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SAILPLANE AND GLIDING

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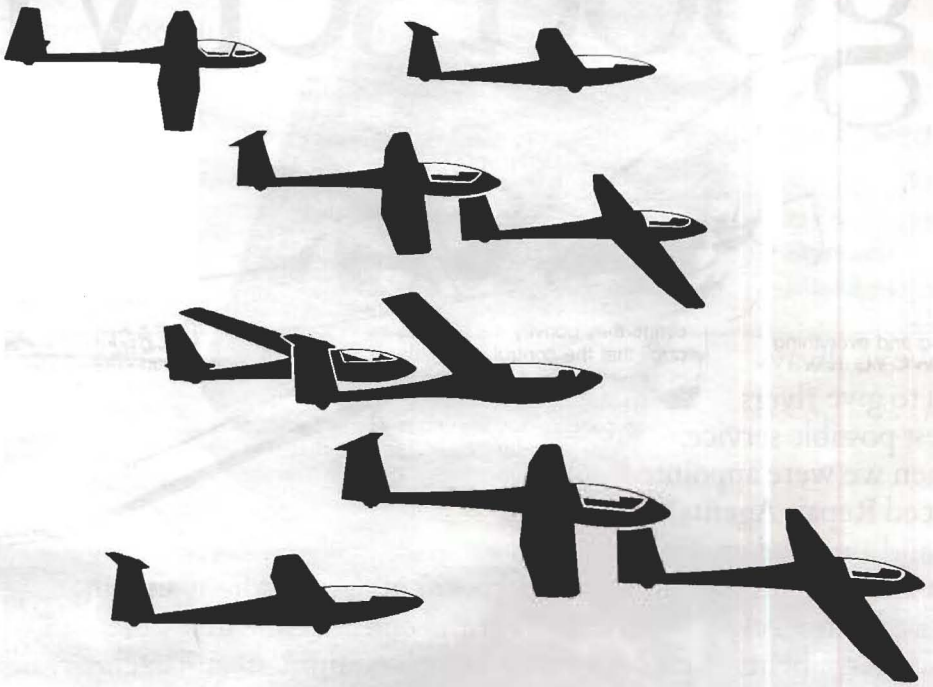
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YOUR LETTERS

MEDIA POWER AND YOUR CLUB

Dear Editor,

For several years I criticised the publicity efforts of the Dorset GC which never got into print, even in *S&G's* Club News. I considered the efforts of previous PROs to be pathetic and took up the gauntlet when it was thrown at my feet.

Journalist I am not, but salesman I am, so I thought carefully about my plan of attack. I considered the objectives and concluded there was a need to get into print or on air on every conceivable occasion something reportable happened, without cost to the club.

Whom to aim for was the next question. This required a careful study of our membership list and location of membership. Next came the task of listing all the daily, weekly and monthly publications within those locations, local radio stations and television stations.

What to report? Anything and everything except accidents. First solo flights, new instructors, handicapped visitors, a new winch, a new glider etc and always with a photograph and names.

I started my campaign along those lines and within a couple of weeks we were in print and on air every week, sometimes almost every day.

The interest this has generated from the general public has been staggering and the club has never been in a stronger position with a good membership base and the potential for future membership enormous. Herein lies catch 22. Can we handle the growth?

I believe with careful regulation we can but it needs a strong committee and a hard core of willing instructors and members.

It is happening for us, so why not make it happen for your club? The cost of a few photographs, postage stamps and some time and effort could help swing the club finances well into the black and you may then be able to afford to buy your own field when the occasion arises.

Do invite editors to visit the club. This will inevitably lead to a good spread of free editorial and photographs for the cost of a couple of flights, but be careful about what you say as your words could be taken out of context and may put others off.

Joe Public still believes gliding is an exclusive rich man's sport. We have to get the message across from grass roots level to the man in the street that they too can share our pleasures. Stand on the hangar roof and shout at your loudest and only the converted will hear! Do your shouting using the power of the media and you could reach millions.

DENNIS NEAL, *Wimborne, Dorset*

THE THREAT FROM OUTSIDE

Dear Editor,

Vic Carr made some telling points in his piece in the October issue, p235. For me the most significant one was that the UK movement flew five times as many visitors as paid up members. Along with that, Vic reported that a BGA sub-committee noted that a significant number of instructors did not have sufficient soaring experience. However, we can conclude that a large proportion of the income in clubs comes from the general public having a go.

There is a depressing practice these days for analysis paralysis - that is avoiding the difficult bit of coming up with a course of action to put matters right. In this bit of analysis, the BGA Committee does not say what the soaring experience was insufficient for. They must have fulfilled a role or they would not have continued to instruct.

I have noted this behaviour pattern in clubs. Instructing for circuit bashing is not very difficult or demanding. The instructor has well defined limits for height and distance in the circuit and provided he keeps the sailplane within those limits, the progress through the air is successful. However, there are those who make trial instructional flights a theatrical event: they convey the impression to the poor pupil that the control of a glider is an achievement well beyond his or her ability. Membership flags.

High performance soaring is a recent event. It was only some ten or 15 years ago that the ASW-17, Nimbus and Kestrel came on the scene and created a quantum leap in soaring achievement. Not so much in distance - Nick Goodheart's UK distance record still stands - but in speed and enjoyment. Competitive racing is an American invention that came in with the SISU and the HP-14.

In the British movement, we have been served very well by those who learned to fly in the '40s, '50s and '60s, and it is they who have borne the majority of instructional load in recent years. Acting unpaid, they have done it because they enjoyed it. They had no experience of racing sailplanes - remember the outcry against glass ships when they came in because they were too fast? They saw solo flying in Skylark 3s as an enjoyable diversion from circuit bashing: many still do. So do not reject them because they are not flying triangles every minute of the day. When they depart, there will be even less instructors to bring on the new members and to drive the tugs. For those who do fly triangles rarely instruct; they are too busy flying.

Vic does point to some very common mental confusions in club management. The emphasis on two-seater flying comes from the desire to balance the books. Unhappily there are very few cost accountants about these days, so few clubs know where the money comes from or where it is likely to go to. Attitudes to management have changed. At one time clubs could expect a few experienced businessmen to come forward and run the club efficiently, now clubs find their committees from those who have a background in "bureaucratic administration", and that is something else.

In one club I came across recently, the total absence of new members in the most active time of the year was finally explained when it transpired that for three months the committee had not considered the election of new members. We do not want our clubs to be run like the Cleveland Health Authority as reported in the Butler Schloss enquiry, but some get close.

The threat to gliding is not from without, it is from within.

J. C. RIDDELL, *Harrogate, N. Yorks*

Vic Carr replies: I stand by the central theme of my proposition. Air experience and course flying is only useful if it provides extra income as a non priority activity. If the flying of outsiders becomes the objective in its own right, perhaps for financial considerations, it will be totally counter productive. The effect will offend more and more paid up members as it does now and reduce our core membership still further.

LET'S SHOW GRASS ROOTS GLIDING

Dear Editor,

I'm sure almost everyone involved with gliding will applaud the efforts of the makers of Channel 4's Equinox series for the recent programme on our sport.

Albeit a very enjoyable and salutary item, it said very little about how gliding really is. The perceived drawbacks people have on gliding, *eg* expense and exclusiveness, were all borne out by this film.

If we are ever to grow as a movement we must put out a better image, *ie* that of friendliness and inexpensive fun and at the same time minimise the drawbacks of cold days spent waiting for a launch and pushing gliders on muddy fields etc.

Remember that few of us speak with plummy Queen's English tones and even fewer spend our time attempting records in £80000 super ships.

Is it beyond the bounds of possibility that the BGA should try to show the makers of this most powerful medium that they could get a great deal of mileage out of gliding as it really is - at grass roots level.

Surely if they can do it for Sumo wrestling they can do it for anything.

SIMON PARKER, *Wolds GC, Yorks*

A FEW WURZELS A LAUNCH

Dear Editor,

Mike Cuming's report on the 15 Metre Nationals at Booker takes a rather sharp dig at Nympsfield's competition launch facilities (expensive and borrowed he implies in the October issue, p238). Perhaps he lacks the sense of humour to see that we only charge London prices to visiting London competition pilots to make them feel at home. Our rustic friends, of course, only pay in groats and wurzels when they come to experience our unfettered airspace.

SIMON ROBERTS, *Kempley, Glos*

THE GEL COAT PROBLEM

Dear Editor,

Gel coats are usually based on polyester resin and gliders of composite structure ➡

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usually use epoxy resins as a matrix for the fibres which carry most of the load, whether they be glass, carbon or Kevlar. Epoxy contracts in volume and then sets solid so little distortion occurs, but polyester resins set and then contract so when they have a thick section distortion may be considerable.

Further contraction may occur over a lengthy period because unpolymerised styrene can slowly evaporate out of the polyester matrix.

I would have thought the best solution would be to use an epoxy based resin for the gel coat and any other finish. The hardener for epoxy is usually hygroscopic so I suppose if not working in low humidity conditions a sheet of polythene should be placed on the surface immediately after spraying to prevent water absorption from the air.

BRENNIG JAMES, *Marlow*

ESSENTIAL QUALITIES OF GLIDING

Dear Editor,

I believe Justin Wills' suggestion that his "three essential qualities of gliding" (October issue, p229) be adopted as the philosophical basis of competitive soaring is wrong for two reasons:

First, the essential qualities, although admirable in themselves, are more aptly suited to be considered as the philosophical basis of individual recreation cross-country flying and in many ways they are intrinsically anti-competitive. To use them as the basis of all competitive soaring is, in my opinion, a mismatch.

Secondly, there is no logical basis to Mr Wills' implied assumption that competitive gliding can only fulfil its responsibility to the general gliding movement if the type of flying done in contests emulates, reflects or is judged by the same criteria as individual recreational flying.

The reason that present contests are unsatisfactory is not because the concept of direct cross-country racing is wrong but because the contests attempt, but fail, to simultaneously assess two different aspects of competitive soaring, *ie* true racing and creative individual flying. The 1000 points system performs neither function well.

I suggest that the primary objective of competitive soaring, and the best way for it to fulfil its responsibilities to the gliding movement, is simply to hold good contests that are satisfying and challenging to the contestants. The benefits (in terms of technology, techniques and morale) of a successful competitive leading edge will trickle down informally as it always has. The danger of having a single accepted philosophical basis to all aspects of any activity is that, no matter how admirable it is, it can easily develop into an unquestioned dogma.

I believe that to develop truly successful soaring contests it is essential to divide the two aspects of competitive soaring into separate contests and to devise scoring systems specifically tailored for each.

True cross-country racing on fixed tasks should not be abandoned or diluted by pilot task choices, but should be strengthened by an incisive scoring system relying solely on placing on each flight rather than by trying to measure the worth of a contestant's flight relative to the winner's. It is this latter aspect of the 1000 points system which is responsible for much of the conservative flying and mindless gaggling of present contests. The answer is to adopt some form of "Grand Prix" points system as has been suggested by such people as Göran Ax and Ingo Renner who know a bit about contests. Some detail refinements are required but that is beyond the scope of this letter.

Creative individual flying requires contests of its own which would be even more distinct from racing contests than Competition Enterprise is at present. The essential requirement is a single scoring system designed specifically to measure the absolute worth of different types of flight. The National Ladder is one such scoring system which could be adopted or adapted. In this type of contest the competitors would simply gather at the contest site and fly completely self selected tasks with the aim of harvesting as many points as possible during the contest period. It is the use of one scoring system throughout the contest (as opposed to several in Competition Enterprise) which would allow complete freedom from formal task setting and enable the contest to fully reflect Mr Wills' three essential qualities of ➡

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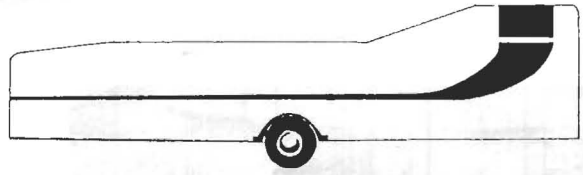
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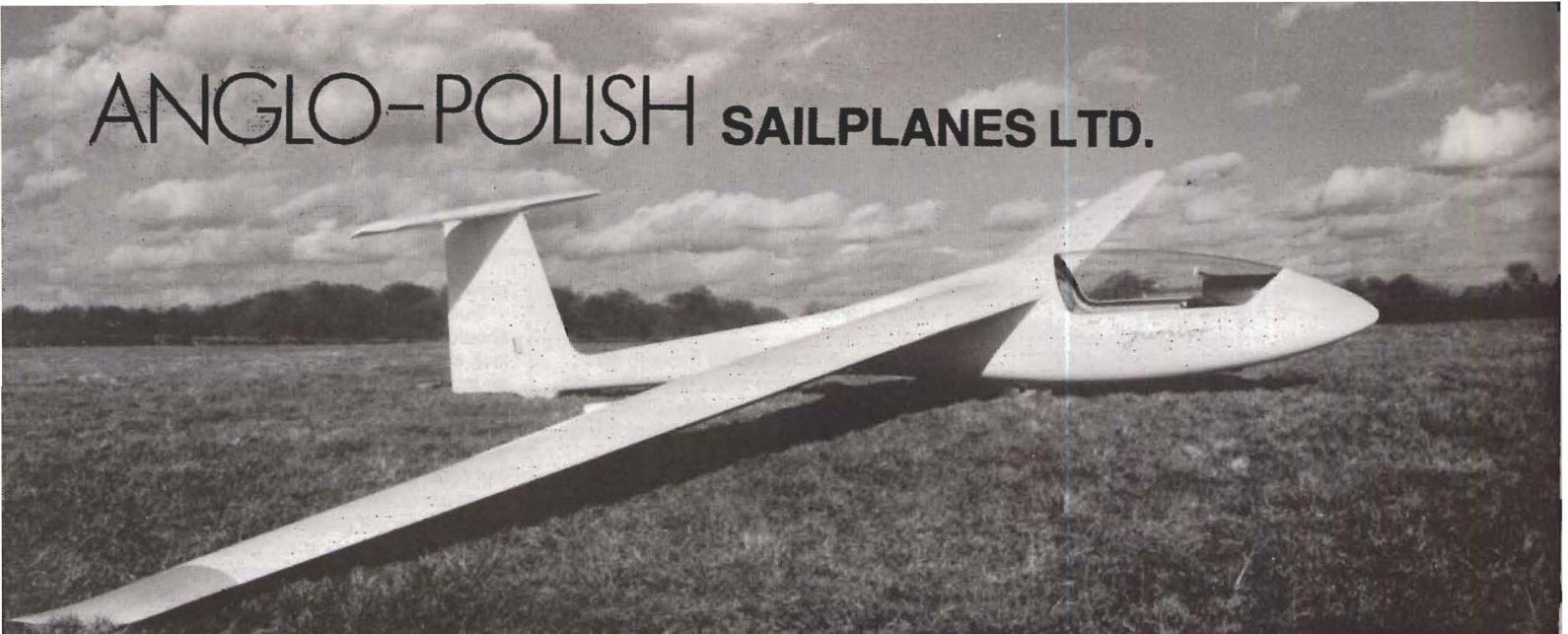


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gliding in a way of which I think he might approve.

Everything I have suggested may be wrong but one thing I am sure of is that to keep the 1000 points scoring system and to simply introduce alternative tasks is not the solution to the problem of competitive soaring. I think that such an approach would be particularly detrimental to cross-country racing, a pursuit which should be unashamedly enjoyed for its own sake.

JOHN GALLOWAY, *Glenrothes, Fife*

Justin Wills replies: I do not share John Galloway's view of the fundamentally different nature between true racing and creative individual flying. I think competitions should test a wide spectrum of pilot skills, and encourage individualism and creativity throughout, including the performance of speed tasks around fixed courses.

John himself suggests an alternative points system to prevent "conservative flying and mindless gaggling", implying that he too believes pilots should be encouraged to win through individual creative effort.

Above all, I think any organisation, be it political, commercial or sporting, needs an underlying philosophy to guide it. To lack one for fear of dogma is, in my opinion, to be consigned to the wilderness of directionless nonentity.

BOOK REVIEWS

Understanding Flying Weather by Derek Piggott, published by A. & C. Black at £6.95 and available from the BGA at £7.45 including p&p.

The author of this book needs no introduction, and almost every glider pilot must have read one of his books or articles at some time or another. To find one on the subject of weather was something new and I began reading this with considerable anticipation.

The first three chapters, covering the air-mass, the pressure pattern and depressions and anticyclones is almost faultless. I particularly liked the section which described the connection between the jet stream and changes in surface pressure. It is a very simple introduction to a highly complex subject.

Chapter 4 on the atmosphere is also well presented, primarily covering the subjects of stability and instability. This is easy to follow, but I feel that a simplified version of the TØ gram would not have been amiss. At some time or another a glider pilot will be faced with one and a rudimentary understanding of how it is used would help unravel the mysteries of adiabatic behaviour.

Chapter 5 is on clouds and this is where the author begins to go off at a tangent. There is a section on fog in which there is a whole paragraph on thermal activity. This belongs elsewhere. Cloud types are largely illustrated by line drawings, although there are some excellent photos of convective and wave clouds scattered throughout the book. However, as this is meant to be an instructional publication I feel the selection of cloud photos leaves much to be desired.

There is one glaring omission - castellanus. This has great significance to current and future flying weather, and deserves a mention.

Chapter 6 on local topography is largely devoted to sea breezes, the remainder on high ground effects. This is the infamous "north-south divide" revealing itself, and I am sure glider pilots north of the Watford Gap will consider their particular types of weather phenomena deserve much more space than they have been given.

Chapter 7 on soaring conditions starts off in fine style, but once again, under a sub heading of visibility, is half a page on upper winds and shower clouds!

Lee waves are well illustrated, both with line drawings and photos, but unlike Chapter 4 there is no positive attempt to give a theoretical explanation. The second paragraph launches straight into soaring techniques in wave, and one begins to wonder where the priorities are in this book. There is much information in this chapter, but I found its presentation somewhat confused. Fig 35 was an unfortunate choice - it is quite contrary to the written text, and illustrates a specific upper wind pattern associated with waves which is extremely rare.

The final paragraph, "Advice on using soaring conditions", switches to flying techniques in gliders and powered aircraft. It is all excellent advice, but again the author has really forgotten about the heading on the front page of the book. I am glad to say that the final section on Bronze badge questions and answers brings the book back on the rails.

My overall impression is that the author has been fighting a battle within himself while putting pen to paper. Soaring, not weather, tends to get the upper hand. The layout of photos and text makes it all something of a hotchpotch. However, there are a multitude of useful facts to be found throughout the book, and if you don't mind the rather poor collation of subject matter the £6.95 will not be wasted. I feel a bit more research and care would have produced a really worthwhile publication.

MICHAEL P. GARROD

Hanna Reitsch - Flying for the Fatherland by Judy Lomax. Published by John Murray (Publishers) Ltd. 50 Albemarle Street, London W1X 4BD. Price £14.95 plus p&p.

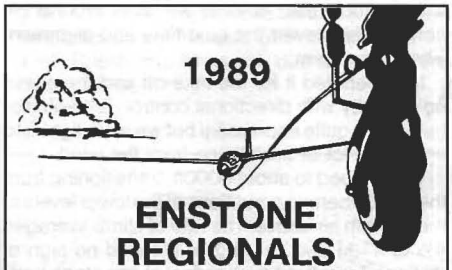
This book, the first major biography of Hanna Reitsch, gives an insight on a fascinating life in flying, and is full of interesting information which Judy Lomax has presented in a very readable form.

Hanna Reitsch has always been (and will remain) an enigma to me, and perhaps to many others as well. There is no doubt, however, about her gliding and flying achievements and many of these have been described in the book. During her whole life as a pilot she was the centre of controversy which towards the end of her life perhaps contributed towards her demise (1979) as she was feeling increasingly depressed and exhausted.

Judy Lomax has taken no end of trouble to interview many people who knew Hanna at different stages of her life, to finish up with a fascinating account which I can thoroughly recommend if you wish to know more about the circumstances in which Hanna grew to be perhaps one of the best known pilots in the world.

RIKA HARWOOD

(Some details of her flying life, which are examined in this book fully, appeared in Doc Slater's obituary on Hanna in the December-January 1979 issue of *S&G*, p302.)



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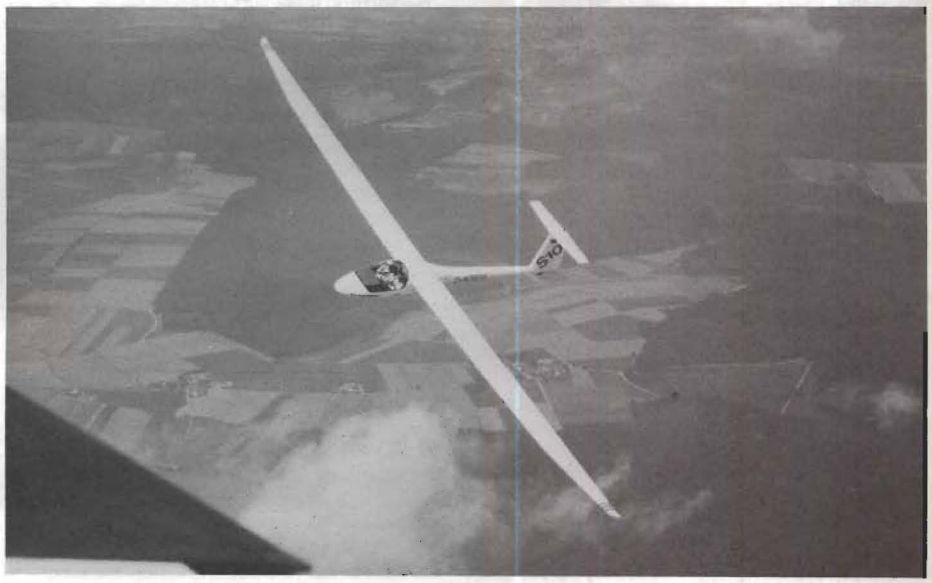
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FIRST IMPRESSIONS OF THE STEMME

George Lee, three times World Open Class Champion, assesses this new motor glider (featured on our cover last April) which will be displayed at the BGA Weekend in February by Mike Jefferyes, the UK agent



I have felt for some time that there must be a strong potential market for a self-launching, high performance, side by side two-seater. I was intrigued, therefore, to read the initial reports of a quite remarkable new self-launching glider that seemed to fit the bill admirably - the Stemme S-10.

As a longhaul airline pilot I regularly fly to Frankfurt and during one of my trips there in October I went to Mannheim to be met by Ingo Andressen (the S-10 sales manager) who kindly agreed to my crawling over and flying the number four aircraft.

From the outset I was favourably impressed by the high standards of engineering and surface finish. It appears to be immensely strong and obviously a lot of thought has gone into many aspects of the design.

It is not a particularly pretty aircraft on the ground, due mainly to the nose-high attitude and wide track of the somewhat spindly in appearance undercarriage. It was a very windy day and although the aircraft was quite well sheltered in front of the hangar the odd gust whipped around the corner. The canopy is very large and I think considerably more care would need to be taken with it in windy conditions than say a typical forward opening canopy on a 15m ship. The wide track of the undercarriage, coupled with the significant weight of the aircraft, seem to afford great stability on the ground.

The weight of the inner wing panels is less than those of the ASW-17

The impressive stiffness of the wings was also very evident on the ground although I understand the weight of the inner wing panels is less than those of the ASW-17. Access to the engine compartment seemed good and it didn't take Ingo long to remove both the left side and top panels. Entry to the cockpit was straightforward if a little athletic. The cockpit is **big** with a lot of room (no problem at all with clearance under the instrument panel for knees) - instrument switches, engine and flying controls were all easily reached. There seemed to be adequate space for instruments/avionic equipment.

The rudder pedals were adjusted conventionally and the seat back by an inflated air bag. There didn't seem to be a lot of luggage space but it should be adequate for most needs.

Engine starting and taxying were straightforward in spite of restricted visibility over the nose (the forward quarter visibility on both sides was excellent). The hydraulic disc brakes seemed smooth and powerful. We taxyed over quite a lot of rough ground initially and once again I was impressed with the stability afforded by the wide undercarriage track and the rigid wings.

The strong wind was some 60° off the runway and caused Ingo some problems as we came around the corner to align with the runway. The aircraft didn't want to know and we carried on going left off the runway and on the grass! Apparently the demonstrator had the wrong spring fitted between the rudder and the tail wheel - too weak! Anyway we came around the corner a bit slower the next time and alignment was no problem.

Ingo handled it for the take-off and there was no dififculty with directional control. Take-off distance was quite impressive but we were light and enjoyed a lot of assistance from the wind.

We climbed to about 6000ft, transitioning from the rough thermic conditions at the lower levels to the smooth air above. The rate of climb averaged 4½ to 4¾kt and the engine showed no sign of distress. I removed my headset at one stage and I would describe the noise/vibration level as acceptable. I understand that the Sauer engined version is considerably smoother and quieter.

Both the shutdown and restarting procedures were uncomplicated with the engine restarting quickly on each occasion - the fact that the engine cools slowly with the nose cone retracted and the cooling flaps shut can only be a plus in terms of starting and prolonging engine life. As a windmilling start is not an option, Ingo told me that they are working on a type of cartridge start system for the engine in case of an electrics failure. Applying the propeller brake and aligning the retracted propeller in readiness for the retraction of the nose cone proved straightforward.

The general handling qualities were very good with an excellent rate of roll for a big ship. In-flight visibility is good but I was aware of reflection in the canopy from the top of the grey instrument coaming affecting the visibility over the nose - painting it matt black would probably be the answer.

Stability felt good in all axes with little change in nose position across the speed range. I felt it had a good glide angle and can believe a best L/D of 51:1. It was poorly taped and a significant gain in performance should be realised when the best position for the turbulator tape is determined (not fitted at present).

The stiffness of the wings was very evident in flight and contributed to a reassuringly solid feel - Ingo said he has had the aircraft up to 320km/h (173kt) without problems. Flap actuation forces were light although I wasn't happy about the shape of the flap lever and its proximity to the airbrake lever - a re-design/modified flap lever would probably do the trick.

The stall was a docile affair and with our combined weight the aircraft would only spin from a

"power on" entry, the recovery being conventional. We then descended below cloud to try out the rough, broken thermals. In spite of only having a hopelessly under-compensated Winter variometer we managed to gain some height!

Once I got used to the perspective associated with thermalling a ship with a large side by side cockpit I found it to be a most enjoyable experience. I was pleasantly surprised by how well I could feel the lift and the control harmonisation seemed good, though I found it difficult to establish the small amount of slip that I normally like to use when thermalling a big ship - maybe the S-10 doesn't need it.

Nose cone could be opened for engine start with little loss of performance

After playing around with a few broken thermals we flew downwind to try the ridges but the wind was at too oblique an angle for them to be working. As we descended we had a landing field selected and a major advantage of the S-10 became apparent in that the nose cone could be opened in readiness for engine start with very little loss of performance.

We finished off by finding some rain to fly in to prove what I knew already - the Nimbus 3 profile, albeit somewhat modified, loses very little performance in the wet. We then joined the circuit but overshot from the first approach as the wind was gusting to 45kt!

In view of the turbulent conditions Ingo sensibly elected to land on the grass during the first lull. He didn't get the flare quite right on the landing and we became airborne again, but he had no problem in controlling the second touchdown without applying power - directional control after landing did not seem to be a problem. Retraction and extension of the undercarriage was easy and Ingo said that he has been pleasantly surprised by how reliably the most complicated feature of the aircraft has performed. The electric retraction/extension system is backed up by a manual extension, powerful springs punching each gear down when required.

It was unfortunate that I didn't get the chance to evaluate the aircraft in the circuit but Ingo invited me to return, hopefully to fly the Sauer engined version next time. The one I flew was fitted with a Limbach engine rated at 90hp at 3400rpm but measured at no more than 70hp at 2900rpm. The Sauer engine is rated at 97hp but has been measured at 104hp. Ingo also said that they were modifying the shape of the two bladed propeller which should give a 10% improvement in performance.

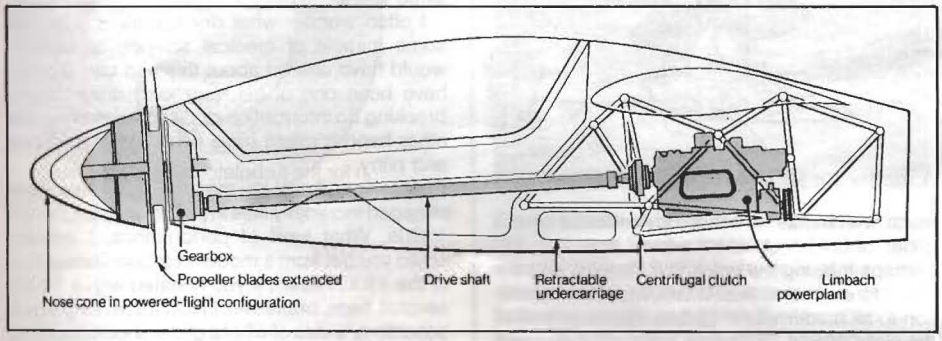
The main criticism of the S-10 in the past was the lack of power, but the first three aircraft were fitted with a smaller Limbach engine that was rated at 80hp and measured at only 67hp. The take-off run of the Sauer engined version using the old propeller has been measured at 220m on concrete and 320m on grass (weight 850kg and corrected to standard atmospheric pressure and temperature). I also understand that the Sauer engined version has been demonstrated in Switzerland and there was no noise level problem, so it must be quiet!

I was a little concerned about the safety aspects of having a transmission shaft running up the middle of the cockpit but Ingo said that they deliberately cut through a shaft and ran the engine for three minutes without a problem. I also wondered what would happen if the nose cone handle was accidentally pulled with the engine running. Apparently they have done this and there was no damage due to the taper on the metal collar at the front of the propeller housing - just a horrible noise and a slight smell of burning.

In summary I think it is a fine aircraft and deserves to succeed. I have very little experience of self-launching gliders but I can appreciate the advantages a self-launching, high performance, side by side two-seater has to offer, Sales figures will show us in due course whether the S-10 team have got it right - I believe they have.

See also the 1986 June issue, p131 and the 1988 April issue, p65.

Footnote: Since George's flight Limbach have uprated their 90hp engine with new cylinder heads. Early trials in S-10 No. 6 together with the new propeller blades have given a climb rate of 7kt at max weight. German certification has progressed well during the autumn and we hope will be complete by the end of February. The first three British machines are due to be delivered during 1989.



The engine doesn't fold out but is mounted centrally behind the seats and drives forward through a carbon shaft in a Kevlar tunnel between the two pilots to a folding propeller in the nose. When the engine stops the propeller blades fold inwards by spring loading and are then enclosed by the retracting nose cone.

HUNGARY

Louis Rotter recommends a site 60 miles from Budapest

Gyongyos airfield is three miles north of the town of the same name and 60 miles NE of Budapest, linked by rail and motorway. It is a hill site with a west wind ridge but from an aerotow you can soar in almost any wind direction or contact wave.

The clubhouse and hangar are on the east side but be careful arriving because the road crosses the main grass runways which have winching and aerotowing. The clubhouse is much like British GC facilities with a bunkhouse, there is ample room for camping and caravanning and a three star hotel five minutes drive away.

You can take your own glider or hire a Pirat. Flying is in the airfield's designated airspace but isn't as restricting as it sounds. Clearance is needed for cross-countries, specifying your route.

Wave is common in winter

During the summer Gyongyos is ideal for 500km O/Rs since it can offer a Diamond flat triangle well away from military flying. Wave is common in winter and 73 Diamond heights were flown in five days during the 1987 Christmas/New Year period, taking advantage of the north Karpatien mountains. The records show interesting gliding throughout the year.

The Hungarians, though new to hosting foreign pilots with restrictions only recently lifted, are very willing and hospitable but take flying seriously with some regimentation.

In 1983 they hosted the Vintage Glider Rally when western pilots enjoyed themselves. This year the VG meeting will again be in Hungary and before and after the event it is possible to glide at this site.

The language can be a slight problem as most people speak German as a second language but there will be an English speaking briefing every day and an English instructor available. The courses are for a group of four or five but individuals can go. It is best to arrange your own travel *via* Danube Travel, 6 Conduit Street, London W1R ST6, Tel 01 439 0263. They offer cheap return flights by Hungarian Airlines or British Airways, presently costing about £180 return.

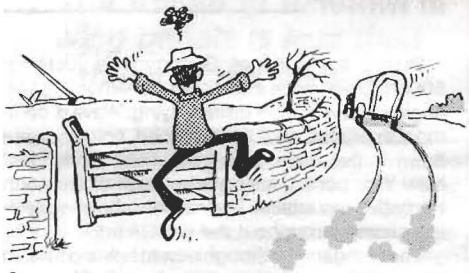
The briefing, when an airfield and navigational chart is presented, is very thorough and followed by an hour in a powered aircraft for designated airspace familiarisation and a two-seater check flight. Those new to the Pirat have two aerotows of 10min. All gliders have radios and oxygen with a basic panel plus one gyro instrument.

For further information telephone me on 0244 326555.

TAIL FEATHERS

A material difference

Long before designer stubble had been invented, there was a potterer-to-end-all-potterers to be seen around Dunstable every weekend with what looked like a perpetual two-day-old beard, his moustache and fingers stained, not yellow but dark brown, from the chain-smoking which eventually killed him. Ron Watson was untiringly helpful with any job you wanted done, from a variometer calibration to a Cornish retrieve. He was also untiringly dogmatic, as when during one of the great downwind dash Nationals he refused to stop his vintage Bentley to let his fellow crew members telephone control to see if their man had landed. "Look at those cloudstreets, nobody could get sunk in those conditions!" he snorted, and swept

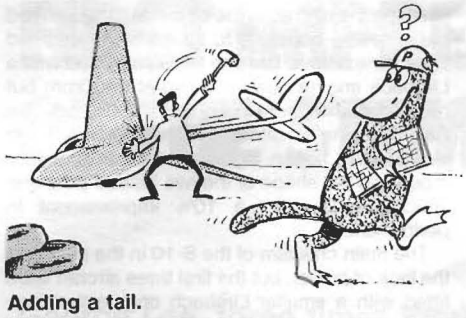


Swept past.

past the hapless pilot and onwards another hundred miles down the peninsular before the blunder (the *pilot's* blunder, not his, of course) was discovered.

To look at him in his dirty beret, messing around with bits of wire in the Ottley Building, you would hardly have guessed that he was a distinguished scientific civil servant in one of the aviation ministries. When I asked him why government-financed aircraft always cost about ten times what they were originally budgeted to cost, he said cheerfully "Well, if we went and told Members of Parliament what we thought the wretched things would *really* cost, none of the projects would ever get off the ground, would they?" He would have been a marvellous character in "Yes, Prime Minister" foxing both the bureaucrats and the politicians with his technical knowledge, his pawky wit and his total lack of respect for rank.

I asked him (this was more than 25 years ago) whether tailless gliders had a future, and he said "There is nothing wrong with a tailless glider that can't be put right by adding a tail." Which firmly ended that topic of debate.



Adding a tail.

Then I asked what he thought the biggest strides forward in glider design would come from, and out of the portion of his mouth that was not engaged in gripping a cigarette he said simply "Materials" and went on bashing out the most recent dinge in the 1930s fourwheeled ashtray that served as his car.

He was right. Exotic designs like the Horten flying wings have got nowhere. Neither did the metal variable geometry Sigma - too complicated by far. And though a plastic variable-geometry SB-11 won the 1978 15 Metre World Championship in the hands of Helmut Reichmann, that monstrously expensive prototype never entered series production. But materials - glass, then carbon, then Kevlar - have successfully made possible higher aspect ratios, stiffer and more perfect wingsections, more effective controls, wider ranges of wing loadings from dry to fully ballasted - all of which have helped, along with better aerofoils, to double performances of the wooden gliders of which we were so proud a generation ago.

Perhaps it should have been a matter for lamentation rather than celebration when a British Skylark 3 won the World Championships in 1960, since it helped to reinforce our insular attitude to new materials. One of the gliders on display on that occasion was the still very new glass reinforced plastic Phoenix, which was described by a distinguished British aerodynamic pundit (not Ron but another scientist, still very



A matter for lamentation.

much with us) as "A schoolboy's idea of what a glider should look like", which was true but perhaps missing the point. The Phoenix was the direct forerunner of the Phoebus and the inspiration to all modern GRP gliders. Apparently all of the eight 1950s Phoenixes were still flying well into the 1980s and for all I know are still flying today; I only hope the latest plastics last as long.

When Slingsby's finally decided that wooden gliders had hit the buffers, they plunged in 1968 for an American design in metal that had not been meant for series production. No American glider of World Championship Class has ever been mass produced, the main reason being the horrendous bureaucracy which put certification of commercially produced gliders on a par with that of Boeing 747s. Their best gliders were always brilliant one-offs with EXPERIMENTAL stencilled on the side. So the British HP-14c flopped. It seemed that Slingsbys wanted to do anything rather than touch the dreaded glass-fibre technology. Eventually the first British GRP glider, the Kestrel 19, based on the Glasflügel Kestrel 17, flew in the UK Nationals in 1971 and became generally available in the 1972 season. (I



Design in metal.

loved the Kestrel, and had three of them between 1973 and 1979; don't let's go into why so many ...) But Britain had lost its lead in designing gliders and, after the Vega, dropped out of the world market altogether.



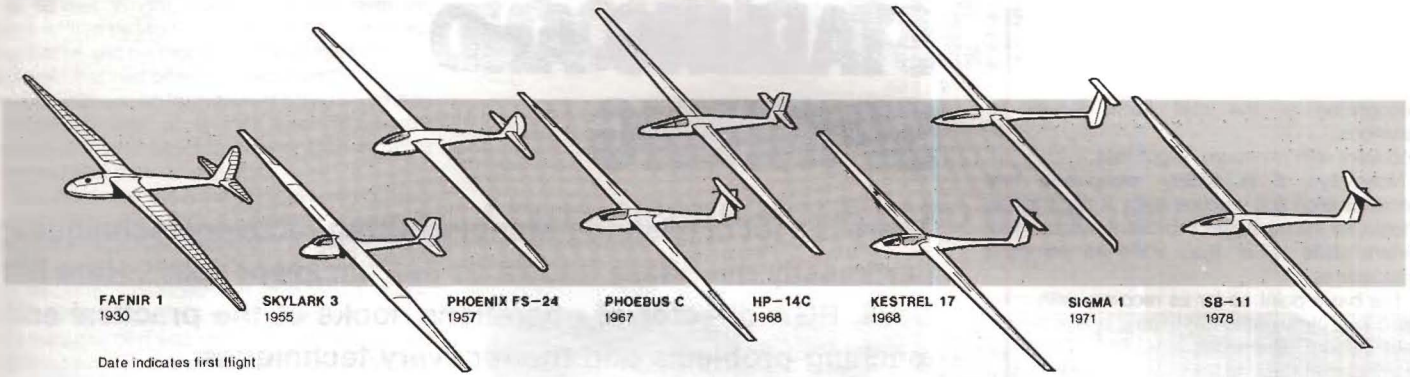
Short and pithy.

This whole story of decline and fall was a microcosm of British industry in general over the same years.

I often wonder what dry comment Ron, had some miracle of medical science saved him, would have uttered about this sad tale. It could have been one of his hour long dissertations, brooking no interruption or disagreement; on the other hand it might have been extremely short and pithy.

Postscript: Apropos the above, gliders have changed incredibly little in planform since the late 1920s. What kind of performance, I wonder, could you get from a modern carbon-fibre replica of the 1930 Fafnir[1], if you cheated with a 1980s aerofoil, flaps, brakes etc? Now there *really* was a schoolboy's idea of what a glider should look like. Mike Russell would doubtless throttle me for the

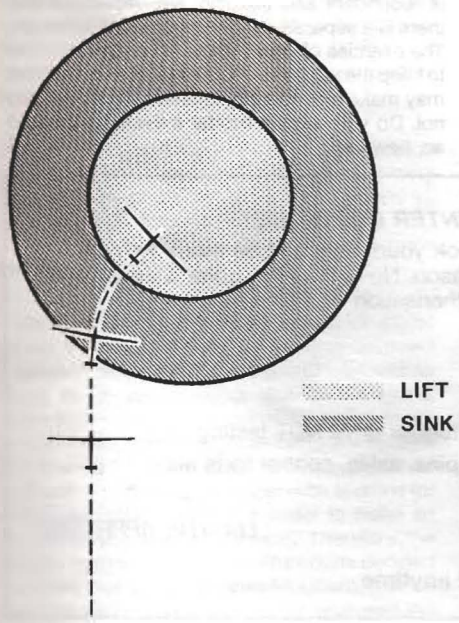
[1] *A beautiful cantilever gull wing sailplane, in which Gunther Groenhoff established brilliant records.*



blasphemous suggestion that we should do fake replicas of old gliders. But my point is simply that the best designers had basically got it right 60 years ago, and if there has not been any fundamental change in glider shapes over the past 60 years, there is unlikely to be much in the next 20. But I would love to be wrong.

Turning the other wingtip

Most gliding textbooks tell you that as you bumble along in straightish flight looking for a thermal, if the glider starts to bank to the left, you should resist and turn right, because there is a thermal under your right wingtip attempting to kick you out. Warren Kay, the stout pilot with the slim glider, who takes some pleasure in being a nuisance, points out that the same textbooks also tell you that the lift is surrounded with loads of nasty sink. Well, since you come to the sink first as you cut across the outer edge of the thermal, won't the sink make the glider bank *towards* the centre of the thermal? In which case turning the other way is the wrong thing to do; you should carry on turning with the down-going wing. Here is a rough diagram:



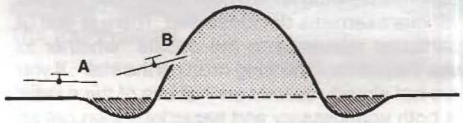
Oh Dear, Oh Dear, Brain-hurting time again.

There are a number of hypotheses to conjure with.

One is that Warren Kay is absolutely right and the textbooks are preaching rubbish that nobody has noticed for 30 years, apart from Warren. This is unthinkable, so another hypothesis must be attempted.

It is possible that Warren Kay is sort of right. That is more tolerable. My thinking goes vaguely like this:

1. Many thermals do not have serious amounts of sink around them, at least not sufficiently sharp-edged to tip the glider over noticeably. My little drawing illustrates:



Clearly the tipping-over effect will be more dramatic at point B than at A.

2. It is also possible that the Kay paradox does indeed happen from time to time, which might explain why sometimes there isn't a thermal where you think it ought to be.

A nice steady speed

A way of testing the idea this coming season would be, for instance when joining another glider in a thermal, to see what happens to your angle of bank and vario when you approach the thermal obliquely (not heading straight for the core, and especially not the other glider), flying at a nice steady speed with two fingers on the stick. On second thoughts, you'd better do it in a two-seater and leave the observations to the P2. Let me know what happens. Note: *S&G* takes no responsibility for the consequences (Ed).

SAILPLANE NEWS



On a recent holiday to the Savoy Alps, France, Jim Young of Farnham, Surrey, saw the 15m Standard Class ST-15 being built at the Stralpes Aero factory and has sent us the following details of a glider he described as "well designed and beautifully finished."

They are being manufactured at a rate of one a month and use a completely new, thinner aerofoil section which it is claimed gives an improved performance. The wing planform is triple trapezoidal to give a lower induced drag than comparable gliders. All controls auto couple on assembly.

The large airbrakes allow safe and steep approaches and with an L/D of 41.7 it has a maximum take-off weight of 500kg, requiring 160kg of wing ballast for a high speed performance in strong conditions. Even so, it has been designed to be good at scratching in thermals.

STALLING AND SPINNING

There is a lot of misunderstanding about recovery techniques, particularly the phase known as the "incipient spin". Here Bill Scull, BGA director of operations, looks at the practical and teaching problems and the recovery techniques.

With the stall and recovery the basic aims are to teach:

- Recognition of the symptoms of the approaching stall to avert it.
- Recognition of the stall itself, in all its variations.
- Recovery with minimum height loss.

Nowadays, it is widely recognised that demonstration and practice stalls during training should, for the most part, represent various inadvertent stalls rather than stalls as aerobatic manoeuvres.

The basic point so far as recovery with minimum loss of height is concerned is making the right amount of elevator movement. This may vary between relaxing the backward pressure to quite a positive forward movement of the stick in the steeper stall. In general the majority of pilots will over-control the recovery, but this is sometimes not picked up in training or on check flights.

It is fundamental that a student or pilot being checked is given a range of stalls including "mush", marked nose drop and wing drop to make sure each is recognised and recovery is well-controlled in terms of the appropriate forward stick movement.

Stall with wing drop

Historically, this is where the teaching problems start because stall with wing drop may often be termed an "incipient spin". This latter term and its implications are misleading and have led to a practice of using rudder in the recovery which is potentially dangerous, but more on this later. The fundamental point here is that the normal stall recovery is just to move the stick sufficiently and after the glider is unstalled the wings can be levelled in the usual way.

Consider the alternatives. If the rudder is to be used as a part of the recovery drill then what are the options? Given that we've considered one already (normal stall recovery) then two remain:

1. Using sufficient opposite rudder to prevent further yaw implies a degree of awareness and control which is most unlikely for a pilot who stalls inadvertently. If recovery can be made without using the rudder at all then what is the point?
2. Full opposite rudder is appropriate if the glider has entered a spin but applied prematurely, that is before the glider is spinning, incurs the risk of spinning in the opposite direction - **particularly if the stick is still being held back.** Such a situation amounts to making a spin recovery before the glider is actually spinning which is clearly an inappropriate action. Again, if recovery can be made without using the rudder at all then what is the point?

It follows from (1) and (2) that use of the rudder is wholly inappropriate. If you are not convinced then consider the following hypothetical situation.

The glider stalls and the wing starts to drop. The pilot moves the stick forward but the wing continues to drop and the glider is spinning.

This situation, if not unique, is probably very rare. The glider in question is one of the few that will enter a spin from a straight stall without any apparent provocation. The question is if the glider is spinning without the stick being held back will the elevator position stop the rudder from achieving its desired effect?

I have put this question and indeed circulated this article to a number of people with considerable experience - most of them with more than 100 types in their logbooks and including test pilots - and, without exception, the answer given is "I know of no such glider!" Therefore, the forward movement of the stick is the key and use of the rudder is likely to cause more problems than it cures.

The stalling reinforcement exercises

These exercises have been taught to BGA instructors for more than 15 years. More recently anyone attending an AEI course will have had the various exercises demonstrated. There is one of particular relevance to the debate "whether to use the rudder if the wing drops at the stall". If you are not already convinced that use of the rudder is both unnecessary and hazardous then get an instructor to show you a spin to the left off a turn to the right (*or vice versa*). If you're still not convinced then your days may be numbered!

The other exercise is the effect of rudder at different air speeds. The comparison is made by applying rudder at normal flying speed and, flying stick-fixed, observing how much the glider yaws and rolls - the primary and secondary effects of rudder. The second demonstration is at a speed near to the stall; the application of full rudder will cause the wing to drop and, maybe, the glider will enter a spin. Remember being nagged by your instructor not to over-rudder the turn entry? Such a tendency may well be suppressed by your stage of experience but will you revert under stress? You don't know do you? But again the implications should be obvious, a flawed recovery technique may be your final undoing.

The "Incipient" spin

Notice that until now I've avoided using the term "incipient". What does the word mean or what is it taken to mean? The Concise Oxford Dictionary states - "Beginning; in an initial stage". It is not a matter of semantics to say that the word is entirely appropriate if a sequence of stall, wing drop, yaw, autorotation, spinning occurs. In this context "incipient" is accurate enough to describe in an initial stage of what will become a spin. However, if the sequence stops at wing drop then the word is quite inappropriate. In reality the word is virtually redundant except to describe an aerodynamic situation rather than one with any practical aspect.

The answer is really quite simple:

- There is a standard recovery from the stall, whether the wing drops or not
- There is a standard recovery from a spin.

And, indeed, there is no need for any intermediate recovery technique between the stall and the spin.

For all practical purposes the term "incipient" is redundant and certainly any implication that there is a separate recovery technique is fraught. The exercise of slow flying and using the rudder to keep the wings level will encourage a habit that may make a glider bite when otherwise it would not. Do you use the rudder if the wing drops. If so, beware!

Cotswold Gliders
(Prop. T. Cox)

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LLOYDS APPROVED

LOOKING BACK

LOUIS-PIERRE MOUILLARD (1834-1897)

Wilbur Wright, asked if he had read the book written by Mouillard, was reported as replying that he and his brother had read the extensive extracts that had been translated and published by the Smithsonian Institution at a time when their confidence was at a low ebb: Mouillard's enthusiasm and belief in heavier-than-air flight had inspired them to continue.

Mouillard was the artist of nineteenth-century aeronautics. He had a lifelong interest in birdwatching and was able, after moving to North Africa, continually to observe large soaring birds. He became convinced that man could imitate them by building a light-weight fixed-wing glider. His favourite bird was the griffon vulture and he decided that this should be his model for a man-carrying machine.

Between 1856 and 1897 he built five gliders, none of them successful, because they were neither inherently stable nor capable of three-axis control. His own experience was limited to one precarious flight made in 1865 on his farm in Algeria. Here is his own account of the event.

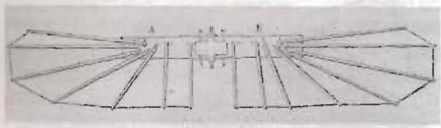
"Through a combination of tricks and stratagems I was at last alone on the farm. I had already tried out my glider by jumping from low heights and I could sense that it lifted, but I did not dare experiment in front of my people.

"I was walking in the meadow with the glider on my shoulders, running against the wind and testing the lift. The wind was light and I was waiting for the breeze to get up.

"Alongside the meadow was a road one and a half metres higher than the meadow; it had ditches either side three metres wide. I had the idea of jumping one of the ditches.

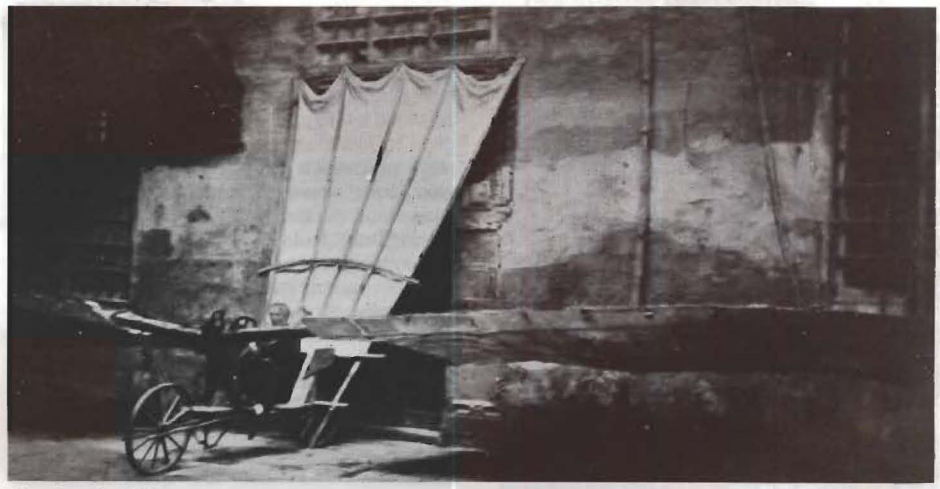
"Normally I could jump across it easily, so I decided to try to jump with the glider on my back. I ran across the road and jumped as usual. But, help!, on arriving at the other side my feet did not touch ground. I was treading air, making useless efforts to land. I was only one foot above ground, but I couldn't reach it. At last my feet touched and I fell forward on to my hands, breaking a spar, and it was all over! But how frightened I had been!

"Happily, the episode ended well. I measured the distance between my landing point and the road and I found forty-two metres. I cannot say that I had tasted the joys of speed - far from it, I was too frightened. However, I will never be able to forget that strange feeling of floating."



Mouillard's hang glider of 1865.

Mouillard also built a large number of model gliders, the most interesting of which possessed a weathercock or windvane which was free to rotate on a vertical axis and in so doing automatically actuated ailerons intended to act as spoilers and keep the glider flying in a straight line. After his death it was said that Mouillard had invented co-ordination of rudder with ailerons (or rudder with wing-warping) in order to make an aeroplane bank and turn correctly. Therefore, the Wrights' patents were invalid. The courts decided otherwise - correctly, because Mouillard, with his horror of mathematics, had never analysed the forces acting on a bird or a glider in flight.

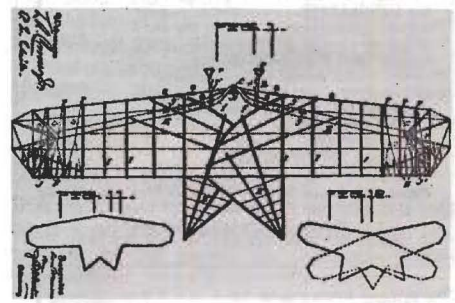


The fourth glider.

In 1881 Mouillard published **L'Empire de l'Air,** an ornithological study applied to aviation, a masterly work. Ten years later he wrote **Le Vol sans Battement** (Flight without Flapping). Enthusiast and dreamer, completely disinterested financially, Mouillard died in poverty, alone and forgotten. His papers were preserved by the French Consul in Cairo and they were found to include the manuscript of his second book, **Le Vol sans Battement,** which was published posthumously. Here are some more extracts from his books:

- "Flight is certainly the most beautiful method of movement that nature has created.
- "Nothing is as beautiful as the sight of this enormous bird (the griffon vulture). It is impossible to see one without stopping to watch its majestic progress. It is the model *par excellence* for our present study. Whoever has seen one for five minutes in full flight cannot doubt the possibility of aerial navigation.
- "One day, in Africa, a pair of eagles gave me a magnificent spectacle. One of them was lifted by a gust of wind and continued to lift itself directly and slowly - without a single flap of its wings.
- "We must observe movements, routines and changes in birds: know all their manoeuvres and, above all, understand them; without that we will never succeed."

As a result of his minute observations of soaring birds, he understood hill soaring; he understood that the whole surface of a bird, including the body, is a lifting body; he recognised the importance of aspect ratio; he had some vague notions on the movement of centre of pressure on flat surfaces and he understood perfectly the need to learn to fly (or balance) an aeroplane before launching into space. This seems obvious to us today, but it was far from obvious to people in those days. It was a characteristic which identifies him clearly with the mainstream of progress, as opposed to those who thought that, given enough power, flying would be straightforward.



Mouillard's patent drawing dated 1887.

Curiously, he had a blind spot as far as thermal soaring is concerned. He spent many hours watching birds soar above the plains. He accepted that vertical currents could occur, but they must be "desperately rare". He was well acquainted with dust-devils but finding them turbulent at ground level, he thought they must be very dangerous for gliders. He ascribed most thermal soaring to some kind of ill-defined dynamic soaring, a view shared by many observers and researchers until the 1920s.

Mouillard collaborated with Massia and Biot in ➡

IT WAS JUST ANOTHER 300KM

Ron Parsons, who insists he was "just the passenger" and can't claim any glory, wrote this for the London GC newsletter. We felt the rest of you would enjoy it as well

This article will hopefully interest mere mortals (like me), not that select minority of **real** pundits whose knowledge and ability separate them from the rest of us.

Simple logbook statistics read - September 18, ASH-25, 315km O/R Monmouth: 7hrs 25 min.

The experience is almost indescribable to glider pilots and impossible for the less fortunates.

A wire launch towards ⅝ low cover promised a typical J. J. flight in conditions believed unsoarable by others. The only radio contact during the initial couple of hours was with pilots many miles west of the front enveloping Dunstable. The launch allowed an exciting dash to the Halton ridge; headwind at this height was probably 25-30kt. To optimise the ridge lift in the westerly and counter the rain now present, we shifted to the Chequers' ridge, but the associated short beat and direction of approaching grot encouraged John to return to Halton.

The next decision opened Pandora's box. A dash north-west to a line squall as vicious in its black appearance as in its subsequent behaviour, in which traits of cu-nim turbulence added excitement to a cloud climb in heavy rain. Nevertheless this climb was the key to the day as it enabled connection with cloud streets behind the front, in, alongside (the dry side) and under which we battled against an approximate 45kt headwind. Bicester, Upper Heyford and Enstone passed by very slowly to leave an unpromising 30km stretch ahead where streets did not exist and thermals appeared to be scruffy and unworkable.

A "normal" cloud climb (if connection half a mile upwind of an elongated cu marker is normal) provided the launch platform for a **very** marginal glide to just clear the crest of the Cheltenham ridge and reach its associated security on its west facing slopes. From here another relatively easy cloud climb over Cheltenham put us within reach of our goal.

Eventually after innumerable cloud climbs in attempts to connect with wave, when the very elusiveness of our goal appeared to be our master on this day, wave suddenly became our ally. Over the Forest of Dean just west of the Severn estuary we climbed to 14700ft. After a radio check of Dunstable conditions, reassurance to our retrieve crew and a sunset time check, the latest permissible departure time for home was established. Monmouth and Eastbach airfield were hidden below cloud but the telecommunications (defence?) dishes at Marstow, Ross-on-Wye and parts of the Severn, assisted a fix. Then we got greedy.

Whilst seeking wave, followed eventually by a climb in silky-smooth conditions, we had both been admiring a "lennie-like" lump in cloud still further upwind. Inevitably, with 14000ft on the clock and our reasons for returning early to Dunstable long since dismissed, we agreed to press on. After rapidly losing 6000ft and still short of our target, we were happy to start a new climb in wave not as strong as the one sacrificed. Wave or road retrieve were now our only options, thermal activity having died.

The 77nm/142km final glide home was started from 12000ft. Minimal topping up was possible in wave along the way (still evident at Aylesbury incidentally) but in principle the Peschges VP3 continued to reflect the 8km cushion John added to my distance measurements and a 5000ft insurance for the risk of wave sink. We returned in 57min at 149km/hr, the wind having now veered. As we neared home the lights of identifiable towns below compensated for the lack of a map reading light in the rear seat (a complaint!).

Friends had organised a precautionary car headlamp flare path and according to my sunset table we landed just in time. In the bar we were greeted with a £17 bill for the flare path car fuel, my lower limbs demanded a whisky mac and John sipped his customary white wine.

As J. J. remarked during the flight - "gliding is a privilege" and we agreed that the man in the street could not possibly comprehend. This flight had everything; it surpassed a 300km of anabatic wind ridge soaring with Ingo Renner and Spanish eagles in the Sierra Guadarrama earlier in the season. "Thank you, John, for your kind of magic".

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Continued from page 15

the design of the mystery glider described in this series (April/May 1987). He probably contributed the leading-edge spoilers, which were supposed to work in much the same way as those on the model glider already mentioned. In 1892, with the help of Chanute he patented in the USA the main features of his last glider. This was fitted with trailing-edge spoilers rather like ailerons and the patent was one of the documents cited in court in 1910 to upset the Wright patents. I am sure that, had he lived, Mouillard would have been the first to applaud the Wrights for their successful emulation of soaring birds and the last person to try to steal their glory.

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MARY GOES FOR A PADDLE

Or at least a trip to the seaside

At Booker, we co-exist with helicopters. Sometimes they get in our way, sometimes we get in their way. I find them disconcerting. Normal airplanes, no problem. Confronted with a glider in a thermal, a fixed wing plane just keeps boring straight ahead, keeping careful watch on the instrument panel and listening to air traffic. Easy to dodge. But helicopters are capable of any manoeuvre. Up, down, sideways, backwards, it all adds to the stimulating mixture at Booker. However, this story only has a bit to do with helicopters, at the end.

Pegasus 987 was down at Nympsfield. Somebody had to bring it home, so I volunteered.

Mark Holmes, Phil Ennis and I set off in the Booker Robin, G-SELL and managed to find Nympsfield after a little uncertainty. The natives regarded us with astonishment. Arrive in your private tug to tow away your private glider, beat that, Onassis! They were so impressed they waved us to the front of the launch queue. Which would have been fine but I wasn't ready yet. I thought I was ready but I kept discovering things that needed adjustment.

Battery not switched on. Oh dear, the seat was too far forward and when the canopy was closed my head wouldn't fit. The kindly patience of the natives began to wear a bit thin. It wasn't really soarable but they thought it was, and they began to get downright rude the third time I popped the canopy and pulled the chain.

"If you're not ready to launch, please pull out of line and let somebody else have a chance" remarked John Patchett with asperity. "I'm ready, I'm ready!" I grated, and as we slowly lumbered along we began to wonder if we would make it over the power lines at the end of the runway.

But Mark Holmes has plenty of style, and he threaded through the gaps in the skyline with panache. I just hung in there. In this game one so often has to just hang in there. Once after a particularly marginal launch in a heavy two-seater behind a reluctant Robin, I asked Brian Spreckley what was best to do if one didn't think the tug was going to make it over the hedge. "Wait until it hits the hedge and then release," he advised.

Mark continued to impress the locals by cranking the combination round in a spectacular 90° bank. Actually I was pretty rusty - hadn't flown for four weeks. I was going to look pretty stupid if we came apart and had to come down for a relight. But I could communicate with the tug, and did so. "Rate one turns, for goodness sake". Clever lad. He knows what it means. After a bit more confusion about which way was east, we began tracking back toward Booker.

Over Aston Down, the sea breeze front, which had been precipitating pilots at Nympsfield to the enhancement of their launch rate, was replaced by some splendid cu, marked by a couple of local lads, so I came off tow and joined them. The original plan had been an attempt at two legs of a 300km., Cheltenham racecourse, Leicester East and home to Booker. But it didn't look very promising in that direction. And being rusty, I wasn't entirely sure I could stay up, but the second cloud *did* work and I managed to find the best bit.

At which point a really impressive military transporter came lumbering by from Brize Norton. I thought perhaps I would give Brize a tinkle, just to let them know I was there, on the edge of their zone. If they decided to send another one up on the same path, by that time we might be coincidental. So I rang them up, and they were very kind and polite and grateful but I had to go off frequency because I can either chat over the radio *or* stay up. Not both.

The weather to the north still looked fairly grotty. I meandered over Blenheim Palace, over Oxford airport, over Bicester and still the weather to the north did not improve. Over Milton Keynes, I got in a spot of bother and began to look for suitable fields. Into wind. Downwind was a built up area. What had been a jolly downwind romp immediately lost its charm. That wind was quite persuasive, and only by luck did I bumble into two knots of lift and being down to 1200ft, which for me is chicken out time, I clung to the two knotter and by the time I had climbed once more to cloudbase and safety, Milton Keynes was a thing of the past.

"What the hell. If I was going to land out I would go as far as I could"

The weather to the east still looked superb. Karina Hodgson and her Dad had agreed to come and get me if I landed out. What the hell. If I was going to land out, I would certainly not want to land at some boring place like Milton Keynes. I decided I would go as far as I could. With a good crew lined up, and a beautiful street beckoning, the rest of the tour was sheer delight. Everybody came out to play. At Cranfield they put on an airshow. Bedford was launching gliders. Along the Bedford River Drain several pundits went whizzing past. At Marham I lingered, watching them lob up the locals, and wondering whether to turn left or right at King's Lynn.

Eastern promise won, so I toured the Norfolk broads. Crammed with boats. So many boats. But despite the co-operation of the elements, a decision would shortly have to be taken to land somewhere. Because before long there wouldn't by any more land. I was running out of land altogether!

Offered a choice these days I usually set down in a proper airfield. Last time I landed in a pasture there was an electric fence which was a complete surprise and could have been expensive. Landing fees seem a modest bit of insurance to avoid breaking the glider. So I decided not to go for Bacton, because it had an H for helicopters, and chose instead North Denes, at Great Yarmouth. Seaside resort, lots to do whilst waiting for the crew. I flew over the sea front, checked out the beach, the racecourse, the harbour. I sat over that little airfield for a full twenty minutes, observing the traffic. There wasn't any. So eventually I sauntered down to land. Carefully. And rolled to a halt in the middle of the rather brief grass strip. Should have rolled off, of course, but brain was a bit slowed down by then.

No sooner had I extracted myself from the cockpit than a red truck roared up. Two men jumped out and without a word of welcome shoved the Pegasus to the side of the runway. They then jumped back into the truck and left me gaping ... I was standing there bemused, for several minutes, when a large red helicopter appeared on the scene. Instead of hovering down, it landed in the style of a fixed wing plane, using most of the runway. Curiouser and curiouser. I walked to the airport buildings, found somebody with a uniform, and he explained that they had just experienced their first emergency landing that year of a North Sea helicopter with 12 men on board and one engine out. Expecting the crippled helicopter, what should arrive in the midst of the crisis but one inopportune little glider.

Once it was over, everybody thought it was quite amusing. The chief pilot had been soaring in his younger days and was most understanding. Chris and Karina and the faithful Mark Holmes turned up at 10.30 and we all went down to Yarmouth for a seaside late night dinner.

Total distance was 296km. But no plan and no barograph. Just a delight, no badge, who cares!

A note from Dave Richardson

You don't need to worry about landing in a field Mary - do you remember last year when you crewed for me during the Dunstable "Raingionals"?

On Day 1 I landed in a nice 600 yard cut sileage field next to the river at Cold Brayfield near Olney. The gate was next to the main road and the farmhouse 100 yards away.

The only odd part was a chap walking across the field who didn't even look up as I landed alongside him - he just carried on walking! I wondered if I had become invisible.

Walking to the farm I immediately bumped into the manager who didn't mind me trespassing at all. Then on my way to the pay phone, and as the rain started, a chap in a car offered me shelter and his car phone. It turned out he has a PPL, flies at Staverton and glides at Aston Down.

When the rain stopped I checked 941 and then ➡

SIX FOR GOLD

Mark Roberts was one of three North Wales GC members to gain Gold height from an unmarked wave system over their site on July 10

I am constantly amazed (and gratified) that my enthusiasm for gliding is mirrored by my family. However, it does slow me down somewhat when they wish to accompany me.

Arrival at the gliding site early in the afternoon (five-past twelve) brings greetings of "Thank the Lord, the evening shift has arrived." Presumably they want a winch driver. Yes, right again! Funny how your worst premonitions come true each time. I am deprived of my family's exquisite company.

At least my syndicate partner has organised the rigging of our dream machine, an Oly 419, possibly the finest aircraft ever built by Elliots.

It is fairly late in the afternoon when Robbie takes off in a freshening south-westerly, which makes our ridge work well. He disappears for an hour, as usual, while I am burning with impatience. I have a crew ready with pickaxe and crowbar to get him out the moment he returns. I don't need them, he is out of the cockpit in a trice and doing handstands. "Feel how cold the air-

(Continued from p17)

spent the next 45 minutes chatting to a fisherman school teacher on the river bank about life and the universe.

Time came to return to 941 and the road in readiness for Mary the Crew. The farmer turned up as the rain started again with a flask of tea and biscuits. Five minutes later, a pretty red Granada, white Komet trailer and "chicken hearted half-baked American granny" appeared over the crest of the bridge, just like the cavalry in the movies. One pleasant car journey later and we were home.

That's the way to do it chaps!

craft is? I got into wave just west of the 'gap'. I got up to nearly 9000ft. WOW man what a flight, WOW MAN WOW!!"

I gather that he is excited but I refuse to be wound up, Walter Mitty could have learned much from us. It was probably a fluke bit of lift and even if it wasn't my chances of getting into a wave system are infinitesimally remote.

The word goes round the site quickly and the rush of gliders to the launch point makes the traffic on the M25 seem insignificant.

One of our grossly overworked instructors, Ray Ball, grabs his barograph and we agree that we will take the next pair of cables, provided the two-seater is out of the way.

"You know this morning I saw six magpies," says Ray, I look blank, "You know, one for sorrow, two for joy, up to six for gold. This has got to be IT!" I agree politely and say that I hope this is so. Oh my God, another Walter Mitty!

But just in case I will borrow the club's barograph. Suddenly I have butterflies, maybe I'll get a Bronze leg ... maybe.

I am launched to just under 1000ft agl and fly all the way to the ridge in lift. I beat up and down, so does the vario. The Bocian arrives and finds a thermal. I follow. The Bocian rises. I don't. I take this to mean that *ab-initios* may not fly the same hallowed air as instructors. Maybe I should go back to church on Sundays. I leave the instructor's thermal and go and look for one of my own. I find one which lifts me towards the cloud at an indicated 6kt and my spirits soar at 10kt. Prudence (cowardice and ignorance) dictates that I shall break off at cloudbase, which is 2700ft on my super inaccurate altimeter. I head gently south-west into the wind and towards a big blue hole over the Ruthin valley with the cloud scudding over the top of my tail. Half a mile ahead of me I see Ray in the Jantar flying due west very fast and then rise. Must be speed-to-heat conversion. Two minutes later I am in 8kt of lift in clear blue, WOW!!

All of North Wales laid before me like an Ordnance Survey map

I lose sight of Ray, and my target is to see the altimeter at over 10000ft, but the smooth lift of 8kt has gently reduced to 3kt. At this height my usual reference points are totally insignificant, even the mighty A55 holiday route to the North Wales resorts is a mere ribbon on the landscape. I am awed and frightened. According to my altimeter I am nearly 5000ft above the cloud tops. Twelve miles to the south I can see the reservoir of Llyn Brenig set in the Denbigh moors which are wreathed in thick clouds. The warnings of the instructors ring in my ears, "Don't let the clouds close up beneath you!" All of North Wales is laid before me like an Ordnance Survey map (thank goodness they don't have clouds on them).

I amaze myself by discovering I have been flying for 1½ hrs and at 10150ft watch with interest as a motor glider climbs the windward side of the clouds.

During all the time I have been over 9500ft I see two other gliders I know well (I should do, I have



Mark, an administrator for a petro-chemical company, joined his club three years and four sites ago, has become an expert at digging out hedges, is their treasurer and says he has "much to learn about gliding."

helped rig them often enough!) way below, but never above me. I wonder if they made it? I have also seen two motor gliders that are total strangers and they too have been a long way below me.

I am left with the awful feeling that I shall be joining those "pundits" who, if they could fly as well as they talked, would be in the British squad.

It is late and I am cold and tired. Home James. From the club's home ridge I can see with dismay that the landing area is littered with gliders. I will stay on the ridge until they clear the field. I discover that the turbulence had become much worse and I make a run for home and safety. I do finals in wild rotor and finish with a less than convincing landing.

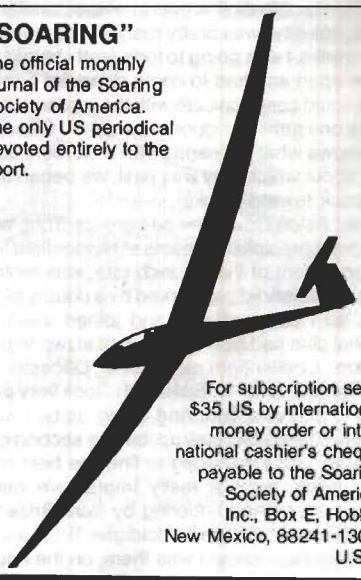
My family, bless their little cotton socks, have taken the car, but left a message "Get a lift with Geoff. If you are not back by nine we will eat all the Sunday roast!"

One for Sorrow, Two for Joy,
Three for a Letter, Four for a Boy
Five for Silver, Six for Gold,
Seven for a secret never to be told.

It was a good day for three of us. Barograph traces show Gold heights for all, with maximum heights of 11000ft agl for me, 11950ft for Ray and 12250ft for John, our "pundit" chairman (see the October issue, p242).

My sincere thanks to those left behind who winched, retrieved, de-rigged and did all the dirty work while I danced on sunlit wings.

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S & G CLASSIC

CHOSEN BY THE ARM-CHAIR PILOT

A FLIGHT IN A THUNDERSTORM

Derek Piggott has just retired as CFI of Lasham GC after thirty-four years. In this article, originally published in *WEATHER*, September 1955 and in the first issue of *Sailplane & Gliding* (October 1955 p115), Derek describes a flight of the kind that people do not indulge in quite so often now. Read it and see why!

Whilst on his feet - or, rather, in his chair - the Arm-Chair Pilot joins all our readers in wishing Derek a happy retirement.

In this article Derek Piggott, Chief Flying Instructor at Lasham, describes a flight on July 14, 1955 in which he soared to the greatest height yet reached in a sailplane in Great Britain.

Cumulus was well developed and tops had reached 14-15000ft by 2 o'clock. A Hunter pilot reported isolated tops to 38000ft, and a beginner at the club had already made a climb to 10000ft. Winch launches had to be stopped because of the risk of lightning strikes down the cable and so at 4 o'clock I was towed off by a Tiger Moth in the Skylark 2 belonging to Imperial College. Torrential rain was falling in a clear cut line to one side of Lasham aerodrome, so heavy that it was impossible to see to drive a car through it, and there were lightning flashes which were timed to be between one and two miles to the north-east.

I released at 1800ft under some spreading-out cumulus with the base at about 3000ft. To one side it was raining and there were fragments of cloud below my release level. I approached the rain belt to a place where the lift was strongest just outside the rain, planning to climb through cloud, steer north-east to come out on the far side and then glide back downwind to Lasham.

Cloud was entered and I began to fly on instruments at just below 4000ft. From there the climb to 11 000ft took only five minutes. The lift was very strong and smooth over a large area, and the variometers showed 15-20ft/sec up all the time. There was very little turbulence, and no precipitation of any sort.

At somewhere around 14000ft I ran into really violent turbulence. There was no rolling or upsetting and no difficulty in controlling the glider; it was like a violent shaking of the glider as a whole, so bad that I even considered the possibility of it breaking up. It was the worst and most violent turbulence I have ever met in several climbs in cu-nims. It was not exaggerated by speed, because I was flying fairly slowly.

Shortly afterwards, whilst still circling, I entered a region where the storm was mainly electrical, and as far as I can remember the turbulence died down. First of all I got small shocks from the controls; these became progressively worse until they became violent - like holding on to the 230 volt main and being unable to let go. One flash appeared as a blue flash ¼-½in diameter from one side of the nose by the rudder pedals to the other and I got a shock through my feet.

The glider was struck four or five times round the cockpit in a few minutes. Most of the others appeared as bright flashes outside, and because I heard no thunder I wonder whether they might have been minor strikes of some sort. The shocks were so bad that I shouted out in the cockpit. The effect of the shocks was so unpleasant that I became frightened of being struck again and again, and I decided to straighten up and fly out of the lift.

By then I was at 17-18000ft, attempting to straighten up on a course to the north-east. In retrospect I realised that I must have been suffering from lack of oxygen, because this course took me right through the centre of the storm. It would probably have taken me only a few minutes to come out by flying southwards along the course by which I had entered.

Scooped in cold air to prevent early anoxia through breathing stale air

I also suffered from slight vertigo, probably through lack of oxygen, and I had my hand out of the window to scoop in cold air to prevent early anoxia through breathing stale air. At about this time I also noticed that the cockpit and my knees were covered with small white hail or hard snow about ⅛in in diameter. I am not sure whether I went through any heavy hail during the violent turbulence.

Icing was now apparent. The cabin and leading edge of the wing had about ¼in of ice and I had to break the ailerons loose by brute force on the control column. The airbrakes did not ice up. After this I had no further trouble with icing of the controls. I had some difficulty in straightening up and suspected instrument trouble: this I interpreted at the time as being due to anoxia.

Eventually I reached 20000ft indicated and decided that it was as high as it was safe to go. I settled on a course towards the north-east with the airbrakes open, still going through the storm. Although I did not see more than 20000ft indicated on the altimeter, the barograph chart shows such an excess over that height that I must have been higher and overlooked the indication.

After descending several thousand feet in sinking air with the airbrakes open, I again flew into strong smooth lift. I was unable to resist the temptation, and climbed again for a few minutes before deciding definitely to descend.

The descent was so rapid that on looking at the barograph chart I think I may have been only semi-conscious during most of it. If so, it is surprising that I did not have to recover from a spiral dive which would almost certainly have resulted from leaving the controls alone. The descent was straight and more or less on heading. At 16000ft on account of anoxia I was mildly amused by the look of the 10000ft hand on the altimeter, since I had not seen it before and wondered whether I was in fact at 16000 or 6000ft. I can recollect deciding that it was anoxia that I was suffering from. Since I had lost height at about 2000ft/min, even with the airbrakes open, I must have been in rapidly sinking air. This was in cloud in fairly smooth air.

It was difficult to say exactly when I came out of cloud, because either rain or ice crystals were falling from an anvil of some sort. At 10-12000ft the ground became vaguely visible. I came out just north of a town I thought was Alton, but even though Lasham is only three miles away I was unable to make a clear decision as to which way to turn for Lasham, and after four or five attempts I went back to Alton and flew visually at 4-5000ft.

When I arrived back it had just stopped raining and the hangar and aerodrome were almost flooded by the cloudburst. I made two loops before coming into land in my exhilaration, but this gave way to a feeling of depression lasting for about a week afterwards.

The damage to the glider was considerable. The leading edge of the wing was dented as though by hail between ⅛ and 3/16in in diameter. This is interesting because the leading edge was covered by a layer of ice during the climb at about 14000ft, and so the damage was done either earlier in the climb, possibly during the very turbulent part, or during the descent after the ice had melted.

This is the first case I know of in which a glider has been damaged by hail in this country, but this may in part be because of the construction - the leading edge is carved from solid spruce for the front two or three inches, covered with fabric, instead of the usual birch plywood, which is harder.

The nose is made of glass-fibre a little more ➡

MERRI HEAD

MERRI'S PROGRESS

In this issue Merri reaches Conversion Time



Just recently I've managed to convert back to glass-fibre. This was in the shape of the Astir, rather inelegantly known as the "concrete swan" by those whose credentials and hours send them aloft in more specialised, sophisticated birds. I had viewed the Astir for a long time with some degree of apprehension. In the first place, it was not made of the slightly wrinkled and time-dimpled fabric which had covered my beloved K-18, and it's predecessor, the K-8. It was gleaming (well, I chose to see it gleam anyway) and smoothly white: I found this to be quite intimidating.

The worst aspect for me was the extra lever. It has a retractable undercarriage. Yet another possible mistake in the making. Yet another mental channel to keep open. I consoled myself with the thought that at some clubs, apparently, the Astir is considered to be an early solo plane. If they could do it, then so could I. Simple logic, right?

As it happens, after an excellent briefing (by the same full Cat who had convinced me to go solo with the immortal words "If you do this one thing a whole new world will open up for you."), I found myself being propelled on line by a grinning gaggle of glider types. They were laughing at the look of terror on my face as I gave the all-out signal, and that was the last thing I heard as I launched. Off the wire, and new problem: I had to release the stick to get the undercarriage up. The view from the ground was quite funny; the view from the cockpit somewhat less so. I did trim out before releasing the stick, but perhaps less accurately than usual, new glider and all that . . .

Once I got the undercarriage up, I felt a little bubble of lift and started investigating thermalling speeds and rate of roll characteristics. I actually gained a few hundred feet before losing it, and eventually starting the circuit. Yes, I remembered my WULF checks and, with the undercarriage down and locked, joined the circuit and actually greased on the landing (don't worry, I bounced the next two just a little). Oh, it's great to be back in glass-fibre, for even if it is a concrete swan, I see it as my first "fast ship". From grin of terror to grin of delight, it was, I suppose, a typical conversion flight.

Now comes the hard work. I now have to relearn the same lessons I learned in the K-18. I reckon that I have quite a few hours flying before I come to know what the Astir will do. I've already had a look at the polar curve in the handbook and due to the weather I've done a bit of circuit bashing. I really need a lot of good long soaring flights with my maps and stopwatch. For the time being, it's back to the basics of type familiarisation and then we'll see. Gliding is a game for the patient, it seems, and it's as well that the hard work is so much fun.

CHRIS ROLLINGS

MOTOR GLIDER RELIABILITY

The national coach points out the lessons to be learned from a recent accident

Over the last few years a number of articles have appeared in *S&G* describing and generally praising various self-sustaining motor gliders. One of the features usually singled out for praise is the reliability of the engine in airborne restarts. But there is an inherent danger that reliability can be described as a relative or an absolute term. In this context it is relative (relative to the previous generations of motor gliders which were "unreliable"). A pilot flying a relatively reliable motor glider may come to think of it as absolutely reliable and be surprised and hurt when it fails him.

A recent accident at Aboyne with a Janus CM and several cars illustrates the point very well. The Janus CM was returning to the airfield following a wave flight and the pilot decided he was a little low to complete a normal circuit easily. His options were:

1. To fly an abbreviated circuit – difficult if not impossible from where he was.
2. To land downwind – not a very desirable option in a very heavy two-seater.
3. To land out.
4. To start the engine and gain the extra height needed to fly a normal circuit.

The pilot chose option 4 but the engine failed to start. During the attempt to start the engine the pilot continued to fly towards the airfield. With the engine deployed but not started, the Janus glide angle deteriorates from better than 40:1 to 12:1. Not enough height for a normal circuit rapidly became not enough height to get on the airfield at all.

The glider arrived in a car-park adjacent to the airfield, still going downwind. The glider was damaged beyond repair, seven cars sustained varying degrees of damage (one of them occupied by two people who had stopped to watch the gliders) but fortunately no one was seriously injured.

The lessons to be learned from this accident are actually very simple. They are:

1. Always assume the engine is not going to start.

2. Fly in such a way as to allow for the performance loss caused by the engine being deployed.

Following this advice means either planning and flying a circuit (usually to a field landing) in a very low performance glider at the same time as trying to start the engine; or attempting to start the engine at sufficient height so that you can give up on it when you get down to circuit height. The first option involves a very high work load and is for experts only. The second option is recommended for the less experienced and involves attempting to start the engine at about 1500ft agl, giving up on the engine at about 800ft agl.

The so called "turbo" self-sustaining glider engines produce less drag when deployed (40:1 reduced to 25:1 or 30:1) and have a generally less complex relight sequence. This does not in any way alter the advice given above, but it simply makes it easier to follow. The rule must still be to assume the engine is not going to start.

Anyone who feels that I should have explained how and why the Janus engine failed to start has completely missed the point of the article.

Gliderwork

C of A OVERHAULS and REPAIRS

By L. GLOVER senior inspector



Husbands Bosworth Airfield, Near Rugby
Tel. Market Harborough 880375
Lutterworth 57544

LA MOTTE DU CAIRE

A new and inexpensive launch pad in the French Alps

Visitors to Gap (Tallard) and Sisteron (Vaumeilh) in the French Alps will have noticed an attractive little valley on the eastern side of the Malaup (1561m), running north from Sisteron. In fact, visitors to all airfields in the French Alps will know of it because of the landable fields at Nibles and La Motte. They have long figured in the lists of such fields which are required reading for all pilots. They appear on the pilot's map in coloured ink, complete with altitude and normal landing direction, against the day when he finds himself in the valley at 300m above ground with no chance of getting safely to Vaumeilh, the nearest airfield, 10km to the south-west.

During the first fortnight of September I found myself in this position, not once, but 14 times, on each occasion following a winch launch from the new "Velisurface" at La Motte Du Caire (665m). Each time I was able to use the thermodynamic lift on the adjacent mountain, La Blachere (1280m) as the first stepping stone towards the higher mountains.

During half of this period the southerly valley wind established itself daily. One day was lost owing to hazy, stable conditions. The rest of the time there was a moderate mistral blowing giving wave in various places in addition to the usual strong thermodynamic conditions. Except for the one day, it was not difficult to get away from La Motte at the first attempt.

Incidentally, although a secret closely guarded by the locals, September turns out to be an excellent month for soaring the southern Alps. Access to the northern Alps across the climatic barrier was only possible on one day but apart from that limitation, the weather was beautiful. Thunderstorms were dying out, the crowds had gone home, the fields were all cut and autumn colours were beginning to appear.



A view of the valley. Photo: William Malpas

La Motte is a winch only airstrip run by a local club, La Batie Neuve with Jacques Noel as CFI. It started last February and has already been discovered by discerning pilots from Germany and Holland. I was only the second British visitor. If you wish to fly there you will have to book early because there is a top limit of 15 gliders. The club is small and friendly, the welcome very warm, in contrast to some of the larger airfields geared to handling up to 100 gliders where, by necessity, the welcome is polite but more distant during the high season.

Other advantages of La Motte include:

- Visitors pay 300F/year plus 50F/flying day and 50F/launch, which are by far the lowest rates in the southern Alps.
- Each flight begins with a low "save" in a typical mountain valley which builds confidence in the ability to do something elsewhere.
- Excellent instruction is available in a K-13. (If required, this should be clearly specified in advance.)
- La Blachere is one of those favoured spots in the Alps where you can usually soar if it's possible to soar anywhere. (For an explanation of this phenomenon see the April 1988 issue of *S&G*, p68, under the heading "Position of the mountain side.)
- The local community has made a great effort to welcome visitors. There are hotels, camp sites with tennis and swimming, furnished homes and caravans for hire, restaurants and shops, forest and mountain walks, fishing and, of course, sunshine.

Improvements are in progress

The only disadvantage that I found in September is probably short lived. For the moment the new runway is rather rough and there is the risk of nicks and scratches to skids and the underside of gliders. However, improvements are in progress and the grass is beginning to grow.

This is a unique site in the southern Alps but it is already evident that perhaps it represents the future of gliding with its low cost, user-friendly approach. Book early before it is too late.

For information and bookings write to Jacques Noel, Quartier Du Donjon, Valernes, 04 200 Sisteron or telephone 92-61-34-84. If you want further information from me my address is Le Thoureil, 49350 Gennes, France or telephone 41.57.94.73.

Continued from p 19

than 1/16in thick covered with fabric. At points where the lightning struck there were burn marks on the paint and a pin hole was made through the glass-fibre. The fabric had been exploded off and peeled back for about an inch all round the pin hole. There were also strikes by my shoulder along the cockpit canopy and another inside the fuselage by my leg. On the rudder a strike had gone forward from the tip and exploded open a splint of ply and spruce about 1×1½in in section, leaving a burn mark inside.

The top surface of the elevators was seriously shattered either by hail or ice breaking off during the descent. The fabric is very tough indeed, but it was torn in strips about 2×½in every 6in all over the elevator. Only the top surface was damaged, apparently because the glider was nose-heavy through icing and so the elevator was held up, the airflow thus striking only the top surface.

The right side of the rudder was similarly perforated and there were also some holes in the 2mm plywood on the leading edge of the rudder. The tips of the rudder and tailplane were badly dented, in this case by hail apparently about ⅛in in diameter or slightly more.

The total time of flight was one hour 15 minutes and the freezing level was 11000ft. Several gliders flew in cu-nims that day, and the Mayor of Basingstoke saw a piece of ice 2in×½in wide fall from the sky in front of him; this was probably ice breaking off a glider.

(Editorial Note: Several other pilots from Lasham reached notable heights in cu-nim's on the same day.)

TWO BIGGIES

Brennig James spent another summer in Spain with his Nimbus 3 totalling 15 000km with several flights of more than 750km

I have written about Fuentemilanos many times and consider it is the best gliding site in Europe, possibly the world. Last season the best day was on August 8 when 24 000km were flown, which is half way round the world without an engine, and on July 26 six pilots completed 750km triangles, several in club machines.

On August 14 Ingo Renner stated at briefing that everybody had to fly 500km except for the more experienced pilots who had to fly 750km - wait for it - around the Madrid control zone. I decided to go anticlockwise as the Sierra de Gredos is a big step (7000ft) to climb over late in the day. The others, including Julian West, went clockwise.

I got on quite nicely towards my first TP, El Barco de Avila, but went a bit gingerly because it's all unlandable and crossed the Sierra de Gredos just alongside El Almanzor at 8500ft. I was now well above the inversion as the terrain had fallen away 3000ft at least and there were only a few clouds miles away to the south, and when I reached them I had to cover about 20 miles before I got a good climb.

Thereafter conditions were good though not very good - 750km was perhaps possible but not 1000km. Still it was nice to have 9000ft of space between my hull and wall to wall citrus as far as the eye could see, not that visibility was that good. However, I was able to see a long way but nothing I could recognise on the map.

"I am completely lost somewhere in southern Spain"

The second TP was Quintanar de la Orde, and the third Ariza. My plan was to fly east until I found the railway - this is known as IFR, I fly railways! The scenery was terrific with plenty of variety but the railway I recognised ran south then hair-pinned around to the north-east. Nothing on my map did anything like that I so reported back to Oerlinghausen: "I am completely lost somewhere in southern Spain. I can see a railway which goes from S to NE, have you any idea where it is?"

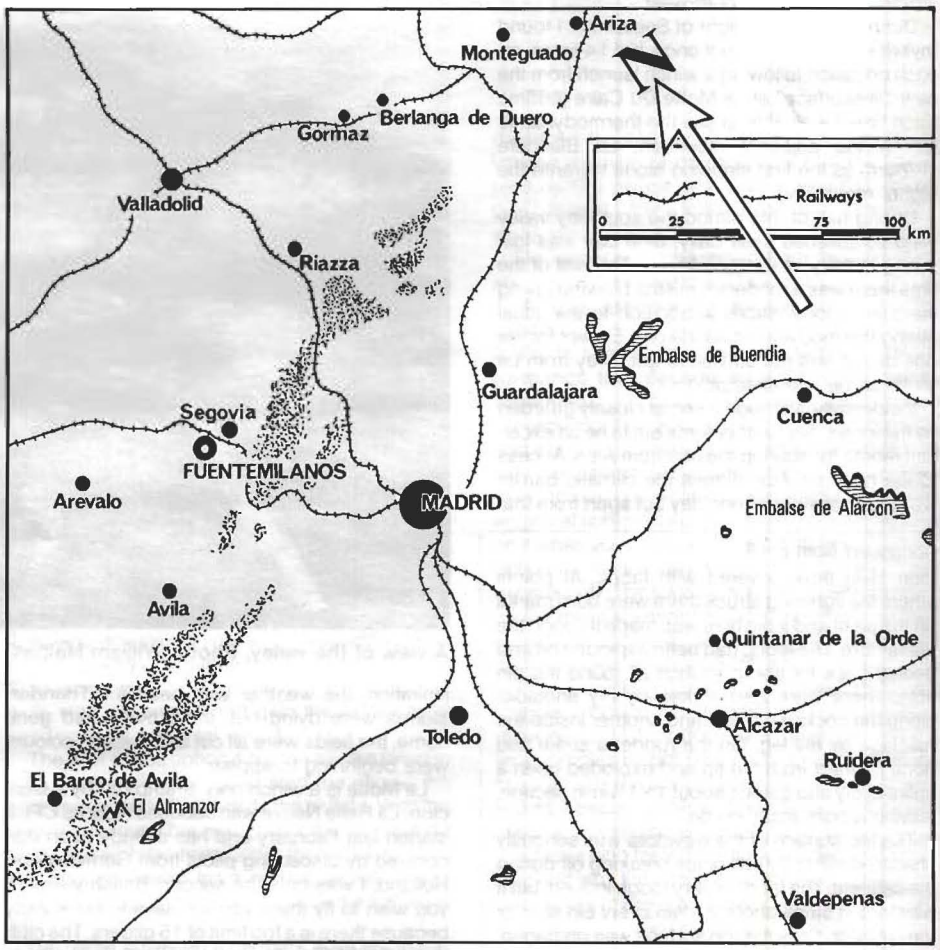
Five minutes later the reply from base was that they couldn't see it on the map either.

Anyway there was nothing to do but grind on. I saw a big town (Valdepenas) which seemed right so I went two towns on, photographed it and turned on to 030 looking ahead for the very large lake, Embalse de Buendia, east of Madrid.

I came upon some lakes (Los Lagunas de Ruidera), blue green, round and close together like a necklace of emeralds - very beautiful but not in the right place. So I soldiered on and saw a deserted airstrip. I felt like landing to ask where I was but I thought that was a bit too chicken even for me. In my flying I feel I am a timid and cautious creature that blunders into fraught situations due to my own ineptitude.

At last I came to a lake, a large lake (Embalse de Alarcon), but it was the wrong shape and certainly not the Embalse de Buendia or anything else on the map.

By this time I was enjoying the situation. So long as I kept going something was bound to turn up. By now the sky consisted of isolated streets



running from the north-west, wispy to the west with anvils to the east. You hit them about two thirds along, found lift, worked up to the upwind edge at 10 000ft and then dived into solid blue for 20 or 30 miles when you repeated the exercise.

I saw a road and a railway running through a ravine. Ah yes, I thought, this is the main line from Madrid to Saragossa and far to the north if I looked hard I might just see the teeny lake at Monteagudo. I looked and in the distance was an enormous lake, the Embalse de Buendia in all its glory. So now I knew where I was after being lost for five hours - some sort of record I suppose.

It was now 6pm so I had to take the shortest way home west of Guadalajara. I found 50 or so storks in a thermal. My need is greater than yours I said as they scattered. I couldn't get above 9500ft as I left the cloud to cross the Carpetanos but cleared them, with 20 metres in hand and turned west for the airfield at La Salceda.

At first I thought I couldn't make it but when I got there I didn't like the look of any of the runways or the ground around it. As I squirmed in the cockpit a voice broke in on the radio and told me to land on the main runway up hill. I did so - the runway is 28m wide with a substantial metal fence on either side to keep the cows off and my span is 24.5m.

As soon as I touched down I knocked the flaps into −2 to make the ailerons effective. Just before she stopped she swung a little but I was able to lift the tip over the fence with no damage.

When I saw a map I found I had been 100km south of track for most of the flight and had flown 763km in approximately 7hrs 30min.

On September 6, my last but one day, I didn't

have much idea what I wanted to do. It was blue and uninviting but at 1230hrs, straight off the launch, I got a climb to 6000ft and set off towards Riazza. Soon I caught up with Ingo and asked what he was doing. "Oh just a 750km", he replied and I asked if I could join him.

At first as it was blue we pair flew but it doesn't work because with a wing in the way you can only see him if he is behind, and *vice versa*, and is only worth attempting if one pilot is in trouble. We went around the first TP at Berlanga de Duero in blue and on the way back we saw a few wisps near Riazza and started to get climbs to 11 000ft. The convergence (and Brennig writes about this in more detail in a future issue) began to form over the ridge approaching Segovia where we got up to 13000ft.

The expected gap developed so we flew across the 20 miles of blue to near Arevalo where we could pick up the next convergence. However, as we went west the visibility deteriorated, the southerly wind having brought in dust from the Sahara. After 30 miles the clouds at 14 000ft gave out so we went into the gloom to find the TP at El Barco de Avila and got back to the cloud at 8000ft. It was working well with the cloudbase now up to 17 000ft.

The visibility improved but the clouds were breaking up and becoming weaker and we were missing the crisp climbs of earlier in the flight. Having been burnt in this situation often enough I knew it was vital to stay in contact with the clouds and accept 4kt when hoping for 6kt.

The Sahara dust came in and he had to land short of goal

After the TP at Gormaz Ingo pressed on a bit low hoping for a last climb but the Sahara dust came in and eventually he had to land about 30 miles short of goal. The last cloud was too weak but just after I left it I got 6kt to 14 000ft and could glide the last 60 miles home, the last 40 in thick murk.

Although we were talking all the time during the flight we had only the vaguest idea where we were in relation to each other, but frequently I saw another glider in the same thermal and after 20 miles realised it was Ingo. He was in a 15 metre ship so his achievement was immeasurably greater than my 760km in 7hrs 35min.

The appeal of gliding for me is that nature sets you a little problem; if you get it right it gives you a pat on the back with one hand while slyly slipping in another while your attention is diverted. If you realise there is a problem and solve it, the process repeats itself.

Physically flying can be a strain. On one day I did 500km in 3hrs 50min without water but afterwards I could hardly climb a flight of stairs because of the effort of stopping my limbs flailing around in the cockpit.

It's a new world out there in Spain and it is nice to feel that we are still scratching the surface. We have found it already to be unbelievably rewarding, the only limitations being imagination, intuition and one's nerve, and what we have heard about Morocco suggests that flying there may be even more fantastic.

CASTLE IN THE AIR

—Or roaming through the dusky wild,
Or bounding o'er the dark blue wave;
Which loves the mountain's craggy side,
And seeks the rocks where billows roll.
Lord Byron.

Tendrils of cloud undulated slowly on one side of the gap and the castle seemed to float along gently in space while the slot stood still. I think there was a windsock flying from a turret and I'm sure that the lawns were in pristine condition. As I'd heard that they keep rather snappy corgies there I thought to give this castle lawn a miss - anyway I had 10000ft in hand.

This was my second wave flight from Aboyne. The expedition north comprised Ken Taylor, my wife Doreen and Roobarb, a "setter" dog. Ken is an ideal expedition companion, a practical engineer with a wonderful sense of humour; if he wasn't club chairman, I would add that he is no better pilot than I am. Doreen is patient and hoped to read three whodunnits and Roobarb is a stupid but enthusiastic rabbiter.

We had come to Deeside by the scenic route, *via* Glen Shee. Descending into Braemar on the day of the royal visit to the Highland Games, Ken told the policeman who stopped us that the trailer contained cabers and we proceeded without let or hindrance.

This flight had started well, boisterous lift in the rotor, then velvet wave over the lochs lifting 516 and me to 17 000ft. It was a brilliant day, enough spaces between the clouds to see where I was, a blinding sea of cloud to the south and the whole coast from Inverness to Aberdeen visible to the north and east. There was even music breaking in on the radio - not harps, mind you. Oxygen was about two thirds used and I thought that I would turn the glider so that the sun would illuminate the instrument panel for a photograph, then climb another thousand feet for a Diamond. I took the photo and lost the wave.

Upwind I could see Loch Muick, a reputed wave hot spot. To a mere K-6E the journey into wind was costly in height and the outcome disappointing - just reduced sink. So it was that I made a little diversion over Balmoral before returning empty handed to Aboyne. I wasn't downhearted though, it had taken twenty years to get Gold height. I couldn't expect a Diamond a week later.

On the first wave day of our visit Roobarb sat on my lap and leaned back with a scrunch against the bifocals which were hanging round my neck - no matter, I can see to fly without them.

Ken had the first launch and to my envy climbed to 9000ft. On his return he confided that he had been lost above cloud for ten minutes. Instead of telling him what a silly chap he was I made sympathetic noises; he was there when cloud closed under me in Wales and I had to scuttle back to England to find a field, much to the amusement of the locals.

My launch was straight into wave and before long there wasn't much ground in view, just one of those circular filtration things found at sewage or waterworks.

Thoughts of royalty and gold and diamonds

Climbing, I thought of Queen Victoria; she had come to Deeside each autumn for many years and returned to the Isle of Wight with no more gold or diamonds than she had brought, what hope for me?

Rising up the side and over the clouds was a thrill; a vast sky and a feeling of serene detachment. Much fumbling and fiddling with the oxygen at 10000ft, small cylinder and only half full.

To stay in the best lift I was gently weaving to and fro, like a trout I had seen swimming against a stream and remaining in the same place. I was at 16 000ft and began to hum, la da, di da, di da da, then giggled as the oxygen mask tickled my chin when I got to the twiddly bit. I had made Gold height and a little euphoria was justified. Airspeed erratic, finger nails bluish - time to come down.

While I circle down with the brakes out Ken called on the radio, "What have you got John?"

"I've got lost."

Lots of helpful questions and advice followed. "What can you see on the ground?" "Not much, - heather, rocks, oh and a sort of circular filtration thing, only this time there are two of them."

Shame prevented me mentioning that I couldn't see much on the map because a sloppy great dog had crushed my bifocals. Anyhow the consensus was to fly west, young man. I wasn't all that worried as there was plenty of clear air and landing fields to the north.

Eventually the airfield showed through a little gap and I wished that I had never confessed to that slight uncertainty.

Ken mended my specs, he nearly got his 5hrs while Doreen was shopping, Doreen nearly finished three whodunnits, I missed a Diamond by 34.5m and Roobarb missed a rabbit by 3.4cm. Not a bad hol.

'I WISH I COULD GO'

You have to be good to get into the British team but it doesn't stop there. Representing your country in the World Championships is expensive

Maybe you can. If you are good enough and get selected. Win a few Nationals, in poor weather as well as good, do the odd foreign competition just to show you can match others. I mean to say, the hack triangle from Lasham to Cirencester and Husbands Bosworth is not going to bring you to the attention of the other top 40 or so pilots to earn selection.

So what else do you need to do? Well, for a start you need a decent glider. You could borrow one. Maybe there is a fairy godmother lurking somewhere who will not mind not flying for two years whilst you get all the practice you need. Not really viable, so I suppose you will have to buy one. Not just any one, but the best. Maybe set you back £25 000 (you'll be lucky). Actually you have one already. It is a bit out of date but was very good in its day when those German designers were working out how to win the next Worlds back in the early 1970s. At least there is a ready market around the clubs where pilots are trading up from K-6s to a super ship. Should be able to sell it for a decent (paper) profit to (partly) fund this Nimbus 5Xri that everyone seems to say is the only thing that is going to stand a chance in the next ...

Well, I could go on. The point is, today's British team member not only has to be good - in fact very good - he/she (yes, Sally, your turn will come) has to have the resources to even get into the reckoning. But it does not stop there because as an amateur sport we expect you to find a lot more loot to earn the privilege of actually going to represent your country amongst the best in the World. It is not too bad really; this time it is just over the water in Austria - do not forget to take a crew and pay for them - but in 1991 you can expect to have a real "jolly" by going to the USA: start saving now!

The Serious Bit

World Championships have, over the years, provided a tremendous impetus to the technical development of modern gliders such that now we are seeing performance that was undreamt of 30 years ago. This impetus has, along its way, produced gliders that many club members now benefit from as they are regarded as first or second generation glass ships. Thus I believe it is in the interests of all UK pilots to support British representation at World Championships.

Secondly, selection of the team should be based purely on merit, and not size of pocket. As far as possible, bearing in mind the need to have access to a decent glider to "get noticed", team selection applies the merit criteria.

The Plea

I am sure that many UK pilots got a bit of a thrill in January 1987 when they opened their paper every day, and there on the sports pages (yes, for once we have been promoted from the Court and Social page of the *Times*) was a full article about the team's performance. Much effort went into getting this coverage (thanks to Maxwell Fendt especially, and Ben and Barry). And it was rounded off very nicely, thank you, with a World Champion in the 15m Class.

Now if you want that again then the team needs money. Not just this year, but on a long term basis. For too long we have gone from year to year with insufficient security of funding to enable long term building (whose members change over quite regularly). True, we have relied substantially on assistance from the Sports Council for part of the travel and glider shipments costs etc, and we have managed to find a few sponsors from time to time. But at the end of the day each team member has had to fork out several thousands to be able to compete. Do we really want to revert to selection by pocket size?

There are now more demands on the limited financial resources available to us from the Sports Council through the BGA, because we are now sponsoring a Junior UK Nationals, to encourage the younger pundits who hopefully will be tomorrow's Champions, and we are sending team members to the European Championships and the Pre-Worlds in the year between the bi-annual World Championships.

The total cost of representation in Australia in 1987 was of the order of £75 000 for a team of six pilots, crews and manager. The BGA's present financing does not leave any room for allocating a larger sum towards the commitment, as there are many other very valid demands on its purse. The present annual BGA contribution is about £5000, which comes from the per capita membership income. This level was set at the beginning of the 1980s and has not been revised for even inflation! So at the AGM at Gloucester in February we shall be proposing a motion to increase this to £2.00 per head per annum (about £20 000pa), or the equivalent of about 50% of one winch launch. Club chairmen and treasurers please support this on behalf of your members.

What Other Funding is There

Apart from continuing to ensure Sports Council support, we are about to launch a major drive to attract substantial long term sponsorship. There are many considerations to take into account, but the main message is that we are not just looking to UK pilots to support the representation at World and European Championships. However, charity begins at home..

To Conclude

So you would like to go? And become World Champion. No better place to start than support the Competitions Committee whose aim is to send the best team, fully funded, and to provide the training experience for the up-and-coming pundits. You never know, you might just be one of them if you set yourself the goals. Or even if you consider yourself "past that sort of thing" would you not like to see one of your younger club members have the chance?

Lastly, personal donations are always very acceptable to team funds, and are acknowledged in *S&G* if you wish (providing over £5). Donations can be sent to the "British Gliding Team" at the BGA's offices. Why not write out a cheque straight away?

PS: We have had six World Champions - 1952, 1956, 1976, 1978, 1981 and 1987 and plenty of other good placings. We can do better - with your support.

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Access



"White Mountain Soaring", a watercolour of a 1942 Spyr V by Amanda Deadman.



Two oil paintings by Michael Joseph. Above: "Bopeep" - Southdown GC in the 1960s and below: "The White Horse of Kilburn."



YVONNE BONHAM

THE GUILD OF AVI

Thirty years ago a small band of artists, including such well known John Young, Gerry Coulson, Margaret Kahn and Ann Welch, were invi exhibition being held in the Kronfeld Club, Eccleston Square, London. the gliding and light aviation fraternity. These exhibitions grew until in 1 BGA secretary) at the helm.

Over the years many artists have been inspired by soaring aircraft ar been exhibited in either the Guild's or the Kronfeld's shows and they de recent exhibiting member is Amanda Deadman who flies at the Bool

To see more of her work and the other Guild artists painting gliding Exhibition entitled "Aviation Paintings of the Year" which will be at the cadilly from July 17-30.

For those of you who are budding artists submission day for the exhib Secretary, Guild of Aviation Artists, 71 Bondway, London SW8 1SQ. Th tising for the "Aviation Painting of the Year".

Below: "Waiting for a Start" at the Nationals at Lasham. An oil painti feld Aviation Society's exhibition.



VIATION ARTISTS

own names as David Shepherd, Michael Turner, Roy Nockolds, invited to exhibit paintings of aviation and gliding subjects in an don. This was then a very popular social club run for the benefit of til in 1971 the Guild of Aviation Artists was formed with myself (ex

raft and gliding and the selection of paintings reproduced have all ey depict the sport as seen through artistic eyes. The Guild's most Booker Club.

liding subjects you should make a note of the Guild's next Open at the Royal Aeronautical Society Gallery, 4 Hamilton Place, Pic-

exhibition is Sunday, June 4. For full details send an A4 sae to The SQ. There is a prize of £1000 awarded by Davidson Gibson adver-



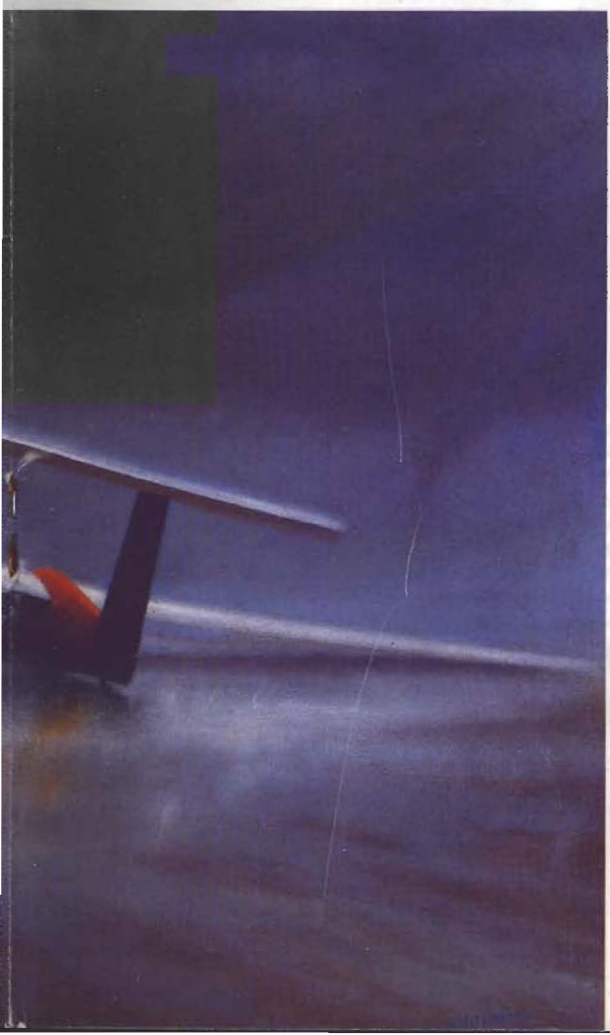
Above: Margaret Kahn's oil painting, "Gliding in the 50s."



Above: an acrylic, "Highland Soaring" featuring an ASW-19B by Amanda Deadman. Below: a watercolour, again of Lasham - "The launch point 1986" by Grahame Joseph.



painting by Brian Withams which won a prize in 1968 at the Kron-



I HAVE CONTROL

Harold says the instructor must detect the need for correction very early on to maintain an adequate level of safety

Recent BGA accident reports include a number of incidents that have occurred on instructional flights. This, to say the least, is unfortunate. A consideration of the nature of skill, however, indicates how dangerous situations can arise during instruction.

Much of skilled performance involves feedback loops. When we attempt to fly straight we visually monitor our heading, checking for any deviation from the target we set. If, say, we detect a deviation to the left then we introduce a turn to the right to compensate. As we come back on to the target heading we then take this turn off again. So the initial deviation is detected visually; the rate and magnitude of deviation is estimated; our brain calculates the stick and rudder pressures required to initiate the correction; appropriate signals are sent to the muscle systems involved and the response of the glider is itself monitored visually. Despite its complexity the whole process is usually undertaken smoothly and automatically by the skilled pilot.

For the beginner it is very different. His first difficulty will lie in detecting heading deviation. The instructor notices one wing is low and watches the nose creep around the horizon through 10, 20 or even more degrees. After what seems an age he might prompt: "We seem to be changing heading, don't we?". When alerted the student will have to find his original heading target and work out the direction of turn required. Initially, he may be unsure of the direction of the required control inputs. He certainly will not know what stick and rudder pressures to use. Furthermore, once he has initiated some control inputs, he will be slow to detect the effect of the glider's response. This means that the time involved is substantial.

". . . this means there is a lag in the system. Lags are bad news."

As the student improves he will learn the direction of response required and he will have a rough idea of how the glider responds to control inputs at normal flying speed. Sensitivity to heading deviation will probably remain low, so the heading will vary substantially before any correction is initiated. In terms of control engineering this means there is a lag in the system. Lags are bad news. They always mean poor performance. The longer the lag, the worse it is.

One instructional technique most of us employ at some time or other is "talking through" a manoeuvre. Suppose we try to help our student fly straight with this technique. In flying straight and level this means that when a heading deviation develops the instructor calls: "We are turning left. Right stick and rudder". The student's task is simplified to assessing the magnitude of control pressures required and applying them.

In terms of the basic feedback loop, however, it adds an extra element, which is a bad thing. The instructor may detect the heading deviation very quickly, but before any response can be set up he has to communicate to the student, which constitutes an added delay. The student might find it helpful to be able to concentrate on just a part of his task, but the overall efficiency of this sort of team-work will be extremely low. In view of this it would be most undesirable to use this instructional technique where efficiency mattered. This, however, is just what we are most likely to do, for this teaching strategy is commonly used in the circuit and on the approach.

If we are flying the approach ourselves we will watch the aim point and control the rate of descent with the airbrakes. Now suppose we try talking a student through this manoeuvre. Consider what this involves: the instructor takes responsibility for perceiving error and deciding what response is required, while the student manipulates the controls. The feedback loop therefore involves the instructor, the student and the communication link between the two. Providing the glider has been flown into a reasonable position to begin the approach the instructor will call: "You have control. Half brake now." If the student sets rather more than half brake an undershoot will develop. It will take some significant time (say two to three seconds) for the amateur club instructor to notice this. When he does, he will call: "Less brake!" The chances are nothing will happen. "Less brake!!". Once he hears, the student may think: "Brake!" and react by puling more firmly on the "landing" lever. This will probably induce the instructor to be rather more explicit, by which time the ground could be rather close. Hopefully, before it gets too near the instructor will abandon his talkdown approach, call: "I Have Control!," and sort things out.

Even those who know left from right are very slow to respond

A similar process is involved in talking a student round the circuit. The instructor's initiation of any correction needs to begin very early on to get messages through to the student in time for him to make appropriate adjustments. Most do not know left from right. But even those who do are very slow to respond. If the instructor's prompt is left too late then a situation can develop from which normal recovery is impossible. This means that the instructor must detect the need for correction very early on.

Unfortunately we have less experience in the circuit and at tracking descent on the approach than at most other aspects of flight for the simple reason that we spend very little time in these stages. Therefore our judgment will not be that good.

Those of us in contact with professional instructors cannot fail to notice that they are able to talk students through the circuit and landing at a relatively early point in training. Professionals spend enough time in the air to maintain very high levels of perceptual skill. We amateur instructors cannot compete with them. We need to take control at a much earlier point if we are to maintain an adequate level of safety.

Sailplane & Gliding

The magazine can be obtained from most Gliding Clubs in Gt. Britain, alternatively send £11.40 postage included for an annual subscription to the British Gliding Association, Kimberley House, Vaughan Way, Leicester.

Red leather-cloth binders specially designed to take copies of the magazine and gold-blocked with the title on the spine are only available from the BGA.

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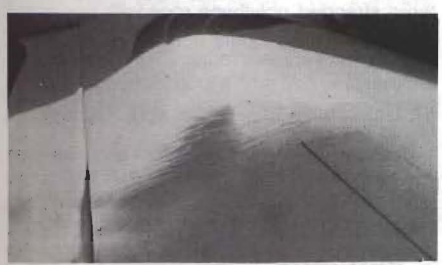
HOW HIGH HOW FAST?

The grim story of damage to a gel coated carbon fibre glider after a three hour flight to a maximum of 25 000ft

Recently while I was doing research for an article on moisture's effects on sailplanes, I came across a situation which may only be partly moisture related - but it certainly had a dramatic result! Although it is fairly clear that whatever damage was done to the glider occurred because it had flown above the handbook recommended speeds for that altitude, when the spoilers were opened, I include it in the "moisture related category" because I feel that the structure may have been saturated, which might have added to the damage.

The motor glider was built about a year ago and remained in the moist, cool environment of Germany until it spent four weeks on a ship coming to Los Angeles, California. After that it was stored in its trailer at Cal City in the desert, but that was in the wettest time of the year there and moisture contents of these structures change quite slowly. The single significant event occurred on March 23 during a flight in New Mexico.

The pilot reported that for the first hour he was at 12 to 14 000ft, contacting a smooth wave that took him to 25 000ft for only a period of about 15min. Significantly, the temperature was −36°C (−33°F) and the ship was at an indicated speed of 150km/h when he elected to "slowly and carefully open the spoilers" to descend to a warmer altitude, spending 30min at about 21 000ft, and another 40min at 18 000ft, coming down through only moderate rotor to land, for a total flight of 3hrs.



This photograph shows the raised cracks on a glider's wings after a wave flight.

Look at the pictures of the damage. I laid black tape over the cracks so that they would show up for some of the photographs. Carl Herold and I inspected the ship together and he and I disagree as to the severity of what happened. He feels the cracks are isolated in the gel coat, in a similar way he experienced with his old ASW-12 after many years of wave flying. However, since the relief of the fractured areas has raised to at least two or three times the depth of the gel coat, I feel these cracks go some or all of the way into the carbon fibre skin underneath.

Carl and I could get visible movement by applying pressure immediately adjacent to a crack with a penknife. We won't know the depth of these cracks until repairs are done. As you can see, long looping cracks formed on top of the right wing with two areas that thoroughly fractured in grid patterns. Further out, three cracks formed on the underside of the wing going directly across the chord, in a pattern similar to what I described in my article "Cold Floppy Wings and Other Things" (*S&G*, August 1987, p194).

On the left wing, on top, a crack runs back from the outboard end of the spoiler box to the trailing edge, and looping fractures formed on top of the drive mechanism for the flaps. Interestingly, at each attachment or drive on the left lower flap, fields of tiny fractures occurred with much more severity than similar simple cracks found on the



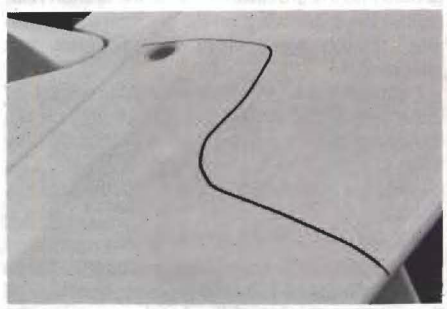
Black tape shows the location of the airbrake box and the outline of the cracks on the right wing.

bottom of the right lower flap in the same spots (below the big upper wing damage). The left wing also had a few chordwise cracks midway out on the underside. Now comes the strange part - there is a long, raised, weaving crack running across the top of the tailplane.

This motor glider has carbon fibre skins, which I believe (but can't prove) absorb more moisture than the glass cloth skins on my DG-300. I have flown my 300 on a number of occasions to higher altitudes, to colder temperatures and through rougher air with no damage whatever. It is pretty cold at −36°C and moisture freezing in the structure could be a factor, especially with the shock of the spoilers being opened at a true air speed of 225km/h.

The pilot reported only 150km/h at the time of opening the spoilers, but at 2% (per 1000ft) times 25 000ft, he was actually going 50% faster than that. The glider's manual doesn't give an actual maximum spoiler deployment speed, but it does list a redline at 20 000ft of 117kt which extrapolates to about 108 or 109kt true air speed at 25 000ft. Manoeuvring speed is 103kt with a 146kt redline at sea level.

I questioned the pilot several times about the reason for using the spoilers and I am still not sure I understand the reason(s) - he said it was to descend to warmer altitudes. Anyway, that is



Tape marks the major crack over the tailplane.

what happened, on just one flight, and is one of the best documented events I have come across. I'm not sure of the moisture factor, but I'm pretty confident about the spoiler trigger to the damage. I can't explain the truly asymetrical damage levels to the tops and bottoms of both wings. This type of motor glider has no other known similar damage record. And finally, I'm only guessing that the tailplane was damaged by being overstressed in the same conditions as the wings, by similar flexing.

This whole situation has been quite a lesson to me, because the pilot sincerely felt that he hadn't overtly caused damage to his ship and I thought he was right; until I started adding up this 2%/1000ft factor. It was a sobering revelation - especially here in the west where we commonly fly at higher altitudes.

Please send all contributions to S&G to the editorial office, 281 Queen Ediths Way, Cambridge CB1 4NH

ROBIN PEARCE-BOBY

PARAFIL PROBLEMS SOLVED

The article in the October issue (p236) by Mick Wells has made me attempt to resolve the problems he has indicated by describing the gradual development of our use of Parafil.

When I took up gliding at Enstone in 1981, one ton Parafil had been used for some time. The jointing, weak links and protection of the knots to the rings at each end left a lot to be desired in respect of their longevity, reliability and the time required for repairs; the jointing devices produced by the Parafil manufacturers, although quite suitable for the oil rigs they were intended for, were found to be unsatisfactory for gliding.

The main runway at Enstone is 1¼ miles long with a hump in the middle so that neither end can be seen from the other. Winch launching had not been encouraged due to this and the wear. Both the runway and wire suffered. Thus the majority of the launching has been by autotow and our experience has shown that MOT failure 4.2 Jaguars are not that expensive to purchase, are usually very reliable and with 1600ft of Parafil will, depending on wind strength and direction, produce between 1000 and 1500ft launches. We have a resident tug for those requiring a higher release.

As both sides of the runway at each end are cropped a parachute on the glider end of the cable is not used. The problems of pulling a parachute out of rape or what have you is not only physically demanding it also slows down the launch rate and damages the crop that is the responsibility of one of the club's founder members and whose goodwill we sincerely respect! In crosswinds, like many other clubs, our pilots attempt to launch gliders into the crosswind side of the launch path so that the cable will then fall back on to the runway, though some days they are not that successful!

I am envious of Farnborough's record of unbroken cables during the cables' lifetime but my naughty cynical mind asks why then do they need to know how to join lengths of Parafil? Our experience is that Parafil is very reliable until it is snagged or broken when the jointing plays a major part in a cable's longevity.

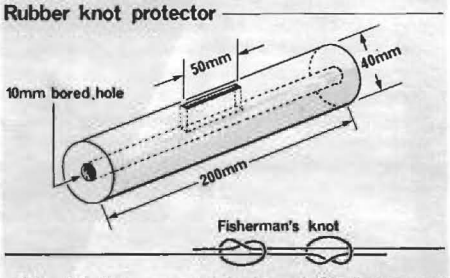
Our earlier technique of jointing a cable break was to pull about 18in of the outer sheathing off the cable each side of the break, wrapping the ends of the exposed core with bodge tape to prevent unravelling, and then tying the cores together with a fisherman's or strap knot, finishing with three in line half hitches both sides. The completed knot was then bound with two or three layers of bodge tape in a tapered shape to reduce the profile and give protection for the wear and tear when towing the cable back to the launch point. This process was very time consuming and every joint had to be remade at least once a weekend; those *S&G* readers who have worked on cables in the cold and wet know how much longer it takes under these conditions and the frustration that is boiling up at the launch point.

Metal weak links of various types have been used and all have tended to fail prematurely following the pounding received on hitting the runway from the release height, there being no parachute to slow the descent. The "exposed" situation of the links that was necessary to enable quick change or replacement did not help either. We were also not enthralled with the possibility of the Parafil main cable or shock rope becoming caught up in a control surface and all the consequential situations that could follow!

The knots and the bodge tape protection to the metal links and rings also take a considerable amount of wear and tear and were often redone several times each weekend with loss of efficiency.

Wooden knot protectors of various types were experimented with but none stood up to more than one or two launches before breaking. This problem was solved by Steve Nash with a tough but reasonably flexible rubber cylinder bored down the centre to receive the cable and having a machined slot down to the bore in the middle of one "side". The original source could not be traced but a manufacturer now produces them for us to an uprated specification and they will last at least a year.

Rubber knot protector



The jointing process is to cut the broken or damaged portion out of the cable, feed the ends into the protector (one from each end!) and bring the ends up through the slot for about 3ft. The black sheath is then cut through about 12in from the ends without damaging the core. Great care is required here and a blunt knife helps. The sheath is then pulled off to produce about 8in of exposed core, tied into a fisherman's knot and gently tightened up. The cable is then pulled back out of the ends of the protector until only the knot is outside the slot. The knot can then be eased into the slot by bending the protector so that the slot opens up. When the knot is down in the slot the ends of the cable outside the protector should be pulled apart to tighten the knot and the partially removed outer sheaths pulled right off. There is no need to trim off the inner core that trails outside the protector.

When the protector wears down to a smaller diameter, the slot is bound over with bodge tape to prevent the partially exposed knot from being worn away by friction on the runway and thus becoming the weakest point in the cable. But when this stage is reached it is perhaps time to order more protectors! The time taken to repair a snagged, damaged or broken cable with the use of knot protectors is only three or four minutes by an experienced helper.

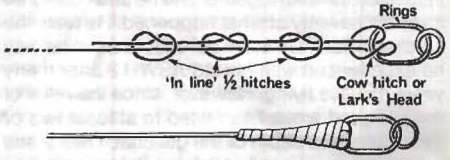
We have always used a "shock rope" about 12ft long at the glider end and joined *via* the weak link to the cable, but due to the wear and tear the next stage of development was the weak link. It was important that this should be simple and not liable to damage at the end of its free fall from release. Weak links of about 1000 to 1100lb were quite adequate for the K-7s and the other lighter single-seater gliders and there was no need to change from one strength to another for each type of glider.

A preliminary check and use of blue polythene rope for weak links indicated that this resolved the outstanding problems until we had the rope properly tested to discover the load at which it failed. This was much too high at 1600lb. But by unravelling one strand of the three that made up the rope we arrived back at 1100lb breaking strain. Of course a thinner three strand rope may produce a similar breaking strain but we had a whole reel of the stronger size!

The weak link is made from a 3ft length of the three stranded polythene rope with one strand removed (this removed strand can be twisted together with another removed strand to produce another link) and then a loop formed at each end by splicing, as every good Boy Scout or Girl Guide will know!

The shock rope and the main cable are then joined to the loops of the weak link with a cow hitch or lark's head symetrical knot followed by a series of three in line hitches, with the free ends bound to the cable or shock rope with bodge tape to avoid the embarrassment of the knot attempting to work loose. The Parafil is prepared for knotting by removing about 18in of the outer black sheath and taping the ends before tying the knots.

Knots to rings (shown loose)

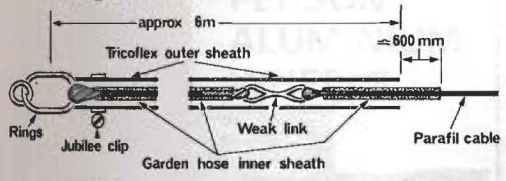


Finished and bound appearance

The rings at each end of the cable are joined in the same manner as for the weak link but the knot is bound with bodge tape to prevent loosening of the knot. At the car end an extra amount of tape is used to prevent wear as it is towed back to the launch point. This end may need re-protecting every weekend, but it only takes a minute or two to do.

The last stage is to protect the weak link and the shock rope from the depredations it will be subject to and prevent the cable from catching on a control surface should anything untoward happen.

Detail of glider end of cable



After a number of experiments and use a length of 1in internal diameter Tricoflex hose is now used. This is a vivid yellow and of great assistance in locating the cable end, except when it falls into flowering rape! The shock rope and a length of the cable beyond the weak link must be sheathed with a length of standard *reinforced* garden hose inside the Tricoflex to:

1. Prevent kinks forming in the Tricoflex outer which cause rapid wear.
2. Prevent the Tricoflex outer sheath wearing away the Parafil black covering where it emerges from the Tricoflex.

The Tricoflex has a 4in tongue formed at the rings (glider) end which is passed through the larger of the two rings - to which the shock rope is knotted - pushed back inside the Tricoflex and a Jubilee clip tightened up over the outside, thus trapping the tongue and sheath in position. After several launches it is as well to tighten up the jubilee clip as it does seem to become loose at this stage.

The Tricoflex we use is 6m long and its weight ensures that it does fall safely away from the glider and will not tie itself into a set of diabolical knots on back release. If the weak link should break it is much easier to see the Tricoflex in its descent and recover it quickly.

It could create a potentially dangerous situation with the weak link becoming ineffectual

In our early tests we used ¾in Tricoflex but it could create a potentially dangerous situation if one or more of the knots inside the sleeve expanded for any reason and jammed the cable so that the weak link became ineffectual. This also made it impossible to take the system apart for renewal, but is not the case with 1in Tricoflex.

Bunching of the cable on reaching the ground after release does not happen very often now but the driver and observer in the towcar are still encouraged to watch the cable on tow back for knots and unravel them as soon as they are spotted. It only requires a few metres tow along the runway to burn right through the Parafil outer sheath and thus require jointing. Recovery of the cable to the launch point by the towcar should not be done at more than 30mph if wear to the protectors and cable is to be kept to the minimum. If minor nicks and cracks appear in the Parafil sheath a layer or so of bodge tape will protect and prevent the entry of water.

The bow in the cable when launching is not a disadvantage and helps the observer in the car to decide more easily when the launch is too slow. Unless the wind speed is very low or there is a strong crosswind, most competent pilots can achieve a launch height within a 100ft of the cable length before the towcar reaches the end of the runway.

The much improved reliability and longevity of cables, together with the speed of repair, has given us a far more efficient operation, considerably less bodge tape is used and an increased safety factor ensues. We have suffered very few breakages of the weak link which has improved the operation immensely. It is as well to keep a few Jubilee clips available as after ten or so launches the clip is not easily reused and may have to be cut off the sheath before it is possible to expose the shock rope to replace the weak link.

A few tips:

1. When tying knots in Parafil do so as tight to the black sheath as possible; the outer sheath does tend to creep (shrink?) away from the knot and in the case of the protectors the unsheathed core will be exposed outside the protector and suffer wear and allow water into the cable by capillary attraction.
2. A sharp knife, a blunt knife, a screwdriver and a pair of large side cutters are the only tools required. Ensure they are always available and avoid launching delays caused by the inevitable fumbles while they are found! We like to think that the towcar crew do the running repairs as part of their job. They are mobile, can get to the problem more quickly and carry the tools etc with them, thus reducing delays.
3. The tail inner garden hose sheath should be pushed over the knot to the weak link and firmly taped here and also on to the parafil where it emerges, thus preventing it from sliding down the cable!
4. When the cable hooker-on tests for "on and secure" he must pull on the Parafil and not the protecting sheaths!
5. A visual inspection of the Parafil for the daily inspection is only required for each end of the cable and any joints there may be; walking the length of the cable with the Parafil running through your hand is a very sensitive method of finding faults and locates those that are on the other - hidden - side of the Parafil.

The "shock rope" assembly sequence is as follows:

1. Cut the tongue at the glider end of the Tricoflex.
2. Slide the Tricoflex 8m or so down the cable not forgetting to put the jubilee clip lightly in position.
3. Slide the tail inner protector also on to the end of the cable.
4. Prepare the shock rope with its rings and weak link so that its length together with the weak link is within the length of the Tricoflex outer by at least 2ft.
5. Thread the shock rope through the inner protector after putting on the rings - it helps if the inner protector is pulled straight by two helpers while the shock rope is threaded through!
6. Join the shock rope to the weak link tightly against the inner protector and lock the free end with bodge tape.
7. Join the cable to the weak link and lock the free end with bodge tape.
8. Slide the tail inner protector up to and partially on the weak link knot and secure with bodge tape.



Robin, an architect in private practice, had his first flight in 1977 in a T-21 but didn't take up gliding until 1981 when told he was "now too old for coarse rugby." He flies for fun, isn't a badge hunter and is still waiting to complete his Silver. He has a half share in a K-6E.

9. Slide the Tricoflex outer up to the rings, pass the tongue through and secure with the jubilee clip.

This description is much more complex than the real thing and I have no doubt other clubs will have other and more suitable methods for them, but our efficiency has improved over the last few years quite dramatically and debris is only a hazard if it is not removed at the time!

THE CLUB

Terry ponders on the character of his gliding club - Coventry

I joined the club because I could no longer put off learning to fly. At that time I thought of the club only as some sort of polytechnic which combined theory and practice and where diplomas would be issued to the diligent. As a result I spent the first six months being excessively polite to the instructors and, as I believed that almost everyone who flew solo was an instructor, it involved me in a great deal of unnatural deference totally foreign to my character.

It took a while for me to realise that the club is actually the sum of the individual members rather than a vague amorphous body - it's Us rather than Them.

There were certain common experiences, mainly learning difficulties, which gradually enabled me to relate to the other members. It was a revelation, too, when I discovered that I wasn't alone in finding gliding expensive. Everyone seemed to have been forced to give up something - holidays, a new car, cigarettes, drinking (perhaps buying drinks would be more accurate) - in order to have the money to fly.

Not that we're all penniless. A few members are, by any standards, rich and their names and the names of their products are known worldwide, but fortunately they have the tact to appear at the club as shabby as the rest of us. Because we are not a posh club. We tend to have the sort of weather-ravaged faces that can be found grinning in stone from the eaves of the shire's older churches, and our clothes look like a consignment hijacked from the Red Cross.

What is remarkable about us is our diversity. On a typical weekend I can fly in company with an architect, a bricklayer, a computer programmer, a doctor, an engineer, a fireman, a gynae-

cologist - the list can run on right through the alphabet and finish with zoologist. The only thing we have in common is that we like to fly.

We have members who, in their professional capacities, are accustomed to dealing in millions, but they sit down solemnly to debate the expenditure of £50 of club funds for some minor alteration to the ladies' loo.

For we have lady members too. Not very many, but they tend - like so many women taking an active part in what is usually regarded as a man's world - to be particularly good.

We have members from every quarter of the British Isles, from Germany, Belgium, America and Lithuania - but none from the black or Asian communities of the nearby industrial cities. I don't know why this should be, but this is the way it is.

Some members seem to contribute more to the club than others, usually in terms of their practical skills, but we all contribute to give our club it's particular character which, despite the apparent common features, is different from every other gliding club.

At times the club reminds me of a worker's co-operative when we all labour together to clear stones from the field or to erect the new hangar doors. On a fine soaring day when everyone wants the Vega, on the other hand, there are scenes on that field which compare unfavourably with the American evacuation from Saigon. The limited quota of good weather we have in England can make gliding not just an exercise in competitiveness but also in selfishness.

A sport which shows the virtues and vices

I find this mixture of people and attitudes constantly interesting - which may be why I can usually be found gossiping rather than helping to pull a Bocian out of the mud. When you like a group of people, however, it can be very difficult to avoid romanticising or sentimentalising them. The knowledge you have of them makes it hard to see them as they really are - a cross-section of the community taking part in a sport which shows up both virtues and vices in a very public way. Sport, contrary to what you were told at school, doesn't develop character - it just provides a medium to put it on exhibition.

Perhaps the most attractive aspect I've noticed is the manner in which people deal with their disappointments, and there are many of those in gliding. It takes a special sort of resilience to shrug off a 300km claim that has been rejected for a minor photographic fault; or a duration flight done on a shimmering summer day that ended four minutes short of five hours; or a freak storm that breaks the back of your parked glider before you've had a chance to insure it.

I keep on hoping that if I stick with the club long enough some of this spirit will eventually rub off on me.

ANONYMOUS CONTRIBUTIONS

Recently we have been sent two articles written under a *nom de plume* without a covering letter or address. We regret we just can't use unnamed material.

DIAMONDS ARE FOREVER

The art of being in the right place at the right time

Mel is a golf club proprietor with his wife Barbie, who is also his crew. He came back to gliding in 1979, is DCFI of Bannerdown GC and has 1000 gliding hours and 100 power.

For most glider pilots 1988 will go down in history as being a non event but for me it was a classic year.

It started with challenging flying at Talgarth in April, followed by an acceptable Standard Nationals with six days gaggle flying and a racing day thrown in at the end.

In August I volunteered to help one of our young pilots, John Arnold, with the Junior Nationals at Booker and on the practice day declared a 500km triangle Yeovil, Cosford, in a Discus. The flight was rather uneventful apart from getting to 5500ft from a stubble fire which led to a 30min final glide, and my second Diamond.

The next day it was suggested I should claim the new Standard Class record. For it to be established I had to achieve 70% of the Open Class 500km record set by Ralph Jones at 106.9km/h. My launch to landing time was 75km/h which was just fast enough. Oh why did I waste so much time before leaving the site?

I still haven't heard the result of my claim but I now know a certain Mr A. Davis also did a 500km triangle in a similar time back in May.*

I was then the non-flying captain and Bannerdown representative at the Inter-Club League final and after a close battle with Aston Down we won the Douglas trophy.



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On registering my Diamond distance with Gordon Camp, FAI office, he asked when I was going to get my third Diamond. "No problem" I replied, "I'm going to Aboyne in October."

Arriving at Aboyne on Saturday, October 22, we learnt they had had their worst wave season for years with the achievements' board reading Rain and Mist on the six previous days. This changed on the Wednesday but it looked as though my season of good fortune was going to end with a bang, literally, when I was told to land. I descended from 12000ft to find that a motor Janus had parked itself in the car-park and my immaculate Golf GTI had taken the initial impact of the right wing. It was a sorry sight with six cars hit.

However the next day, after six hours flying, I climbed to 21800ft, a height gain of 20000ft (the highest in October for Aboyne).

On the Friday before we left we were in southerly wave and I was intent on helping my friend, Martin Goodwin, get his Gold height. I had full oxygen but only an 8k barograph (you may be wondering why anyone should have an 8k barograph at a wave site, well ask Martin, he had mine), when I hit 4kt south of the Lochs at 5000ft.

Pushing forward the lift remained a constant 4-6kt and I am convinced it wouldn't have stopped until 40000ft. At 25000ft the ground station said that the Aboyne 1988 record was 27400ft. My canopy had iced up on the inside and I was flying along the lower edge of a band of cloud looking out of my DV panel.

At 28000ft I ran out of courage (bottle if you like) although my feet were still warm and I had plenty of oxygen left. I knew I must have been near the top of the barograph, if not over. I left the still constant 4-6kt and started my long descent.

Examining the barograph later it was within 1mm of the top of the drum. However, we think 28000ft is the highest in the country this year.

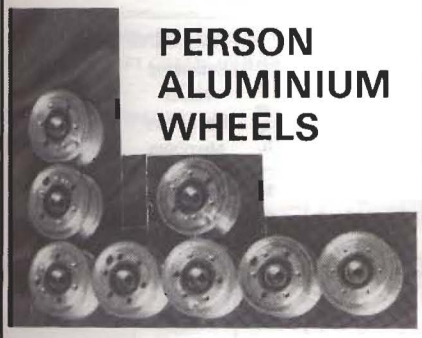
Martin achieved his Diamond with a flight to 22500ft.

* * *

As a postscript and one of the reasons I decided to write about my gliding year is that I come from a gliding family - my father Peter was killed flying a Dart 17B in 1968 whilst practising for the Nationals. He had gained all three Diamonds in a K-6CR and my mother, who also flew, gave me his badge, not thinking I would be qualified to wear it for a few years, if ever . . .

**Andy Davis' flight in a Discus on May 20, a 517.62km triangle at 79.61km/h has been recommended by Gordon Camp for homologation.*

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GLIDING IN SPAIN

A WAVE FLIGHT FROM BOOKER

On an unpromising day when few bothered to fly

For those of us who fly from flat sites, a climb to 5000ft in clear air is a considerable luxury in our soggy climate. However, as if to show what nature may sometimes provide, an unusual thermal wave system (as described by Tom Bradbury in *S&G*, December 1987, p282) allowed some of us at Booker a brief glimpse of the pleasures experienced routinely at sites where Diamond height is frequently gained before a Silver badge.

On Thursday, August 25, a blustery, overcast morning signalled the start of yet another of the seemingly hopeless days of last summer. It was at least dry and my resignation to another day spent decorating the house was weakened to the extent of telephoning Colin Jackson (also unfortunate with his choice of holidays). Eventually an Astir and a DG-300 were assembled amidst considerable derision ("optimists") and parked hopefully at the launch point whilst we retired to the clubhouse to await developments.

It was 3.30pm before we felt sufficiently frustrated to attempt some local pairs flying. The Astir was duly towed skyward with the principle objective of somehow managing to remain airborne long enough for Colin to join me.

The aerotow was uneventful with little turbulence - not a good sign - and it was with some reluctance that I relinquished my grip upon the tow plane at around 2500ft. Sure enough, there was little more than turbulence to break the monotony of the evening descent as I flew towards Lane End (a favourite local thermal source).

Weak lift over the village strengthened as I circled inquisitively and I suddenly found myself established in a most remarkably smooth, strong thermal, much better than I had expected to find. The lift increased steadily as I climbed until at 3500ft the vario jammed against the stops!

On what appeared to be such an unpromising day I thanked nature for her gift with special pleasure and made a quick radio call to let Colin (and the world!) know of my good fortune. I was soon joined by the BGA Janus flown by Chris Rollings, and shortly afterwards the familiar planform of Colin's DG-300 tucked in comfortably some distance below.

Pressed hard against the local ceiling at FL45 I reluctantly levelled the wings to fly upwind towards Oxford and less restricted airspace. The existence of wave influence became apparent as I continued to rise above a lower layer of ragged cloud, climbing gently but steadily towards an upper, almost unbroken, layer of stratocumulus. No definite slots were visible in the overcast sky, but I investigated conditions underneath some small blue gaps which beckoned hopefully and was thrilled to be carried magically through the cloud layer into a mountainous panorama of cumulus cloud streets and bright sunshine with an enormous, steeply arched wave bar lying in the clear blue sky above the neatest street.



Ian, a PhD research chemist, has been gliding for six years, has a Silver badge, 200hrs plus and owns a half share in an Astir. He says his regular 300km attempts have served only to teach him more about local farming techniques.

Flying in parallel with the wave cloud and holding a steady 2kt I watched the altimeter climb past 6000ft and called to let Colin know what I had discovered. In fact he had been climbing well in a different part of the system and we were soon both well above 7000ft close to the crest of the wave bar.

It was rapidly becoming a most remarkable experience and all on an afternoon when few from Booker had bothered to fly. How often, I wondered, did we miss marvellous opportunities through not launching on seemingly unpromising days. For there had been little evidence from the ground to suggest the existence of such a remarkable system and it soon proved to be too good to last as the wave cloud flattened and the lift died, leaving us to descend once more beneath the lower stratocumulus.

Not even a reasonable thermal subsequently offered itself and we were back on the ground (together with the BGA Janus) only five minutes apart, our flight into fantasy having lasted little more than an hour in each case.

But what an hour! Small beer perhaps to our colleagues from Aboyne or Talgarth but to us a most fascinating experience to be remembered for a long time.

My only regret? It was such an unpromising day that neither of us had flown with a camera or barograph. Our most exceptional local flight therefore went unrecorded.

ANNUAL STATISTICS

OCTOBER 1, 1987 to SEPTEMBER 30, 1988

GLIDING CLUBS	AIRCRAFT				ALL LAUNCHES	NO. OF AEROTOWS	HOURS	CROSS-COUNTRY KM	MEMBERSHIP		
	Club 2s	Club 1s	PO	Tugs					Flying	Estimated No. of Temporary Members	No. of Female Members
ALTAIR	5	1	5	1	2908	109	392	614	18	300	2
ANGUS	2	1	6	0	2720	0	373	301	42	136	10
AQUILA	1	2	8	1	963	764	214	100	33	131	2
AVON	4	4	35	4	10800	10800			102	2000	8
AVRO	4	3	0	0	2886		297	0	99	111	9
BASSETLAW & DISTRICT	2	1	0	0	2283	0	261	410	28	125	2
BATH & WILTS	4	3	20	3	3330	733	854	2500	94	500	6
BLACK MOUNTAIN*	3	1	20	1	2216	2216	2965	N/A	70	400	
BLACKPOOL & FYLDE	2	3	19	0	3570	0	1792	500	96	100	6
BOOKER	11	11	90	8	12271	12271	12001	50000	435	2910	50
BORDERS	1	1	16	1	1821	1772	1219	3000	88	290	7
BRACKLEY	1	1	8	0	3180	6	732	1497	51	48	6
BRISTOL & GLOS	4	4	42	3	8515	4905	4806	N/K	274	812	62
BUCKMINSTER*	2	1	11	1	3718	2143	1170	14405	84	725	
BURN	4	3	20	1	6901	2110	1890	2500	145	1500	10
CAIRNGORM	2	0	9	0	1712	400	1366	2	37	900	4
CAMBRIDGE UNIVERSITY	4	4	35	2	7855	2618	4154	42273	229	1434	9
CHANNEL	4	0	6	0	6947	0	950	N/K	81	1356	7
CONNEL	3	2	1	0	1567	20	310		33	564	5
CORNISH	3	2	3	0	3245	N/A	538	550	55	240	1
COTSWOLD	4	3	31	0	8994	0	2453	14850	193	661	40
COVENTRY	6	5	65	4	10799	9453	6432	19973	281	2660	20
CRANFIELD	1	1	12	2	1329	1329	582	2422	56	206	1
DARTMOOR	2	1	3	N/A	1619	0	154		42	125	4
DEESIDE	3	3	10	3	4469	4469	4892	N/K	122	376	N/K
DERBY & LANCS	4	4	22	0	6793	0	2443		154	720	12
DEVON & SOMERSET	2	3	24	1	8029	899	2615	29600	176	514	6
DORSET	3	2	11	1	4308	507	662	1000	110	1628	11
DUMFRIES & DISTRICT	2	0	3	0	301	0	32		17	30	0
EAST SUSSEX	3	2	13	0	5683	24	767	N/K	121	500	10
ENSTONE EAGLES	2	1	6	1	1615	540	664	24000	40	239	6
ESSEX	3	2	30	1	6646	2000	1377	12300	135	403	15
ESSEX & SUFFOLK	2	2	13	2	2200	2200	1410	10150	100	595	10
FILTON	1	0	0	0					12	0	0
HEREFORDSHIRE	3	1	7	1	1210	1210	1102	N/K	96		2
HIGHLAND	1	3	4	0	2641	7	531	944	35	273	3
IMPERIAL COLLEGE	0	3	0	0	355	150	312	2100	50	80	6
KENT	3	3	28	2	6933	3388	6000	3000	193	1517	17
LAKES	2	1	4	1	1469	1214	492	270	26	256	2
LASHAM	11	0	129	5	35759	14390	14200	133000	683	4314	100
LONDON	5	4	80	4	20650	8000		71000	289	5400	42
MARCHINGTON*	3	0	10	1	1580	1450	780	4554	80	240	
MENDIP	2	2	12	0	2743	0	778	2000	45	150	6
MIDLAND	3	4	25	1	11797	150	4178	10045	255	1293	25
NENE VALLEY	2	2	4	1	2490	80	331	400	43	259	
NEWARK & NOTTS	2	2	10	0	3327	12	401	773	64	602	5
NEWCASTLE & TEESSIDE	2	1	4	0	1074	0	319	500	24	113	2
NORFOLK	3	2	30	2	3907	3609	2367		171	674	9
NORTH DEVON*	5	0	5	1	140	69	940	8040	10	0	
NORTH WALES	2	2	4	0	2159		327	372	49	344	6
NORTHUMBRIA	3	1	16	1	3491	689	595	600	65	150	6
OUSE & HAMBLETONS	4	5	12	1	7000	1424	1404	2000	125	1244	15
OXFORD	3	3	13	0	4284	0	1077	4900	104	600	15
OXFORDSHIRE SPORT*	3	1	2	0	1840	0	1950	90000	60	45	
PETERBOROUGH	2	1	12	2	1674	1674	649	6500	68	396	8
RAE BEDFORD	0	0	6	1	15	0		3225	13	16	0
RSRE	2	2	1	0	840	6	117		14	60	1
RATTLESDEN	2	2	15	0	2602	115	587	6455	61	247	9

RIDGEWELL OATLEY	2	2	0	0	122	0	11	0	26	0	1
ROYAL AIRCRAFT ESTABLISHMENT	2	3	8	0	4039	13	919	1452	68	36	10
SACKVILLE	1	0	2	1	450	100	300	1000	8	0	0
SCOTTISH GLIDING UNION	4	4	33	2	8887	4790	6270	7000	225	1083	22
SHALBOURNE	2	1	16	0	4029	0	766	1100	74	430	9
SHROPSHIRE	0	0	13	1	758	758	1260	12000	36	10	1
SOUTH WALES	3	2	19	2	4274	1276	1477	14000	125	740	15
SOUTHDOWN	2	3	28	3	7250	5437	4000	17000	220	600	22
STAFFORDSHIRE	2	2	3	0	2513	0	480	210	73	140	5
STRATFORD ON AVON	3	2	12	0	4641	0	889	4250	95	845	
STRATHCLYDE*	3	1			700	50	125	20	40	130	
STRUBBY	2	1	5	0	2693	45	282	200	35	225	4
SURREY & HANTS	0	12				See Lasham			283	See Lasham	30
SURREY HILLS	2	1	2	0					40		
SWINDON	2	1	8	1	3294	343	483	N/K	38	663	5
THRUXTON*	2	1	4	1	1710	1710	571	1970	52	981	
TRENT VALLEY	2	2	18	0	5231	24	1340	5200	89	288	7
ULSTER	2	1	10	1	1162	1148	592	0	34	179	
UPWARD BOUND TRUST	2	0	1	0	1245	0	136	0	25	262	3
VALE OF NEATH	2	1	6	1	1371	517	405		50	150	1
VECTIS	2	0	2	1	557	557	184	N/A	25	124	2
WELLAND	2	2	7	0	2550	12	468	2450	41	250	2
WEST WALES	3	0	4	0	1241	0	155	0	28	56	2
WOLDS	5	3	25	1	12027	1247	2098	9125	258	1918	63
YORKSHIRE	3	5	35	3	7487	4908	3865	12000	228	1205	8
CIVILIAN CLUB TOTAL	228	172	1291	83	350404	122860	127280	672602	8492	51827	832
ARMY GLIDING ASSOCIATION											
KESTREL	2	4	2	1	4323		812	5770	87		
WYVERN	2	4	5	0	5840		1122	5737	146	290	12
ROYAL NAVY GSA											
CULDROSE	3	2	3	3	1712	630	275	2200	45	215	6
HERON	3	2	4	0	1650	1000	550	2500	40	156	5
PORTSMOUTH	6	4	0	4	4596	3032	1022		150	560	30
RAFGSA											
ANGLIA	2	2	3	0					45	100	0
BANNERDOWN	3	4	6	1	5785	207	1050	6090	85	63	0
BICESTER	6	8	19	4	14458	5009	4980	36720	211	582	4
CHILTERNS	1	3	4	0				50	108	0	
CLEVELANDS	4	4	13	2	4362	1496	1319	11383	117	52	
CRANWELL	3	4	7	1	4255	421	1149	4831	115	75	13
FENLAND	2	4	6	0	4676	60	1047	10036	56	110	
FOUR COUNTIES	3	3	4	0	4950		1170	5250	89	20	
FULMAR	2	3	0	1	3755	195	477	460	30	100	0
HUMBER	3	2	4	0	2967	0	547	652	50	100	2
WREKIN	2	3	4	1	5869	339	1459	6127	84	39	6
SERVICE CLUB TOTAL	47	56	84	18	69198	12389	16979	97756	1400	2570	78
CIVILIAN CLUB TOTAL	228	172	1291	83	350404	122860	127280	672602	8492	51827	832
GRAND TOTAL	275	228	1375	101	419602	135249	144259	770358	9892	54397	910

** No statistics received. Last year's figures used.*

JUNIOR PILOTS

Following the success of the UK Junior Nationals in 1988, Booker have agreed to hold the event again this year from August 26 to September 3. Basic qualifications are: under 25 at the start of the competition and a Silver badge. Write to the BGA office for entry forms and further details.

The top four pilots in the 1988 Championships will be competing in the European Junior Internationals at Cambrai, France, this July.

Chris Rollings will be at Le Blanc, France, in late June with the BGA Janus and two places have been provisionally booked in the Pegasus competition there for British Junior Pilots. Write to the BGA office or contact Tony Moulang (0622 35063) if you are interested in joining this training/competition week.

Subject to the Sports Council grant the BGA hopes to give some financial support to each of the above three events.

Tom Zealley, *BGA Competitions Committee*

NATIONAL LADDERS

After photo analysis the two pilots 3rd on both Ladders have now moved up a place each - Trevor Stuart is 2nd on the Open Ladder with 6735pts because Nick Hackett was unable to supply his photographs and Derek Westwood is 2nd on the Club Ladder with 2254pts.

Ed Johnson, the National Ladder steward, is still hoping for comments on his idea for a Weekend Ladder, see the last issue, p298.

COMPETITION DIARY

May 14-27:	World Gliding Championships, Wiener Neustadt, Austria.
June 3-11:	15 Metre Class Nationals, London GC, Dunstable Downs.
June 17-25:	Competition Enterprise, Le Blanc, France.
June 17-25:	Western Regionals, Bristol & Gloucestershire GC, Nympsfield.
June 25-July 10:	European Women's Gliding Championships, Orel, USSR
July 15-23:	Open Class Nationals and Regionals, Lasham Gliding Society.
July 22-August 5:	Polish Nationals, Lezno, Poland.
July 29-August 6:	Booker Regionals, Wycombe Air Park.
August 12-20:	Standard Class Nationals, Coventry GC, Husbands Bosworth.
August 20-26:	Two-Seater Competition, Wolds GC, Pocklington.
August 26-Sept 3:	Junior Nationals Booker Airfield.

GLIDER PILOT WATCHES

A very limited number of watches with the international "three gulls" gliding motif on the face are available from the BGA. Ben Watson, British team manager, noticed the attractive watches during the European Championships and arranged to bring back to the UK ten examples from the French agents.

BGA ACCIDENT SUMMARY –

Compiled by JOHN SHIPLEY, Chairman, BGA Safety Panel

Ref No.	Glider Type	BGA No.	Damage	Date Time	Place	Pilot/Crew Age	Pilot/Crew Injury	Pilot/Crew Pl/Hrs	Summary
76	K-13	2830	M	30.6.88 1021	Challock P2	59 41	N N	600+ 0	Some seconds after touchdown a loud crack was heard from the rear of the glider. Examination showed a broken lower longeron close to the tail skid. The tube fracture indicated that it had been cracked for some time and had finally broken when the tail skid had hit an embedded flint which are common on this airfield.
77	ASW-20F	3313	W/O	27.5.88 1630	Long Mynd	66	S	250	The glider took off and started to climb normally until at about 100ft when it was seen to be climbing very steeply. It then yawed sharply to the left and the winch driver maintained power in an attempt to "pull it straight". This did not work so he cut the power and the glider dived into the ground. The pilot was seriously injured.
78	ASK-23	2995	M	30.6.88 1745	Long Mynd	24	N	53	During the winch take-off or initial climb the elevator trim spring broke. The climb was difficult and fast and the pilot pulled off at 700ft. In spite of being low to middle weight the pilot found he could not fly below 50kt. A safe landing was made. Club comments: **No warning of failure given by inspection. Regular spring renewal considered.**
79	Swallow	1020	W/O	3.7.88 1731	Bryn Gwyn Bach	?	S	?	After a normal winch take-off the glider apparently climbed normally to about 300ft when the cable detached from the glider. Rather than turning to the left then landing ahead he flew downwind too far. In a slow turn to clear power lines the glider **spun in from about 50ft** and the pilot was seriously injured.
80	ASW-15	2035	W/O	28.5.88 1427	Nr Hinckley, Leics	46	F	250 approx	This **fatal** accident occurred during a 300k cross-country. The barograph trace shows that the glider was low and had two small, weak climbs prior to the crash. It is possible that the pilot had drifted away from a selected field in weak lift. Then, under increasing workload while searching for another field, lost control and spun in.
81	DG-200		S	2.7.88 1530	Dunstable	36	N	85	The pilot decided to land before approaching rain and set up a longer than normal base leg as he looked rather high. On base leg he extended half land flap as he still thought he was high but then found that there was a strong crosswind. He had to land in a field but saw power lines too late and landed in a deep boggy gully.
82	Not known		S	26.6.88 1600	Pocklington	43	N	15	On an aerotow launch **the glider weathercocked and the right hand wing hit standing crops.** The pilot tried to recover but could not and the glider was substantially damaged.
83	SZD Junior	3237	M?	17.7.88 1252	Middleton	49	N	34	On his second flight on this type the pilot experienced turbulence and sink in the circuit. He increased speed but did not monitor his aiming point and landed well down the airfield. The glider ran towards a fence at the left of the runway and fell into a ditch before stopping. Only ½ brake was seen and he could have turned during the ground run.
84	Blanik	2661	S	2.7.88	Milfield P2	0 0	N N	- -	After a moderately heavy landing the aircraft then ran across a deep rut. The glider was found to have significant structural damage to the wheelbox and surrounding fuselage structure. The main failure originated in the right wheelbox wall. This had cracked right across through a hole previously made to remove the wheel actuating pivot.
85	K-7	936	M	2.7.88 1340	Woodford P2	34 32	N M	186 0	In the circuit the P1 noticed that the wind had fallen and was now across the runway. He instructed P2 to over-fly the launch point, avoiding a parked glider. P2 eased in the brakes until clear then the brakes were re-opened. P1 remarked "watch your speed" as the airspeed was falling and P2 reacted by pushing forwards. The glider landed heavily.
86	SHK 1	1837	M	14.7.88 1130	Parham	50	N	225	On a crosswind aerotow launch the glider became out of position to the left and begun to get high. The pilot decided to pull off but could not stop as the field sloped down towards a stream. Turning left into an adjacent field the glider hit a ditch which collapsed the mainwheel. (No nose hook fitted. Tug pilot had no problems.)
87	Sport Vega	2758	S	11.7.88 1300	Parham	?	N	-	This ground handling incident occurred when an all terrain cycle used for glider retrieving was moved off while near to and pointing at a glider's wing. With two people on the back it was difficult to turn and as the driver leaned forward to put weight on the front wheel the bike did a "wheely" throwing all three off and ran over the wing.

88	Sovereign YS-53	1787	M	27.7.88 1206	Galewood P2	34 37	N N	242 5	On a day of strong winds and marked wind gradient the approach appeared normal until at about 20ft the glider was caught by a strong gust. P1 needed both hands on the stick to level the wings but in doing this allowed the airbrakes to open fully. This resulted in a heavy landing that collapsed the undercarriage.
89	K-10	2810	M	22.7.88 1638	Usk	30	M	7mins	During the pilot's second flight severe sink was encountered in the circuit. The pilot correctly shortened the circuit but was unable to straighten up after a steep final turn and headed towards some caravans. The glider was groundlooped to avoid these. The narrow field and steep low turn required were considered too difficult for an early solo.
90	Club Libelle	2415	S	3.8.88 1500	Nr Bicester	62	N	101	On a competition task the pilot chose a field that he then found he could not reach. The adjacent field he landed in was small and with a steep slope. The bounced landing was very heavy, followed by a groundloop and the glider finished in a high chain link fence. Suitable alternative fields were available.
91	Dart 15	1186	M	30.8.88	Snitterfield	41	N	7.5	After positioning high but well back on final approach the pilot adjusted his height using the aiming point technique. Using half brake he lined up correctly when he encountered strong sink. He moved to close the brakes but actually opened them fully. As a result he did not have enough height to clear the fence which he hit with the tailplane.
92	Nimbus 2cs	2680	S	17.7.88 1347	Upavon	33	N	1036	The winch launch was normal until at about 10ft the right wing dropped and the glider yawed in spite of the pilot releasing and trying to correct. After a ground/airloop the nose impacted with the ground while travelling sideways. Whilst rotating, the tail hit and was broken off.
93	Skylark 3	1251	S	12.8.88 1430	Nr Banbury	34	N	20	On a 50km downwind attempt a field was selected from 1700ft agl. Passing over the downwind fence the pilot saw that it was **ridge and furrow at 90°** to the line of landing. A heavy landing was made. The underside of the cockpit area and the nose were severely damaged.
94	Sport Vega	2798	S	8.8.88 1330	Aboyne	19	N	168	On aerotow the pilot lifted off and finding himself at 15ft pitched the nose down, hit the ground then found the rope had released. Two-thirds of the way down the runway, he could not land ahead so chose a small rough field that lay at 90° to his path. He was unable to complete the turn or round out before hitting trees.
95	Dart 17R	1361	S	7.8.88 1530	Andoversford	31	N	89	A large stubble field was chosen for an out landing and a circuit set up around it. On base leg the pilot hit heavy sink and, despite closing the brakes, touched down in the up sloping undershoot field just short of a low stone wall. In attempting to "hop the wall" the fuselage scraped the top and the wing hit a tree.

F = fatal; S = serious; W/O = write off; M = minor; N = nil.

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LATE ISSUE

We apologise for the delay in distributing the last issue of *S&G* and for mistakes in the Classified Section. This was entirely beyond our control and due to a problem with a printing machine. We trust it won't happen again.

DEREK'S DINNER-DANCE

The farewell dinner-dance for Derek Piggott is on Saturday, April 15 at Lasham Gliding Society. The tickets, £15 from the Lasham office, are limited to 300 so you are advised to book early.

BGA NEWSLETTER

Mike Cuming, who has incidentally just become the manager of Booker GC, is editing the BGA Newsletter which is going out to Official Observers.

INTER-UNIVERSITY TASK WEEK

The 1989 Inter-University task week is being jointly hosted by Imperial College and University of Surrey GCs at Lasham Airfield, from August 20-26. It is open to all UK university and polytechnic gliding clubs and also to individual entrants in further education.

The aim of the week is to provide a challenge to pilots of all abilities - tasks from a Bronze badge leg to a 300km triangle are set accordingly. The other main purpose is to enable you to meet other pilots who are just as poor as yourself and are doing even less work!

The results can be great fun and there are always surprises - last year the overall winner

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96	Astir	2239	S	25.7.88	Bidford	68	N	-	Four gliders were airborne under a cloud street at over 4000ft when it developed into a cu-nim. Three gliders landed safely in hail after descending with full brake but the Astir entered the torrential rain. The pilot then had to land in a field with zero visibility and hit a hedge. He could have run ahead of the storm in strong lift.
97	Skylark 2	766	W/O	7.8.88 1600	Currick Hill	25	M	15.75	The pilot decided to carry out a practice spin to lose height. His first try resulted in an incipient spin from which he recovered. The next, at 2300ft was more successful with a "fairly dramatic entry". He then found opposite rudder had no effect and the glider "seemed to be on its back" but impacted in trees at a shallow angle causing minor injuries. **The pilot was disorientated.**
98	Pegasus		S	16.8.88 1815	Nr Elmley Castle	28	M	750	After being airborne for 6hrs the pilot had to land out. A small paddock was chosen as the only available field and a short landing attempted to avoid the sloping far side of this area. He hit a tree in the hedge and cartwheeled in. The glider was substantially damaged but the pilot only superficially injured.
99	K-7	3201	M	3.8.88 1200	Bum P2	34 ?	N N	300 0	On a simulated cable break P2 elected to land ahead but delayed slightly. This meant landing on a rough area of the runway and at round out P2 pushed forwards. P1 took over, eased the brakes and landed the glider tail first. No significant bumps were felt but a rear fuselage longeron was found broken at a previous repair.
100	K-6CR		S	9.8.88 1815	Nr Beecles	35	N	28	A farmer's landing strip was chosen and a good circuit and landing was made. However, on the ground run the pilot found it impossible to keep in the centre of the strip and caught a wing in the adjacent crops, groundlooping the glider. The landing may have been slightly downwind but the main factor was the narrow strip.
101	ASK-23		S	20.8.88 1455	Nr Booker	23	N	92	The pilot tried to reach a local ridge system. Finding no lift he made his way out of the system and looked for a suitable field. All nearby fields had power and phone lines in them so that at 400ft he had to choose an uphill field in the lee of a hill. He dropped a wing on the approach and just cleared a tree before landing heavily.
102	Olympia 463	1379	S	28.8.88 1730	Nr Enstone	46	N	40	After soaring for an hour the pilot left the lift and attempted to return to the airfield. In strengthening wind it appeared a marginal return and rather than pick a nearby field he pressed on until at 800ft he had to decide to land in an area of beaten down crop. At touchdown the aircraft groundlooped damaging the wing mounts.
103	M-200	2877	M	26.8.88 1300	Bentley P2	48 37	N N	2000 25	A crop free area of a field was selected for a field landing while flying a competition task. On the approach it was noticed that the far end of the field sloped downhill so a short landing was attempted. During the round-out the tail caught in the standing crop damaging the rear of the fuselage.
104	Bocian 1E	1993	M	20.8.88 1118	Dallachy P2	49 26	N N	712 0	During an approach in rain the aircraft was sideslipped to give better forward vision. The aircraft was slow to straighten and due to the low airspeed and water on the wings hit the ground sideways with one wing low. The skid and wingtip were broken off.
105	K-6CR		M	4.9.88	Kirton-in-Lindsey	54	N	24	After using airbrakes on his base leg the pilot turned on to final approach and found himself too low. He failed to notice that his brakes were still open and stalled the glider into the boundary hedge.

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Continued from page 37.

was a K-13 beating an ASW-19 among others. Yes, anything's possible so if you'd like to enter your T-21 or your Nimbus 3 drop a line to: Nick Lay, Captain, Imperial College Gliding Club, c/o Imperial College Union, Prince Consort Road, London SW7 2BY.

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GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	*Name*	*Club*	*1988*
252	Pratt, D. L.	Lasham	30.7

DIAMOND DISTANCE

No.	*Name*	*Club*	*1988*
1/373	Mynott, S. J.	Cambridge Univ	16.8
1/374	Pratt, D. L.	Lasham (in Spain)	30.7
1/375	Chapman, C.	Lasham (in France)	30.7

DIAMOND GOAL

No.	*Name*	*Club*	*1988*
2/1604	Macdonald, G. E.	Lasham	3.8
2/1605	Torrance, A. S.	Cambridge Univ	23.8
2/1606	Cluskey, A.	(in France)	4.8
2/1607	Hurn, T. G.	Black Mountains (in France)	9.7
2/1608	Ranson, J. B.	London	16.8
2/1609	Garland, N. J.	Pegasus (in France)	23.5

DIAMOND HEIGHT

No.	*Name*	*Club*	*1988*
3/846	Downham, E. H.	London	11.9
3/847	Crooks, M.	Lasham	12.9
3/848	Moore, D. R.	Cambridge Univ	12.9
3/849	Hamilton, C. J.	SGU	12.9
3/850	Hatton, D.	SGU	12.9
3/851	Maynard, V. H.	London	24.9
3/852	Merritt, L. R.	Southdown	27.9
3/853	Beardsley, G. C.	Brackley	27.9
3/854	Howse, D. J.	Cambridge Univ	17.9
3/855	Newland-Smith, M. E.	Essex	27.9
3/856	Turner, S. M.	Southdown	27.9
3/857	Heath, J. N.	Southdown	27.9
3/858	Purdie, P. G.	Lasham	26.10
3/859	Ranson, J. B.	London	21.9

(Ten heights were flown at Aboyne and four at Portmoak.)

GOLD BADGE

No.	*Name*	*Club*	*1988*
1277	Thomas, J. W.	Cambridge Univ	7.9
1278	Torrance, A. S.	Cambridge Univ	13.9
1279	Hawkins, R. W.	Southdown	20.9
1280	Holland, P. A. G.	Trent Valley	29.9
1281	Hinder, Sue	Lasham	28.9
1282	Osborn, M. P.	Wrekin	26.10

GOLD HEIGHT

Name	*Club*	*1988*
Thomas, J. W.	Cambridge Univ	7.9
Merrick, R. W.	London	11.9
Torrance, A. S.	Cambridge Univ	13.9
Stark, M. S.	Ouse	13.9
Bryce-Smith, R. D.	Cambridge Univ	24.9
Maynard, V. H.	London	24.9
Lowndes, R. A.	(in Spain)	6.9
Matthews, J. R.	Southdown	11.9
Moore, D. R.	Cambridge Univ	12.9
Franks, H.	Cambridge Univ	12.9
Bradley, B.	Cambridge Univ	12.9
Brightman, P. P.	London	17.9
Woodage, L. P.	London	17.9
Blaxill, V. D.	London	17.9
Walker, R.	Southdown	20.9
Hawkins, R. W.	Southdown	20.9
Cross, L.	London	21.9
Holland, P. L.	Trent Valley	27.9
Holland, P. A. G.	Trent Valley	29.9
Richardson, M. J.	SGU	29.9
Beardsley, G. C.	Brackley	27.9
Kenny, J. E.	Vectis	7.9
Bonner, M. J.	London	11.9
Cornelius, D. M.	London	11.9
Hinder, Sue	Lasham	28.9
Ruttle, D. M.	Humber	29.9
Bailey, P. A.	Enstone	6.10
Attwood, S. W.	Essex	8.10
Aitken, P. M.	Kent	14.10
Curtis, K. J.	Two Rivers (in Austria)	19.10
Shaw, C. A.	Phoenix (in Austria)	19.10
Osborn, M. P.	Wrekin	26.10

GOLD DISTANCE

Name	*Club*	*1988*
Macdonald, G. E.	Lasham	3.8
Torrance, A. S.	Cambridge Univ	23.8
Cluskey, A.	(in France)	4.8
Hurn, T.	Black Mountains	9.7
Garland, N. J.	Pegasus	23.5

SILVER BADGE

No.	*Name*	*Club*	*1988*
7801	Pettifer, A. R.	Kestrel	1.10
7802	Turney, J. A.	Strubby	23.8
7803	Hannah, D. C.	Lakes	9.10
7804	Garland, N. J.	Pegasus	10.4
7805	Tagg, D.	London	30.9
7806	Fuller, A. B.	Rattlesden	6.10
7807	Hawkins, C. F.	Cambridge Univ	11.9
7808	Crabb, P. G.	Coventry	16.8
7809	See, D.	Booker	6.10
7810	Concannon, P. J.	Upward Bound	26.10
7811	Dodd, M. J.	Herefordshire	11.9
7812	Brooker, S. R.	Imperial College	16.8
7813	Tanner, D.	Booker	24.9
7814	Labouchere, C. M.	Black Mountains	28.8
7815	Aubeelack, A.	Avon	30.9

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Jeffries, D. J.	South Wales	19.6

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INTERNATIONAL GLIDING COMMITTEE REPORT

London, October 21-22

The BGA were the hosts and 24 countries attended what, until now, has always been known as the CIVV meeting. The following are extracts from the report written by Tom Zealley, our delegate

It had been decided by the FAI Council that this commission, as well as other sporting commissions, should be known by its English title – International Gliding Committee (IGC).

Colin Bantin (Canada) reported that his country was including gliding as a demonstration sport in their bid for the 1996 Olympics in Montreal.

European Young Persons' Gliding Championships 1989. François Ragot (France) said that it would be from July 30-August 12 at Cambrai, 150km NE of Paris, and open to pilots up to 25 years-old with a maximum of 40 each in the Standard and 15 Metre Classes. Two pilots per country per Class would be accepted with the possibility of three if undersubscribed. Ten to 15 Pegasus would be loaned free of charge.

Other Championships. France intends to bid for the International Motor Glider Championships at Issoudon in 1990 and, with Sweden, to bid for the 1993 World Championships. Denmark will host the European Club Class Championships in 1990 at their Amborg Gliding Centre.

New Badges. Bernard Smith (USA) reported on the deliberations of his sub committee dealing with possible new FAI gliding badges. There were three front runners:

1. The World badge – sufficient cross-country flights to make up a distance equivalent to the earth's circumference.
2. A Handicap badge – the distance/speed to be achieved would depend on the performance of the glider flown – probably in three broad groups: L/D below 30; between 30 and 40 and above 40.
3. An Intermediate badge – between Silver and Gold along the same lines as the new BGA Diploma.

The World badge was most likely to be submitted first for approval.

World Class Glider. A major part of the meeting was devoted to a lengthy exposition by Piero Morelli (Italy) on the technical specification for the design/prototype competition intended to lead to the development of a cheap, low performance, one design glider. Many detailed aspects were covered and included changes to the previously circulated draft document prepared by Piero's sub committee. The requirements were additional to those stipulated in JAR 22. There was a plea that most of the additional requirements should be recommendations rather than mandatory to avoid disputes over a good design/prototype which just failed to meet some particular IGC criteria.

The aim was for the glider to be aerodynamically conventional using modern materials and methods of construction.

The next step would be for a new sub committee of people with legal and business abilities rather than technical skills to consider the detailed terms and programme for the competition. Motivating and rewarding potential entrants would be a key problem with a need for market surveys, enlisting the enthusiasm of the Akafliegs and the consideration of such factors as the position of existing manufacturers.

Motor glider records. Alvaro de Orleans Borbon (Spain) gave the proposals of a study group to tighten up procedures controlling technical aspects of motor glider record attempts. There had been suspicions of (and opportunities for) cheating with present procedures.

* * *

The previous week Tom attended the FAI General Conference in Sydney, Australia, when 32 countries were represented.

WOLD'S TWO-SEATER COMPETITION

August 16-22

The Wold's GC's Two-Seater Competition, now in its third year, is becoming increasingly more successful and attracting more entries. Organised by Les Cooper (manager) and his team along the lines of Competition Enterprise, the main focus is on as much flying and fun as possible.

Entries, and there were 12 gliders with each team comprising approximately four with many changing the crew and pilot each day, included K-13s, K-7s, converted K-7s, a Bocian, Eagle, T-21 and two M100s. The Wold's M100, flown by Bill and Mel, was fitted with all mod cons including a stereo with a large cassette selection so they could choose the music to fit the situation – *eg* a triumphant final glide to the Ride of the Valkyrie.

Competitors ranged from pundits to those trying Comps for the first time, an interesting example being the Camphill K-7/13 flown by Ken Blake (CFI) with a team of three early solo pilots plus a K-8 to give them cross-country and competition experience.



The Derby and Lancs GC winners from l to r, John Collins, Mike Armstrong, Andy Melville and Peter Boneham.

There were four competition days with Mike Munday as the director and Simon Parker the task setter. The K-21 team from Derby & Lancs GC, who came 2nd to Camphill's Janus in 1987, were the favourites and won by a narrow margin ahead of the Kirton K-13.

And we did have a lot of fun and flying with the week interspersed with barbecues and parties.

ANDY MELVILLE

CLUB NEWS

Copy and photographs for the April-May issue of *S&G* should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH to arrive not later than February 7 and for the June-July issue to arrive not later than April 4.

GILLIAN BRYCE-SMITH
December 7

AVON (Bidford-on-Avon)

We have lost Malcolm, Val and Debbie, their lives cruelly taken by unforgiving Scottish terrain when the Robin light aircraft in which they were travelling crashed on Friday, October 21.

Obituaries

Malcolm Oakley

Malcolm, our resident tug pilot, engineer and maintenance man, joined us early in 1987 and quickly made a tremendous impact. His energy, vitality and incessant cheerfulness were - and will remain - an inspiration to us all.

His great affinity for tugging earned the fond nickname of "Tuggy One." His unique brand of humour did little to conceal his most meticulous conduct as a pilot.

Malcolm leaves two children, Brian and Catherine.

Valerie Burgess

Valerie also came to us early last year, taking charge of the catering. She worked tremendously hard and gave us irresistible home-cooking.

More importantly, this role gave Val the opportunity to participate in and reciprocate the typical glider pilots' banter and her warm personality shone through, endearing her to us all.

Val leaves three children, Mark and twins Tony and Brett.

Debbie Bruce

An environmental studies graduate, Debbie left her successful career with the CEGB last year to become a partner in Avon Soaring Centre.

She applied herself to running a progressive club in the only way she knew - thoroughly, intelligently and with bubbling enthusiasm.

Debbie's love of nature was a stong characteristic and it was intrinsically linked with her passion for soaring. She made rapid progress to her Silver badge and AEI rating.

The space left in our lives and in our hearts by the loss of these three remarkable colleagues and friends is beyond description. Our deepest sympathies are extended to their relatives and very special friends.

Chris Morris

AVRO (Woodford Airfield)

Congratulations to the winners of the annual awards presented at the AGM on November 11:- Phil Kendal; (Cross-country trophy); Marcus Sheard (Most Meritorious Flight trophy); Ian Taylor (Chairman's award); Roger Bostock (Dennis Davenport trophy) and Nigel Jennings (Jimmy Orrell trophy and Sir Harry Broadhurst trophy).

Also congratulations to Dave Taylor and Ken Gresty on going solo and Shaun Connor (Bronze badge).

The club IS-28 motor glider flew again after nine months' extensive work, mainly by Guy Chapman, Ivor Corkell and Roger Bostock, on the wings.

S.C.

Obituary - J. H. Orrell

We mourn the death of our founder chairman J. H. "Jimmy" Orrell on August 3 at the age of 84. His illustrious career in aviation spanned over 50 years with the RAF, Imperial Airways and finally as a test pilot, being awarded the OBE in 1956.

The club was fortunate in having Jimmy as chairman from its inception in April 1953 when he was chief test pilot at AV Roe and Co Ltd at Woodford. He did more than anyone to encourage the development of the club from its humble beginnings with a T-31 and a Tutor, at one stage advancing his own money to pay for a much needed training aircraft.

When he handed over to Charles Masefield in 1974 we were a successful and well established training and soaring club. Elected vice-president at this time, he keenly attended club functions until latterly prevented by ill health. His illustrious tales of his flying experiences were much enjoyed and his observations and fatherly advice at AGMs valued, particularly by club officials.

His influence will be missed but his advice hopefully not forgotten.

Gerry Ramsden

BICESTER (RAFGSA Centre)

Well done to Ron Pepper on completing his Bronze badge and gaining Silver height and to Phil Jones and Bob Braithewaite on going solo.

Our Aboyne expedition was most enjoyable with Gold heights for those who didn't need them!

The latest addition to our fleet, an ASW-24, is being tried out.

M.H.

BLACK MOUNTAINS (Talgarth)

We thank Mike Young, who has moved to Australia, for his very successful season as our tug pilot. Dave Hodsman is taking over the winter tugging period.

Jerry Martin is our first full time instructor and congratulations to Derek Eckley on his instructor rating

With unusually fine and calm weather we only had a few wave days in November.

W.D.M.

BORDERS (Galewood)

Our annual dinner in November was well attended. Derek Robson again won the Distance trophy (230km in the Northern Regionals where he came 3rd) and Ken Fairness the Height and Club Ladder trophies thanks to the flying week in November. Ken reckoned it was his best five days' flying ever - 15hrs in five flights, all terminated voluntarily, total climbs of 56700ft, two broken off at 12500 because he had forgotten to turn on the oxygen and one to 17600ft when he broke off a 3kt climb due to icing and cloud cover. Leon Adamson was also unfortunate to miss his 5hrs when the wind died after 4½hrs.

The day after the dinner produced weak wave all day and gave an average of over 1½hrs/flight including the club two-seater.

A.J.B.

CAMBRIDGE UNIVERSITY (Duxford)

Congratulations to Graham Armstrong and Darren Johnson on going solo.

The winch has been out of action this autumn so there has been a lot of aerotow practice. Iain Baker and crew are hard at work on repairs and modifications.

Our social evening was a great success and Marshall Papworth hosted the splendid fireworks party once again. Our thanks to Mike Smith for arranging the well attended Bronze examination.

J.L.B.

CLEVELANDS (RAF Dishforth)

After two wave weekends in succession giving climbs of 20000ft plus we entered a quiet period of bright, still conditions. This was some consolation for the poor summer and a good opportunity for training, coinciding with the annual influx of new university members. Congratulations to Laura Park on going solo in the T-21.

At the AGM in December we were pleased to welcome back our president, Air Marshall Sir Leslie Mavor. Awards went to Dave Stewart, Neil Claughton, Steve Harper, Paul Mason and myself. We also had an historical moment when Jack Clark was presented with a new flying suit.

J.P.

CORNISH (Perranporth)

We said farewell to Simon Jordy on November 5 with a bonfire party and firework display by John James and Ron Brewer. Simon has been a valued member and instructor for many years and we wish him well in his new post.

Our Motor Falke is back thanks to the hard work and expertise of Bill Lewis. Pip Phillips has collected his RF-5 "The Mouse" from Dunkeswell after extensive refurbishment and the club Blanik is on C of A.

Congratulations to Ian Hardy on going solo and to Rex Vinson, Pete Endean, Nigel Davey and Dave Uren on their AEI ratings.

G.A.H.

COVENTRY (Husbands Bosworth)

We had some cross-countries during October including a Silver distance to Saltby by Graham Thomas. Some members had an enjoyable weekend at the Long Mynd with 5hrs in wave for Chris Spiers. There have also been successful trips to Camphill and Feshiebridge.

We hope the arrival of the Super Falke will encourage the continuation of training in the winter. We are again offering winter membership to our neighbours at the Welland GC to gain aerotow experience and to help encourage winter winching.

D.L.S.

CRANWELL (RAFGSA)

The Astir, damaged earlier in 1988, has been replaced by R65 and the K-8 has gone. When the replacement two-seater for the K-7 arrives we will have an all glass fleet which we hope will boost the number of *ab-initios*.

A recent expedition to the Long Mynd saw a week of rain and fog. Congratulations to Ray Walker, DFCI, on soloing in the motor glider. We have another expedition to Talgarth in April.

We welcomed Tim Dickinson back from Cyprus while Dave Montgomery has gone to Cyprus.
B.S.

DARTMOOR (Brentor)



Derek Tamblyn with his instructor, Roger Matthews, the club chairman, after going solo.

November was as near perfect as can be and gave us a chance to try out our second winch built by members under the "foremanship" of Chris Matten. Our launch rate rose again and made up for losses in the wet summer weeks.

Derek Tamblyn went solo during this Indian summer, sent by chairman Roger Matthews who recently re-qualified as an instructor after tuition by our founder CFI, Ivor Phillips.

Peter Williams, Alan Holland and other members of the North Devon GC continue to help with the instructing, Peter as CFI.
F.M.

DORSET (Old Sarum)

Congratulations to John Holland and Taki Kawafuji on going solo and to Vanessa Smith on her SLMG PPL and assistant instructor rating.

Visitors please note that in north-westerly winds the base leg has to be inside the airfield boundary.
D.N.

HEREFORDSHIRE (Shobdon)

The Twin Astir is being sold to the disappointment of a few but we hope its replacement will be utilised more by the whole club.

We have just welcomed a small group of wave visitors including John Jeffries, his ASH-25 being quite the centre of attention.
M.S.D.

HUMBER (RAF Scampton)

This has been a most successful year with an increase in launches, hours, kilometres and improved finances. Eric Isherwood, Doug Ward and Steve Ashton went solo, Steve gaining a Bronze leg a week later. Doug was our 12th Malcolm Club scholar to go solo.

At our AGM in December the awards were presented as follows: Vicar's trophy (first Bronze badge of the year) Dave Jones; Scout trophy (best progress) our hardworking MT member, Steve Skidmore; Workers' pot, Tony Smith and Chris Gilbert; CFI's trophy (fastest closed circuit 100km) Tony Smith; Trevor Grosse trophy (notable achievement) Dave Ruttle. Dave flew 50km to Burn, had an aerotow and returned, also organising his own expedition to Portmoak where he got his Gold height.

Kev Atkinson, retiring CFI, was presented with a special model of a Discus. John Dobson takes over as CFI.

We welcome Joe Hutton back from the Falklands, where John Morris is going this month, and Chris Gilbert, our treasurer, bar and engineering officer, has gone to Germany. Without his enthusiasm and hard work the DG-300 wouldn't have been ready for an expedition.

We have bought 600m of Parafil for our autotow which is giving 1800ft launches.
K.M.G.

KENT (Challock)

Congratulations to Steve Noad, Caroline Bunyan, Derek Waldron and Les Connelly on their AEI ratings and to Paul Aitken for his Gold height at Aboyne, the only badge claim on our annual autumn visit.

We have had the loan of the SZD Junior demonstrator and hope to add one to our fleet. We are preparing for the course season with three winches and two tugs.
A.R.V.

NORTHUMBRIA (Currock Hill)

Rod Watson has retired as CFI and our thanks to him for his valuable services. His deputy, Ken Holburn, has taken over and Jack Little, who is again going to Kenya this Christmas to instruct for a while, is now DCFI.

Eddie Clayton, a qualified airframe engineer, has gone solo and volunteered to maintain the Pawnee tug which has been fitted with a new propeller following its taxying accident.

The K-8 is being re-covered and given a new canopy. We hope to have the BGA ASW-19 during the winter as it was so popular with members last year.
R.D.

NENE VALLEY (RAF Upwood)

We had a terrific year with a 20% increase in launches and an enormous leap of 89% in flying time. Congratulations to Geoff Cross, Dave



Taki Kawafuji of Dorset GC rings in her first solo on the Flevo bell presented to them by their twinned club in Holland.

Bourne and Roger Morrisroe on completing their Silver badges and to Alan Haiek, Neil Cannon, Gus Pinkerton, Roger Emms and Don Billau on their Bronze badges.

Our thanks to Geoff Cross for organising our flying week at Bassingbourn prior to his posting to Germany. We arranged a flying course for Army personnel resulting in one course member going solo. It was an enjoyable and successful week with many badge claims. Our thanks to all those who helped.

We are negotiating the design and production of a twin-drum winch, hopefully for the next season. Our thanks to Paul Winterton and Hamish Rogers for designing and building our Astir trailer.
A.H.

NORFOLK (Tibenham)

The new buildings are quite magnificent surpassing all expectations with their lecture room and flight offices. Our grateful thanks to all responsible.

Ivan Esgate's beautifully produced September newsletter shows the extent of our activities. Recently retired Graham Ashworth spent a few months instructing at a club in Kenya and Gerald Nunn crossed the Sahara by Land Rover to bring him home.

There was an expedition to Aosta and during the Aboyne visit Alf Warminger climbed to 25300ft above 8/8 cloud, so ending his season of 200hrs solo gliding.

We have bought a winch from the Royal Navy and hope to attract more *ab-initios* currently deterred by the cost of aerotows.
G.H.H.

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One of Peterborough & Spalding GC's new solo pilots, 73 year-old Frank Nixon (in the Bocian) is photographed with Ken Snape, a full Cat.

PETERBOROUGH & SPALDING (Crowland Airfield)

We had media attention when 73 year-old Frank Nixon went solo. Congratulations also to David Lake on his solo.

We now have our third club Bocian and in addition the club has a Pirat and two tugs, which makes us well equiped for our 65 members.

At an EGM we decided to buy some land and a sub committee is looking for a suitable site.
M.J.

SCOTTISH GLIDING UNION (Portmoak)

At our Christmas dinner-dance George Peddie was presented with the Service salver and flying awards went to Richard Allcoat, Alan Bauld, Tom Docherty, Colin Hamilton, "Tiny" Irvine and Brian Scougall.

Congratulations to Nick Wales who was sent solo by his grandfather Jim on his 16th birthday. Also to Keith Inglis, Isobel Lindsay and Stan Perry on their solo flights.

We are sad to lose the services of Peter Copland, a director and treasurer for many years, who has resigned because of ill health. We are grateful for his stewardship through the bad times as well as the good. We hope Hamish will return as our course instructor for 1989 and we welcome Darren Powell, our summer tug pilot.
M.J.R.

SOUTH WALES (Usk)

Bonfire night was again a great success. Our winter lectures are on Saturday evenings during February and March.

Rod and Maureen Weaver have their Bronze badges; Mike Bryan has gone solo and Dave Jeffries has inaugurated the 100km triangle at Usk.

At the AGM the award for outstanding club effort went jointly to Mo and Ken Counsell. Peter France collected the greatest height gain award with the first Diamond flown from the site.
L. R. B. & J.M.B.

STAFFORDSHIRE (Morridge)

We now have an impressive ditch across the field and the rate it fills with water augurs well for future drainage.

We welcome back Tony Dodd after a 14 year lay off. He is a solicitor who helped pilot us through the difficulties of forming the club so never really lost contact.

The Portmoak expedition was only notable for John Burke's 5hrs. The rest of the month was a virtual wash-out but Colin Ratcliffe, CFI, had good wave at Aboyne.
M.J.P.

STRATFORD ON AVON (Snitterfield Airfield)

Membership continues to grow. Congratulations to Caroline Coates, Mike Calder, Geoff Butler and Steve Oerton on going solo and to Tony Edlin, Chris Roberts and Peter Kenealy on their AEI ratings.

Our winch is giving excellent launches, particularly with the prevailing WSW wind when we find the small ridge to the south gives many flights of respectable duration.

Thursday flying and trial instruction lessons start in the spring.
H.G.W.

SURREY & HANTS (Lasham Airfield)

Our 50th anniversary was celebrated at a dinner in Guildford on November 12. Ann Welch was the guest speaker and amusingly described some of the exploits of early members in days when it was possible to construct a glider trailer in two hours (with the use of a handy telegraph pole). We also took the opportunity to say an official farewell to Derek Piggott who received a standing ovation. Our thanks to Mike Wilson and his "volunteers", particularly Alan Hardy, who organised such a splendid evening.

We have bought our fifth K-8 making the club fleet the strongest ever at 12 machines. Despite poor weather we have had a sound financial year and ordered a second Discus for this summer.

We welcome our new CFI Terry Joint whose experience and enthusiasm promise to contribute to a healthy future.
C.G.S.

SWINDON (Sandhill Farm, Shrivenham)

Although wet and windy 1988 has been successful for *ab-initios* with three more going solo - congratulations to Martin Sawyer, Linda Inches and Geoff Wirdnam.

Having soloed earlier in the year, Phil Atley, Graham Huggins and Les Colclough have their Bronze badges.

The Christmas dinner-dance at Blunsdon House Hotel was a great success. Our thanks to the organisers, Colin Winnall and Lindy Wirdnam.
J.P.A.

TRENT VALLEY (Kirton-in-Lindsey)

We now have aerotowing with our Super Cub as well as winch launching and pilots from other clubs are welcome. Our annual dinner-dance is at Northorpe Hall on February 24.

Some syndicates have had problems with field mice setting up winter homes in their gliders.

Congratulations to Alan White and David Rendall on going solo in the K-13. David went in 23 launches after a break from gliding of 2½ years and was launched by his father, Barry.
L.W.

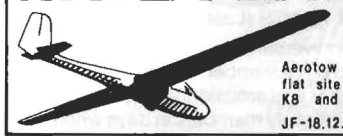
WELLAND (Middleton)

Winter expeditions are planned to Dishforth and the Long Mynd. Winter work includes building

Nick Wales of the Scottish Gliding Union who went solo on his 16th birthday.



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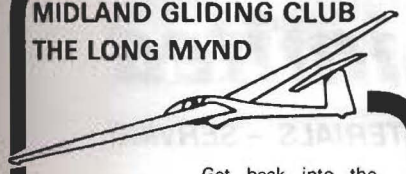
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Congratulations to Neil Honey on going solo.
R.H.S.

WOLDS (Pocklington)

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Despite the bad weather 1988 was a good year for us with a record number of new members, launches and cross-country kilometres giving one completed Gold badge, one 100km Diploma, 22 Silver legs and many Bronze legs and solos.

After the great success of our Two-Seater Competition with over 3000km flown, we look forward to seeing you all at the Comp this year from August 20-26. (See the report in this issue.)
M.&S.

WYVERN (RAF Upavon)

A fortnight's *ab-initio* course was run in September by Gerry Sturgess, Roy Gaunt and John Bradley for ten MoD scientists from Boscombe Down. Due to weather and military activity there were only six flying days but 400 launches and six solos including Gerry's son Ian. Congratulations to them all.

Our thanks to Paul Lutley for organising the Christmas dinner in Upavon followed by disco in the clubhouse. The first award of the Barry Perks trophy for endeavour went to Pat Hemsley for his contribution in refurbishing the winches and MT.
D.B.

YORK GLIDING CENTRE (Rufforth Airfield)

As you can see we have changed our name (previously Ouse GC) so we don't have to keep explaining where we are! If you want to soar the Vale of York and enjoy the holiday amenities of York you know where to come.

Our autumn and early winter weather was an improvement on the summer with a number of pilots reaching solo standard. The Bronze badge course is well subscribed and a steady increase in membership means our instructors will be well occupied with *ab-initio* training through the spring.

While awaiting our usual share of winter wave we are developing our skills in dual tows.

We are becoming increasingly busy through the week and are grateful to Lyn Wetherhill and Tony Simms, our full time office secretary and CFI, for their constant hard work. Flying statistics for 1988 have broken all previous records.

We've made a lot of progress on the ground too with the completion of our workshop, store and parachute room, mains electric supply to the caravan park, lighting, paths and tree planting on our picnic area.

We had a fine time at the annual dinner-dance with trophies awarded to Mark Boyle (best cross-country), Don Atkinson (longest retrieve) and Meg Stark (best gain of height), all from Rufforth.
C.R.

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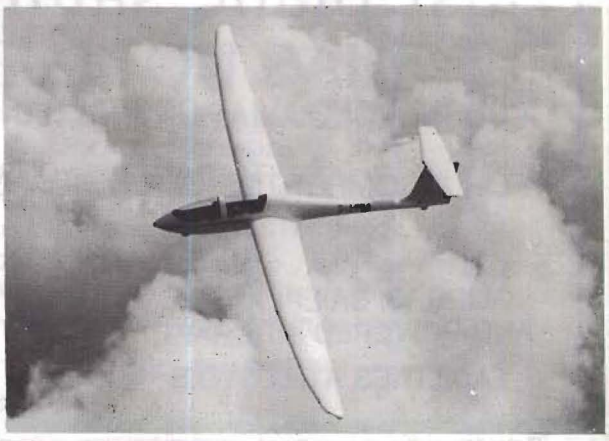
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