Darrel Tucker have gone solo. There was a pleasant expedition to Portmoak in October with another planned to Sutton Bank at Easter.

We had an enjoyable dinner-dance in February with annual awards going to Chris Marsh (100km triangle); Howard Johns and Russell Clarke (two-seater trophy); Brian Birlison (pre-Silver pilot, Brian being 16 years-old); Oliver Ward (best flight); Ken Lloyd (best over 60s pilot); Steve Manktelow (height cup) and Stuart Evans (ladder trophy).
M.S.

DARTMOOR (Brentor)
The atrocious weather has kept flying to a minimum. A small, dedicated band worked constantly to prevent damage to the field from the torrential rain.

The overhaul of gliders and equipment has been made easier by two new generators which create much better lighting and enable meetings, lectures and minor social functions to be held at the site.

At the annual dinner the most improved pilot award went to Peter Rogers; the club shield to Colin Sanders for his tireless work on the club gliders and Roy Boundy won the award for general services to the club presented by Sylvia Wood in memory of Norman Wood, who is sadly missed by us all. John Clarke won our gigantic wooden spoon for the biggest gaffe of the year.
F.G.M.

DEESIDE (Aboyne Airfield)
The winter wave has been working well with flights to 18 000ft in December and 15 000ft in January. Duncan McKay is enjoying his newly acquired Oly. We have started collecting for Children in Need for 1995 at 1p/1000ft gain of height.

There is still time to enter for the Scottish Regionals in June. Contact us on 013398 85339 for more details.

We are celebrating 30 years of continuous flying from Aboyne Airfield, which in the beginning was just a scrubby bit of useless land, and hope to hear from past members, particularly founder and life members with whom we have lost contact. Visitors and friends who would like details of our of celebrations, please send your name and address to: James Davidson, Deeside GC, Aboyne Airfield, Dinnet, Aberdeenshire, AB34 5LB. Tel/fax: 013398 85339.
G.D.

DEVON & SOMERSET (North Hill)
At our well attended AGM on December 3 Chris Heide and Ken Jenkins were returned to the committee. Trophies went to Dave Reilly, Simon Minson, Lisa Knights, Ron Johns, Ellis Smith, Ian Mitchell, Tom Zealley and John Murray. The enjoyable buffet was by Caroline and her team.

John Street and Ian Anderson are spearheading a major publicity campaign culminating in an open weekend on June 24-25 dedicated to air experience flying from dawn to dusk, while proofs of the new club leaflet are looking very exciting. We are planning one and two day courses to complement our successful one week summer courses.

January saw many members taking advantage of the visit by the BGA's DG-500, while others experienced inverted flight with Chris Miller in the club K-21. Stewart Procter and Geoff Cook have AEI ratings and Phil Rowlands has soloed.
S.C.L.

FENLAND (RAF Marham)
We are having our usual winter slack period but the trophy presentation was a success. Awards went to Al Thompson (member of the year); Martyn Pike and Liz Peel (hardest workers); Andy Green (club ladder); Paul McLean (longest cross-country); Tony Mountain (speed trophy) and Cpl Padgett (*Aux Vaches* trophy for the most humorous field retrieve tale). CFI, Rhod Evans, understandably awarded himself the *Faux Pas* of the year after a field landing close to the airfield while on a soaring flight.
A.R.M.

FOUR COUNTIES (RAF Syerston)
We are celebrating our 40th anniversary with a dinner on May 27 and a flying day. Past members and friends are invited and if interested please contact the clubhouse on 01636 525300

Unfortunately we have had a spate of caravan thefts from the site and are increasing security to deter the thieves.

At our well attended AGM launch fees were increased. At Christmas we held courses for full Cat preparation, SLMG instructor rating, assistant Cat and AEI rating and all passed. It was followed by a New Year pyjama party.

Wolfgang "Wolfie" Koerner, who has a Bronze badge, is returning to Germany in April. Sylvia Bateman is an assistant instructor and has formed an ASW-20 syndicate with John Wilton.

"Ben" Beniston has been awarded a BGA diploma. Al Garrity has taken over as CFI from Andy Mason. Our thanks to Andy for all his hard work. We are expecting a new Discus and hope the airfield will dry out enough to be able to fly it!

Note: please remember that RAF Syerston has now an ATZ; call on 125.42Mz (Syerston Air Cadets) or 130.1 (Four Counties) before you enter or try to land.
D.M.R.

GLYNDWR (Lleweni Parc)
Jess Pennant went solo on her 16 birthday in December and achieved two Bronze legs out of her subsequent four solos.

For further details of our courses contact our office on 0745 813774. The same number applies for any students in North Wales and the North West who wish to fly with the North West Students' GC based at Lleweni Park.

Unfortunately, one of our K-13s was damaged in a field landing, but is well on its way to recovery, aided by Dave Bullock, CFI, and Eddie Lees. Luckily, we have another and two Capstans.

The unpredictability of wave was proved recently when Rod Witter and Eddie Lees made an attempt at our site height record (24 500ft) and 21 000ft was attained. A try the following day resulted in the glider beating the tug down!
B.L.(0745 813774)

HEREFORDSHIRE (Shobdon Airfield)
Despite the weather, activity is very much on the increase. There have been wave flights to 10 000ft and then on one February day Diamond heights for Ken Payne, Welland GC (22 000ft), who had needed Gold height for three years; Brian Marsh, Stratford on Avon GC (21 500ft); Richard Palmer, Black Mountains GC (27 600ft) and Phil King (26 000ft, curtailed because oxygen was running out). Every opportunity is grabbed, especially as nowadays position above cloud can be reliably determined.

Mike Dodd arranged an enjoyable exchange with the Worcester scuba diving club with underwater "gliding" for us and a day's flying for them. Something we hope to repeat.

The London GC are visiting us in March, and about a third of our members are visiting Chauvigny in August, including the Falke syndicate who will be flying over.
R.P. (01568 708908)

HIGHLAND (Easterton Airfield)
Our glider store (hangar) is progressing well. Our site has changed hands once more and its new owners are ourselves - whoopee! Our grateful thanks to all who helped to make this possible.

We have had a few nice winter wave days.
A.G.V.

HUMBER (RAF Scampton)
Obituary - Humber GC (1967-1995, aged 27)
We thank past and present members for making the club what it was. Hopefully the RAFGSA as a whole may benefit from this closure.

We held our final AGM in February which was well attended. Various trophies went to Ian Whittingham, Dave Cockburn, Bruce Davisdson, Alan Docherty, Joe Hutton and Tony Smith.

We would like to thank everyone who has assisted this club over the years.
N.D.

LAKES (Walney Airfield)
Unfortunately our new clubhouse took a battering in the January gales. One trailer was embedded in a wall and another on the roof.

We have a new trailer for the new K-21 so it's now ready for some flights across the Pennines.

We fly all year round, have no reciprocal membership, launches are £5/1000ft and soaring 10-15p/min - *ie* very cheap! Why not pay us a visit and enjoy the spectacular scenery?
A.D.

LINCOLNSHIRE (Strubby Airfield)
We have had the best year yet. Membership has almost doubled with flying and badge claims also well up. We are getting a new purpose built winch to relieve the load on the old one which is starting to creak just a bit.

Dan Thompson and Mark Ridger have soloed and John Kitchen has a full Cat. At the annual dinner-dance trophies went to Alan Ely, Harry Fleet, Jim Evans, Angie Hearny, Mick Fairburn, Henry Draper, John Knott, Paul James and John and Jeanette Kitchen did a family double.

Visitors by land or air are always welcome, but please fly circuits to the south of the main EW runway to avoid the heliport. We currently fly weekends and Wednesday, but are hoping to start Fridays in the spring.
R.G.S.

LONDON (Dunstable)
After a frustrating period dealing with official bodies, we have a licence for the bar and planning permission for the clubhouse extension. Unfortunately, we are not allowed to take drinks from the bar into the restaurant because of the fire regulations, but we are allowed to bring in our own fire-water from other sources. This lunacy will last until the extension is complete.

The committee is also examining the possibility of adding a new high performance two-seater to the fleet, as our aspirations exceed the performance of the K-21 currently instrumented for the purpose. Since our aspirations also exceed our budget, discussions look set to continue for some time.

At the cross-country group meeting in February, Robin May revealed proposals to set up retrieve, mentor and task-setting systems to encourage more cross-country flying. Our M3 maintenance facility has been enlarged and improved by building work. Our first renovated Robin tug is expected to be in service in time for the Easter competition.
R.C.

MARCHINGTON (Tatenhill)
Our dinner-dance was well attended and most enjoyable but the trophy presentation was simple - Garth Lawley (DCFI) made a clean sweep of all the cross-country trophies.

Chairman David Barke has handed over to Ken Walls, having done an excellent job. Bob ➡



Ian Helme of South Wales GC about to go solo.

Thacker is now treasurer. Our thanks to them. Shirley Theaker, our new technical officer, has organised the club fleet's Cs of A with the work generously being done by A. Roberts, R. Steward and S. Hunt.

We have negotiated a further two years' extension at Tatenhill and have planning permission for or own hangar.
P.M.P.

MIDLAND (Long Mynd)

Flying continued through the winter, weather permitting, with 23 flying days in December and January. The traditional Christmas lunch was much enjoyed. Liz Platt, who has catered for us excellently during the last three years and transformed our Saturday evenings, has handed over to the new caterer, Neville Roberts, who looks set to continue the high standards.

Our course season runs as usual from mid-March to the end of October.
A.R.P.

NENE VALLEY (RAF Upwood)

At the annual dinner CFI Roger Emms reported that 1994 was our most successful year with membership steady at 40, more instructors than ever before and all members having regular training flights to maintain our good safety record. Trophies went to Clive Winn (most improved pilot); Ron Sibley (clubman of the year) and John Young (Silver and Gold ladders).

But our pleasure was reduced by confirmation of the loss of our airfield by September when the RAF stop maintaining the field and will call in our lease leaving us homeless. We are looking for another site and if anyone knows of a possibility within a reasonable distance of Huntingdon please contact Roger on 01223 263250.

Ted and Connie Dickerson, two of our USAF members, are returning to the USA next year and to mark their time with us have generously set up a youth gliding scholarship. This will enable a young person to learn to fly at a greatly reduced cost giving approximatly 40 launches and 8hrs soaring. The club have set this up as a trust fund for the next ten years and it will be open to any youngster demonstrating a commitment and willingness to learn to glide. We all thank the Dickerson family for their generosity.

The first to be chosen is Charles Thorogood, a junior member of the club.
R.T.



Shaun Badby's photo of The Gliding Centre's K-7 ready for the last launched of the day after a heavy storm.



Bath Wilts & North Dorset GC's tug delivered to The Park by Richard Marsh who is being welcomed by CFI Ron Lynch.



Above: Bidford GC prizewinners, l to r, Ed Doyle, Dave Lloyd, John Watson, Andrew Reid, John Scott and David Findon. Below: Burn GC in winter. Photo: Paul Newmark.



NORFOLK (Tibenham Airfield)
An enjoyable Christmas party cabaret revealed a wealth of talent. Our winter programme of evening lectures has been well attended and Ray Hart has written a book **Is There Life After Silver C?** which grew out of his lecture notes.

Neville Harris (68) and Matthew Cook (16) are probably our oldest and youngest first solos of 1995.
B.W.

NORTHUMBRIA (Currock Hill)
The winter was endured by the hard core of members who, unfortunately, were rewarded with only a few satisfying flying days.

Our thanks to those who helped with the numerous maintenance tasks, particularly to the club fleet and ground equipment/facilities. We have a new retrieve winch, an attractive programme of courses and expeditions planned to Portmoak and Lleweni Parc.
D.W.H. (0191 4133199)

NORTH WALES (Bryn Gwyn Bach Farm)
Our annual dinner-dance was enjoyable and well attended. We are exploring the skies in our newly acquired Bergfalke 4 and have an expedition to Aston Down in May.

The winter was wetter than usual with little flying of note.
P.C.

PETERBOROUGH & SPALDING (Crowland Airfield)
Despite the generally poor weather we have flown during every January weekend. Dave Crowhurst, CFI, has introduced mandatory spin checks for all solo pilots - this must surely improve safety.

For the first time in many years we are planning midweek courses of one, three and five days between May and August. These will also benefit members as the airfield will be manned during the week.

Our flying fortnight starts on July 31 and visitors will be made most welcome.
G.E.W.

PORTSMOUTH NAVAL (Lee on Solent)
Despite very poor weather since November which left our airfield waterlogged, we have kept flying and Ian Tongue and Tim Club have gone solo.

Our annual dinner-dance in January was a great success. Our thanks to the organisers, Mandy and Tony World. The latest addition to the club fleet is an Astir CS, which awaits collection in Germany.
K.S.

RATTLESDEN (Rattlesden Airfield)
Our non-flying social events including our AGM have been well attended. Thanks to the hard work of the usual dedicated members the club is now in a much healthier financial position with our newly constructed hangar, an excellent clubhouse and a great deal of support from the old members.

We now owe it to our CFI to support the efforts of Richard Page and Sarah Lee who are fund raising to buy a new fleet of training aircraft. We require members to join The One Hundred Club and to support fund raising events so that we can avail ourselves of available grant money. It is up to you all to make a great effort - not leave it to the usual few.
M.E.

SCOTTISH (Portmoak Airfield)
Our Christmas party was a great success.

Kevin Hook has flown the first cross-country of 1995, 150km in the second week of January in wave of up to 13 500ft. Not bad for a day that gave only 3hrs of flying between the rain and darkness!

Members have nearly completed our 24hr short-wave weather station to give accurate up to the minute rain forecasts! And a new tasksetting programme should be finished soon after hours of button-thumping and picture-scanning.

Eoin Macdonald has taken over from Graham Smith as CFI. We thank Graham for his hard work over the years.
G.S.G

SACKVILLE (Riseley, Beds)
Winter blues have been kept at bay by a succession of parties. At the Christmas dinner, the pilot of the year award went to Ann Fewtrell. We have an expedition to Lleweni Parc in March and plans for our not-too-serious task week at the end of April - all are welcome.
D.C.W.

SHALBOURNE (Rivar Hill)
At our well attended AGM Jonathan Mills, CFI, presented awards to Bryan Vowell, Richard Dann, Rob Sharpe (task week trophy) and the challenge cup went to the Mini Nimbus (EAV) which amongst other things had taken Ken Porter and Bill Cook 300km for Diamond goals. Steve Ottner presented awards to Jim Gavin and Denis Maynard (member of the year).

The annual workday (held between Christmas and New Year) was well supported with many of the planned tasks successfully completed despite the poor weather.

The annual dinner in January (organised by Verity Murricane) was a great success with a raffle of unwanted Christmas presents raising money for the club social fund. Carol Pike has taken over as CFI from Jonathan Mills. Our thanks to him for three years' hard work.
J.R.

SHENINGTON (Shenington Airfield)
Our member Martyn Wells represented GB very successfully in the World Championships coming 4th overall in the Standard Class.

We had Christmas and New Year Eve parties for members and locals. We started the year with a good ridge day and have had wave and ridge days since. Our fleet is back to strength with the arrival of our new K-13.

The annual dinner-dance was a great success and well attended. Awards went to Mary Meagher (best flight - 500km); Stuart Meier (best achiever) and David Weitzel (clubman of the year). Chairman Brian Badger was surprised to present himself with an award rather than to the candidate he thought had won! CFI Paul Gibbs was presented with a cartoon of himself and glider.
T.G.W.

SOUTHDOWN (Parham)
With winter looming, Rod Walker and Tony Challoner led a 16 strong expedition to Nympsfield where the high winch launches proved the main attraction. Among the many triumphs, Bernard Potter went solo off the winch.

The autumn lectures have been popular, particularly the talk by Brian Bateson on "Soaring in France". Around 80 had a splendid meal, organised by the clubhouse committee, before the lecture. The Christmas dinner was another bright spot but a number have escaped to warmer climes including Australia and South Africa.
P.J.H.

SOUTH WALES (Usk)
At the AGM in December, Dave Jobbins, Harold Armitage and Mike Dunlop were presented with the Diamond, Intermediate and Standard trophies, while Jane Paul, the retiring course secretary, received the trophy for the greatest contribution to the club in 1994.

Despite the poor weather there have been good wave flights. The winter has been made more tolerable with excellent lectures given by Graham Morris, Tom Bradbury and Peter Saundby, as well as club speakers. Task week is from Saturday May 27 - visitors welcome.
M.P.

STAFFORDSHIRE (Seighford)
We have had another successful dinner-dance with the silverware going to new homes. The mud oozes up at the launch point but the intrepid band presses on. James Fisher has gone solo and on January 14 Jon May spent 45min in wave just below the airway. The combination of restricted airspace and dense cloud surrounding the site prevented cross-countries.

We have been given a redundant Air Cadet hut which will be the new clubhouse, once we have planning permission. Winches are being overhauled and the programme to bring Cs of A for all club gliders into the winter is now complete. The K-13s have had nose wheels fitted to help prevent the persistent problem of skid mounts being damaged. The AGM is in March

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and we have had an interesting programme of winter lectures.
I.G.P.M.

STRATFORD ON AVON (Snitterfield Airfield)
Frank Jeynes (Discus) has a Gold badge and Diamond goal and Roger Hancock and Chris Wooller have gone solo. In spite of exceptionally wet conditions we have managed to keep flying most days with our SD1 Rover car retrieve system perfected over several years.

We are operating full time from May to September with summer holiday courses/task weeks and evening bookings planned. Lesley Blair is taking over from Phil Picket as winchmaster (mistress!). An ASW-20 syndicate has been formed, a wind powered generator for the control bus batteries installed and the diesel generator housing completed thanks to Barry Monslow's skills.
H.G.W.

SURREY HILLS (Kenley Airfield)
Our annual charity project during the May Bank Holiday will again be "Sportage". Last year we raised £2000 and hope to improve on this.

Our fleet started the year with four two-seaters and four single-seaters plus our new winch built by Dennis Henley and helpers over the winter. Launches to 1500ft on a still day are now the norm. Al Gaivoto has gone solo.
D.W.

THE SOARING CENTRE (Husbands Bosworth)
During the winter we had successful expeditions to Feshiebridge, Lleweni Parc and Dishforth, with several flights up to 10 000ft at Dishforth. With last year's work on the field completed, we were able to fly over the whole winter.

Our entrance road has also been resurfaced. Our Pegasus was featured in a BBC weather programme, with Roger Goodman doing beat ups to the extent that the cameraman was seen ducking. After many years of haggling the local council have erected proper road signs to the club which we hope will help prospective air experience passengers to find us.

Our Regionals are from July 22 with cash prizes. We will also have our normal task week.

We have moved into the information technology age with our own world-wide web page on the internet. Set up by two members this features pages of computer held information and pictures featuring the club, its operations and gliding as a sport in general. These pages can be accessed by anybody, anywhere in the world with access to the internet. For those in the know, the address, (URL), is http://www.csv.warwick.ac.uk:80/~phrsq.

One Puchacz is going to Poland for a total refurbishment and the Sport Vega and K-8 are being replaced by a third Junior.
T.W.

TRENT VALLEY (Kirton in Lindsey)
After an excellent Christmas party members staggered on to the frozen airfield to begin New Year flying. Dave Davey and Dave Thomas resoloed after a substantial lay off (for D.T. this was 40 years).

The highlight of last season was a visit by Derek Piggott during which he tutored for 4hrs. John Wigmore has taken over as PRO from Mike Morton.
M.P.G.

ULSTER (Bellarena)
Ferry operators are supporting with much reduced concessional fares the VGC's Vintage Rally, which we're hosting from May 27 to June 3. They cover participants, cars and trailers. A viable number have already booked from GB and the Dublin oldtimers are coming up in full strength too. But there are still places available so if you want to come 'phone Jim Lamb on 018687 23279 or Bob Rodwell on 012477 58777 pronto.

This rally will be in the middle of a five-week spell of the 7-day operation we are planning this year - two course weeks preceding the rally and two following. Similarly, if you'd like to attend any of these feel welcome and 'phone Jim.

We have an open day on May 6 with another in late August. As this was written the tug was having a three year C of A, several gliders were being overhauled and the annual dinner was being defrosted.
R.R.R.

VALE OF WHITE HORSE (Sandhill Farm)
A restoration project is underway on a donated T-21 recently collected by members from Essex. The club is buying a new two-seater to replace our K-7.
A.J.W.

VECTIS (Isle of Wight, Bembridge)
The year started with a New Year's Eve party to wish instructor Jim Britton all the best with his new job in the USA and was followed by flying on New Year's Day. Sadly, now the airfield is waterlogged.

Major Pat Fergusson gave us an interesting talk on his part in building the Colditz glider. Expeditions are planned to Thouars, France, and Husbands Bosworth. CFI Neil Watts has made a trolley mechanism to manoeuvre the gliders.
M.J.H.

WOLDS (Pocklington)
We are organising a trip to Portmoak. We have a few new gliders - ASW-19, Discus, Nimbus 2, Jantar and a K-6E. We have some one day courses at weekends and Thursday evening lectures on various subjects.

We are again running task weekends, starting from May 6-7. The task week is from May 28 and the Two-Seater Comp from August 20-26. Visitors are welcome to all activities.
M.F.

YORK (Rufforth Airfield)
After a quiet autumn we managed two short soaring flights on January 1 followed by a weak wave day the next weekend when several went to over 7000ft. One of the Blaniks is back after a long lay off and the second should be ready by early summer for cross-country training. Following last year's success we are planning another motor glider "fly in" in June with a social event on the Saturday evening.
S.R.L.

Obituary - Roger Mortimer
Roger, a well known figure in Northern gliding circles, has sadly died after several months' illness. Roger was a member for over 30 years, a committee member for several years and previous club secretary. He was a keen cross-country pilot, a regular contestant at the Northern Regionals in his Jantar and a previous winner.

In his last letter to the club he expressed his great appetite for competing and encouraged all members to try the special exhilaration of competition flying.

Our sympathies go to Sue, his son Jonathon and his parents.
Steve Lee

CONGRATULATIONS!

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RECORDS

INTERNATIONAL GLIDING RECORDS (as at 10.2.95)

SINGLE-SEATERS

Height Gain	12 894m	P. F. Bikle, USA	SGS 1-23E	25.2.1961
Absolute Altitude	14 938m	R. R. Harris, USA	Grob-102	17.2.1986
Straight Distance	1460.8km	H-W Grosse, Germany	ASW-12	25.4.1972
Goal Distance	1254.26km	B. L. Drake, D. N. Speight, S. H. Georgeson, New Zealand	Nimbus 2	14.1.1978
Goal & Return Distance	1646.68km	T. L. Knauff, USA	Nimbus 3	25.4.1983
Triangular Distance	1362.68km	T. L. Knauff (Nimbus 3), L. R. McMaster, J. C. Seymour K-H. Striedieck, (USA) (ASW-20B)		2.5.1986
		R. L. Robertson, Gt Britain (in USA)	Ventus A	
Free Distance*	1434.99km	K.H. Striedieck (in USA)	ASW-20B	12.5.1994
100km Triangle	195.30km/h	I. Renner, Australia	Nimbus 3	14.12 1982
300km Triangle	169.50km/h	J. P. Castel, France (in Namibia)	Nimbus 3	15.11.1986
500km Triangle	170.06km/h	B. Bünzli, Switzerland (in Namibia)	DG-400 (sealed)	9.1.1988
750km Triangle	158.41km/h	H-W. Grosse, Germany (in Australia)	ASW-22	8.1.1985
1000km Triangle	145.33km/h	H-W. Grosse, Germany (in Australia)	ASW-17	3.1.1979
1250km Triangle	133.24km/h	H-W. Grosse, Germany (in Australia)	ASW-17	9.12.1980

MULTI-SEATERS

Height Gain	11 680m	S. Josefczak and J. Tarczon, Poland	Bocian	5.11.1966
Absolute Altitude	13 489m	L. Edgar and H. Klieforth, USA	Pratt Read	19.3.1952
Straight Distance	1383km	G. Herbaud and J-N. Herbaud, France	ASH-25	17.4.1992
Goal Distance	1383km	G. Herbaud and J-N Herbaud, France	ASH-25	17.4.1992
Goal & Return Distance	1261.36km	M. W. Walker and T. Delore, New Zealand	ASW-22	1.12.1989
Triangular Distance	1379.35km	H-W. Grosse and H. Kohlmeier Germany (in Australia)	ASH-25	10.1.1987
100km Triangle	177.26km/h	E. Sommer and I. Andresen, Germany (in USA)	Janus C	26.7.1984
300km Triangle	170.90km/h	H-W. Grosse and Karin Grosse, Germany (in Australia)	ASH-25	8.1.1988
500km Triangle	163.03km/h	H-W. Grosse and Karin Grosse, Germany (in Australia)	ASH-25	20.1.1988
750km Triangle	161.33km/h	H-W. Grosse and Karin Grosse, Germany (in Australia)	ASH-25	10.1.1988
1000km Triangle	157.25km/h	H-W. Grosse and Karin Grosse, Germany (in Australia)	ASH-25	11.1.1988
1250km Triangle	143.46km/h	H-W. Grosse and H. Kohlmeier, Germany (in Australia)	ASH-25	10.1.1987

SINGLE-SEATERS (WOMEN)

Height Gain	10 212m	Yvonne Loader, New Zealand	Nimbus 2	12.1.1988
Absolute Altitude	12 637m	Sabrina Jackintell, USA	Astir CS	14.2.1979
Straight Distance	949.7km	Karla Karel, Gt Britain (in Australia)	LS-3	20.1.1980
Goal Distance	951.43km	Joann Shaw, USA	Nimbus 2	2.7.1990
Goal & Return Distance	1127.68km	Doris Grove, USA	Nimbus 2	28.9.1981
Triangular Distance	847.27km	Joann Shaw, USA	Nimbus 2	5.8.1984
100km Triangle	145.49km/h	Susan Beatty, South Africa	ASW-20B	24.12.1990
300km Triangle	143.9km/h	Susan Beatty, South Africa	ASW-20B	26.12.1990
500km Triangle	133.14km/h	Susan Martin, Australia	LS-3	29.1.1979
750km Triangle	127.29km/h	Susan Beatty, South Africa	ASW-20B	21.12.1990

MULTI-SEATERS (WOMEN)

Height Gain	8430m	Adela Dankowska and M. Matelska, Poland	Bocian	17.10.1967
Absolute Altitude	10 809m	Mary Nutt and H. Duncan, USA	SGS 2-32	5.3.1975
Straight Distance	864.86km	Tatiana Pavlova and L. Filomechkina, USSR	Blanik	3.6.1967
Goal Distance	864.86km	Isabella Gorokhova and Z. Kozlova, USSR	Blanik	3.6.1967
Goal & Return Distance	673.5km	Katrin Keim, Germany and A. Orsi (in South Africa)	ASH-25	7.1.1992
Triangular Distance	760.4km	Katrin Keim, Germany and A. Orsi (in South Africa)	ASH-25	5.1.1992
100km Triangle	141.90km/h	Adele Orsi, Italy and K. Keim (in South Africa)	ASH-25	10.1.1992
300km Triangle	143.17km/h	Katrin Keim, Germany and A. Orsi (in South Africa)	ASH-25	6.1.1992
500km Triangle	113.87km/h	Katrin Keim, Germany and A. Orsi (in South Africa)	ASH-25	3.1.1992
750km Triangle	121.02km/h	Katrin Keim, Germany and A. Orsi (in South Africa)	ASH-25	5.1.1992

BRITISH NATIONAL RECORDS (as at 10.2.94)

SINGLE-SEATERS

Height Gain	10 065m	D. Benton	Nimbus 2	18.4.1980
Absolute Altitude	11 500m	H. C. N. Goodhart (in USA)	SGS 1-23	12.5.1955
Straight Distance	949.7km	Karla Karel (in Australia)	LS-3	20.1.1980
Goal Distance	859.20km	M. T. A. Sands (in USA)	Nimbus 3	23.4.1986
Goal & Return Distance	1127.68km	M. T. A. Sands (in USA)	Nimbus 3	7.5.1985
Triangular Distance	1362.68km	R. L. Robertson (in USA)	Ventus A	2.5.1986
300km Goal and Return	153.3km/h	M. T. A. Sands (in USA)	Kestrel 19	10.5.1983
500km Goal and Return	152.7km/h	M. R. Carlton (in South Africa)	ASW-17	24.12.1980
1000km Goal and Return	105.79km/h	M. T. A. Sands (in USA)	Nimbus 3	7.5.1985
100km Triangle	166.38km/h	B. Cooper (in Australia)	LS-6B	4.1.1991
300km Triangle	146.8km/h	E. Pearson (in South Africa)	Nimbus 2	30.11.1976
500km Triangle	141.3km/h	B. J. G. Pearson (in South Africa)	ASW-20	28.12.1982
750km Triangle	109.8km/h	M. R. Carlton (in South Africa)	Kestrel 19	5.1.1975
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

MULTI-SEATERS

Height Gain	10 234m	A. E. Kay and K. Wilson	ASH-25	12.10.1990
Absolute Altitude	11 023m	A. E. Kay and K. Wilson	ASH-25	12.10.1990
Straight Distance	514.86km	J.A.Hill and I.Smith (in Australia)	IS-28	14.122.1992
Goal Distance	472.43km	M. R. Carlton and M. French (in South Africa)	Calif A-21	18.12.1979
Goal and Return Distance	709.35km	R. C. May and S. G. Jones (in Finland)	ASH-25	11.6.1988
Triangular Distance	825km	B. T. Spreckley and P. Jones (in Australia)	Nimbus 3DT	7.2.1987
300km Goal and Return	138km/h	G. Dale and M. Bird (in Australia)	ASH-25	4.1.1991
500km Goal and Return	113.08km/h	M. R. Carlton and C. Greaves (in South Africa)	Calif A-21	23.12.1978
100km Triangle	137.22km/h	M. R. Carlton and Leonie Lawson (in South Africa)	Calif A-21	27.12.1978
300km Triangle	138.37km/h	B. T. Spreckley and P. Jones (in Australia)	Nimbus 3DT	6.2.1987
500km Triangle	130.56km/h	M. Bird and R. Gardner (in Australia)	ASH-25	3.1.1991
750km Triangle	114.18km/h	B. T. Spreckley and P. Jones (in Australia)	Nimbus 3DT	7.2.1987

SINGLE-SEATERS (WOMEN)

Height Gain	9119m	Anne Burns (in South Africa)	Skylark 3B	13.1.1961
Absolute Altitude	10 550m	Anne Burns (in South Africa)	Skylark 3B	13.1.1961
Straight Distance	949.7km	Karla Karel (in Australia)	KS-3	20.1.1980
Goal Distance	528km	Ann Welch (in Poland)	Jaskolka	20.6.1961
Goal & Return Distance	620.31km	Jill Burry (in Australia)	Mosquito B	4.1.1994
Triangular Distance	814.01km	Karla Karel (in Australia)	LS-3	9.1.1980
Free Distance*	620.31km	Jill Burry (in Australia)	Mosquito B	4.1.1994
300km Goal and Return	107.5km/h	Karla Karel (in South Africa)	ASW-15B	1.1.1975
500km Goal and Return	102.6km/h	Karla Karel (in Rhodesia)	ASW-15B	16.10.1975
100km Triangle	110.8km/h	Karla Karel (in Rhodesia)	ASW-15B	2.11.1975
300km Triangle	125.87km/h	Karla Karel (in Australia)	LS-3	12.2.1980
500km Triangle	120.69km/h	Karla Karel (in Australia)	LS-3	20.2.1980
750km Triangle	110.53km/h	Pamela Hawkins (in Australia)	ASW-17	17.11.1984

UNITED KINGDOM RECORDS (as at 10.2.95)

SINGLE-SEATERS

Height Gain	10 065m	D. Benton	Nimbus 2	18.4.1980
Absolute Altitude	11 031m	D. Benton	Nimbus 2	18.4.1980
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
Goal & Return Distance	801.3km	C. Garton	Kestrel 19	22.7.1976
Triangular Distance	770.5km	C. C. Rollings	Jantar 2A	28.5.1985
300km Goal & Return	114.5km/h	D. S. Watt	ASW-22	18.8.1983
500km Goal & Return	101.46km/h	M. B. Jefferyes	DG-600	17.8.1983
100km Triangle	123.2km/h	R. Jones	Nimbus 3	13.8.1983
200km Triangle	114.95km/h	D. S. Watt	ASW-24	3.8.1990
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	88.8km/h	C. Garton	Kestrel 19	10.6.1976
750km Triangle	77.98km/h	C. C. Rollings	Jantar 2A	28.5.1985
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 16.6m	7.4.1990
500km Goal	90.7km/h	H. C. N. Goodhart	Skylark 3	10.5.1959

15m CLASS

Straight Distance	827.9km	T. J. Wills	LS-6	29.5.1986
Goal & Return Distance	617km	C. Garton	LS-6	28.8.1989
Triangular Distance	609.9km/h	A. E. Kay	ASW-24	9.5.1991
500km Goal & Return	83.42km/h	M. B. Jefferyes	DG-600	25.5.1990
100km Triangle	119.7km/h	T. J. Wills	LS-4	18.4.1981
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	93.1km/h	M. D. Wells	LS-7	26.5.1990
600km Triangle	88.1km/h	A. E. Kay	ASW-24	9.5.1991
200km Goal	127.1km/h	A. H. Warminger	Vega	12.5.1984

STANDARD CLASS

Straight Distance	718km	T. J. Wills	Std Libelle	1.8.1976
Triangular Distance	609.9km	A. E. Kay	ASW-24	9.5.1991
300km Goal & Return	104.09km/h	A. Kay	ASW-24	28.4.1989
500km Goal & Return	75.66km/h	P. Jeffery	Pegasus	3.9.1989
100km Triangle	119.7km/h	T. J. Wills	LS-4	18.4.1981
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	93.1km/h	M. B. Wells	LS-7	26.5.1990
600km Triangle	88.1km/h	A. E. Kay	ASW-24	9.5.1991
100km Goal	150km/h	T. J. Wills	LS-4	12.5.1984
300km Goal	131.1km/h	T. J. Wills	Std Libelle	24.4.1976
400km Goal	73.8km/h	T. J. Wills	Std Libelle	7.6.1976

UK 750km DIPLOMA

1. Goal & Return	801.3km	C. Garton	Kestrel 19	22.7.1976
2. Distance	761km	D. S. Watt	ASW-20L	9.5.1980
3. Triangular Distance	770.5km	C. C. Rollings	Jantar 2A	28.5.1985
4. Distance	827.9km	T. J. Wills	LS-6	29.5.1986
5. Triangular Distance	770.28km	C. C. Rollings & B. A. Fairston	ASH-25	3.7.1990
6. Distance	757km	A. J. Davis	Discus	7.8.1990
7. Quadrilateral	753km	B. Elliott & D. P. Francis	Nimbus 3DT	7.8.1990
8 Quadrilateral	758km	M.Bird	ASW-22	24.6.1993
9 Quadrilateral	758km	R.May & H.Rebbeck	ASH-25	24.6.1993
10 Quadrilateral	754km	A.E.Kay A.W.A.Kay	ASH-25	13.8.1993
11 Quadrilateral	755km	C.J.Pullen & A.Danbury	ASH-25	30.6.1994
12 Quadrilateral	754km	R.A.Cheetham	ASW-25	21.8.1994

MULTI-SEATERS

Height Gain	10 234m	A. E. Kay and K. Wilson	ASH-25	12.10.1990
Absolute Altitude	11 023m	A. E. Kay and K. Wilson	ASH-25	12.10.1990
Straight Distance	445.58km	J. Moore and D. Stabler	Bergfalke 2	
Goal & Return Distance	542.91km	A. E. Kay and A. Kay	ASH-25	12.8.1990
Triangular Distance	770.27km	C. C. Rollings and B. Fairston	ASH-25	3.7.1990
300km Goal & Return	112.2km/h	A. E. Kay and C. Lyttleton	ASH-25	27.5.1990
500km Goal & Return	98.20km/h	A. E. Kay and A. Kay	ASH-25	12.8.1990
100km Triangle	123.99km/h	R. C. May and E. Morris	ASH-25	27.7.1989
200km Triangle	119.07km/h	R. C. May and P. Townsend	ASH-25	18.7.1990
300km Triangle	109.08km/h	C. C. Rollings and G. McAndrew	ASH-25	18.8.1989
400km Triangle	113.70km/h	J. D. J. Glossop and I. Baker	Nimbus 3DT	30.8.1990
500km Triangle	104.74km/h	C. C. Rollings and P. Brice	ASH-25	25.5.1990
600km Triangle	94.94km/h	R. C. May and S. Lynn	ASH-25	19.7.1990
750km Triangle	92.34km/h	C. C. Rollings and B. Fairston	ASH-25	3.7.1990
100km Goal	173.32km/h	D. Hill and J. Gorringe	ASH-25	8.4.1990
200km Goal	113.3km/h	R. Miller and B. Tapson	Janus C	11.5.1984
300km Goal	107.4km/h	P. R. and A. H. Pentecost	Janus C	7.5.1984

SINGLE-SEATERS (WOMEN)

Height Gain	7833m	Alison Jordan	Astir CS	8.10.1978
Absolute Altitude	8701m	Alison Jordan	Astir CS	8.10.1978
Straight Distance	454km	Anne Burns	Skylark 3B	10.5.1959
Goal Distance	324.4km	Jane Nash	Ventus B	15.4.1989
Goal & Return Distance	386.3km	Geralyn Macfadyen	Sport Vega	30.6.1994
300km Goal & Return	80.60km/h	Jane Nash	Ventus B	4.6.1989
100km Triangle	80km/h	Anne Burns	Cirrus	14.6.1970
200km Triangle	77.08km/h	Jane Randle	Nimbus 2	12.8.1990
300km Triangle	76.8km/h	Jane Randle	Kestrel 19	18.8.1976
400km Triangle	67.83km/h	Geralyn Macfadyen	Sport Vega	30.5.1994
500km Triangle	76.1km/h	Anne Burns	Nimbus 2	31.5.1975
100km Goal	135.39km/h	Jane Nash	Ventus B	11.6.1989
200km Goal	85.5km/h	Anne Burns	Olympia 419	2.6.1963
300km Goal	93.16km/h	Jane Nash	Mini-Nimbus	7.4.1990

MOTOR GLIDERS

SINGLE-SEATERS

Height Gain	6710m	A. Mossman	PIK-30	20.8.1992
Absolute Altitude	8010m	A. Mossman	PIK-30	20.8.1992
100km Triangle	76.5km/h	I. W. Strachan	PIK-20E	11.8.1984
200km Triangle	48.2km/h	I. W. Strachan	SF-27M	23.8.1996
300km Triangle	83.1km/h	I. W. Strachan	PIK-20E	19.8.1994
100km Goal	85.7km/h	I. W. strachan	SF-27M	16.7.1991

MULTI-SEATERS

Height Gain	5882m	M. G. Throssell and P. Bartle	Janus CM	27.9.1988
Absolute Altitude	6888	M. G. Throssell and P. Bartle	Janus CM	27.9.1988
100km Triangle	35.6km/h	P. T. Ross and H. Daniels	SF-28A	27.6.1976
100km Goal	76.2km/h	P. T. Ross and K. Winfield	SF-28A	22.8.1966
200km Goal	66.3km/h	P. T. Ross and P. Fletcher	SF-28A	18.7.1976
500km Triangle	78.45km/h	B. T. Spreckley and O. Pugh	Janus CM	16.5.1986

BRITISH NATIONAL MOTOR GLIDERS (AS AT 10.2.1994)

SINGLE-SEATERS

Height Gain	7253.9m	J. M. West (in USA)	Ventus CM (17.6m)	5.7.1992
Absolute Attitude	9211.3m	J. M. West (in USA)	Ventus CM (17.6m)	5.7.1992
Straight Distance	753.2km	J.M.West (in Spain)	Nimbus 4T	12.8.1993
Goal Distance	415.1km	B. J. Willson (in Australia)	PIK-20E	11.1.1983
Goal & Return Distance	646.97km	J. M. West (in USA)	Ventus CM	2.7.1992
Triangular Distance	753.2km/h	J. M. West (In Spain)	Nimbus 4T (17.6m)	12.8.1993
100km Triangle	119.14km/h	J. M. West (in Spain)	Ventus CM (17.6m)	15.8.1992
300km Triangle	97.96km/h	J. M.West (in Spain)	Ventus CM (17.6m)	16.8.1992
500km Triangle	96.11km/h	J. M. West (in Spain)	Ventus CM (17.6m)	12.8.1992
750km Triangle	112.83km/h	J.M.West (in Spain)	Nimbus 4T	12.8.1993
300km Goal & Return	113.05km/h	J. M. West (in USA)	Ventus CM (17.6m)	9.7.1992
500km Goal & Return	103.77km/h	J. M. West (in USA)	Ventus CM (17.6m)	7.7.1992

MULTI-SEATERS

Height Gain	5882m	M. G. Throsell and P. Bartle	Janus CM	27.9.1988
Absolute Altitude	6888m	M. G. Throsell and P. Bartle	Janus CM	27.9.1988
100km Triangle	35.6km/h	P. T. Ross and H. Daniels	SF-28A	27.6.1976

INTERNATIONAL MOTOR GLIDERS (as at 10.2.95)

		SINGLE-SEATERS		
Height Gain	9935m	M. D. Stevenson, USA	DG-400	25.10.1985
Absolute Altitude	10 408m	G. Cichon, Germany	Nimbus 2M	27.5.1979
Straight Distance	1039.87km	K. Radebar, Austria (in New Zealand)	DG-400	25.1.1993
Goal Distance	1039.87km	K. Radebar, Austria (in New Zealand)	DG-400	25.1.1993
Goal and Return Distance	1220.44km	K. Holighaus, Germany (in South Africa)	Nimbus 4M	23.12.1992
Triangular Distance	1400.19km	K. Holighaus, Germany (in South Africa)	Nimbus 4M	7.1.1993
Free Distance*	1351.16km	B. Bunzli, Switzerland (in Namibia)	DG-600M	24.12.1992
100km Triangle	191.19km/h	B. Bünzli, Switzerland (in Namibia)	DG-400	29.12.1987
300km Triangle	176.99km/h	B. Bünzli, Switzerland (in Namibia)	DG-400	14.11.1985
500km Triangle	164.18km/h	K. Holighaus, Germany (in South Africa)	Nimbus 4M	4.1.1993
750km Triangle	155.82km/h	K. Holighaus, Germany (in South Africa	Nimbus 4M	6.1.1993
1000km Triangle	155,00km/h	Tilo Holighaus, Germany (in South Africa)	Nimbus 4M	2.1.1993
1250 Triangle	139.96km/h	K. Holighaus, Germany (in South Africa)	Nimbus 4M	7.1.1993
		MULTI-SEATERS		
Height Gain	6550m	Ingrid Kohler,Germany, and S. Class (in USA)	Grob 103SL	10.6.1993
Absolute Altitude	8782m	Ingrid. Köhler, Germany, and S.Class (in USA)	Grob 103SL	10.6.1993
Straight Distance	1078.07km	H-W. Grosse and Karin Grosse, Germany	ASH 25E	6.5.1993
Goal Distance	1078.07km	H-W. Grosse and Karin Grosse, Germany	ASH 25E	6.5.1993
Goal & Return Distance	1011.45km	W. Eisele, Germany and Daniela Eisele	Nimbus 3DM	23.12.1991
Triangular Distance	1256.19km	W. Binder and W.Mertel (in South Africa)	ASH-25MB	14.12.1991
Free Distance*	1196.11km	W. Binder, Germany and A. Knahm (in South Africa)	ASH 25MB	30.11.1992
100km Triangle	179.53km/h	O. Wegscheider and P. Eich, Germany (in South Africa)	Nimbus 3DM	5.1.1990
300km Triangle	164.88km/h	H-W. Grosse and Karin Grosse, Germany (in Australia)	ASH-25T	9.1.1991
500km Triangle	171.1km/h	H-W. Grosse and J. Hacker, Germany (in Australia)	ASH-25T	31.12.1990
750km Triangle	157.27km/h	H-W. Grosse and Karin Grosse, Germany (in Australia)	ASH-25T	10.1.1991
1000km Triangle	144.67km/h	H-W. Grosse and Karin Grosse, Germany (in Australia)	ASH-25E	10.1.1992
1250km Triangle	128.04km/h	W. Binder and W. Mertel, Germany (in South Africa)	ASH 25MB	14.12.1991
		SINGLE-SEATERS (WOMEN)		
Height Gain	8444m	Ingrid Köhler, Germany (in USA)	DG-400	12.6.1988
Absolute Altitude	10 245m	Ingrid Köhler, Germany (in USA)	DG-400	12.6.1988
Straight Distance	539.87km	Ingrid Kohler, Germany (in USA)	Ventus CM	14.6.1993
Goal Distance	539.87km	Ingrid Kohler, Germany (in USA)	Ventus CM	14.6.1993
Goal & Return Distance	531.11km	Ingrid Köhler, Germany (in USA)	DG-400	1.7.1989
100km Triangle	127.49km/h	Ingrid Köhler, Germany (in USA)	DG-400	4.7.1989
300km Triangle	87.53km/h	Ingrid Köhler, Germany (in USA)	DG-400	4.7.1989
500km Triangle	84.94km/h	Margit Pantenburg-Becker, Germany	Ventus CM	31.5.1991
		MULTI-SEATERS (WOMEN)		
Gain of Height	6550m	Ingrid Kohler, Germany, and S. Class (in USA)	Grob 103SL	10.6.1993
Absolute Height	8782m	Ingrid Kohler, Germany, and S. Class (in USA)	Grob 103SL	10.6.1993
300km Triangle	67.82km/h	Isabel Mittag and K. Walter, Germany	DG-500M	27.5.1990

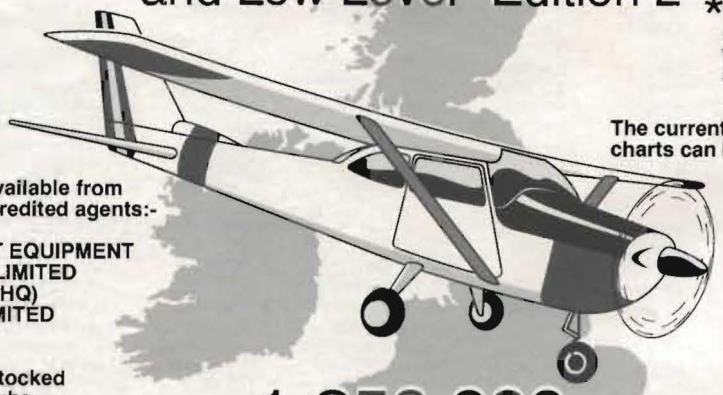
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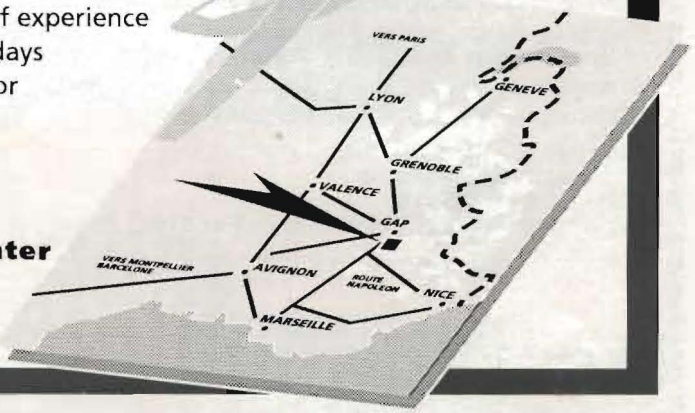
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ADVERTISERS' INDEX

Aeronautica del Guadarrama 102
Airborne Composites 96
Anglo Polish Sailplanes . . . 70
Armstrong Communications 119
E.W.Avionics 103
Baltic Sailplanes 62
Benalla GC 114
Black Mountains GC 109
Booker GC 110
Bristol & Gloucestershire GC 111
Buckminster GC 110
Cair Aviation 113
Cambridge Aero Instruments 66
Cambridge University GC 111
Centreline 79
CAA 118
Peter Clifford 124
J. Collinson 114
Cotswolds Gliders 124
T.L.Clowes 119
D&M Engineering 96
Deeside GC 112
Derby & Lancs GC 112
Distinctive Designs 119
John Edwards 96
Enstone Eagles GC 120
The European Mountain Gliding Centre 123
European Soaring Club . . 120
Anthony Fidler 122
Flight Insurance 65
D.Garrard 124
Glider Instruments 113
Goodison Glider Instruments 114
HT Communications 99
Hill Aviation 83
ICOM 122
Irvin GB 115
JSW Soaring 119
Kenilworth International . . 95
Kent GC 112
Lasham GS 111
London GC 63
London Sailplanes Ltd. . . . 64
Lyndhurst 112
McLean Aviation 67
Harry Mendelssohn 96
Midland GC 100
Nevynn International 71
Norfolk GC 112
North Yorkshire Sailplanes 113
Northumbriair 78
North Wales GC 112
Oxfordshire Sportflying . . 112
PC Systems 114
Peterborough & Spalding GC 120
Piggott Bros 96
Pilot Flight Training . . 99, 113
RD Aviation . . . . . IBC
Rematic 78
Repcliff Chemicals 64
Schempp-Hirth . . . . . BC
Scholfield Aviation 94
Scottish Gliding Union . . . 99
Segelflugschule 114
Sedgwick Aviation 68
J.L.Smoker 115
Severn Valley Sailplanes . 114
Shenington GC 113
Skycraft 115
Shropshire Soaring Group 112
Soaring Oxford Ltd 62
Southern Sailplanes 121
Southdown Aero Services . 66
Ernst Specht 114
Stemme Motor Glider . . . 115
Stratford on Avon GC . . . 112
Sunstate Soaring 103
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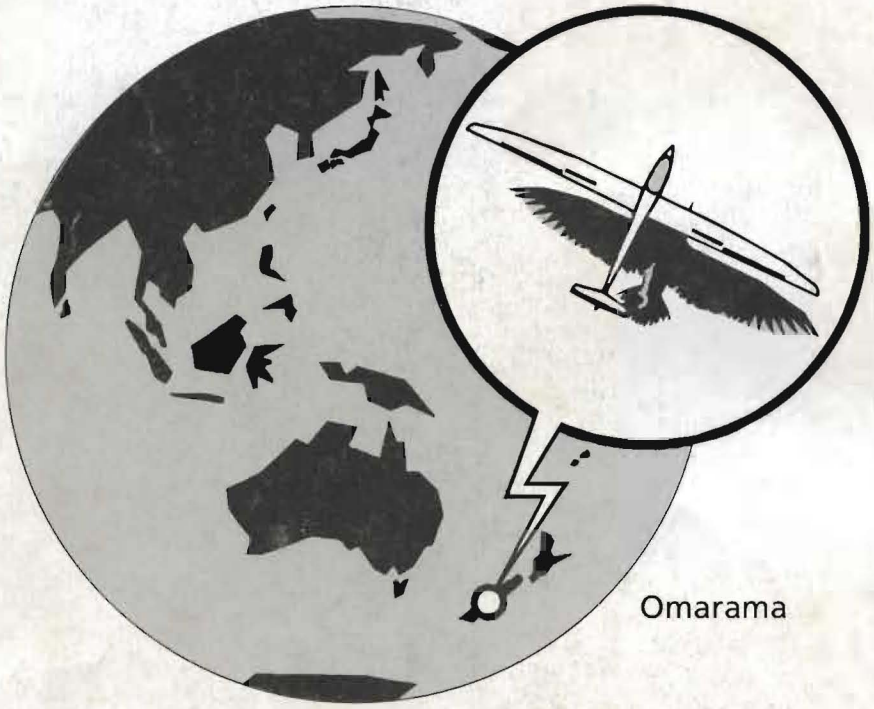
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