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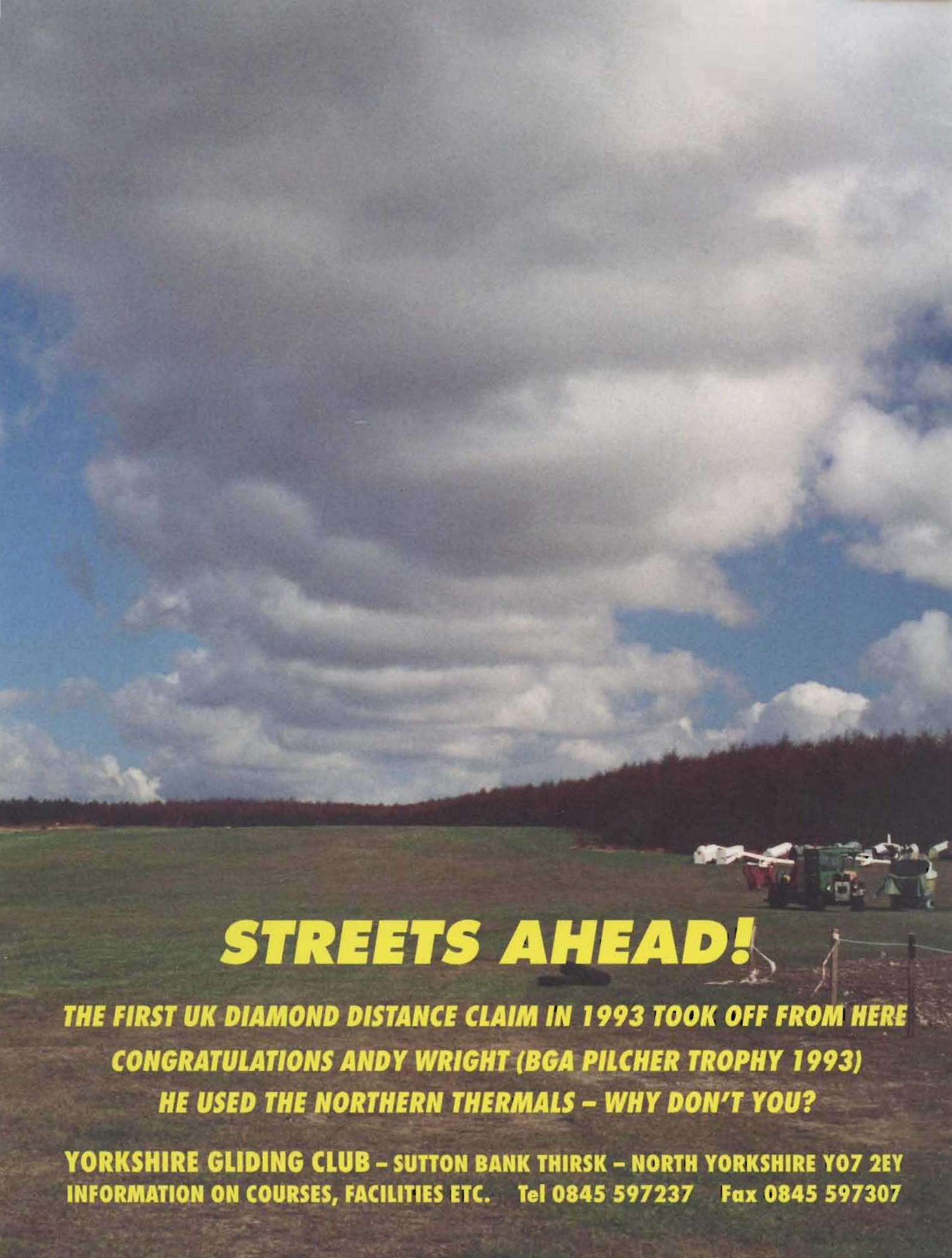


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SAILPLANE & GLIDING

Magazine of the
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June-July 1994
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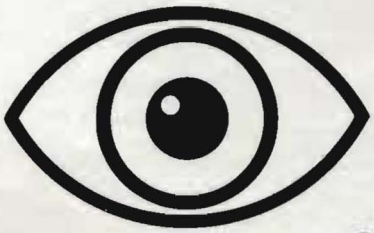


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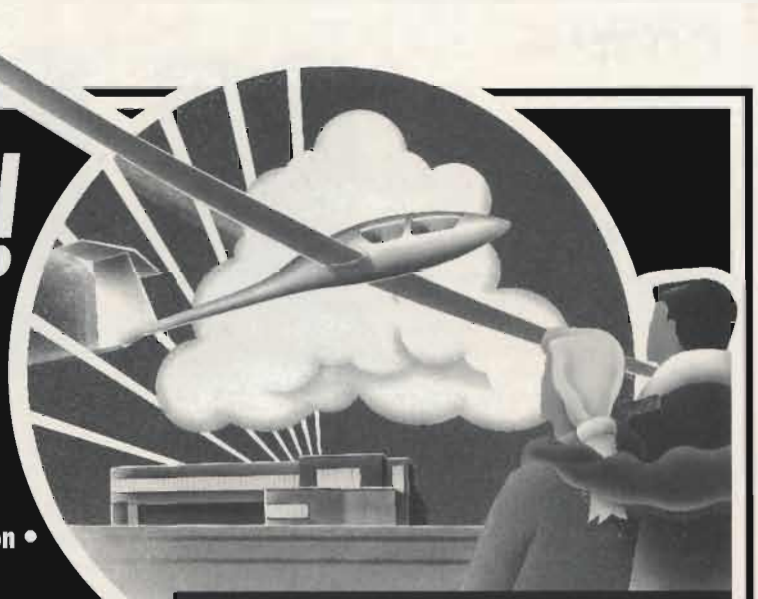
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YOUR LETTERS

FAILED AEROTOWING PERMISSION

Dear Editor,

The committee and members of Blackpool & Fylde GC (now renamed Bowland Forest GC) thank John Jackson for his sympathetic letter in the February issue, p11, following our failure to get permanent planning permission for aerotowing at our site. However, we don't think we have under-estimated the strength of the anti-noise lobby. We knew we had a tough fight and took the following steps in our campaign to win permission;-

1. Our Pawnee 235C tug was fitted with the best hush kit available - a Hoffman four blade 110mm pitch propeller and a Gomolzig silencer.

2. Our tug flight paths were planned to be varied and all avoided flying below 700ft over local houses.

3. We didn't breach the terms of our temporary planning permission.

4. We ran a public relations campaign and actually received far more letters of support from local residents than there were complaints to the planning authority.

5. We were the only party at the inquiry to provide objective noise measurements. Our readings showed that had the draft PPG on Planning and Noise been used as the criteria, we should have been allowed at least 82 launches a day, even taking into account our site is within an area of outstanding natural beauty.

6. We indicated at the inquiry that we would have accepted 30-35 launches a day for ten days each month with flights limited to between 10am and 6.30pm. Clearly, we didn't argue for unrestricted aerotowing as Mr Jackson feared.

7. We employed professionals to present our case. Experienced lawyers and an expert on local planning issues as well as a briefing with Queen's Counsel cost the club almost £12 000.

We're still shell-shocked by the inspector's decision and don't understand his logic. If any club contemplating an aerotowing planning application feels that our experiences may help, we will tell you all you can. However, please don't assume that we were greedy in our application, that we disregarded the interests of the locals or that we contravened any planning limitations.

JOHN MITCHELL, *treasurer of Bowland Forest GC*

BGA ACCIDENT REPORT

Dear Editor,

I was interested to read in the **1993 Accident Report** of field landings the recommendation to fly in a four-seater aeroplane as a training aid. One would think after 33 field landing accidents they would come up with something more suitable.

Why isn't the full potential of the motor glider realised? It is a far more realistic means of training than Group A aircraft. It goes without saying why. Granted the BGA has only one motor glider, not enough to go round, but there are now many more at various clubs - the result of the influx of ex ATC Venture motor gliders.

Enstone has a motor glider school with four motor gliders and extensive experience in field landing training. Edge Hill also has four motor gliders and there is motor glider training at Rufforth and Burn.

So why doesn't the BGA take a leaf out of the RAFGSA's book and recommend more motor glider training, at least for field landings? After all the RAFGSA had only one field landing accident in 1993.

RAY BROWNRIGG, *CFI, Oxfordshire Sportflying Ltd*

PREVENTION OR CURE?

Dear Editor,

I have become increasingly disturbed by the recent emphasis on exploring all the corners of the spinning envelope of gliders, even from low heights, without an associated re-emphasising of spin prevention. I know that the coaching staff do not intend this, but every time I have seen something related to spinning exercises or publicity recently I have never seen the avoidance methods reiterated - I think this is wrong.

The simple fact is that any glider, to my knowledge, will recover after a departure from controlled flight by centralising the controls at the first sign of a departure. This will put the glider into unstalled, unyawed flight, making any other recovery unnecessary.

The glider may adopt a slightly unusual attitude when the pilot centralises the controls, but it will subsequently react immediately and correctly. Thereafter the pilot should be able to minimise any height loss. However, this does work best in the first stages of the spin when the aerodynamic and inertial forces have not had time to develop fully; after that the full spin recovery may be necessary.

There is nothing new in all this; Mike Cuming referred to it in his excellent article "Don't Pull the stick back - push it!" in the April 1991 issue, p75, and it is merely a Standard Stall Recovery by any other name. However, I think we should be certain that everyone knows the technique, has practised it, does it instinctively at the first perceived sign of departure and instructors teach it as the last part of spinning exercises to reinforce the lesson. Even a Puchacz will recover from a departure using this technique if caught early enough. If this reminder saves one life this year I for one will be grateful.

JOHN DOBSON, *RAF Syerston*

(See also the articles on pages 130 - 132. Ed.)

AIRSPACE INFRINGEMENT

Dear Editor,

March 19 was a good day by any standards at Usk. A brisk north-westerly was producing wave to 15 000ft and 6 to 8kt thermals were being lifted off Wentwood ridge and the Blorenge - but someone was in a bad mood.

As the saying goes, there I was in a 6kt thermal at 3000ft when suddenly three pounds of infuriated feathers hurtled past the canopy. It was a buzzard which then did a violent pull up and started circling in the thermal in the same direction at about 180° to me. It became obvious that he was after me.

There followed some anxious neck craning and we both decided to turn in. I've never been one for jostling for position in thermals but this fellow definitely was. He was able to screw round at least two turns to my one and consequently was soon in a position to launch a second attack at the canopy.

This was followed by another violent pull up and I could see the tips of his wings bending. The pursuit continued, this time with him thermalling in the opposite direction. I decided that three pounds of buzzard hiting the glider at a combined speed of 70kt wouldn't do either of us any good and if I couldn't beat him at thermalling my V_{NE} should exceed his. (This is a posh term to indicate that I fled leaving him in triumph.)

I have often encountered buzzards before and they usually take instant flight when I crash in on their thermals. Has anyone else had this experience? Do our Scottish compatriots get attacked by **eagles**? Another member had a similar incident on the same day and we wonder whether this will be a regular occurrence. I do hope he just goes away!

HAROLD ARMITAGE, *Pontypool, Gwent*

DISTANCE CALCULATIONS

Dear Editor,

With regard to my letter in the June 1993 issue, p127, concerning distance calculations, it does seem that the main point of that letter has been missed. Apart from one (private) correspondent it would appear that most readers assumed that I was arguing for an improvement in distance calculations *per se*, whereas I was suggesting that the use of computers allows more sophisticated formulae to be used, However, a closer look at the computational problem involved in distance calculations does make it clear that a simple spherical model, that everyone can understand, is accurate enough for gliding purposes.

However, my statement that it would be sufficiently accurate to use only six figures was not simply a personal conviction but a mathematical fact of life. This can be seen by repeating a calculation using an amended computer programme in which the trig functions are either rounded to six decimals or, even more drastically, are deliberately put in error by adding 0.0000005 to each value. Apart from a possible rounding error the result will not be sufficiently changed.

It is not immediately obvious how the radius of 6371km came to be adopted by the FAI but it can be a reasonable estimate. It corresponds to the geocentric radius in the region of latitude 35° but with the penchant for using large numbers of figures, the final part of the computation would have been made slightly easier if this radius had been specified with a few extra places of decimals so that the conversion factor would have become 111.195 exactly, more or less!

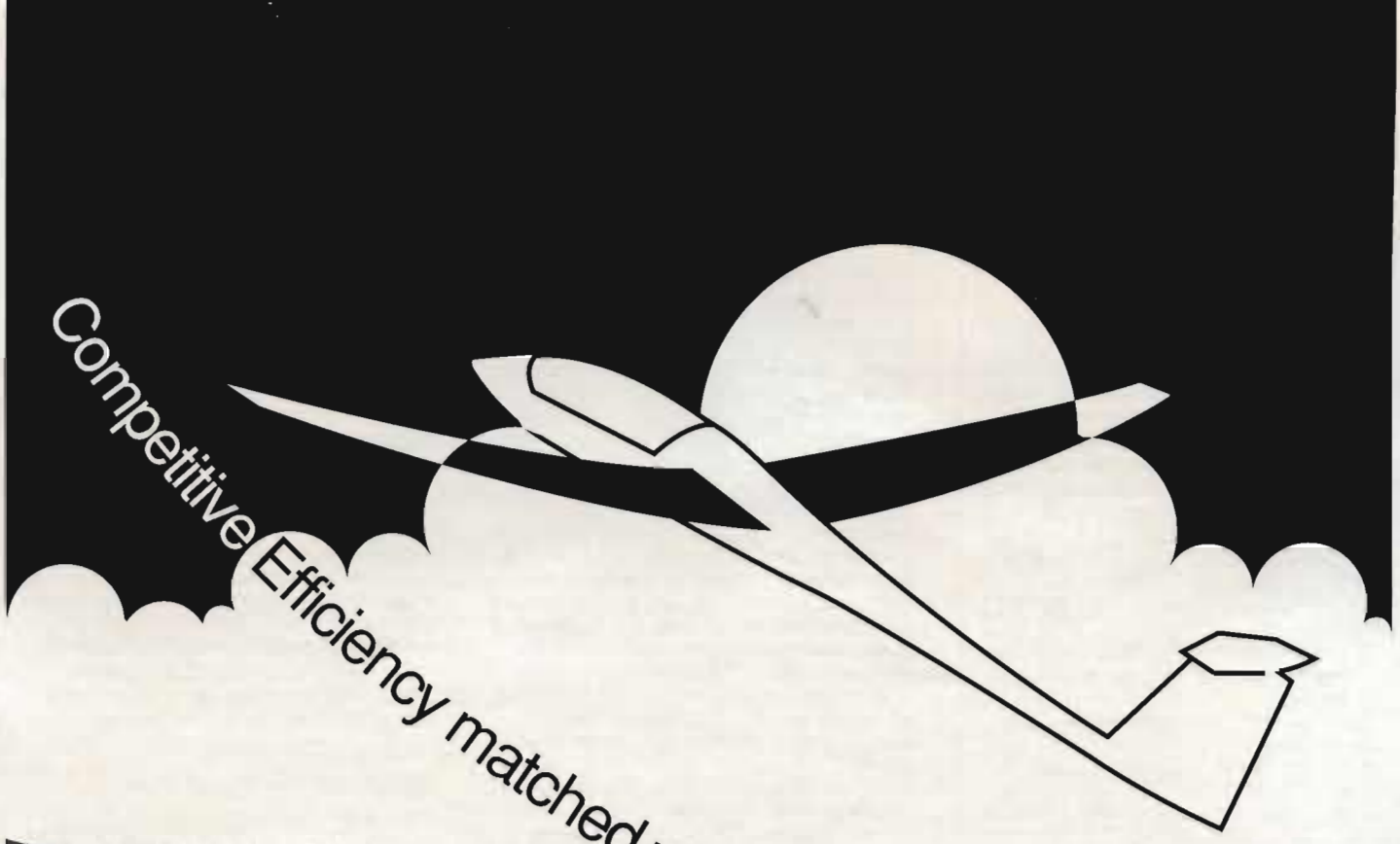
BILL NICHOLSON, *Bexhill, Sussex*

AMATEURISM OF GLIDING

Dear Editor,

I am about to go to Florida to take advantage of the better weather for some extensive training in the hope of being able to go solo after two frustrating years of gliding disrupted by poor weather.

"Great" you may say, "another new pilot joining this wonderful sport and taking the first step towards some of the badges awarded by ➡



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the BGA. Certainly that was my intention when I organised this trip, but I now feel it is likely to be a last fling before giving up gliding until I retire in 30 to 35 years.

The reason for this change of view is the amateurism of gliding in my area and I suspect at most clubs in this country. There is a "that's gliding" attitude to the difficulty of getting accurate information before leaving for the airfield and the consequent risk of a wasted journey - in my case the waste of at least half a day's leave.

I did write to my club secretary suggesting that a mobile phone at the launch point would allow me to get more information than just they are or aren't flying before setting out. I would like to know such things as details of the weather and the number on the flying list. It would also be useful to be able to discuss the suitability of the conditions with an instructor and even book a place on the flying list before starting the hour's drive to the club.

The reply to my letter didn't indicate that they had even considered any of the possible advantages, so I will be looking at other clubs. I feel, however, that I shall be forced to the conclusion that gliding remains structured for those with more spare time than I have and I will have to wait until either the sport reaches the 1990s or I retire.

I know others have given up gliding for similar reasons and I hope this letter will prompt an improvement in the arrangements at many clubs to the benefit of gliding as a whole.
NEIL YOUNGMAN, Malvern, Worcs

THE WAY IT WAS

Dear Editor,

Ah, yes, I remember it well. Ivor Shattock's article in the February issue, p17, engendered many memories associated with the training programme of the 1940s. How the adrenalin flowed. It was difficult to contain oneself for the next weekly flight.

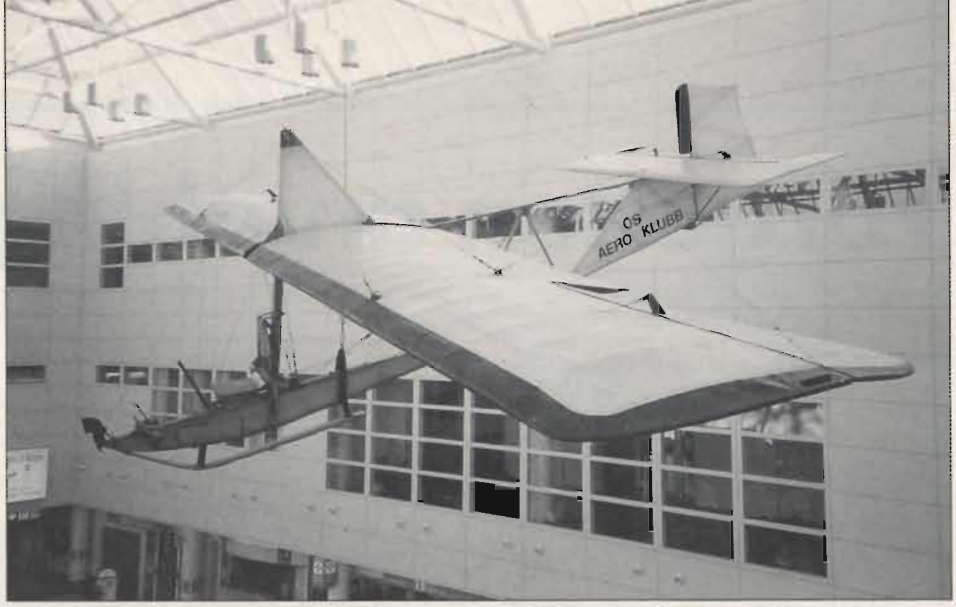
Ivor described his flying syllabus as a ground slide, low hop and then the high hop which led to the turns. In our particular group, E 108 Gliding School, ATC, we had the airborne slide which was open to much temptation.

Some couldn't resist an early climb to the clouds. The winch driver thought otherwise and would settle the errant pilot back on to the airfield. We flew the Kirby Cadet with its delightful smell of wood.

Some five years later I came across the SG-38 and flying it was a form of aerial motor cycling. Once used to sitting in the open it was great fun but difficult to fly if deaf or tone deaf as the airspeed assessment is based on the "singing" brace wires. Cloud flying was a little limited - a piece of wool and sound - but fun.

There is a SG-38 hanging from the ceiling in the reception hall of the RAF Museum, Hendon.
GEOFFREY LEE, Hindhead, Surrey

We welcome your letters but please keep them as concise as possible and include your full name and address. We reserve the right to edit and select. The final deadline for letters is June 14 but we appreciate contributions before this date.



Robert McConnell wrote to say that he was reading the February issue of *S&G* on a journey to Sotra, west of Bergen in Norway, where he is presently working, and after clearing customs was pleasantly surprised to find a beautiful example of what appeared to be an SG-38 suspended from the concourse roof. (See photo.) "I admit I'm no expert on vintage gliders, and this could well be an excellent copy, but it certainly matches the drawing on p17. It looks original though and is in fine condition," he adds.

REVIEWS

Cross-Country Soaring by Helmut Reichmann, translated by Max Bishop, 2nd English edition, published by the Soaring Society of America. Available from the BGA at £31.50 including p&p.

Fly for yourself - not against others. Of the many young German glider pilots who have been coached by the late Helmut Reichmann quite a few had to face advice like this. Easily remembered, easily forgotten. Most of us will have to do with his book which has appeared in a new edition.

Twenty years ago the first German edition of this now classic filled the vacuum between How-I-did-it accounts and scattered theoretical papers which hypothesised how to do it - Glide further, faster and safer. The latest English edition fills in some of the more recent developments and exceeds its German counterpart in quality.

The book is organised in two parts. The 100 odd pages of part one really form the "How" - core of the book, while part two essentially represents a "Why" - an appendix explaining the rules of the first part for the more technically minded.

Scanning through the table of contents might provoke the impression of being faced with yet another book that explains Silver badge gliding knowledge. Wrong. The further one ploughs through the book the more the three times World Champion's experience is demonstrated. Many books put the emphasis on very technical aspects of our decision making only to stop short of looking at how to implement them. Not only does Reichmann know how to glide, he also knows who glides.

We all know very well how to be the fastest of the day - only, blind too our mistakes, in practice most of are not. To get to know oneself one does actually make decisions on a cross-country flight which can be frightening; a lot are made in a rather automatised way.

This is necessary, bearing in mind the complexity of the task. The book helps to identify some of those patterns where poor decision making results. Although Reichmann will only talk to you through the book, he coaches rather than lectures. The text is fun to read, spiced with humour and amusing stories, some of which might even milk a smile from, in this respect, jaded English pilots.

Most of the German original's (7th edition) - abysmal editing, the cross references were not updated for the last edition and there is no bibliography - was corrected in the translation, although there is still no index. At the book's price this is something one could expect.

The typesetting is another point of criticism. It is crammed and inconsistent. The graphs are decorated with a mix of units ("kph"=km/h, kts, mph, fpm, m/s); a proper translation should make all of them into knots. Some graphs refer to a specific type of aircraft, but do not differ from the first edition where a different type was used. In general they deserve redrawing! Despite this, the translation itself reads well and manages to retain a lot of Reichmann's style.

The German weather presented the translators with a dilemma; it does not at all resemble the conditions in the US where the book was published. Cutting out the section on typical weather patterns is a rather minimal solution which seems to contradict Reichmann, who acknowledges that getting the good climbs and avoiding the sink matters more than anything else.

The author urges you again and again to fly safely and politely, Sadly, this advice has gained weight since his tragic death..

The book is not entirely up-to-date, but is a must for any glider pilot.
CHRISTOPH GROTE

Whispering Wings by David Millett, published by Newton Books at £14.95.

This is a highly personal and readable account of David's involvement with gliding over nearly 40 years. For much of that time he was a full-time course instructor or CFI at several clubs in England and Wales. The book has 39 chapters, arranged more or less in chronological order, starting with two short scene-setting accounts of his experiences as a rear-gunner in Lancasters during WWII and the subsequent problems of choosing a career. Then came the discovery of the newly forming Lakes GC at Tebay which was to determine the course of David's life from then on.

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Each of the chapters is relatively short and self-contained, so the book in some respects resembles an anthology - in this case extracts from the author's memories and his logbook. The stories are amusing, instructive and nicely balanced in terms of the use of gliding jargon and providing explanation without condescension for readers who might be less than knowledgeable about the subject. They cover the whole range of the sport - the thrill felt by the pilot on his first solo; the strain and responsibility of being a full-time course instructor; the camaraderie (and otherwise!) of those involved; the challenges of competition and cross-country flying; and some interesting and thoughtful cautionary tales.

It is a pity that the author has not been well-served by his publisher and editor. The quality of reproduction of the photographs is poor and there are numerous typographical errors. It is, however, the story that matters and these faults in no way detract from the fact that it is a good read for both novices and old-timers, some of whom might well recognise themselves, even if unnamed. It is well worth the price of an aero-tow.

MIKE RICHARDSON

Accidents To Gliders - 1993.

This annual report was published in February, somewhat earlier than in previous years. As well as the summaries of accidents which you see in this magazine it includes the annual report and an analysis of the main accident causes. It is recommended reading for anyone who wants to learn by the mistakes of others. There is food for thought in comparing the RAFGSA's accident rate with the civilian clubs; the GSA is almost four times safer!

Predominant among the accident categories are field landings, often due to poor or late selection. Failed winch launches continue to cause problems; interestingly there is evidence that powerful winches are safer, particularly if the cable is replaced as soon as it breaks the first time. The seven stall/spin accidents resulted in two fatalities and one serious injury; the rest started low enough for the spin not to develop properly.

A continuing cause is failure to connect the controls, usually the elevator, and the consequences are often serious. Most other countries deal with this quite successfully by independent checks of the rigging and positive checks of the controls. Is it time for a change of policy here?

For anyone with a mind to use it there is a useful breakdown of accidents into various categories - fatal and series injuries, substantial damage and write-offs, by accident category and by type of glider. The simple message from reading this publication is - "be a safer pilot." Why not ask your CFI for the club's copy or get one of your own from the BGA - a bargain at £1.75.

BILL SCULL, BGA director of operations

TaskFinder by Ken Sparkes, priced at £29 (the main programme) and £19.95 for the task distance option from Ken on 0269 651469. The complete competition package costs £49.95.

It's not just the cockpits of gliders that are filling up with computer technology, the club office is being invaded as well with software designed specially for use by pilots. TaskFinder is intended to simplify finding a suitable task and accurately measuring its length. It is written in Visual Basic for DOS and data input is mouse controlled from hot spots on the screen, prompt buttons and their associated scrollable option lists. This stops you typing in faulty data which might crash the software. Nor can you accidentally by-pass a selection option or input data to the wrong field, as you are automatically prompted for and only allowed to select from the appropriate data for each field in turn.

The first part of this software package is an optional extra which calculates the task length most suitable for the conditions and the glider. The user merely inputs the glider type, wind strength, average thermal strength and a dolphin increment which allows for streeting effects on days when this could be a useful bonus. TaskFinder first uses the glider's polar curve to calculate the theoretical cross-country speed and then, from the expected start and finish time of the thermals, the maximum distance you could expect to fly. (It can be a bit demoralising to complete what you thought was a big task, input the appropriate data to TaskFinder, and discover you could have gone another 100km if you had flown more efficiently.)

For competition organisers, there is also the option to enter the time of the first launch, the expected time interval to launch the grid and the maximum start height to calculate when the startline will open. This time can then be substituted for the start time in the distance calculation section. Other competition options include such things as the sponsor's name, day number, camera and circling side.

The main part of the package is the task length calculator which is personalised to circulate from your home airfield. From the opening screen, the user selects the task, again *via* the mouse. Then you are prompted to choose the TPs one by one from the official BGA list of over 600. This is a scrollable lists of TPs but if you have a particular TP in mind, typing the first letter of its name will quickly take you to that section of the list. TPs are entered by double clicking on your choice and the running total in kilometres is displayed.

When you have finished selecting the correct number of TPs, as well as the final task length, the resulting printout includes BGA trigraph, name, detailed description, latitude and longitude (for GPS users), OS map number and the TP bisector (for photo interpreters). The headings and distances for individual legs are presented and popular tasks can be saved on the disc. Selecting the map option shows the task displayed on a map of England and Wales (wot, no Scotland?) with controlled airspace marked out. Airspace will be updated yearly.

Task finding

If you know that the first TP should be to the east, but after selecting it are not sure which other TPs to consider to produce the desired task length, then select the TaskFinder option. After defining the minimum and maximum task length (the only keyboard input section of the entire programme where the input of an impossible minimum distance is automatically rejected) TaskFinder will search either the entire database or to the N,S,E or W as requested, to find those TPs which match your criteria. On a 286 this was rather slow, but on my 486SX a typical search took 12 -14sec.

The acceptable TPs then appear in a drop down list and double clicking on any of them results in TaskFinder calculating the distance using that TP. You can change your mind several times; selection is only final when you click on the DONE button. If a TP produces a task suitable for a record attempt, *eg* a 28% triangle, it is marked with asterisks and if selected a notice appears on screen to emphasise this, complete with an OK button to acknowledge you've actually seen it.

Overall the software was very easy to use and gave no real problems when used at the 1993 Inter-Services Regionals. System requirements are a 286 with 1Mb RAM. Ken welcomes suggestions for improvements and it was nice to see my own suggestions incorporated in an update. Free upgrades to new versions are available to registered users and the programme has been updated considerably from the version used at several Comps last year. I also found it very convenient for checking club ladder distance claims.

JOHN WRIGHT

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TEACHING SPINNING

Some inexperienced pilots have a great fear of spinning and Chris Rollings, BGA senior national coach, emphasises the correct way it should be taught. Because it is so important, we follow on with another article on the same subject, this time explaining what happens to the modern glider in a spin

Two double fatality spinning accidents in the last three years led to a long hard look at two-seater spinning characteristics and some additions to the advice to instructors. The investigation of spinning behaviour was mostly conducted on the Puchacz but the results are applicable to most types if the C of G is far enough aft for them to spin continuously.The advice to instructors at the end is certainly not type specific - it is intended to apply to all types.

1. A spinning modern training two-seater rotates about once every 4sec, height lost is generally 300 - 400ft/turn or just under 100ft/ sec for as long as the glider keeps spinning.

2. For some types (*eg* K-21) the spin will not continue for any length of time (or even start) unless the C of G is at or very close to the aft limit. For many types (*eg* K-13) prolonged spins will only occur if the C of G is towards the aft end of the range; for mid range C of G positions the spin becomes a spiral dive after a turn or so. For some types (*eg* Puchacz, Blanik, T/YS-53) prolonged spins are possible through a large part of the C of G range.

Correct recovery action in — less than half a second

For all of these types, if the C of G position is such that prolonged spins are only just possible, then correct recovery action takes less than half a second to stop the spin with a height loss of less than 50ft. Recovery is into a steeply nose down attitude and recovery from the subsequent dive will normally take about 200ft to a level attitude at about 80 - 90kt (this speed would then normally be converted to about 100ft of extra height in a pull-up).

Correct recovery action in the aft part of the C of G range will generally take about 1sec to be effective. This may extend to about 2sec at extreme aft limit, *ie* a height loss in recovery of up to 200ft with again a further 200ft needed for the recovery from the subsequent dive. The foregoing remarks apply to recoveries after half to two turns of a spin. Recovery from a prolonged spin at extreme aft C of G could take almost a complete turn, *ie* 3 - 4sec and around 300ft, though normally it will be quicker even in this case.

3. Incorrect Recoveries. The following observations have been verified most often on the Puchacz but will generally apply to other types as well.

a) Failure to apply opposite rudder (indeed keeping full in spin rudder applied) results in a barely perceptible (approximately a quarter to half a second) delay in recovery and increases the height loss by less than 50ft.

b) Failing to move the stick forward but applying opposite rudder may have any one of three effects. **First and most important the glider may continue to spin**, perhaps with some change in the rate of rotation or attitude. Second the glider may recover (into a sideslip if the rudder is left applied). **Third** the direction of spin may reverse very abruptly.

This is potentially very disorientating to a pilot not expecting it. Which of these three events occurs depends on aileron position, C of G position and mode of spin entry and is difficult to predict **except that if opposite aileron is applied immediately after the opposite rudder, spin direction reversal almost always occurs if the elevator is kept up.**

This is quite a likely sequence of movements by a pilot who is frightened by what has occurred and has not immediately recognised the spin. The subsequent confusion and disorientation may well serve to delay recovery even further.

Investigation of recent fatal spinning accidents revealed that in one case almost certainly the pupil had been flying the glider at the time that it started to spin and had prevented the instructor from recovering from the spin in time. Another recent double fatality could also have been in this category although there is no direct evidence for or against this possibility.

In both cases it is certain that the P2 had never been in a spinning glider prior to the fatal spin.

This leads me to make three recommendations to instructors - all applicable to training in all types of two-seater.

1. Instructors should **never** allow pupils to stall unintentionally until they have received sufficient spinning training so that it is unlikely they will panic if the glider starts to spin. You may be sure that there is enough height for you to take over and recover but that is only true if the pupil co-operates - don't take the risk!

2. When introducing the pupil to spinning or any of the further stalling and spinning exercises or wire launch cable breaks, the first demonstration should be pupils hands OFF (holding on to shoulder harness for preference). NOT "following through" on the controls.

3. The discipline of the "I have control" - "You have control" hand over of controls should always be used, with those exact words, right from the start of training. A well established routine may be enough to tip the balance and cut through panic if the worst happens. This last item is not a change - just more emphasis on what we always taught.

Hopefully instituting the above changes will reduce that possibility of such accidents in the future.

ROGER TARGETT

ROGER TARGETT
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SPINNING MODERN SAILPLANES

How many instructors, asks Howard, chairman of the BGA Technical Committee, can honestly say they have not attempted to demonstrate a full spin entry only to have the glider pitch down completely symmetrically and fly off unabashed?

With a complex stalled airflow around a glider no two spins can be fully identical - the motion depends on too many variables. Even in a docile K-13 there is a huge difference between a slow mushed entry and the snap departure under load as demonstrated in the BGA stall reinforcement exercises. The variety of entry conditions, control positions and C of G positions, lead to a whole variety of detailed motions, particularly during entry, which impair complete repeatability.

What is acceptable spinning behaviour?

Technically, it is not yet possible to predict with accuracy the detailed motion of a glider at the entry to or during a spin. While some valuable design guidelines exist, acceptance is invariably *via* flight demonstration. The current JAR22 handling specification requires the demonstration of only two aspects. In all certificated weight and C of G conditions the sailplane must:

1. Give fair warning of an impending departure, and
2. Recover from spins of up to five turns within one additional turn after the application of a standard procedure.

The significance of the standard procedure should be clearly appreciated. This is the only procedure from which recovery has been fully validated. Its virtue is that it is standardised, providing an important simplification to the training interface. It is not necessarily the optimum for all sailplanes at all times, but it is unlikely to be very far from it. There are no criteria in the airworthiness code covering non standard procedures. If a pilot chooses to change the procedure then he is on his own and should be prepared to stand by the consequences.

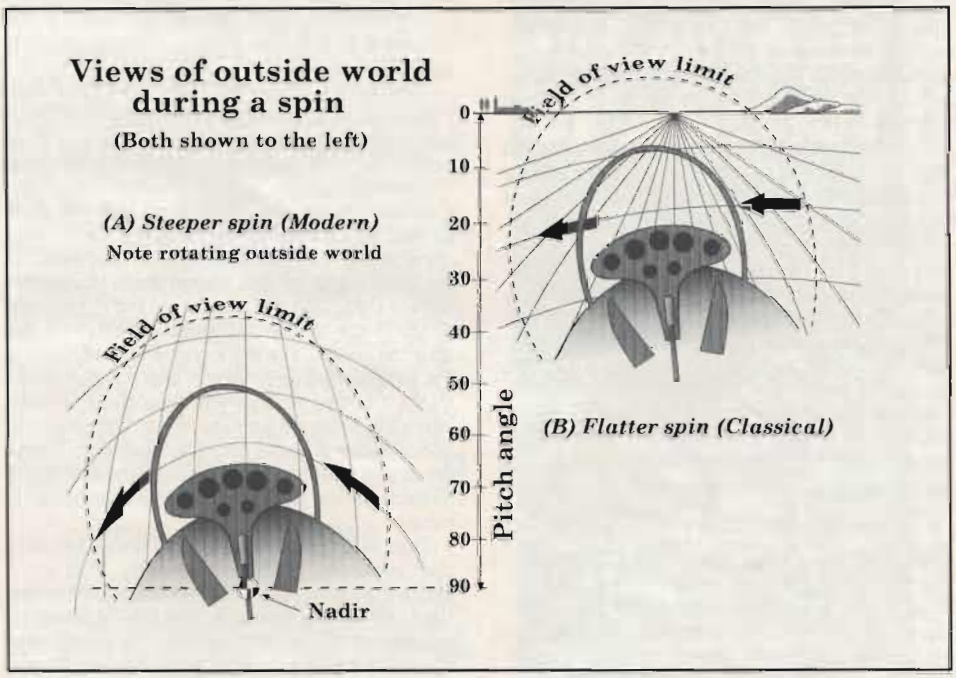
There are no specific requirements regarding height loss, again because the recovery procedure is the standard, not necessarily the optimum for all conditions and types. For example, consider a sailplane that is pitching within a spin. By using a recovery action that is timed to be phased in with the pitch, the pilot might be able to effect a recovery with a minimised height loss. If recovery has been initiated at other points during the pitch cycle an additional height loss could be incurred, but this is not construed as unacceptable unless the basic "one turn" requirement is violated.

There are also no standards on ride comfort (!), although if the motion during the spin was particularly violent or disorientating then something would need to be done about it. This is very unlikely with conventional sailplane layouts.

Learning the spinning peculiarities of a new type can be a challenging undertaking, and must be carried out methodically over several flights and with time for thought between. Always feel out a sailplane in a forward or mid C of G position before investigating it near the aft C of G limit. These remarks apply equally to the test pilot or early solo pilot.

Modern sailplane characteristics

There is now sufficient evidence to draw general trends on spinning behaviour of the typical modern sailplane configuration. Such configurations can be characterised by: high aspect ratio, mid mounted wings with GRP smoothness giving L/D better than 35, low profile cockpit and a conventional horizontal tail, T or low. This article reviews and discusses these spinning motion. **Note that whatever the behaviour of the sailplane the recovery method remains standard throughout.**



The response characteristics of a modern glider lead to a spin that is often more nose down and possibly more "agitated" than older trainers like the K-13. Do not be misled. The glider is still operating well outside the normal angles of attack range for attached flow and control. It is just as vital to apply the full procedure including reducing the angle of attack using forward stick while the glider continues to auto rotate. With many modern gliders there is a firm pitch down at recovery. This pitch down may even occur during the initial rudder movement, and is probably the result of an inertial coupling effect as yaw rate is suddenly reduced. Also, as the glider unstalls the tailplane becomes fully effective and full pitch balance is restored. As a result you get an **even better view** of the ground and an obvious, rapidly rising ASI. You must prepare for the prompt dive recovery action that **will** be required.

All this can be quite character building when explored for the first time (at an appropriate altitude, please). However, the visual alarm of the steep nose down spin may be more perceived than real. Given that in the spin your flight path is approaching vertical, then your pitch angle to the vertical is some measure of angle of attack. Albeit that you are fully stalled, in a steep spin the angle of attack is lower, possibly only just above stall value, whereas in a flatter spin it may exceed the stall value by a large margin.

As a limiting example, if the nose is level in a vertical spinning descent then the angle of attack should be comparable to 90°! For a test pilot there is no worse portent than the nose continuing to rise during a serene auto rotation. This invariably suggests very high angles of attack that will require plenty of control power and **time** to recover. Even the most confident will be backing off on the full back (pro spin) stick right away. Recovery from the steeper spin should be easier and prompt, albeit that the recovery from the ensuing dive will consume more height. ➡

The steep spin and disorientation

It should be appreciated that the steeper spin presents a wholly different external view to the original, flatter version. Instead of the scenery translating smoothly past the nose leaving obvious clues to the sense of rudder required, the steep spin is characterised by a largely rotating outside world (see the diagrams on the previous page). As the axis of rotation is probably somewhere near the base of the instrument panel, so the outside world is seen as rotating in roll, leaving fewer clues as to the yaw pedal required to counter it. Herein lies the seeds of disorientation.

If a spin has been entered deliberately, holding on full pro spin rudder, then the recovery action is clear from the position in which the pilot finds his feet. On the other hand if the spin was entered accidentally or the pilot has suffered some severe disruption during the recovery procedure, then identifying the appropriate action to take from a rolling, horizon-less, outside world can be less than obvious.

If the direction of the spin cannot be identified then **you** are incapable of applying the standard procedure since you do not know which side is "opposite". (Actually the side of the nose that is advancing most rapidly and covering, rather than revealing the scenery, is the side on which rudder should be applied.) If the sense of rotation is unclear an option is to centralising **all** controls, checking particularly that the elevator is near central, and certainly not on the rear stop. This will lead to recovery in almost all currently certificated gliders, but will use extra time and height. During that time you should carefully decide which rudder might be needed. A familiarity with the behaviour of your glider under such conditions is the best preparation you can have.

Oscillatory motions within the spin

Attitude oscillations (in pitch and/or roll) during the established spinning motion are, within limits, perfectly acceptable. These occur because the separated airflow leads to very low aerodynamic damping, and because the airframe has suffered a big disturbance to its trim during spin entry. The oscillation may damp out over several turns or may be sustained throughout the spin. There is no basic reason why recovery should be impaired in any way. In fact the oscillations are variations in the flight conditions which increase the probability of striking a recovery or auto recovery condition. Agitated spinning motion, while alarming and possibly disorientating at first experience, is not in itself dangerous, and can reasonably be tolerated provided it does not become violent.

With all this going on, recognising the cessation of the spin can be a problem. Again, in a nose down spin, yaw (in a spin) and turn (in a dive) can easily be confused, particularly if the spin yaw rate is slow as it often is on larger gliders. Buffeting and loss or change of ASI reading can be similar to the effects under normal sideslip. If there is no clear pitch down or change in rotation rate or control feel then the exit point can be easily confused. It is as well to know the sideslip characteristics of your glider at speed before embarking on prolonged spinning. If you are doubtful of recovery then centre the sideslip with the rudder and check for a rising ASI. If you cannot achieve this then you are still spinning. On the other hand, if you mistakenly maintain a spiral dive then its airbrakes out and gently on the control.

Variations with control positions

With modern aerofoil sections, control surfaces remain effective over a much wider range of angles of attack. There is good news and bad news here. The good news is obvious, but note also that wider control power means a wider range of spinning behaviour depending on detailed control positions and a greater variation of characteristics if the controls are mismanaged. With low side area fuselages, rudder power is maintained out to very high sideslip angles, the so called "super sideslip", easily demonstrated on a Kestrel or Janus. Similar mishandling can make a spin exit very messy and dangerous if speed is rising rapidly.

Ailerons are the control most likely to be centralised when spinning so the effect of their position is most readily experienced. Generalities are not easy, but records suggest that on many modern designs out-spin aileron tends to exacerbate pitch and roll oscillation and increase sideslip excursions sometimes leading to very unpleasant, mushed, slipping auto recovery. On the other hand, in-spin aileron leads to cleaner, faster rate spin, often with increased nose down pitch. These tendencies would indicate that the ailerons continue to work conventionally during the established spin. Which aileron application might improve recovery is less clear; in-spin seems to steepen attitude, thus reducing incidence, while out-spin might achieve auto recovery during a favourable oscillatory cycle. Central ailerons, as the book says, are the best compromise.

Flap settings can also greatly affect spinning characteristics, particularly at entry. This is because they affect both the pitch balance and the spanwise distribution of lift. One should be aware of whether the aileron datum is geared to flap operation.**If not**, then the flap portion that is lowered on the inner wing will gather a disproportionately large amount of the total wing lift. While not good for performance, this leaves the ailerons lightly loaded and therefore fully effective. **If geared in**, then normal aileron control will become progressively worse as flap and aileron are lowered and speed is reduced. The departure may also be more sensitive to aileron movements promoting in-spin yaw, but this is often minimised by the careful aerodynamic design of such advanced configurations. During all flaps-down departures be aware of flap limits speeds which are easily exceeded during recovery. Selecting flaps neutral will not significantly affect the recovery performance.

Spinning - a case study

As an example I have found a flight test report we did at Bedford in the mid 1970s. At the time we thought this sailplane (name withheld) was a bit borderline. Given the experience of numerous additional types, these characteristics are now seen as typical and should now be familiar to all who have spun modern gliders:

"During entry from a slow 30° bank turn the amount of out turn aileron required increased rapidly as speed was reduced. This combined with the control input required to check lateral wallowing lead to an untidy departure with ailerons frequently on the stops. At stall the glider rolled cleanly into the turn and the nose dropped. Recovery at this stage was prompt on relaxing back pressure but if sustained a spin ensued, often with the rudder locked over.

"At forward C of G (33%) attempts to provoke a sustained spin were unsuccessful, the motion degenerated, usually within a turn to a steep spiral with the rudder locked on, a good deal of sideslip present, and airspeed rising rapidly. The foot forces to unlock the rudder were unpleasantly high (estimate 50 to 100lbs) and the glider sometimes pitched nose down as the rudder moved, or shortly after. Speeds during recovery were high and it was difficult to avoid flap limit speeds if the flaps were down.

"At more aft C of G (38%) it proved possible to sustain the spin for rather longer, although the attitude steepened throughout, with a tendency to what at first sight seemed like self recovery after three to four turns; however, this was apparent rather than real, and the terminal motion appears to have been a steeply nose down spiral, again with the rudder locked on, a lot of sideslip and a fluctuating ASI (probably due to the sideslip). Foot forces as above were needed to unlock the rudder: once this had been done the sideslip reduced and the ASI resumed function. This phase took half a turn and left the aircraft in a near vertical nose down attitude from which prompt recovery (or flap retraction) was required to avoid infringing the flap limit speed.

"The mean rate of rotation during the spin was fairly slow - typically 4sec per turn - though the spin was as a whole rather more oscillatory, especially when out-spin aileron was applied, and (as above) became steeper throughout. A 3.5 turn spin and recovery to level flight consumed 1200ft. The undercarriage doors sucked open occasionally adding to a variety of rattles and creaks."

Conclusion

The behaviour described is quite different to that of most training two-seaters and is all the more striking when experienced solo in an unfamiliar sailplane. Nevertheless the training guidance remains equally valid for all circumstances and types. There is nothing new and no changes in the procedures required but a better anticipation and appreciation of the likely attitudes and motions is beneficial. Safety margins can be maintained through proper preparation.

NEW SITE FOR USA SOARING CENTRE

Just after publishing our article about Elsie and Derek Johnson opening The Soaring Centre at Ridgeland, South Carolina (December issue, p324), they discovered and have now moved to Walterboro, an ex Second World War airfield 40 miles north from Ridgeland, along Interstate 1-95. The airport is very large with three runways over 5500ft long with 300ft wide grass landing areas down each side, so they can also offer ground launches. Their address is 175 Aviation Avenue, Walterboro, SC 29488, USA, tel 0101 803 5495812 (home), 0101 803 5495439 (office).

GOING FOR SILVER



Bob went solo with Stratford on Avon GC in 1992 and has a Bronze badge and more than 400 flights, all wire, on a variety of aircraft from the Junior to the T-21. He says he took up gliding "when the imminent receipt of the state pension allowed a little financial indulgence."

Perhaps this time I would get away. The sun shone, the little white clouds stretched to the horizon, and I had just made a very brisk climb from the top of the wire. My first carefully memorised landmarks were clearly in view, with Draycott water shining beckoningly in the direction that I wanted to go and Rugby just beyond -- the navigation had always been my biggest nightmare. Mind you, I was barely above the 3000ft (QFE) which the instructor had said was the minimum before leaving for the great unknown, and my secret ambition (like all Bronze dreamers I'm sure) to complete all Silver task in one go slowly faded. But I had entered "Silver distance" on so many flying lists and never even reached this height with a barograph – plenty of times without of course – that I was getting a bit desperate. So, decision time. Husbands Bosworth and 50km here we come.

I left the nice, safe cloud that I had been sharing with an Oly and a K-6, Silver height and 5hrs respectively, and headed for the next one. It worked! And again! Full of confidence I skirted Birmingham CTA 3500 ALT-FL45 and set course HusBos-wards.

Cloud number three, or was it four?, looked just the same to me, but it didn't seem to have any lift. Before I knew it I was down to 2000ft, where the book says you should pick your field. Still struggling for every scrap of lift, I noted that I was still nicely on course with the Fosse Way and Gaydon to prove it. This is a sparsely populated area with plenty of fields, so I could pick one with all the book requirements – no slope, no wires, no changes in colour and as a bonus adjoining a farm, but it seemed to be covered in odd little spots.

Landing was no problem – did I mention that I was in the K-8? – and I even managed a sneaky little side-slip to land as close as I could to the farm. Well, the farm obviously had nothing to do with the field, because in between was a deep ditch topped with a barbed-wire fence cunningly concealed in the most prolific, virulent stingers you have ever seen. Please take note that you do not attempt cross-country flights in shorts and trainers without socks. Of course, the farmhouse was deserted when I finally reached it, and the next hour of muddy bridleways, streams, more ditches and more nettles would best be told in *Rambling Weekly*.

The club 'phone rang out for ages before it was answered, because, of course, they were launching from the other side of the field, but I finally gave the required pick-up instructions – take the road out of Warwick towards Oxford for a mile and a half, turn right and it's the long farm track just past the crossroads.

As we dismantled the glider it became obvious what the odd little spots were – cow pats (well, makes a change from sheep. . .). It seemed that every time you walked backwards with a wing, or staggered under the weight of the fuselage, you found one.

On the way back to the club, which didn't take long, I began to feel more and more depressed – what sort of glider pilot couldn't find lift on a day like today? I clutched the canopy more tightly to my chest (for some reason we didn't put it on the trailer) as we entered the airfield, just as the K-6 slid in over the peritrack. I had been away for 5hrs. Still, I thought, cheer up, at least you overcame the navigation bogey. And a voice asked "Did you get lost? They said that you landed at Oxford."

OVERSEAS VINTAGE NEWS

Germany:- The Green Party is doing its best to stop all gliding from the Wasserkuppe and has already forced them to reduce their number of launches. It is believed they object to the noise of aerotows.

Denmark:- Four veterans have built a flying replica of the RRG Zögling. Niels Ebbe Gjörup is restoring a Norwegian registered Hütter H17A which came *via* Sweden.

Sweden:- Rolf Algotson says that the recently restored (and finished in Poland) British EoN Olympia is very popular with the Kronberg GC veterans' group. Apart from bringing the Danes the H17A mentioned above, he has been trying to get a Fi-1 sailplane from Iceland for the Alleberg Gliding Museum. The Fi-1 was an Olympia Meise with a pod and boom fuselage and six were believed to have been built during 1943 and 1944.

France:- Last year's great discovery, an AVIA 41P high performance sailplane originally designed in 1932, is being restored as a static exhibit for the Musee de l'Air et de L'Espace by the GPPA at Angers. Built in very limited numbers, this one dates back to 1936. The longest flight by this type was 397km by Eric Nessler in 1938.

CHRIS WILLS

Monflorite. Derek Piggott says that this year there won't be any gliding at this site near Huesca. Spain.

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TAIL FEATHERS

Spellbound (again) Platypedant refuses to take it lying down

One thing the hang glider chappies have over the rest of us - it's not a lot but it matters to the one or two us who care about the English language - is that they know the difference between prone and supine. I take my hat off to



Difference between prone and supine.

them for that, although I understand they cannot return the compliment without doing an unplanned Immelman. Now I realise we are all prone to make mistakes, but I'd be supine if I didn't make a small fuss about this. I'll make my fellow gliding layabouts literate - still layabouts, but literate layabouts - if it's the last thing I do. (It probably will be just that. Ed.)

The reason the hang glider chappies know the difference between prone and supine is that they have a real choice between designs offering the two different flying positions, so they give the matter some deep thought. Apart from the amazingly beautiful and futuristic Horten tailless glider, the Wright brothers' biplane and one or two other oddities, there were few aircraft before hang gliders that one flew in the prone position.

There are some gliders one can fly standing up, such as the Olympia 419, shoulder high to a Guardsman's horse. However from about 1960 onwards, forcing pilots to peer between their toes at the scenery (well, the sky rather than the scenery) became an obsession with glider designers. Mercifully, they relented after a while, and found other ways of reducing drag, having decided that wetted area was more important than cross-section.

Nevertheless, of the gliders built in the last ten years or so the ASW-22 is a bit recumbent; indeed very much so. In fact recumbenter than anything else since the Diamant.

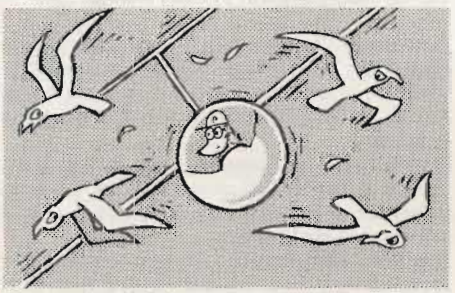
I mention the ASW-22 because, in an otherwise excellent journal from which I never hesi-



Steal material.

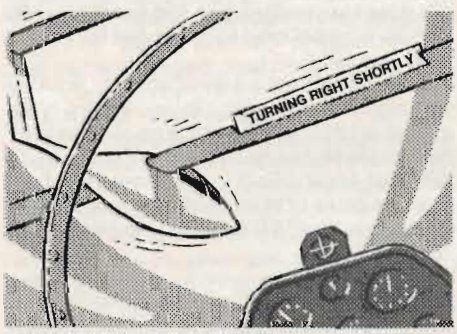
tate to steal material, and vice versa, a writer I have never spoken to came close to being a soulmate. I would love to meet him in a bar, though I am not so sure about in the air. He had started in Kirby Cadets in 1949 (just like me) and here he was now flying an ASW-22 (just like me) 40 odd years later. What a happy coincidence! Then we sharply parted company.

First he said the aileron drag on the ASW-22 was so bad, the only way to initiate a right turn was to whack the stick over to the left to yaw the big bird to the right. (You know, the right aileron sticks down into the breeze and the adverse yaw drags you thataway.) Then after you had fooled it into yawing the way you wanted to go, you suddenly whack on the stick over to the right and Bob's your uncle. A thousand seagulls who thought they knew what you had in mind squawk violently and plummet out of the way to save their lives. So do a few sailplanes that have been silly enough to get close. The sky is full of squawking sailpanes and seagulls, all plummeting. I can't remember what the writer said about the rudder while this is going on, but I imagine it would have been hard over to the right a good minute before all that sleight of fist with the ailerons began.



Plummet out of the way.

Anyway, I tried it in the air and found nothing of the kind happened. What a relief. Seagulls and sailplanes locally (by which I modestly mean



Just don't rush me.

anywhere in a 500km radius) can relax. If my right aileron goes up, I shall eventually start going round to the right, just don't rush me.

However, the author of this piece (whom I now think I am more likely to meet in a dark alleyway than a bar) did mention that he had some difficulty getting used to the ASW-22 because of the very prone (sic) position of the pilot. Then I twigged. Of course, with your nose wedged against the rudder pedals it must be damn difficult to co-ordinate your turns. It is also difficult for the seagulls and assorted soarers to read your thoughts from your facial expression, because while you are gyrating in Heaven knows how many different directions, the only thing they can see under the graceful canopy of the ASW-22 is your arse.

If it looks right it'll fly right, or will it?

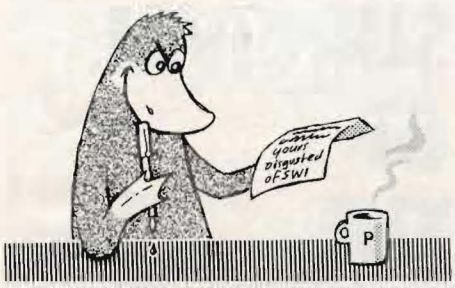


Weather does not suit gliding.

For 21 years, from my third-storey eyrie - and it's an airy, eerie eyrie - overlooking the Thames, I have been able to watch the Oxford and Cambridge boats flash by in their historic annual bout. Well, I do so if the weather does not suit gliding, and very frequently in March it does not suit anything better than sitting in comfort with a hot whisky while two brave crews catch pneumonia. But what's this I see? Following countless computer simulations and tests in water tanks, both eights have now put the most hideous modern oblong or trapezoidal paddles on the ends of their oars, so much at variance with the elegance of the traditional oars and of the boats themselves.

I was just about to write to the *Times* - I am always on the point of posting furious or witty letters to the *Times* but never get around to it - when I thought "Hang on, what about those lumps that you have just stuck on the wingtips of your ship? Not only are the sticking-up bits not very pretty, but the leading edge of the new flat bit on to which the new sticking-up bits are stuck comes back at an angle instead of a curve as before. Can you convince yourself that the whole ensemble is pretty? Come on, be honest!" and the letter to the *Times* about the ugly oars on the Thames goes in the bin.

So whatever happened to the old aviation proverb "If it looks right it'll fly right"? Was it ever true? Well, the Spitfire looked right, and so did the Sabre jet fighter, and so does Concorde.



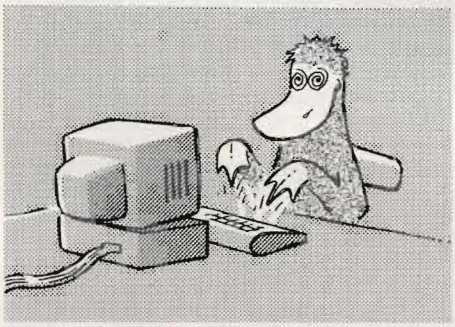
Letters to the *Times*.

Obviously technology changes and tastes change with it; there is no resemblance between those three famous aircraft, but they were all three right for their time. The Kite I and the Weihe and the ASW-12 looked right too, and for the same reason. But in each case that was before the computer took over our lives and our toys. By helping designers to discover minute little tricks of hydrodynamics or aerodynamics, the computer has brought into being hideous new keels for yachts, and added all sorts of baffles and other unsightly junk to racing cars. Can any sane person possibly say that a new Formula One car is as good looking as an old Mercedes racer?

The answer is No. I'm afraid that creeping uglification is here to stay, and we shall have to live with it.

We want our winglets

But there are two consoling thoughts. First, a tour round any art gallery will demonstrate that over the centuries fashion fools us into believingi that the most extraordinary costume is in immaculate good taste, once people get used to it. Thus in a while gliders without winglets will begin



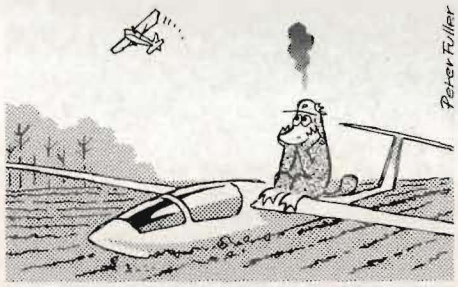
The computer took over our lives.



I feel cheated.

to look somehow incomplete. Even now I feel cheated if I get aboard a Boeing 747 that hasn't got winglets: why are we being fobbed off with second best? "We want our winglets!" we yell as we bang our spoon on our dinner tray, and are only mollified by a trip to the flight deck and a second round of free drinks served by the captain.

The other is that for any proverb, however profoundly true it may be, there is an equal and opposite proverb that is just as true. Bear in mind that an ugly glider soaring is always a more beautiful sight than the prettiest glider sitting in a



A more beautiful sight..

ploughed field. So in place of the now unfashionable "If it looks right it'll fly right" we new realists say:

"Handsome is as handsome does"

The Final Check Flight

And in the fulness of time Scraper came before St Peter at the Pearly Gates, submitting himself for full flying membership. The Keeper of the Gate smiled upon him saying: "'Tis true that you have often departed the ridge much lower than you should, and that you have done those things you ought not to have done, but nevertheless, here are your Heavenly wings." With joy in his heart Scraper soared away into the firmament as he had never soared before.

Next came Ridgebound, with visage pale and drawn, begging for at least the chance of a check flight with the Great CFI. And St Peter was full of compassion saying unto him: "It has been noted that you only gained two Bronze legs and a dubious Silver height, nevertheless, here are your celestial accoutrements." With new found resolve, Ridgebound sped away even unto the uttermost regions of Paradise.

Last of all came Pundit, full of sound and bombast waving his green card and demanding his place in the front of the launch queue. And St Peter spoke sternly with measured tones, explaining that he must serve his time in purgatory with many a flight in the two-seater. Then Pundit ranted and raved: "Why are these lesser mortals granted their wings so readily and how is it that they all fly so well in Paradise?" St Peter, who had long expected this question, replied until him: "The reason the Angels fly so well is because they take themselves so lightly." And Pundit at last understood and went away sorrowing.

PETER J. HOLLOWAY

BIRTH OF A THERMAL

Probably the death of a thermal is all too familiar, but how often have you witnessed the birth of one at ground level?

On Saturday, last August 28, the country was covered by a large anticyclone. At midday I was walking down a lane between two recently harvested cornfields. In the one on the right the straw still lay loosely where it had been spewed out behind the combine. Not a breath of wind stirred in the surrounding treetops, and just a few cumuli of unambitious proportions loitered overhead, going nowhere in particular.

A movement above the field caught my attention. At first I thought it was birds, but on looking more closely I was surprised to see a gaggle of short straws flying slow left hand circuits at a height of 10 to 15ft, with a radius of perhaps 30ft. Gradually they tightened their turn and progressively speeded up as they moved closer and closer together until, as they were swirling in a narrow column, heaps of larger pieces of straw from the surrounding area made short ground runs in their direction, became airborne and rushed up to join them. For half a minute there was the surreal spectacle of a dense pillar of straw higher than a house engaged in frenzied gyrations. At this stage I was standing in an open gateway between thick hedges and felt a strong breeze on my back as fresh supplies of air were sucked into the field.

As the thermal bubble took off, most of the straw seemed to mushroom outwards to land again. Though the foliage on the treetops remained as still as ever, there was now a breeze from ahead of me. The reason for this was not apparent, but presumably another thermal was forming over the field behind me; the straw there had already been baled and lugged, so provided no visual evidence. Then the breeze reversed once more as another "straw devil" developed over the first field. The sequence was repeated three times within a few minutes, until a cloud shadow ended the performance.

The maximum shade temperature I recorded that day, half a mile away, was only 15.5°C so there was no doubt quite a substantial differential between a sun-soaked cornfield and the wooded hill on its north-western boundary or the green sugar beet field that rose to the east. Perhaps katabatic flows from those sources created mini cold fronts that converged in mid field to trigger the cyclonic swirls.

JOHN KENNY

THE LOTUS EATERS

John, DCFI of the Vectis GC, Isle of Wight, recalls those lazy days of summer

Roobarb, the dog, full-length on the back seat of the airfield retrieve car, yawned and stretched her paws. The soothing sunshine was warming her arthritic joints. Graham, the club's Man of Means looked at her and said "That dog doesn't do much."

Her white muzzle twitched, didn't he know how she had saved Aboyne from a plague of rabbits in 1988, bravely resisted a charge of sheep till the last moment at Talgarth in 1989 and sneaked a lap of water from Butch's bowl at Lasham in 1991? Now she was the Vectis GC Duty Dog in charge of weekday flying.

Graham wasn't to know of these past glories but everyone likes him, he mucks in with the menial tasks and spends his money so sensibly on a DG-400, lots of flying training and good wine and does some tugging for the weekday layabouts. The latter are mostly losers from the market economy, the halt and the lame and the blind – more suited as emigrants at Ellis Island than the Isle of Wight.

The summer of 1992 was lazy and warm for idlers, not vastly soarable, but we all gained something from it. Most of my contentment was from good company and bonhomie.

Dave and Ken are both white muzzled like Roobarb. Major Dave, USAF Rtd, has flown everything from Galaxies to Cubs. The original Quiet American, he only once raised his voice when, as tuggie he shouted "Pilots man your planes." He believes in firm government and liberal ex-teacher Ken, who has a perpetual twinkle, was a perfect foil in a hilarious double act. Also an experienced power pilot, Ken soon completed his "Bronze".

Sometimes the local Detective Inspector, Martin, would drop in to check on these suspicious layabouts and survey the (crime) wave. He gained his Silver height in the process.

Mark, fresh from school, was a quick learner and soon went solo, in spite of his white kid gloves. In June, passing disc jockey Steve dropped in for an AE flight, said it was OK and could he go solo and convert to the K-8 by August so that he could join the club expedition to France? "Er, – if you work hard Steve." He did and made it with a couple of days to spare.

Some days my partner Jenny flew my SHK, some days I flew her K-6e, usually the sea breezes wiped the thermals away early, so we scoured the cliffs and hills for other means of support and found some interesting mini waves. Graham would motor off miles away in the DG to find the real lift but did his 5hrs on the local cliffs.

Then there was another Dave, a driving instructor who would jump straight out of his school car into the front of the Blanik and admonish me for not looking in the mirror nor indicating before take-off.

Rob, an engineer and power pilot, converting to gliding and tugging, nursed the tug whose engine was, by now, nearly out of hours and then it was time to go to France – another story. On our return summer was done and it was like one of those golden ages, passed before you realised it had come.

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DENNIS NEAL

SURVIVAL OF THE WEAKEST

Dennis, CFI of Dorset GC, writes about their return to their original site, Bovington Camp, and how they are overcoming their problems

Some 18 months ago Dorset GC left Old Sarum after years of wrangling with a variety of owners and a dawning that we wouldn't survive beyond another year or two if we chose to remain. We had been searching for suitable fields for a long time but whenever we found one there was always a stumbling block. But our persistence paid off in the end and we discovered that the field we had left some 28 years earlier was vacant once more.

What had been a relatively smooth field then, now resembled a moonscape after gravel extraction work. However, we agreed a tenancy at a very reasonable rent and the club voted to move. But the move to a site 28 miles from Old Sarum effectively split the club membership into those who would go with us and those who chose other clubs. Unfortunately we were left with a handful of not so young instructors, a lot of teaching experience and ever creaking bones to make the best use of our new but very different field, poor drainage, low height winch launches and lots of military flying.

We had the membership. Before we started flying we were joined by locals who were happy enough to pay membership fees and then get stuck in with the pick and shovel and go home weary and covered in mud.

We made the move over a couple of weekends. The base for the portable hangar had been prepared, the hangar was dismantled one weekend, transported during the week and erected the next weekend by many willing hands. We completed it just in time before the rains came and our fleet was safely housed.

Our first launch was exactly 28 years to the day since the last launch from the site. The low cloud and showers didn't deter us - we were flying!

Somehow over the next few months we man-

aged to learn about the site and how to make the most of what we had, and our first pupils were going solo. No hang-ups about field landings here. Every landing is a field landing, carefully avoiding parked gliders and learning to choose the best spots to touch down or being vibrated to bits in the rough.

We turned out a different kind of pilot

We coped, we made mistakes which we learned from and turned out a different kind of pilot from our previous experiences at large flat sites. They accepted our limitations, took up the challenge and learned to soar from 600ft launches and will one day be the backbone of the club. They are, of course, lacking in hours and qualified experience to become instructors and it may be a couple of years before they reach the required standards.

Suddenly we faced a crisis situation. I was grounded medically and within a couple of weeks two other instructors faced the same fate. We were down to one full rated and one assistant rated instructor and 20 *ab-initios*.

The weather has helped. It has been so diabolical it has given us some breathing space. The BGA sent us computer lists of instructors within a reasonable travelling distance and we asked the fully rated instructors for help. The response has been magnificent and we shall, as a result, have instructors over the next 12 months who in turn will benefit from their experiences at this site. Chris Rollings, senior national coach, has also pulled out the stops and is currently checking out an AEI for an assistant rating.



From l to r, Dennis Neal, CFI, Barry Thomas, full Cat, Bill Cook, assistant Cat and Vic Phillips, who has an AEI rating.

We shall survive and thrive as a club. So much has happened since our return and there is much more to be achieved. We have had our first task week, although the good old British weather let us down again, but there is the prospect of a better task week in August when we will be joined by a Dutch club for some very different flying.

If other small clubs face a similar situation, I would commend that the problems be put to bed as quickly as possible. Seek help from the BGA and other clubs and you will keep flying with the assistance of others and become a stronger club as a result.

My sincere thanks to all the instructors who have rallied to our assistance. We hope to be much stronger soon and may be in a position to help others through a similar bad patch.

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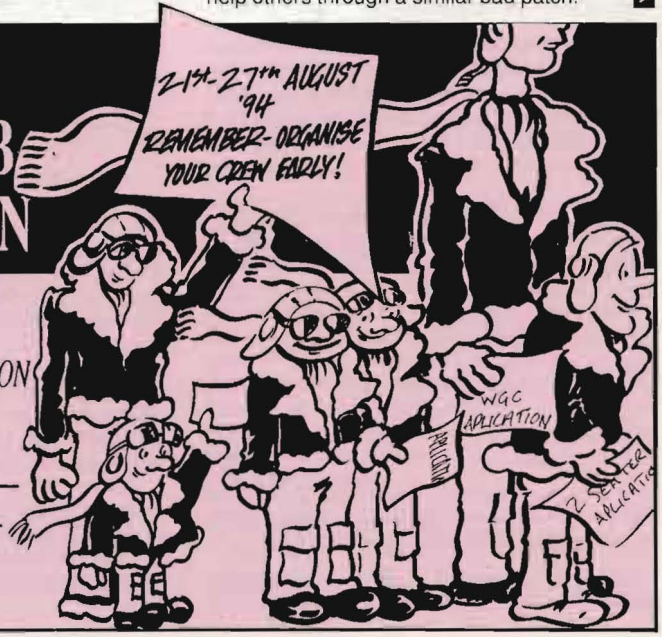
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TOM BRADBURY

FLYING TOWARDS FRONTS

There are a few drought stricken years when the British Isles seem free of active fronts for weeks on end. In most years cross-country flights have to be fitted in between a series of rain bearing systems. Here, to refresh the memory, is an illustrated summary of some frontal characteristics

Basic fronts. There is always a temperature gradient between the cold polar regions and the hot tropical zones. When a convergence line develops the temperature gradient is intensified making a sharp boundary between warm and cold air masses. Fig 1(A) shows a surface flow giving convergence between cold northerlies and warm southerlies. The pecked lines are isotherms which become concentrated by this low level convergence. Fig 1(B) depicts the high level flow. It shows a region of divergence caused chiefly by the upper winds accelerating away. Fig 1(C) is a vertical cross-section combining the patterns low down and high up.

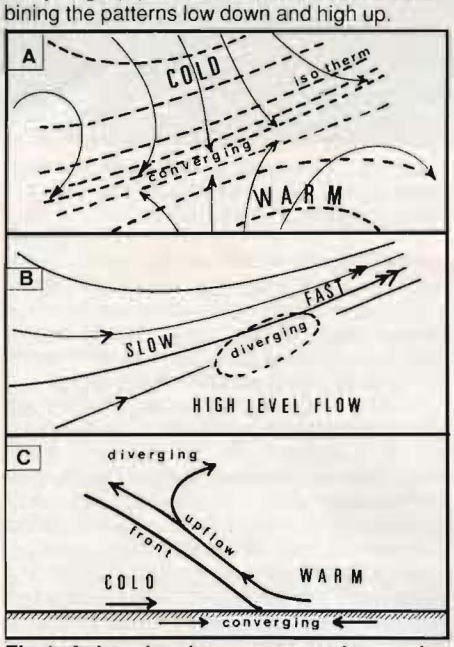


Fig 1. A. Low level convergence increasing the temperature contrast. The pecked lines are isotherms. B. Acceleration of the high level flow resulting in divergence aloft. C. Vertical cross-section showing low level convergence and high level divergence resulting in a flow of air up the frontal surface.

When convergence below and divergence aloft are combined in the same area it results in low level air being drawn upwards. During ascent the warm air rises over the cold because it is less dense. The boundary between the air masses is called a front.

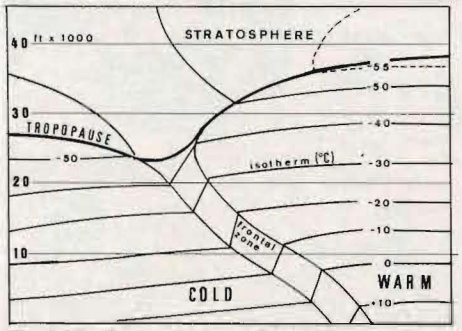


Fig 2. Vertical cross-section through a front showing isotherms and the tropopause.

On small scale Met charts a front is usually drawn as a single line; large scale diagrams reveal it as a more gradual change. Fig 2 shows a vertical section through a front which crossed the British Isles. The front is marked by a pair of pecked lines sloping upwards from right to left. These lines separate the two air masses and show the width of the frontal zone where they merge. Solid lines show the isotherms which slope down from right to left with a marked kink where the frontal zone intervenes.

Tropopause changes

The heavy black line marked tropopause shows the boundary between the stratosphere aloft, where the temperature changes little with height, from the troposphere below where the temperature almost always decreases with height. The tropopause dips down when flying from warm to cold air. There may be a downward flow of air at this point bringing very dry stratospheric air down below the warm front.

The motion of this stratospheric air has been traced by measuring the concentration of ozone. Ozone is formed in the stratosphere and (generally) destroyed low down. Extra ozone in the upper frontal zone usually indicates downward penetration of stratospheric air.

Cloud structure

Fig 3 shows the kind of cloud often produced by the upslope motion over a frontal surface. Ascent cools the air leading to condensation of moisture; this produces cloud and eventually rain (or snow). The slope of the frontal surface may vary between about 1:50 and 1:200 depending on the temperature contrast and the wind structure. This diagram greatly exaggerates the slope.

Approaching the front from the cold side the first signs are high level cloud in the form of cirrus. Cirrus consists of ice crystals which can refract the sun's rays to produce various kinds of halo. Going further towards the front the cirrostratus thickens and lowers to form altostratus. This is formed from water droplets even though the temperature at that level is far below freezing. The cirrus halo is then lost but the sun may still be visible if the altostratus is fairly thin.

Nearer the surface front the cloudbase continues to descend and low stratus develops, particularly in regions over and near the sea. Hills are often hidden by the low stratus. Far inland the lowest cloud often burns off by day in summer.

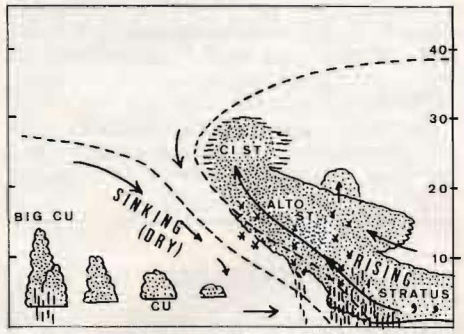


Fig 3. Cross-section showing cloud structure.

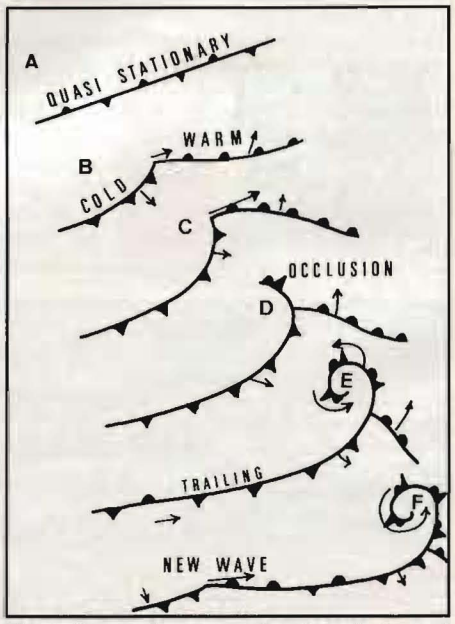


Fig 4. How a front can develop. Letters A through to F show changes at intervals of half a day. Warm fronts are shown by blobs, cold fronts by spikes. Occlusions are indicated by pairs of blobs and spikes.

Time variations

Fig 4 shows how an originally almost straight front can develop with time. Each stage is separated by about half a day. At the top A shows a quasi-stationary front marked with alternate blobs and spikes. The warm air lies south of this

dividing line. B shows an undulation in the front. It usually develops in association with a shallow surface depression. On the right the line travels NE'ward as a warm front; on the left it moves SW'ward as a cold front. The cold front often travels more rapidly than the preceding warm front and the kink between the two becomes more marked in C. The surface low has usually deepened since stage B.

Eventually the cold front overtakes the warm front to form a system called an "occlusion". When a front becomes occluded as in D the warm air is lifted from the surface. Quite often the beginning of an occlusion coincides with the period of maximum deepening of the associated surface low. When deep surface lows slow down the occlusion becomes wrapped round the centre, as in E. Far away from the low the cold front slows down too and is called a "trailing" cold front.

The last stage F shows the trailing cold front developing a new wave on it. This takes us back to stage B and the whole process can be repeated. In bad summers a large and slow moving depression gets stuck to the west of Scotland and successive new waves form on the cold front over the Atlantic. One rain belt has hardly cleared eastern Britain before a new one develops and sweeps in from the Atlantic to take its place.

Undulations on the frontal surface

The frontal surface does not have a constant slope; it may level off and even dip slightly. Fig 5 shows an example of a cloud gap which developed where the frontal surface flattened out. Here the upward motion was interrupted and a wide break developed in the high cloud layer. This allowed the sun to come through and revive the cumulus clouds which had dispersed below the high cloud.

Anafronts and katafronts.

Fronts can also be classified by the air motion up or down the frontal surface. If the air rises up the frontal surface it is called an "anafront". Anafronts are active systems because ascent of air produces deep cloud masses with much rain. The reverse is a "katafront". Here the flow is downwards warming and drying the air and dispersing much of the cloud. A long front extending a thousand miles or more will often have some active sections which are anafronts and other weaker parts which are katafronts.

Frontogenesis and frontolysis

These are two more terms to indicate changes taking place. Frontogenesis means a front is forming or becoming more vigorous. Frontolysis is the opposite, meaning the front is weakening. When the old front has decayed completely it is said to have been "frontolysed".

Complicating factors

1. Longitudinal circulations.

With some fronts the warm air ascends the frontal surface smoothly. In other cases a complicated process (which I find too difficult to describe) may produce rolls with their axes of circulation almost parallel with the frontal surface. Fig 6 illustrates these. The rolls are shown end on; they extend into the diagram. Rolls can

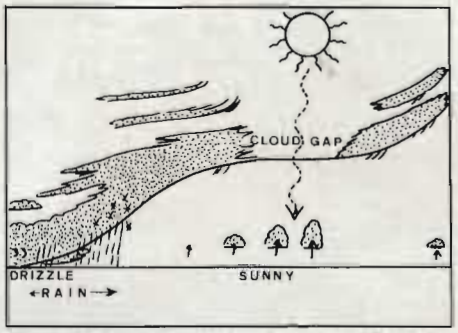


Fig 5. Cross-section showing changes in the slope of a front and the effect on cloud cover.

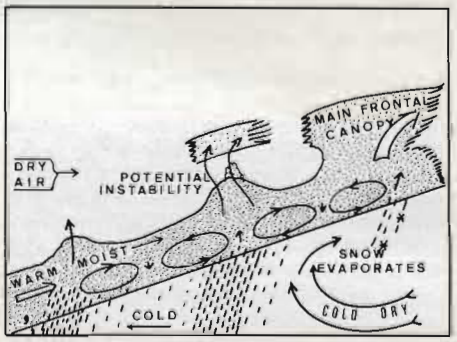


Fig 6. Longitudinal roll circulations parallel to the front and the effect of potential instability in the warm air aloft.

be contra-rotating, rather like the longitudinal rolls under cloud streets. This results in extra up and down motion above the frontal surface producing bulges in the cloud top. It also affects the rainfall. Instead of one uniform area of rain you get several bands of heavier rain.

2. Cloud seeding

The air in and just below a frontal zone is normally stable (since cold air is capped by warm air). However the warm air above the frontal surface may be "potentially unstable". This can occur if the air aloft is very dry. When potentially unstable air is lifted it first cools at the the dry adiabatic rate of 3°C/1000ft. If the lower layers were already moist they soon become saturated

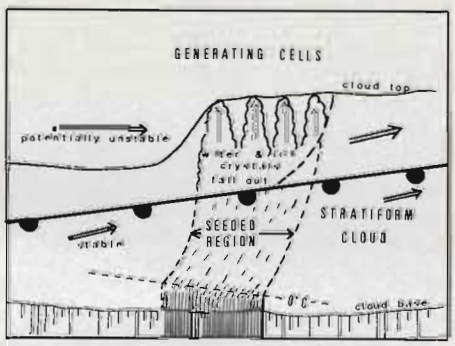


Fig 7. Vertical cross-section illustrating how potential instability in the warm air can lead to growth of cloud turrets. Ice crystals falling from these turrets seed the air below to produce a band of heavier rain.

and the rate of cooling is reduced to the wet adiabatic rate. The much drier air above continues to cool more rapidly at the old (dry) rate. This change of lapse rate between the wet air low down and the dry air just above it can make the air absolutely unstable as soon as it becomes saturated.

The first signs are the appearance of cumulus turrets building through the layers of stratiform cloud. These turrets then produce showers of ice crystals which fall down into the layer below. Dropping ice crystals into clouds is called "seeding". Clouds have been artificially seeded for many years. "Rain making" was once a popular activity; experimenters tried to increase rainfall by dropping "dry ice" into clouds. Trials showed that artificial seeding of a moderate sized cumulus could stimulate it to grow into a cu-nim.

At warm fronts the seeds of ice crystals grow in the saturated air and produce trails of precipitation starting as snow and turning into rain below the freezing level. The process is illustrated in Fig 7. The cu turrets form the "generating cells" from which ice crystals fall to seed the stratiform cloud below. The frontal rain is thus broken up into bands or clumps of heavier rain. On this diagram the freezing level is shown by a pecked line marked with a zero. As snow descends past this line it changes into rain and falls much faster. The diagram shows how the angle of precipitation alters where the snow thaws.

Pressure tendency and frontal activity.

Changes of pressure can give an indication of frontal activity. With a typical moderately active front the surface pressure starts to fall many hours before the front arrives. If the front is weakening the fall of pressure is usually delayed; in some cases the pressure may continue to rise. Rising pressure near the front usually means that the air aloft is subsiding. This precedes thinning and dispersal of all the upper cloud layers. If pressure continues to rise in the warm sector there will probably be at least a couple of days fine weather, sometimes more.

A club barograph is the best indicator of pressure change but one can get a useful guide from noting the change of ground based altimeter readings. If the altimeter shows an increase of height the pressure is falling, and vice-versa. Unfortunately pressure change alone is not too reliable as a guide.

Variations along a warm front.

Fronts are normally most active near the centre of low pressure. It is here that the upward motion is strongest. Towards the centre of high pressure the air aloft is usually found to be subsiding and hence becoming warmer and drier aloft. If you fly towards an anticyclone the cloud thins out into layers instead of being solid. Then the upper layers dissolve as the air dries out. Finally nothing remains except a zone of low stratus to mark where the front lies. Fig 8 illustrates the process.

The dangers of hill fog.

Near most fronts the air is usually very close to saturation. Even a small amount of lifting is enough to produce a cap of cloud over hills be- ➡

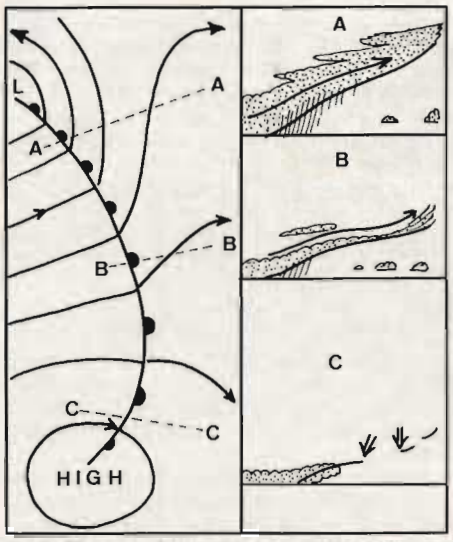


Fig 8. Changes in weather as you travel away from the low pressure.

fore the front arrives. After a warm front has passed the cloud may be low enough to produce fog over the sea and windward coasts as well. Cloud covering high ground has led to hundreds of aircraft accidents in the past. Although there are more navigation aids nowadays aircraft still fly into hills. Gliders are less likely to be involved but only because their pilots seldom take-off if the weather looks unsoarable. Powered aircraft tend to get caught out when pilots try to beat the incoming front, or find they have to let down through solid cloud.

When low down the grey layer of low stratus is sometimes hard to see against an equally grey layer of altostratus. A layer of thick haze can also make it difficult to notice low stratus. One may only realise there is a layer of lower cloud when another aircraft suddenly disappears from view.

Some mountains seem to collect numerous wrecks. Years ago when I used to walk over Snowdonia I came across many twisted fragments of old aircraft on ridges and in gulleys. The RAF station at Valley used to keep a map of all wrecks, partly to reassure people who rang up to say they had found bits of aeroplane. In my time the map had at least one hundred known wrecks marked, many dating back to the war years.

The Scottish mountains have also claimed a number of victims too but it is not only the high peaks which which take their toll. Even quite gentle hills such as the Downs and Isle of Wight have their quota of wrecks.

PART 2

SIGNS IN THE SKY

The approaching warm front.

Long before any threatening layer of cirrostratus appears one may see filaments of cirrus. Some of these appear as hook shaped clouds. When they start to increase they are called "mares' tails". Occasionally one may see how they form. Photo A shows a close up taken at about 35 000ft. At these high levels short lived puffs of cloud appear looking like icy cumulus. These release ice crystals which trail back in the



A. Cirrus hooks forming at 35 000ft from shortlived puffs of ice cloud.

strong wind shear producing very long filaments of cloud. The generating puffs usually vanish so quickly that one does not notice them before the cirrus hooks appear.

Dense cirrus streaks (photo B) can appear near the edge of a jet stream well ahead of the main cloud sheet. They usually travel very rapidly. The long streak is aligned with the upper wind, usually around 30 000ft. These streaks suggest the air aloft is becoming moist.

Contrails

Thickening condensation trails are another sign that the air is becoming moist at high levels. Most contrails form when the moisture from aircraft engines condenses in the upper atmosphere where the pressure and temperature is too low to hold the excess water. Jets, with their much hotter exhausts, start trailing at lower temperatures than piston engines. In both cases the trails evaporate in very dry air but thicken and persist when they meet the previously invisible moisture ahead of a warm front.

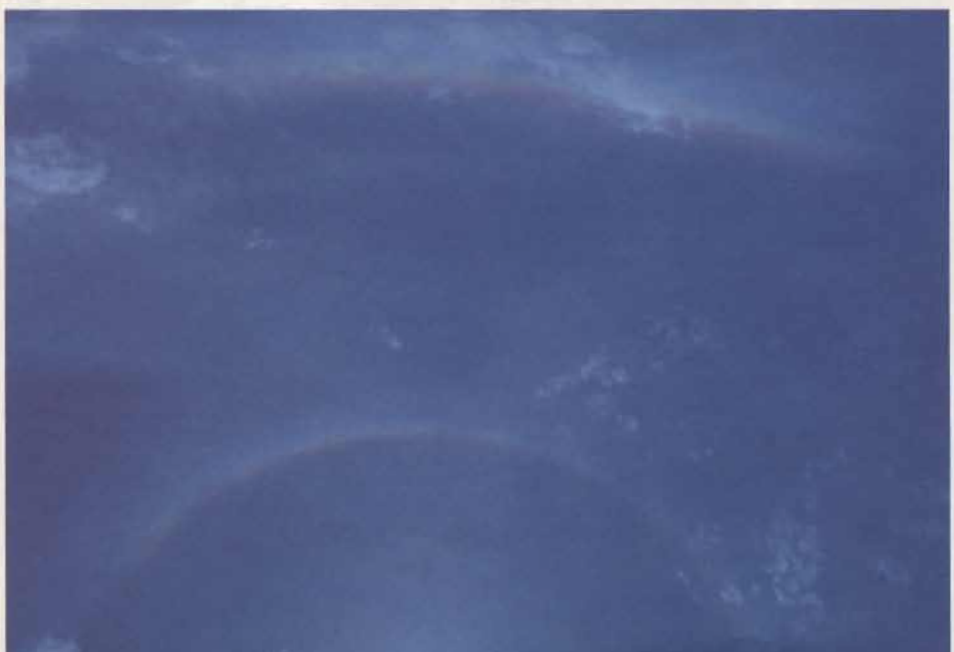
Haloes

Haloes are a sign of cirrostratus. This cloud can start by being so thin that the blue shy shows through. Photo C shows the top half of a 22° halo, a fairly common type - 22° is the angle of minimum deviation when light passes through a



B. Dense cirrus streaks aligned with the upper wind and moving rapidly from the horizon.

C. Types of halo caused by cirrus ice crystals.





D. Leading edge of a warm frontal cirrostratus sheet. Cu still forming



E. Cu still active under a sheet of frontal medium cloud.

prism of ice with sides at 60°. Many ice crystals are hexagonal prisms and alternate faces of a hexagon are inclined at this angle. The top part of photo C also shows a section of a 46° halo. This is due to ice prisms with faces at right angles. Fresh new cirrus can produce many more patterns with arcs of contact and mock suns.

The leading edge of the main cirrostratus sheet (photo D) may be as much as 500 miles ahead of the approaching surface front but quite often the distance is only about 300 miles. Cumuli keep going in the unstable cold air ahead of the warm front but dry air sinking down under the front often limits the cu tops. Even when the cu themselves vanish there may still be thermals under the cirrus.

How thermals change character

When cirrostratus spreads over the sky thermals may change character. Until the cirrus arrives many thermals have sharp edges so that one immediately feels the surge of lift on entry. When a thick cirrostratus sheet spreads over during the heat of the day the effect is as if the time had jumped and evening was near. Thermals lose their sharp edge and feel softer and smoother. The rapid change may be disconcerting; it can take a little while to slow down and adjust to the new feel of lift. One gets the impression that thermals have become more widely separated and cautious pilots feel an urge to work every thermal to the very top in case there will be no more.

Provided the top cover does not arrive until well after midday the ground often gets enough heat to maintain thermals even when the cirrus has changed to thin altostratus. Photo E shows cu still working under a medium cloud sheet.

A gap in the upper cloud sheet, possibly formed where the frontal surface flattens out as in Fig 5, allows the cu to build up with renewed vigour (photo F). Breaks in the advancing upper cloud sheet are not uncommon; this is an encouraging thought if one is obliged to fly under the frontal cloud to get home.



F. Cu building up again when a gap appeared in the frontal cirrus.

Sometimes the cold air is so unstable that convection continues even under thick altostratus. Photo G shows a day when fairly active cumulus persisted until the frontal rain was only a few miles away. The altostratus sheet had lowered to about 8000ft and weak wave activity began to show up over some of the cu tops. Fronts quite often stimulate some wave activity. Some satellite pictures show long waves on the top of frontal cirrostratus but the cloud layers are usually too thick for wave soaring.

Departing fronts

On rare occasions one can see the form of upslope motion in the cloud of a retreating cold front. Photo H shows the arching strands of cirrus cloud after a cold front had passed just before sunset. The front was slowing down and was about to change direction and return as a warm front. The steeply sloping cirrus shows the the upslope motion where the warm air climbed above the frontal surface.

G. Active cu with weak waves under lowering altostratus.



H. Cirrus showing upslope motion at the rear of a cold front.



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A NEW COMPETITION FORMAT

Jason elaborates on his thoughts muted in the letter pages in the last issue, p63, about the way gliding must go with the advent of GPS to help overcome current problems

Of all the different types of gliding competition developed since we started racing gliders sixty or so years ago what is the best formula? Today are we small but dynamic and full of diversity or do we suffer with immature and poorly designed systems of competition? Unfortunately many pilots would answer with the latter. Competition gliding has had a long, undisciplined youth and it is time to overcome the problems and inadequacies of our system.

GPS gives us the chance to improve the format of our competitions which is why many were so pleased about the success of the GPS scoring system at Kiwiglide in New Zealand. The following is a competition format from pre-start phase to finish, which the Cambridge equipment used at Kiwiglide is fully capable of supporting. Our sport should take advantage of the generosity of Uncle Sam in putting up these satellites to get its house in order or eventually it could suffer the same fate as powered air racing, becoming more spectacle than sport.

The Pre-Start

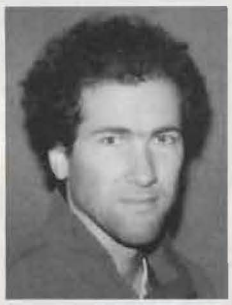
Loitering around at the very top of a thermal, flying at minimum sink speed trying to use the controls as little as possible, waiting for the perfect moment to start, is one of the most dangerous aspects of competition gliding. Our start system means you accept higher risks if you want an optimal start. We could remove almost entirely the incentive for eking out that last 100ft of pre-start climb by using the existing GPS based flight recording/scoring equipment which incorporates an altimeter, to restrict the top of the gate to an altitude approximately 500ft below that of the top of usable lift at the time of the start.

Establishing what this altitude should be on any given day is not difficult and being off by a few hundred feet plus or minus doesn't really matter as one altitude limit would be enforced for all starters. In addition, by restricting our maximum altitude during the three minutes before starting to approximately 400ft above the top of the start gate we could completely eliminate Red Line dives through the start gate. Fine tuning the altitude limit would allow us to arrive upon a sensible limit to the maximum possible speed flown through the gate.

These two proposals would make the starting area far safer. They also take away the possibility of gaining, before the competition has even started, the advantages the present systems allow; and in this regard some of these are really excessive. The unlimited altitude start used at International and some National Championships makes about as much sense as supplying each glider with a tug and having a Le Mans' start, which at least would be quite a bit fairer.

The Start

Competitions are not time trials where we all get a separate, fair shot at the same course but a form of racing where pilots interact with one another as well as with the weather; the format should better reflect this reality. Group starts are common to all forms of group racing and for most people it is simply common sense that if you race together you start together. Though the present start systems offer the opportunity to out-calculate our competitors as to the optimum start time, more often than not the weather does our calculating for us. Much of the start time differentials typically seen are simply a by-product of the cycling of lift and the fact that gliders are forced to take turns going through the gate. Pilots speak of "Start gate roulette" and frequently our choice of start time alone, if combined with a flight that is merely competently flown, will suffice to guarantee a win. This unsatisfactory state of affairs has an even more pernicious side effect.



Jason, from Florida, started gliding five years ago and within a year was competing. He flies an ASW-24E, was one of 16 to complete 1000km in a Regionals and the only pilot to win two days of the 1993 US Standard Nationals. Last year, with John Good and Gary Fackender, he created a new scoring format for POST flying in the USA.

If a pilot has "won" a start gate roulette then he can attempt to stand on his margin by merely staying with a gaggle. This contributes greatly to an excessive reliance on this sort of tactic which is clearly to the detriment of our sport, to wit, the leaching we all rail against. A system that requires pilots to break away from a group to beat it, as opposed to the present one which rewards pilots who can start a few minutes later and still catch the pack, should generate fewer gaggles.

Obviously one shouldn't expect to see a big reduction in gaggles on all days simply by taking the "roulette" out of starting, but on the kind of days which most encourage gaggles and on when they are most detrimental to good racing, such as blue days, pilots would no longer have the option of resting on the minutes of margin the present start system generates of necessity as an unwanted by-product. Here GPS offers the scoring equipment to establish a group start that will solve this problem, and by taking advantage of the full capabilities of this system we can make it a safer start.

The Race

Once we see pilots racing against one another, actually making speed, as opposed to hassling for pre-start advantage, racing formats take a back seat to racing itself. But here too GPS scoring equipment offers a means to make our racing safer and fairer.

GPS in effect allows you to build a three dimensional race track in the sky. You can bring gliders through zones or gates while between TPs. You could bring the gliders into viewing range for the benefit of the spectators (a group whose interests most racers hardly acknowledge as existing at all).

Most would be pleased to know how things are going before gliders start finishing. With a rough idea of the average speed achievable on the day and knowledge of the start time, spectators would know about when to tilt their heads skywards. Done properly it needn't compromise the race. On course, co-ordinate designated GPS control gates, with or without an altitude component which would create three dimensional zones, are a way of dealing with controlled airspace and busy airways. One could also use them to make pilots deal with areas that pose interesting tactical gliding challenges.

There are other improvements in safety this competition allows. It might be possible to avoid thunderstorms, which can be extremely hazardous. Why let a thunderstorm cell that decides to spend a couple of hours sitting on top of a TP ruin a whole race if there is a recognisable ground feature a few miles away that can serve as an alternate TP? On problematic weather days, an airborne monitor could be used as a last resort to alter the course.

In the US over the past few years we've had a system where we can alter the task after the launch but before the opening of the start gate. With the excitable airmasses we sometimes have to deal with in North America this allows us to shift from an impossible task to something that makes the most of the day. So far we have seen no real abuse of this system and most are convinced that the pros amply outweigh the potential cons. GPS offers the responsible competition director additional capability.

The Finish

GPS scoring equipment deals with the finish in a simple and familiar manner. When you reach the defined finish point or line the data is recorded and flagged to the scoring component of the system software.

The positioning of a GPS finish line is flexible, one merely picks a position with recognisable ground features that provides an adequate, safe area for both flying and rolling finishes. If in extraordinary circumstances the position of the finish needs to be changed after the race has started this presents no problem for the scoring system.

The added expense and trouble of changing from cameras to GPS will be wasted if we don't use it as an opportunity to race in better ways. Let's not blow it!

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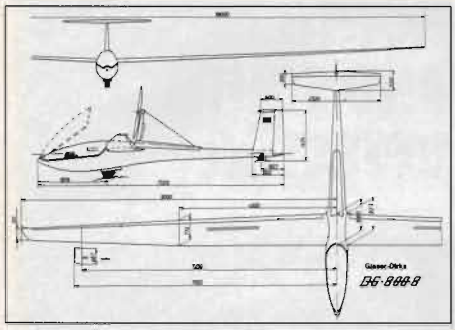
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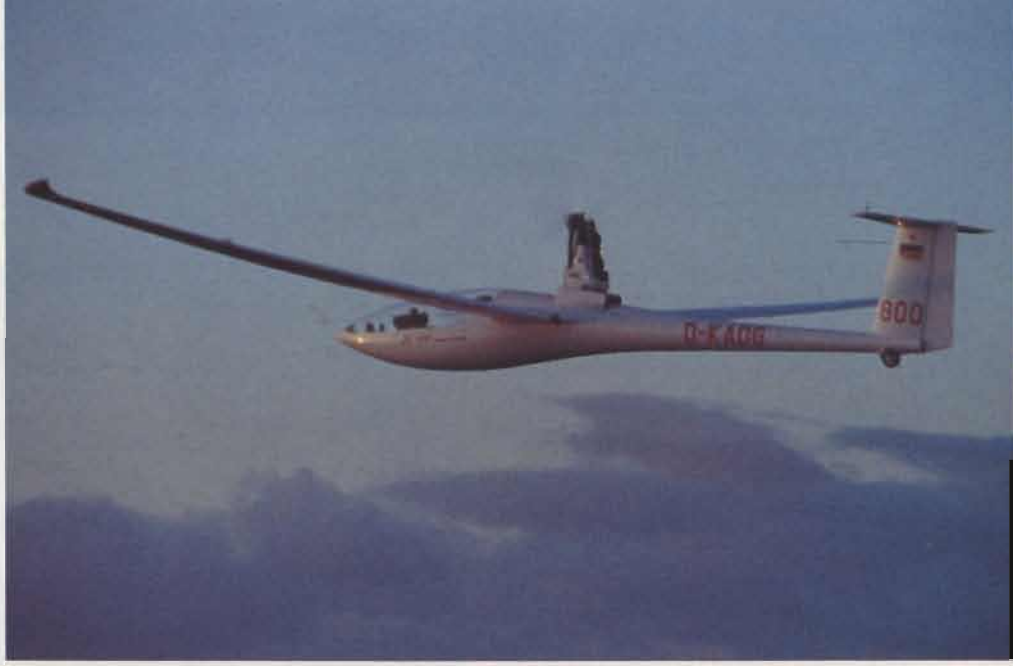
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THE LATEST FROM GLASER-DIRKS



Glaser-Dirks are developing a new version of the DG-800, the DG-800B. They are utilising a new engine, the MWAE 50 produced by Mid-West Aero-Engines, a British Company. This three cylinder, two-stroke engine is certificated for powered aircraft. Glaser-Dirks have reduced the number of cylinders to two, giving a 600cc capacity and, although light and compact, this



John Ellis took this photograph of Bob McLean flying the DG-800A over Yorkshire. This version has the same wing as all the gliders in the DG-800 series.

is quite large compared to the usual motor glider engines. It produces 50hp at only 6000 rpm,with a 3:1 belt reduction gear giving a propeller speed of 2000rpm with a very low noise level. Furthermore the engine has a much longer time between overhaul than others in current use. A novel feature of this machine is that the engine runs inside the fuselage which, in addition to the water cooled design, contributes greatly to the reduction of noise.

The first DG-800B will be in production later this year.

GLIDER FORMATION

BOB PIRIE

Bob describes how glider pilots are planning to join the D-Day commemoration with their own special tribute

Fifty years ago - when gallant names like Horsa, Hotspur and Hamilcar were synonymous with deeds of heroism; when Elliotts of Newbury, Slingsby Sailplanes and Airspeed were a reality and when weird sounding Waco was known more for its aviation links than for recent tragic events - allied tugs and glider crews were poised to deposit their brave and precious cargoes into Normandy.

Apart from the few proud veterans who "were there", most modern glider pilots can only speculate at the combination of stomach-churning anticipation and eagerness which the D-Day crews experienced as they made their final preparations for probably the longest aerotow - and the most important field landing - of their lives. Sadly for many of them and their passengers it was a one way trip.

Memories of those men and their exploits live on. However, with the demise of military gliders in the 1950s, the incredible rate of progress in glider design and the development of gliding as a sport in the ensuing years, images of lumbering WW11 gliders are fading fast. In contrast to the situation with early sporting and training gliders - going from strength to strength thanks to a healthy vintage gliding movement - it's is only *via* museum displays, books and archive film footage that we can hope to capture some of the spectacle of those mass aerotows of the 1940s.

This was brought home to me a few months ago when plans for commemorating D-Day were announced in the press. There was talk of march-pasts, fly-pasts, mass parachute drops and even sail-pasts of historic vessels. But there was no apparent role for gliders - ancient or modern. So I took tentative steps to see if this could be rectified, envisaging a small, informal fly-past of K-13s from our training fleet at Lasham, to take place around the time of the official commemoration.

The course of events which followed can only



Bob, who first became interested in gliding as a schoolboy helper at the 1955 Nationals at Lasham, is an instructor, part owner of a Mosquito and has been on Lasham's committee for some years, latterly as vice-chairman. He is also a former member of the BGA Safety Panel. Photo: Elaine Boles.

be described as heartwarming - but, on reflection, not surprising, knowing the enthusiasm and imagination which exists within the gliding movement, and especially among the people who have involved themselves in planning the project.

Positive responses from the Lasham committee, from Bill Scull and the D-Day commemoration team at the MoD, were accompanied by all sorts of suggestion (mostly encouraging) like "Better consult Don Spottiswood." "The RAFGSA may be interested." "Keep those Upward Bound chaps at Thame in the picture" and "Didn't Derek Piggott fly WW11 gliders?" (He did - and he'll be part of the project I'm about to describe.)

The idea of something small and unofficial was overtaken by a tide of goodwill and enthusiasm. As *S&G* goes to press, the project has ➡

grown to the point where a privileged group of pilots and aircraft representing the BGA, our respective clubs and everyone associated with gliding - past and present - will play a formal and quite visible role in ensuring that our military predecessors receive a fitting remembrance.

Britain's major commemoration event will take place in Portsmouth, Southsea and the Solent area on Sunday, June 5, with 14 heads of state in attendance, a huge open air service on Southsea common, mass fly-pasts of military aircraft and a review of large merchant and naval vessels by HRH, Queen Elizabeth, aboard Britannia.

And our small glider-borne tribute - now swelled to possibly 18 tug and glider combinations and some 70 pilots - has been honoured by being allocated the opening slot of the whole programme.

It's a bit awe inspiring for us on several counts. First, because of the sheer statue of the whole occasion. Second, because a nagging feeling persists that something - weather, red tape or goodness knows what - may prevent it from happening, making this article no more than a pipe-dream. And third, if June 5 turns out to be a 500km day we'll never be forgiven by our fellow club members. To cap it all, the binoculars of our BGA president, HRH Prince Philip, will probably be trained on us as we make our run-in.

But all being well, at 0930hrs on the big day, after an early morning briefing, someone will echo General Eisenhower's famous words: "OK. Let's go!" Two flights totalling some 40 tugs and two-seater gliders will take off simultaneously from Lasham and RAF Odiham. Forming into a "vic" formations, we'll trundle down our very own slice of airspace (Thank you CAA!) to pass over first Southsea Common and then a fleet of large vessels anchored at Spithead, before over-flying Lee on Solent. Our own flight of five Lasham K-13s should be home and ready to resume their training duties by about 1030m while other participants will either attempt to soar home, or make a proud return to their home clubs in smaller formations.

In addition to Lasham, participants will include the RAFGSA, RNGSA, Army Gliding Association (Kestrel GC), Air Cadets and the Southdown, DRA (Farnborough) London and Bannerdown GCs.

On the organisation side there's still potential for "many a slip"... But with dedicated professionals like Phil Phillips, Alan Meredith, Mark Thompson and others at Lasham, the RAFGSA's Terry Holloway, the Air Cadet's John Dobson contributing large helpings of know-how and enthusiasm and the CO of RAF Odiham offering us the use of the airfield to give us two sites, the prospects are looking good.

Now it is down to us to make the fly-past itself not only look good, but happen in a safe and dignified manner appropriate to the occasion.

If, over the next few days, you see small groups of tugs and gliders practising formation flying, we hope they don't cause you any inconvenience - and that they may even provide you wiyth entertainment or amusement.

And if you are not gliding yourself on the 5th, and we're not all grounded by the weather, come on down to Hampshire. It will be a long time before you see a formation of a similar size - and in such eminent company as those D-Day veterans and other VIPs who will be in attendance.

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GERMAN GLIDING GADGETS

Alan Harris has translated news of two gliding gadgets from *Aerokurier*

Good news for those tired of fiddling with or losing those tiny safety pins used for locking Hotellier control connectors.

Klaus Wedekind, a German glider pilot, has developed a new easy-to-use locking device. It is basically a spring-loaded sleeve which fits on the control push-rod just below the Hotellier connector. It will slip up and lock the conector if the latter is properly in place and refuse to do so if it is not.

The LBA (German airworthiness authority) has approved the design and most manufacturers are now fitting them to new gliders.

They can be retrofitted to old gliders. In some cases the owner can do the job himself, in others expert help may be needed and the push-rods may need to be changed. If you can do it yourself, the cost is about £10 per connector.

More information is available from Klaus Wedekind, Südhang 56, D-57548 Kirchen, tel 01049 2741 63033, fax 01049 2741 63268.

Gadget 2 is for lady pilots only but, who knows, some resourceful chap might like to make a standard modification available for those days spent semi-reclined under a cold cu when the difference between the sexes shrinks to almost nothing.

Yes, it's a new high tech pee-tube. The innovative part is a 12v electric vacuum pump driven by the glider batteries which sucks out the urine into a plastic container (more environmentally friendly than the old type!). The working end has an appropriately shaped receiver which has proved to be leak-free in the year the propotype has been tested.

Roland Schmitt from Cologne produced it for his wife, but it has been such a success that production has started. You can order one from Roland Schmitt, Diepeschrather Str 6a, D-51069 Kölm, tel 01049 221 686782

ELECTRONIC NORTH AND SOUTH DETECTOR

There is probably no need for me to delve into the various existing types of glider magnetic compass and their weaknesses when subjected to thermalling turns. These will be fairly well known to most readers and they have been very well covered in an article in the June 1993 issue, p142, by John Dobson, "Cloud flying for Advantage."

Here is a compass (see classified ads) that is completely free from turning and acceleration errors. It is perhaps best described as an "audio lower wing north and south detector", as it goes "ping" when the lower wing turns through north and "pong" when it turns through south. It can help you keep your bearings without performing mental gymnastics whilst you are circling. Suitably adapted, it can also provide the reference heading signals required by the Thermalyser (see my article in the June 1991 issue, p138) to make that instrument completely automatic in providing a vector-analysis of variometer readings for each circle flown.

At the heart of this all-electronic compass is a flux-gate toroidal transformer mounted so as to sense the horizontal component of the earth's magnetic field in the nose-to-tail direction of the glider. The measured flux is therefore impervious to bank angle and varies with glider heading according to the cosine curves in Fig 1. The

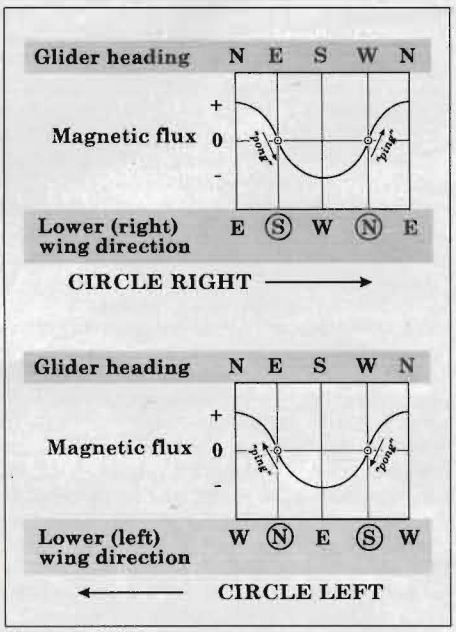
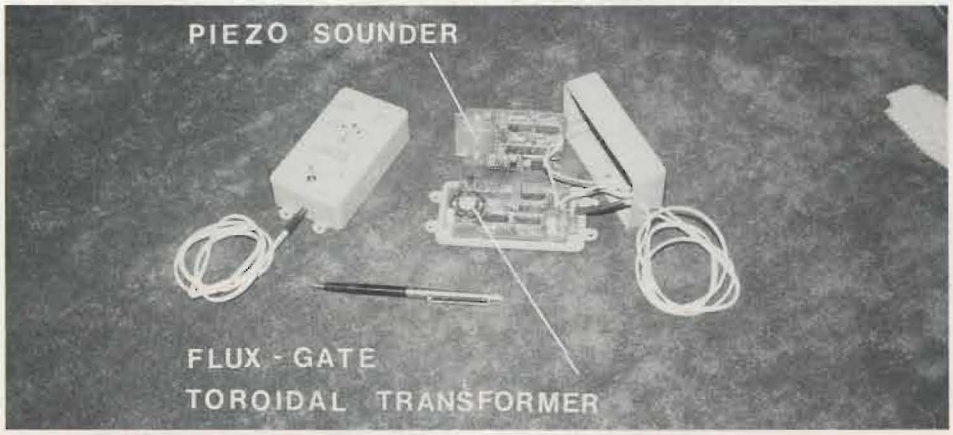


Fig 1.



electronic circuit is arranged to detect the zero-crossings which occur on east and west headings and trigger the audio signals: "ping" as the flux rises through zero and "pong" as it falls through zero, in either direction of turn. The diagram also shows how the inherent ambiguity in these signals is resolved satisfactorily by referring them to the direction in which the lower wing is pointing during the turn. In this way "ping" and "pong" will signify north and south respectively during all turns carried out in normal flight.

The resulting instrument is shown in the photograph above. It measures 112 x 62 x 31mm, weighs 140g and consumes 20mA from an external 12V dc supply. The "ping" signal is 4KHz tone 1/6 second in duration. "Pong" is a similar signal interrupted at 500Hz to provide the necessary contrast. Signal response to the zero-crossings is virtually instantaneous.

For the best accuracy the compass must be mounted parallel to the centre-line of the glider and horizontal fore and aft when the glider is at its normal glide angle. As the angleof dip is about 65° in this country, the magnetic field has a vertical component 2.1 times larger than its horizontal component. It follows the 1° of misalignment in pitch will give rise to an error of 2.1° in the north and south indications. However, as we tend to thermal at constant airspeed and hence at a constant glide angle, this is not likely to cause serious errors.

Readers may well be curious as to what happens if the glider is weaving slightly around a steady east or west heading. The result will only be an occasional "ping" and "pong" as logic circuits ensure that they cannot be triggered too frequently. The compass is also arranged to go "ping" every time it is switched on, just to remind you which signal represents north.

This instrument, supplementing a simple cartype compass, the latter for use mainly during cruise, can provide an effective and economical answer to gliding's direction-finding problems.

A MEETING OF MINDS

An account by JOHN DOBSON of a mountain expedition



In March Graham McAndrew, BGA national coach, flew with one of the best French mountain flying experts, Jacques Noel, in the High Alps from Gap. Just down the Durance valley the RAFGSA were in the middle of an 18 day expedition to Sisteron with William Malpas as their "mountain guide." A gite supper was arranged between the two parties at which the guest of honour was the renowned doyen of French mountain flying, Roger Biaggi, who is semi retired from flying but still writes articles. He also taught William Malpas the black arts of rock polishing many years ago.

The photo above shows the three mountain experts seated in the centre, Graham top left and a happy throng of GSA pilots surrounding.

The RAFGSA were very fortunate with the weather, flying 17 days out of 18 using the ridges, thermal and wave of the Durance valley and beyond. Six days of mistral gave two Diamond heights, five Gold and four Silver legs with all the pilots going above 12 500ft using oxygen, some for the first time in a glider. Five had been on a breathing and hypoxia course at the AMTC, RAF North Luffenham, a few weeks before the expedition.

Most flew above 20 000ft either dual in the two Janus or in the three single-seaters. One pilot had to re-fly his Diamond height on the next day after the rechargeable battery in his EW barograph gave up without notice during the print-out.

Several cross-country tasks were flown using wave, the longest being 300km. However, the largest tasks were flown in excellent thermodynamic and thermal lift in the mountains as far as the Italian border and around the Parcour. The longest was 375km; the average flight was of 3hrs 30min while a total of 350hrs and over 5000kms were logged by an average of 11 pilots. Most of the achievements were with the guidance and help of William Malpas who flew on oxygen for only the second time in his life.

The first ASH-26E was at Sisteron and impressed with a quiet but powerful motor assisted take-off, the shaft driven propeller and clean pylon design assist, whilst the ASH-25 gear assembly looks fit for any field landing! (See also Brian Spreckley's assessment of the ASH-26 on p152.)

There were 80 gliders on site (95% German) by the end of March which were swiftly dispatched at a rate of 40 per hour by the six tugs Although there were several field landings by other nationalities in the Durance valley area, there were no serious accidents. The Germans used bright day-glo markings of varying designs on their gliders as an aid to visibility against the snowscapes.

The expected valley breezes did not generally appear due to the heavy blanket of snow on the mountains that normally then heat up and cause the air to be sucked in to the valley systems from the south. Some German and Swiss pilots flew long distances, using local knowledge and the wave systems, getting as far as Lake Maggiore and back.



Part of the big blister, currently housing 17 gliders and two tugs with, here, some Dublin GC visitors. Photo: Alan McKillen.



The site from the east. Lough Foyle is the overshoot, with Donegal behind. Photo: Dan Begley.

ULSTER GC'S BIG DAY

Bob Rodwell writes about the greatest day in the life of the Ulster GC when they opened Boyle's Blister

Over night snow and a biting wind did not prevent the largest gathering of gliders ever in all Ireland assembling for the formal opening on April 9 of the UK's latest secure freehold gliding site - the Ulster GC's new field, hangar and clubhouse at Bellarena, Co Derry. Half a mile north of the former site, it is similarly positioned beneath the precipitous cliffs of the multi-faced 13 mile Binevenagh ridge.

Eighty invited guests joined the UGC celebrations which were supported, too, by a strong Dublin GC contingent with a small fleet and cross-channel visitors from Husbands Bosworth, Oxford and Portmoak. Some influential guests experienced wave to 5600ft before the gusts became unflyable.

US business prevented BGA chairman Don Spottiswood from attending but ever welcome was director of operations Bill Scull, who lectured us on safety the evening before.

Sports Council for NI chairman Don Allen cut the ribbon for the 60ft doors of our 150ft x 90ft blister hangar to roll apart. He warmly commended such a substantial addition to the province's sporting amenities being brought about by voluntary effort and broadly hinted that such impressive self-help will meet its due reward when the SCNI assumes new capital equipment funding powers soon.

Disappointingly absent were any representatives from the NI Tourist Board and the local City of Derry Airport (Eglinton) but more warmly supportive bodies - notably the SCNI, Limavady Borough Council and neighbouring Coleraine BC - were well represented among the guests and our official opening was covered by both local and province-wide media.

Project mainspring Harry Boyle prepares for the guests. Photo: Dan.

April 9 was the realisation of a 63 year dream; for the first time since its formation in August 1930 the UGC was secure in its own freehold home and no longer subject to successive landlords' whims.

It was also the culmination of a great deal of hard work, led by our immediate past chairman Harry Boyle, whose sterling efforts were attended by good fortune.

The first luck was the availability for sale of two such ideal fields (now amalgamated with a leased seven acre undershoot) in 1992.

The next was the revival of a grant offer, first made in 1985 but not then taken up, from the provincial DoEd to help buy a site if possible. It was achieved by the silver-tongued triumvirate of Bill Scull and two MPs, Tayside's Bill Walker (the BGA's man about the House) and the constituency's Willie Ross.

Obtaining the steelwork for the 13 500ft^2 hangar for only £2000 from a demolition contractor was another stroke of luck. With total reskinning, 52 loads of readimix for the floor and foundations, and fittings, this cathedral to the joys of flight cost £22 000 - much lower than many mainland clubs have paid for lesser sheds.

The 800ft^2 three-room pre-fab clubhouse alongside is a bonus achieved two or three years before we dared expect. It was member Pat Majury's office, which her employers were replacing with a brick building. Her speedy footwork ensured we got it for £1300 plus VAT; with professional transport and re-erection the total was less than £2500.

But our best fortune is the supportive community over whom we soar. Gliders have been familiar in the skies over Magilligan since the 1930s and our earliest flights off Downhill and, later, Benone strands. Locally, we are popular.

We encountered none of the depressing anti-aviation culture and the selfish well-connected second-home owners - usually flash lawyers - who have made life such a misery for some other clubs trying to develop in mainland GB.

Our planning application produced a handful of local objectors in what seemed kneejerk reactions; their opposition was not sustained and we got the planners' nod without argument.

With all this came months of hard work, often in evil weather. Contractors' help was confined to digging and pouring the foundations, laying the floor and, purely for speed, skinning the hangar. The steel erection and doors we did ourselves, TA sappers helping in raising the topmost frames. We also built and plumbed the loos-and-shower block, with septic tank drainage.

A contractor was also used to level the field where fences were removed, and Harry then reseeded.

With the infrastructure now in place for a permanent gliding centre of national potential, attention turns to the fleet. Following a moment's managerial madness some years ago when we sold the Twin Astir this now numbers two Capstans, a K-6CR and a Super Cub tug with the use of the Queen's University K-7 and a privately owned Super Cub as required.

The scene from the podium showing some of the 13 mile ridge. Photo: Dan.





JOHN STALEY & MIKE CUMING

GET OFF MY LAND

As a follow on from their series in 1992, John (an agricultural fieldsman) and Mike (of The Gliding Centre) took the photographs on the right in central England in 1993. Readers are invited to consider whether any of the fields are suitable for landing in.

You might like to ask yourself the following questions:-
1. What is the crop in the central field in each photo.
2. How tall is the crop?
3. During which month was each photo taken?
Answers on are p151.

Continued from the last page.



SCNI chairman Don Allen administers the snip. Photo: Dan.

The private fleet is growing rapidly. This raises questions about the nature of any re-equipment to which we might aspire while we are the Sport Council's flavour of the month.

How much revenue would a sexier replacement or complement for the K-6CR generate? Can we recover from the Twin Astir boo-boo and achieve similar two-seater capability again? With the availability of really high-power winches now, would winching be a feasible option for on-ridge westerlies?

However these questions are resolved, one fact is crystal clear. We want **you** to come and to fly whatever aircraft we have available - or to bring your own.

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Photo A. Yellow field.



Above: Photo B. Pale green field. Below: Photo C. Grass field.



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GRAHAM'S CORNER

Graham, BGA national coach, is making some more observations on club flying in this issue with

Stop And Go



Our new photograph - entitled the "Cool Dude" - was sent by Martin Wilshire. He took it last May when Graham and Chris Rollings visited the Cornish GC at Perranporth with the DG-500 and "a grand day was had by all."

Sometimes rules or operating practices are adopted to reduce the workload of those trying to keep order. Occasionally they are endorsed to produce conformity and uniformity, others simply because if it happens at other clubs it must be a good idea.

I suspect this scenario is quite a lot of the latter and a little of the former. If you haven't seen it at your club then I'm sure you will at others.

Picture the scene, a quiet afternoon at a gliding club somewhere in the UK. The tractor is pulling a two-seater back to the launch point after its landing up the field. You are walking back with the glider when quite suddenly it stops. You look up to find that it isn't just your party that has ground to a halt but everything on the field has come to a complete standstill. People pushing aircraft freeze. Even the tug jolts to a halt half - way through taking up slack.

Good grief, you think, time has stood still. The Russians (or whoever currently represents a threat to national security) has developed a matter immobilising beam. They are experimenting with it on our own little gliding club.

But wait! There is movement. The glider in the circuit is starting a downwind leg. Maybe the beam isn't quite perfected - it can obviously paralyse ground borne troops but isn't yet capable of dealing with an airborne enemy.

The glider in the circuit continues around a regular approach and landing and once stationary, low and behold everything starts moving again. Life continues as normal as if nothing had happened. No one mentions the three minute pause when the world appeared to hold its breath, waiting for a perfectly normal pilot to fly a perfectly normal glider around a perfectly normal circuit.

The above sequence is common. At some sites the restricted landing area requires that at times it is necessary to stop all launching and ground movements to allow an aircraft maximum choice of the minimum landing area. At other sites all ground activities cease, simply because it's easier to tell everyone to stop rather than teach them to exercise conscientious and thoughtful airmanship and efficient practices. If you think you are restricted, visit a club that it really strapped for space.

A pilot on approach to a crowded landing area wants to see the many mini obstructions moving towards each other to create a single minor obstruction that can be easily predicted and negotiated, not members sitting like lemons waiting to be hit by some early solo pilot who tries to weave between the scatter.

At least put the hurdles in line with the approach of the desperate pilot and not leave the debris lying around the field like undisciplined sheep. ■

GET OFF MY LAND ANSWERS

(See p149)

All the photographs were taken east of Bicester on June 5, 1993.

Photo A: Set aside

The field is orange having been sprayed about a month earlier with the weedkiller Roundup. You can buy the same spray in garden shops by the name of Tumbleweed

The sprayed set aside was probably re-grown wheat from the previous harvest. The re-growth is only a few inches shorter than the cultivated wheat (in adjacent field with tramlines).

Photo B: Spring beans

This crop is about 2ft tall but it has a suspiciously smooth surface and unusual light green colour. Peas look very similar. Both crops were due to exhibit white flowers within a few days.

Photo C: Set aside

Untreated set aside. Weed grasses have been allowed to grow and are quite short. Fields like this are usually OK to land in but need careful inspection for ruts and old tramlines.

Rod Ward (Rodz - Sky Supplies), a competition pilot and professional full Cat instructor, has designed two gliding aids which will be reviewed in a future issue. They are the Rodz Nav Aid (price £9.50) for accurate pre-flight map marking including TP zones, and in-flight for distance and bearing course corrections and final glides. The other is an aviation scale rule (price £4.10, both plus p&p) which includes nm and km scales in half million and quarter million scale. They are available from Rod of 106 Brewers Hill Road, Dunstable, Beds LU6 1AF, tel 0582 662447.

SPREADING YOUR WINGS

"Or reaching new horizons with an engine..."



Alan, on the right, with Ray Brownrigg, CFI of Oxfordshire Sportflying Club.

I always swore it would take something revolutionary for me to rejoin the sport. I had left two years earlier, frustrated by the weather; by 20min hops; by having no back-up crew for cross-countries when the weather was good and by playing it safe by staying close to home.

But I retained my subscription to *S&G* and was heartened on behalf of newcomers by Mike Cuming's intensive flying courses. It was then that I chanced upon a back-issue *S&G* article by Richard Hall on conversion to a SLMG PPL.

OK – what if ... I could escape that field at the curtailed end of the journey? What if I could take more chances on the weather, knowing I could probably get back...? What if those crops looked less threatening? What if these hybrid Grobs were really serious aircraft – fun to fly? What if the instructors were actually human beings?

My mind flashed back to a day at Booker, when most gliders were into 20min hops, and a DG-400 set off for wave lift. The pilot returned hours later looking like the cat that got the cream. I decided to convert simply to have more choices, but the training quite literally opened new horizons.

By sheer coincidence, I was not only to get to know Richard Hall, (unknown to me at the time, he was to become one of my instructors), but share his enjoyment of bird-watching from 1000ft, and of unexpected "U-terns" to track rare birds in the sky.

"You want to go motor gliding," said a Southdown syndicate member "... go see Ray and Richard at Oxfordshire Sportflying Club. You can do it in a week; it's a piece of ...". Well (interpreting), "it's easy..."

Maybe it can be done in a week for Superman... But it usually takes longer for us mere mortals. Ten weeks later I had a licence, and a much greater confidence even for cross-country gliding.

The sheer numbers of temporary members on SLMG conversion at Enstone reinforces the popularity. Accents hailed from everywhere between Scotland and Devon.

The theory is easy – 20hrs minimum from Bronze badge, Angus Deayton to present your licence and the obligatory speech: "It was a team effort; I'd like to thank Charlie Apha Tango, airfield cat..."

The course is exhilarating, if not easy, and immensely confidence-building for gliding.

For me it started in and around the circuit, then beyond. A full 5hrs flying on the first day alone. I checked my gliding logbook – two years earlier, it had taken me three months to clock up my first 5hrs without an engine.

So what are the challenges – and how do they help build confidence?

Although having been cleared for – and experimented with – cross-country flights, I found myself a babe in arms.

Instead of navigation by railways and motorways alone, straight-line navigation – with all the vagaries of wind drift – was to become second nature.

With an engine up front, the time to stop and consider the routes was invaluable. Months of cross-country experience became accelerated into a few hours, with time to learn to plot the ideal straight-line route to the next waypoint – or home.

The second major benefit came when realising the benefits of a guardian angel looking after me – of flying through areas like the (now closed) Upper Heyford Mandatory Radio Area with an extra pair of unseen eyes looking out for other aircraft. This is only possible with an engine and radio.

Soon, the initially confusing American accents of Upper Heyford became quite reassuring.

After one (controlled) close aerial encounter, I am convinced there is an opportunity for a mid-air dating service. The delightfully feminine-sounding Cabair 43 – passing on the other side of the railway line – was identified by the controller, and sure enough, there she was, at 11 o'clock, climbing through my flight level.

If only she knew the lust her voice was generating in the Grob 109 cockpit off her port wing; if only we could have met later – maybe 8 o'clock that evening...

The friendships generated through calls to distant airfields were also important – through planned trips into distant airfields, rather than forced friendships with landowners when running out of lift.

But as in so many aspects of life, instead of the glamorous Cabair 43, this airport dating service was to bring me closer to the Fagash Lils of the coffee shops, and intrepid aviators with stretched flying jackets and even more stretched flying tales. I've waited for Cabair 43 on several occasions, but she never arrived...

The final benefits of motor gliding came through the familiarisation of many, many farmers' fields, through practice landings – always fun, and occasionally puzzling to distant ground observers.

The Navigation Flying Test and General Flying Test are the highlights of any PPL course. It was then I realised that Wales was not a protected species, nor Shobdon a Japanese martial art.

The purists will be glad to hear I am now back in gliding – albeit with an engine to get me home when the going gets tough. The more open minded will appreciate the ability to go straight home through otherwise banned airspace.

But sorry, chaps, I still keep my membership of the OSF to fly the superior Grobs, for the flexibility of a light aircraft with all its benefits of two-abreast seating, heated cabins – and at least a chance of meeting that elusive Cabair 43... ■

SPELLCHECKERS

Julian Flack says he can't see why Platypus has so much trouble with spellcheckers (see the last issue, p75), when his cousins down under have licked it, as shown by this cutting from *Australian Gliding*.

> Wee kneaded two bee shore and no their are know miss steaks in yaw magazine, sew its bean threw the spell cheque programme and its all write.

BRIAN SPRECKLEY

FIRST IMPRESSIONS OF THE ASH-26

Brian, former 15 Metre World Champion, assesses this newcomer from the Schleicher stable and goes on to consider the advantages of having an engine

For some years now there have been rumours about the creation of an 18m Class, the manufacturers and designers claiming that it is the most effective span on a performance to weight and cost basis. Most manufacturers already produce a 15m glider with wing extensions to stretch them to 17.5m and now 18m. The performance improvement is noticeable but there is a price to pay in the compromise of a 15m to 18m wing.

Alexander Schleicher are the first to bite the bullet and produce a pure 18m span glider, the ASH-26. This glider has been designed from its concept to carry an engine and to have self launching capacity. Martin Heide, the designer, has considered the extra requirements of motor glider pilots and included a larger more comfortable cockpit for the potentially longer flights (and larger pilots). Having at some time been the owner of most of Schleichers models, I did not expect to be surprised or disappointed by my flight in the ASH-26.

My first view of it was in a Cobra trailer, which was the same length as an ASH-25 trailer to accommodate the one piece wing. The rigging was as straightforward as the ASW-24 with similar self connect controls and an improved waterballast self connect system, similar to the LS-6c. Of course, an 18m wing must weigh more than a 15m - the wing panel weighs 70 – 72kg, which is only 5 to 10kg less than the ASH-25 outer panel. Luckily with the Cobra trailer design one does not have to lift it far.

The cockpit appears to be similar to the ASW-24 until you sit in it. The seating position is more upright allowing better visibility. The forward part of the seat has been raised further to provide more comfort and prevent the pilot sliding forward in a crash situation. The seatback has a similar adjusting system to the Libelle allowing seat adjustment in flight. Attached to the seatback is a head rest designed to reduce the possibility of whiplash in an accident or heavy landing.

With the seat three notches forward from the rear most position, my 6ft 2in frame required that I put the rudder pedals four positions back from the fully forward. There was plenty of room for my big feet and boots to work the rudder pedals without being constrained by the narrowing fuselage – a big improvement on most of the gliders I currently fly.

The cockpit layout is a continuing improvement on the other Schleicher gliders, the only minor irritation being the flap lever is still rather high up in the cockpit which I find causes fatigue during long flights. Certainly the "spring" trimmer seems to work better than most of this type and is very effective in flight. The undercarriage feels a little awkward to retract but this is a small price to pay for what is one of the best single-seater undercarriages I have seen. Unlike most, it extends far enough to be of some use when landing in rough areas or small crops. The wheel is placed further forward than usual which means when using the hydraulic disc brake or opening the throttle on taking-off with the engine you are unlikely to tip the glider on its nose. However, back sufferers beware, the forward wheel position makes the tail heavy to lift when fitting the tail dolly.

I have always felt that the only true way to assess a glider's handling qualities is in a soaring flight. The response of the glider to turbulence and the transmission of feel from the glider to the pilot are as important as stability and rate of roll. My flight did not allow me to make a judgment on the soaring qualities of the glider, but my first impressions are that all the basic ingredients are there. The rate of roll is adequate and to be improved in the production model; full aileron deflection produces less adverse yaw than one might have expected from an 18m glider. Light and progressive control forces allow crisp and accurate turn entry and roll control. The glider felt extremely stable but with the C of G position well forward had a tendency to run out of elevator in tight turns. The production glider will have a larger tailplane and this, with more attention to the C of G position, should overcome this tendency.

Approach and landing is straightforward; with the landflap selected the forward visibility is excellent and there is a good steady feel to the glider. The airbrakes are adequate allowing for the sort of steep approach one associates with a flapped glider. Landing with the motor on board feels rather like landing with waterballast; there is more inertia and this is noticeable in the float prior to touch down.

The wing loading range with engine is 34kg/sq metre to 50kg/sq metre which is comparable to most modern competitive gliders. Without the engine one can achieve a wing loading as low





Top: Peter Selinger's photograph of the ASH-26 withou gine, sent by Brian.







ut its engine. The others are the version with an en-



as 29.5 allowing 80kg for the pilot etc. This is a formidable range, especially for the heavier pilot currently finding his 15m span feels a little heavy. The pleasure we used to experience riding strong thermals in the old flexy wing gliders like the ASW-20, has been reduced by the tendency of modern designs with their stiffer carbon wings.

The ASH-26 has a carbon wing but the 18m span makes it feel somewhere between the frantic ride of the Standard Class and the pleasant promenade of the Open Class. I am looking forward to flying it cross-country to see if it really does have that "feel" so essential to a good soaring sailplane. I have never believed that a glider's performance should be measured by its wing loading alone. We can be seriously misled by highly technical reports and reviews based on calculation or a small number of test flights. The real measure of performance is against other similar gliders during soaring flights. I am sure that the performance of the ASH-26 will create considerable irritation to many owners of Open Class gliders and envy amongst the 15m pilots.

Purists Read No Further

There is no doubt that many glider pilots do not identify motor gliders as being the same game as gliding without an engine, however there is a growing place for SLMG (self launching motor glider) within the gliding community. This demand for autonomous gliding is currently being met with a mixture of improvised technology, various glider designs with different engines and control systems squeezed in

Martin Heide has from the outset designed an SLMG which could be the start of a new generation. He has been helped considerably with the development of the Norton Rotary engine by Midwest Engineering. The lack of vibration with the Midwest engine means that even pilots with dental fillings can fly an SLMG. It is fixed in the fuselage a little aft of the C of G. The propeller is mounted on a carbon fibre pylon and driven by a toothed belt which runs inside a fairing attached to the pylon either side of the radiator that provides cooling for the liquid cooled motor.

The weight of the pylon assembly is very considerably less than previous types with the engine mounted on the pylon. This has a number of benefits which include reducing the C of G shift with engine extension and retraction and the likelihood of being brained by the engine in the event of an engine out crash.

The engine operation is extremely simple. A small control panel houses the dual ignition switch and engine status indicator lights which, with digital rpm and temp, gives all the engine management information required. The cockpit controls consist of fuel on/off on the cockpit left side, throttle and propeller brake levers which are both mounted below the instrument panel along with the primer and starter buttons. The propeller brake is mounted in such a way as to prevent the use of the starter with the propeller locked. Once started the engine achieves take-off temperature by the time the checks are complete, and full power for take-off starts around 6000rpm. After flying other SLMG the lack of vibration and the reduction in noise is most noticeable.

The take-off was to be uphill and with no wind.



The engine controls.

It took four of us to push the glider into position on the soft grass runway so I was a little concerned about the take-off run. I need not have been for despite ploughing through several large pools of water, the 50hp engine took me to flying speed and take-off in less than 200m. Aileron control was good from the outset and with a noticeable lack of tug propwash the take-off is straightforward. Immediately after lift off I established a climb of 3m/sec at 95 to 100km/h.

The engine limits are liberal with the max continuous being 6900rpm, max take-off 7500rpm for 5min and max rpm being 7800 for 20sec. A system of green, amber and red indicator lights gave tell at a glance information. Level flight was achieved with one third throttle at 190 to 200km/h, ideal for transitting beneath controlled airspace or under cloud cover, it being possible with the Midwest engine to operate at low power settings with no lubrication problems, unlike two-stroke reciprocating engines.

The best range of the ASH-26 is using the climb glide technique (saw tooth) and is around 500km on 17 litres of fuel. Level flight range has not yet been calculated as the fuel consumption trials have yet to be made. Stopping and retracting the engine was simple and quick. Martin assured me that the engine can be retracted immediately after stopping but the prudent owner might decide to wait a moment or two to allow the exhaust to cool first. After extension and engine starting, power can be applied immediately to initiate the climb.

Whilst no official noise output figures are ready, the ASH-26 is more than 10% quieter than the external engine assembly of the ASH-24. The exhaust system in the ASH-26 is mounted in the fuselage, the exhaust gases being drawn out of the open engine compartment doors by the venturi effect around the fuselage.

Having flown the ASH-26E with its Midwest engine it is difficult to imagine how the other manufacturers of SLMGs will be able to continue with their engines on a stick. The lack of vibration and the ability to cruise in level flight will make this type of installation attractive to many pilots.

For those seeking the ability to operate entirely alone they had better ask "Chez Schleicher" about a steerable tailwheel and wingtip wheels as at the moment it is not possible to taxy. Not a problem at most gliding clubs where taxying motor gliders is considered to be a very anti-social activity.

If there is a future for the SLMG, Schleicher are certainly pointing the way with the ASH-26E, but the problems of pilot licensing and cost will certainly be a major factor for the future. ■

McLEAN AVIATION

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A BRIDGE TOO MANY

I am sure she had never been round a turning point; in fact I don't suppose she even knew what a TP was. She was a Slingsby Swallow, not a racing pigeon. Born and bred in Yorkshire, it was twenty-five years before she had left her native county for the first time, to take a holiday in Shropshire. She had fallen in love with the Welsh Marches and in the course of time was able to spend a couple of summers up at the Long Mynd. Towards the end of her second summer she was asked to fly round a triangle, ending up where she started – what Ken Machin called "Going Nowhere by the Most Tedious Route" when he presented the Cambridge Club with a trophy for it.

A whole triangle sounded rather alarming, but perhaps, thought Swallow, half a triangle would be fun. But half a triangle still has a TP, and this one was called LEO. Not, as she first supposed, a lion cut into a hillside, but a bridge, in fact the A44/railbridge near Leo-Minster. But this was no ordinary TP, it was a BGA TP, and therefore its position was defined with stupendous accuracy: 52°13.872N, 2°43.922W.

Now when it comes to navigation, swallows are no chickens, and our Swallow had learned at school that a minute of longitude was about a half a mile at these latitudes, so here was a TP defined to within a yard! And about two yards in the north-south direction! This, she thought, demanded a one inch map at the very least, so she got out her 1967 Ordnance Survey Sheet 129 and studied Leominster. The BGA description of LEO said "N of station on NE edge of town", and Swallow found that it fitted the position. Alas, the map showed a level-crossing, not a bridge, and the road was numbered A49, not A44. But of course! A 1967 map would not have all the new roads on it, and obviously the level-crossing had long since been replaced by a bridge, and no doubt with the new roads a little renumbering had gone on too.

So Swallow made all her preparations for the big flight, old Instamatic camera at the ready and barograph ticking. Oh, yes, she still had a clockwork barograph; in fact she had nothing electrical with her at all, not even an electric variometer, and certainly not a GPS to guide her to the 1yd x 2yd TP on the bridge.

A wonderful winch launch and she was in her element again, under the biggest black cloud in the sky. She could hardly believe her luck and, leaving the Long Mynd behind her, she set off proudly for Craven Arms by way of Cheney Longville. To her left the woods of Wenlock Edge stretched as far as the eye could see, and on her right the river Clun turned south as if to beckon her onwards. And onwards she flew; from cloud to cloud, darting across the sunlit spaces and climbing up into the grey underbelly of the clouds. Soon Hopesay and Stokesay were left behind, and Onibury slid beneath. "Now *there's* a level-crossing," thought Swallow, "I wonder when they will replace that one with a bridge."

Ahead the clouds looked tired, and the wooded hill of Bringewood Chase began to loom large. It might have been better to have followed one of the valleys, the Clun or the Teme, for here in between the country was high and hostile – and exquisite. But with care Swallow was able to keep out of trouble and, leaving Ludlow Castle on her left, she flew over Richards Castle and past the aerials of Woofferton. And there, down the broad valley delineated by the railway, lay LEO, half in sun and half in shade.

The glide from the hills seemed to go on and on, and soon Swallow found herself choosing landing fields just short of the TP. She thought she might have enough height to slip round the bridge, take a photograph and get back to her chosen field. Then bump! Lift at last! She turned her nimble wings into the thermal, and was soon climbing gently up again, drifting all the while towards LEO.

The closer she got, the more perplexed she became, because there below was the level-crossing just as the one inch map had said. Not a bridge, for sure, but a level-crossing which was indubitably "N of station on NE edge of town." As she went round and round she was able to take a long look at it, and finally she took its photograph as it drifted past.

And as she turned north-east and flew away from LEO she couldn't help wondering, isn't it odd that man has all these computers and satellites and navigation aids and flight directors and still cannot tell a bridge from a level-crossing?

Ian Strachan, BGA TP co-ordinator, comments: Thanks to Anthony (or is it Antonia?) Swallow for a roundabout way of notifying me of an error in the description of the BGA TP at Leominster. For the 1994 edition of the BGA TP booklet, the description has been changed to a level-crossing. As stated in the notes at the beginning of the booklet, the published lat and long figures are simply computer conversions from the grid references which are measured values from the OS 1:50 000 map for the listed points. It is a moot point as to how many decimal places from this conversion to publish; we eventually decided on three so that anyone using the printed lat/long figures for distance calculations would not have a result of degraded accuracy since not everyone has a conversion programme from Grid to Lat/Long. However, such a programme is available and has been given to all who wrote in during 1993 for the TPs on floppy disc.

With over 750 points on the BGA list, it is not easy to be correct in every particular and I invite anyone discovering an error or anomaly, no matter how minor, to notify me either directly (0420 564 195, fax 563 140) or through the BGA. An ongoing problem are changes to road layouts. Although the half million air map is revised every year, it does not show small topographical details.

Maps which do, such as the quarter million or fifty thou (not the old OS one inch to the mile, please, Anthony, it went out some 20 years ago), unfortunately are only updated every few years, and so new works will not be shown.The best guarantee of picking up latest topographical details is to buy one of the road maps which **are** updated annually.

As an example, the 1994 version of the OS three inch to a mile **Road Atlas** uses the same topographical data of changes such as new roundabouts, bypasses, motorways and the like. Unlike some road maps, it has contours, shows railways and stations and **does** distinguish between rail bridges and level crossings. It would be a useful addition to any club flight planning room, but chain it down!

THE UNLUCKY DAY - by Laszlo Hemmert.



OVERSEAS NEWS

CANADA

In April 1992 the Rocky Mountain Soaring Centre became the first privately owned sailplane operation in Golden, British Columbia, and Michael Cook, formerly a hang glider pilot, was one of the first to sign up for the lesson package. The following are extracts from an account by Michael.

Golden, which is on the Trans-Canada Highway, is directly on the Rocky Mountain Trench, sporting some of the highest and most picturesque peaks in western Canada. The valley is fairly narrow with quick and easy access to the mountains. To the south, towards Invermere, the widening valley has ample outlanding areas in the lush green farmland with moisture coming from the Columbia river and the many lakes.

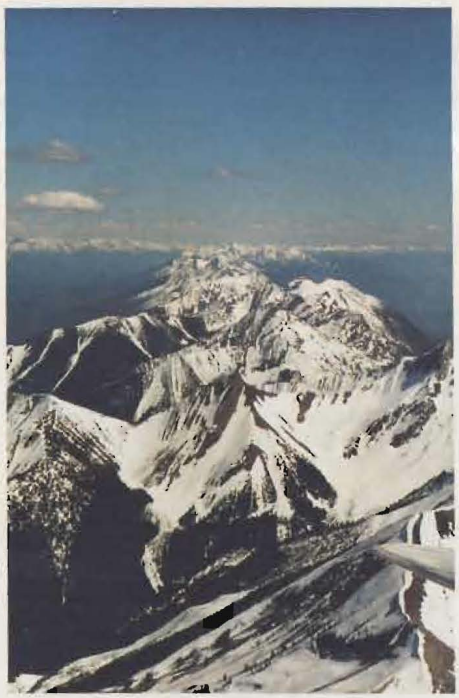
Once flying over the peaks you can readily grasp the concept of naming this range the Rocky Mountains. Over 70% of the landscape is solid rock and it's easy to appreciate the lift created along these south-west facing slopes on a sunny afternoon.

Further south past the 100km mark, the valley widens further and becomes the Kootenay river watershed which is notably drier. A trip to the Montana border isn't out of the question past Mount Fisher at 9640ft.

Once on the ground, staff are immediately on hand to help and the owner/operators, Uwe Kleinhempel and Aaron Archibald, are friendly and supportive. The Centre offers single and two-seaters for hire at hourly or daily rates, complete instruction in basic and advanced training, specialising in mountain flying, and aerotows from a 150hp Citabria.

There is a good choice of accommodation and a host of tourist attractions, from fishing to white-water rafting. Golden is bordered by five National Parks and there are hot springs and spas close by. The area has possibilities for flights up to 1000km as well as outstanding potential for wave.





Two photographs of the area sent by Michael. Above: Mt Goodsir towards Banff National Park. This photo was featured in the Segelflug-Bildkalender for 1994. Below: Looking down the Rocky Mountain Trench from 12 000ft agl.

SOUTH AFRICA

South Africa, which is close to half a million square miles with most of the interior on average 4500ft asl, has 789 active glider pilots - about one in 25 000 of the population.

There is gliding throughout the year but the best conditions are for the five months starting from October. South Africans have gained a number of world records and in recent years an increasing number of visitors have broken their own national and world records. Possibly more 1000km flights have been made in South Africa than the rest of the world together.

The 16 clubs are mainly around the major population centres with 60 to 70% of the country's 267 gliders in use. Five clubs launch by aerotow, the rest by winch with all mainly flying at weekends.

Due to high import duties which have only recently been reduced from 40% to 15% and the falling exchange rate, the fleet is ageing. There are very few of the latest gliders with only one Discus, one ASH-25 and one or two Nimbus 3s which means few gliders to hire to visitors.

Certainly for the last three years visitors are shipping their own gliders to SA. The Soaring Society, through the Aero Club, will give information and indemnity against Customs duties if given sufficient notice. A foreign glider may stay in the country for six months without liability and it is hoped to extended this after current negotiations.

Airspace restrictions have been very onerous with 50 mile control zones around major and many minor commercial airfields. However, in the last two years there have been some helpful concessions in the west, which is the best gliding country where the Nationals and "record" camps are held.

As to the political situation, SA is an unknown quatity after the elections this spring.

(These details are from John Ellis who attended the OSTIV Training and Safety Panel in Chicago. See the BGA News for the full report by Bill Scull.)

CZECHOSLOVAKIA

Milos Pajr came to the UK from Czechoslovakia to glide last summer and has sent some information about his own country for anyone wanting a gliding hopliday.

Their aeroclub has 71 airfields and 75 clubs for power flying, gliding and parachuting and of the total membership of 6500 half are glider pilots. Before the 1989 revolution the state gave equipment to the clubs but now it is changing rapidly and, Milos says, becoming more like our own system with self-supporting clubs.

The soaring season starts in April and finishes in August. Spring is changeable but every April there are flights of more than 500km. But the peak time is summer with high cloudbases and good lift. There are large fields for out landings and visitors are given cards with relevant phrases to help communication.

Milos's club, Aero Club Jicin on the tip of the beautiful region called the "Bohemian Paradise", welcomes visitors and club expeditions. It is 85km NE of Prague and has four Blaniks, three VSO-10s and two tugs. Visitors can bring their own gliders or fly club machines.
Accommodation isn't a problem. There is a clubhouse, bungalows and camping on site with hotels and private rooms nearby.

"The cost of flying and accommodation is cheaper than in Britain," he adds, giving as an example 2000ft aerotows at £7-£8 and winch launches at £2. Clubhouse accommodation is £2.50 a night and all meals £4.50 per day.



Milos photographed at his club.

For more details contact Milos at Letna 1035, 512 51 Lomnice n Pop, Czech Republic, tel and fax to the Aero Club - 01042 43323022 or Jill Matthews, Damey, Monymusk, Aberdeenshire AB51 7HS Tel 0467 651477.



Barry Rolfe, the secretary/administrator for the last 24 years and general secretary of the Royal Aero Club.



Debbie Carr, who for four years has been Barry's personal secretary, also works for the Royal Aero Club and handles the advertising for *S&G*.

THE BGA WORKING FOR YOU

We are often asked who works for the BGA, so we thought it was time to let you see the faces behind the names



Above: Tiffany Rolfe has looked after all coaching and instructing matters, courses, inspectors, Cs of A and classified advertising during her eight years with the BGA. Below Beverley Russell, who has worked for the BGA for 19 years, is responsible for *S&G* subscriptions, Comp numbers, invoicing, club orders and OOs.

Below: Gail Burgess, who for five years has been part time, looking after the A and B certificates, Bronze claims, Comp licences, maps and the BGA lottery.



Below: Diane Marshall, part time for seven years, is in charge of all accounting matters.



Below: Alyson Waugh, who has been with the BGA for five years and as well as general duties she runs the mail order sales.





BGA & GENERAL NEWS

BGA AGM

It looks as though we are becoming an unsociable race. The BGA AGM, again at the conveniently placed Forte Post House at Crick, Northants on February 26, was well supported but the numbers fell away dramatically for the dinner-dance. Many of the pilots winning trophies didn't attend and it was a very scaled down, rather flat occasion compared with just a few years ago. No doubt partly due to the recession and a reflection on changing life style although it was encouraging that some of the younger pilots stayed for the evening.

Next year it is hoped for more support when it will return to the popular Harrogate venue, hosted by Yorkshire GC.

However, enough came to hear Andy Davis reveal how he became the World Standard Class Champion and ask pertinent questions. Julian West was also given encouragement for his academic but interesting illustrated talk on lee wave interference patterns.

The AGM went smoothly under the chairmanship of Don Spottiswood. New committee members are Tim Gardiner, John Glossop, Chris Pollard, Chris Pullen and Keith Scott.

BGA diplomas were presented to Ian Strachan and Reg Curwen. Ian's was for his contribution to British gliding over a long period and in particular for his major role in the evolution of the competition aspects of the sport. His recent development and production of the BGA approved Turning Point List and Handbook for Official Observers are two examples of his prolific output.

The positions Ian has held include chairman of the Competitions and Awards Committee, BGA representative to IGC and Nationals director. And he continues to work tirelessly.

Reg joined Fenland GC in 1958 and was soon involved in organising and competing in National competitions as well as rapidly becoming a full Cat instructor. He has twice been CFI for the universities of Glasgow and Strathclyde and in 1968 was manager and professional CFI of SGU.

More recently he has been associated with gliding at Shenington, initially with Altair and now with Shenington GC where he became their inaugural CFI in 1990. Reg has had more than 11 000 launches (nearly 2000hrs), has run or helped with over 200 courses and taught countless *ab-initios* the intricacies of gliding and airmanship.

At the dinner, trophies were presented by Lynn Davis, Andy's wife, as follows:- **Wakefield** (longest distance) Michael Bird (London GC), 758.1km on June 24 in an ASW-22; **Furlong** (longest triangle), 609.2km on August 13 in an (LS-6c) and **Slingsby** (Weekend Ladder runner-up), John Bridge (Cambridge University GC); **Frank Foster** (fastest 500km) Martyn Wells (Booker GC), 504.8km at 102.7km/h on August 13 in an LS-6; **California in England** (longest flight by a female) Ruth Housden (Deeside GC), 406km on August 13 in an SHK; **Manio** (fastest 300km) Mike Young (Cambridge University GC), 328.7km at 93km/h on May 18 in a Discus; **Rex Pilcher** (earliest Diamond distance) Andy Wright (Yorkshire GC), 525km on May 3 in a Nimbus 2B; **De Havilland** (maximum height) Terry Slater/Glen Douglas (Deeside GC), 22 000ft gain in an ASH-25 on March 20 from Aboyne; **Volk** (longest O/R) David Starer (London GC), 576.7km on June 24 in a Kestrel; **Seager** (longest two-seater flight) Robin May and Henry Rebbeck (London GC) , 758.1km at 87.4km/h on June 24 in an ASH-25; **Enigma** (Open Ladder winner) and **Goldsborough** (highest World Championships placing) Andy Davis (Bristol & Gloucestershire GC); **Firth Vickers** (Open Ladder runner-up) Tim Macfadyen (Cotswold GC); **L Du Garde Peach** (Weekend Ladder winner) Ed Johnston (Cotswold GC) and the **John Hands** (services to competitions) Joyce Thompson (Enstone GC) for running the Enstone control and other jobs for many years.

NEW CAA BOARD MEMBER

A glider pilot, John Brownlow who flies at Bicester GC, has become a part time member of the CAA Board.

John joined the RAF in 1947 and has over 8500hrs in 120 aircraft types. A gliding instructor since 1955, he has a Gold badge and two Diamonds.

On leaving the RAF as an Air Vice Marshal in 1984 he joined Marshall of Cambridge Ltd and became executive director airport and flight operations. During this time he co-ordinated flight testing the Lockheed Tristar's conversion to its RAF air-to-air refuelling role. He later became a company director, responsible for flight operation and managing director of the Cambridge Aero Club.

John is an approved test pilot for the Popular Flying Association.

BGA 1000 CLUB LOTTERY

The results of the **March** draw are: First prize - M.Elsey (£83.75) with the runners up - R.Davidson, T.E.Dyson, S.D.Brixton, P.F.Ross and L.Tebb - each winning £16.75.
April. First prize - J.Scibor-Kaminski (£83.75) with the runners up - S.J.Parsonage, A.J.Hulme, P.Turner, J.Simmonds and P.Fincham - each winning £16.75.

OSTIV MEETING IN CHICAGO

Bill Scull, BGA director of operations, went to the OSTIV Training and Safety Panel in Chicago, held in February before the Soaring Society of America's annual convention. Its purpose is to exchange ideas on training and safety and compare safety data and accident trends. Delegates are mostly chairman of national safety and training committees or senior gliding association employees. Twelve countries were represented, South Africa by John Ellis, ex BGA Airspace Committee chairman. The following are extracts from Bill's official report as chairman of the panel.

The host country and new members always give a summary of gliding in their country, including any problems, and the panel considers various papers. One aim is to compile definitive advice on training, safety and operations similar to OSTIV Airworthiness Standards; also to encourage an objective approach to accident prevention without resorting to regulations.

The meeting produced very useful material - a development of the original UK Safety Audit by Canada; a new Swedish safety seminar concept; a paper by a Finnish psychologist on what makes learning effective; Australian publications on **Airways and Radio Procedures** and a **Daily Inspectors' Handbook**. It also meant we could compare standards such as licensing, airspace freedom and any new problems.

There were proposals for two possible video programmes. The first was from the UK, "Rig and DI" (for which we have a sponsor). Failure to connect controls, particularly the elevator, is much less of a problem in the other countries because most of them do duplicate rigging and positive control checks. A video on cockpit safety may be produced at the Fachhochschule, Aachen, Germany and include their canopy jettison material, as well as information from TüV Rheinland on cockpit improvements and crashworthy cockpit design by the manufacturers which are being much discussed in OSTIV.

Reports on the JAR-22 study group and the European Gliding Union (EGU) were considered. The implications of harmonisiation of motor gliders and pilot licencing still pose potential problems. The American delegate collected information on glider pilot licence requirements, to make the case for mutual acceptance of foreign licences by the FAA. This will help EGU in approaching JAR-FCL.

We reviewed the "Risk Management" paper which is to discourage attempts to reduce marginal risks in operational matters by technical solutions - the syndrome of solutions looking for problems. A paper on tow plane upsets was in the same context. The evidence from all the countries represented was that this problem had been dealt with operationally.

The "Spin Training Review" paper was about the "spin-ability" of a glider in relation to pilot experience and the need for thorough training. Training should continue after first solo and the consensus view was that up to first solo the emphasis should be on stall/spin awareness and the recovery at incipient (autorotation) stage; however, the student should experience the fully developed spin. Recovery from the full spin should be taught after solo when the student was more confident and receptive. The general view was that spinning should not be taught below 1500ft, although in exceptional cases to 1000ft to complete a manoeuvre.

The "Alpine Soaring" paper was concerned with safety standards and safety briefings in mountain flying - the fatal accident rate in the French southern Alps was 42 in five years and pilot skill and escape options to safe landing areas were important factors. One member had

DEADLINE DATES
August-September
The main deadline for editorial copy is May 31 with letters and club news reports accepted up to June 14. The deadline for display advertisements is June 24 and classified advertisements July 4.
While contributors are extremely considerate in keeping our dates a number of advertisers have been late which is why the last issue was delayed by some days.

to drive 1200km with an instructor to inspect the land out fields before being allowed to fly from a site. A World Championships pilot felt the lack of safety briefings at this level was seriously neglected.

As to club standards, the Diest Aero Club (Belgium) was mentioned. It has 100 members, 30 under 20, and training before solo includes a dual cross-country. The Swedish safety seminar also considered leadership styles and club development.

The role of OSTIV was discussed. Not all gliding associations of the countries and individuals represented were members and they were asked to promote OSTIV through their magazines. One problem was that *Technical Soaring* only publishes papers given at the OSTIV congress and there aren't many on training and safety. For the time being this could only be changed by giving more papers at the congress which delegates were encouraged to do.

AIRFIELD PLANNING SPECIALISTS

Roger Hepworth, Richard Milne and David Titterington have formed Airport Planning and Development Ltd to give specialist development, financial and operational advice into planning, design and management of UK and international airports. Of particular interest to readers is that the team have considerable hands on experience of small airfield planning, development and operation. They are based at Lancaster House, 16 Moorfield Business Park, Yeadon, Leeds LS19 7AY, Tel 0532 537936.

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BGA ACCIDENT SUMMARY Compiled by DAVID WRIGHT

Ref No.	Glider Type	BGA No.	Damage	Date Time	Place	Pilot/Crew Age	Injury	Hrs
161	Discus CS B	3760	M	6.6.93 1530	Preston Lodge FM	46	N	400

The pilot had to make a field landing so selected a field then continued "scratching" alongside for several minutes. A normal circuit and approach were flown during the latter stages of which he noticed that the surface of the field was ridge and furrow. The furrow depth and hardened clods removed the gear doors and then the undercarriage collapsed

162	Puchacz	–	N	**.9.93 –	Incident Report	0 P2 0	N N	– –

While waiting for a winch launch the crew postponed the launch due to landing gliders and an aerotow. After 15min all was clear and P2 asked for "cable on". It was then discovered that it was still attached. P1 had pulled the release but the rubber draught excluder seal had held the ring in place. The canopy had been open and people present.

1	K-13	3112	M	9.10.93 1636	Gallows Hill	42 P2 22	N N	322 2

The winch launch was being flown in gusty winds by an early solo P2. At about 200ft the speed rose and P2 signalled "too fast". The nose was lowered and the airbrakes opened, but neither pilot remembers doing this. A steep turn was started during which speed was lost and P1 took over. Again the brakes opened and P1 could not prevent a heavy landing.

2	Falke	M/G G-BRRD	M 1405	3.10.93	Seighford	41 P2 61	N N	360+160pwr 65+122pwr

The motor glider was being used for type conversion. The landing was made with the engine off due to rough areas of the runway causing prop tip strikes. However, the prop stopped in the vertical position and, despite a fully held off landing, the nose dropped and the prop hit the ground. The prop had been fitted in the wrong position.

3	BG135	1922	W/O	16.10.93 1405	Lleweni Parc	34	F	21

Fatal accident: The "V" tailed glider had been rigged that day and already flown once. On the second winch launch, at about 800ft, the left tailplane was seen to rotate through 90° causing the glider to pitch up and enter a spin from which recovery was not possible. The locking pin was not correctly installed, allowing the tailplane to move.

4	Carman JP15-36	F-CFGA	N	9.10.93 1400	Nr Galewood	33	N	128

After soaring for about 35min the pilot's right rudder became disconnected. As the airfield was straight ahead he increased speed by about 10kt and made a straight in approach to a safe landing. It was found that crimps in new rudder cables had failed due to the ferule being incorrect for the crimping tool.

5	K-8	2935	S	30.10.93 1310	North Wales	54	M	12

The pilot joined the circuit at about 750ft and turned on to finals at 400ft, aiming to touch down into the airfield, running to a halt uphill.However, he realised that he was too high and too fast and would overshoot into the hedge. He closed the brakes and tried to turn but hit a wingtip which swung the glider around into the ground.

6	Junior	-	M	22.10.93 1600	Long Mynd	50	N	33

At about 300ft in the winch launch there was a sudden bang and loud wind roar from behind the pilot. He grabbed for the release but opened the brakes in error. He then released the cable but found he could not reach the handle to close the brakes and had to make a hurried field landing. The noise may have been from an untaped access hatch.

7	Skylark 4	1060	S	18.11.93 1340	Halesland	59	M	16

Because of the 1 kt headwind the pilot rotated gently to lift off andwas about to ease into the climb when the winch reduced power. The pilot lowered the nose but not sufficiently promptly to prevent a very heavy landing. The winch driver had heard the signaller exclaim "oh" as the glider's wing started to drop and had stopped the launch.



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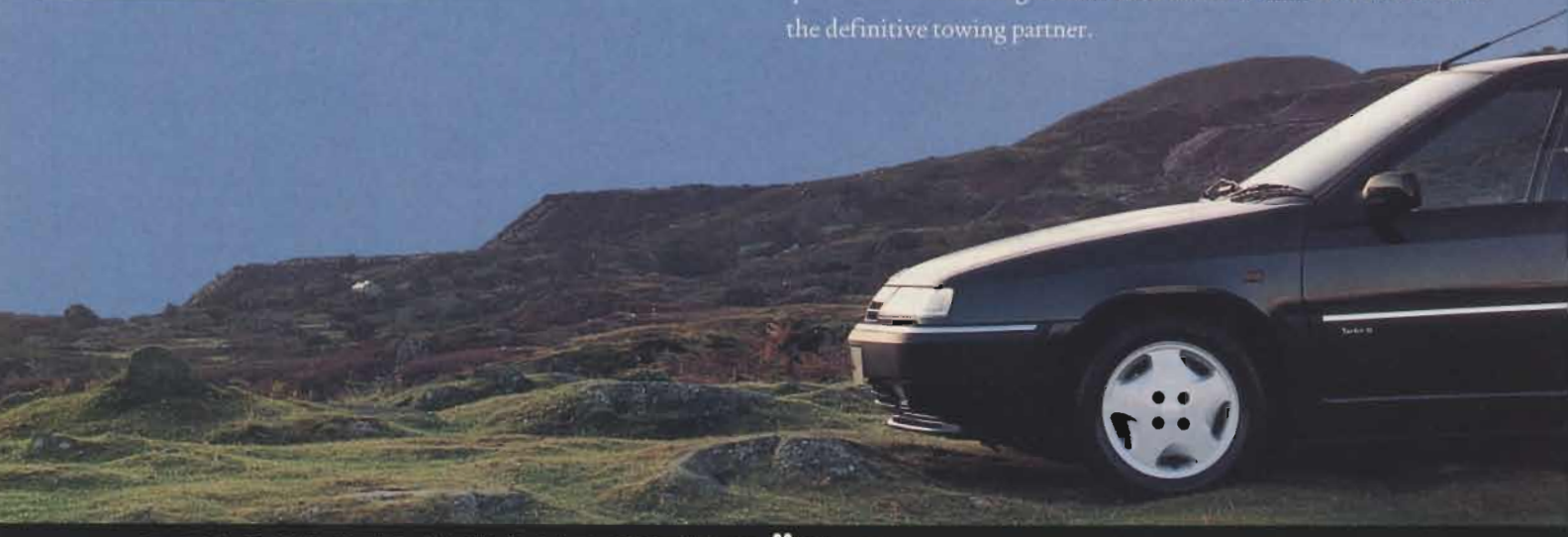
However, the most relevant accolades came in the four Caravan Club Towcar of the Year Awards, including **Towcar of the Year.**



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Gliding

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RULES OF PROMOTION 1. *The CAR 94 promotion is available at all CITROËN CAR 94 events and open to any UK resident over the age of 21 who holds a full, valid and current UK driving licence. 2. Citroën employees (or members of their families), their dealers and those engaged in this promotion are not eligible to enter. 3. Only one entry per person is allowed. Only completed official entry forms will be accepted. Purchase or a test drive are not pre-conditions of entry. 4. The car prize will be awarded to the first entrant drawn from all the entries received. The closing date for all entries is 24 January 1995. 5. The draw will take place on 27 January 1995. The winner will be notified by post within 28 days. 6. The winners name will be made available to those enclosing a Stamped SAE, marked 'Results' by applying to the draw address. 7. The draw will be independently supervised. 8. The Citroën Xantia will be taxed and ready for the road (but not insured). 9. No cash alternative will be offered. 10. Proof of posting will not be accepted as proof of delivery. Responsibility cannot be accepted for lost or mislaid entries. 11. No correspondence will be entered into. 12. The promoter is Citroën UK Ltd., 221 Bath Road, Slough SL1 4BA.*

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You could win this superb prize by completing and sending the entry coupon opposite to the Freepost address below. You must be over the age of 21 and hold a full, valid and current UK driving licence. Closing date for all entries is 24 January 1995. The draw will take place on 27 January 1995.

THE CITROËN CAR 94 DRAW, FREEPOST, CITROËN UK LTD., LONDON, N4 1BR. (NO STAMP REQUIRED.)

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Telephone (incl. area code) _____

My present vehicle is:

Make _____ Model _____

Reg No. _____

When do you expect to replace your current car?

Eg February 1995 [0][2][9][5] Month Year ☐☐☐☐ Month Year

Will your next car be purchased: (please tick all that apply)

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3. Petrol ☐ Diesel ☐ 4. Saloon/Hatchback ☐ Estate ☐

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Tick box if you are under 21 years old ☐

The information given here will be held by Citroën U.K. Ltd and is safeguarded under the Data Protection Act. The information may be used to keep you informed about new models and special offers that might become available. This data will not be divulged to anyone outside of Citroën UK Ltd or its agents. If you do not wish this information to be retained, please tick this box ☐

very gentle moderate waterproof sun screen which is exactly what it says.

To order, send a cheque for £12.50 to Comfort and Joy, Bay Tree Cottage, Eastleach, Nr Cirencester, Glos GL7 3NL, making it clear where to send the kit, and it will be dispatched pronto.

METFAX AVIATION'S NEW SERVICE

New MetFax Aviation services have been launched and some of the header sheets dropped thanks to new software. The new fax products, from the Met Office and the CAA, are in hard copy format. All start with the 0336 400 prefix and bring more detailed forecasts to MetFax Aviation.

The new listings are:-

511 - Airmet UK weather text.
512 - Airmet UK upper winds text.
513 - Airmet UK update and outlook text.
514 - Airmet area south-west England text.
515 - Airmet area south-east England text.
516 - Airmet area central England text.
517 - Airmet area cross-Channel text.

The header sheets for Airmet products have been incorporated at the top of the sheet which helps offset new telecommunications industry-imposed charges - effective across all premium-rated services, they are 39p/min cheap rate and 49p/min at all other times.

Correction: We regret that in printing the Repclif Aviation Ltd advertisement in the last issue, p84, the telephone and fax numbers were left off. See p144, for full details.

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	Name	Club	1993
412	Coombs, A.W.	USA	19.6

DIAMOND DISTANCE

No.	Name	Club	1993
1/616	Coombs, A.W.	USA	19.6

DIAMOND GOAL

No.	Name	Club	1993
2/2177	Morris, H.T.	London	28.8
2/2178	Taylor, M.A.	Rattlesden	13.8
2/2179	Gliddon, D.	Booker	24.6
2/2180	Owen, D.R.	Australia	17.12.82

DIAMOND HEIGHT

No.	Name	Club	1994
3/1142	Harland, S.J.	Deeside	20.1

GOLD BADGE

No.	Name	Club	1994
1715	Taylor, M.A.	Rattlesden	13.8.93
1716	Harris, C.I.	Midland	30.1
1717	Hancock, C.D.	Southdown	22.3

GOLD HEIGHT

Name		Club	1994
Edwards, M.W.		SGU	16.1.
Bolton, C.H.		Glyndwr	22.1
Oultram, A.J.		Staffordshire	30.1
Harris, C.I.		Midland	30.1
Hughes, D.J.		Midland	30.1
Collins, J.D.		Midland	30.1
Brown, A.		SGU	20.1
Gill, D.		Staffordshire	30.1
McIlroy, D.		Lomond	17.3
Hancock, C.D.		Southdown	22.3
Brunning, S.		Chilterns	16.3
McLaughlin, W.J.		Shropshire	26.3

8	-	3rd Party	-	00.10.93 1204	Incident report	37	N	2

The glider was being winch launched with a 5 knot crosswind. The pilot had been instructed to offset for the wind but did not fully compensate. After an otherwise normal launch the cable was being wound in when a loop went round the drum stopping the drive. The cable drifted over adjacent power cables, shorting out local supplies.

9	SF-27	4013	M	05.12.93 1540	Brentor	75	N	66 ?

The pilot was making a hangar flight but, contrary to normal procedures, the log keeper had not been informed and the retrieve tractor returned with cables down the runway. The pilot did not notice this until on finals and decided to land over the tractor, but had insufficient distance to stop and ran into a wire fence.

10	K-23	3721	M	05.12.93 1500	Tatenhill	53	N	9

The pilot was landing in gusty conditions ahead of an approaching rain cloud. He increased his speed to cope with the bumpy approach and intended to ease the brakes in "to float the landing". However, he opened them instead and could not correct before making a heavy touchdown. This was followed by a series of bounces.

11	Puchacz	3rd Party	N	00.12.93	Incident report			

The glider was being retrieved from soft ground by a tractor and the rope was attached at an excessive angle to the glider's centre line. As the tow started the glider swung rapidly around causing the tip holder to loose his grip. The glider continued to pivot and a bystander was hit on the back of the head by the wing.

12	Astir			14.01.94 1215	Lasham	63	N	115

The pilot was seen to make a good circuit and was well positioned on finals for the conditions. He then used rather too much airbrake and started toundershoot. The airbrakes were gradually closed and the glider was seen to develop a pitching oscillation as it flared in the undershoot area. It bounced three times before finally landing.

F=Fatal; S=Serious; W/O=Write-off; M=Minor; N=Nil.

AN UPDATE ON THE CITROËN XANTIA



Who says national coaches get the winter off? Chris with his Xantia.

In the last August issue, p220, *S&G* published my impressions of the Citroën Xantia after a couple of days and about 500 miles in a Xantia 2.0i. Since then I've driven about 28 000 miles in Xantia's, mainly in my 16 valve VSX but also quite a bit in a 2.0i and a Turbo Diesel model. That being so it seemed worth writing a short update on how accurate my first impressions had turned out.

First, the costs. Despite the very hard usage that national coach's cars get, the 9000 mile service interval seems adequate and nothing has failed in mine so far, so only two visits to the service agent in ten months (apart from when a local car thief rammed my car with the one he was in the process of stealing - but that's another story). Looking back at what I wrote nearly a year ago, my overwhelming impression was one of comfort and relaxation and that remains true. Driving from Booker to Aboyne is a pleasure if the traffic is not a problem. Adding a trailer - even a large one - the limit to cruising speeds is always the legal one, even on windy days, stability is not a problem. Incidentally, I've found that on the VSX model, using the sports or firm supervision setting gives even more stability and resistance to "wagging".

The 16 valve engine's ability to give plenty of torque right up through 6000rpm makes overtaking slow moving traffic whilst towing a trailer very safe and easy (and was the reason Graham McAndrew and I chose that model), but both the 2.0i and the Turbo Diesel are quite handy in this respect too, but need a bit more gear changing.

What have I grown to like most over the year? Low noise levels, a very comfortable ride and most of all having the stereo controls on the steering wheel (why doesn't everyone do that?). Dislikes? Just one, I can't see the main-beam warning light because it hides behind my hand on the steering wheel. I wish they'd move it.

Will I order another one? Yes and I probably won't even change the colour.

CHRIS ROLLLINGS, BGA senior national coach

GOLD DISTANCE

Name	Club	1993
Morris, H.T.	London	28.8.
Taylor, M.A.	Rattlesden	13.8
Gliddon, D.	Booker	24.6
Owen, D.R.	Australia	17.12.82

SILVER BADGE

No.	Name	Club	1994
9343	Gliddon, D.	Booker	24.6.93
9344	Smith, D.B.	Deeside	4.12.93
9345	Gill, D.	Staffordshire	30.1
9346	Davies, T.P.	Black Mountains	11.3
9347	Taylor, A.J.E.	Southdown	17.3
9348	Stevens, M.	The Gliding Centre	26.3
9349	Dowling, P.	Bidford	15.5.93
9350	Johnston, I.	Borders	26.3
9351	Sinclair, S.	Kent	26.3

SPORTSMATCH SPONSORSHIP

Leslie Kay, chairman of the Hereford GC, explains how his club have benefited from this scheme

What would your club do with a large cash hand-out? We bought ourselves a Junior. In response to inquiries about this news in the last issue, p103, I have written this piece to encourage interested clubs to follow our success.

Sportsmatch is a govenment scheme administered by the Institute of Sports Sponsorship (tel 071 828 8771); The Scottish Council (tel 031 317 7200) and The Sports Council for Wales (tel 0222 397571. Awards are between £1000 and £75 000 (£500 to £25 000 in Wales). In essence if you can find a commercial sponsor the scheme will match £1 for each £1 raised.

The scheme managers are very helpful and supportive. There doesn't appear to be a problem of availability of funds. The awards are discretionary so you must make the best case you can.

How do you find a sponsor? This is the key challenge and probably the biggest obstacle. Sponsorships must be commercial, *eg* for genuine advertising or publicity and may not be donations.

There must be no "material relationship" between the organising body and the sponsor. This requirement depends on the facts but may not preclude, for instance, an approach to a club member's employer if the agreement can be shown to be made at "arms length".

Fund raising may be for an event or for a capital project. Either way your club gets a valuable opportunity for media exposure alongside the publicity gained by the commercial sponsor.

The application form runs to seven pages and in addition there are copious notes and rules, Designed to discourage the more dubious scheme, it should pose little difficulty for most gliding projects.

Yes you can do it!! The effort involved may be very well rewarded. Please give me a call on 0850 740188 if I can help with a problem.

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Scottish Gliding Union
Portmoak Airfield
Scotlandwell KY13 7JJ
0592 840543

INTERNATIONAL GLIDING COMMISSION

Extracts from Tom's report of the meeting held this March in Marbella, Spain. Brian Spreckley, Ted Richards and Ian Strachan also attended

A commercial firm gave a vivid visual presentation of a gliding competition with remote controlled video cameras in every glider using GPS. The total cost of the equipment was large, but they seemed confident they could find a sponsor and make a "Masters" gliding competition as popular as the America's cup for yacht racing.

1995 World Championships, New Zealand. The entry will probably be only between 74 and 79 with entries confined to three per country per Class, plus past World Champions, with a limit of 50 per Class. New Zealand will accept foreign entries to their Nationals this December.

Because they expect numbers to be low, the entry fee will be increased to $1700, which is still $300 below Borlänge.

1997 World Championships. At last year's meeting France and Poland said they would bid for 1997. Knowing that entry price would be a key factor, both were waiting to see what the other would charge so bid documents were only circulated shortly before and budgets related to the entry prices were only tabled at the meeting. Apart from the cost, the other factor was the terrain. Mountain flying is susceptible to local knowledge and the Polish bid related to flat country. The vote was 15 for France and ten for Poland, with three abstentions.

1996 European Championships. Finland gained 13 votes and Switzerland nine.

Motor gliding. Piero Morelli (Italy) reported that motor gliding competitions are still not very well supported. There will be an 18 metre mixed motor glider and pure glider competition in Germany in June and the next European Motor Gliding Championships will be in Germany in 1996. Piero also won support for announcing it as a World Championships but if there weren't sufficient entries it would be down-graded to an International Championships and if still not well supported to a European Championships.

Rules Committee. Despite considerable work, Chapter 2 of the gliding **Sporting Code** was not deemed to be ready for adoption. However, section 2.16, which allowed the use of electronic barographs for badges with the approval of National aero clubs, was modified with effect from this October to allow their use for all flight verification including records, once three or more aero clubs had approved a particular piece of equipment (which includes the EW barograph). The principle of in-flight declared TPs for new types of badges and records was agreed and the committee was asked to bring forward new rules to achieve this at a future meeting.

Cost of World Championships. A working party chaired by Ake Pettersson (Sweden) suggested setting up an IGC committee to look into the arrangements for future Championships, making use of the expertise often painfully acquired by previous organisers. A number of ideas were aired but not all supported - *eg*, there should be about six approved sites. Size is contentious; large numbers help to spread the cost but over large Championships mean using non gliding club sites and facilities have to be created, which is unnecessarily expensive. There is also a tendency for the host country to use the Championships to gain permanent improvements at the expense of the international competitors.

Other Championships. This year's European Championships at Rieti, Italy, may be over-subscribed and the third entry not allowed. The Club Class in Slovakia will probably have an entry of 60. The women's 1995 Championships in Germany will be preceded by a pre-Comp this year. Germany made a preliminary bid for the 1999 World Championships at Bayreuth.

The entry fee for the Junior European Championships at Leszno, Poland, in 1995 will be 400DM and probably be held in the last two weeks of May. Slovenia was approved for the 1996 Club Class competition.

World Class Glider. The type certificate for the PW5 was almost complete. There was some concern about the price being increased to 22 800DM excluding taxes and dealers' commission since it was voted the winner last spring. There was also a problem about the legal contract between FAI and the winner who was different from the manufacturer (both Polish). It was hoped to have the first World Class Glider Championships in 1996.

Glider recovery system. Bruno Gantenbrink (Germany) was concerned that this safety development wouldn't happen unless IGC declared it should be a requirement for international gliding competitions. Without this there would be no incentive for manufacturers to do the necessary development work. Eventually a motion of general intent was agreed.

Lilienthal medal. There was only one proposal and Bernard Smith (USA) was awarded the medal.



Milos Pajr, visiting Highland GC from Czechoslovakia last summer, took this photo from the hill near their site at Easterton.



Glyndwr SC pilots - Ian Skinner (left) who has Silver distance and Ray Cronin, their latest tug pilot.



Above: Paul Brooks of Borders GC after his 5hrs. Below: Brummieglide Gliding Scholarship winners Claire Billingham (aged 17) and Randeep Dhinju (16 years). Remember the fund raising dinner with Dave Gunson arranged by Mary Meagher in January? This is where the money went and Claire and Randeep are learning to fly at The Gliding Centre. Instructor Bill Jepson is in the back seat. Photo: Mary Meagher.

CLUB NEWS

Copy and photographs for the August-September issue of S&G should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 0223 247725, fax 0223 413793, to arrive not later than June 14 and for the October-November issue to arrive not later than August 8.

GILLIAN BRYCE-SMITH
April 15

ANGLIA (Wattisham)
Chris Webb is our new CFI taking over from John Hicks.

Andy Hill gained Gold height at Sisteron, France. We have a motor glider coming from Bicester. The workshop situated within the hangar is almost finished and the syndicate Skylark 2 should be flying this summer after a complete overhaul.
M.A.T.J.

ANGUS (Drumshade)
We are settling in nicely at our new site at Drumshade - this name is not very well known locally, so it was suggested at the AGM that we call the airfield Glamis, as we are close to Glamis Castle and it is the area's name. This was not approved but will be considered in the future.

Our first flight on February 12 was by CFI Alan Black in the Bocian and since then we have flown the SF-H34, Swallow and Pirat.

We have had a number of interested visitors and given trial lessons.

At our AGM in March Martin Davies took over as chairman from Colin Wright.
G.N.

AQUILA (Hinton in the Hedges)
Our new clubhouse should soon be finished. Our fleet has been expanded by two more K-8s and a back-up winch and we have a number of new, ex-Turweston members who are making a valuable and very welcome contribution.

The annual dinner was well attended with awards going to Tony Limb ("Scramble" trophy for the instructor achieving the earliest start), John Rayment (best flight for his 300km), Chris Greengrass (wooden spoon and best height) and Doug Edwards (clubman of the year).
D.P.

BANNERDOWN (RAF Keevil)
The Janus C has arrived at last and been flown in spring gales. It winch launches without vice and handles well in landing flap.

The spring visit to Lleweni Parc provided three wave days and a Gold height for Steve Murray. A K-7 loaned to Bristol University GC is being used with the club fleet.

The one remaining war time hangar has been reclad and we hope to use part of it for the two-seaters and bus.

Our CFI, Mel Dawson, has been awarded the Andy Gough memorial trophy for RAFGSA member of the year. As if this is not sufficient glory, Mel has just been appointed Mayor of Chippenham - beat that!
D.C.F.

BATH, WILTS & NORTH DORSET (The Park)
In spite of the weather we have had a few interesting flights. Bob Bromwich flew his LS-6 on an O/R to join the wave soaring over Wales on March 19. Alastair MacGregor flew his DG-300 200km to Bath, down to Chard and back along the sea breeze front on March 26 and we have had a crop of Bronze badges.

With the advent of Richard Grundy's ASW-19, a new Skylark 3 syndicate (Jeff Smith, his son Mark and Dave West), a second Carmam owned by John Holmes and our "new" Bocian from our overseas member Anti Jouppi in Finland, shortly to be fetched from Felixstowe, our fleet has grown to five two-seaters, three single and 23 private gliders.

Stuart North is assisting as DCFI to Ross Lynch. We have introduced a bursary system for younger members which we hope will involve local schools. We are also running a course for



Brian Birlison with Cotswold GC's CFI, Mike Pirie, who sent him solo on his 16th birthday.



schoolchildren aged 14-18 years in July and three field landing courses.
J.L.

BICESTER (RAFGSA Centre)
Hooray! Upper Heyford is closed, however pilots flying to and from Bicester are reminded that it is a disused airfield so must not be landed on except in an emergency and observe the 500ft rule when overflying.

We are hosting the Inter-Club League, Standard Nationals and the Inter-Services Regionals. The soaring season started well with Ted Norman gaining a Gold distance/Diamond goal; Alison Grimsdell and Jim Coughlan, Gold height and Silver legs for Steve Archer-Jones and Owen Walter (duration and height); Bill Bailey and Sue Price (duration); T.Barnes (distance) and Ian Cottingham and Mark Hadland (height), T.Barnes and Mark Hadland completing their badges. M.S.Parsons has gone solo.
Y.E.

BIDFORD (Bidford Airfield)
Our annual dinner-dance went well with trophies going to Norman Britton, Richie Toon, Keith Whittingham, Tony Huttlestone, Geoff Knight, Roger Slater and Richard Palmer.

Members are well on the way towards raising funds to buy an additional two-seater.

There are still places on our Regionals (June 25 - July 3). The task week starts on June 18 (with no entry fee), the cross-country week on July 9 and the Aboyne wave trip is from September 17. If interested phone the office.

Jenny Fleetwood has a Bronze badge.
C.T.

BLACK MOUNTAINS (Talgarth)
After a slow February we had 15 soarable days out of the first 23 in March. We have had good wave with many climbs in excess of 15 000ft and several above 20 000ft. As ever the indomitable Tony Burton led the way with climbs to 22 000 and 28 500ft on consecutive days.

The K-13 looks very smart with a new canopy. Trevor Davies has completed his Silver badge.
D.U.

BOOKER (Wycombe Air Park)
Summer mid-week evening training groups have started and the year's first 300kms were flown in early April.

Amongst the new machines are at least three LS-6-18s. Several have joined our intensive conversion courses to gliding for power pilots.

We had two expeditions to the Long Mynd and shared the joys of bungy launching the vintage group's Tutor.

We may have a few places left in our Regionals.
R.N.0

BORDERS (Galewood)
Kevin Burns has brought a Carmam from France and Mike Crewes has bought a Vega, giving us three on the site.

We plan to celebrate our 25th anniversary over the August Bank Holiday weekend with three days of flying. Any one wishing to fly with us will be most welcome.

The first flight at the club was in a Slingsby



Deeside GC's club Junior being retrieved from the Ladder hills.



Burn GC's Colin Wheat, Martin White and Bob Collins with the rebuilt Diamant. Photo: Paul Newmark.



Above: An aerial view of Angus GC's new site which is outlined in white.
Below: Winter flying with the older fleet at Wolds GC. Photo: Andy Butler.



Eagle and we hope to repeat the event with the same aircraft, which is currently undergoing an overhaul and re-furbishment.

Bill Stephen is an assistant instructor and Andy Henderson has started his instructor training. Paul Brooks flew his 5hrs in a club Bocian on a cold northerly day in November.
B.C.

BOWLAND FOREST (Chipping Airfield)
Due to the poor weather much progress has been made with our lecture/briefing room which was opened with an inaugural lecture by Dave Rukin in March. George Wearing has an AEI rating and we have some new members. We give a warm welcome to visitors.
S.R.

BRISTOL & GLOUCESTERSHIRE (Nympsfield)
Field improvements have progressed with work started on another regraded strip and the filling on the south side nearly complete. We hope this will give a 50% increase in usable field.

An improving financial situation was reported at our AGM in March and Andy Davis stole the show at our dinner-dance by winning all but a few of the awards.

Improved reception on 130.125 has been noticeable. We wish a speedy recovery from a leg injury to Phil Walker, our Inter-Club team leader.

Following excellent wave days, we had an early start to the season with cross-countries of over 300km in March. Visiting pilots should note that the nuclear shelter at the south side of the field is not suitable as a BGA TP.
S.I.D.

BURN (Burn Airfield)
Mike Howey gained his 5hrs on March 26. On April 10 Martin White test flew the beautiful Diamant rebuilt from a write-off over two years by Bob Collins, assisted by Colin Wheat.

On the same day Mark Griffiths (Austria) declared Gamston Airfield for Silver distance and eventually landed after 130km near Leicester.
P.N.

CAMBRIDGE UNIVERSITY (Gransden Lodge)
We aim to use the newly acquired Grob Acro for cross-country and aerobatic training and there are a number of new syndicates. Members and visitors approve of being able to book a glider for mid-week flying and despite the wind, rain and snow we have not lost many flying days. Saturday, March 26 saw many long distances and fast times achieved and we now have permission to winch to 3000ft.

Entries for our August Regionals are up on last year and plans are well advanced. Keith Sleigh-Ives has joined us as course instructor and Mike Langton is running the office.

David Cudby, Michael Cain, Dennis and Andrew Shaw, Graham Howatt have gone solo and David Hawthorne is the first of our cadets to achieve Bronze. Keitha Bryce-Smith is the first to gain a 1994 Silver badge with a 5hr flight.
M.H.L.

CONNEL (North Connel Airfield)
Mid-week flying has been resumed after a long break, the gales have abated allowing us to aerotow again and we now have a flower bed around the clubhouse, thanks to Gerry and Mairi Bryce. Projects to be discussed at our AGM include the need to finish the clubhouse, upgrade the winch, get another single-seater, develop our youth training programme and repeat last year's successful open weekend.
R.W.

CORNISH (Perranporth)
After more than a decade as CFI Peter Arthur is taking a well earned rest while still happy to instruct and tug. Ernie Hayman is also retiring as DCFI and they both hope to have more time flying their syndicate Libelle. John Shaw is now CFI with Gordon Hunter as his deputy.
S.V.S.

COSTWOLD (Aston Down)
First solos were flown by Doug Wright, Dave Sculthorpe and, on his 16th birthday, Brian Birlison. Mike Oliver achieved Gold height during a cross-country flight in March to the Welsh borders. It's quite unusual for Cotswold members to gain Gold from Aston Down starting off with a reverse motor launch, but recent westerly winds have provided better wave conditions, despite our distance from Wales.
M.S.

Obituary - Robin Atkinson
It is with great regret that we report the death of Robin Atkinson, following a short illness. An accomplished pilot, Robin was a keen and enthusiastic member of the club over a period of about eight years and had served as a committee member and secretary.

He frequently instructed the "Wednesday group" who especially will greatly miss his patience, understanding and helpful ways.

We send our condolences to Robin's widow, Julie, to whom he had only been married two and a half years.
Mike Shailes

DARTMORE (Brentor)
At the AGM the following were elected :- Ray Boundy (chairman); Chris Manning (secretary); Richard Crooker (treasurer); Peter Walters (site manager); John clark (site engineer); Dave Hooper (safety officer) and Dave Wallace (field treasurer).

Richard Crooker took over after the sad loss of our efficient and well loved treasurer Joyce Andrew. The post of field treasurer was re-established to cope with the flood of air experience flights we (and our sister clubs Devon and Cornwall) get in the tourist season.

Our CFI Peter Williams awarded the trophy for the longest flight to Steve Bolt who also won the trophy for the first flight of the season, an O/R to North Hill.

Obituary - Norman Wood
It is with great sadness that I report the death of a very popular and hard working member, Norman Wood.

"Stormin Norman", one of the older members, learned to fly with the club. His wartime experience gave him highly developed skills in photography and many of us are indebted to him for the framed "show-off" photos we have on our study walls.

Norman was one of the kindest, amiable and patient men I have ever worked with. Our sympathies go to Sylvia and family.
Frank May

DEESIDE (Aboyne Airfield)
The cross-country soaring has been good with Jack Stephen doing a 300km in early March on the same day that the club Puchacz did a 120km. Dave Smith has completed his Silver with a cross-country, Sarah Harland has an assistant Cat rating and Dave Pirie and Glen Douglas have their AEI ratings.

At the AGM Lionel Sole was appointed chairman and Dave Pirie and James Davidson joined the committee. Roy Pearson was awarded the chairman's trophy for his work in producing our new eight page colour brochure.

Retrieve of the year to date has been with Frank Cruikshank who landed out the club Junior in February in the Ladder hills. Due to the weather closing in Frank was airlifted out by a SAR helicopter from RAF Lossiemouth.

The retrieve involved 17 members carrying a derigged glider two miles the following day in deep snow and included six river crossings! The glider and Frank were undamaged, however the trailer running gear required replacing after damage caused by the deeply rutted forest tracks. Frank's bar bill was also severely depleted!

February saw us soaring at 15 000ft and at 19 100ft in March.
G.D.

DERBY & LANCS (Camphill)
Despite bad weather, the strong winds gave us some good hill soaring. The cross-country season started well in late March with two 300kms by Nigel Howes and Tim Robson, and an 80km by Brian Hamlet. We now have a Grob Acro for cross-country training.

The Husbands Bosworth expedition achieved height gains of 12 000ft. Courses are filling up and visitors are always welcome.
W.T.

DEVON & SOMERSET (North Hill)
If you blinked at the wrong time this winter, you missed the good weather. The first cross-countries were a 155km on March 10 by Ron Johns (Pegasus) and on March 26, Ian Beckett (Duster) 118km, John Pursey (SF-27) 161km and Dave Reilly (Libelle) 210km.

The Oly 463 syndicate had a 30th birthday party for the glider. Also, "the workshop sit-in" has been popular, with winter refurbishing and C of A work keeping the workshop full. Ian Mitchell has just gained his inspector's ticket.

Our summer courses start in June and we have our task week in August when we welcome friends old and new. Our telephone number is now 0404 841386.
I.D.K.

Obituary - Ian Snelling
With great sadness, we report Ian's death. A true stalwart of the club, anyone could turn to him for assistance at any time.

Holder of a Silver badge, he flew his syndicate K-6CR on every possible occasion and was clearly on his way to greater achievements, so it came as a great shock and sorrow to us to learn

that he had developed motor neurone disease. In spite of increasing difficulties and often in great discomfort, Ian fought on. He continued to fly until he could no more.

Our sympathy goes to Catherine and family.
J.O.P

DORSET (Eyres Field)
Our amphibious winch plucked us skyward for some excellent soaring in mid-March.

A lecture by Barry Walsh, a professional Met man, wetted the appetite for a course next winter but failed to forecast the abysmal conditions during our task week, the last two days of which saw Chris Rollings guesting in our K-13.

Vic Phillips has an assistant Cat rating.
M.J.

EAST SUSSEX (Ringmer)
Tim Huff and Dave Deacon have flown 50km to complete their Silver badges; Graham Reeve has a Bronze badge and John Williams has resoloed.

Construction of the new hangar is proceeding, due to lots of work by lots of people.
L.M.

ESSEX & SUFFOLK (Wormingford)
Our new clubhouse, worked on by Wally King, Pete Nicholls, John Friend and others, is taking shape and we hope to be in by late summer.

Paul Rice has taken over from Angus Macdonald as CFI, Angus having served us well over nine years.

A new member, Chris Bailey, went solo, gained a Bronze leg and won the instructors' cup. A Discus and Pegasus have joined the privately owned fleet.
M.J.F.

FENLANDS (RAF Marham)
Thermals started early with several flights of over 1hr on February 11 - the first by Martin Pike. Nick Ashworth has gone solo and Paul McClean received the good show award at the RAFGSA AGM. This was because at last year's Inter-Services Regionals Paul had to say goodbye to his tug at low level when it developed engine troubles. He quickly turned his water filled Nimbus 2 back for a safe downwind landing.

We are hoping to exchange one of our two K-13s for a K-21, giving us a better aircraft for cross-country training.
A.R.M.

FULMAR (RAF Kinloss)
For the second year running we have won the Founder's trophy. The youngest member to go solo last year was Mark Chivers on his 16th birthday. Colin Forsyth has an AEI rating.

We have flown most weekends this year, despite some interesting weather. In fact the problem has been getting gliders down. Eddie Pratt (K-13) and Gary Moxham (K-21) were worried when at 12 000ft plus they had trouble losing height because the wave was so strong.

With the arrival of the Super Munk we are getting more launches in per day which, with the wave we have had so far this year, is just as well. We were very sorry Nev Weir and Tim Dickenson were posted but welcome new members from Lossiemouth who have arrived with the Tornado squadrons.

Gary Moxham has taken over as CFI from Jonathan Joynston.
B.F.G.

GLYNDWR(Lleweni Parc)
We had an enjoyable annual dinner with Vic Carr from Sleap Soaring Group as guest of honour. Vic helped present the awards.

A lovely new trophy was proudly presented in David Merriman's memory by Chris Childs to the most improved pilot - Ian Skinner for going from solo to Silver badge in one season.The award to a younger member for outstanding service went to Ray Cronin (Jnr); the best cross-country trophy to Rod Witter for the first 300km from Lleweni (in his Nimbus with Mike Sanders) and for Diamond goal in the Dart from Bicester.

Various clubs have been enjoying our ridge and wave soaring. Craig Lowrie achieved Diamond height with over 19 000ft and Chris Hancock, Theresa Tilus, Mike Brooks and Ken Pickering (all from Southdown) gained Gold heights. Eddie Lees claimed Gold height and Silver distance on one flight in his Skylark 3.

Mike Sanders has an AEI rating and Ben Long flew 5hrs and Silver height in the club K-8. Ray Cronin and Roger Bostock are now tug pilots.
G.P.

HEREFORDSHIRE (Shobdon Airfield)
Wave conditions persist almost continuously. Dave Fall and Mike Dodd have soared the Falke to 11 700ft in lee of Radnor Forest and Phil King, on another day, climbed to 17 500ft at an average 9kt, the strongest lift he had ever experienced. IAS to maintain position in the wave was 80kt.

The new Junior has widened horizons with a number of wave flights, Alex Chappell getting to 13 000ft. Even Roy Palmer left the tug during our wave week for a 10 300ft climb.

Visitors from the London GC had excellent weather - Mike Garrod (Vega-17L) went to 13 500ft, Brimfield (K-21) to 19 500ft and Ken Maynard (ASW-20) to 11 000ft. Everyone had spectacular flights and on one calm day we had cracking thermals with every aircraft airborne for most of the day.
R.P.

KENT (Challock)
At our AGM Tim Gardiner was re-elected as chairman. Angus Roper is our treasurer, John Hoolahan secretary and Caroline Whitbread, George Costin and Steven Noad have joined the committee. Stafford Lintott has an AEI rating, Malcolm Kerley has gone solo and Sarah Drury completed her Silver badge in March with a distance flight.

Our annual fun/task week is August 21 - 28 when local clubs are invited and full accommodation, catering and licenced premises will be available. The entry fee is £10 per person.
A.R.V.

LAKES (Barrow-in-Furness)
For the first time (as far as anyone can remember) the club IS-28 went on a thermic cross-country. David North flew it 37km on the first thermic day of the year, beating Peter Redshaw in the Capstan by a very long way.

After its winter away, we finally have Bowland Forest GC's picture back, collected again by Peter Lewis. Our clubhouse has a collection of pictures waiting to be claimed by any glider pilot that flies into Walney; we eagerly await the first glider from Jurby!

Elwood Mancini has gone solo.
A.D.

LASHAM (Lasham Airfield)
"Phil" Philips is CFI but a permanent CFI is in the process of being selected. Our two Tost winches, operated by staff members Sid Fall and Steve Dutton, routinely give launches to 1500ft, frequently give 2000ft and have achieved 3000ft. Our tug master, Mark Thompson, has obtained a Pawnee tug equipped with a hush kit and a four-bladed propeller. It has the apt registration of G-TOWS.

The marketing initiative, directed by Nigel Pringle, has resulted in an increase in flying members and air experience pupils. The courses especially tailored to individual pupils needs have been most successful and the range will be extended this season.

The Lasham cadet scheme, run by Jeff Smithers with the aim of encouraging young people to fly, has 12 members. One, Nick Luxton, flew solo on his 16th birthday.

We have had lectures by Derek Piggott (stunt flying in films); Peter Hearne (modern day avionics) and Andy Davis (on becoming a World Champion).

Surrey & Hants GC have a fleet of 11 solo gliders from K-8s, two Discus and a superb Ventus C. Even early in the season, these have enabled excellent cross-country flights to be achieved.

Imperial College GC's member, Andrew Fowler, has gone solo. IC have the use of a World War 2 RAF bunkhouse, known as "The Flops". This is having much needed renovation.
A.M.S.

LINCOLNSHIRE (Strubby Airfield)
At the AGM John Knott took over from Steve Crozier as air tech and Roy Partington joined the committee to co-ordinate group flying.

Robin Forman and Alistair Knott have gone solo and Colin Watmough has an AEI rating. Two Pirats have joined the private owners' fleet and the Oly 463 belongs to a new syndicate.
R.G.S.

LONDON (Dunstable)
The club has a vigorous publicity campaign to increase the membership, overhauling our literature and co-ordinating a range of advertising. There is some debate about how the expected flood of air experience pupils will be handled against the needs of club training and flying.

We now have eight two-seaters and could really do with more. Plans for the new clubhouse extension have been unveiled to general approval and we are calculating the resources available for self-building. Course bookings are about 35% up on last year.
R.C.

MENDIP (Halesland Airfield)
Tom Trippick went solo on his 16th birthday and gained a Bronze leg on his second solo. Mick Longhurst got his 5hrs; John Alcock ➡



CFI Mike Cuming of The Gliding Centre congratulates disabled instructor Gary Bennett on *not* flying this glider! Someone else did it.



Two firsts for the King family at Rattlesden GC. Julie went solo at 16 and now her brother Kevin soloed at 16 and is presented with his wings by his proud instructor father David.

achieved 5hrs and Silver height easily in wave and Grahame Stirzaker has a Bronze leg.
G.W-S.

MIDLAND (Long Mynd)
Visitors from Booker, Oxford University and Imperial College have enjoyed bungying in the plentiful westerlies. The cross-country season started well with wave and thermal flights.

Bill Duckett has his 5hrs; John Abbott, Guy Hartland and Richard Swire have AEI ratings and Rowan Griffin is an assistant instructor.
A.R.E.

NEWARK & NOTTS (Winthorpe Airfield)
For the *ab-initio* we are offering short courses to run on four consecutive Saturdays. This season flying weeks are May 28, June 5 and August 27 to September 4 and we would be pleased to welcome visiting pilots then, or at any other time.
F.H.

Obituary - Mike Abrahams
It is with deepest regret that we report the death of Mike Abrahams.

Mike, who joined in 1987, was one of the club's characters. Although coming to gliding late in life, it soon became his main interest.

He was enthusiastic and hardworking and could always be relied upon to be first on site in the mornings and would have the winch out on the airfield before other members started to arrive. He would always lend a hand and made himself readily available to help out at special events. To Mike, gliding was a passion and he quickly gained his Silver badge.

Every member will have their own memories of Mike and he will be sadly missed. We extend our sympathy to his wife, Nona, and family.
Frank Hunt



David Cudby of Cambridge University GC after going solo.

NORFOLK (Tibenham Airfield)
We were featured on BBC's "Holiday" programme recently and the response has been very good. We hope the benefits will spread to other clubs.

We are in an "all change" mood with new gliders appearing and others changing hands. Several members enjoyed good hill and wave soaring with our K-21 at Sutton Bank.

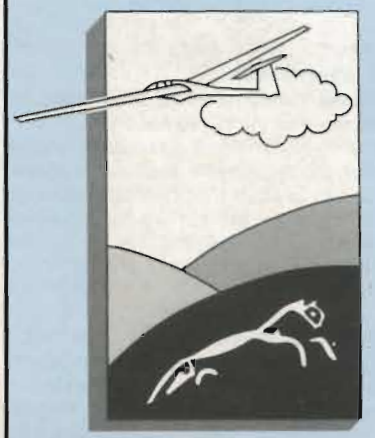
At our dinner-dance, the Bergfalke pilots stag-

John Holland of Cotswold GC being presented with his 70th birthday present, a painting of his ASH-25 by Roy Layzell, by Andy Davis. See the last issue, p102.



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We run courses at all levels, from complete beginners (about 25% of our trainees) to BGA approved instructor courses. Many of our pupils come from other clubs to boost their skills or to overcome some shortfall in their own club's training programme. To date, over 80% of our pupils have returned to us for further instruction.

We have a motorglider based at Ben Nevis for those who find Scotland more convenient or attractive and offer motorglider PPL training all year round at Shenington. Silver C conversions cost about £600, Bronze C conversions cost about £1100 and SLMG PPL from scratch costs about £2100.

STOP PRESS: Advanced and cross-country courses (using glass-fibre two-seaters and our new LS-4) begin in June.

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gered away with five of the cups as a reward for their record-breaking flight.

We flew between the rain and snow showers on Easter Monday open day and made many new friends.
K.E.P.

NORTHUMBRIA (Currock Hill)
The Pawnee is having a three year check and our gliders their Cs of A at the beginning instead of the middle of the year. Ian Tait has gone solo.

Wings were presented to new solo pilots during our wings night and trophies went to Martin Fellis (Ladder, League 1); Jon Pickering (Ladder, League 2); Dennis Driver and Colin Tweddle (best flight in a club two-seater); Steve Fairley (wave trophy for 15 500ft) and Tom Corrigan (best progress). The prizes were presented by our local TV Met man, Bob Johnson.
J.T.C.

OXFORD (Weston on the Green)
Apart from maintenance and Cs of A, the "quiet season" has seen Simon Hogg and Phil Hawkins qualify as AEIs. Cross-country flying started with a few promising days in March.

Our CFI, Chris Emson, proposes to introduce 0930 briefings every flying day from April.
F.B.

PETERBOROUGH & SPALDING (Crowland Airfield)
Despite the rain, we have flown most weekends. The club fleet is now all glass, a Grob Twin 2 having joined our two Puchacz and Sport Vega - members also have the use of a privately owned Pirat.

Jean Smith, Alan Flintoft and Richard Trives have gone solo. Richard is the first of the ATC cadets affiliated to our club to have soloed. Mike Edwards and Glenn Williamson have Bronze badges and Bob Shamman a full Cat rating.

Bert Loftus, a founder member, has reluctantly hung up his goggles. Bert first flew almost 60 years ago and has been offered a life membership in recognition of his contribution to the club.

The dinner-dance was most enjoyable with trophies presented to Roger Gretton (ladder winner, CFI's trophy and longest cross-country - 500km twice!); Dick Thirkill (ladder runner-up); Trevor Nash (100km shield and most spectacular field landing); Brian and Pete Crowhurst (two-seater trophy); Bob Darby (wooden spoon) and Bert Loftus (worst retrieve).
G.E.W.

SCOTTISH GLIDING UNION (Portmoak Airfield)
Early spring flying has been good, with strong thermal and wave climbs resulting in a satisfying crop of results. Our evening flying groups have started again with large attendances.

Muriel Kennedy has gone solo; Gavin Goudie has Silver height; Mike Edwards Gold height and Kevin Hook gained his 100km diploma in March, which was one of the earliest cross-country thermal flights of the year.

We have sold one of our K-13s to Ireland to make way for two K-21s due for delivery in September. This will form the start of our re-fleeting programme. Visitors are always welcome.
G.S.G.

SHENINGTON (Shenington Airfield)
Mary Meagher organised a very enjoyable gliding dinner and raised enough money to fund two "Brummieglide" sponsorships (see photo).

At our AGM in March the committee was extended by three to reflect the much increased membership. The CAA safety evening was well attended.

We've had a busy few months and the site is now operating seven days a week in conjunction with The Gliding Centre. We have a new K-13 and K-8 in addition to the many other gliders on site and bought a winch.

We've had lots of successful ridge, wave and thermal soaring through February and March with Simon Adlard setting a new site record of 11 500ft.

Tony Heslegrave has a Bronze badge; Brian Thompson, Alex Hartland and Arthur Carpenter Bronze badges and a Silver leg; Mark Stevens and James Clarke have Silver badges; Colin Edmunds, Terry Herbert, John Whiting, Tessa Wilson and Mark Stevens have AEI ratings and Paul Gibbs is a full Cat.
T.G.W.

SOUTH WALES (Usk)
The long winter was put to good use by Peter and Simon France preparing club gliders and trailers and Harold Armitage and his team re-roofing, reheating and refurbishing the clubhouse.

We had enjoyable winter expeditions to Cotswold GC. Jim Marsh and Rod Weaver have AEI ratings.

The season started well with several good wave flights to 15 000ft and a 250km flight by Dave Jobbins in March.
M.P.V.

STRATFORD ON AVON (Snitterfield Airfield)
We are flying seven days a week this season with courses, a task week and an expedition to Sutton Bank. We also have Bronze badge lectures and an AEI course in the autumn.

We are adding a new K-13 to the fleet and several syndicate gliders have been refurbished, notably the K-6CR, Oly 460 and the Dart 17 with a colour scheme which must be unique and defies the imagination.

Phil Pickett and Geoff Gale are BGA inspectors and Sharon Edlin, Phil Pickett and Neville Skelding have AEI ratings. Roy Wood and Bob Hill have joined the committee and Geoff Butler has become membership secretary. A club ladder has been set up by Brian Marsh to encourage cross-country flying and two pilots achieved over 3hrs in mid March with strong thermals rarely experienced so early in the year.
H.G.W.

SURREY HILLS (Kenley Airfield)
We had a full programme of winter flying, despite adverse weather, and work has been completed on our newly acquired K-7.

At our successful March AGM prizes went to P. Freeman (*ab-initio* award); G. Burrup (club award) and R.Mace, T.Pearson, D.Williams, A.Frost, M.Hughes and C.Fiorentini (our new AEI pilots who won the Alex Wright award).

R.Harvey and N.Hearn have Bronze badges and M.Hughes flew Silver distance in the K-8 in difficult conditions.

For the third year running we start the season with a new single-seater - this year a SF-27. We welcome visitors to our five day week operation with an updated fleet of two K-7s, Bocian, T-21, two K-8s, Swallow and now the SF-27.
S.P.D.

RATTLESDEN (Rattlesden Airfield)
The annual dinner and prizegiving was a great success. Awards were presented by the CFI to Kevin King, Richard Goodchild, Karen Wright, Mike Lee, Mark Taylor, Martin Raper and Simon Goodchild. The quiz shield went again to team Vega - Andrew Howell, Andy Page, Adrian Cleveland and Kevin King.

Thirty-five turned out for runway repairs - a good effort.
M.E.

SHALBOURNE SOARING SOCIETY (Rivar Hill)
The weather has been horrendous with little flying. A group went to Lleweni Parc and Denis Maynard reached Gold height. Jim Gavin has gone solo.

Unfortunately thieves have broken into the container again and stolen the new roofing materials for the clubhouse. Carol Pike is back flying again after his serious illness at Christmas.
J.R.

SHROPSHIRE (Sleap)
Spring has really sprung in the last two weekends in March at Sleap. We flew 91hrs in 33 flights in three days. On the 26th four flights were more than 300km. One was by our newest member, John McLaughlan who flew Diamond goal after little more than a year's gliding (but he does fly jets for a living).

We still have a spare slot for another syndicate and room for visitors, see our advertisement in the classified section.
T.A.

SOUTHDOWN (Parham)
With the return of the K-18, the club fleet is now completely refurbished, due in large measure to "Dad's Army" under their leader, Ron King.

After a disastrously wet spring, our best soaring day was on March 26 when the airfield was closed for the Point to Point.

An expedition to East Sussex GC gave us much needed soaring off the winch and one to Denbigh produced Gold heights for Kevin Pickering, Teresa Telus and Chris Hancock.

Craig Lowrie may have missed his Diamond height by 80ft because the trace was fixed with shrinking dope!
P.J.H.

THE GLIDING CENTRE (Shenington Airfield)
The club fleet has risen to 16 gliders and four motor gliders. The courses are nearly full and motor glider PPL training seems to have taken off with courses most weeks.
M.F.C.

THE SOARING CENTRE (Husbands Bosworth)
The season is well underway with the first 100km by Steve Crabb and the first 300km flown on March 26. Tom Burton did the first Silver distance in the Junior. The courses are well attended ➡

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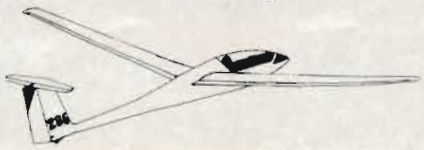
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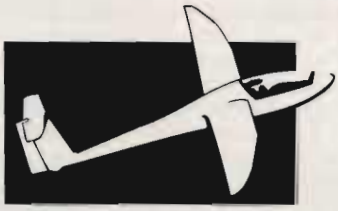
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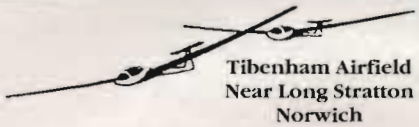
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with two women-only courses later in the season.

We have a number of new gliders including Tony Head's ASW-19, Iain Freestone's Glasflügel 304 and Phil Marks ASW-12. This is the only ASW-12 in the country and was imported by Phil from America in exchange for a Kestrel.

Further improvements include fitting a turbo to our four drum winch by Roger and Lester Goodman, which now provides neck jerking acceleration as well as a high launch rate. The flattening of the field has been finished giving us one of the smoothest sites around.
T.W.

VALE OF WHITE HORSE (Sandhill Farm)
Our annual dinner was a great success in March with two awards for cross-country flying going to Gerald Brown (in his LS-7); best progress to solo to 16 year-old David Leach; best progress since solo to Richard Kill (Silver height and duration) and best flight in a club glider to Roger Tyack (Silver distance and duration in the K-18).

This year is getting off to a good start - all four club aircraft have Cs of A, the third winch is complete (thanks to Eric Brown and Colin Winnall) and John Ashcroft flew 300km on March 26 - a first for March!

Thanks to CFI Gordon Walker's winter lectures many solo pilots have passed their Bronze papers

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We have begun to upgrade our club fleet by giving our K-13 an electric vario (and averager) which will greatly help the cross-country instructing planned for this year.
S.F.

VECTIS (Isle of Wight, Bembridge)
Owing to the wettest winter for some time we have had little flying since the end of November. However, it has allowed us to do some much need maintenance on the gliders and club machinery.

This year is our 10th anniversary and we are planning an open day where we hope to give Major Pat Fergusson his first flight in a glider. Major Fergusson was involved in building the Colditz glider. We have bought a Blanik from the RNGA at Lee on Solent. The field has just begun to dry out and we have started flying with many check flights after the long lay-off.

Our DCFI John Kenny is running mid-week flying from May to July and will be leading the expedition to Thouars in France in August, hence the reason for no mid-week flying in during that month.
M.J.H.

WELLAND (Lyveden)
The K-7 has been re-covered and painted cream and red, we have a new launch signalling trailer, a fire extinguisher trailer and the retrieve tractor has been repaired.

Meyrick Jones took over as chairman from Ken Preston at the AGM and Peter Willock, Barry Chadwick (CFI) and Ken Wells have joined the committee. Our treasurer, Chris Hill, has retired.
R.H.S.

WOLDS (Pocklington)
Summer started early with good days on March 19 and 26 when Phil Barrat gained his 5hrs; "H" Craven Silver height and several 300 and 500kms were attempted. Roger Bentley went solo.

Our Pawnee tug is back after a long winter lay-up having its wings re-covered. We have a trip to Lleweni Parc taking 13 gliders and around 50 people.

The busy holiday courses start soon, no doubt old friends from other clubs will be coming on expeditions and we have our Two-seater competition in August.
M.F.

WREKIN (RAF Cosford)
The past two months have been quite successful in spite of the bad weather. Alan Podmore and Jim Anderson have gone solo. Chris Gault gained his 5hrs and Silver height in one flight.

The cross-country season has started in earnest. Richie Toon flew 300km, Brian Mackenzie completed part 1 of the 100km diploma and Les Simpson unfortunately landed out on his first cross-country for several years. The K-21 has flown 100km for cross-country training.

CFI John Sullivan completed the first hour off the winch. The mini expedition to Lleweni Parc by Mick Davis and Dave Judd was a great success with over 27hrs flown in two days and wave up to 16 000ft.
I.C.

YORK (Rufforth Airfield)
The season began in early March with 4kt wave to 16 000ft and later in March 4kt thermals to 5000ft. Our moves to reduce our land loan are working with £20 000 paid off in the last season. We are organising several gliding open days and a fly-in for motor gliders.
H.McD-R.

YORKSHIRE (Sutton Bank)
Good wave, thermal and ridge days have given us an excellent start to the season. On March 26 Nick Gaunt (LS-7) flew 300km O/R to Wooler, Northumberland.

Mark Jerman has gone solo and Gail Watson re-soloed. Carl Perkins and Paul Foster have Silver distances and the wave brought a Silver height for Carl Perkins and Diamond height for Barry Ogleby.

Our annual dinner-dance proved a great success. Andy Wright won a trophy for the longest flight of the year and also the BGA award for the earliest 500km flight of 1993.
C.L.

AUSTRALIAN NATIONALS

The Queensland Soaring Association, who are hosting the Australian Nationals, say the dates have been put forward by two weeks to October 11 to 21 with two practice days starting on October 9.

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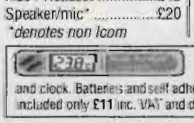


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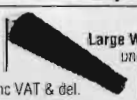
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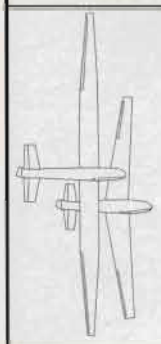
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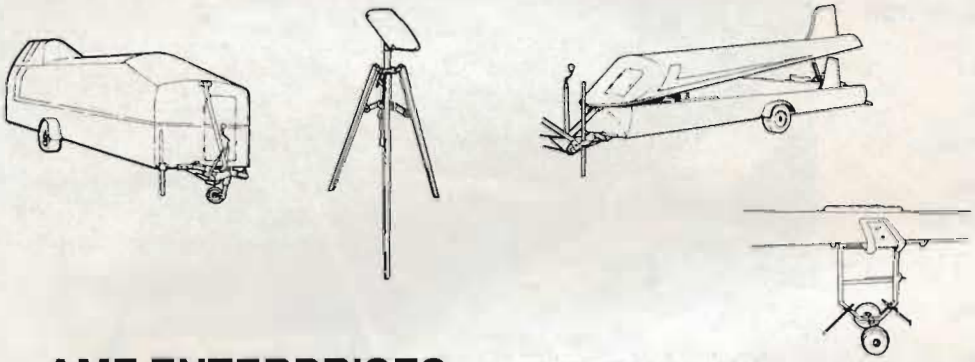


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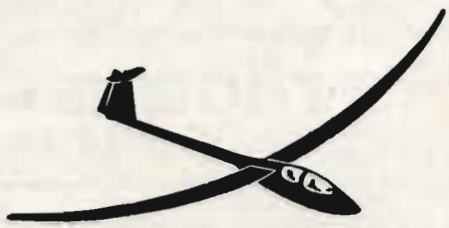
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WAY OFF TRACK



On the beach

Having passed the point at which one can no longer claim to be regarded as a sagacious elder and is more readily viewed as a silly old fart, Penguin recently moved. Into other hands passed the spacious suburban family home, no longer required as the children were long since gone. We migrated to an ill-finished and pokey hovel on the Co Down shore. For Penguin Place now read Penguin Plage.

The surf breaks literally yards from Penguin's door. My view, as I write this, is of Scotland's Galloway peninsula on the horizon; cranking my stiffening neck round to gaze further south I could dimly perceive the Isle of Man if it were not for the squalls and supertankers in between.

Compensation for the severe stress which trading down into a smaller home entails; moving house during a spell of the most evil February weather and the jettisoning of half a lifetime's diligently hoarded toot is the arrival of some credit with the bank.

This was almost instantly converted, in Penguin's case, into a pair of nice long wings now reposing in the Bellarena hangar and a little VW Polo for Hen Penguin to buy some compliance on the distaff side.

I've only flown the Jantar twice so far and, on this squally Good Friday, April Fool's Day, am earnestly praying for the gales to cease so that some flying may be possible tomorrow or later during the Ulster club's traditional Easter week.

But two flights - the first a fraught experience with no forward view whatsoever through a heavily misted canopy and driving sleet - were enough to reaffirm my adherence to the doctrine you have so often seen expounded in another place - TINSFOS. Plat, old son, you are so right!

Nineteen metres of immaculately profiled and polished wing, with an elastic flap, sure beats the hell out of the club K-6CR or Capstan, to which I have been for too long confined.

And while waiting for the gales to abate I'm able to gaze over to Scotia's shore; recall the many pleasures I've had at Aboyne - in particular, the very memorable 1983 Competition Enterprise - and wonder how the Manxmen will make out with their newly established club on an island which I can just see but have never visited.

Meanwhile, I'll nominate myself for Murphy's Plate. Who else but someone with congenital cock-up ability would combine acquisition, after so long, of a long-legged sailplane with moving even further from the site, now an additional 24 miles - a total of 96 miles - away?

The one saving grace, that perhaps you in congested mainland Britain may not appreciate, is that you can drive for two hours to the airfield here and still feel fresh and unstressed enough to fly.

...and on the beaches

I'm unfailingly polite to grannies and warm particularly to any who also runs a Super Cub. So Mary Meagher, who I've never met, is on the inside track for my esteem, even more so after her splendid portrayal in the April-May issue, p87, of the appeal of the joint Dublin/Ulster Kerry safaris.

I attempted this task with far less success back in December 1977 without the assistance of Dan Begley's magnificent photos which added so much to Mary's piece.

Combined with Peter Denman's graphic account of a starkly terrifying white out while flying from Fermoyle, p89, it made an issue to remember over here.

But I felt a tinge of disappointment at the omission of any mention of the *third* beach used in Kerry, albeit it far less frequently than Inch or Fermoyle. It is Rosbehy which, like Inch, is a sandspit beach projecting from the shore and on the other side of Dingle Bay, oriented, with Magillicuddy's Reeks behind, to work in northerlies.

If I'm remembered for nothing else in gliding, I'd like to go down as the man who made the first glider flights off both Fermoyle and Rosbehy - and soared in both of them.

A dummy scare

The McKillens' dog found it, cocking a leg over for a passing pee, and Fleet Air Arm veteran "Sailor" McFarlane quickly recognised it as a Second World War contemporary of his.

"It's a bomb," he said, "a practice bomb." But it was lying in the middle of the Ulster GC's domestic site, beside Belle and Harry's caravan.

We retired to a safe distance to the clubhouse and someone put the kettle on. While we thought about it over coffee, a member had a bright idea. "Perhaps we ought to call the police" she said.

Three fuzz, bristling with hardware, duly arrived. "I think we ought to call the sergeant. While we wait, do you think we could have a coffee too?" one asked.

In time the sergeant, acccompanied by lesser flatfeet, arrived. Clearly a man of decisive action, he drank his coffee, too, before formulating his response.

"It's a job for the military, this," the three-striper said.

Some time later half a platoon of squaddies arrived in armoured Land Rovers. One of Sandhurst's brightest and best was in command.

Showing some familiarity with gliders, having flown at Talgarth, he, too, was a dynamo who should go far. "This is one for Felix," he said. "While we wait could you please put the kettle on?"

Felix is the collective code name for the chief ammunition technical officer in the province and all his acolytes. In due time yet more armoured vehicles were bumping down the track as Felix and armed escorts arrived from Stroke City, 25 miles away.

"Stroke City?" you ask.

It's verbal shorthand which saves time and obviates the need to say "Derry-stroke-Londonderry" to keep citizens of all persuasions and traditions happy.

By this time the clubhouse was bursting at the seams. About 30 squaddies and fuzz were busy thinking about it - and drinking our coffee as they thought.

Felix and his closest aides set to work beside Belle and Harry's caravan. We wondered whether they'd set off what the Army euphemistically calls a controlled charge to send the caravan into orbit - or simply blow it apart.

Meanwhile, we stayed inside, drank coffee and thought about it.

Eventually, the all-clear came. The alert was over. There had been no bang, no controlled charge.

We felt a sense of anti-climax - so put the kettle on.

"Concrete," Felix said when - over coffee - he was asked what the bomb contained, thus confirming what our in-house expert, Sailor, had been saying all along.

Felix wouldn't allow us to keep the concrete bomb as a memento, spare ballast weight, tie-down or even as a trophy for the lead balloon pilot of the year. If it were left lying around, he said, it might start another scare.

We never did identify the joker who we assumed had found it lying on the mudflats or sand dunes of Lough Foyle, which were RAF bombing ranges 50 years ago, and who thought it looked better beside Belle and Harry's door.

But we did find that while an Army might *march* on its stomach, it can drink a phenomenal amount of other people's coffee while it *thinks*.

Fright manual

Luckily, I didn't read the Jantar flight manual before I shook hands on the deal and signed the cheque - for otherwise, it might have scared me off.

It is akin to those Japanese instruction leaflets years back, before they dropped their stiff Nipponese pride and began to employ native English-speakers to write them. But the Poles make it so more entertaining while also, oddly, crystal clear. ➡

Like this, warning of the launch: "As most of the great span ships, JANTAR 1 (especially with the waterballlast) makes some troubles in the very soon phase of the ground run according to its tendency to drop down the wing towards ground."

To avoid groundlooping, you should "Avoid the start from the high grass" and "Precisely find the start direction against the wind and skillfully support the wingtip".

Tortured, perhaps, but certainly unambiguous.

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Hollowing out the Heavens

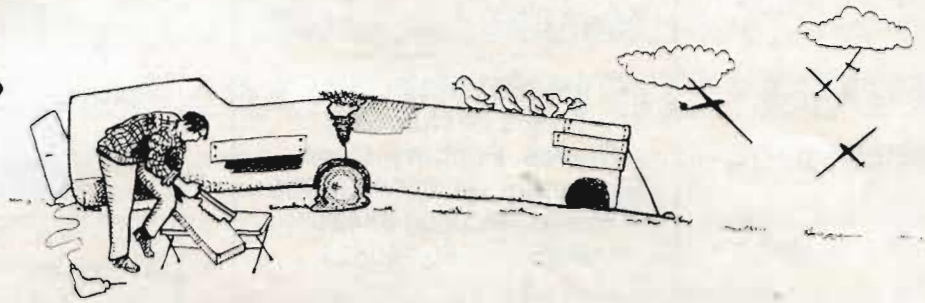
Soft borne upon ground warmed air 'tis not
but boisterous bubbling cauldrons in the sky unseen
that lift you to the very heights of joy
or tip you out to sink to earth again.

Struggle as you must to stay that cobbled course
tight bound up in your white crossed cage
augering ever upward to the sunlit grace
hollowing out the heavens.

The heavy footed ones feel not the pain
nor know the fleeting sweetness of the day
when jesting gusting winds give forth their gain
to raise the spirit and the lowly clay.

When winds ebb swift away at even's call
and sinking suns take with them all their power
flaps down and spoilers break that magic spell
the rumbling wheel on Mother Earth to lower.
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Correction: We regret that in the Club Directory in the last issue, p80, the Essex & Suffolk GC tel No. was incorrect. The contacts are: Kevin Bye (Secretary), 199 Sheldrake Drive, Ipswich, Suffolk IP2 9LE, tel 0473 882279 and John Friend (membership secretary), 64 Severn Road, Ipswich, Suffolk IP3 8PU, tel 0473 720429.

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Barry Rolfe
Promoter

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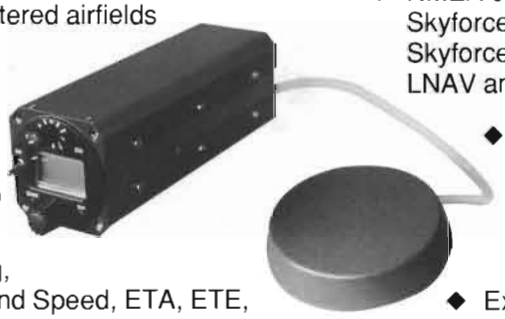
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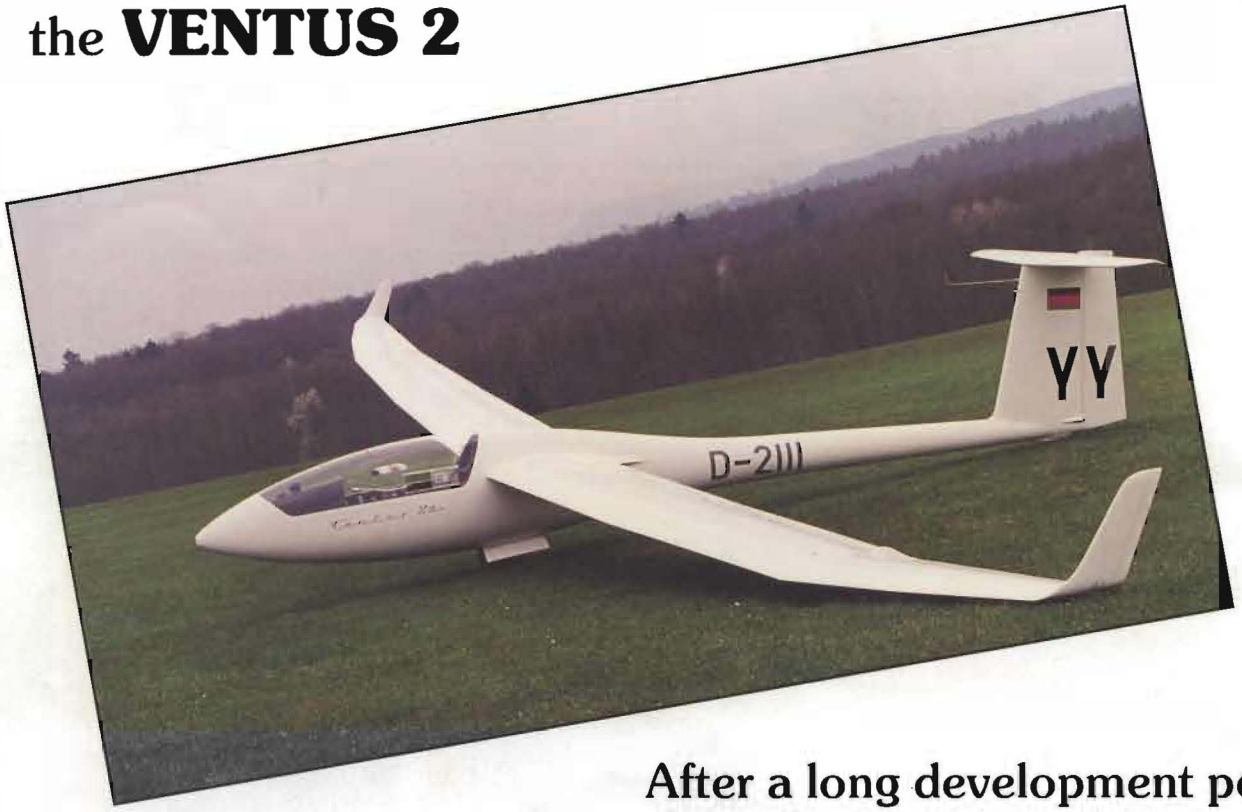
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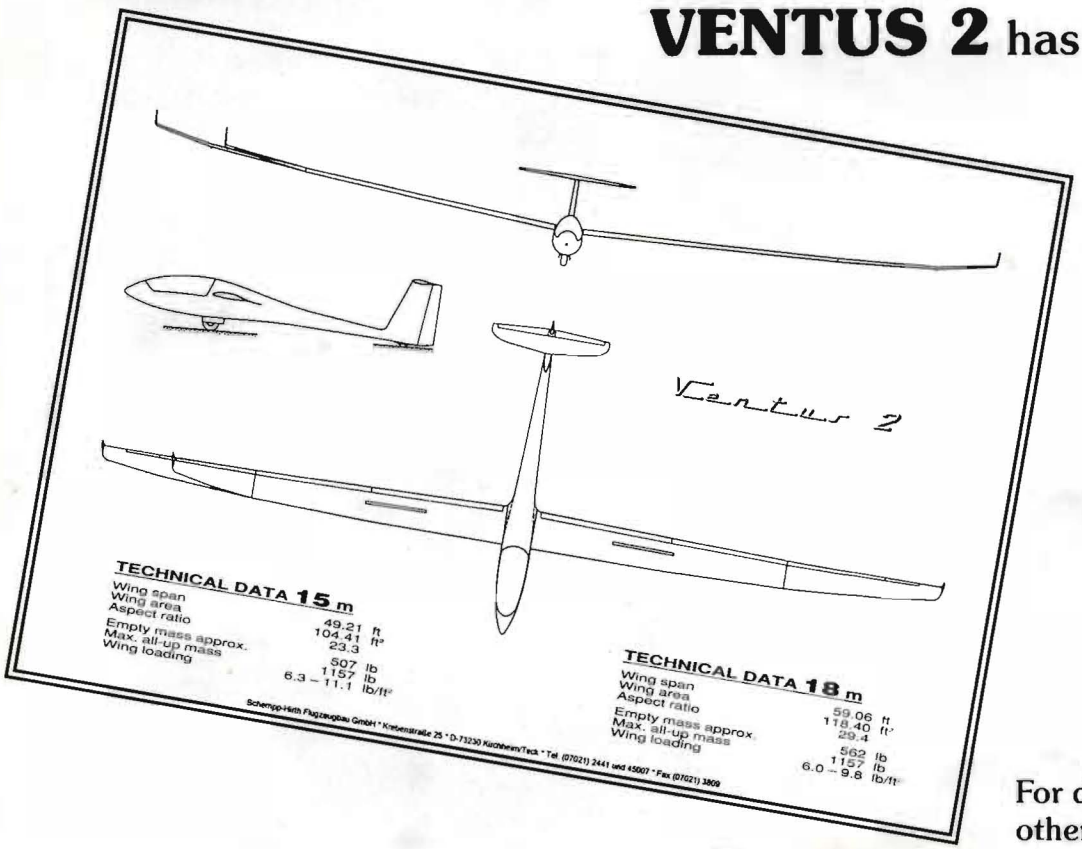
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