SAILPLANE & GLIDING

June — July 1973

30p

AT LAST!

A 360 channel radio designed by Terry McMullin especially for gliding and light aircraft use!

ANNOUNCING THE ASH.360

Compare these features:

1. High sensitivity for maximum receiving range. An input of 1 micro volt gives 10dB signal to noise ratio.
2. 2 watts r.m.s. R.F. output with speech clipping for maximum transmitting range: equivalent to 8 watts p.e.p.
3. Audio Output 1 watt with provision for use as an intercomm facility.
4. Low power consumption—only 50 milliamperes on receive standby and ½ ampere on fully modulated transmit at 12 volts.
5. Type Approval, Class 1, Light Aircraft category F already applied for.
6. Specially designed instrument panel for the Kestrel incorporating the ASH.360 into the console.
7. Fully guaranteed for 15 months.

Price £295 (excluding V.A.T.)

Available from Slingsby Sailplanes, U.K. sole distributors to the gliding movement from 25th June 1973.

AND NOW—A 2¼ inch diameter, fast response Vane Type variometer to make room for it! 2 seconds response time. The WINTER Type STV-55 10-0-10 knots.

Price £46 complete with flask (excluding V.A.T.)

SLINGSBY SAILPLANES
KIRKBYMOORSIDE, YORKS.
Tel. 31751 Telex 57911

YORKSHIRE SAILPLANES LTD.

ANNOUNCE

THE Ys 53 SOVEREIGN

ALL METAL TWO-SEATER

INCORPORATING

- ★ **NOSE HOOK FOR AERO-TOWING**
- ★ **LIGHTER CONTROLS FOR BETTER HANDLING**
- ★ **DE-LUXE COCKPIT INTERIOR**
- ★ **GLIDE RATIO OF 1:28**

AGENTS FOR

PILATUS B4

ALL METAL SINGLE-SEATER

GLIDE RATIO 1:35

For further details contact:

GERRY KEMP or JIM BECK

Yorkshire Sailplanes Ltd., Melmerby Industrial Estate, Melmerby, Ripon, Yorkshire Telephone: Melmerby 391 (STD Code 076 584)

WE ARE GETTING BIGGER

SAILPLANE & GLIDING is changing its format. This was decided at the last Magazine Committee Meeting and follows literally months of careful consideration and costing.

It was felt the larger size will help project a modern image and give greater scope for the presentation of articles, photographs and illustrations.

We are naturally excited by this step and hope our readers, including the minority who admit being resistant to change, will assess it an advancement, not a retrogression.

Obviously it wouldn't be practical to alter during the middle of the year, so we will wait until the beginning of 1974 for our new look.

SAILPLANE & GLIDING

OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION

Editor: Gillian Bryce-Smith

Consultant Editors: Alan Slater — Rika Harwood

Subscriptions: Frances Tanner

Committee: A. W. F. Edwards, Chairman — R. Q. Barrett — M. Bird G. Harwood — P. Wills

Advertisement Manager: Peggy Miéville, Cheiron Press, 8/10 Parkway, London, NW1 7AD Tel. 01-267 1285

CONTENTS

Cover photograph: Calif A-21, see p190 for details

Published by the British Gliding Association, 75 Victoria Street, London, SW1H 0JB Tel. 01-799 7548/9

Printed by Taylor & Francis (Printers) Ltd., Rankine Road, Basingstoke, Hants

READING A MAP

This is the first of three articles written by Ann Welch *for the less experienced cross-country pilot. The next is "Reading a Weather Map" with "Foreseeing a Collision" completing the trio.*

GLIDER navigation is basically map reading. The compass is useful only for maintaining the correct intended direction—but only if you know what that is in the first place. There is much to have to concentrate on when flying cross-country, but early ones at least are usually done in good visibility, so that eye-ball location of the landmarks ahead is easy.

This is a basic difference from light aeroplane navigation where you calculate a course from a compound of speed, wind, magnetic variation and deviation etc simply because you may not be able to see where you are going—and this is why in an aeroplane it is not difficult to go miles off course without realising it. In a glider you essentially fly visually from landmark to landmark, locating the first one before you leave base and *remembering to locate each next one before you finally lose sight of the last.*

Because you are travelling relatively slowly and seeing the world by constant circling there is absolutely no reason why you should ever get lost. But life is not like that; it is just as easy to get lost in a glider as in any other sort of airborne vehicle, balloons not excepted. There are many reasons:—

- Mistakenly or carelessly starting off in an unintended direction.
- Concentrating on circling and forgetting about position.
- Getting low and fumbling endlessly in weak lift.
- Assuming that you won't get lost, and/or
- Deceiving yourself that the features on the ground and on the map tie up, when they don't.

Since it is important that you do not get lost, and by lost I mean really lost and not merely temporarily unsure of the actual position, some planning is necessary.

The first step in navigating cross-country is to think about it—not at breakfast on The Day but from the moment you land after getting your C. On that Day celebrate by buying yourself a map preferably without a transparent film surface. At this stage the ¼ million, about 4m:1inch, is probably more useful than the half million. Now, find out and list the usual Silver badge milk runs and 100km triangles that are used from your club and study the map with these flights in mind, drawing any track lines with a soft pencil. Fold the map so that the most likely cross-countries are presented in a manageable way, and do not do any further solo flying without taking your map along.

There are two ways of looking at the map. Normally, that is with N at the top and the ability to read all the funny names; or easily that is, turned so that your line points "through" the nose of the aircraft and the way that you will want to go. This is simpler for all flight directions except, of course, N.

Flying Straight. In the air teach yourself what the countryside should look like for starting off in the various cross-country directions, and how to fly straight on track. For example: "we should pass about a mile to the left of that town, and right away in the distance I can see the Downs—they should be about two to three miles away to our left if we should ever get that far."

Now point the glider in the direction of this future cross-country, give the compass time to settle down and read what it says. If you have plenty of height, fly off in the intended direction a mile or so strictly on the compass heading and see what happens. The wind will probably drift you off your hoped-for line; so get some more lift, go back and start again, this time heading a bit into the wind to counteract the drift. Fly off on this new heading and see what happens.

With a bit of practice you will find that you can soon build in an approximate drift correction without wasting time, which means that you will now

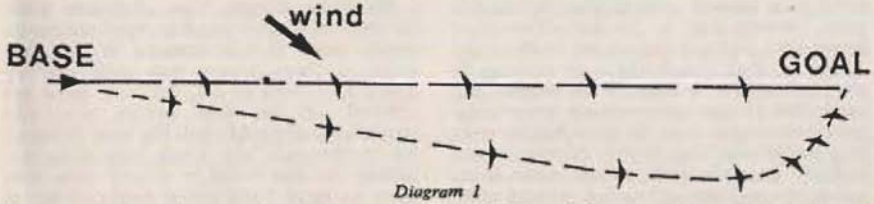


Diagram 1

have a better chance of starting your real cross-country in the right direction, and of flying to your landmarks or goal in a straight line, instead of creating one of those beautiful shapes that is really best left to a french curve (Diag. 1).

Now to concentrate on reading that map. What you are trying to do is to continuously relate your position to those of ground features around you. What you are *NOT* trying to do is to know all about the hamlet directly beneath you —it is quite unimportant even if your girl friend lives there. You can relate your position by *comparison*—"My line goes exactly between Newtown and Oldburg so I will be on my line if each town stays about the same distance away on either side of me."

You can also relate your position by the angle of ground features to your pencil line on the map—"I am on my line if the motorway that I should see soon converges at an angle of about 10°," or, "When I hit the canal it should be exactly at right angles to my approach."

If these things happen as expected you are flying in the right direction, so observe the compass heading. And get into the habit of checking the time on reaching prominent land marks. When planning a flight you should note any line features within ten, even 15, miles of your track because, certainly in Britain, there are enough roads, railways, rivers, bridges, or canals to almost guarantee you will not get lost if you use them properly.

Look at the map and you will see that such features invariably make a collection of contained areas more or less straddling your line. If you are over any of them you cannot be lost unless you fly across its boundary by mistake—avoidable by simple observation. Using containment areas means that you can constantly check on whether or not you are making good your line, or whether you should head a bit more into wind between thermals.

It will be seen from Diagram 2 how, for example, you would set off from base, getting a preliminary check from

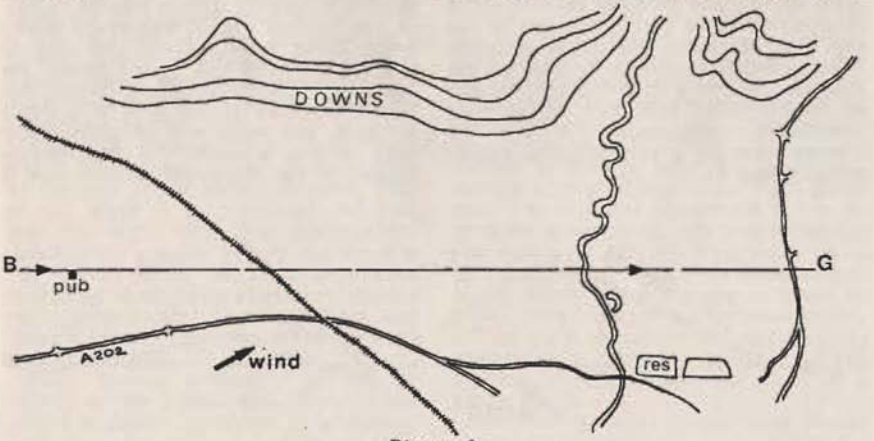


Diagram 2

some well known local landmark like the pub, passing just to its left. You now know that you are setting off in the right direction, but ahead there is nothing in the featureless landscape to make for next. But if you continue on your compass course (so you fly straight) in even approximately the right direction you cannot become lost unless you cross either the railway or the big A road without noticing it. If visibility is in excess of five miles you should be able to pick up one or the other quite soon. As you fly or circle nearer check the angle of the railway to your apparent approach path and then check it against the line on your map.

If you are approaching the railway, or it is approaching you, too square on there is obviously drift from your right, so between thermals you should head off at an angle to the right of your line in order that your final path made good continues to straddle the line on your map. If the lift is strong you will not have such a problem with crosswinds as you will when the lift is weak, when you have to spend such a long time in the thermals that you get carried away, literally.

Initially it may be difficult to know at what sort of an angle to your line you should try to fly to compensate for the wind, but what you are aiming for is to be able to start circling in each new thermal from a position somewhat upwind on the line on your map—since it is going to leave you downwind at the top. It is, of course, possible to calculate a very efficient course to fly from all the relevant data, but since the efficient use of the lift should have first call on your overloaded concentration it will be enough to make a commonsense assessment. (Diag. 3).

Minimum Angle. You obviously want to head into the wind at the minimum angle, since if you overdo it you can reach a stage where you may not be going anywhere at all, but you must get upwind of the line before you can reasonably expect to use the next thermal. So if thermals are weak and close together but the wind is strong, you may have to head back at an angle of up to 45° to your line, but never more; if, however, although the wind is fresh thermals are strong and well spaced out you will be able to make your way to windward of your line at a much more gentle angle.

But what do you do if, after a particularly tedious spell of circling in a thermal with a strange glider whose pilot does not appear to have noticed you, the countryside below has gone all strange? First of all note the time and do a couple of gentle circles looking carefully around to the horizon for any feature, *however far away*, that you might recognise; and check back to when you were last on course with a position-time check. The elapsed time since you passed the position may enable you to work out roughly how far you could have flown.

Look Around. Refresh your memory with a look at this position on the map. Have a really good look around to see if this feature is still even faintly visible. If not, return to the near horizon, study for a large feature, and endeavour to positively identify it. It is helpful to stay in any thermal even if you use it badly; avoid flying vaguely about. As soon as you have located this large feature—the Malvern Hills, Southampton Water, the East Coast—try to see if it is possible to work out some sort of relationship with it. For example, "If that distant estuary is the Bigmouth, as I'm sure it

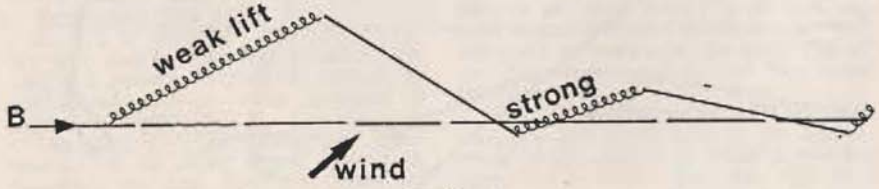


Diagram 3

is, it runs N-S and I am NE of the bend in it, probably about 9-10 miles NE. So what other features should I be able to see?" (Diag. 4).

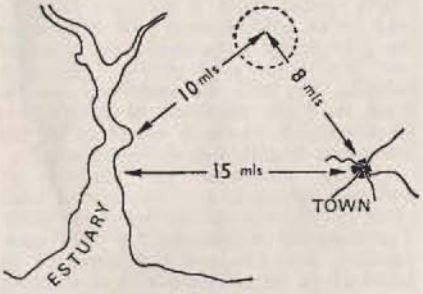


Diagram 4

Look at the map. 15 miles to the east of the Estuary a large old town with lots of roads radiating from the centre is marked. Work out in which direction to look for it and do so. If you cannot see it, but you ought to be able to, check again that you are looking in the right direction and look all around there. When you've located the town—and it has to be there somewhere if you got the estuary right—you now have two checks. You are about 9-10 miles NE of the estuary bend and about 8 miles NW of the town. So you now have an approximate position. So look around again, a bit nearer now either at the map for a feature that you can look for on the ground, or for a prominent landmark that should be on the map. When you have located this you know exactly where you are.

All you have to do now is to note the time, find some more lift, use it efficiently, work out which way you ought to go, positively identify some good features ahead in relation to either your line or the temporary line you need, hopefully, to make good your track, and go singing on your way.

The first CROSS-COUNTRY and AIRSPACE

Advice from JOHN ELLIS

Chairman of the BGA Airspace Committee

AS a certain well known comedian might say, if he was a glider pilot, "Airspace is with what we fly in". This is true, but lots of other people fly in it as well, and when I talk about Airspace, I mean those bits which we cannot fly in or those bits which we can fly in, but only some of the time.

The first cross-country flight in a glider often takes a real mental effort on the part of the pilot concerned. First of all, there is the planning required, then the right day, then the apparent difficulty of actually getting the beast to stay up at all in the local area—even though all those other people are soaring up to great heights, including those who haven't yet got their Bronze C so can't go cross-country.

Then having eventually got up to 3,000ft or so there's the "home aerodrome syndrome" problem to overcome. Once over that, there's usually no thermal to justify having burnt one's boats, and even assuming there is, there's the terrible problem of navigation. All in all, the first cross-country can be a splendid epic, good for much booze in the bar when successfully completed.

Airspace. Often hidden amongst all the other problems of a first cross-country are those of AIRSPACE. It is very difficult to keep in mind that apart from staying up, and flying in the right direction, it is of prime importance not to fly in those areas which are prohibited for one reason or another. This really starts in the planning stage. The usual system is that either a club has one or more, so called, milk runs for first cross-countries, or the duty instructor will approve the cross-country drawn on the map of the aspiring cross-countryee (for want of a better word).

Wherever possible, these routes should be chosen to avoid any possibility of in-

fringement. It goes without saying that they should not be aimed directly at prohibited areas, but also they shouldn't skirt them. They should not if possible cross airways, or go directly over busy power airfields etc etc. This is a counsel of perfection, and if it is possible to plan the route in this way, the pilot can then virtually forget about the Airspace side and concentrate on all the other difficulties.

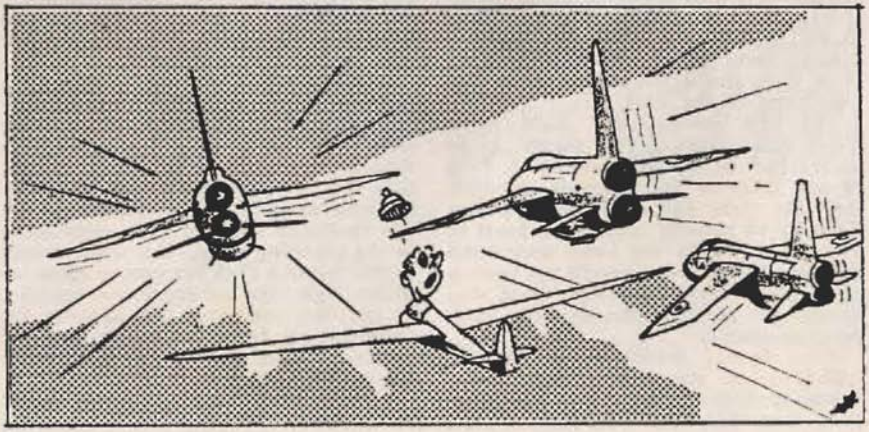
Complications. Unfortunately, of course, we live in a difficult world and many clubs find it impossible to plan flights in this way. There are so many areas of the country where to route clear of all restrictions would mean a cessation of cross-country flying. This implies that having chosen our necessarily less than perfect route, the pilot must have some prior knowledge of the Airspace problems involved. For the milk runs I would suggest that clubs set up a self-briefing service. This would of course show the route on an up-to-date map, with track and distance information and good landmarks marked for aid in navigation. It could also show distinctively all the associated prohibited Airspace with vertical cross sections, including Air Traffic Zones.

Also a repeat of the VMC criteria, both in written form and drawn in vertical cross section with little diagrams of gliders and cloud etc showing what is and what isn't allowed. There is great scope here for the local artist. This makes the job of the duty instructor much simpler, in that all he has to do is to ask one or two questions before authorising the flight—wrong answers—no flight.

For the pilot who has planned a "non standard" first cross-country most of the above applies. First, is the route likely to lead to an infringement and if so does the pilot really understand how to avoid one? This is more a question of thorough briefing, but still the questions can be fitted in. I am assuming of course that all instructors are fully aware of all the Rules and Regulations etc—what else?

Having wandered off slightly by addressing remarks to Instructors, I must come back to the first cross-country pilot. The Airspace regulations are very complicated, but you are not expected to know all of them. However it is common sense to know exactly where you can't go and when. Study your planned route, or the local club route and ask questions about it, it's too late after you've been hooked on. Know the VMC criteria thoroughly, apply them honestly and harm will not befall you.

If you get lost, as does happen on rare occasions, even to those who have actually flown more than one cross-country, decide on whether or not there is a possibility that you might be flying into an area where you shouldn't. If this is likely, no problem, LAND before you get there. But not at that big airfield with several runways, very large buildings in the centre and about two hundred civil aircraft—it's London Heathrow and my word have you got some explaining!



Positioning For Turning Point Photographs

By JOHN GLOSSOP

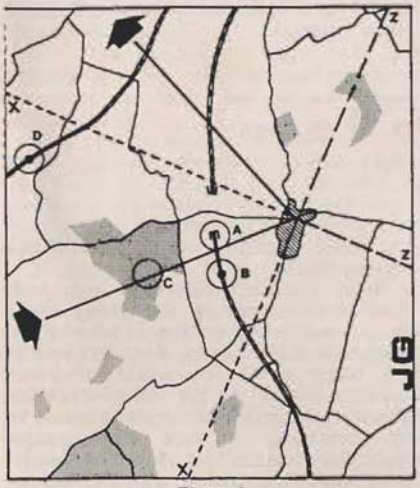


Figure 1

MOST competition pilots take recognisable photographs of turning points, with or without fixed camera mountings, lenshoods back-up cameras etc (see S&G Feb 1971, p10). Many, however, prove unsatisfactory because the glider was not in the photographic zone at the time the photograph was taken.

Marking the zone on the map doesn't always help as the worst field of vision in a glider is vertically below it. The exact ground position of the glider is almost impossible to determine, particularly when at a reasonable altitude.

I have used the method described for several years with a hundred percentage success. (So far!)

Figure 1 shows a sketch of a typical turning point taken at random. In this case the crossroads in Ampthill. The track in is ENE and out NW. The photographic zone is therefore ZZ.

It follows that if a straight line is formed by any feature in sector XX, through the turning point and on to the glider, then the glider must be in the photographic zone.

The railway station at D could be used but in practice a feature as close to the incoming track as possible should be used, *eg* the station B, tunnel mouth A or the large wooded area C. This target feature can be any distance from a few hundred yards to several miles short of the turning point.

The glider should then simply be flown just past the turning point and turned. When the turning point appears as at C, in Figure 2, the glider is banked and the turning point photographed. If the turning point appears as at A or B, the photograph would be taken too soon or too late respectively. In practice the turning point can be rounded much more tightly than the diagram indicates.

The only map marking required is the trackline. Provided the features are correctly lined up, the photograph will be acceptable whatever the glider's altitude or distance from the turning point (subject to the maximum 10km).

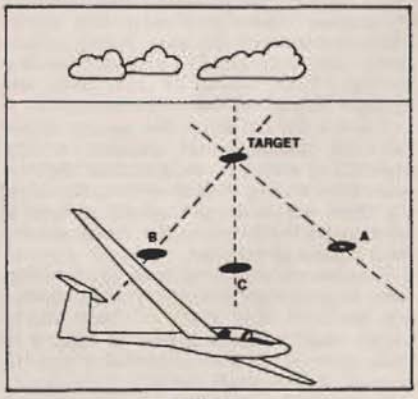


Figure 2

F. N. SLINGSBY

With the utmost regret we announce that after a prolonged illness Fred Slingsby, aged 78, died peacefully at his home on Monday, May 21. An obituary will appear in our next issue.

Is gliding for the "oldies"? Has the sport lost its sense of fun and adventure? Do we discourage the inexperienced pilot with sophisticated equipment and over-taxing competitions?

TONY RYAN of New Zealand asked these questions in a pertinent thesis sent to his country's magazine "Gliding Kiwi". The article stimulated so much comment, he thought it was of more than local interest.

GLIDING—Where Do We Go From Here?

OUR Club is similar to others I have had dealings with and from what I read in both local and overseas magazines, it is not very different from gliding clubs anywhere. But a number of characteristics of this—rather typical—club seem worthy of remark.

Although membership is growing steadily, there is a fairly large turnover, a significant proportion of members "drop out" within a year or so of joining. The usual faithful "hard core" consists almost entirely of "oldies", indeed it is a matter often commented on that young people rarely seem interested in gliding, members younger than about 25 are often immediate family of older members.

While I do not subscribe to the notion that the whole world belongs to the under-20's, still I do believe that there is something wrong with an active, challenging sport which cannot attract at least a representative membership from among the younger generation.

It raises serious doubts as to the long-term viability of the sport if it cannot rely on a regular entry of fresh young blood, eager to have a go and willing to stick with it and so become the hard core of a few years hence.

Forty years ago, when sporting gliding was young, there *was* plenty of young blood in the game—look at photos of early gliding events.

It seems to me that, somewhere along the route, gliding has lost its sense of fun and adventure. This loss appears to me to be a serious one and unfortunately it is closely related to the drive to improve performance to the ultimate through technical advancement of aircraft design which has caused the cost of aircraft—and hence of gliding—to go up as if in a super-thermal.

Now, don't misunderstand me, technical advancement is not wrong and I am not saying that we should all be flying Minimoas and Weihes, *but*, by limiting our attention to the world of exotic "Gummi-flügels" to the virtual exclusion of any real interest in simpler aircraft we are becoming a race of moneyed eccentrics increasingly more separated from the mainstreams of sporting interests—and of new blood.

Time was when a small group of enthusiasts with energy and time, but little money, could build themselves a passable aircraft in a year or two of hard work and then have a lot of fun with it.

Now, you just have to have a very deep pocket indeed, or be content with an ageing wooden aircraft which is still fun to fly and to adventure in—but you have to do it on your own, your aircraft is "not with it" and there is little encouragement for you.

No wonder the young folk pass us by! Or if they are mad keen on aviation they turn to sky-diving or to hang-gliders.

We look with some concern at the

hang-glider advocates, shake our hoary heads and say "It's not cricket" or words to that effect. Worse still, we say "Let's not have anything to do with them, they are bound to have accidents and if we acknowledge their existence they will get us into disrepute."

But, the hang-glider boys have got something—they are having enormous fun, they are flying, and it's not costing them a packet.

You could compare the "official" sport of gliding, as it now exists, to what yachting would be like if it were restricted to the big ocean-going racers only (or motor sport, if it were restricted to Formula I Grand Prix only).

Yachting started to go the way that we are going, but realised the error and introduced a wide spectrum of classes—all of modern design—right down to the tiny one-boy dinghies which encourage the keen youngster to get into the sport early and find his feet in the company of many other juniors all sailing the same type of boat.

Sure, we have a different situation in gliding, I don't forget this, but nor do I forget that drain-off of potential enthusiasts into other sports because they see us as too exclusive and too expensive. (Incidentally, exactly the same difficulties were raised in yachting, when the idea of one-design classes was first discussed!).

In the last three or four years interest in competition gliding has focused on Standard Class as never before. Why? Because the lines of development within the formula have so converged that we *almost* have a "one-design" class and the competition is patently between pilots and not between their cheque-books. This is fine, but Standard Class is still too expensive and exclusive.

We need equivalents to the P-Class dinghies and Moth-Class boats as well as to the One-Ton Cup (Standard Class?) and America's Cup (Open Class?) giants.

Yes, this is, in part, a plea for one-design gliding.

Possible Solution. I'm well aware of the difficulties and that "our situation is not the same as yachting". However, I am sure that, if we want it, the problems can be licked. After all, there are already some "de facto" one-design classes. In the USA 1-26 competitions are quite numerous and attract big and enthusiastic entries, yet the performance of a 1-26 is little better than the average two-seater trainer. Elsewhere the K-6CR fills this role.

High performance is not necessary. A design suitable for home construction *is* necessary. Something aerodynamically better and safer than a Rogallo hang-glider, yet not vastly more expensive, could be the means of attracting a great store of top-pilot-potential into our sport.

Once in, this potential could be realised if there is a reasonable gradation of steps from the cheap do-it-yourself machine up through several stages of sophistication to the Open Class. The keen member could then find all the challenge and competition he desires at whichever level he can afford, or to which his ability will raise him—as happens now in yachting.

Another urgent need—perhaps even more urgent than suitable aircraft, and certainly more immediately possible—is competition opportunities for the relatively inexperienced. We need suitably-graded competitions to encourage and bring-on these pilots. What's more, senior pilots must not be allowed to use these competitions as practice grounds for their own skills.

Discouragement. When this is done (as happens now in local affairs) the junior pilots are doubly discouraged—firstly because the task-setters cannot but help to take the senior pilots' abilities into account and thus set tasks which are discouragingly tough for the relative beginner, but secondly, and even more powerfully, because the beginner has no chance whatever of winning.

The junior pilot is immensely encouraged if he can take home a small trophy to brag about—never mind that it was only a junior competition—he *won* it!! But what can he say at home if he came an "honourable fifth" next in line behind four much more experienced pilots in much better gliders? Other club members may appreciate his effort, but his wife and drinking mates won't, and this could quite easily turn him off gliding altogether, whereas some encouragement and a fair chance to win a minor trophy could have pushed him well ahead.

Most other sports have properly-graded competition, why not gliding?

Suggestions On Handicapping

By M. WELLS

THE present system of handicapping used in this country has for a number of years been based upon an excellent piece of work by the BGA Handicapping Committee. The basis of this system is the assumption of the "average British thermal" which enables climb/glide ratios to be established and allows calculations of speeds and a handicap figure. (See S&G December 1967, p. 459.)

The existing method of handicapping is, however, faulty in that it makes use of calculations based upon a model atmosphere which assumes still air. This, as all pilots know, is not the case. The air is often very far from still, but the existing handicaps are accepted because it is believed that the upwind and downwind components of a closed task will average out to zero knots or still air.

This assumption does appear logical, but in fact it is not true! A glider is for a large proportion of such a task flying against a headwind.

The type of thinking set down above is best illustrated by an example. Assuming a Skylark 3 is flying a task at 90° to the wind, which is 20kts, the present handicap system allows for an average air speed of 28.3kts, and so the pilot will have to allow for a headwind component of approximately 14kts (see figure 1).

This shows that the mean wind in such conditions is not zero when related to a glider. This also raises the point that the lower the performance of the glider, the higher the headwind component will be in such a situation.

Now if the information used for the present handicap system is extended to take account of a standard wind at an altitude of 2,000ft and above, we have an opportunity to establish a more representative handicap list.

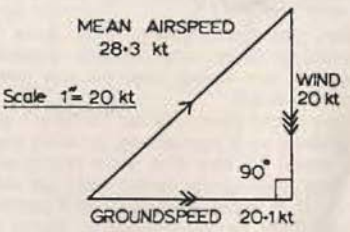


Figure 1

Meteorological stations distributed over the country have collected information on average surface winds. If such averages are taken for the summer months of say April to September and once again averaged for the whole of the country, the "average British surface wind" can be established (see table 1).

Using an average surface wind of 7.7kts, the wind at 2,000ft can be approximated by use of a commonly accepted multiplication factor of between two and three. This will indicate the average wind speed is close to 15kts which can now be termed the "average British wind". This figure also makes allowance for winds which are too strong for glider flights in that this figure could be as much as 22kts.

Having established an "average British wind" we can now calculate actual cross-

TABLE I. Average wind speed in knots taken over ten years

	April	May	June	July	August	Sept	Summer Average
Kew	8.0	7.5	6.5	6.5	6.5	6 5	7kts
Edgebaston	8.5	8.5	7.5	7.5	7.5	8.5	8kts
Mildenhall	8 0	7.5	6.5	6.5	7.0	7.0	7kts
Plymouth	9.5	10.0	8.5	8.5	8 5	10	9.3kts
Abingdon	7.5	7.0	6.0	6.0	6.0	6.5	6.5kts
Aberporth	10.0	9.0	8.0	8.5	9.0	10.5	9.3kts
Bidston	9.0	8.5	8.0	8.5	8.0	10.5	8.66kts
Durham	7.5	6.0	5.5	5.5	5.5	7.0	6kts
Edinburgh	8.5	7.0	6.5	7.0	7.0	8.5	7.5kts

Overall average 7.7kts

country speeds against wind direction for all gliders (see figure 2).

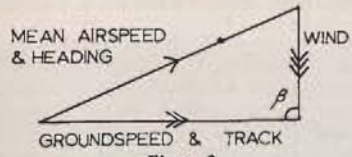
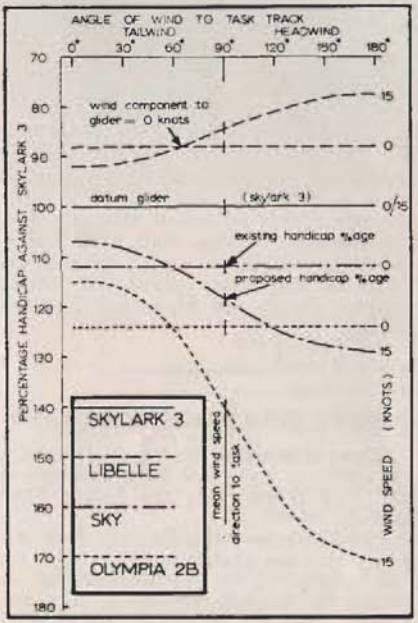


Figure 2

Using the Skylark 3 as the datum glider, the actual cross-country speeds achieved can be used as the basis of the new handicap graph against which other gliders can be related (see graph 1).

HANDICAPS AGAINST AVERAGE WIND SPEED AND DIRECTION



Graph 7

When other gliders are now compared with this new datum it will be seen that the percentage handicap varies greatly with the wind direction. The handicapped performances of gliders calculated on this basis move closer on downwind only tasks and further apart on upwind tasks.

The curve of these relative percentages crosses the existing handicap line well before 90° (or the mean wind direction to task track) and actually crosses the 90° line at an approximate average between the extreme upwind and downwind handicaps. This now allows handicap figures to be calculated on all gliders with the "average British wind" at 90° to task track. See specimen calculations, table 2.

Working back from the present handicap figure, average air speeds for all gliders can be found. This allows calculation of a handicap which has been taken to the nearest 2%.

PROPOSED HANDICAPS

%	Sailplane Type
58	Sigma
68	ASW-12, Kestrel 19, Nimbus 2
72	Kestrel 17
74	BS-1, Diamant 18
80	Cirrus, Phoebus 17, HP-14c (18m), SHK
82	Diamant 16.5, KH-1
84	Std Libelle, ASW-15, Std Cirrus, LS-1, etc.
86	Dart 17, Foka 5, Torva Sprite
92	K-6E
94	Olympia 419, Foka 4, Vasama, SF-27M
98	Dart 15, Skylark 4, Pirat
100	Skylark 3, K-6CR, Olympia 403
102	Olympia 463, M-100S, Fauvette, K-14, BG-135
108	K-8, Jaskolka
112	Skylark 2, SF-26
116	K-13, Blanik, Eagle, Bocian
118	Sky, Weihe
122	K-2, K-7, Capstan, Mucha Std
126	SFS-31, Milan
140	Olympia 2B, Kranich, Meise

TABLE 2

Glider	Min. Sink	Speed at Min. Sink	Iso Climb	Speed to Fly	Sink at Speed to Fly	Average Air Speed	Average Wind	XC Speed	Revised H'cap %
Skylark	1.2	41.0	2.38	52	1.95	28.3	15	24.0	100
Std Libelle	1.14	40	2.32	59.25	1.82	32.1	15	28.3	85

148 ASK-16, Tandem Falke
190 RF-5B (17m)
208 Falke, SF-25B

For those pilots who think such a re-handicapping is too harsh, it should be pointed out that a number of advantages still exist in flying a high performance glider. These being:—

(a) That there is only a limited period during the day when soaring can take place, and so the faster glider will be more likely to finish the task and get speed points.

(b) That no account has been taken of "thermal density" which can often allow higher performance gliders to sample more thermals and achieve a higher average rate of climb, and can in extreme cases make the difference between reaching and not reaching the next thermal.

(c) That no account is taken of tasks being given an upwind bias.

In conclusion, I think this type of handicapping would approach a more realistic basis in that it makes allowance for penetration. Unfortunately, being based on averages, shortcomings must exist. However, unless a number of handicap lists are used for various conditions, this system should provide a reasonable compromise.

IAN STRACHAN, Chairman, BGA Handicapping Committee, comments:—

Mr. Wells' general thesis that wind should be used in closed circuit calculations is absolutely correct in the UK where nil wind conditions are a rarity. The present handicap system was set up in 1967 when less closed circuit flying took place and the known approximation of "nil wind" was more reasonable.

Each year the Flying Committee, to which the Handicapping Committee report, reviews the handicap system as well as individual percentages for the coming year. Over the years some changes have been proposed and discussed but the system has not been changed as it appeared to be working passably well.

However, for 1974 or 1975, changes are likely to be made as a result of task setting trends and a better knowledge of UK thermal structure. At the same time, the datum glider will probably be updated and the handicap figures inverted so as to be directly proportional to cross-country speeds instead of inversely as at present. Any average wind used will be based on values at soaring heights and times of day over typical UK contest country during the May-August contest season.

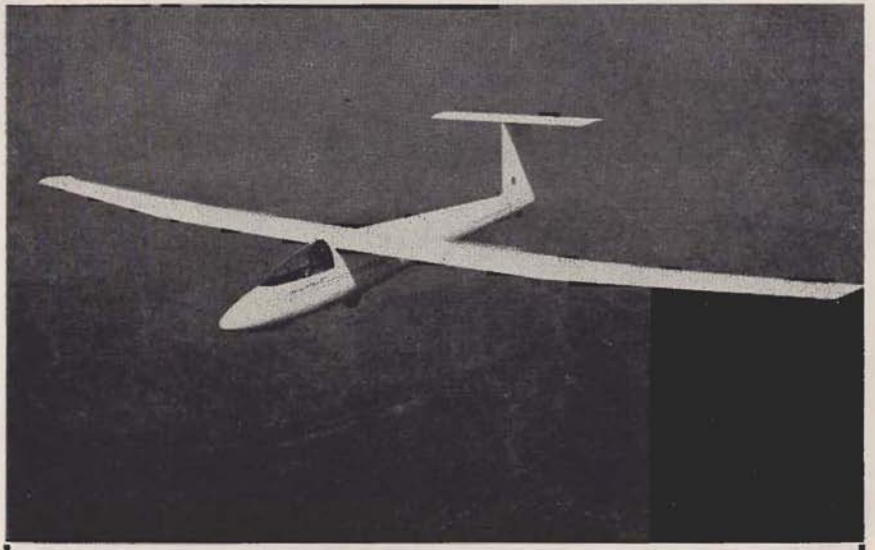
REPORT EVEN MINOR ACCIDENTS

There is evidence that a small number of accidents have not been reported at all. This is worrying the Safety Panel officers.

The Chairman, Ian Dandie, feels it is likely this has always been the case but the practice is to be discouraged as, should it become prevalent, it would detract from the value of the statistics and hamper accident prevention where this is based on developing accident trends.

He stresses that the responsibility for placing the report lies with the club from whose site the glider is launched or with the operator when flying from a non-BGA site.

PIRAT



PIRAT 15M 1:33.2 glide angle. Price delivered Booker Airfield, Marlow, Bucks. with full set of instruments excluding altimeter. £2,575. Quick delivery.

COBRA 15 15M sailplane. Winner of many international competitions. 1:38 glide angle. Price delivered U.K. with full set of instruments excluding altimeter. £3,239. Quick delivery. Demonstrations now available. Write for details.

BOCIAN IE Two-seater. Price delivered Booker Airfield £2,515. Quick delivery.

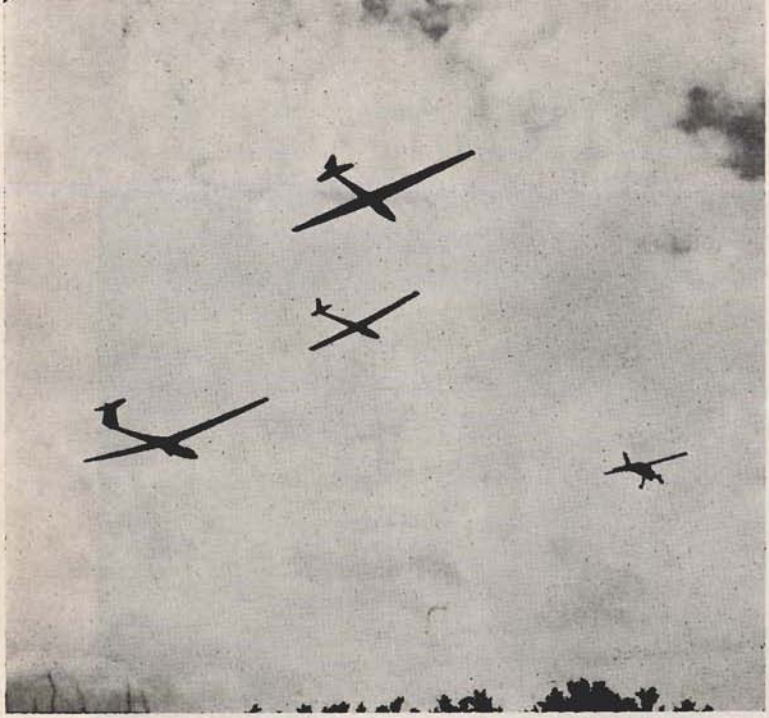
Trailers for above from £370 (low profile)
These prices do not include V.A.T.
Write or phone for details.

Polish Tug Aircraft **WILGA 35.** Full British C of A now granted. Very cheap to operate. Price on application. Delivery 3 months.

Full range of PZL Instruments in stock.

For full details contact John Strugnell at:

DALTRADE LTD., 110 Cannon Street, London, E.C.4
Telephone 01-623 5464 or evenings Bourne End 23458
Sole Exporters — Pezetel, 4a Czestochowska Street, Warsaw, Poland



One Way to Cut Costs!

Photo: Beverley Hill

A Wilga towing three gliders on a non-contest day of the 1972 Booker Regionals at Wycombe Air Park. The trio are a K-6E owned by 'Shep' Shepherd, J. Ralph's Dart and a Std Cirrus belonging to G. Shaw.

How Others See Us

THE colourful descriptions of the newspaper world when a glider lands out have been a standard joke for years yet, although there may be a boom in the sport, this regular weekend occurrence still makes headlines.

Already this year we have been sent a mass of cuttings taken from newspapers all over the country plotting the exploits of what must by now be regarded by the uninitiated as the most hazardous of pursuits. The accounts are dotted with the well-worn phrases "pilot unhurt", "glider undamaged".

So far a Northumbrian club member has come-off worse through the public's good intentions and the dramatic interpretation by the press, although the incident certainly warranted space!

The saga starts with the *Northern Echo*'s account of a "Glider Forced Down". Although the pilot gave a patient and considered explanation of why he landed from a height of 6,000ft, his comments claimed two more paragraphs.

"Mr J. Gibens of Hayden Bridge, Hexham, who came out of the ordeal unhurt, said he ran into bad weather conditions after turning to make his way back to the Northumbria gliding club.

" 'There was little danger involved,' he said, 'because I had time to select my spot. Our training prepares us for this kind of thing'."

But this was only the start. The Journal, a rival concern, printed a large photograph of him sitting alongside the wing tip with a lively description of his flight ending "in a full-scale emergency."

Apparently after he "ran out of air" an eagle-eyed member of the public phoned the police and reported a plane crash. Five fire engines, four ambulances and a fleet of assorted police vehicles were converging on the field as he landed.

How We Bungeyed To The Bottom from Bincombe Bumps

By ANTHONY EDWARDS
Cambridge University Gliding Club

FOUR-hundred-and-three years ago, with commendable foresight, the Fellows of Gonville and Caius College, Cambridge, purchased the manor of Bincombe in Dorset, complete with Bincombe Hill (531ft) and its six tumuli, known locally as the 'Bumps'. Four hundred years later the Fellows elected me to their number, and a bungey expedition to the Bumps became Almost Inevitable.

Do you remember the anticyclone which provided such unseasonable weather in the middle of March? We do, and so do the cattle on Bincombe Hill. For a whole week the wind strength never reached double figures, and the cattle were much perplexed by the vigour with which eight undergraduates of the University of Cambridge defended thirty yards of elastic rope which they repeatedly laid out on the hill. Steve Gibson, Mike Thomas, Duncan Cumming, Nick Donaldson, Desmond Pearce, Richard Walsh, and Steve O'Collard, accompanied by their bungeymaster and his wife Catharina, were learning the noble art of bungeying. We took one of the club's Swallows and the Edwards family Olympia 463 "Cockleshell".

On the first weekend the Swallow was flown at Tarrant Rushton, home of the Dorset gliding club, whose hospitality was much appreciated.

But for the rest of the time we had to rely on our bungey. And bungeys like wind. An early morning reconnaissance on Monday revealed a light northerly, so after breakfast we set off inland to Batcombe Hill to find a north face. We found it, shimmering in a flat calm, with no launching site anyway. Richard thought of telephoning Upavon for some weather, and soon we were on the way back to Bincombe with the promise of a sea breeze to soar.

Now the sea breeze in March is not very strong, and our hill was not very large—about 230ft of slope and then a slight incline of another 200ft to the bottom field. Nothing daunted, we laid out our three strands of bungey, and drove a land anchor into the hill to take the bungeys at full stretch, the upper end being secured by an Ottfur hook which was tethered to the Land-Rover. Cockle-

shell was rigged and positioned—this was her fifteenth different expedition site, so she had no qualms. Her pilot, in spite of greater experience, was not so sure. And therein lies part of the pleasure of flying gliders off new hills, for every launch is an adventure—especially if the hill is 230ft by half a mile.

Four stalwarts stretched the bungeys down the slope in front of me and slipped the rings over the land anchor. Not daring to wait lest the faint zephyr disappeared altogether, I gave the signal and was launched down the hill. Splutter through the cowpats, and Cockleshell trundled into her element. With 34kts on the clock I nursed her round a gentle turn towards the slope.

Since the launch had consumed about 50ft, I had 180ft of hill left, and gravity was winning. The grain store which marked the end of the beat loomed unnegotiably large and I turned before it, out into the valley to demonstrate to the undergraduates (whose experience was one field landing between the eight of them) how to land in a field. Since it was my 68, it caused no problem.

Sadly we derigged Cockleshell and took her back to our camp.

Tuesday, alas, was much the same, and in the afternoon, after Catharina had been the guinea-pig in Cockleshell, Steve O'Collard—a power pilot—did his first glider field landing. Next Duncan made the trip, hopping the near hedge with great agility, and then we sent off Desmond. He managed a whole beat back along the hill before turning away for the inevitable landing.

I waited with Cockleshell in the hope that the breeze might freshen in the evening, but without being rewarded with so much as a superpuff.

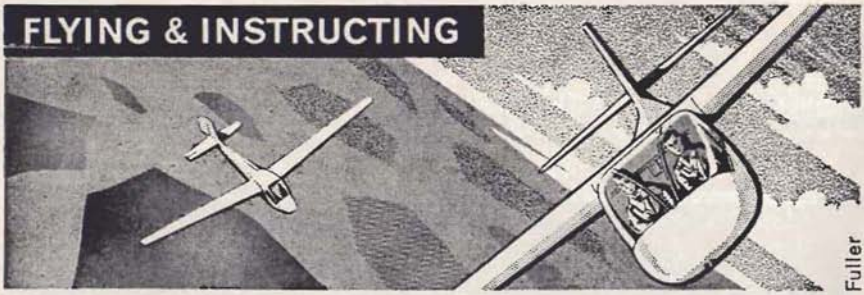
For Wednesday, ten knots was forecast, so we were up on the hill early, only to find a gentle northerly. At last the penny dropped—in the mornings we had been experiencing the land breeze, a phenomenon not much patronized by glider pilots. All day we played around on the hill. The helicopters from the Portland Naval Air Station were becoming increasingly inquisitive, and we tried to entice one down by dancing round in circles and then falling onto the grass in the shape of an H. It responded by orbiting Bincombe Bumps, so then we tried a T. However, there was disagreement in the camp (promoted by one of our power pilots) as to whether the head or tail should be into wind, so there was some delay and the helicopter flew off.

Still no launch

Philip King joined us during the day, but we couldn't persuade him to take the Swallow to the bottom—wise man—so the day passed with no launch. But there seemed some hope that by Thursday the promised front would be sufficiently close to produce a soarable southerly. It was not to be—we kept vigil all day, and though the wind freshened a little it was from the south-east. As it died it went southerly and we rigged Cockleshell in desperation. I sat on the launch point waiting for the wind, and as my pulse rate slowly climbed, the light air as surely dropped. It became obvious that both would soon pass their thresholds, so off I went, down the hill bump, bump, bump, deft turn to the right, along the hill—but it was no use. Duncan, who was waiting with his camera in the bottom field, said I did go up a foot or two, but the turn at the end was in sink.

We enjoyed ourselves, which was the main thing, and we learnt a little. If expeditions are like this when there is no wind, argued the novices, how splendid they must be when it blows! So another generation of Cambridge bungeymen is born. As for myself, nine safe launches in little or no wind confirmed my faith in the wisdom of the 'static' bungey launch, and I learnt something about teaching field landings: it appeared in conversation after the expedition that the chief concern was the possibility of overshooting into the far hedge, a concern that had been generated by reading books on "how to do it". Consequently there had been a slight tendency to fetch up in the near hedge.

Now it may be true that modern plastic missiles cause overshoot worries, but for the rest of us it is absurd to be so oppressed by the far hedge that we risk ending up in the near one. For if one hits the far hedge one will do so at modest speed, but if one hits the near hedge one does so much faster, thereby breaking what I have always regarded as the golden rule of prangs, which is, IF YOU MUST PRANG, PRANG SLOWLY.



SWINGS AND ROUNDABOUTS

By DEREK PIGGOTT

A RECENT accident at Lasham has emphasised the personal responsibility which rests on every pilot of a glider just prior to being launched.

On the day in question a Nimbus 2 was starting on a car launch when it swung off and groundlooped into a K-8 which was about 150 yards ahead of the launch point and a short distance to the side of the runway edge. The Nimbus pilot, realising that the take-off would involve an element of risk, had in fact asked for the K-8 to be moved, and when this had been done for a short distance the situation was accepted rather than cause further delay by still refusing to be launched. The Nimbus was undamaged, but the K-8 had one wing amputated at about half-span as well as other serious damage.

Later that day an identical situation arose at the aerotow point, when a Kestrel pilot was preparing to be launched with an obstruction about 100 yards ahead and not far to one side. In both cases the wind strength was about 5 to 10kts and almost at right angles to the take-off direction. The accident caused considerable consternation, and many pilots obviously did not understand the factors involved which influence gliders during take-off and landing. They do not all behave as well as most training gliders and it is vital to understand the differences.

The most important point is that, regardless of who may be at the launch point, and however inexperienced the pilot may be, it is *he* who bears the responsibility for accepting or rejecting the launch in the light of the situation as he sees it from the cockpit. If he has the slightest doubt about his ability to launch safely, bearing in mind such hazards as a positively sideways swing or a cable break at any stage, then he must refuse the launch. He must not be influenced against his judgement to go ahead in a doubtful situation and must never be criticised for playing safe by refusing the launch.

If a cable break could result in part of the cable landing on or close to a glider in mid-field, then it is not safe to launch. Sooner or later, if such a risk is accepted, the cable will break at the wrong moment and an accident will occur. The pilot who takes a chance is always to blame if he creates a hazard that was unnecessary.

Furthermore, if anyone at the launch point sees any reason to think that the pilot has not seen or understood a potential danger, then it is his or her *duty* to stop the launch. This particular accident, although the ultimate responsibility of the Nimbus pilot, would never have happened if only one of the dozen or more competent pilots at the launch point had cared enough to shout STOP! To say that it was not their business to stop the launch is not good enough. Safety is everybody's business.

Crosswind effects. The main effects of a crosswind on the ground run are well known. The wind tends to lift the upwind

wing and the glider always tends to swing, or weathercock, into the wind. Inexperienced pilots often find it difficult to remember, or to work out quickly, the control movements required to keep going straight. But once the wind direction is known it is easy—it is always the into-wind wing which must be held down (by moving the stick slightly into wind), and it is always necessary to rudder *out* of wind. This applies during any crosswind take-off, it applies equally for crosswind landings whether the into wind wing down or crabbing method is used.

Light crosswinds, in particular those with a slight downwind component, provide by far the most treacherous conditions for take-offs and landings. Due to the crosswind there is the tendency for the glider to start a swing, while due to the down-wind component there is a delay before the controls can become effective, during which the ground speed has increased and accentuated the effects of inertia. So *prevention* is far better than *cure*, and the wingtip holder should always be on the *downwind* side so that any pull he may exert is anti-swing into wind. This is contrary to usual practice. He should also hold his wing tip a little above the horizontal and be prepared to *run* with it, not just balance it and let go. The pilot himself can help by anticipating a swing into wind and by applying opposite rudder before he starts to roll, also by holding the stick back to increase the tail load. As the controls begin to become effective the opposite rudder can be reduced and the tail raised long before full flying speed has been reached.

Strong crosswinds. Unless the wind is more than about 60° to the direction of take-off a strong crosswind seldom creates problems. This is because good control is reached at a much lower ground speed, and inertia effects are relatively minor. However, with stronger winds the tendency to swing into wind is far more pronounced, and at low speed cannot always be controlled by opposite rudder. In this case, again, the wingtip holder should be on the *downwind* side and should hold his wingtip well above the horizontal in order to prevent the wind getting under the upwind wingtip. Provided that there is normal acceleration on take-off the pilot should have good aileron control, and be able to hold off any windward swing by means of the rudder, shortly after the wingtip holder has let go.

Of course there is a definite limit to the strength of crosswind component which can be accepted with some of the modern gliders. The main preventive measure is to leave plenty of room on *both* sides of the take-off path to allow for a possible swing. Room must be left into wind, particularly for the case of a cable break but there must also be room on the downwind side for a swing which might occur if the turning tip should touch the ground. If the ground is rough or the grass long, a violent swing will occur and the launch will almost certainly have to be abandoned.

Stabilising effect. On take-off, the pull of the tow rope exerts a stabilising effect and helps to prevent swinging, but how much effect this can have is dependent on the position of the tow release. A nose hook for aerotowing can be a very useful asset in crosswind conditions. In strong crosswinds, it is often an advantage to start the take-off run a little on the upwind side of the tug aircraft so that the load in the rope is already helping to prevent a swing into the wind.

If the cable breaks during the take-off run there is a real risk that the pilot will be unable to prevent the glider from weathercocking into the wind and running into any obstruction on the upwind side of the take-off path. Always consider the possibility of a break during the ground run as well as what should be done in the case of a break later during the launch.

Weathercocking. In flight the directional, or weathercock, stability is assured by the existence of the fin and rudder which provide more side area behind the C of G than ahead of it. Thus with aileron and rudder held central the glider will always weathercock into line with the relative airflow, just as a (Church) wind vane will always swing directly into wind. When rudder is applied, the nose of the glider yaws until the force produced by the rudder is balanced by the tendency of the aircraft to swing back into line with the airflow.

If the aircraft is very stable because of a large fin then the rudder will not be able to produce a large angle of yaw

before this balance occurs. With a smaller fin the directional stability will be less, the rudder will be more effective and the angle of yaw far greater. Now when the glider is on the ground it moves not about its C of G, as in flight, but about its point of contact with the ground. If the wheel is well ahead of the C of G the glider will have a greater tendency to weathercock and rudder power will be less. Conversely, if the wheel is behind the C of G directional control will be much better.

All modern gliders fitted with retractable wheels, also many others including the K-6 and Olympia 463 series, have their landing wheel well ahead of the C of G, and when stationary or at low speeds the tail skid or tail wheel is resting firmly on the ground. Another key factor is that the position of the wheel also affects the behaviour of the glider once a swing has begun. The swing will be increased by the inertia of the glider. Any tendency to swing will therefore be increased by the mass of the glider behind the C of G trying to move on in a steady direction, thus accentuating the swing and making it even worse.

Sliding sideways. A swing can only occur if the tail is sliding sideways over the ground, and a tail wheel with a rubber tyre will resist skidding sideways over tarmac, though it will not be so good if it is bouncing over rough grass. On the other hand a metal tail skid, or a metal or nylon tail wheel, will easily slip sideways on tarmac, but is better on grass or earth.

Any extra load on the tail will help to increase its resistance to moving sideways and so help to prevent a serious swing. On the other hand, the friction of a tail skid will make intentional steering more difficult unless the tail load is reduced. It is, therefore, helpful to hold the stick back on these gliders during the early part of the ground run until sufficient speed has been reached to ensure good rudder control. Similarly, after landing the stick should be held right back to increase the tail load if there seems any risk of a swing developing.

Wheel brake. Many violent swings and ground loops during landings occur because of the use of the wheel brake after touch down. If the brake is powerful the effect is to reduce the load on the tail and it can then slip sideways more easily. The effect of rapid deceleration is even more significant. Unless the glider is running absolutely straight the deceleration increases the effect of the mass behind the C of G and so accelerates the swing. Violent braking in modern gliders should always be avoided, especially if they start to swing.

Swings often start after a touchdown with drift and it is useful to remember that a slight over-correction for drift in crosswind, will produce a small swing contrary to the main weathercocking action. Therefore it is better to overdo the correction.

The possibility of an uncontrollable swing depends on the type of glider and the wind conditions. Special care is essential with gliders which have the main wheel ahead of the C of G since they will be unstable once a swing has been started. If the surface offers low resistance to the tail wheel or tail skid slipping sideways, it will help to prevent a swing by keeping the tail firmly on the ground at low speeds.

Anticipation. Crosswind take-offs should be started with full rudder applied in anticipation of the tendency to swing into wind. The glider should be held by the *downwind* wingtip with the into wind wing below the horizontal position. This will help to prevent any swing into wind and ensures that if the wingtip man does drag the wing, the aircraft is always swung out of wind.

Leave ample room for swinging into wind and always bear in mind that the cable may break during the take-off roll so that the glider may swing into any obstruction on the upwind side, even though it is several hundred yards ahead of the launch point. In light winds, leave ample room for the possibility of a ground loop in either direction. Avoid fierce braking after landing, particularly if the glider is turning at the time.

Above all, remember that it is the very light wind conditions which are the most critical. Do not be tempted to take-off or land near obstructions or other gliders in these seemingly easy conditions.

Finally, if you do ever ground loop, make sure that it is only your own machine that can be damaged. Inspect the glider very carefully. With the modern types the loads on the rear fuselage can be very high. Almost invisible hair line cracks in glass-fibre machines may look very much like minor cracks in the paint finish. They could result in a complete fuselage failure on a subsequent flight. Judging from some of this kind of damage brought to light on C of A inspections, there may be a number of pilots flying dangerously unserviceable machines all over the world.

PHILIP WILLS RESERVE FUND

Another £1,000 from the Philip Wills Reserve Fund has been loaned to clubs during the year and another request for £2,000 is expected shortly.

This fund was established to give loans to assist BGA Member Clubs with the acquisition or development of land and buildings. Although the fund is considerably reduced, quarterly repayments will steadily build it up again, so there is still money available for clubs wishing to apply.

ANY FOOL—OR GLORIOUS GAWLER *part 1*

By RHODA PARTRIDGE

"ANY fool" they said contemptuously "can do it there". Not, mind you, that they had been out there. "10,000ft cloudbase, ten knot thermals. Even you, Rhoda, should be able to manage the navigation. You follow the road and there's only one road."

I was glad to hear it. I've set off fairly frequently with barograph, barley sugar, eye make-up, maps, water, camera, a good book and money. The best I'd managed to date was a measly 200km, and it gets a bit embarrassing when you fly such beautiful equipment.

"I'll send you a card," I said, "if I get my 300km".

"Don't bother," they answered, "just let us know if you get the 500."

I had to go to Australia because my first grandchild had been born there and, gliding-wise, he couldn't have picked a better spot. I met Rob Moore at the Mynd in May, admired his tan, accent and Gold badge and said "Where do I glide in Australia?"

He said, "Gawler, of course," and aren't I just glad he did! That club looked after me so well that just to think about it makes me go all emotional. I won't tell you about it blow by blow and name by name because they know how I feel and they aren't the sort of people to get excited at seeing their names in print. I'll tell you about the flying instead.

Adelaide Soaring Club, South Australia, flies from Gawler airfield, about 25 miles north of Adelaide. Fleet, one Falke, two K-13's, two Super Arrows, one Boomerang, three Std Libelles, two with water ballast. No private owners.

February 6th. In the K-13 to learn the low tow position, to be shown the site and have the airspace limits explained. Low tow is easier than high tow and there's less risk of upsetting the tug. The airspace limits are a bore, mostly two or three thousand feet in a two mile radius of the field and from five to ten thousand feet in the northeast sector. They phone the military airfield at Edinborough every morning and ask what the limits are for the day. Flew the Super Arrow in the evening (it had "BF" on its tail). Nice and smooth, like a K-6.

The next day I flew into the north-east sector in the Super Arrow to look at the boundaries and flew a 100km out-and-return without realising because the visibility was so good that it felt like local soaring.

February 8th. Much honoured to be given one of their lovely Std Libelles to fly. I was a bit bothered about flying a Libelle for the first time. Suppose I liked it even better than my Std Cirrus? But I didn't, thank heavens, not quite.

The following day was very stable until evening when a dust storm came through and the wind veered. I had a happy local flight of 1.50hrs.

Day-dreams. February 10th looked good. I'd day-dreamed a good deal at home about this holiday. So there I'd be in Australia and they'd say "300km today Rhoda" and I'd go off and do it. When it actually happened I was filled with gloom and foreboding and I didn't want to go one little bit.

Noel Roediger took pity and said he'd come round with me in another Libelle and that was really wonderful. He had problems because at one moment I blundered off up the wrong railway line and he lost me. He couldn't get me on the radio because, unknown to me, my mike button had jammed down. (Thank goodness I didn't murmur unseemly words or sing rude songs while I was on the air).

It took us quite a time to sort that one out and, as we hadn't taken off until one o'clock, I didn't reckon we had a chance of making it and used the flight to try and learn how to dolphin soar properly.

I learnt a tremendous lot from seeing it done correctly and on the way home was quite resigned to landing out when a beautiful sea breeze front formed and we coasted happily down it, landing back

at Gawler at 7.15pm. This was strictly Noel's flight and it's not every pilot who can fly two Libelles simultaneously! I had two other good cross-countries and I'll tell you about them in Part 2.

A bit about conditions. It's hot. It's worth taking salt tablets. You must cover up and wear a hat and use a non-oily sun filter lotion. (Dust sticks to a cream or an oil.) Use a lip salve because cracked lips can really hurt. On a long flight I used zinc cream to protect my hooter, applied when the canopy was closed because of the dust.

Navigation takes a little getting used to because railways are almost invisible. They wander around without glinting rails or embankments or telegraph wires. You can plot their course by the silos. If a town has silos the railway goes through it. There's a criss-cross of roads and I could never make out which were the main ones. The rivers very often don't have any water in but you can plot them by a wriggly line of trees and bushes. An unfair geographical trap is huge lakes that are not marked on the map because they weren't there last week. The country looks completely different from ours. The colours are bitter chocolate, tan, honey and pale cream. Green where it's irrigated. The Jamestown 300km milk run is very pretty with a series of ridges running north-south and the sea 40 miles away parallel to the west. Excellent fields to land in all the way up.

They don't think much of their clubhouse and plan to build a new one, but it's perfectly adequate, with bunk rooms and hot showers and loos, all under the same roof. There's a huge fridge and a refrigerated soft drink machine. No catering. A car usually goes into Gawler at lunch time to collect sandwiches etc and they go to a cafe or a hotel for supper.

The bar is nice, the beer ice cold, and I enjoyed sitting on the grass outside drinking beer and gossiping at the end of the day. Prices. Temporary membership A$3 a day. Launch to 2,000ft A$1.50 approx. 1hr gliding time A$3.60. When I was there I was getting around A$1.60 for £1 and my 32 hours in 21 launches cost me A$168, and that included full membership and entrance fee because I plan to take another look at my grandson as soon as I can manage it.

Not a certainty. I'm a bit bothered by this "Any fool can do it in Australia" attitude. There had been two poor weeks before I arrived and my last week was very stable. I was lucky, but it's hard on a British pilot who has poor weather and they say "What? You can't even get it out there?"

I'm told that conditions are slightly more reliable inland but the heat and dust are really trying and the country is as flat as a door mat. I should have figures for total numbers of 500km and 300km flown in Australia in 1972 when I write the sequel to this article. It won't be as high as you expect. We had about six 300km and one 500km during the 18 days I was there. Also a number of near 500km and we didn't have one of their "boomer" days. Mostly between four and eight knots at the best time of day with cloudbase to 7,000. Beautiful!

The Club welcomes visitors and there is midweek flying. Mike Valentine (Mynd, Lasham and Cairngorms) is second full time instructor. He bought an old Holden for £40 and had an epic two day drive from Perth across the Nullabor desert. He arrived at Gawler at 1.30am feeling a bit curled at the edges, saw a traffic sign that said "Dip", so he dipped his lights and a moment later, at 40mph, hit the dip with an ear-shattering crash. Later he was arrested for not having an Australian driving licence and arrived before breakfast at the club with a policeman at each elbow to apply for the resident instructor's job. He's very happy and fits in a treat. He did his 300km the day after I did mine.

There's much too much to tell for one article, so, for another instalment, order your copy of S&G now!

SOUTHERN SAILPLANES

NOW is the time to be thinking about your next sailplane
The SCHEMPP-HIRTH range meets most requirements

The NIMBUS 2—THE Open Class sailplane

20.3 metres of **S**chempp **H**irth performance
(super) (high)

Large (30 gallon) water ballast tanks; a maximum all-up weight of 1,168 lb, combined with an empty weight of approximately 750 lb, means that you can carry a lot of water when conditions dictate, which is more often than you would think! A four-piece wing so your Nimbus fits into a Standard Class size trailer; easy to rig and derig; the cockpit is long enough for most pilots (one at a time!); the flaps are operated by only one lever—good aileron control right down to landing flap—so you don't have to learn to play a piano to fly it!

Please don't think we are making comparisons with any other sailplane —we don't think there is a comparable one.

The STANDARD CIRRUS—a proven contest winner

"T" tail—to keep the fuselage in one piece in the unlikely event of your landing in crop; large (same size as Nimbus) cockpit so you don't have to taper from the waist upwards to get the canopy on; built-in water tanks —no pipes in the cockpit therefore no likelihood of a cockpit full of water; large instrument panel—you don't need to be a magician to fit nine instruments on it.

The OPEN CIRRUS—17.7 metres of high performance at the right price.

All three designed by Klaus Holighaus, whose creations have taken the last three World Championships.

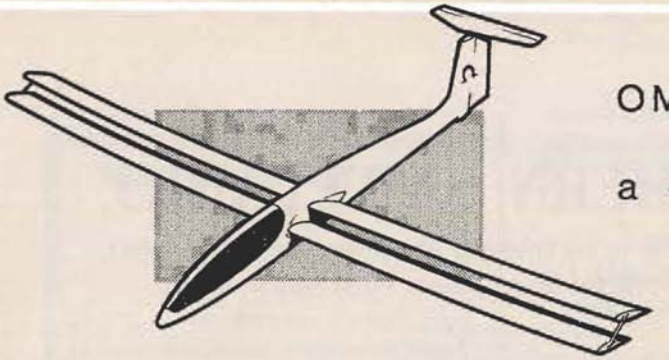
Contact U.K. agent—Ralph Jones, Southern Sailplanes—for full details

---

Let us put your broken toy back together. We will treat it as if it were our own. Yes, even ours get broken sometimes!

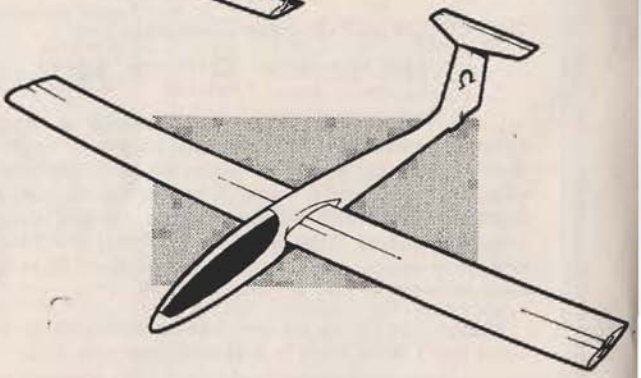
We have a large stock of instruments and spares. Don't hesitate to contact us for Olympia parts. We can make what we haven't got.

Southern Sailplanes, Membury Airfield, Lambourn, Berks.
Telephone Lambourn 774 and 399



OMEGA

a designer's fantasy



by

Andrew Coates

SOARING in my new 32M sailplane with an aspect ratio of 32, climbing at eight knots with rural Cambridgeshire set out below, I think I will start my 500km triangle. I pull a lever (painted gold and studded with diamonds, not yet approved by the BGA Technical Board).

Presto! My beautiful machine is now a 16M sailplane with an aspect ratio of only 20.

"Really?" Nick Goodhart would say. "Impossible!" Frank Irving would cry.

Shooting across the country at 100km/h, the Omega hits a thermal 60km away. A push of the lever and the sailplane resumes the span of 32M and aspect ratio to match and I start thermalling. But no, the thermal is too weak. I pull back the lever to 16M, without worrying about trousers or pumping the rudder pedals to operate the flaps.

Mine has no flaps or sailcloth rolled up behind the wing spars, or telescopic wings.

What is it then? Well, the principle is not new, it has been with us since the 1930s. All soaring pilots will know, on wet days, washing the dishes, there it is, in the kitchen—the aspect ratio of a hundred or so, and if they pull the string it will turn to an aspect ratio of approx 1.5. The venetian blind!

A venetian blind on my glider, it is ridiculous! No, no, it's not really a venetian blind but a double set of wings, a bi-plane. Yes, that's right, it's a swivelled bi-glider. We know aviation pioneers tried venetian blinds but mine it . . . let me sketch it, have you a piece of paper? What's that—an annual subscription reminder? That will do . . .

There you are! Still don't believe it? Like to see it? It is out there, in the trailer. Right, let's go over and you help me rig it. Yes my trailer does look tiny and you are correct, it is a 32M glider. The Trades Description Act people say that I may call it 32M in spite of it measuring only 16M, but still the total length of the two sets is 32M.

Out comes the fuselage, just an ordinary fuselage, but with the flat sides at the centre section with two steel tubes sticking out at each side for the wings. Just like the old Dart's tube on the fin for its tailplane. Plug in the wing and push in the pins to hold the wing together. Clip in the tailplane on top of the fin.

There you are, all ready for a flight.

Push in the gold lever, the wings swivel and it's now a bi-glider ready for take-off. Yes the steel tubes on the fuselage will take the weight. A few years ago it would have had bracing wires but today we employ marvellous modern materials.

Who built it? Slingsby, of course, as they have experience of swivel wings. Remember the Camco V-liner? They designed and built it for an American client some years ago. Pity, it was destroyed by fire before they could fly it.

Yes, the cockpit is similar to other sailplanes except for the gold lever to operate the swivel wings. It works very smoothly and is manually operated, just like airbrakes.

Instrument panel? No I don't have one, the cockpit is too narrow, so I put all the instruments behind my headrest and they are reflected in a hooded mirror in front of me. If I want to adjust an instrument, all I have to do is reach over my shoulder. It also solves the CG problem. And you see I don't like to wrap my legs round the instrument console.

I agree, the wing is narrow—only 1M wide and is constant chord from root to wing tip. We would like to have it tapered but there would be a gap between the two wings when folded flat in mono-glider position. The wings are constructed with aluminium honeycomb from leading edge to trailing edge, full span, bonded to the light alloy box section spars and metal skin—no ribs.

You will notice the lower wing is at the front while the upper is at the rear, it is what we call 'negative stagger'. The three reasons for this are first that by staggering the aerofoils we separate the regions of increased and decreased pressure between the two wings; second, when swivelling the wing to mono-glider position, the upper wing will fold down to the lower's trailing edge and seal the gap and, lastly, the cockpit area is increased by moving the upper wing backwards.

But what about the depression area on the top surface where the two wings meet?

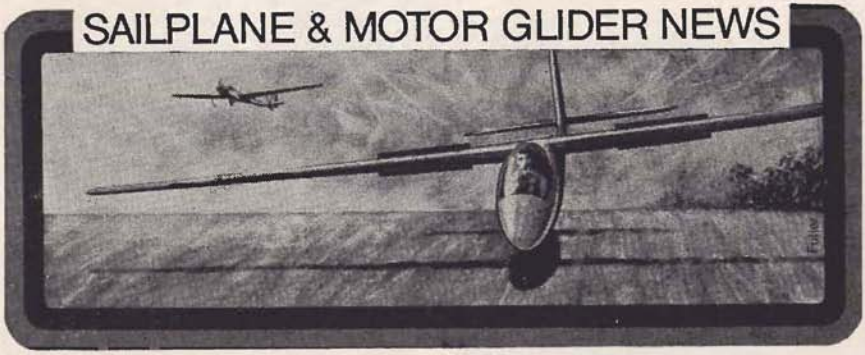
No ailerons

Well, there are no ailerons on the glider so lateral control is provided by the spoilers, full span on both wings. The lower spoilers also operate as airbrakes when both spoilers are applied well out. The struts at the wing tips are there to keep the wings paralleled.

The tailplane, on top of the fin, is an all flying tail with full span trim tab, and is coupled to the swivel wings, to change its angle of attack in both mono-glider and bi-glider positions. The fuselage will be in a very steep angle of incidence when flying bi-glider, but it gives the pilot a good field of vision when thermalling or landing.

I had a bit of trouble with the BGA Technical Committee . . . oh, it's my turn for the aerotow now, cheerio, nice to meet you. Please hold the wing tip. Mind that wing tip strut or you will have your fingers clipped off when I do my pre-flight checks! All clear above and behind? Take up slack . . . All out!

SAILPLANE & MOTOR GLIDER NEWS



POLISH SZD-40 HALNY

AS briefly referred to in our April issue p91, the Experimental Institute at Bielsko-Biala have got off the ground with their latest project led by W. Okarmus.

Looking for possibilities to satisfy top pilots who wish to attack the two-seater world records as well as improving two-seater high performance the design team decided to start their basic work with the wing of the Zefir 4 which had proved its capabilities on the high speed end but was not up to scratch at thermalling speeds.

In collaboration with the Institute of Aerodynamics in Warsaw where wind-tunnel tests were carried out the basic wing section NACA 66-215-416 was modified resulting in noticeable improvements at the lower end of the speed polar.

As only one pair of the original Zefir wings was available it was agreed to alter only the outside contour of the original section, especially because the primary structure which is a one-piece plywood shell was difficult to open up. In order to improve the performance over the whole range it was decided to fit camber-changing flaps and droop ailerons and increase the span from 19 to 20metres.

The newly designed flaps and ailerons as well as the wing tips are made of glass-fibre reinforced resin and balsa wood. The flaps and ailerons work in conjunction and can be deflected ±6°, the ailerons alone have an extra deflection 23° up and 9° down starting from the end of the flaps. The flaps have "elastic hinges" and have five positions.

The machine is fitted with full top and bottom air brakes. The fittings for the forward swept wings are made of solid stainless steel similar to those of the Zefir. A completely new design has been used for the fuselage which has a glass-fibre re-inforced front shell while metal is used for the fin and rear part of the fuselage. On the prototype there was insufficient room to fit the operating levers for the controls in the tandem cockpit and these have thus been fitted for the use of the rear pilot only, but in the event of this aircraft going into production, there will of course be dual controls as well as dual instruments.

The T-tail is of GRP and there is also a retractable undercarriage. The test flying programme has not yet been completed but results obtained so far are very encouraging.

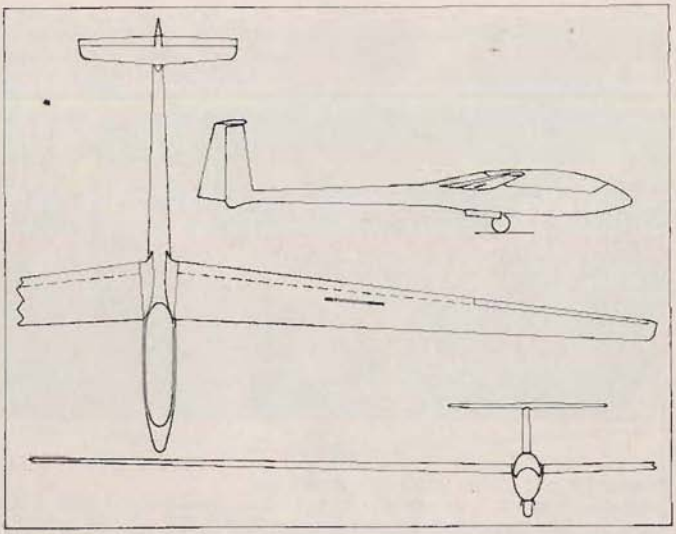
Technical data

Span (m)	20
Wing area (m^2)	16.11
Wing loading (kg/m^2)	37.9
Aspect ratio	24.66
All up weight (kg)	610
Empty weight (kg)	410
Stalling speed (km/h)	70
Minimum sink at 81km/h (m/sec)	0.57
Maximum L/D at 99km/h	43:1
Never exceed speed (km/h)	240

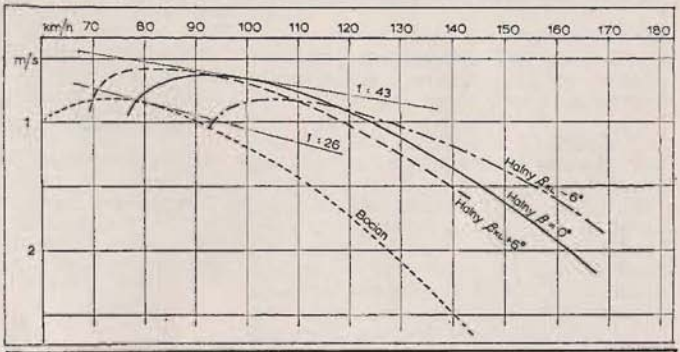
HP-17 STANDARD CLASS SAILPLANE

DICK SCHREDER of USA, the well-known designer of the HP-series intended for the home builder, hopes to complete his latest design for entry in the USA Standard Class Nationals in June. The HP-17 is a further development of his most recent series, but new features include a water ballast carrying spar, full span flaps, spoiler ailerons and the new Wortmann section FX72 MS-150A.

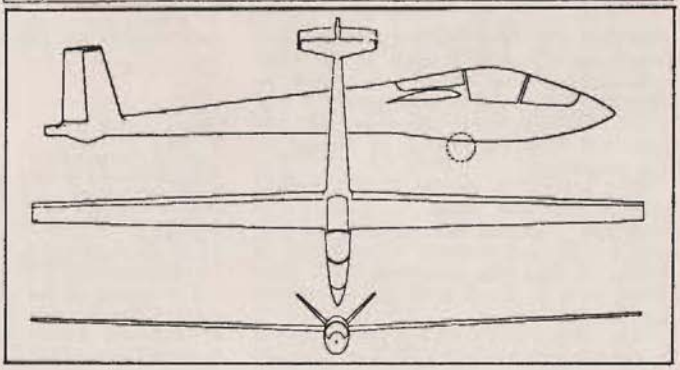
HALNY



POLAR CURVE



HP-17



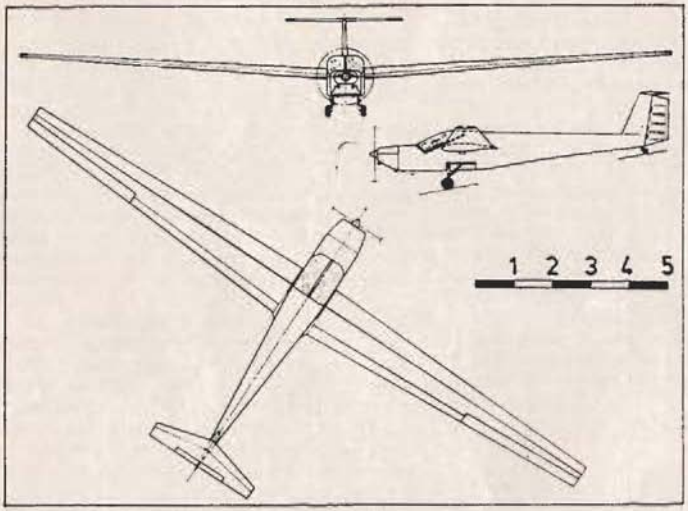
Except for 4in spaced structural foam wing ribs, all-metal construction is used throughout. Schreder has put his long home-building experience to provide new simplified construction that allegedly reduces assembly time to 700 hours for a builder with average mechanical aptitude. *Soaring*, May 1973.

Technical data

Span (m)	15
Wing section Wortmann FX72 MS-105A	
Wing area (m²)	10.5
Wing loadings (kg/m²)	26.8-40.5
(Gross weight 426.38 kg including 90.72kg ballast)	
Aspect ratio	21.4
Maximum L/D	40:1
Stall speed 60° flap at 335.66kg (km/h)	51.5
Minimum sink at 284kg at 64.5km/h (m/sec)	0.52

peller can be feathered for gliding flight. For further development and production, however, it is intended to use the 65hp Walter-Mikron 3 engine. The report in *Der Flieger*, from which this extract has been taken, also mentions performance figures for the M-17 while towing a 15m single-seater VSO-10 (no details available); the report does not state whether tows have in fact been carried out. The data given suggest that this really universal aircraft would fall within our Redhill definition of 1969 for self-launching gliders. (The definition neither includes nor excludes motor gliders capable of towing).

R.H.



M-17

MOTOR GLIDER M-17 UNIVERSAL

NEW from Czechoslovakia is the M-17 two-seater motor glider which had its first flight at Brno on October 17 last. Jiri Matejcek, the designer of the Standard Class Orlice, is in charge of the project.

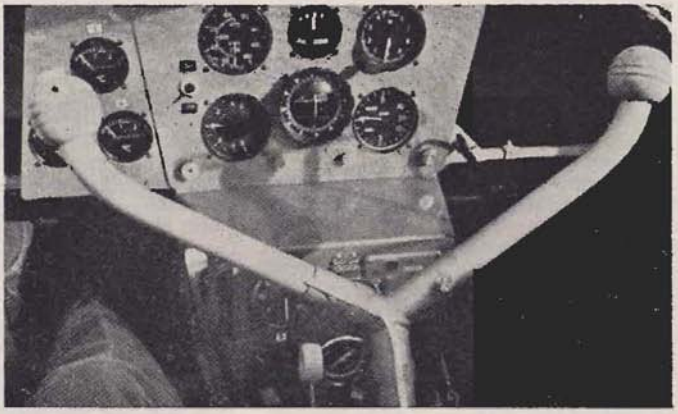
The seating in the M-17 is arranged side-by-side and there is a centrally mounted Y-shaped control column. The single spar ply-covered wings have a lining of sandwich polyester foam; it is fitted with a T-tail and has a retractable under-carriage.

The power unit used for the prototype is the 42hp Stamo MS 1500, and the pro-

Technical data and calculated performances

	42 hp Stamo	65hp Mikron	Towing VSO-10
Span (m)	17	17	17
Wing area (m²)	17.5	17.5	17.5
All up weight (kg)	580	580	580
Take-off distance (m)	200	150	320
Take-off to clear 15m (m)	330	260	550
Climb rate (m/sec)	2.5	4	2.5
Maximum speed (km/h)	180	210	170
Cruising speed (km/h)	150	200	
Ceiling (m)	5000	6000	3500
Range (km) *at 120km/h	450	500	450*
Fuel consumption ltr/ph	10	9	9

Calculated glider performance: Glide ratio 95km/h over 28:1. Minimum sink at 80km/h below 0.85m/sec. Landing speed 65-70km/h.



M-17 Y-shaped control column

HIGH PERFORMANCE IN KIT FORM

AN interesting sailplane flew for the first time during February at Cologne, Germany. The Elfe-17, which, from an idea by Heinrich Schönenberg, was designed by Alfred Neukom of Switzerland and built by Schönenberg, is not only interesting because of its performance, but also because it will be available in kit form thus giving private owners and clubs with insufficient finance, but with the necessary expertise, the possibility to own a high performance sailplane at greatly reduced cost.

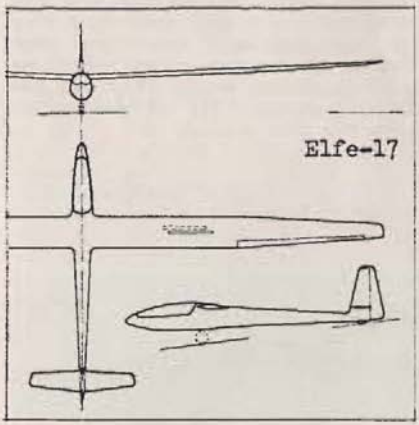
The machine is made of light alloy and man-made fibres. The rear fuselage is of light alloy-covered wood, while the front is a GRP shell. The wings are of sandwich-wood, honeycomb-type construction and the main spar of light alloy.

The 17 is based on the Elfe-15 of similar construction, but the flying characteristics, especially at low speeds, have been improved. Performance-wise it is not unlike a Kestrel 17.

If demand warrants it is intended to go into series production, however, for those interested in home assembly the kit comprises: unpolished wings complete with fittings; complete set of fuselage fittings; tail unit assembly and rudder fittings; retractable undercarriage assembly and canopy fittings. This should cost about DM12,000 and would involve approximately 300 to 400 man hours to complete. A finished Elfe-15 would cost in the region of DM22,000 and the 17m version DM500 to 1,000 more.

The type certificate for the Elfe-15 has been issued in Switzerland and it is hoped that the 17 will be cleared later this year.

Aerokurier



Technical data	*Elfe-17*	*Elfe-15*
Span (m)	17	15
Wing section—Wortmann		
Wing area (m^2)	13	11.80
Wing loading (kg/m^2)	28.50	29.20
Aspect ratio	22.20	19
Empty weight (kg)	250	225
Pay load (kg)	120	120
All up weight (kg)	370	345
Minimum sink at 75km/h	0.55	0.59
Stalling speed (km/h)	70	70
Maximum speed (km/h)	220	220
Glide ratio at 90km/h	40:1	38:1

CALIF A-21 SERIES

THE Italian Caproni Calif A-21 (S&G, August 1969, p354 and February 1971, p19) now sold in the USA by Caproni's representative Hugo Taskovich of Palo Alto, California, is still the highest performance two-seater currently available (price not known).

In August 1972, Edward Makula of Poland broke four world records in the A-21 while on a visit in the USA; it has also shown its paces in a number of high class competitions. The firm Caproni Vizzola reports that the A-21 has received its type certificate in Italy and is awaiting certification in the States.

In co-operation with RFB Rhein Flugzeugbau of Düsseldorf, Germany, it is planned to start production of a motorized version of the A-21 within one year. The power will be provided by two Wankel engines, and a ducted turbo-fan propeller along the lines of the Sirius 2.

The A-21J jet version is undergoing engine and airframe trials in the USA with a view to starting manufacture under licence in the near future. No prices have been quoted.

ALL-METAL SAILPLANES FROM ROUMANIA

THE Export Agency Jehnoimport of Bucharest have announced the latest sailplanes from Roumania. The IS-29E and D are of 17.6 and 15m span of all-metal construction and are intended for high performance and contest flying.

The leaflet describes its excellent handling and the comfortable cockpit.

A high aspect ratio was selected which together with the Wortmann wing section and use of Fowler flaps give increased performance over the speed range.

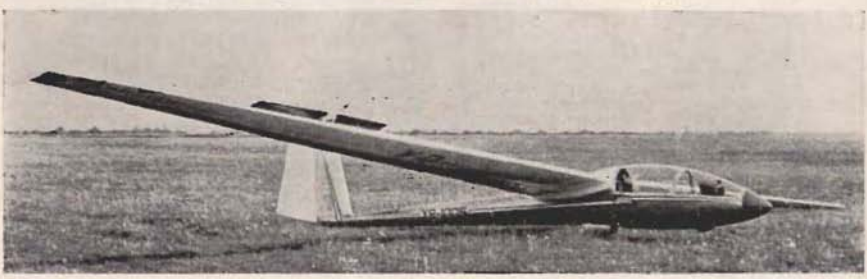
It has a hydraulically sprung retractable undercarriage, DFS-type airbrakes, differential ailerons and a T-tail with mass-balanced tailplane. (Photo below.)

The rudder as well as the tailplane are partly fabric-covered; the ailerons are push-rod and the rudder cable-operated. Price not stated. *Planeur.*

Technical data	IS-29E	IS-29-D
Span (m)	17.6	15
Wing section FX61-163-124		
Wing area (m^2)	12.78	10.4
Wing loading (kg/m^2)	29.8	30.7
Aspect ratio	24.2	21.6
Empty weight (kgs)	275	220
All up weight (kgs)	380	320
Glide ratio at 92/90km/h	42:1	37:1
Minimum sink at 76/78km/h (m/sec)	0.50	0.58
Maximum speed (km/h)	220	220

SOVIET GLASS-FIBRE SERIES

AFTER buying two each of the ASW-15 and Phoebus types from West Germany, the Soviet Union is beginning glass-fibre construction of the BK-7 "Lietuva" by the Lithuanian firm Balys Karvelitis, following flight tests of the type last December. It is a single-seater high-wing type with retractable wheel and high elevator; the span is 17.8m, and at an all-up maximum weight of 480kg the gliding angle is 1 in 43. (*Skrzydlata Polska* via *Der Adler.*)



High Energy Landing Problems (H.E.L.P.)

By JOHN WILLIAMSON

BY the end of 1972 there were 112 modern glass-fibre sailplanes registered with the BGA. Common characteristics of all these sailplanes are their German origin, and, stemming from the German airworthiness requirements, air-brakes considerably less effective than those enjoyed by British and Polish aircraft. And of course, they are exceedingly "slippery".

First of the proud owners of these new expensive ships were the competition crowd. Bright-eyed and bushy-tailed, they leapt into the air secure in the knowledge of hundreds of safe flying hours in the log book. But soon the problems associated with the high energy potential of the new generation ships began to show.

In 1971-72 there were 20 reported accidents to GRP sailplanes in the UK. Ten of them can be attributed primarily to the HELP! factor. In all ten the pilot was very experienced and (except one) previously accident-free. The sorry tale is told in greater detail in the Annex to this paper.

Ten HELP! prangs in two years, given upwards of 100 GRP sailplanes flown by perhaps 500 pilots may not sound much but it could become a serious and expensive problem very quickly. The normal trend of sailplane ownership is for the latest and greatest of yesterday to become the commonplace of tomorrow and to be discarded down the pilot-ability scale—and soon indeed to be bought brand-new as the first aircraft of a new and hopeful syndicate. If ten pilots averaging 875 hours experience can do it, just imagine what the next 50 or so pilots of lesser talent could achieve!

Common Thread. The pattern of the ten subject accidents has a common thread—a badly judged circuit. The aircraft was at the wrong height or speed at the wrong place. Theirs was to do or die—ours is to reason why. Being very experienced it may be assumed that the ten pilots were trained ten or more years ago and subsequently moulded their flying patterns in such aircraft as Olympias, Skylarks and K-6s. In these aircraft they were safe. In GRP they slipped. The critical links between the types of aircraft and the cause of the accidents are the types of air-brakes and the high cruising speeds of the GRP class.

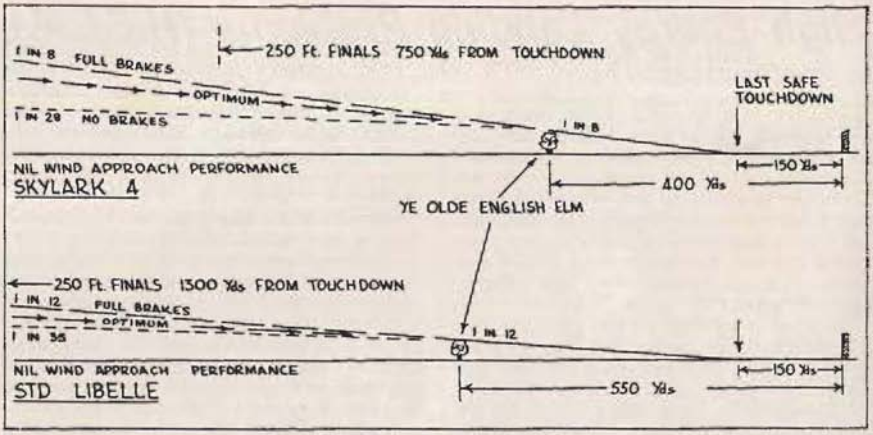
Air Brakes. Maximum-area laminar flow is the secret of the slippery ship. To enhance his chance of achieving this the designer has put his airbrakes farther and farther back in slimmer and slimmer wings—or has left them out altogether. So at best one has a pair of small-area paddles above and below the wing; possibly a single paddle, upper surface only; or a pop-it and drop-it drag 'chute.

Guesstimation of the comparative effectiveness of typical GRP brakes is illustrated in the diagram on the next page. The Std Libelle, at 50 knots with full brakes in zero wind achieves a glide ratio of about 12:1. A Skylark 4 similarly placed is 8:1. To approach thus over a typical English elm tree and to arrive safely before the far hedge claims him the Skylark pilot needs about 450 yards of field.

The Libelle man will be hard pushed with less than 600 yards. But the Skylark could be brought in a bit steeper after clearing the tree, thus creating extra drag in useful quantities. The Libelle would also speed up, but the drag increment would be proportionately less and the resultant float in ground-effect would leave her pretty close to the original 600 yard mark. All in all, what was good for the Skylark is not so good for the Libelle and habits die hard.

The next problem facing the unconverted is the high cruising speed of the glass-ships. A Skylark in pre-circuit flight is doing about 40kts. The conscientious (and safe) pilot trims forward, adds five knots or so downwind, another five knots crosswind plus half the windspeed and a bit for Mum and the kids. By now he is doing 55-60 knots, hand on the brakes and preparing to descend into his chosen pasture at a glide ratio of, say, 6:1. Trained assiduously to fly by attitude, his eyes are fixed on the field ahead and NOT (ever) the ASI.

Now put him in the Libelle. His best-glide speed is over 50 knots already and



he has become accustomed to this during several hours of soaring flight. He will do the Skylark drill through sheer habit; will change *attitude* rather than speed and will be startled to find himself swinging wide on finals at a previously unobserved speed of close on 80 knots . . . HELP!

Pinpointing the problem is one thing. Finding a remedy is another, but the remedy must lie in training. Clearly the pilot must first get used to the effect of his new mini-brakes on approach glide paths and therefore on his circuit pattern in a wide range of wind speeds. Starting with the zero wind case, and assuming half brake, he will have to be nearly one *mile* from touchdown at 300 feet! Try that on an *ab-initio* pilot. His reaction will be one of complete trust and to him it would easily become the norm. Try it on one of your newly solo pilots and he will be perplexed.

But it is the sort of thing he will have to get used to before he is fit to take a GRP ship cross-country and with a bit of extra training he will accept it. Try it on a middle-aged Skylark 4 pilot of around 400 hours and he will probably have a fit. It will take him much longer to get used to the idea; and in a stress situation he is quite likely to revert to his previous circuit habits and finish up in a HELP! situation.

The trouble is that we do not have the two-seaters in which to readily give training which is representative of the GRP sailplane situation. The nearest we might achieve at present is a Motor Falke with the throttle cunningly set. Bocians and K-13s are a far cry from the Libelle, and only by deliberate restriction of brake movement may a suitable glide slope be simulated.

Having got used to flat approaches—and in GRP you may almost say that if you can see it, you can reach it!—our pilot must be trained to approach at the right speed for the situation. With a near-silent environment and a ship which will move away at high speed with the least provocation, there is only one way—air speed monitoring. For years we have (correctly) emphasised the need to fly the circuit by attitude so as to release the maximum of one's attention to the outside world. Now we must accept the need to monitor the air speed so that we avoid the onset of a HELP! situation.

Barring exotic innovations such as head-up displays and audio air speed presentation, it behoves us to frequently *look at* the ASI at all points of the circuit, and thus keep the energy potential to an acceptable minimum. The minimum must clearly be enough to cope with low-level turbulence but will frequently be *less* than the normal cruising speed.

It will be easy to teach speed monitoring to new pilots; but less easy as the pilots get more experienced. Instructors should start at once to demand a high accuracy of speed control during post-solo checks and Chief Instructors should devise a series of dual checks for club

and private pilots alike, which will include use of limited brakes and close monitor of approach speeds. The latter will not be popular, but in the long term it may be essential for the good name of the Movement, and if the insurance premiums for all and sundry are to be kept to a reasonable level.

The time-honoured method of boosting the drag of an inadequately spoilered aircraft—Weihe, Minimoa—was to sideslip. This technique has largely disappeared. It may be that the next GRP generation will be fitted with adequate brakes—the Poles can do it, perhaps the rest will copy. But meantime the technique should be brushed up by those who mean to fly GRP. In many cases this will mean going back to the two-seater and a serious evaluation of the problems involved—airspeed inaccuracies; large yaw movements near the ground; delicate balance between bank-angle and rudder effectiveness.

Summary. A problem has arisen because of the high energy potential of modern GRP sailplanes. The problem can be overcome in the long term by adding to the syllabus of training such techniques as long approaches with limited brakes; close-monitoring of airspeed; and re-introducing the side-slip as a common exercise. The short term solution is to re-educate the solo pilots in the above techniques, if necessary by resort to further dual training, a process which will be resisted. The key man in any such programme is the CFI. He has been given the responsibility for everyone who takes off from a BGA site. He must assume, or be given, the power to exercise that responsibility.

SUMMARY OF ACCIDENTS TO GRP SAILPLANES IN THE UK—1971/72

In 1971 and 1972, 20 accidents to GRP Sailplanes were reported to the BGA. Ten of these occurred for various reasons not connected with the class of aircraft, but ten could have been caused primarily because the sailplane was of the GRP clan. All the latter pilots were very experienced, but not necessarily so on the sailplane itself. Only one had previously had an accident. The following table is arranged in ascending order of pilot overall experience (hours).

PILOT EXPERIENCE ON			SAILPLANE	BRIEF DESCRIPTION OF ACCIDENT
TOTAL HOURS	TYPE HOURS	TYPE LAUNCHES		
338	100	—	ASW-15	Too high into small field (sports pitch). Hit far hedge attempting ground loop.
510	20	?	BS-1	Steep approach with drag chute. Did not round out in time. Field landing.
531	88	—	Std Libelle	Field landing. Overshooting so yawed heavily to brake. Stalled and struck ground still yawed. Distracted by mobile obstruction.
650	17	9	Std Cirrus	Undershot home airfield trying to land as short as possible. Hit corn with wing tip and ground looped.
700	8	6	Std Cirrus	Contest flight. Crosswind landing into smallish field. Overshot into hedge.
740	9	14	Kestrel-19	Attempted first 'all-systems' landing in very turbulent conditions. Did not round out sufficiently. Too many knobs and not enough knots?
750	48	28	Std Cirrus	Well organised approach into small field. Hit wire hidden by downwind hedge. With better brakes may have come in steeper and thus with better view?
903	31	22	Std Libelle	Undershot home airfield hitting fence post. Practising short landing technique?
1750	500	—	Diamant-18	Bogged approach into small field (too high). S-turned and then undershot into hedge.
1860	237	—	Phoebus-C	Sideslipping into small field with full brake to "shave" downwind hedge—hit it. Distracted by radio transmission.

Most soaring pilots have their favourite retrieve stories. Incidents which in part make-up for landing in unintentional places. We hope this graphic account instigates a batch of out and no return tales.

THE LASS OF BREDON HILL

By ANNE WALKER

IT was the Tuesday of the Inter Universities Gliding Competition at Gaydon Airfield. We'd brought along our lovely new Std Libelle "Quasar" and it was my turn to fly.

The task was a 117km triangle—Gaydon, M5/M50 junction and Droitwich A38/M5 junction. There was a 15kt northeasterly blowing, but I thought it would be no problem in the Libelle. This was intended to be a fun competition, much more up our street than serious regionals.

Off we went behind the Husky and I was soon climbing in a 4kt thermal. Crossing the start line, I joined the Phoebus in the next thermal. But funny, I was left behind as the Phoebus thermalled to cloud base—the wheel was still down.

For the next ten minutes I struggled. One wheel door stayed open, even with the wheel retracted. This produced a howling noise and a drastic effect on performance. I got it right at last but lost height over Evesham at 1,200ft and not a field in sight.

The place was one huge market garden and I had visions of landing among the gooseberry bushes!

I drifted in no sink and as the ground rose to meet me, there was the edge of Bredon Hill facing straight into wind. Putting the speed up, I dived for the hill arriving below the top and gentle lift carried me safely above the ridge.

Soon be away now, just wait for a thermal. Nice field on top, quite a change to do a bit of hill soaring. Still no lift—where was that field? The time was 3.30pm.

I secured the Libelle in a quiet hollow and as I had lost radio contact with my husband, Richard, decided to walk for a phone. I walked and walked and the only buildings I saw were uninhabited or derelict. At last I came across some people having a picnic who telephoned Gaydon for me while I returned to the Libelle.

An hour later I still had no radio contact with my retrieve crew but spoke to another station who passed on my position.

I explored again, this time in the opposite direction, and found a track leading down the hill. This turned out to be a newly made graded, but completely deserted, road. After half-an-hour's walking (it was very hot) I decided I must go back to the glider.

Meanwhile Richard had been waiting half-way along the second leg. He'd lost contact ages ago, as I was behind Bredon Hill, and an Olympia landed in a cornfield beside our trailer thinking it was his trailer marking a field.

Suddenly at about five o'clock he heard over the radio: "Quasar has landed on top of Bredon Hill". But no exact position was given.

Hunt for a Glider. Richard walked the full length of Bredon Hill in the scorching heat, growing more and more anxious as practically the whole of the top was covered in chest high barley. Just as he was giving up hope, there was a sheep field and his white glider—safe.

We walked back along the narrow path to the car to find the bottom of the graded road. We were informed that the person to direct us was Fred Archer, who writes books about the Hill. He lives at Ashton-under-Hill, right round the base and just below where Quasar had landed. But Fred Archer wasn't in.

So we went to see Tom Archer, but he wasn't in either. Mrs Archer said we could try their track up the hill, but it was an old one and certainly not the one

I found. We tried it but soon decided against going far.

The next farm may have the track, so off we went to the Hughes' farm. No one there had heard of this road up the hill. Maybe I imagined it?

Nine o'clock now. We had to get back to the glider, the parachute was on the wing and storms were forecast. Abandoning the trailer, we drove our Volvo Estate car straight up the side of the hill, clinging on as she bumped and bounced over the steep rocky fields.

At the top we climbed a wall and there was my road. It ran just above the Archers' and Hughes' farms.

In the gathering darkness I set off to walk down the track to find where it started while Richard stayed to secure the Libelle for the night. Owls hooted and bats flew past my face as I walked steadily downwards, at last arriving at a lovely old farmhouse where I inquired the way to Conderton. The pub there was to be our rendezvous.

A dinner party was going on and after the initial shock of a stray woman pilot asking the way at ten o'clock at night, I was whisked inside to tell my story.

I had come to the right place. Mr John is one of the old school of aviators. Both he and his wife couldn't have been more welcoming. Mrs John, incidentally, is Ursula Moray Williams, the author of many children's books.

The Johns wouldn't take no for an answer and insisted I should fetch Richard for a meal and stay for the night. The agent for the local landowner drove me to meet Richard who had got lost and stuck several times coming down the hillside in the pitch dark.

For the rest of the evening I'm afraid the Johns neglected their other guests to look after their uninvited ones. We were fascinated by tales of DH-9s, Avro 504s, Gipsy Moths etc until at one o'clock we fell into clean sheets.

Next morning we took the Johns up to the top of the Hill to see us de-rig—in pouring rain.

And the score? 39km flown. Retrieve time 19hrs. No, I wasn't exactly bottom!

PLEASE—CUT THE CACKLE

By MAGPIE (John Williamson)

THE silly season is here again—radio-wise! Prolonged chit-chat extolling the merits of this or that part of the hill-side beat; the excitement of the last few minutes of the struggle to Silver C height; the wifely entreaty to "come down, your dinner's ruined". All this and much, much more may be plucked from the ether on 130.4 or 129.9 any day of the week, and *ad nauseum* at weekends.

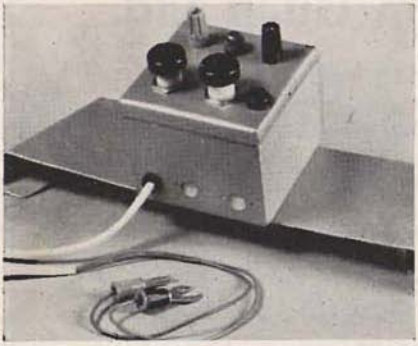
Trouble is radio is still a novelty to many, and agreed, it *does* make soaring more sociable and more fun. But it is a mixed blessing. If we all had a private channel there would be no difficulty, but we haven't and there is a problem.

For example the innocent chatter of tyros soaring the Welsh hills can seriously endanger two pundits trying to maintain proper separation in cloud over Nympsfield, preventing them from getting the vital message across. Worse still the deflation of a Yorkshire pudding, subject of a heated radio exchange at Lasham, might be the final straw that overloads the faculties of a Libelle pilot on tricky finals at Frome, so that he ends up in the hedge.

Part of the problem is that transmitters and receivers rarely match each other exactly but when they do the ranges they can achieve are quite remarkable. So although you may not achieve more than 30 miles to your own base station, you may unwittingly be blasting someone's head off 100 miles away.

So please, please cut the cackle! Limit your messages to those vital to your flight and retrieve. Organise what you are going to say before you press the transmit button. Keep off 130.4 at weekends unless you are cloud flying—and don't forget there is a recognised competition somewhere in England over *every* weekend from now until the end of August! Over to you—Magpie out!

AUTOMATIC SIGNALLING DEVICE



THERE have been many attempts to construct a reliable automatic device for launchpoint-to-winch signalling. This unit, designed by A. R. Wyse, is an electronic switching circuit to operate a 12 volt 30 watt Aldis signalling lamp and has been used very successfully at the Bedfordshire gliding school where he is a junior instructor.

The electronics fit neatly into a four inch cubic box which is clipped to a tripod supporting the Aldis lamp. The box was lined with a polystyrene ceiling tile to protect the electronics from vibration or mishandling. Three push buttons give the appropriate signals.

Power is provided by a 12 volt battery standing on the ground beneath the tripod. The leads from the unit connect to the battery, the lamp being connected to the terminals on the box.

The main advantages of this type of unit are consistent signalling irrespective of the operator; the bat-waving chore is eliminated; there is minimal drain on the power source; a completely solid state, therefore tamper-proof; insensitivity to temperature and small voltage changes and it is ideal for use in caravans where the lamp may be mounted on a tower.

Mr Wyse has sent circuit drawings and a parts list. If anyone is interested and would like photostat copies, write to the Editor enclosing a s.a.e.

The 3,000 mile cross-country!

BY THE TIME this edition is out, six leading glider pilots should have just covered a 3,000 mile cross-country course which will result in a $6,000 contribution towards the USA team's travel expenses to the '74 World Championships. This is the second year of the transcontinental Smirnoff Sailplane Derby which started from Los Angeles on May 14 with the gliders being launched daily by aerotow until reaching their goal, Washington DC.

World Open Class Champion Göran Ax of Sweden, the present USA Champion Ray Gimmey and Betsy Howell, who has set American women's goal and distance records, were competing with Wally Scott who won the race last year in an ASW-12 similar to the one in our photograph, plus John Ryan, a former national champion, and Woodson Woods, winner of major regional contests.

Edward H. Butts, competition director, predicted before the start that most of the route would be flown at altitudes ranging between 7,000 and 14,000ft at speeds of up to 120mph with each day's "leg" averaging between 250 and 300 miles.

GLIDER PILOTS—UNINVITED GUESTS

A MASTER of Foxhounds was telling me that summer is his busy time, when he does his "public relations stint". Dropping in on local farmers, thanking them for allowing the hunt on their land and generally fostering goodwill.

"Makes such a difference, just a few pleasantries," he said, "worth every second of the time."

It started me wondering to what extent the gliding world bothered about farmers. Whenever I have been on a retrieve I've been amazed at the co-operation and kindness of landowners. I'd hate a glider let alone a car load of enthusiasts over my garden.

But few show more than a passing concern for their crops—and not every pilot ends up near the side of the field. In fact most farmers seem to help rather than resent the de-rigging process, one this spring happily driving his tractor over a potato field to haul out a well-embedded Swallow. Meanwhile his wife scuttled off to make tea.

I know some clubs wisely make an effort to keep on friendly terms with neighbouring farmers but this soaring season, as in the past, hundreds of landowners will be invaded by a glider dropping in on them. Apart from the disruption of their work and perhaps minor damage to crops, they virtually have an uninvited guest for as many hours as the retrieve crew are likely to take over the journey and then an influx of more strangers. And I bet not one in fifty gets a letter or telephone call of thanks.

The BGA issued a code of conduct for pilots last year and as it is essential information for anyone cleared for cross-country flying, it's worth hunting out the June 1972 issue of S&G and re-reading it with the accompanying article on pages 180 and 181.

General & BGA News

DISASTER STRIKES BRISTOL GLIDING CLUB

FOR the second time within one week the Bristol gliding club has suffered major damage. The hangar containing a Capstan, two T-21's, Swallow, Prefect and both tug aircraft (Tiger Moth and Auster), in fact the whole club fleet, as well as the fuselage of a Kestrel 19, and another privately owned Tiger Moth was destroyed by fire during the night of May 6/7.

A passing policeman raised the alarm at 5am when he saw smoke coming from the hangar but nothing could be saved and the steel frame asbestos-clad building also suffered severe damage. Five members who were sleeping in the nearby club's dormitory got away safely.

The first fire, less than a week ago, happened to a K-13 which was under cover in Peter Scott's old private hangar acros sthe field and was totally burnt out. Since then special care was taken to secure everything at night and Ron Sandford, a senior member of the club, had himself locked the hangar doors on Sunday evening. The police, who are investigating the fires, found the locks had been forced and therefore arson cannot be ruled out!

The fuselage of Doug Jones's privately owned Kestrel (bought unfinished), on which he has been working for months and which he had left in the hangar for the first time, did not escape the fire. Also one of the T-21s was on hire from the Halifax gliding club to help out with courses.

The fire which was announced on the Radio brought immediate offers of help from other clubs, among them Ralph Jones from the Inkpen club with an offer of a T-21 and Lasham offered a K-7 and a tug and are willing to run Bristol courses at Lasham one of which was due to start at Nympsfield today.

A special meeting has been called for this evening at which decisions will be taken to cover the emergency. Initial estimate of the damage, which is covered by insurance, lies in the region of £17,000 to £18,000. *May* 7, 1973.

EUROGLIDE ENTRY LIST

Foreign entries received for the Euroglide contest to be held at Lasham from August 18 to September 2 include:

Country	*Pilot*	*Standard Class*
Austria	Wolfram Mittbach	Std Libelle
Holland	Daan Paré	Std Cirrus
Iceland	Leifur Magnusson	?
Luxembourg	John Braun	Std Cirrus
Sweden	Ake Petterson	Std Cirrus
Switzerland	Toni Ruch	Std Cirrus
Switzerland	Rudolf Stüssi	*Nimbus 2
W Germany	Manfred Dick	*Kestrel 17
W Germany	Otto Tönges	LS-1C
W Germany	Peter Sand	Std Cirrus

Bobby Clifford, South Africa and Tony Fowke, New Zealand have been accepted as *hors concours* entries for the National Championships thus making a total of 52 pilots. *Open Class

SPEED LIMITS FOR TOWING GLIDERS

ON May 1, 1973 the speed limit for private cars, light vans, or dual purpose vehicles not exceeding 30cwt unladen weight towing glider trailers was increased to 50mph providing the following conditions are fulfilled:

(a) The laden weight of a trailer with brakes must not exceed the kerbside weight of the towing vehicle.

(b) The laden weight of a trailer without brakes must not exceed 60% of the kerbside weight of the towing vehicle.

(c) The kerbside weight of the towing vehicle must be legibly marked in a conspicuous and readily accessible position either inside the vehicle or outside on its left or nearside.

(d) A prescribed plate bearing the number "50" in white, silver or grey on a black background must be displayed on the rear end of the trailer.

The speed limit for vehicles and trailers not fulfilling the foregoing conditions will be 40mph.

The kerbside weight of a car includes full tank, spare wheel, tow bracket etc but not persons or luggage.

Detailed regulations are available in Statutory Instruments 1973, Nos 747 and

748 (Department of Environment) obtainable from HM Stationery Office, price 8p and 3p respectively, or direct from Department of Environment, Trailer PO Box 686, London SW20 STB.

WORLD OUT & RETURN RECORD INCREASED TO 1,260km

BILL HOLBROOK, 51, of USA has broken the above record on Saturday, May 5 by flying his Libelle 301 (with 70lbs water ballast) from Lockhaven, Pennsylvania to Hansonville, Virginia and back. He flew 1,057km last October over much the same route on the day Striedieck claimed the record with 1,093km. (See S&G, December 1972, p466.)

BOOMERANG 200km RECORD BROKEN

WHILE British team pilots were attending a team meeting on Sunday, April 29, George Lee set the pace for the 200km triangle year to break the UK single-seater record by flying their club Kestrel 19 at 92.6km/h from RAF Spitalgate around a 210km course.

Bernard Fitchett managed to fly two 100km triangles one before and one after the meeting held at Dunstable. It goes without saying that no more Team meetings will be held in day time during the soaring season!

. . . And the 100km too

BARRY GOLDSBOROUGH who had flown a 200km triangle from Sutton Bank in his Kestrel 19 in the morning and realised it was not fast enough set off again in the afternoon to attempt the 100km triangle. He is the first pilot to exceed 100km/h on the UK single-seater record list for triangles. Length of triangle 107km, speed approx 103km/h.

. . . Also the 400km triangle goes

ALAN PURNELL took his Nimbus 2 round the Shobdon, Daventry, Lasham 412km triangle on Friday, May 11 to increase his own UK record to 80km/h. The flight took place under excellent conditions with a cloudbase starting at 3,500 and rising to 5,500ft during the day.

NEW RECORD FOR JUSTIN

JUSTIN WILLS, flying his Std Libelle, broke the UK 100km goal speed record of just over 138km/h on April 7. (All records subject to homologation.)

Support the British Gliding Team

S&G's copy date is such that this is being written over a very wet Easter. Thoughts of the British Team pilots breaking the 200km triangle record this season seem all too optimistic just now, but we are still hoping 1973 will have a really cracking summer—so the Australian heat next January won't be too much of a surprise for the British party.

Clubs have told us about some interesting fund-raising schemes, amongst them a photographic competition with entry fees going to the Boomerang Fund (Burton & Derby GC), a sweepstake on the fastest time achieved this season around a 200km triangle starting from the club site (London GC) and we hear that the South-West District GC have

put ½p on all bar prices, the proceeds to go to the Fund. We should like to hear from Fund representatives about any other unusual ideas so they can be passed on to other clubs.

Contributions are continuing to roll in from clubs and from individuals. A special appeal to owners of high performance gliders is producing a gratifyingly good result and we should like to thank everyone who has made a donation so far. If you haven't yet got around to signing your cheque to help give the British team the best possible chance in Australia we hope to hear from you soon. Please make your cheque payable to "BGA Boomerang Fund" and send it to the BGA office, 75 Victoria Street, London SW1H 0JB.

A Limited Offer. Philip Wills has kindly agreed to autograph a small number of copies of his new book on gliding, *Free as a Bird*. These will be sold from the BGA on a first come first served basis at £4.50 each (£4.70 mailorder) and the Boomerang Fund will benefit by £1.00 per copy. If you would like to have your own autographed copy please order from the BGA straightaway!

ROGER BARRETT, *Team Manager*

Recently appointed Boomerang Fund Representatives include:

Club	*Representative*
Bannerdown	Fl/Off M. B. Baillie
Bath & Wilts	K. S. May
Bicester	Fl/Off A. W. Gough
Crusaders	M. Mallinson
Fenland	SAC M. Mahon
Fulmar	Fl/Lt E. Bell
Hambletons	J. D. Pullan
Northumbria	D. C. Pattison
Ouse	A. Batter
Portsmouth Naval	Rosemary J Nourse
Rotherham & District	H. W. Pearson
South-West District	Sgt P. G. Cook
Wrekin	Sgt C. J. N. Waller

Other Fund Reps are listed on p110 of the last issue of S&G

WINNERS JUNIOR INTERSERVICES

Spitalgate May 5-13. The 30 pilots flying in the Senior Class flew on five days four of them contest days. M. Livesay and C. Woodier both in Std Libelle came first and second with 89 and 88 points respectively. Third, R. Dixon, K-6E, 76 pts. The 19 pilots in the Junior Class had three high-scoring contest days; won by J. Stockwell, C. Joslin and K. Hartley all in K-8 with 47, 45 and 42 pts. respectively.

GLIDING CERTIFICATES

DIAMOND HEIGHT

No	*Name*	*Club*	*1973*
3/158	B. Ward	in France	27.1
3/159	A. Shelton	SGU	20.10.72
3/160	H. Orme	Four Counties	23.3
3/161	R.McLuckie	Four Counties	17.3
3/162	J. G. Heath	SGU	28.3

DIAMOND GOAL

No	*Name*	*Club*	*1973*
2/435	Rhoda Partridge	Midland	10.2
2/436	A. R. Nicholas	Swindon	26.3

GOLD C HEIGHT

Name	*Club*	*1973*
Angela Goddard	in New Zealand	12.1
R. Rothnie	Deeside	4.2
C. J. Ridley	in Australia	15.12.72
R. M. Beach	Thames Valley	6.3
M. B. Hill	Swindon	4.3
W. S. Hill	Highland	4.3
D. P. Campbell	SGU	6.3
E. M. Handley	Fulmar	6.3
E. R. Smith	Fulmar	5.3
P. France	South Wales	4.3
R. N. Hunt	Anglia	3.3
J. C. Taylor	Bicester	29.3
A. S. Johnson	Four Counties	2.3
S. Mulholland	Four Counties	18.3
W. Mason	Coventry	31.3
J. G. Heath	SGU	28.3
F. W. Fay	Coventry	28.3
G. E. Gothard	Coventry	28.3
A. M. Blackburn	Derby/Lancs	28.3
L. Chadwick	Midland	31.3
C. Leo	Airways	6.3
W. J. C. Smith	Essex	4.4
R. J. Steward	Burton/Derby	3.4
A. W. Maitland	in Australia	20.12.72
S. Cervantes	Bristol	28.3
M. D. Wells	Enstone	7.4

GOLD C DISTANCE

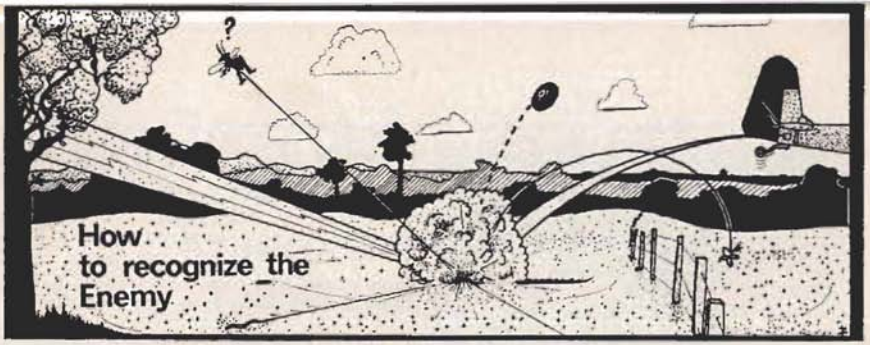
Name	*Club*	*1973*
Rhoda Partridge	Midland	10.2
A. R. Nicholas	Swindon	26.3

SILVER C

No	*Name*	*Club*	*1973*
3306	E. R. Smith	Fulmar	4.2
3307	N. I. Lovie	Deeside	30.12.72
3308	A.McCarry	Fenland	7.2
3309	J. C. K. Hutchins	SGU	21.2
3310	M. Clarke	Surrey/Hants	24.2
3311	K. Holmes	Cranfield	11.8.72
3312	D. A. Ross	SGU	15.3
3313	S. Fisher	Swindon	20.3
3314	N. Nisbet	Bicester	26.3
3315	R. Sherwin	London	27.3
3316	R. Ashurst	Thames Valley	27.3
3317	A. Maxwell	Bicester	26.3
3318	M. O. Breen	Thames Valley	27.3
3319	Lin Steynor	Airways	20.3
3320	M. B. Baillie	Eagle	30.4.72
3321	J. A. Emptage	Airways	5.4

ANGELA'S WORLD RECORD HOMOLAGATED

THE 500km triangle women's single-seater record broken by Angela Smith in South Africa on 28.12.1972 in the Libelle 301 has been homologated by the FAI at 108.9km/h.



—*or reflections of a paranoid P1*

By STEPHEN LONGLAND

"ANY particular problems?" you say to your P2 as he steps in and smashes the seat.

"Well!" he replies, unconcernedly strapping himself in and trapping the airbrake lever up his left trouser leg at the same time. "Well!"

"Well what?"

"The last flight was a bit of a *(censored)*!!!"

"Come, come. I'm quite sure it wasn't that bad," you say ironically, "let's have a look at your logbook."

What you are handed is a Thing that appears to have been three times into a vacuum cleaner, once down a lavatory and twice under a steamroller. What a treasury of delicate euphemisms, what a collection of blank epigrams, what a wealth of esoteric innuendo lies therein. At least, you assume this to be so since most of the entries are illegible.

The last remark is a laconic 'landing . . . with some help!' Exactly what that means is anybody's guess.

You, the novitiate P1, the Man in the Golden Flying Suit, ever present help in times of continual trouble, nerveless colossus of cast iron, are about to find out.

'Landing . . . with some help!' You wrote the same terse comment in another logbook not so long ago. It might have looked bland but to you it was a *Reader's Digest* Condensed Accident Report. The facts that you so beautifully compressed were as follows:

The enemy and your good self came weaving down the approach like an intoxicated J.L. Seagull. Suddenly, for absolutely no reason at all, the aircraft essayed one brief dart at the ground, found it and bounced 20 joyful and abandoned feet into the air, remaining poised at this height for an age—you reviewing your sinful past, the aeroplane stoutly defying every known law of aerodynamics and your P2 maintaining a good firm grip on the controls.

The enemy responded to your curt request for more practical attitudes by slamming the stick forward as far as it would go. You had no idea you could move so fast. There was a brief flurry of arms and legs.

"I've got it," you said, stirred rather than shaken. With one quick and expert karate chop, you helped the fiend let go of the stick. You slammed the brakes shut, prayed an economical prayer *("Help")*, plumetted through the wind gradient, bent the stick back over the edge of the seat . . . and arrived with a spine shattering jolt.

Apprehensive Start. Inevitably, your first few flights as naïve P1 are full of surprise and interest. For a beginning the flying machine that you are in charge of will *not* fly when your P2 takes over. Not wishing to hazard the machine and not too sure of just how far you can let things go before interfering, you tend to take over too early. This irritates the enemy.

You also give him mental indigestion by cramming information into a brain that in the circumstances isn't working efficiently, if it's working at all. This makes him fractious. What you do tell him may not appear much to you, but even the most intelligent P2 finds three simple, closely related facts more than enough.

He is about to enter into mortal combat with a machine designed solely to frighten him out of his mind. And very

successful the designers have been! No sooner does the enemy leave the ground than four-fifths of the mighty brain that solves complicated equations without resorting to the crutch of pen and paper is left behind.

That isn't to say you treat him like a blithering idiot. He may have a PhD and still spin at every opportunity. And if he can't spin, he'll ground loop. But one thing is certain, he won't forgive you if you make him look the fool that in a more familiar environment he most definitely isn't.

You may be the instructor, the man who is there to put the aircraft the right way up again, but, at first, his only master is fear and you are about as relevant to his survival as a sack of cement to a drowning sailor. He is thinking—if it can be said to be thought—with his gut, and that is knotted worse than any fumble at the winch.

Still, all this is to be expected. When you learnt to fly the thing you found most amazing of all was the unhurried ease with which your instructor got you out of this, that and the other potential full stop to your gliding career. With the benefit of the ageless wisdom of hindsight you realise that he probably wasn't quite as cool in the endless crisis as he made out.

Well, after several hundred launches as P1 in charge of a two-seater, you too manage to forge a passable imitation of Olympian detachment. Of course, you never suggest that you don't make mistakes but you exude the required air of relaxed practicality.

True, you are frightened occasionally but you don't communicate to your P2 the dismal fact—that he is the most alarming person you have ever had to fly with.

When your seat smashing P2 and your good self finally take to the air after the obligatory winch fumble, the flight is hardly as bad as you imagined. Nevertheless, it doesn't pay to slumber. Come the approach and the enemy goes utterly to pieces. The nose of the glider wanders inexorably towards six parked gliders and their wildly gesticulating crews.

Instructors' Code. He takes the avoiding action you suggest and attempts to turn downwind and ram the only telegraph pole in sight. You sort the potential mess out, land, debrief him as the glider is returned the mile to the launching point and sign his book with the words "approach and landing require polish". This, in instructorese, is for other P1's as full of darkly hidden significance as a Masonic handshake.

Fifteen suicidal P2's later and you are punch drunk. You'd dearly like a cup of tea or something more vigorous, like a gallon shot of amphetamines; you'd love to fly yourself for a change and be frightened on your own account. Instead you shout out "who's next?" and the "next" wanders across.

As part of your pre-flight checks you scrutinise him carefully, exercising meagre psychological skills to help discover what kind of personal problems are likely to interfere with his flying. You probably use a bit of phrenology and tie-reading just to help with an accurate diagnosis. The fact remains, however, he must be crazy to want to fly and you are mad to try and teach him.

Erratic. Perhaps he is the man who flies in Quantum Jerks. If he "ticks" rather than walks, he probably is. This man's thought processes aren't smooth, he explodes from one point to the next and flies like that as well. Teaching this person not to act as though some kind of electrical condenser is difficult.

Your next P2 might be the man whose mistakes are obvious to everyone but himself. This is the *man who knows everything*. He *knows* he can fly, even when stepping out of the wreckage. Indeed his sole reason for flying is to show he can do it much better than you. What *IT* is, basically, has nothing whatsoever to do with flying, as you may have already guessed. He is the man who competes in the game of life for every single thing except his own wife.

He competes with you from take-off to landing, competes with you over who shall have the stick and pits his vast strength against your puny muscle in a spin recovery that even at 300ft and heading for the basement he is definitely not going to make.

This particular person isn't living in your world at all. He dreams of wild aerobatic shows at zero feet over the launch point. Despite the braggadacio, his whole life is tinged, deeply and sadly, with the depressing hues of insignificance.

Type 780 Parachute Assembly. This assembly is SLIM. By using our new low bulk, low porosity 17' (5.2 m) para-conic canopy in this assembly we have available a parachute pack measuring only 19" high (482 mm), 12" wide at top (304 mm), 15½" wide at base (381 mm), 1½" deep at top (38 mm), 3¼" deep at base (82 mm), weight 17½ lbs (8 kgs)

Type 719 Parachute Assembly. Our standard assembly considered to meet the majority of needs in this field. Incorporating the well proven 24 ft. (7.32 metre) canopy. Weighs approximately 18½ lb. (8.39 kgs.). Size 23" × 13" × 5" (584 mm × 330 mm × 127 mm).

ARE YOU SITTING COMFORTABLY

Our main aim is comfort - with 8 hour flights now commonplace, the harness of any parachute must be comfortable to the wearer. Our range of four specially designed parachutes for light aircraft and sailplanes meets all known requirements. Two versions not shown here are the 737 shoulder pack and 758 which is basically similar to the 719 but 3" shorter in length.
We are also manufacturers of the well known Type Z and Light Aircraft Harness ranges for 25g and 12g stresses.

RFD-GQ

RFD COMPANY LTD

GQ

RFD-GQ Limited, Godalming, Surrey, England.
Tel: Godalming 4122 Telex: 85233

He's not the hero he imagines but a sad casualty of the "virile man" illusion. He can't bear to admit to a mistake.

By comparison with that monster of twentieth century egotism, your other P2's may seem mild. But you know you have to be constantly aware of the dangers of boredom. So, they all fly appallingly! Go into a reverie for two seconds and they'll have you upside down at ten feet.

Same Mistakes. You smile at the next and offer helpful suggestions, remembering that they are all different people though they all make the same unbelievable mistakes. If you happen to be in a K-13 or K-7 you will be able to judge how nervous he is by the mist obscuring your view forward.

Of course, with the really nervous ones you will be extra calm and thoughtful. You won't curse as he winds the glider into a spiral dive or grunt as he attempts to lower the rapidly increasing speed by squeezing the stick to his backbone and flattening you in the bottom of the cockpit like a piece of pastry. Instead, before things get out of hand, you offer helpful suggestions like "Get the blankety blank blank off!" or you will raise your voice and bellow *"I have it!"* Either he won't react or will scream back at you "What?". Even after you've sorted things out and explained why things went wrong and how they should be prevented, he will do the same again.

But, there again, the man getting into the front may be the *man who knows everything he knows*—and that's not much. You know the sort. He has some sort of agreement with God, an insurance policy that states that no matter what happens, he will always survive.

Only in Theory. He has an implicit faith (sadly misplaced) in the published figures for the two-seater's glide angle. He's got it worked out—in theory. Practically, as only you can see, his brilliantly calculated circuit is going to end halfway round the final turn with the most spectacular cartwheel.

The next man may well be that rarest and most melancholy of birds, the *man who will never learn how to fly*. He imagines that life has dealt him a worm-eaten hand. The truth is more subtle. When he married his wife clobbered him. He had kids and they clobbered him. He asked the boss for a raise. The boss leapt to his feet and clobbered him. His stomach went sour and gnawed itself into ulcers—that was his body clobbering him.

On the field he starts to run the flying, to organise everything—regretfully, you clobber him.

Whatever type your P2 is, he will give you a good ride for his money.

One day he will master the fiendish rudder, the horizon won't roll up and down as if you were in a small boat on a heavy sea, the wings will be level when they are supposed to be and turns will be when he demands, not when the air disturbs. He will also keep a good lookout and not have to be reminded that there are hundreds of people in the air quite probably not looking where they are going and he oughtn't to be one of them.

Local Airspace Agreements

THE BGA Airspace Committee know that some gliding clubs for many years have concluded local agreements with nearby airfields, be it military or civil, for their mutual airspace benefit. These agreements, while applying only to the local pilots and not to the operations of gliders from other clubs, have probably proved worthwhile in the interests of better relations with other airspace users.

It has come to light in a recent case, that immediately on completion of such a local agreement, the airport concerned made an application for a Special Rules Zone and Area, plus an advisory or full airway. At no time during the negotiations with the Club did they intimate that this was their real object. It would appear, from a preliminary examination of their application, that part of their case is that the local gliding club can have no objection because of their local agreement.

Whilst not wishing to discourage any further such agreements, clubs should be aware of the implications of this particular case before completing them.

JOHN ELLIS (Chairman, BGA Airspace Committee)

OVERSEAS NEWS

Please send news and exchange copies of journals to the Overseas Editor's new address: A. E. SLATER, 7 Highworth Avenue, Cambridge CB4 2BQ, England.

LILIENTHAL MEDAL FOR 1972

JAN WROBLEWSKI of Poland, World Champion Standard Class 1972, and World Champion Open Class 1965, has been awarded gliding's highest international award the Lilienthal Medal. Since the World Championships in Yugoslavia he has travelled widely and taken part in the 1972 *Daily Telegraph* contest at Dunstable; the New Zealand Nationals in January 1973 and visited Waikerie, Australia for several days in March.

TRAGIC END TO SECOND KENYAN EXPEDITION

ON February 27, a Champion tug aircraft got into a vertical dive to the right shortly after take-off while towing a K-13. The German pilot, Waldemar Lorentzen, was fatally injured but the pilots of the K-13, Dr Teddy Stedfeld and Herr Hein landed safely from about 150ft.

This second expedition arranged by the Germans took place at Nakuru from February 18 to March 12. None of the pilots had brought their own machines; instead they flew the K-13 and a K-6 already stationed in Nakuru. Although excellent conditions were encountered no records could be claimed on the gliders available.

Schempp-Hirth are looking into the possibilities to station one or two Cirrus sailplanes in East Africa which could be chartered by visiting qualified glider pilots. *Luftsport.*

MOUNTAIN SOARING CONTEST

THIS year's "Championnat de vol a voile en montagne", the 8th in the series, will be held from June 30 to July 12 at Vinon in Southern France as usual, and is open to pilots of all nations with "une certaine expérience" of mountain soaring, flying single-seaters with a gliding ratio exceeding 31, and to two-seaters. Classification will be in Open and Standard Classes, and the two-seaters will be integrated into one or other of these: for example, a Caproni A-21 will fly in the Open Class but an ASK-13 or M-200 will be in the Standard. Entries can be received up to June 1, addressed to Dr M. L. Marcy, 19, Route Nationale de St.-Antoine, 13015 Marseille, France. Entry fees are: under 22 years, 450F; over 22, 800F, plus aerotows. *(Aviasport.)*

THREE DIAMONDS

PILOTS from 29 countries had 3-Diamond badges up to the end of 1972, with Great Britain coming 7th. Thus: Poland 257, USA 247, W. Germany 244, France 151, Austria 91, Switzerland 25, Gt. Britain 24. Canada comes 8th with 19, New Zealand 10th with 16, South Africa 11th with 15, and Australia 20th with 6. But it looks as if the order of the first three may soon be reversed, for in 1972 alone W. Germany added 42 to her total, the USA 28, and Poland 12. *(Der Flieger.)*

OSTIV PARTICIPANTS

THOSE wishing to read papers at the next OSTIV Congress, to be held at Waikerie from January 20 to 25, 1974, are asked to notify, and send summaries to, the chairman of the relative section by late September at the latest. These are:—

Scientific papers (soaring meteorology): Dr. Joachim P. Kuettner, c/o Meteorological Office, John Scott House, Market Street, Bracknell, Berks, UK. And a copy to: Mr. Derek G. Reid, CSIRO, Division of Atmospheric Physics, P.O. Box 77, Mordialloc, Victoria 3195, Australia.

Technical papers: Mr. Floyd J. Sweet, 1910 Massachusetts Ave., McLean, Virginia 22101, USA.

A limited number of participants can obtain 60% reduction in air fares through OSTIV. Group travel from Melbourne, and accommodation at Waikerie, are being arranged by D. G. Reid (address above), who should be notified as soon as possible.

OSTIV is just 25 years old. A history of it, and its 1931-39 predecessor ISTUS, written by L. A. de Lange, is being published by the Swiss *Aero Revue*, starting in June.

BULAWAYO

BULAWAYO gliding club members, Paddy Sullivan and Rodney Davison once again took part in the Midlands championships at Gwelo, flying the Vasama.

The weather was not particularly good, but they both enjoyed themselves and managed to complete the tasks set.

After the Championships, Murray Albertyn took the aircraft to Salisbury where he set out on a 300km triangle; unfortunately on the last leg he got lost and could not find Warren Hills airfield, home of the Salisbury gliding club.

He finally landed near Selous, damaging the machine in doing so. He had been airborne for about seven-and-a-half hours.

This sailplane has been repaired and completely resprayed and we are sure that it is now the finest looking glider in Rhodesia.

After having no two-seater for 18 months, our long awaited K-7 arrived from Windhoek, South West Africa, in February. R.D.

HANS-WERNER GROSSE—827km TRIANGLE

ON Wednesday, May 16, Hans-Werner Grosse, Germany, completed the first 800km triangle in the world. He took off from Mölln (near Hamburg) at 08:29 with cloudbase at only 1,600ft which rose during the day to 4,000 and later to 7,000ft. He took his ASW-17 round the course Bebra, (nr Eisenach), Nordhorn, (nr Dutch border), Mölln at an average speed of 92km/h and cruising between 2,000 and 3,000ft. When he arrived back over Mölln there was still sufficient lift for him to carry on and he landed after a total distance of 930km at 19:00hrs. As usual Hans-Werner carried out his flight without cloud flying and his average rate of climb was 2m/sec. Twice he had been down to 650ft and he landed from 2,500ft at Rensburg. He said that had he had a final climb to 4,000ft he could have completed 970km. He feels that a 1,000km triangle is now a distinct possibility. R.H.

OBITUARY

SIR ROGER CONANT, Bt., M.P.

ONE of the most importants jobs at a Championships, and especially a World Championships is to look after the many visitors properly—whether distinguished or merely enthusiastic. It is, however, a job that is frequently carried out inadequately because no one seems to have time to spare from the pressing needs of the operation itself. This did not happen at the World Championships at South Cerney because we had Roger Conant, who looked after guests or visitors with care, kindness and great charm.

Regrettably, Roger died on March 29. He was not a young man when he started gliding in 1954, but went at his flying with characteristic enthusiasm gaining his Silver C in 1969 at the age of 70. As an MP he saw the need for a better understanding of gliding, and formed the Parliamentary gliding club to help spread the gospel. His land at Harringworth housed the Perkins club, and even provided hill soaring on "Sir Roger's Ridge".

He got a lot of fun out of his gliding and contributed a great deal in return. A.W.

CANADIAN NATIONALS 1973

PIGEON Lake, Manitola, the Winnipeg Gliding Club's flying field, is the site of this year's Canadian Championships from June 26 to July 5. There will be Open and Standard Classes: also, for the first time, a Sports Class to give less experienced pilots competition experience, with tasks mostly chosen to provide Silver and Gold C legs. Correspondence about the contest should be addressed to Mrs. Hazel Flint, 96, Harvard Avenue, Winnipeg, R3M 0K4.

Activities during 1972 of Canadian gliding clubs which sent in returns show a total of 10,934hrs flying from 29,359 launches flown by 75 club gliders plus 89 privately owned. (*Free Flight.*)

SITE FOR NEXT S. AFRICAN CHAMPS?

THE Port Elizabeth correspondent of *Wings over Africa* quotes Claude Hardman as saying, after attending a camp at Colesberg with the Eastern Province Sailplane Club, that the next South African Championships ought to be held there, as it was a better site than Bloemfontein where he had already flown in two Nationals. At the Colesberg camp pilots at times found lift of 1,300ft per minute (22ft/sec or nearly 13kts), and there were standing waves almost every evening. Further, there was little evening build-up on the roads to hamper pilots returning from cross-countries.

Best flight of the camp was Barry Becke's 560km triangle. Most of the time pilots could get away from winch launches without using their tug.

CIVV ELECTIONS

PIRAT GEHRIGER (Switzerland) was re-elected President. Seff Kunz (West Germany), Ann Welch (Great Britain), Pierro Morelli (Italy) and Boris Jancelowicz (Poland) were re-elected Vice-Presidents at the March meeting of CIVV.

LADIES INTERNATIONALS AT LESZNO

THE first international contest for ladies to be held from June 24 to July 8 at Leszno, Poland has received 27 entries from 16 countries but no-one from Britain has entered.

Gliding provides so many fine picture taking opportunities. But there's rarely time to fiddle with camera settings and film loading. Even more so in competition gliding when photographic evidence may be required. That's when a Kodak 'Instamatic' camera comes into its own. With drop-in film cartridge loading, minimal adjustment, big clear viewfinder and compact shape it's made for shooting fast and sure.

That's why they're recommended by the B.G.A.

(You'll find them quite at home on ground level too!)

The cockpit camera

Look one over soon at your Kodak Dealer.

Kodak

Kodak and Instamatic are trade marks

SOAR AHEAD WITH A 'BLANIK'

Unsurpassed in Performance and Reliability
Fully Aerobatic

Now with Improved Airbrakes

Delivered U.K. £2,945 and Duty £150
(including instruments)

Over 1500 manufactured and production continuing

Get with it—join the 'BLANIK' set and progress in the '70's

Distributor for U.K., Eire and Canada:
Peter Clifford Aviation Limited, Oxford Airport, Kidlington, Oxford
Tel. Kidlington 4262 Cables: Cliffair, Oxford

Sole Exporter for Czechoslovak Aviation Products:
Omnipol Limited, Washingtonova 11, Prague 1, Czechoslovakia

BOOK REVIEW

Animal Flight. By COLIN J. PENNYCUICK, Ph.D. Published by Edward Arnold. Price £1.20.

COLIN PENNYCUICK is both a scientist and a member of the Cambridge University Gliding Club who has flown in Nationals, so is better qualified than the many amateurs who have written most of the books on this subject in the past. His sciences are aerodynamics, mechanics and physiology and he has a lot to say, but as this book is one of a series he only has 67 pages in which to say it, so it is rather condensed and only a few examples of the "did you know that?" kind can be mentioned here.

For instance, "if a certain fraction of the body weight consists of fuel and is consumed, the distance the bird can fly depends *only* on its effective lift/drag ratio, not on the weight or size of the bird". In practice this means that a bird carrying its own weight of fuel at take-off should fly 3,400km, and Dr. Pennycuick warns conservationists that they must conserve the refuelling areas used by migrating birds.

Another quotation: "if bird A weighs twice as much as bird B it will need 2.25 times as much power to fly but will only have 1.59 times as much power available from its muscles". Consequently "there is a definite upper limit to the size and weight of practicable flying animals" which in practice is 12kg in several different orders of birds, though it is 20kg for the super-condor and was 18kg for the pterodactyl, both of which fly (or flew) almost entirely by soaring. Dr. Pennycuick does not mention man-powered flight, but a ten-stone man weighs 64kg: one must presume that flapping flight is much less efficient than using a propeller with a fixed wing. (Otto Lilienthal's brother Gustav, who believed in ornithopters, pointed out contemptuously that Nature's nearest approach to the aeroplane is not the bird but the beetle, which uses one pair of wings as a propeller and the other pair as a fixed aerofoil.)

Another subject with a bearing on man-powered flight is discussed in the book: respiration. In the human lung the ultimate subdivisions, where oxygen is passed to the blood, end in blind alleys, so that most of the oxygen breathed in never reaches them. In the bird's lung, on the other hand, the air blows right through from end to end because the ultimate subdivisions are tubes open at both ends. Many people on learning this, including the reviewer, have assumed that this is Nature's modification to enable the flight muscles to get the enormous amount of oxygen they need, by picking up all of it that passes through the lungs.

Dr. Pennycuick does not agree, on the grounds that (a) the bat has our mammalian type of lung, yet flies well, and (b) he quotes V. A. Tucker as finding that the lungs of a flying budgerigar "are able to extract up to 6.5% of the oxygen in the inspired air, and are not noticeably superior to mammal lungs in this respect". Figures I have collected are very different, though almost as sparse. Human lungs are said to absorb 24% of the oxygen breathed in; and as to birds, figures given in *Biology and Comparative Anatomy of Birds* (Ed. A. J. Marshall, Vol. 1, p.379) show the proportion of oxygen absorbed to be 30% for the pigeon, 35% for the duck, and 36% for the chicken. However, Pennycuick's view is favoured by A. N. Worden (*Functional Anatomy of Birds*, p55), who says that birds' lungs "resemble those of some reptiles"; and as both birds and mammals have evolved from reptiles, it looks as if Nature has modified the mammalian lung rather than that of birds.

Also relevant to man-powered flight is Dr. Pennycuick's demonstration that every bird has a maximum and minimum possible useful wing-beat frequency, and that, with an increasing size of bird, the maximum frequency decreases faster than the minimum till a limit is reached where both frequencies are equal. This means, if you work it out, that a flapping-winged man's useful maximum frequency is less than his useful minimum—or, in other words, for a man no flapping frequency is any flipping use.

Deserving of a final mention is the author's reference to the President of his gliding club, Prof. John Pringle, who discovered, contrary to accepted belief, that an insect's wing muscle can contract many times in response to a single nervous impulse. (Pringle also discovered, incidentally, that flies balance themselves in flight by Nature's version of the gyroscope.) A. E. SLATER

CORRESPONDENCE

RHODA ANSWERS BACK

Dear Editor,

I'm really enjoying this correspondence. But, before I get ground into the mud, could we first look at what I actually said? Basically this gliding is a man's sport. Not many women glide although there are some who fly beautifully. It's hard to organise flying when child bearing and rearing but men are remarkably kind to women pilots who really love gliding.

Anne wrote giving valuable advice about how to keep up gliding while child rearing. She made my point by saying "Thank you, Richard".

Erica says "No, no, no!" I don't know you Erica but are you sure you aren't one of the exceptional women who fly beautifully? You don't suffer from premenstrual tension. Bully for you. Doesn't make it a myth though—like Mary—I go a strange greyish yellow colour and fly angrily at the windsock.

To one of your views I say "no, no, no". It is possible to be happly married to a man who doesn't glide. (Think of all the men who are happily married to women who don't glide.) My husband owns a lovely sailing boat and the possibility of him understanding me even better than he already does fills me with blind panic . . .

Women, girls, sisters, dames, please don't talk about being close behind me. It makes me sound as though I'm out in front. Nonsense, I write for S&G because I

enjoy doing it, not because I'm a perishing pundit.

The letter that absolutely enchanted me was from that "male chauvinist pig". Really subtle. But John, I haven't seen you for ages. When did you take to reading the agony columns in women's mags?

Cardigan, West Wales. RHODA PARTRIDGE

FROM THE OTHER HALF!

Dear Editor,

My attention is drawn to correspondence appearing in your April/May issue which "confirms" that there exists no such female as your contributor "Rhoda Partridge".

I am more than a little put out. Incurable romantic that I am, I clung long and loyally to the Yeti and to "Nessie", the former exploded and the latter quietly submerged. Now Rhoda Partridge, my final handhold on romance, is being firmly banished to the wastelands of mythology. She does not exist, we are assured.

I am left to wonder—and to ponder—"Who was that obliging woman who appeared suddenly in my home—and then ever more occasionally—calling herself Rhoda Partridge, masquerading as my wife and bearing me all of five children?"

The mind boggles—or perhaps only my mind!

Cardigan, West Wales. GRAHAM PARTRIDGE

POSITIVELY RHODA

Dear Editor,

Since it is impossible to prove a negative, neither the non-existence of God, nor the non-existence of Rhoda Partridge can be proved, not even by statistics as John Jefferson seems to think. On the contrary, if we take Rhoda Partridge's non-existence as a null hypothesis to be disproved, then John Jefferson will be able to disprove her non-existence himself on almost any weekend at the Long Mynd. And I am sure he will be delighted to find that unlike some of those women of "women's lib", Rhoda Partridge has all those feminine qualities that make women so agreeably different from men.

Cambridge. PETER O'DONALD

CONSIDERATION OVER AEROTOWING

Dear Editor,

The following is true, only the names have been changed to protect the guilty. I am an instructor/tug pilot/dogsbody of a gliding club that operates in an urban environment—i.e. we are surrounded by houses. Conscious of the fact that we operate a tug and our members can occasionally afford an aerotow doesn't entitle us to inflict our airborne flatulence on the surrounding populace; climb-out and approach patterns are always flown so as to cause the minimum amount of disturbance compatible with safety.

In this we have been fairly successful, the only noise complaints have either been from the local nut or justified.

You may therefore imagine my feelings when visiting some friends who live near a gliding club in the depths of the country to find that this club were towing directly over the village and ignoring the open country all round. The residents were, to say the least, annoyed and I am forced to agree with them.

This club was equipped almost identically to my own and a study of the lay-out of the two sites on a large scale map shows that they could easily tow well clear of all populated areas.

A message has been sent down the grape-vine to the offending club who have, I think, mended their ways. However, as this age is becoming more and more pollution and noise conscious, it would be a great pity if our activities became restricted due to the inconsiderate or thoughtless actions of a minority.

Both the Chairman and the CFI of this club are bigger than me, so I sign myself:

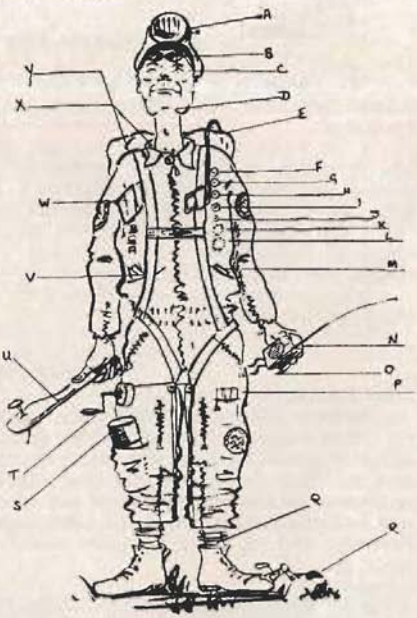
(*Full name and address has been given.*) PAPA BRAVO

FOR THE WELL-DRESSED GLIDER PILOT!

Dear Editor,

In response to E. E. Gray's letter suggesting we should have a gliding uniform, I enclose a design for a practical and worthwhile garb.

A—helmet with flashing lamp for signalling
B—polaroids
C—far-seeing gaze
D—determined chin
E—parachute
F, G H—A, B and C badges
I—Bronze C
J—Silver C
K—space reserved for Gold badge
L—space for Diamond
M—Yokel/English, English/Yokel dictionary
N—walkie talkie (with real legs)
O—specially grown nail for use as screw-driver
P—Red Cross food parcel
Q—rot-proof socks
R—wing tip clamp
S—thermos flask
T—winch for raising flying suit legs after landing in swamps
U—cudgel for driving off small and large children, animals etc after landing out
V—foreign currency
W—maps, logbook
X—thermal underwear
Y—inflatable shoulders for duty pilot chore



Maidenhead, Berks. ALAN BRIGHT

PARACHUTE JUMPING—NOT SUCH A WORRY

Dear Editor,

From the first day I flew in a glider I worried about the parachute—not whether it would work if needs be, but whether I could cope with a bale-out. Finding many like-minded members amongst the Essex club, we have organised several groups to attend weekend parachuting courses. More than 20 have now made at least one jump.

Before climbing out of an aircraft for the first time I experience sheer terror, but in seconds the panic was over. I was out and away and totally unprepared for the pure delight of floating down under a canopy (truly like being a bird) or for the surprisingly gentle landing. I think we all enjoyed our jumps. Most of us liked it so much, we went back for a second. We all felt the course was very worthwhile and have gained enormously in knowledge and confidence.

We are much indebted to John Meacock and his colleagues at the Peterborough Parachute Centre for the first rate courses organised on our behalf and strongly recommend other glider pilots to have a go. May I wish P. A. Howell and his school every success with their venture.

Perhaps we could then challenge any other gliding club to a spot landing competition—provided it was outside the soaring season of course?

Leigh-on-Sea, Essex. SHEILA CORBETT

ENTRIES SPORT/CLUB CLASS NATIONALS HUSBANDS BOSWORTH MAY 26-SEPTEMBER 2

Pilot	*Sport*	*Club*
Bowden, D.	Std Libelle	
Brindle, G. F.		K-6E
Chinn, G. M.	Std Libelle	
Dickson, W.		K-6E
Ellis, C. A. P.		Skylark 3
Farmer, A.	Kestrel 19	
Garrod, M. P.	ASW-15	
Harrison, K.	Cobra	
Hale, R. J.	Std Libelle	
Hogg, A.	Std Cirrus	
Jarvis, H. R.		K-6CR
Keily, K.		K-6E
Libburn, D. W.	Std Libelle	
Lyndon, R.	Std Libelle	
McLuckie, R.	Kestrel 19	
Nicholas, A. R.	Phoebus C	
Oulds, T.		K-6E
Rollings, C. C.		K-6E
Saundby, R. P.	Std Cirrus	
Seth-Smith, M. P.		K-6E
Sharman, R.		K-6E
Shephard, E. G.	Std Cirrus	
Simpson, C. R.	Kestrel	
St. Pierre, A. H. G.		Pilatus B-4
Torode, H. A.		K-6E
Vann, E. J. C.	SHK	
Waller, C. J. N.		K-6E
Welsh, J. H.		K-6E
Winning, E. J.	Std Cirrus	
Zealley, T. S.	Kestrel	
Robertson, D. J.	Kestrel	
Stafford Allen, R. C.	Std Cirrus	
Strachan, I. W.		SF-27M
Fay, W.	Std Libelle	
Cardiff, J.	Cobra	

Advertisements, with remittance, should be sent to Cheiron Press Ltd., 8/10 Parkway, London, NW1. Tel. 01-267 1285. Rate 10p a word. Minimum £1.30. Box numbers 40p extra. Replies to Box numbers should be sent to the same address.

FOR SALE

WEIHE, Series 2, 18M. Built Malmo. Full instruments. Twin vario, electric turn and slip. Major last year. C of A April 1973. With trailer, £750. Can be seen North Weald, Essex. Phone Brentwood 4121. Wendelken.

OLYMPIA, recent 10 year C of A, and recover. Skylark type canopy, complete with trailer and FULL instrument panel. Available immediately. Ring Navenby 554 evenings.

T-53B PHOENIX 2-seater. Low hours, trailer, no C of A. £2,300 or near offer. George Whitfield, University of Reading, Dept. A.P.S. Telephone Reading 85123.

SKYLARK 2 and trailer for sale, some instruments available separately. Tel: Stratford-on-Avon 2650 (business hours).

MOBILE winch mounted on rebuilt long wheel base Land Rover. Particularly suitable for expedition use. MOT expired. £375. Ring Lambourn 774.

LIBELLE 201B—latest version. Immaculate. Trailer and instruments less horizon. Offers Box No. SG 403, available mid August.

DIAMANT 18, fully instrumented. Rated L/D 45:1 at 51kts, min sink 1.7ft at 38kts. BGA handicap 80%. Sailplane trailered on cradle trolley within normal trailer and pulls out complete on cradle for easy rigging and stowing. Tel: Stratford-on-Avon 2650 (business hours).

SUPER NEW 26' lightweight wooden trailer, Rubery Owen axle, spare wheel, originally designed for Skylark 3. £350. Seen Usk. NEW GQ glider parachute. £65. Tel: Wolvesnewton 263 for details.

CRASHED Blanik salvaged spares for sale including complete fuselage from wing L/E. Retractable wheel all control runs etc, £100 the lot. Telephone Stratford-on-Avon 2650 (business hours).

G.Q. PARACHUTE—perfect condition, new July 1971, £50—Secretary RCT Gliding Club, 14 AD Regiment, RAF Upavon, Wiltshire.

ASW-15 ready to fly. Basic instruments EB 69 parachute, lightweight fitted trailer, C of A. John Glossop, 33 Woodland Road, Sawston, Cambs. Tel: Sawston 3484.

FALKE SF-25 Two-seater powered sailplane. £1,600. Swinn, Scugdale Hall, Swainby, Northallerton, Yorks. Tel. Hutton Rudby 700553.

FOR SALE (continued)

T-21B for sale. Enclosed canopy. Major C of A in 1972. C of A expired February 1973. £875. Ring Lambourn 774.

IMMACULATE DART 15 with sound trailer £2,000. Instruments, radios, oxygen, parachute and barograph also available. Giles, 3 Kenton Road, Harrow, Middx. Phone daytime 01-427 9001.

SKYSURFER Magazine. Foot-launched gliding $7.00/yr. Box 375, Marlboro, Mass. 01752, USA.

METAL trailer, 27ft long, newly built to guaranteed highest standards; corrosion and rot-proofed. Any offer considered. Telephone Lewes 3845.

TRAILER—enclosed Slingsby type with fittings for DART 17R. Good condition. Offers to Clay, Kirkburton 2668.

OLYMPIA 2B complete with instruments. £800. Trailer available. G. Bagley, Staff Mess, RAE, Farnborough.

AUSTER tugmaster, 3 seat full dual, Major 10/1 800hrs left. C of A due June, possible recovering, £900 or best offer. T-21B VGC sell for £1,250 or dry hire £20pw. West Wales, Clarence Esplanade, Tenby 2705.

SHORT NIMBUS Tandem Two-seater for sale. Full instruments, C of A. Trailer. Good home essential. Box No. SG 396.

K-2 complete with instruments. Covers, immaculate condition, major C of A just completed. Can be seen at Shobdon. Offers to S. F. Elms, Pheasant Hotel, Welland, Malvern, Worcs. Tel: Hamley Swan 400.

DART 15—Superb—ready to fly, complete with full instruments, oxygen, parachute and trailer. £2,500 ono. Seen Long Mynd. Mansell, Mosterley Farm House, Cound, Nr Shrewsbury SY5 6BH. Tel. Acton Burnell 251.

SKYLARK 3G, good condition, full panel, including horizon and electric vario. 10 year C of A completed this year, valid to January 1974 with good trailer. Available immediately. £1,800. Phone Bourne End 23458.

T-21B with or without C of A. Nearest £850-£900. Good condition. Ring Burton-on-Trent 64357 daytime for details.

T-21B two-seater for sale. C of A to Feb. '74, nose ballast mod. Ouse Gliding Club, Rufforth Airfield, York, or Tel: York 24322/27461.

SOARING Hang Gliders, Jig-built Rogallo type, nylon or poly. Sail, photo and full details from Stafford Sailwings, Blakefield House, Jawbone Lane, Melbourne, Derbyshire.

SHK-1 Comp No. 325. Instruments, complete with trailer. Price £3,100. Artificial horizon available. Contact M. Bagnell, after 7.00pm, Aldershot 28610. Glider may be seen at Husbands Bosworth by appointment.

SKYE ADC Mk II. Offers. Pye Cambridge, 129.9, 130.4. £70. Cheddington (0296), 668119.

FERRANTI Mk 6. (Miniature horizon), £80 o.n.o. Phone Little Gaddesden 3407.

SITUATIONS WANTED

EX DETECTIVE Superintendent aged 38 years seeks interesting position connected with gliding. Experienced in repairs to wood/fabric machines. 130 hours on variety of aircraft. Silver C instructing experience. Available for interview 1st June, 1973. Box No. SG 402.

INSTRUCTOR, full rating and PPL available for Summer Courses from mid July to September. 2 seasons experience of this work. Hugh Watkins, 15 Church Walk, Penn Fields, Wolverhampton, WV3 7VY. Tel: Wolves 34995.

SITUATIONS VACANT

WANTED fully rated BGA Instructor for Summer Courses. Motor glider rating advantage. Apply to: Secretary, Cairngorm Gliding Club, Blackmill, Kincraig, Inverness-shire.

WANTED

GRUNAU or similar. Early solo type. Also pair of wings for Grunau. Reply Pearson, 38 Meadow Bank Avenue, Sheffield, S71PB. Tel. 51959.

WANTED (continued)

SYNDICATE requires glider in Swallow Oly Skylark K-8 range. Ring Fundenhall 347 evenings.

ONE "S&G", February 1959. Ingvar Hyllander, Berguusgatan 9F, 21459 Malmö, Sweden.

K-7, T-21 or similar, full details. Secretary, East Kyloe, Beal, Berwick-on-Tweed.

INFORMATION concerning two TRT/2 air radios lost in the post. Serial numbers A208 and B209. Reward on recovery. Anglia GSC, RAF Wattisham, Ipswich, IP7 7RA.

INSURANCE

GLIDING HOLIDAYS

AIRFIELD EQUIPMENT

FINANCE

FINANCE for your glider purchases. Advances made on your present glider. Peterborough & Fenlands Finance Limited, 15 Broadway, Peterborough. Telephone 66191.

PUBLICATIONS

SOARING PILOT — the INTERNATIONAL gliding magazine. A quarterly journal devoted to the glider pilot with the professional outlook. Annual subscriptions £1.20—UK, £1.50—Europe, £1.60—USA and Commonwealth. Write SOARING PILOT, Portland Chambers, 120 Portland Street, Manchester 1.

AUSTRALIAN GLIDING Monthly, publication of the Gliding Federation of Australia. Prepare yourself for the 1974 World Championships! A complete coverage of Australian soaring and exclusive features of international interest. Subscription £3 or $7.50 U.S. to Box 1650 M, G.P.O. Adelaide, South Australia 5001.

"SOARING"—official organ of the Soaring Society of America. Edited by Douglas Lamont. Address: Box 66071, Los Angeles, California 90066, USA. Subscription: $8.00 outside USA; apply to your post office for a form.

Put yourself in the Picture. Buy AIR PICTORIAL each month for the world air view in pictures and features. Reports and photos of aircraft and sailplanes, military aviation news, spotters' notebook, etc. Price 25p from your newsagent. For free specimen copy send 5p in stamps to Dept S.G., Seymour Press Ltd., 334 Brixton Road, London, S.W.9.

NEW ZEALAND: "Gliding Kiwi" Official Gliding Magazine of the N.Z. Gliding Association. Printed October and alternate months. Write N.Z. Gliding Kiwi, P.O. Box 545, Tauranga, New Zealand. £1.80 sterling for year's subscription (inclusive of postage).

It will, of course, be understood that the British Gliding Association cannot accept responsibility for the claims made by advertisers in "Sailplane and Gliding".

CLUB NEWS

CONTRIBUTORS PLEASE NOTE

Copy and photographs for the August/September issue should reach the Editor, S&G, 281 Queen Edith's Way, Cambridge, telephone Cambridge 47725, not later than June 14.

Copy and photographs for the October/November issue should be sent to the Editor not later than August 15.

Please, whenever possible, type copy on foolscap, triple-spaced.

April 16, 1973. GILLIAN BRYCE-SMITH

ANGUS — improved launch rate

THE launch rate for September to March, using our original winch, has increased by almost 70% compared with the same period last year.

Our Oly, badly damaged last year, has been replaced by a Swallow. Jim Simpson took it to 6,000ft in wave for his Silver height on its first operational day with a 78 minute flight a few weeks later.

We have a new Pirat and with our T-21, a Bocian and a Swallow this makes a well-balanced fleet and not bad going for a club which started in September 1970.

Jim S. (again!) took the Pirat to 4,000ft in thermals on its third working day and then on to 8,500ft in wave. On the same day Margaret Neill flew her Bronze leg while her daughter, Fiona, had her first flight in the Swallow.

Our engineers are having a busy time with C's of A and the new winch still on the stocks.

J.S.

BLACKPOOL & FYLDE — superb hill soaring

WE used a day of northwest wind to explore the limits of soaring on our unique hill. We were able to hold height above the hilltop in a very gentle breeze, using the 290° face of Parlick, until the wind veered beyond 330°. No doubt a stronger breeze would have been soarable round to 340°. If the east face also proves to work with the wind 40° to 50° oblique to it, then the north easterlies will be usable round to 030° or 040°. To date we have exploited winds from the NW, W, SW, SSW, S and SE to our complete satisfaction, using winch launches from our valley airfield. Our remaining thrill will be to tackle the north-facing ridge three miles away downwind.

We are now flying regularly again, to bring back the treasurer's smile. The operations are limited while the airfield is not fully cleared, for with temporarily restricted overshoots and rusty solo pilots, certain cable-break situations could be tricky. Most of the flying is dual, and crack-of-dawn arrival is not by itself sufficient to guarantee a flight before dusk.

Thank goodness modern concrete comes in huge ready-mixed loads; we were faced with the need for 2,500 loads from our little mixer to cover the floor and apron to our new hangar!

K.E.

BRISTOL & GLOUCESTERSHIRE — encouraging start

THE cross-country season has been thinking of arriving since the end of February when Tim Bradbury went 50km to Cinderford and back in his new Std Libelle. To date there have been ten cross-countries, the longest being the 282km by Howard Jones in an attempt at the 300km Nympsfield-Lasham-Hereford triangle which was stopped at Ross-on-Wye by an approaching warm front.

A sizeable party of Nympsfielders made the pilgrimage to Portmoak at the end of March and Sant Cervantes and Rob Robertson did some 25hrs flying with the club K-8. Their work draught-proofing the canopy and fitting oxygen paid off—they were rewarded with Gold height climbs of more than 13,000ft.

Despite the weather, the club counted last year as good. Chairman Mike Harper gave three reasons for this at the AGM in March—good management, midweek flying and aerotowing during the holiday courses. The number of launches had increased and during its first full year of operation the K-8 had flown 162hrs.

BGA Chairman Chris Simpson, the guest of honour at our dinner-dance, spoke about glider pilots and airspace. Mrs Simpson presented cups to Tim Bradbury, Keith Aldridge, Ron Sandford, Sant Cervantes and Phil Edmonds, the best *ab-initio* pilot.

Despite the VAT increases, gliding costs are reported to be very much the same as in France, where they have Government subsidy. Maybe that's a bit of Common Market policy we don't need!

Two more changes involving long-serving club members: Mike Ross has left us to work in Israel for three years (yes they do glide there), handing over to Don Chatterton as membership secretary; and Tony Gaze was elected a Vice-President of the Club to succeed the late Cyril Uwins, a former BAC test pilot.

Entries for the Western Regionals (July 21-29) are not coming in as fast as usual at this time of year—the only excuse we can offer is that we are full already! (See also p198 for late news.)

M.J.C.

BURTON & DERBY — a time of change

OUR club fleet has altered for the first time in years. Many an advanced pilot took a farewell flight in the trusty T-21 before it was finally de-rigged and grounded in favour of two new Blaniks, one of which belongs to Randle Lunt but is available to club members.

Syndicate news: The Dart 15 had a losing argument with a hedge and is now awaiting repairs; the Skylark is for sale and a new Std Libelle is expected from Germany.

We have two new instructors, Brian Johnson and Mick Delahay, and other successes include a 13,700ft height gain at Aboyne in the Std Libelle by Ray Steward to complete his Gold C. Two Silver C's were completed and also two Bronze C's.

The annual dinner and dance was well attended and Ernst Specht was awarded the CFI's trophy for the second year running for his 300km triangle. Unfortunately, his turning-point photographs were incorrect and his Gold C claim was disallowed.

M.T.

CAMBRIDGE UNIVERSITY — parts with its Tiger Moth

AFTER six years' faithful service the Tiger Moth G-ANFI has been reluctantly pensioned off and replaced by a refurbished (French Air Force) Super Cub 150 G-BAFT. It is hoped our new Citabria will join us during May to help launch the rapidly increasing fleet of club and privately owned gliders being flown from both our sites at Duxford and Cambridge.

The glass-fibre contingent (Std Libelle and two Diamants) have been added to by a Cirrus, another Std Libelle with a Kestrel 19 on its way.

B.H.B.

CORNISH — active ridge

DESPITE a long absence from these columns, soaring is continuing apace from the cliffs at Perranporth and our four mile ridge has been working overtime. As a result of last year's circuit bashing and general training in K-13's and the Swallow, the trends are now definitely towards private ownership and cross-country flying.

Amongst machines flown at the club are a SHK, Skylark 3, Pilatus B-4, Skylark 4, the immaculate 30 year-old French Avia 40p—the only surviving example—with a Pirat, Std Cirrus and Blanik to come.

Our instructors have been amusing themselves with a fiendish engine of torture known as "the blind flying hood". It is a fabric covered framework which fits under the canopy of the K-13 and blanks off the rear cockpit, allowing the instructor to fly from the front during the aerotow and landing. This has given invaluable practice and tuition in instrument flying and we hope it will "soften the blow" on first attempts at cloud flying.

At our AGM Dennis Jenkin was elected chairman, taking over from Dave Collins. Our holiday gliding courses are rapidly filling, so we advise early enquiries.

We flew from our "satellite" field at Hells Mouth on March 14 and our Beagle Airedale tug was kept busy all day.

P.H.

COVENTRY—can't beat the T-21

THE soaring season at Husbands Bosworth started with a memorable cross-country by the newly formed T-21 syndicate. Lou Frank, the chairman, and Chris Thomas flew 139km to Swanton Morley after four hours in the air. They were forced to land due to extreme cold, having been 4,500ft over Swanton Morley and well on their way to their goal, Yarmouth. It put the hot-ships to shame as it was the only glider to get away from the site in gusty, marginal conditions.

In fact two weeks later the T-21 again headed off to unknown skies and landed at Dunstable—it is now rumoured it is top of the ladder.

The annual treasure hunt to Portmoak brought John Heath his Diamond height and Bill Fay and Guy Gothard their Gold heights. A week later Wally Mason got his Gold height at Dishforth in wave.

V.M.G.

DERBYSHIRE & LANCASHIRE — with a challenge

WE have several pots which haven't been awarded for some time so challenge the more competitive pilots from Dunstable, Husbands Bosworth, Long Mynd, Nympsfield, Swanton Morley and Sutton Bank to make the flight to Camphill and claim a trophy.

We ran a mini-course at the beginning of April for Liverpool Polytechnic and two gliding clubs. Some of our members visited Aboyne recently and John Taylor, Malcolm Blackburn and Val Rowell gained Gold heights.

There were no major committee changes at the AGM, Ted Neighbour and Mike Armstrong carrying off the main trophies. Plans are being finalised for our task week from May 28 until June 3.

P.H.

DEVON & SOMERSET — snow in April

THE soaring season has just about struggled into being but several of our members couldn't wait and have returned from Portmoak flushed with success. The dark side of the cloud showed with the crash of Les Ford in

his Olympia 463. He spun into the ground from 500ft, writing off his aircraft and landing himself in hospital. We understand he is now on the mend.

April brought a promise of good weather but one weekend we still had to record that SNOW stopped operations! Launch rates are good and work is progressing slowly on the new winch and control bubble which we hope will be operating by the time the next issue appears. And the track to our site has now been covered with tarmac.

S.M.C.S.

DONCASTER & DISTRICT — accent on training

A VERY mild winter has allowed the training programme to go ahead non stop. The Falke has rarely been on the ground on flying days, and as club policy now allows pilots of Silver C standard to fly it solo, its utilisation has increased.

Special mention among the solos, to 55 year-old Les Lockwood, promptly christened "The Flying Grandad" by the local press!

The elusive wave has returned, and the Skylark 2 piloted by John Ashmore maintained 11,000ft for three hours in March.

Pressure on the club single-seater list will be reduced by the purchase of a M-100s.

New syndicate arrivals are the "Regal" Eagle and the long awaited Std Libelle, syndicated by CFI John Stirk.

The social side has had a successful winter and highlights were the fancy dress party and a talk given by Keith Emswell on the BG-135.

D.J.W.

DORSET — still at Compton Abbas

GLIDING at Compton Abbas has now taken on a more club-like attitude. We have a Blanik, a Pirat on order and with our three tugs, any private owner is welcome for a holiday. We still operate seven days a week, though are not running courses, but flying is steadily increasing as people realise we are still here.

The regionals are fully booked with 43 entries.

R.K.

ENSTONE EAGLES — March wind and accidents

WE are sad our chairman Lorne Daniel has retired but welcome Dave Wales, elected in March.

March winds have caused two incidents which should serve as lessons. Our chairman's newly repaired SHK was blown over in its trailer, fortunately with only minor damage and the Eagle syndicate's trailer jack-knifed in strong winds on the M6. It hit a bollard causing damage to the glider, trailer and car.

On the brighter side, April has been outstanding for one member at least. Martin Wells gained Gold C height in his Olympia 2B, reaching 13,500ft on a cross-country to Inkpen. Martin reported conditions were exceptional with numerous ten knot thermals. This "super Oly" has been entered in the Western Regionals, so Cirrus and Std Libelle owners watch out!

C.E.H.

ESSEX — pulley launching

SERIOUS gliding started early this year with a large number of soaring flights at our flat site without the benefit of ridge or wave. Much of the success must come from the pulley launching system reintroduced by CFI Graham Martin. The pole benders regularly achieve 2,000ft which has enabled them to get away on mid-week flights when the tug isn't generally available.

Honours this year go to Martin Southward for his out-and-return to Cambridge on a marginal day and to Tony Manwaring for his climb to 9,000ft.

There is an increasingly competitive spirit which speaks well for the Easter programme. And talking of competition, this has recently become a family affair. Three fathers have been put on their mettle with the joining of the next generation—welcome to Jacqueline Swallow, Richard Toyne and Martin Matthews.

S.C.

HEREFORDSHIRE — a new club

SHOBDON, site of a glider pilot training base during the war, has long been regarded as an excellent centre for exploring wave from the Welsh mountains.

With an increasing number of private owners coming for the soaring, it was inevitable that a permanent club would eventually be operating from the airfield.

Herefordshire was off to a good start with its new Blanik being released over the site after its delivery flight and climbing to 3,500ft in weak wave.

A.N.M.

HIGHLAND — flourishing

FORMED 18 months ago by the civilian members of the Navy's Fulmar gliding club, we now share a site with the RAFGSA Fulmar club at Milltown airfield and are grateful to the RAF for the use of their hangar and launching equipment.

The club is thriving with 30 members, three gliders, a T-21, Swallow and Skylark 3F as well as a privately owned Olympia 2B. We sometimes have the use of a Falke and an Auster, the latter now bought by a syndicate of RAF and our club members and permanently sited at Milltown.

From time to time we are banished from Milltown while Harriers lurk in the woods and leap from the runways. On these occasions, we retreat to Aboyne and can't thank the Deeside club enough for their hospitality and the opportunity to enjoy wave conditions. John Fraser and Bill Hill gained Gold heights there and Neil Collier his Gold height and five hours. Bill Hill claimed his five hours on a trip to Portmoak with the Skylark.

R.E.T.

INKPEN — lively April

THE beginning of April saw the soaring season start in style with Ralph Jones doing well over 400km trying for a 500km triangle, and several members achieved climbs of over 10,000ft on April 8.

Five pupils went solo in early April and Arthur Downton had the distinction of obtaining both legs of his Bronze C within ten flights of going solo.

Activities at Inkpen have increased considerably since Southern Soaring have been operating from the site. We now boast two Blaniks and two Falkes, the second loaned by Reading University.

The private owner activity has also increased with ten private machines based at Inkpen.

The club held it's AGM on April 13. Peter Osborne was elected Chairman, the other positions of aircraft member and MT member being filled by Peter Purdie and Barry Dixon.

April 14 was a good soaring day with Ray Foot, Peter Osborne and Ralph Jones going Kestrel hunting to do flight comparisons. Sunday was even better with Toney Hanfrey claiming his Silver C distance with a flight to Nympsfield and Barry Dixon managing another four hours for his duration—better luck next time.

I.R.C.

LAKES — no spring chicken!

THIS has been a time of progress with Bronze legs and first solos recorded as well as the appearance of wave bringing numerous climbs of 5 to 9,000ft over Duddon Bay and one 12,500ft climb over Lake Windermere by Roger Bull in the Std Libelle.

We were pleased to welcome syndicates from the Blackpool club on two occasions in March and arranged aerotowing experience for them in addition to soaring for those prepared to accept turbulent conditions over Duddon Bay in a brisk northerly wind.

One fact, not generally known, emerged from a talk on club history. Our amalgamation in 1956 with the Furness club effectively makes us almost 43 years old and the fourth oldest club in the country.

R.R.H.

LINCOLNSHIRE — in outer space!

OUR airfield at the time of writing resembles a moonscape. Our landlord farmer has tipped many loads of soil in the worst areas, and is about to level it, for which we are very grateful.

Our operations have been spoilt by strong winds in recent weeks, but a little soaring has been done. We still eagerly await delivery of our new Bocian 1E.

Thanks to sterling work by our air display committee, Bardney should echo to the sound of Lancaster, Spitfire, and Macaws among others on June 24.

J.R.S.

LONDON — dusty start to spring

THE sight of dust flying up behind a tug is normally associated with the mid-summer months, but in March is quite exceptional. The absence of the customary mud was extraordinary and partly instrumental in above normal flying activity during early spring.

The only notable flights to date were by John Jeffries who collected the Lasham Dunstable Plate by flying a K-8 in both directions. The Husbands Bosworth Dunstable Pot was claimed by the opposition with a T-21B!

The huge array of glass-fibre ships have only flexed their muscles so far, the best performance being a 155km triangle by Mike Bird in a Kestrel at about 75km/h

Our original Commodore tug, having had an argument with a Jaguar, is being replaced by another. In addition, we have acquired a 220hp Minerva, the performance of which, both in rate of climb and propeller noise, is greater than we have experienced before.

We have organised a club sweepstake to assist funds for the British team. For 10p anyone can make a guess at the fastest speed achieved by a club member round a 200km triangle before September 30, ranging from 50km/h to 110km/h. The craftiest pilots will, of course, put down for the speed they think they can do themselves, and hope nobody betters them!

After ten years as resident winch driver, Don Gerrard is leaving to join a vehicle maintenance course (he should have learnt a lot already!) Don has undoubtedly done much for the club by regular maintenance on equipment and achieving a high "fumble free" factor. We shall miss him very much. Geoff Naylor is back again for the summer course season, while our hard working resident tug pilot, Dick Sherwin, has now been replaced by a similarly keen pilot by the name of Peter Vearie.

A great deal of repair work to club buildings has been going on, largely due to the leadership of Pat George. Our accommodation has not yet been classified as the Dunstable Hilton, but much has been done towards better sleeping quarters for course members.

M.P.G.

MIDLAND — in optimistic mood

IS this the season we have all been waiting for? It certainly made an excellent start and we sampled 10kt thermals before the end of March. Within a few weeks of the first thermals popping, there were a number of good cross-countries and heights—the best by Mike Horan who used a cloud climb to latch on to wave to 15,500ft asl.

Richard Cooper flew Silver duration and height together one Sunday, and Bert Penfold also gained Silver height. Carol Burnett and Ron Hawkes soloed in March and are clocking up K-8 time.

Everyone enjoyed the dinner-dance. Trophies were carried away by Don Brown (best distance); John Anstey (best height); John Brenner (best out-and-return and also ladder); Louis Lopez (best *ab-initio*) and Mike Ray (club effort).

We welcome Simon Morrison as resident instructor to assist Jack Minshall on the courses, but begin the season without a full-time engineer. Although some work is being contracted out, much of the onus of aircraft maintenance falls on the shoulders of technical officer Charles

Nightingale, and Jack on non-flying days. If Chas has good backing and assistance from members, we may feel the present set-up should continue.

W.J.T.

NORFOLK — farewell to T-21?

NEWEST member to join us is "Victor November" who clocked up more than 20hrs during his first three weeks. He's a willing little fellow who can park a solo glider at 2,000ft in about seven minutes or the T-21 in eight minutes. We decided to operate the Condor completely separately from the rest of the club fleet and thus was born the Avato Flying Group—membership £5, single-seater tows to 2,000ft for £1.25 or fun-flying for £7 an hour.

The change-over from wire launching to aerotows has meant a re-think of future policy, particularly from the training aspect. With the Falke and K-13 for pupils, there is reason to consider exchanging the T-21 for another single-seater.

At the end of two years our Falke has totalled nearly 900hrs and will be in continuous use during July and August when we run our holiday courses.

We have decided that all club members who fit a tow-ball to retrieve cars should use the 50mm size, (not 2"), and would like to suggest this might be standardised throughout BGA member clubs.

C.E.H.

NORTHUMBRIA — golden invitation

THE wave at the site continues to make its presence felt, particularly when the wind is SW and some first class flights have been achieved during the past few months, off the wire too, as our tug has been absent for its C of A.

Now that the tug is back, looking very well and the second winch has been rejuvinated and is in use, we should reach new heights this year.

The only shadow hanging over us is an application by Newcastle Airport for a SRZ/SRA; we would be encompassed by the proposed SRA and if we were obliged to fly only VMC we would feel somewhat restricted. However, nothing definite yet and our Secretary, David Pattison is a good negotiator and has made the position known to the BGA who will no doubt have our interests in mind.

Malcolm Haley, badly injured last August when he crashed in his Olympia 463, is making good progress and we are pleased to see him visit the field regularly.

Our invitation to sample our site still stands and as many of our 1972 visitors would testify, a lot can be gained by a visit to Currock Hill, "there's golds in them thar hills!"

G.D.R.

OUSE — new equipment

MEMBERS at Rufforth are eagerly awaiting the arrival of the new K-13, last reported at Harwich. We are also hoping that our new winch will be completed in time for the first launch of the K-13. Built to a design by Alan Park, this machine features a massive 116 diesel mounted within a van body and a control cabin which vaguely suggests the bridge of the Ark Royal. Complete with heater and a double seat, it is hoped that members will be attracted rather than driven to the far end of the field.

We have already clocked up four cross-countries. On one weekend in early April the usual milk run to the east coast cliff tops at Carnaby was changed to Sturgate, with the Blanik, Pirat and Skylark 2B visiting our friends at the Trent Valley. The retrieves were somewhat unusual (even for the frozen North) in that they had to fight raging blizzards on their way back. Dave Smith in the Blanik,

trying to copy the previous flight to Sturgate with Secretary Jim Purves and Ray Rogers, came across a solid wall of snow and had to land among a forest of pylons near Eggborough Power Station.

E.B.

OXFORD — getting sociable

THE successful dinner at Weston Manor was the first social function of its kind held in the club for some years.

Since January flying has progressed well in spite of some windy days. On February 10 the two K-13s soared in front of a snow storm in strong smooth lift. The whole club fleet was flying and soaring before the end of March. Many thanks to the band of workshop toilers who contribute so much towards keeping the club costs down.

April 7 saw tiny dots between 5 and 6,000ft. Pete Forrest, newly converted to the Skylark 2, got his Silver height with a barograph on board. The Phoebus was earning ladder points during a C of A test flight. First away landing of 1973 was by Joe Wren in the Skylark 2.

J.R.

PETERBOROUGH & SPALDING — speedy launching

WITH the Sports Council's assistance, the Capstan became club owned in April to back-up our Bocian. This coincided with the delivery of the new tug, a Rallye Commodore, which will give front-line towing facilities from now on together with the Tugmaster. Such is the climbing capability of the Rallye that 2,000ft launches now take a mere three minutes and give a winch-type climb angle. We now have an additional K-6E and there is a new syndicate for the M-100s.

Many thanks to National Coach John Heath for the assistant instructors' course he held in mid-March at our Crowland airfield. The weather was glorious and John passed all five pilots, complimenting the club on its instructional flying standard, a credit to existing instructors.

At our third AGM members thanked the retiring CFI, Reg Bradshaw, and Chairman, Tony Fidler, for their work since the club's formation and we are pleased they will remain on the committee.

The courses for the spring bank holiday are fully booked but we have vacancies in early August for *ab-initios*. We are also arranging a one week course at the request of the local education authority. It is primarily for physical education teachers so that they can give first hand advice to pupils interested in gliding—a valuable long term asset.

J.V.L.

SCOTTISH GLIDING UNION — no time for hibernation

THE first quarter of 1973 included 76 flying, 38 soaring days into which were packed more than 2,000 launches; 1,274 by club gliders, 321 by club private owners, and (mainly in March) 445 by visitors. Some days, 75 or more hours were flown.

To the single Silver C leg of January and the two of February, were added ten Silver, ten Gold and one Diamond legs in March, all for duration or height. Some people clearly have no idea how to hibernate in a warm clubhouse!

The successful Christmas dinner-dance is being followed by another at Easter, when trophies will be revealed—and, presumably, their recipients. Congratulations, meanwhile, to Frank Ireland on his BGA Diploma and to our Directors on instituting a country membership of the SGU for members of other Scottish gliding clubs. Details from our Secretary Robin Snow.

B.A.F.V.

SHROPSHIRE — in wave

THE 1973 thermal season started early with 4-6kt thermals on March 8 allowing a 100km triangle to be completed in 1hr 30mins—by no means a fast time but remarkable for the time of year.

We were pleased to welcome Chris Simpson and John Large with their Kestrel 19 on March 24 and 25 when the weather obliged with 6,000ft of wave for Chris and some six hours of thermal soaring for the rest of us.

March 31 was a superb wave day with climbs of over 10,000ft achieved from 3,000ft tows, the best height being 13,700. The extensive strato cu. layer between 4,000ft and 6,000ft inhibited cross-country flying to a 130km triangle, which is a pity as ground speeds of 70 to 80kts were possible along the N-S line of the waves.

We welcome the Avro Club who have

taken up a syndicate slot at Sleap basing their Skylark 3 on the airfield for the use of suitably experienced members.

I.P.

SOUTHDOWN — sponsored flights

THIS year has started well with four new solo pilots in the first quarter, plus two members who re-soloed. A definite improvement on last year.

The highlight of March for the fortunate was the expedition to Portmoak with 18 enthusiasts and seven gliders. The Merritt brothers both gained their Silver distance and Veronica Wood her Silver duration.

We are hoping to launch a scheme for sponsored distance flights from Firle. It has a dual purpose, to encourage pilots and at the same time raise funds for the World Championships.

S.E.

STAFFORDSHIRE — have left Meir

FLYING at Meir ended on January 1 of this year, thus ending our ten year history on this site which has served us so well.

Our new site at Morridge is progressing slowly but steadily and it is hoped that by the time this is published we shall be flying from there. However, operations will not be easy for some time due to the newness of the site and we shall have a great deal of exploration to do in the air. Accordingly, some restrictions will have to be made and initially, "check free" pilots will need 100 hours and Silver C to fly solo, all other pilots will require dual instruction relevant to their experience.

Although we have not yet been able to fly from the new site, our members are working very hard on the preparation of equipment and the building of the hangar and clubroom which will be equipped will all "mod cons".

Groups of members visiting other clubs on odd weekends have been given a most cordial welcome and we hope to return their hospitality.

C.J.R.

SURREY & HANTS — experiments

AFTER a winter of fog the season suddenly burst upon us in March. By mid-April there was a sprinkling of 300km trips among the total of 5,000km flown. Some days have produced a high cloudbase, occasionally nearly 7,000ft asl.

A group of RAF members visiting us from Lahr in Germany caught a particularly good spell of weather notching up a collection of five hours and heights to take back with them.

The Pilatus B-4s are frequently airborne and receiving unanimous acclaim from all and the Kestrel 19 will be up and about by the time this is read.

Our experiments with plastic covered seven-strand piano wire were most successful. At double the cost per cable, the launch total per cable nearly tripled compared with the uncovered seven-strand wire. We are now taking the plastic cover a little further and experimenting with a hard Teflon covering to reduce heating effects of runway friction and increase the launches per wire to perhaps 750-800 before the first breaks occur.

C.L.

TRENT VALLEY — rock crushers

THE start of the soaring season has brought the syndicate aircraft out of hibernation and most members have enjoyed thermal flights this year.

The fleet of syndicate owned aircraft has been enlarged by the arrival of a Pilatus B-4, whilst the club T-21 and Swallow are looking very smart following complete recovering by now experienced club members.

We have been visited by the rock crushers again. More peritrack has disappeared and is now stored on one of our three runways. We have not lost any flying days as a result, but our cross-wind landings are well practised.

The ill fortunes of 1972 continued through to the dinner-dance when our musical group failed to arrive. Congratulations to G. Sewart, B. Gould, B. Hill, P. Schofield and D. Snowden, who were presented with cups for two-seater endurance, single-seater endurance, CFI achievement, perseverance and T-21 endurance flights, respectively.

R.G.B.

ULSTER & SHORTS — new tug spells liberation

IN March National Coach Bill Scull collected and delivered our new tug, an ex-German military Super Cub. With

flaps and 150 relaxed horses where the previous under-powered yoke had only a gut-busting 95, the new Cub is immaculate after a post-demob rebuild. We expect it to widen our horizons by making possible safaris to a number of promising but confined expedition sites. In particular, it overcomes a difficulty which lost us a lot of flying during the frustrating winter months—blustery winds from the northern sector which made use of Newtownards' short cross-runways obligatory and curl-over from Scrabo, the hill in our circuit, severe. These were circumstances with which the previous Cub was unable to cope.

The under-used Falke went to Booker to help finance this very necessary change. *Ab-initio* training has reverted to the Blanik, which is also well used for solo and mutual soaring.

First 1973 expedition is an Easter safari to Farranfore, in Co Kerry, where we will join the local club and a similar Dublin outfit for a ten-day camp. Wave potential in the Irish south-west is rumoured to be really something—Jeremy Bryson gained Gold height on his one and only Farranfore flight some years ago in wave triggered off by mountains which deserve a better name than Magillicuddy's Reeks.

A recent disposal was the Eon Baby to Dublin. The solo fleet is now two Skylark 2s, a K-6E and the affiliated Queen's University Club's Skylark 3. But a six-man syndicate is scouring the market for a Dart 17 to add to our other two privately-owned aircraft — Gordon Mackie's highly autonomous SF-27M and the Jeremy Bryson/Alan Sands Kestrel 19 which joined us late last season after being aired by Nick Goodhart at Vrsac.

Bets are now being taken on the date this aircraft will first soar back to Britain, in the wake of Alan Sands' K-6E flight to Scotland last year.

R.R.R.

WOLDS — full programme

WE are awaiting delivery of our second K-7 which will release the first one for solo and cross-country flying to improve our advanced soaring training. We are looking forward to flying each evening this summer in addition to week-ends and will be holding three flying weeks, one specifically for cross-country flying.

Our soaring season started early on February 13 and we have had promising weather including some wave flying—a rarity indeed out here in the East Riding.

R.H.D.

WYCOMBE AIR PARK — record-breaking spring

THIS spring was a record-breaker with March producing record soaring and five completed Silver C's.

The Portmoak pilgrimage produced Gold heights for Rowan Beech and Chris Leo—Chris got his en route at Dishforth and then again at Portmoak for good measure! Mike Field, true to form, made a climb to a mere 18,000ft and finished the week with a triangle of Aberdeen, Fort William, Portmoak.

In April, Justin Wills broke the 100km goal speed record, finishing the flight in fine style with chandelles to eject water ballast and then landed beautifully with the wheel up! Luckily no damage was done and he took off on a cross-country again later that day.

J.M.C.W.

YORKSHIRE — busy season ahead and recruiting drive

GOLD heights still escape us but there have been a number of good climbs in wave recently and some cracking thermal days. New arrivals on the site are two Kestrel 19s, a Pilatus B-4 and the long-awaited club Blanik. We expect our current recruiting drive will bring in enough new pupils to keep the three two-seaters busy. To date we have 16 firm entries for the Northerns in August and further entries are welcome.

With about 30 gliders on the site and a record number of visitors booked, this season promises to be our busiest yet—all we want is good weather.

S.V.G.

SERVICE NEWS

CRANWELL — re-decoration celebrated

THE social side of the club started in style in early April when we held a party in our newly decorated clubhouse and bar. Gp Capt King formally opened the bar and we were joined by members from Four Counties and East Midlands for the celebration.

A flying start has been made on the certificate side with Alan Jury's Diamond height at Aboyne and John Delafield completing his collection with a 23,000ft flight at Dishforth. Good conditions have produced Bronze legs and last year's wooden spoon winner's Silver distance.

Members are looking forward to crewing and flying in forthcoming competitions. Alan Jury, our new CFI is flying our K-8 in the Junior Inter-Service competition alongside half the Cobra syndicate, Ernie Taylor and Ivor Bishop. Our vice-chairman, John Delafield, will, of course, be defending his title at Lasham in August.

A.S.R.

CULDROSE (RNGSA) — best year yet

THE 1972 season was highlighted by the winning of the Naval Air Command Gliding Trophy, for numbers of launches, hours flown, A and B's and the rest and (touch fibreglass) an accident-free year. The accent has been on training and 27 first solo's from our shifting population has been most rewarding; also nine Bronze C's, one of which was gained by Miree Wells, daughter of CFI Pete and happy recipient of a Whitbread Bursary. She is photographed below with one of our two Pirats, recently acquired with the help of the RNGSA, Nuffield Trust and ourselves—what a club machine!

Winter achievements . . .? Six A and B's, one Silver duration, one height and another 4,000ft climb without barograph —will we never learn?—one new instructor and another in the pipeline, and over 1,000 launches since January using

the wire (reverse pulley) alone. But what we want is polyprop, and I'm not referring to many tug aircraft (although *one* would help)—any news on the legendary rope?

Our old faithfuls, the two Capstans, continue to fly slowly enough to go up in the exceedingly narrow West-country thermals, so much so that, after half an hour up, club rules now require the instructor to pay. The Pirats go up even better and are a delight to fly, but even their speed can't always overcome a strong headwind.

Although our problems include the shape of the Lizard Peninsula (life-jackets *will* be worn for cloud-flying), don't let that stop you from making us your Diamond goal.

S.C.

FOUR COUNTIES — go wave hunting

OUR 12 man March wave hunt has brought four Diamond and eight Gold heights. Diamond climbs were made by Barry Dobson, Des Holcroft, Alan Jury, Bob McLuckie, Harry Orme and Doc Saundby. Conditions were so good that on one particular day when the wave only extended to 11,000ft pilots were complaining!

The only club member who didn't gain a certificate was the expedition organiser, Bob Lyndon. Where's the justice in that?

Alan Farmer missed the expedition but not to be outdone went to Dishforth and collected his Gold height.

We now have three full cat instructors, Jeff Argent, Dennis Ballinger and Ralph Dixon, and lost Alan Jury who leaves us to become CFI at Cranwell.

R.T.D.

The expedition members photographed during a lull in the flying, taking a rest from Diamond and Gold heights

PHOENIX (RAF BRÜGGEN) — expedition with a difference

EIGHT members have spent nearly three weeks in April gliding over the rugged area around Issoire, some 20 miles south of Clermont Ferrand in southern France.

Issoire is just to the east of the Auvergne mountain chain which is part of the Central Massif, and when a depression from the Atlantic reaches the Central Massif, there is sometimes a wave system of up to 30,000ft.

They were recording, charting and analysing wave conditions, comparing their data with meteorological information. The findings will be passed on to British and RAF gliding organisations.

PORTSMOUTH NAVAL (Lee-on-Solent) — Texan thermals

WE are pleased to report the safe return of "Hotel Delta", Humphry Dimock's Kestrel 17 after its repair. Club members lucky enough to fly this machine enthuse about its performance and superiority over the club Skylark 4.

The season has started well for us. Texan-type thermals were found over Fareham during the weekend of April 7 and 8 with some members reporting climbs to a cloud base of 7,000ft. Among these Richard Fox and "Mitch" Mitchell gained Silver height.

Our first expedition of the year took place in April when nine club members took the Capstan and Swallow to Nympsfield for a week. This was very successful with every day except one soarable. 26 hours were flown and three Cs obtained.

On the ground equipment side Keith Morton and his MT Committee have worked long hours getting our old bus mobile again and Tom Kneale has done sterling work equipping it as a mobile canteen.

R.F.L.

WREKIN (RAF COSFORD) — competition minded

WHILE our young pilots work hard bringing the K-8 through its major, our pundits are making new instrument panels and fitting ground sets to their cars for the coming GSA competitions.

A vote of thanks to our recently retired CFI George Ross who took over

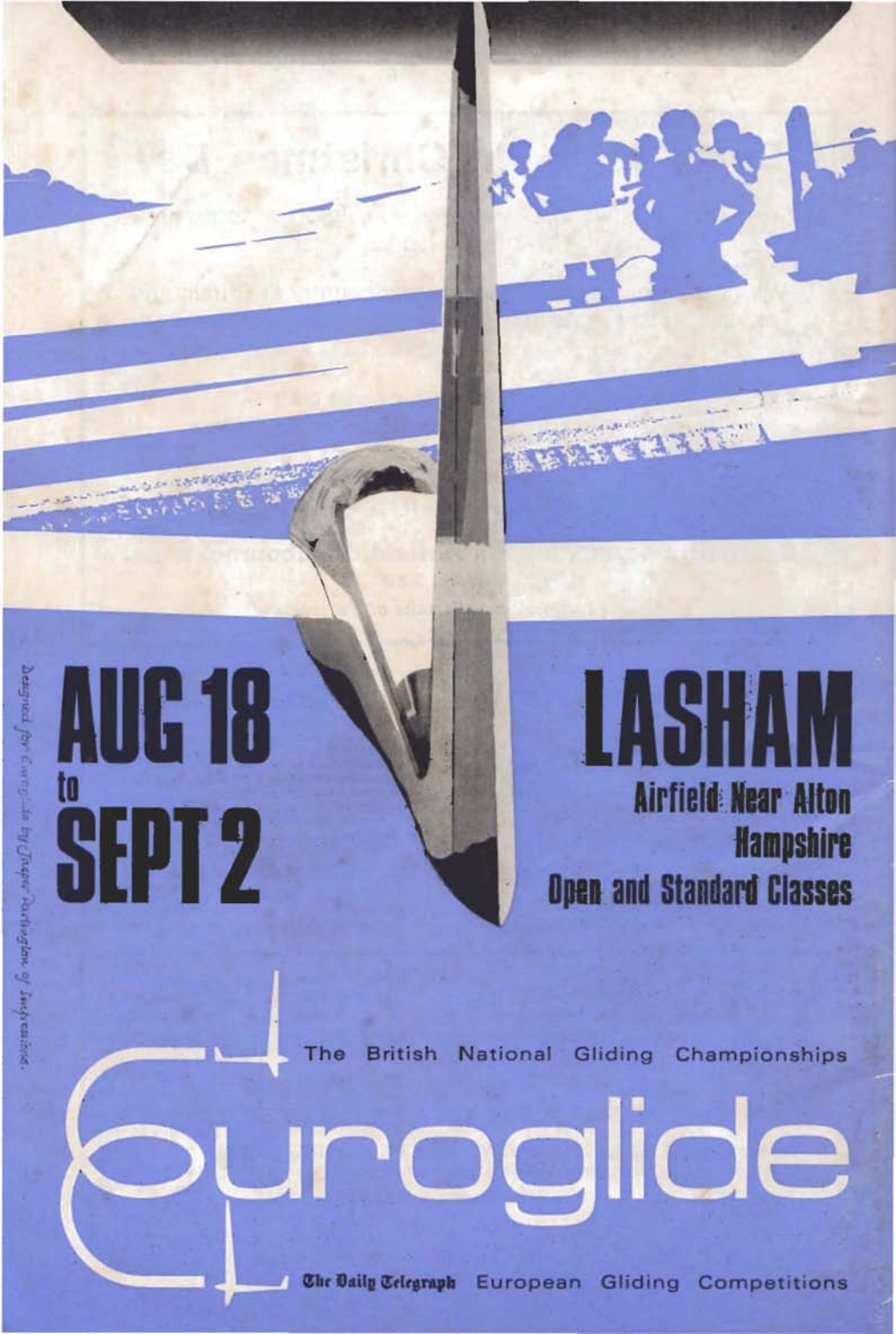
18 months ago but now with a new house and examinations on the agenda, felt it necessary to resign. Peter Sturdgess, who has been part of the Cosford scene for some time, has taken over and we wish him well.

Our local Boomerang is Chriss Waller who misses no opportunity to increase the steadily climbing fund.

Dave Green has just collected our first Silver distance of the year with a flight of 64km to Bickmarsh.

K.M.R.

INDEX TO ADVERTISERS



AUG 18
to
SEPT 2

LASHAM
Airfield Near Alton
Hampshire
Open and Standard Classes

The British National Gliding Championships

Euroglide

The Daily Telegraph European Gliding Competitions

Designed for Euroglide by Jasper Partington of Instrument.