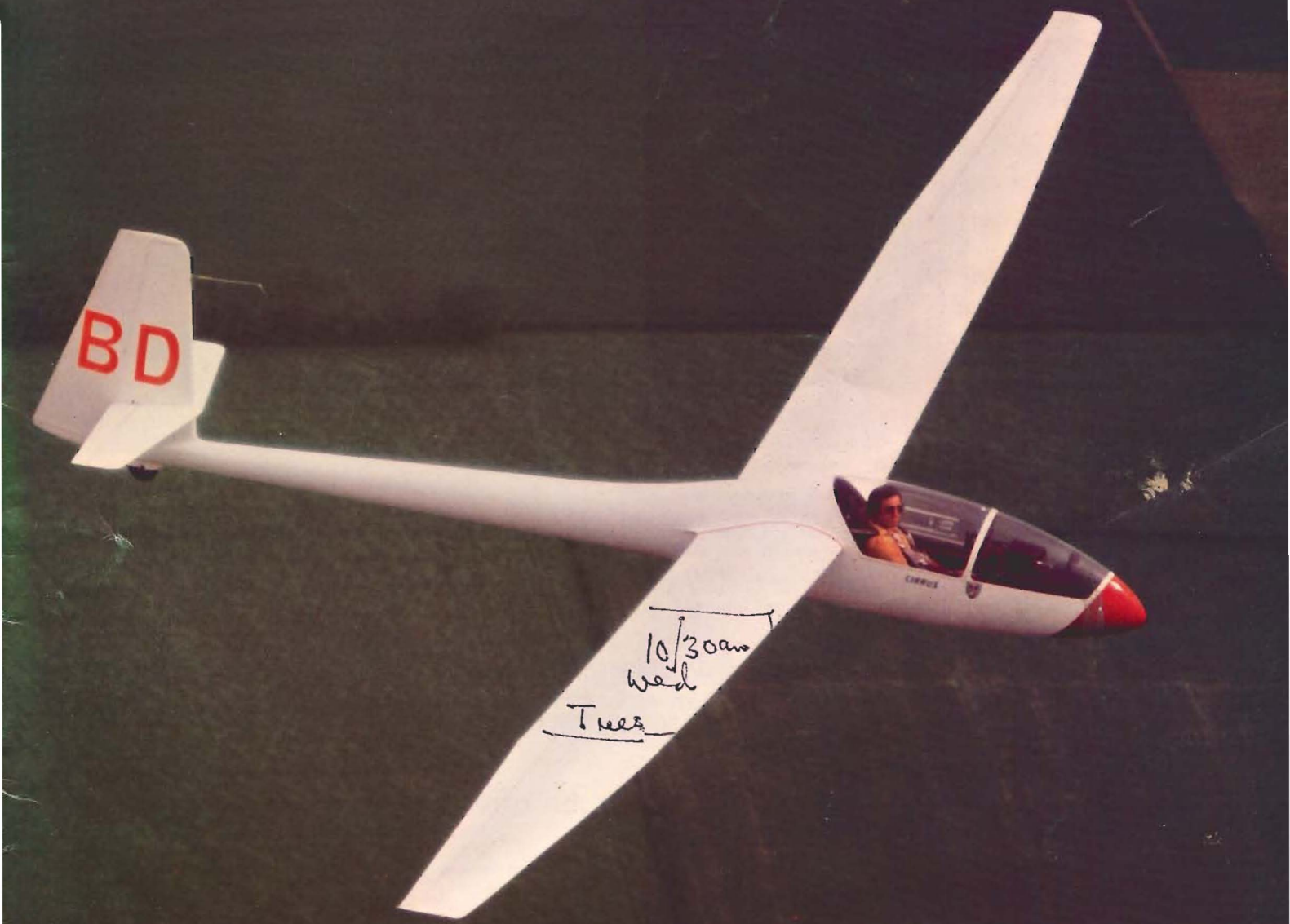
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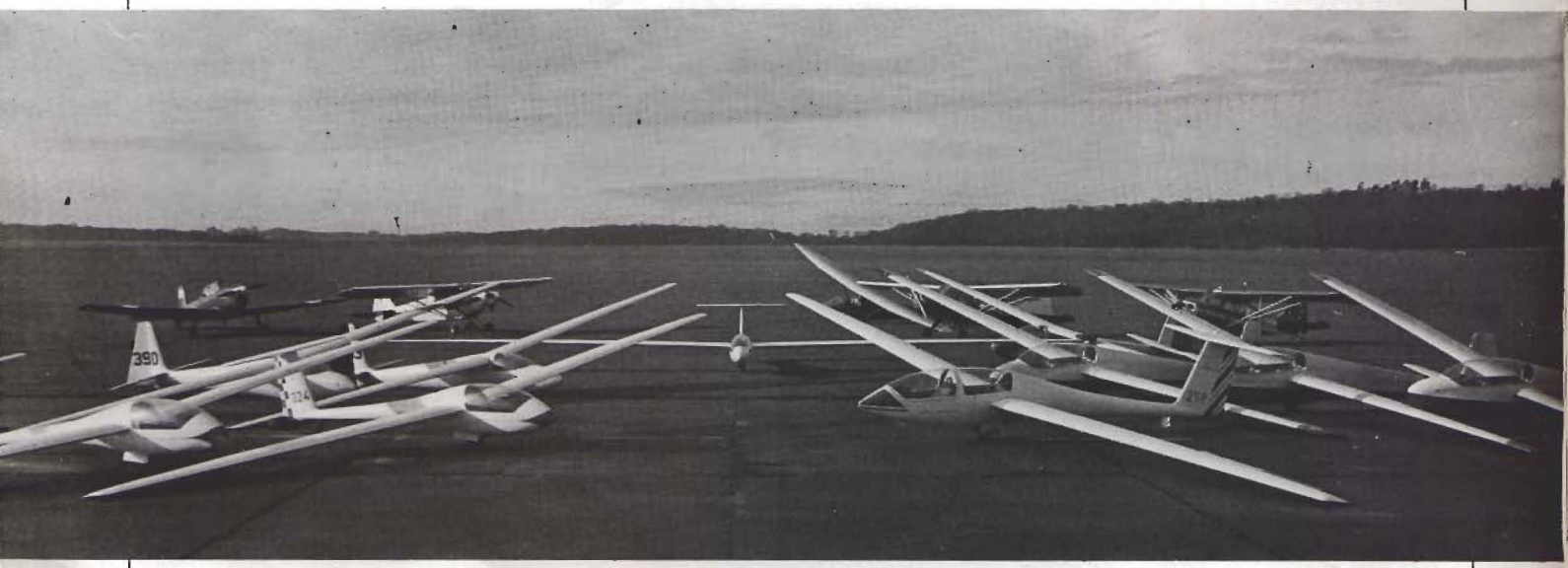
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Magazine of the BRITISH GLIDING ASSOCIATION

BGA 50th ANNIVERSARY YEAR, 1929-1979

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Chairman's Report, 1978

ROGER BARRETT

1978 was the year George Lee won the World Open Class Championships for the second time. So in one respect 1978 was highly satisfactory. Back in Britain, however, about 75% of all the cross-country soaring was still done from just 15% of our clubs. We would like the majority of our members to have the opportunity to do more cross-country flying, and my report this year will show that the BGA has started taking action to try to improve the *quality* of gliding being done at most of our clubs.

The year started well for George Lee when he received an MBE in the New Year's Honours List; we were even more delighted when he came back from Chateauroux still World Champion. This is the first time anyone in the Open Class has won twice in succession. Our congratulations also go to Bernard Fitchett who finished fourth in the Open Class after winning four of the 11 tasks, and to Dickie Feakes (Manager) and everyone else who contributed to our very successful result. Politics entered into gliding again when the Sports Council, acting on instructions from its political masters, refused to grant aid the British Team because South African pilots were competing. Contributions from many club members as well as from sponsors enabled us still to enter a full team but this action has shown very clearly that it would be foolish to rely on any financial help for future world events from government sources.

A soaring flight for Prince Charles

In June HRH The Prince of Wales, President of the Royal Aero Club, made a private visit to RAF Bicester and flew in a glider for the first time. Appropriately Prince Charles's instructor was our World Champion and they managed to soar locally for a couple of hours in poor weather. In contrast really superb conditions in South Africa at the turn of the year were put to excellent use by Con Greaves and Chris Simpson when they broke two world multi-seater records: triangular distance of 762km and 750km triangle speed (104km/h).

The 1978 summer was not a good one for gliding: an all-time high of 10 905 flying members totalled about 110 000 hours in the air, only two per cent more than in the previous disastrous year; we are certainly due for a proper summer in 1979. The statistics for 1978 show the continuing trend to private ownership; very nearly a 30% increase in the last three years, and privately owned gliders are now about 70% of the total being flown in Britain. Nevertheless it is clear from the figures quoted at the beginning of my report that more club members should be given a better opportunity to taste for themselves the delights of cross-country flying. Without any doubt we are lagging behind other countries in this respect.

Our BGA Committees have been spending a lot of time thinking about what we can do to help solve the problem. The answer is certainly not going to be an immediate one because it involves a number of factors - the policies of club committees and CFIs towards club fleet planning, glider usage and the training of instructors amongst them. The BGA has, however, decided to make a start and the first sign of this is the purchase, with generous assistance from the Sports Council, of a Twin Astir. The Instructors' Committee and our professional coaches are already using this glider for more advanced training than has hitherto been possible. Other changes are being planned and these will become evident very soon: our aim is to show as quickly as we can that longer, more enjoyable, soaring flights *are* possible for those who are willing to accept the challenge.

Priority given to smaller clubs

This has been a busy year for the Executive Committee whose members have tried to visit as many clubs as possible. We gave particular priority to the smaller clubs away from the south of England as their contact with anyone from the BGA is necessarily limited. I hope the club members we managed to talk to found the discussions useful - certainly we learnt a lot. If I had to pick one club from amongst those I visited it must be the Ulster Gliding Club. With less than 50 members, and with the odds stacked against them in Northern Ireland at present, they have moved from near Belfast and are now getting established at a new site close to Londonderry that has splendid potential for wave flying. As the only BGA club in Ireland we wish them every success.

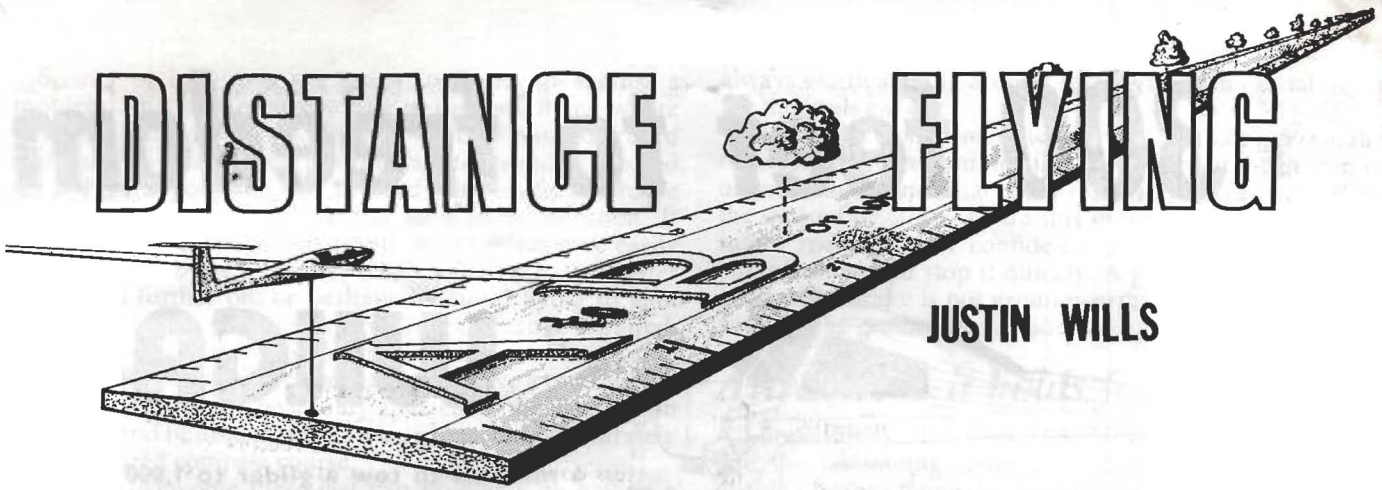
BGA officials and committee members also had plenty of opportunity to meet pilots at the Northern Regional Conference organised at Ilkley in Yorkshire by some of our northern members, and at the 1978 BGA Weekend held at an Oxford College where BGA Diplomas were presented to George Collins, Peter Saundby, John Welsh and Tom Zealley.

New system of registration letters

After taking account of the views of those pilots who commented on the "Green Paper" we produced on the problems of glider identification, a decision has now been taken to alter the existing scheme and the new system of registration letters that will remain permanently with gliders comes into effect next autumn.

I sadly record the deaths of our President, Philip Wills, and of Rex Pilcher, Chairman of the BGA's Airspace Committee. Philip's contribution to British gliding is published elsewhere and is without parallel. The Philip Wills Memorial Fund has been established to honour his memory. Rex Pilcher was a young man who in the short time he worked with us showed a talent and a dedication to our sport that everyone who met him admired. We are indebted to John Ellis for immediately volunteering to look after our airspace interests until a successor to Rex could be appointed.

DISTANCE FLYING



JUSTIN WILLS

Few British pilots are better qualified to write about this subject. On August 1, 1976, Justin flew his Std Libelle from North Hill, Devon, to Trier in Germany, a distance of 718km, to break the UK straight distance and the Restricted Class records. The account was in the October, 1976, issue of S&G, p194.

I want to start by defining what I mean by distance flying: it is simply where the primary objective of the flight is to achieve or exceed a certain distance and where the function of speed is secondary in that its only importance is to enable you to achieve that distance before the onset of unsatisfactory conditions, *eg* nightfall. This definition is almost the antithesis of modern competition flying where the achievement of distance often counts for as little as twenty-five per cent of the total marks awarded on a given day. This emphasis on speed has resulted in little discussion of the techniques involved in distance flying, despite the fact that it is still widely practised both by those attempting records and badge legs as well as those competition pilots who find that due to the vagaries of the weather they cannot complete their task. I hope, therefore, that this article will go some little way to increase the amount of debate on this subject.

Preparations must be extensive

One problem in discussing distance flying is the often quoted adage that any fool can drift off downwind on the right day. I would suggest that this statement is as mistaken as the last fool who drifted off on the wrong day; the last fool who drifted off on the right day was no fool. Success in most fields of human endeavour befalls those who combine confidence backed by ability and opportunism backed by preparation. Nowhere in gliding is this truer than in distance flying where, due to the wide range of possible eventualities, the preparations must be similarly extensive.

First you have to determine the objective, whether it be 300km, 500km or 1500km. Then how that objective can best be achieved – by out-and-return, triangle, straight distance or the seldom used but very satisfactory dog leg, which often enables a flight to be fitted into a limited land mass and weather area. Remember that the dog leg can be in any direction, even 180° from subsequent track, so that a short upwind leg from release can enable you to both evaluate the day and add valuable distance. These considerations will have to be weighed against the range of starting points available to you and the meteorological conditions.

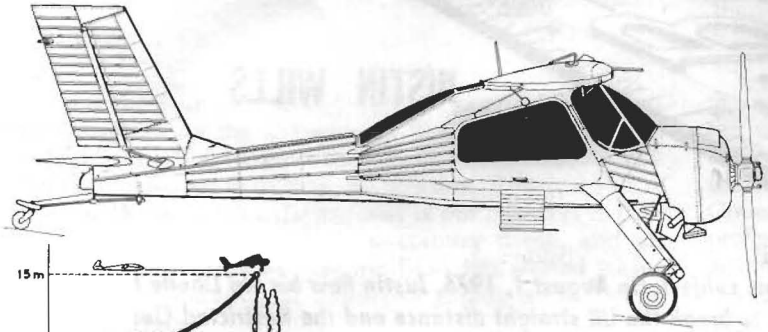
Having established the right place, the essential factor is to be ready at the right time. More distance flights have failed due to problems in this area than for any other reason. The only way I have found to overcome this is to have as much as possible ready before the day of the attempt. Readiness presupposes basically sound equipment such as serviceable car with full fuel tank, efficient trailer with correct tyre pressures and a crew who knows exactly what to do, what the radio proceedures are and what the retrieve system will be. Since you are intending to use the whole of the soaring day you must be ready before the first lift commences. I try to have the minimum to be done on the day of the flight. If this can be reduced to rigging, taping, filling up with waterballast, sealing and signing and installing the barograph, making the declaration and photographing the start board – even this can take over an hour with a 15 metre glider – so much the better. Assuming that you want to have achieved a state of readiness half-an-hour before take-off and also that you have had to drive to the starting point, even this schedule requires a fairly early leap ex-sheetsville: as Dick Johnson says: "Those who would fly like eagles cannot consort with owls".

You should aim to release the tug at or near 3281ft above your intended landing spot. If you do not know where that will be it is safest to stick to sea level. Ensure that the tug pilot makes a careful note of the position of your release. Once you are off-tow your main preoccupations for the rest of the flight will be to keep an accurate check on your position and constantly assess the conditions ahead. I like to use both quarter million and half million maps, but for really long flights this can result in a lot of paper in the cockpit, and therefore it may be best to keep the quarter million covering only the starting area, any suspected problem area and your probable landing area. Prior to a flight I always study the proposed route with an eye to identifying possible decision points and mark these on the map. Over the years I've tried to build up knowledge of problem areas such as the Bridgewater Plain, the Vale of York, etc, so that an appropriate diversion, if deemed necessary, can be made in good time.

If conditions are good you should be able to cover considerable distances without circling, using helpful lift patterns along your route. The barograph trace of a really fast flight in these conditions will not resemble an advertisement for *Jaws*, but rather the back molars of homo sapiens: plateaux with rather jagged rims divided by gaps as you dive from one cloud street to the next.

Assessing conditions ahead can be difficult when you are constantly rushing along at cloudbase and in these circumstances I find cloud shadows on the ground very useful.

300 feet to freedom



WILGA

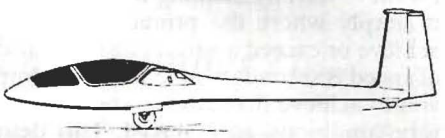
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5 minutes for the whole towing operation.

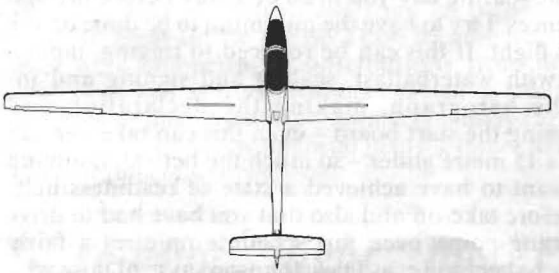
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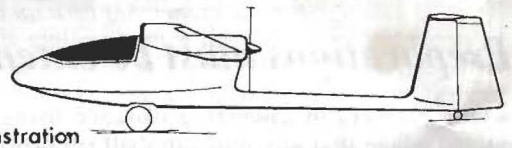
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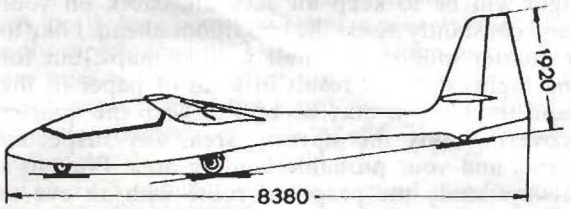
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Sooner or later you are going to come up against a problem. This is particularly true in distance flying where your flight may well cross different weather systems. Faced with this, your immediate priorities are to stay airborne and get as high as possible. I try to classify problems according to their geographical extent and their likely duration. If either of these are relatively small, the problem may easily be overcome by slowing down till you reach the better conditions further on, or perhaps by cloud flying to gain additional height so that you have the extra range required. To do this successfully you must be confident of being able to break off your climb below icing level, have a total energy system which will not be unduly affected by the moisture in the cloud and be able to straighten up reasonably accurately on the desired compass course.

I try to overcome these last two problems by having a switch so that I can change from the Brunswick tube to a normal diaphram total energy system, and by having a small non-magnetic disc mounted behind my Cook compass on which I have drawn lines corresponding to rate one turns on my turn and slip. I therefore only have to set the Cook in accordance with one of these lines and I know that provided my turn and slip is on rate one, I have an immediate indication of my heading. I do not think it particularly important that a compass should be accurate in terms of direction so long as you make a note of the indicated headings required on any given flight. This may be my excuse for never having had much success with trying to swing compasses!

Anyway, the important thing with problems is for you to discover them rather than *vice versa.* A sudden drop in thermal strength is either an indication that you should press on or that it is time you slowed up. The decision as to when to stop and when to go is one of the most difficult in our game. If the problem ahead looks really bad, you may be forced to consider whether there is any other means whereby you can continue the flight. First, there are man made thermals, for example steel works and stubble fires. Secondly, if you are anywhere near a coast it may be worth gambling on a helpful sea breeze which can often continue to work in deteriorating conditions right up to the time it starts to drizzle. If there is a wind it may be worth diverting to any possible hill soaring area and in these conditions it is always worth sniffing around for wave which can cut in as the thermals cut out.

Inevitably, there comes the moment of landing. From the outset it should be assumed that this will be at the extremity of your range, since that could result in your just exceeding the desired distance. To do this in a reasonable degree of safety requires both confidence and ability to land the aircraft short and stop it quickly. A glider without a really good wheelbrake is not groundworthy and it is on contact with the the ground that accidents happen.

Attractions it holds for me

I hope this article has given some idea of the complexity and the fascinating series of in-flight decisions required during distance flying. In finishing I think I should outline the attractions that this pursuit holds out to me.

First, there is the emotional aspect: the achievement of primeval, simple, physical distance, easily understood and visible from the cockpit as it occurs, has an attraction to me which exceeds the possibly more sophisticated result that occurs when you include the time factor in the equation. Secondly, there is the exhilaration of flying great distances without circling when things are going well, giving an impression of perpetual motion and a heady feeling of freedom. Thirdly, there is the element of adventure in every flight with its unknown outcome and its satisfaction, should it turn out well. Fourthly, there is the potential; I believe that with existing equipment we can improve the UK distance record by fifty per cent – I doubt whether a figure of twenty per cent can be applied with confidence to most of our speed records.

I also believe the world distance record can be greatly improved by lengthening the soaring period involved, either by carrying out the flight in extreme latitudes during their summer, or by the flight spanning more than a single soaring day, the night being spent, for example, hill soaring. Such a flight might be somewhat easier in a high-performance two-seater.

Finally, there is the impossibility of it all. Successful distance flying involves the combination of so many factors that the chance of them all coinciding on a given day seems awfully remote. But you can try.

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SOAR ULSTER SOON

BOB RODWELL describes Bellarena, Northern Ireland's Diamond mine



Binevenagh from above its south-western slopes, looking north towards Benone strand. The sea-cliffs can be seen, from behind, running off the picture top right. The field is just off the left-hand edge. Binevenagh is 1260ft asl and the lake on top is public and stiff with trout. The strand is a great place for sand yachting and beach-casting for bass.

Recently I asked a gorgeous geologist what she could tell me about Binevenagh, the table-topped massif which marks the end of Northern Ireland's Sperrins range in a three-mile length of sea cliffs to the north and a multi-faceted eight-mile ridge facing NW, through W and SW to due S.

With a melting smile and scarcely a pause for breath she told me it was made up of quartzites and mica-schists and was a continuation of the Scottish Highlands. It comprises Dalradian and Moinian metamorphic rocks which leave the west of Scotland to dive under the North Channel, surface for a quick breather in north-east Antrim, plunge again beneath a tertiary lava plateau before popping up for good to overlook our new gliding site.

It's fruitless now to speculate what was in the mind of the great Creator when He drew this lee-wave diagram in fluid rock during a warm spell some generations back but if it was soaring, which the geometry suggests, He got the design exactly right. The full range of Atlantic winds, from SSW to due N, batter unavailingly against Binevenagh, to be sent skywards by some conventiently aligned precipice, several of which alternate with more gentle slopes in the middle and at the southern end.

Flew Oly to Scotland

Even light sea breezes wafting in across the beach beneath the mountain's northern end after a convective spell are soarable on the northern cliffs. More substantial winds on to the ridge from the SSW to NNW charge first over mountains in Mayo and Donegal, which often send them waving merrily on their way. In the early 1960s Dmitri Zotov hooked one of these waves to fly an Oly 2B to Scotland at 15 000ft during the few daylight hours of December 27.

And when winds come from anywhere in the eastern half of the compass rose, from due N to SE, and thoughts of ridge soaring are far from mind, Binevenagh itself often sets up its own primary wave close to the sharp escarpments in the lee.

Beneath the mountain on the western side is the triangular, sandy, thermal-spouting Magilligan peninsula, a narrow strip of dunes and a big expanse of flat, well drained, grass fields which are an outlander's dream. The peninsula ends in Magilligan Point, the Northern Ireland side of the 1200 yard-wide mouth of Lough Foyle, an international waterway. Beyond the usually unruffled waters of the lough are the mountains of Donegal, and Malin Head of shipping forecast fame.

Beneath the northern cliffs and continuing out to the point are the gently curving Downhill and Benone strands which together comprise an unbroken six-mile run of hard, fine sand and the finest beach in Ireland. To the south the flat farmland of the peninsula is continued through Dutch-engineered polderlands right round to the Sperrin range which curves away to the south-west.

Due north, beyond the beach, there is no recognisable turning point before Tiree and the Outer Hebrides but to the south, with a long stretch of Striedieck-style Appalachian ridge running along the Sperrins to start you on your way, is the whole length of Ireland to Cork, Cobh, Bantry Bay and the Blarney Stone – all Gold distance plus.

So much for the setting: the Ulster GC is now in the 48th year of its love affair with Binevenagh but has only recently moved in to take up residence. We began flying off Downhill strand in 1932 and since 1936 have been licensed by the Crown to operate from Benone strand beneath the NW corner of the ridge. Until 1976 we mounted occasional aerotowing or autotowing operations to fly off the beach whenever the winds looked set to blow steadily from the west or north-west, but we were never there to try the now-proven soarability in other winds too.

Beach operations, though exhilarating, have their frustrations, not least when bright weather brings hordes of trippers and scatters their cars along the strand. They are hard on equipment too and for the 12 years we owned it, we never chanced the all-metal Blanik on the beach.

I'll spare you the details of the disappointments we incurred in our search to find a landward site in the area, save to say that the objections of a giant German company which prevented us using an otherwise disused runway next to its factory were really a favour in the end.

For the Bellarena field we then found fits the bill perfectly. We have an amicable arrangement with a delightful landlord who, unasked, laid on a piped water supply just before last summer's barbeque and topped it off with a delivery of Bushmills whiskey to dilute it with. The field is immediately beneath Binevenagh's highest and most imposing face, which looms 1260ft above our eastern threshold. The top 300-400ft are vertical. The field is close to the point where the ridge turns from facing W to SW and S.

You'll find us at 57°07′ 40″N 06°58′W (C 660 317 on the Irish OS grid – and north *is* at the top). Sheep-grazed, with obstruction-free approaches, the field is about 1100 yards long, rough in parts but usable over more than 800 yards. Orientation is E-W and climb-out in the prevaling westerlies is over the uninhabited lough shore and the waters of Lough Foyle so we avoid noise complaints.

Facilities are few – a basic caravan with gas rings, the afore-mentioned standpipe but, so far, not even gorse bush cover for private purposes. It's a quick dash by car to the local, or a variety of friendly B&B farmhouses in the neighbourhood for those.

When this is read, we should have a small hangar on the site. Since the move from Newtownards at Easter last year the tug has had to be hangared elsewhere. We have our eyes on a

nearby vacant cottage for conversion into a residential clubhouse in time.

For £20/yr we retain our licence to operate from Benone strand. Whenever the sea cliffs are working gently and there's no hope for the lesser performers making it back the few miles to the field, it's an easy matter to land on the beach and re-launch from there. The strand gives us occasional autotow launching opportunities too, with Parafil ropes as a useful stand-by facility when the tug is down for C of A.

Soon we will have winch launching as Chairman, Gordon Mackie, is building a winch to be operated by this summer. In any moderately fresh westerly, a launch to 1100-1200ft should set one comfortably for an easy downwind dash to the lift zone on the ridge.

Yet a fourth means of launching may follow within a year or so. We have a bungey and hope to obtain the use of a suitable bit of the ridge top to revise a launch method the club used back in the early 1930s.

But what, I hear my English readers ask – accustomed to making tired jibes about everything Irish while sinking Guinness by the tanker-load – but what about that awful Irish weather? It is, of course, never anything like as bad as the lore suggests. It was, by general consent, a very bad year for gliding in 1978 all over the British Isles and NW Europe too. Yet we moved to Bellarena at Easter and had only one non-flyable weekend by December 3/4. *Every other weekend* we had consistent and sometimes excellent local soaring, with waves to 12 000ft; some thermals to 8000ft, sea breeze frontal lift to 5000ft and ridge lift galore. Can you, honestly, say as much for where you fly?

This was written just after we resumed flying on February 3 after a two-month stand-down. The first weekend's flying consisted of day-long ridge soaring to 3000ft on the first day – high enough to span the gap over the ridges further south – and some tantalisingly weak wave after an overnight 180° wind reversal on the second day.

So why not come on over to soar in Ulster soon? We are working, with some success, on the North Channel shipping lines – BR, P&O and Townsend-Thorensen – to do something about their penal trailer rates and extend the same concessions that they offer on their routes between Britain and the Continent. BR will now accept car/trailer combinations on their commercial-vehicles-only boats between Stranraer and Larne, at a lower per-foot rate, and T-T are looking at some concessions favourably. We would love to see you, aircraft and all, and guarantee that if you don't fall in love with us, you'll love our site. You might find the clinching factor if you look at an airmap and see how uncluttered our airspace is, compared with yours.



The ridge from the far end of the field showing the main western face and the southern slopes to the right. In the foreground is the UGC's Twin Astir, in service since May last year.

But the dangers? I hear you ask – bombs, bullets and all that? As an Englishman who's been living in Belfast since before the first half-brick was thrown, I've always found it difficult, if not impossible, to convey to people on the other island just how utterly normal lives most people here live. There was a period, it is true, from about 1972 to early 1975, when there was some slight degree of random risk in the major towns.

Those days, happily, are largely gone and my family's life is no more fraught, and arguably less so, than if we were living in Bournemouth, Barnsley, Bexleyheath or Birmingham. When BGA Chairman, Roger Barrett, visited Bellarena last September, he commented that in a drive of about 80 miles he saw only two reminders of our "emergency" – a police station surrounded by a high wire screen, and a Land Rover full of redcaps as he drove through Londonderry.

There are, I must confess, some disadvantages if you take up this invitation to soar Ulster soon. The price of beer is scandalous and, except for stout, the quality is uniformly foul. But in compensation our spirits tot is larger than yours though the price is the same – and there's nothing better to thaw out the frozen pilot after a wave ascent than a "hot Irish" with a generous pinch of cloves and a peat fire gently cosseting the feet.

* * *

Footnote: I'd hate anyone to read an unintended divisiveness into any of the above. What goes for Northern Ireland gliding goes for soaring in the Republic too. We share the same weather, the same wave generators, the same uncrowded skies, safaris and socials and the same ghastly beer. If you visit Bellarena you'd be wise, and as welcome, to visit the Dublin, Kilkenny, Clonmel and Kerry clubs too.

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HAZEL SAUNDERS

Landing out can be a serious business and until we have actually had to do it, we tend to keep our fingers crossed and hope to meet the challenge when it arises. Even the pundits must admit that their first one caused at least a slight up-rating of the heart beat. However it can have its lighter moments and my first appointment with fear turned out to be quite an ego-boosting experience.

It came about when, after floating around in weak wave for a time, I descended through a hole in the clouds and – gulp – didn't recognise a single landmark. Naturally whilst taking in the magnificent cloudscape below it had not occurred to me that some idiot might actually move the airfield in my absence and, worse than that, move it so far away that it was not even in sight. Well some goon had and, remembering the old adage "Don't just sit there, panic", I duly panicked. Not having the faintest idea where I was going, except downwards of course, I searched frantically for something to give me a clue as the altimeter relentlessly unwound from 4000 to 2000ft.

"festooned with electric fences or rampant bulls . . ."

Down below there was a multi-coloured selection of postage stamps that could only laughingly be called fields by those who did not have to land in them, and anyway it was a safe bet that every one was festooned with electric fences, telephone wires or rampant bulls. Well it had to be one of them and there was some consolation that they were visibly growing as the altimeter now sneered its reading of 1500. Picking two of the biggest fields close together in case my first choice proved wrong, I mentally turned to Derek Piggott's chapter on field landings and flew a nice wide circuit of my first choice whilst still within range of the second. Finding no hazards apart from not having a clue as to wind direction I made, for me, a copybook approach over the low hedge to roll along the ground nicely with full airbrakes. Watching the distant hedge getting larger every minute I realised that I knew the wind direction now, it was right behind me! Intimate contact with the hedge was avoided with a low speed ground loop and – phew I had made it. Only one question, where the hell was I?

Having parked the K-6 with its wind wing held down by my parachute and ballast, I was approaching an elderly couple peering anxiously over the roadside hedge when there was an immediate boost to my ego as I heard "Oh look, it's only a girl." This might not have pleased a member of the women's lib but to me, a mother of two teenagers, it was sheer music. To the question "Are you all right love?" I nonchalantly replied "Yes thanks, it is only my pride that is hurt", and then somewhat more sheepishly asked where I was. I was only about 12 miles from base. By now the first contingent of children had arrived so picking the toughest looking lad to guard the glider, I trotted off to the village.

Looking for a house with telephone wires I remembered my handbag was safely in my husband's keeping back at the airfield and that I didn't have as much as a stiver, whatever that is, in my pocket. Moral. When flying have at least a copper or two handy for 'phone calls. Finding a householder who believed me (you try knocking doors and telling startled citizens that you have just dropped out of the sky), I called base only to have the misfortune to find my 17-year-old son on the other end of the line. Himself a bronze C pilot who has not yet got lost, he greeted my call with what could only be called hoots of derision and it needed a reminder as to who paid his flying bills before I got the respect which I felt was my due. Just the same, I made a mental note in the hope that I might be on the end of the line when he has to call in some time.

I returned to the field to find news of my arrival had travelled quickly and from the number of children being held at bay by my appointed guardian, I reached a conclusion as to how the villagers spent the long winter evenings – come to think of it I had seen in a recent S&G it was a good substitute for gliding. The field now looked as if the school fête was under way but at least my sentry had prevented the wings being used as a sort of heaven sent see-saw as I feared might happen with an unattended machine. My arrival provoked an immediate response when I was recognised as the intrepid aviatrix and for a while I bathed in the hero worship of my new fans who seemed to regard me as a combination of Sheila Scott and Amy Johnson rolled into one, whilst the more daring pushed autograph books under my nose for signature. The gloss was taken off a bit when one of the little boys told me that most of them would write an essay at school on my landing and the teacher would not believe them unless they had an autograph or something to prove it. I would like to have seen some of those essays, I bet Biggles wouldn't have been in it compared to their own real life heroine!

Well the glory only lasted for about an hour, my fan club revelling in the words of flying wisdom dispensed so liberally whilst a willing Mum plied me with hot tea until the retrieve crew arrived led by a grinning teenage son. Suffice to say the aircraft was quickly de-rigged and stowed into the trailer and I mentally awarded my literary prize of the week to the knowledgeable little chap who seeing the K-6 safely stowed was heard to whisper to his less worldly companion: "It must be a jet, it hasn't got a propeller."

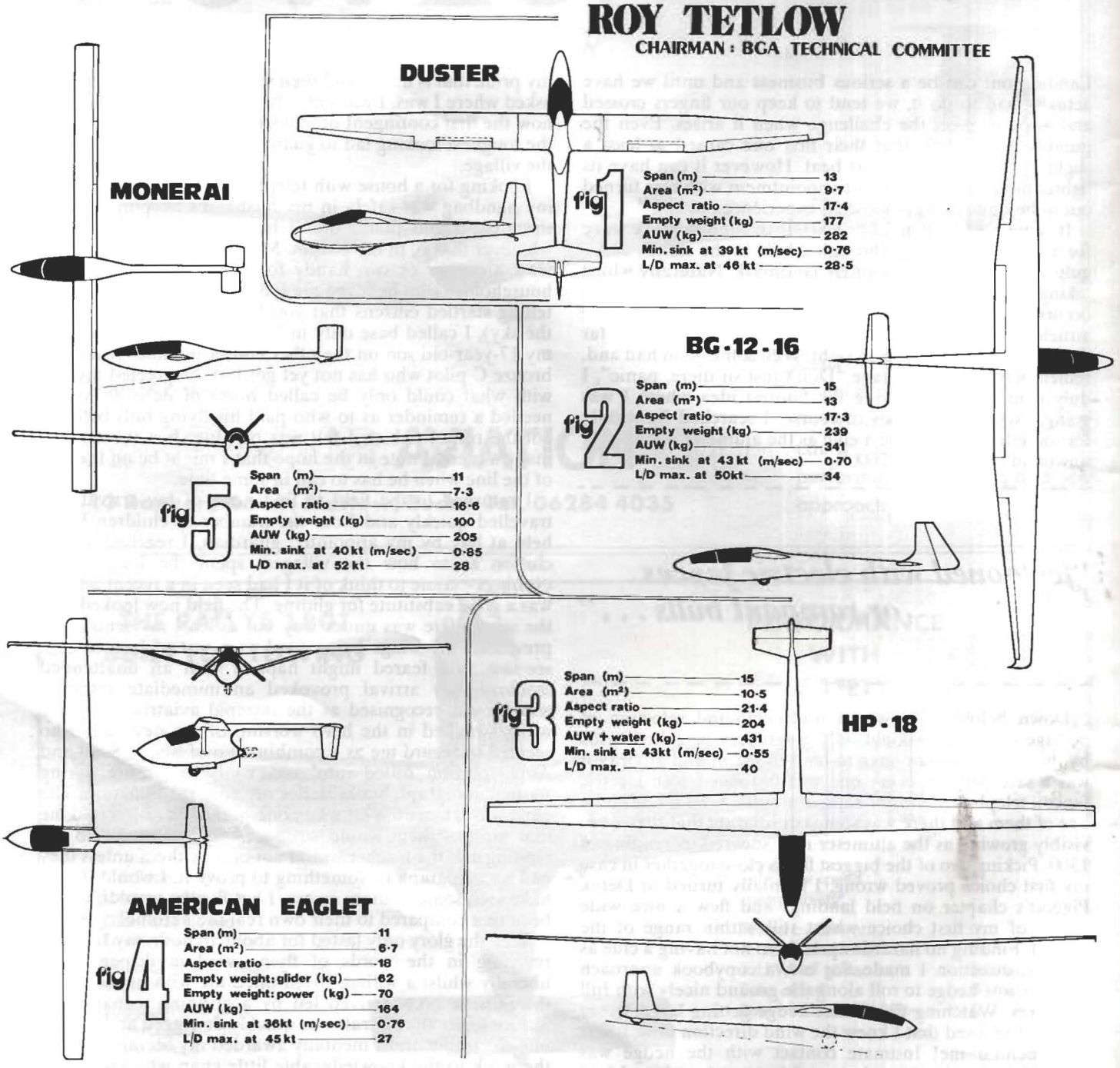
It was a whole two weeks before I landed out again.

Please send all contributions to S&G to the Editor at 218 Queen Edith's Way, Cambridge CB1 4NH – not to the BGA Office.

SOME THOUGHTS ON HOME-BUILT SAILPLANES

ROY TETLOW

CHAIRMAN : BGA TECHNICAL COMMITTEE



This is the first part of a two-part article on home-built sailplanes and sailplane structures in general.

Over the last few years, judging by the deluge of mail on the subject at the BGA and to myself, interest is growing in home-building. A few have been built in the UK in the last decade but they can be numbered on one hand, Manuel Hawk and Condor, Ken Holme's KH-1 and the resulting Halford KH-2 or Scorpion and the Dunstable group Kestrel two-seater. There are also a couple on the verge of completion, P. Wright's Micron and on another level the Williams Solar Sailplane. Much has already been written about the earlier machines and articles will appear on the last two. At this moment there are no plans available for a UK design.

At the Cranfield Institute of Technology we have carried out several design studies for sailplanes and sailplane structures (Ref 1, 2 & 3) but have not as yet attempted to build one due to lack of funds, time and available manpower.

The questions I am constantly asked are: what plans are there, which one should we build, how much will it cost, will it require special skills and how long will it take to complete? Yes there are plans and kits from the USA and what I propose is to review the current offerings. At this moment none of them are certificated by the BGA but in most cases having seen the drawings there are no structural reasons, with some modifications, why they should not be granted initially a Permit to Fly followed by a C of A if flight tests prove satisfactory. Their flying qualities can only be assessed "in the flesh" but we have no evidence to suggest that certification is not possible.

1. Duster

This is a conventional wooden structure which any skilled woodworker ought to be able to tackle. As presented it has a three-piece wing with a 7ft fixed-in-place centre--section which frankly for UK use needs to be modified, preferably to a true three-piece wing like the Pirat. The wing spar is also a solid, laminated, spruce from root to tip and cries out for modification to a box spar with its consequent saving in weight and expensive spruce. The original is of course simple to build but heavy.

Many of the control system details would benefit by minor modification to improve their structure and cost effectiveness, for example the elevator/aileron drive system could easily be made similar to the K-6, a model of simplicity, without compromising the basic design.

The materials specified in this design and the others can be converted to UK specifications and for those interested a list could be provided for specific applications.

Kits are available from DSK Aircraft Corp and full details can be obtained from the addresses at the end of the article. The kit prices range from $2000 to $2800 depending on the degree of fabrication and with the fully fabricated kit it is suggested that 900 hours would be required for completion. Plans are also available for scratch building and cost $80 from California Sailplanes.

2. Briegleb BG-12-16

This is also a basically wooden structure with in this case a two-piece wing and using simple construction methods. The design is a development of the 15 metre BG-12, using the same wing but with a new more streamlined fuselage retaining the triangular section rear fuselage. Many sets of plans and kits were sold for the BG-12 and there are several flying. About 60 sets of plans have been sold for the BG-12-16 and a few are under construction but not in the UK as far as we know.

Plans cost $95 and an information pack $2.50 from the Sailplane Corporation of America.

3. Bryan HP-18

This is an all-metal sailplane with a performance to match some of the glass ships and is based on Dick Schreder's earlier successful designs. The fuselage is based on the RS-15 consisting of a built-up aluminium tail cone running into a GRP front fuselage. The wing is a development of the earlier designs incorporating foam ribs, an extruded, machined main spar and bonded-on metal skins. Providing care is exercised during bonding, and the right shop conditions are to hand, this method is feasible but these methods cannot be successfully attempted in damp, draughty sheds! Many of the minor details will be familiar to those with memories of the HP-14. A series of articles on building this machine appeared in *Soaring* commencing in spring 1976.

Plans cost $150 and an information pack $5 from Bryan Aircraft and kits range up to $6000.

4. American Eaglet

This is one of a new breed of small sailplanes utilising modern construction methods. The rear fuselage is an extruded, thin walled aluminium tube connected to a bolted together space frame front fuselage and clad at the front with a cosmetic GRP pod. The strutted wing is also of novel design with a wooden spar and a full depth foam aerofoil section core which is sanded to shape using contour boards and a rather long file! The skins are then bonded into place and consist of a premoulded GRP leading edge section and premoulded glass skin, which come as a roll similar to aluminium alloy thus eliminating time consuming finishing operations.

Again, providing care is exercised and the right environment is available, this is a feasible construction method. Several details are in the course of minor modification and some plans are in the UK. There is provision in the basic design for a 16hp motor for self-launching.

Plans cost $150 from AmEagle Supply Co, excluding the motor.

5. Monnet Monerai

This is the third in a series of home-build aircraft and at present a powered version is being designed and built. Like the Eaglet this is a small sailplane with some new features and has a very similar fuselage construction, except in this case a welded, steel tube frame is used rather than a bolted one. The wing, unlike the Eaglet, is of constant chord (shades of the BG-135) and as a result it enables an all-metal design to be used with the minimum of expensive tooling. The wing and V-tail use pressed aluminium ribs and the wing has an extruded I-beam spar which is intended to be the basis of further designs. The skins of aluminium are apparently bonded to the spar and ribs and my previous comments apply.

Each wing panel is quoted as requiring only 20 man-hours to complete! Of the designs discussed this is probably the aircraft needing the least number of hours for manufacture. Whilst I haven't seen the detailed plans for this machine, photographs and general description suggest no insurmountable problems with structural certification.

Comprehensive kits from Monnet's cost up to $2900 and a monthly Monerai newsletter containing general information and tips from the builders costs $10 for 12 issues.

* * *

References: 1. Millman, A. – Design of a Standard Class Sailplane in Composite Materials – Cranfield Institute of Technology MSc Thesis 1971; 2. Graham, T. – Design of a 17 Metre Sailplane Wing, CIT MSc Thesis 1974 and 3. Williams, I. P. Cost Effective Light Aircraft and Sailplane Structures, CIT MSc Thesis 1976.

Addresses: Duster – California Sailplanes, Raute 2, Box 36-S, Placerville, CA95667, DSK Aircraft Corporation, 13161 Sherman Way, North Holywood, CA916605; **Briegleb** – Sailplane Corporation of America, El Mirage Route, Box 101, Adelanto, CA92301; **HP-18** – Bryan Aircraft, Box 488, Bryan, OH 43506; **American Eaglet** – AmEagle, 841 Winslow Court, Muskegon, Michigan 49441, Wicks Aircraft Supply Co, 410 Pine Street, Highland, Illinois 62249 and **Monerai** – Monnet Experimental Aircraft Inc, 955 Grace Street, Elgin, Illinois 60120.



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A PSYCHOLOGICAL PERSPECTIVE ON GLIDING

Part 1 – Accidents

KEITH A. NICHOLS, Department of Psychology, Exeter University

As physical skills go there is nothing particularly demanding about the basics of flying. Rather like driving it is a co-ordinated tracking task which most of us find to be within our grasp. But the complete act of a glider flight asks more of us than these basic physical skills.

The much less tangible activities that we call judgment, prediction, vigilance, scanning, monitoring for change and personal control are in high demand. Yet our grasp on these capacities can be capricious and when it slips we may become victims of the cold physics of flight, and the sometimes tauntingly elegant events that preceed an accident. (Although it was some years ago I am still pressed by the clear visual memory of my friend's Olympia arcing gracefully from 600ft into the beautiful spiral path of a spin and the subsequent suspended horror as I helped disentangle his badly broken body from the wreckage.)

If we are honest it is obvious that we all risk destruction in an accident. But at the same time it is equally obvious that some accidents can be averted, particularly if we were to take a more informed assessment of our physiological and psychological functions. Sadly we sometimes seem casual to the point of negligance about these. Will you note for example that our pre-flight checks run CBSITCB; whereas they should, I believe, be P-CBSITCB, where the P stands for pilot – physiological and psychological state. Unlike the pre-flight checks which are forgotten once in the air the P should reoccur from time to time as an in-flight check. Why? Because a glance at the flight safety bulletins reveals that gliders themselves rarely fail, but pilots often do. In some instances experienced and trusted pilots.

The problem is to sort out what the ingredients of disaster actually are, particularly when depending on sketchy memories. One thing is clear though, a proportion of accidents can be accounted for in psychological terms. Accordingly I would like to offer a little material from various areas of psychology which may help to highlight some "principles of pilot behaviour" – a topic which, oddly, is not thought sufficiently important to be included in our formal training and examinations.

Task Analysis

Some types of flying place a heavy load on the pilot. As an exercise imagine, for example, that we have to programme a machine to duplicate the exact sequence of tasks a pilot follows whilst climbing in a thermal with other aircraft near the home field. A 30 second section of the programme would run rather like this:

- read ASI and *VSI/compare with values required/compare with last readings and compute rate and direction of change/generate correcting control movements to restore to criterion airspeed and best lift.
- scan field of view/if other aircraft detected predict track/assess probability of collision/decide continue or cancel turn.
- check angle of bank against horizon and slip indicator/generate correcting control movement to restore to required bank and no slip or skid.
- read altimeter/compare with last reading compute rate and direction of change.
- scan field of view/if other aircraft detected etc.
- locate position over ground/compare with last position/compute rate and direction of drift/relate to altitude and distance from field/decide continue or return.
- read VSI and ASI etc.

and a pilot can be working like this for several hours. Of course this does not tell you anything you do not already know. But from this exercise we can be reminded that we function by *continuously shifting our attention* through a sequence of tasks.

Basically because we have limited channel capacity, *ie* can attend only to one or two things at a time, this makes the work load constant and unremitting. Great familiarity with the task alters this somewhat, since the incoming data becomes highly predictable and the response to it reflexive. But in general certain flying situations put the average pilot under considerable load. As a rough indication check your pulse at the top of a hard climb and compare it with normal levels when back at home (count the beats in 15 seconds, multiply by four to give beats per minute). I checked mine once, on a non-nervous day, and found that it was about 100 beats per minute as against my normal 75, reflecting the demands imposed (It is claimed that even experienced commercial aircrew can reach 140 beats per minute on ILS approaches.)

Problem solving becomes slower

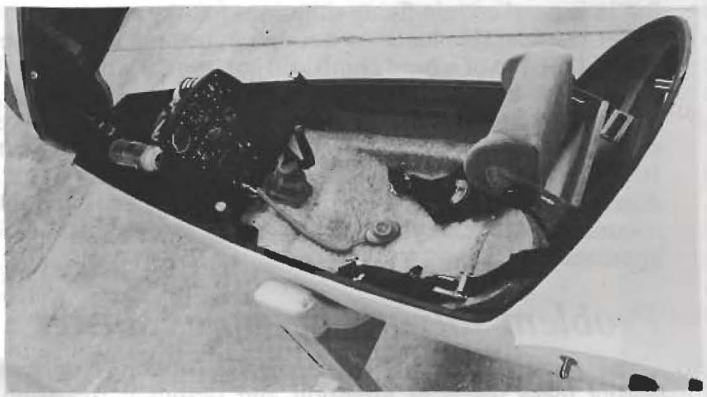
The physiological and psychological capability of sustaining these levels of attention and output varies from person to person and from time to time for each person. Changes in functioning will occur which reduce general levels of arousal (alertness) below optimum levels leading to a variety of possible effects. Reaction times get longer, attention lapses will become more frequent and scanning sequences thus disrupted and less regular. Events and signs which would normally attract attention will remain undetected until a later point than normal. Thinking and problem solving will become slower, more fragmented and usually much more rigid.

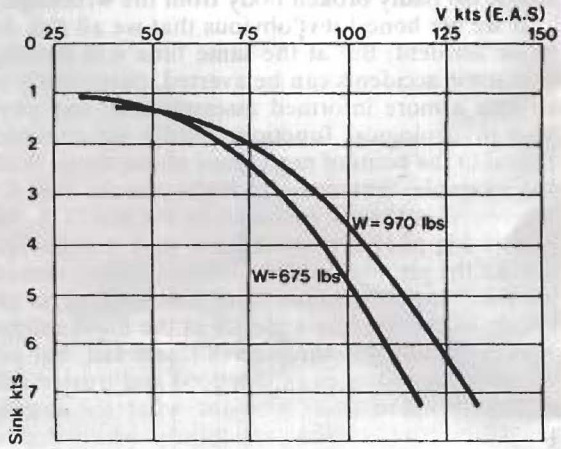
In the same vein shifts which raise alertness above optimum levels also affect performance adversely. Here we are talking about changes in the emotional tenor of the pilot in the direction of tension, or frank anxiety. Muscular control becomes less refined and movements consequently gross. Attention is directed by a need for anxious hypervigilant searching in relation to sources of threat, inevitably to the neglect of other tasks. For example an unrealistically anxious preoccupation with maintaining a position safely near the home base can divert attention from basic flying and anti-collision scanning. In this state thinking again changes to become increasingly inflexible with an inclination to be blocked by repetitious unproductive thought, or just simply blocked. (Have you ever tried simple calculations when you are really taut and up against it?)*

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Being realistic few of us reach such disabling extremes, but smaller changes in their direction are unavoidably frequent, although we may remain unaware of it at the time. However, the point in writing all this is that the accident reports show that fall off in vigilance, thinking etc *does* occur and that the deficit does not have to be great to set the scene for an accident. "I was feeling a bit tired and didn't notice for a few moments that the speed had fallen off. When the wing dropped and would not come up I got a bit confused and just could not believe it was a spin until too late." The brief lapse in attention, the rigidity of thought when something unexpected happened and the inflexibility of the pilots response are just the sort of thing I meant when earlier I talked of psychological aspects playing a part in accidents.

Factors influencing performance

While we cannot always detect the fluctuations in our functioning, we can brief ourselves on their origins. In some ways this is the most important aspect of the discussion because it makes possible *preventative measures.* For convenience we can separate known factors that diminish performance into pre-flight (*ie* operative before a flight begins) and flight induced:

1. PRE-FLIGHT

Fatigue - activity prior to a flight which leaves the pilot tired before he begins, *eg* a long drive or an earlier flight.

Sleep deficit - accumulated sleep debt through a period of disturbed sleep or simply a major loss of sleep the previous night.

Alcohol residue - alcohol may remain unmetabolised for many hours after heavy drinking. An early flight after late drinking may therefore take place with alcohol still in the blood stream and will affect performance.** (The hangover effect is due to dehydration because alcohol is a diuretic. Coffee, another diuretic just compounds the effect. Water is what is needed. A hangover is effectively the same as being ill - so do not fly anyway.)

24 hour (circadian) body rhythms - each of us has a daily cycle wherein alertness, temperature and so on vary. It is regular and you may be aware of your own peaks and troughs. It may happen that you are often launched at your physiologically least efficient time.

Longer term body rhythms - it is now accepted that there are long term physiological cycles which effect both men and women, although these are often very variable from individual to individual. That occasional day of edgyness, vagueness or feeling plain ratty may not be the weather. Women of course have to take their menstrual cycle into account as well.

Emotional state - difficult situations elsewhere which have generated much emotion may leave a pilot in an agitated state and the victim of intrusive distracting thoughts - a well known source of car accidents.

Health - hardly needs mentioning since it is obvious. We depend on our brains as machines and to take them into the air riddled with cold or 'flu viruses is clearly an act of stupidity.

2. FLIGHT INDUCED

Attention fatigue - the ability to sustain attention can fade a long time before physical fatigue becomes evident. People vary very much in the length of time they can direct attention, but eventually there will come a point where it becomes noticeable that lapses are more frequent and much longer. Past a certain point making more effort does not help.

General fatigue - stiffness, aching back, headaches, light headed sleepy feelings, are the familiar signs. In this state, as with driving, performance drops away badly as described earlier.

Motivational fatigue - I've invented the term because I think it merits special mention. With fatigue changes occur in the personal drive to fly accurately, keep a look out, constantly check position and so on. The rather nice "can't really be bothered anymore" feeling that marks the change is a killer.

There is nothing dramatic or unexpected in this list. But it could well be a list of things which, on occasions, we prefer to forget. The nature of performance change means that if we are responsible pilots we must work at remembering and checking and altering our flying accordingly. The constant question should be "what state am I in?" There may be days when it is sensible not to fly, or to have a short flight with large margins for safety. There may be a day when it is sensible to abandon a flight because all the signs suggest that the pilot is no longer the man he was when he took-off. (Towards the end maybe of that absurd task called the five hour Silver C leg - which encourages people to fly at a far greater length than many are accustomed - pilots often encounter the most demanding phase of the flight when very tired and scratching low down in fading thermals.) In short, the ability to maintain attention through scanning sequences and to think flexibly is vital for safe flying. If we know that this ability is *likely* to be weakened, or we feel fatigued to the point of noticing that it has faded, then we ought to modify our plans accordingly.

Enough said, save one closing point. Social pressures at clubs do not always work in favour of caution. I can recall incidents when realising I was a little "distant" I took greater care with checks and had a long pre-launch think, only to be hassled by authority figures about the cable having been kept waiting. Also there was a day when I had really decided not to fly at all because I was feeling rather "spaced" out. Some of my friends thought otherwise - "Go on" they said, "lot of nonsense - get in the thing and get on with it." Good friends - worthless advice. Well, have I overstated the case? I wonder what you think?

* *More on this and what to do about it in Part II.*

** *Objective tests show that even small doses of alcohol depress performance. The reason why so many believe it does not affect them is that it also impairs judgment and standards.*

GOODBYE WAVE

Maggie Medley-Hammond

The weeds are quite delirious, the nettles in their prime,
The cabbages like guipure lace, the paths a mess of slime,
Not a scythe has marked the brambles nor a hoe the buttercups
Since my old man went looking for the wave.

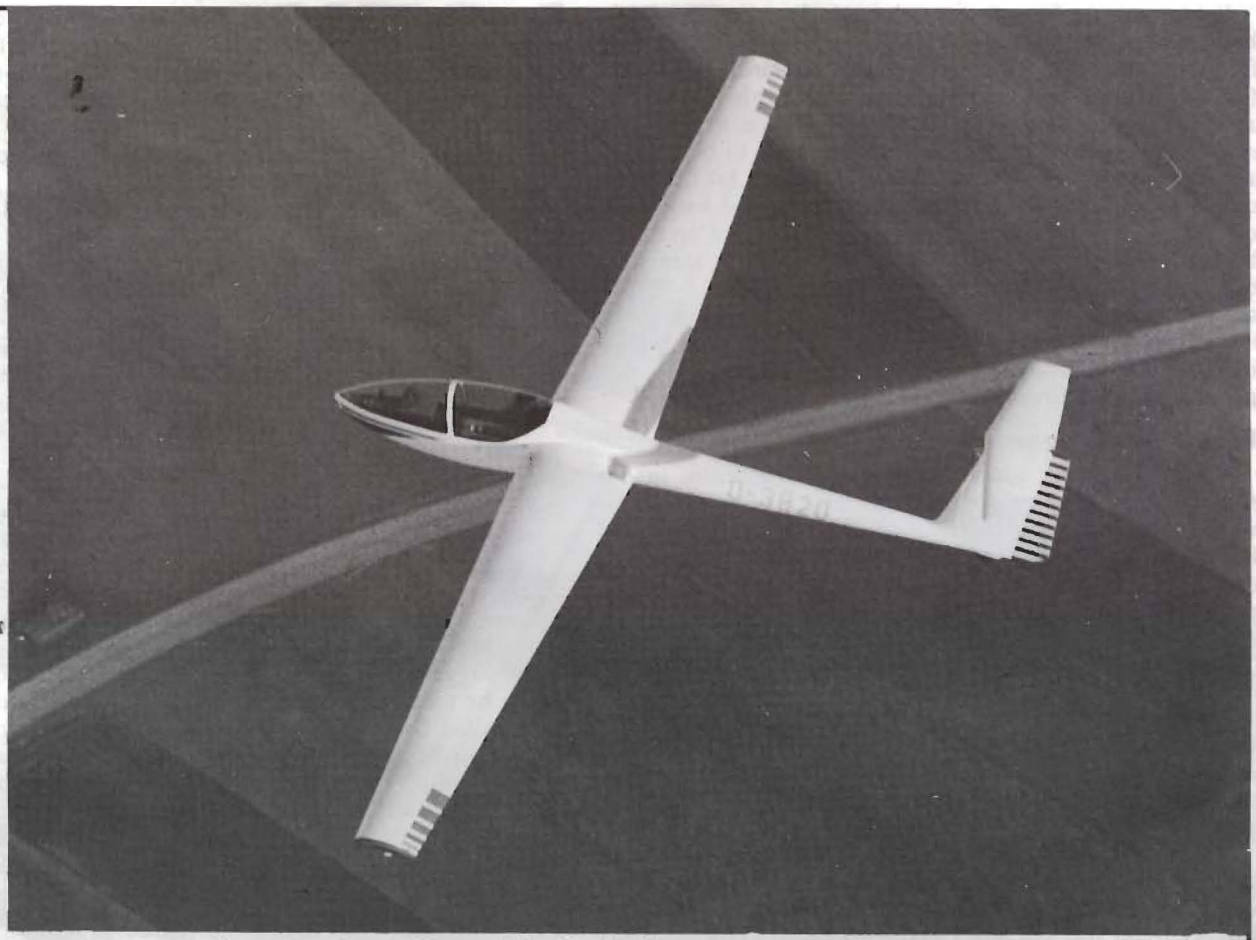
Oh! the grass needs cutting and the beans won't grow.

The window sash is broken and the backdoor doesn't lock,
If thieves break in and clean me out it won't be such a shock.
The insurers wouldn't pay up but the premiums I don't pay
Since my old man went looking for the wave.

Oh! the grass needs cutting and the beans won't grow.

The drive is full of potholes and the guttering is blocked,
The rain runs down the outside walls, the cesspit's getting choked,
The dry-rot in the hallway is creeping up the stairs
Since my old man went looking for the wave.

Oh! the grass needs cutting and the beans won't grow.



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SECOND TIME ROUND

R. C. WRAY

I started gliding in the late 1940s with the RAF in Germany and soon became addicted. My brief gliding career ended in 1950 and the opportunity to start again did not occur until 25 years later. A quarter century of faint regret and occasional nostalgic memories. Then suddenly I found myself living near a gliding club, why should I not start again? I will. I did.

This is the tale of my first flight (under instruction needless to say) after a 25 year lay off. As such it must be nearly unique.

At last, after many hours of rewarding toil getting others into the air, my turn came for the front seat of a K-7. Mindful of early training, I carefully inspected every nook, cranny, hinge and split pin of the aircraft and only became aware of the atmosphere of slight puzzlement among the club members when, as had been mandatory in days gone by, I seized a wingtip and vigourously activated it up and down to detect whether the contrivance was in danger of coming apart.

At this stage my instructor, a person of infinite aeronautical sagacity in whom my confidence is complete and towards whom my respect is total suggested, albeit tactfully, that I should stop mucking around and get in. This I achieved deftly enough. I found I did not need the solicitous assistance of my colleagues who had attended to the straps of the young lady on the previous flight. This was just as well as, in my case, the assistance did not seem to be so enthusiastically forthcoming.

A superstitious individual?

Comfortably seated, my instructor's voice from the rear cockpit could be heard uttering a strange incantation, "See Bee Sit See Bee". I thought perhaps he was a superstitious sort of individual until he explained. In all modesty I think I can claim to be a reasonably apt pupil and these new fangled cockpit checks appealed to my sense of order and discipline. In the end I only had to unstrap and get out twice. Once to remove the sheet of lead which the young lady previously referred to used to protect her back side from the instructor or possibly for some obscure aeronautical reason, and the second time to throw out the cushion which was the preferable alternative to removing the top of my head to get the canopy to close. It only remained nearly to brain an innocent bystander when testing a device which seemed to cause large planks of wood to fall out of the wing and which I am reliably informed is not to be confused with the spoilers which I was brought up with. We were ready to go.

We went. Long dormant happy memories came flooding back. The twang of a tightening cable reverberating through the air frame, the feeling of isolation from the community, even the odd feeling in my feet as they lead me into the sky. To my delight, I found I could fly, I could sense the instructor relaxing a bit as we smoothly (give or take the odd yaw and pitch) reached the top of the launch, whereupon I seized the release and pulled it six times vigorously as taught 25 years before. "Easy on" said the instructor. "You'll pull it to bits." I explained briefly that release mechanisms were unreliable and treacherous as I put the K-7 into a near vertical turn to the left. The instructor made mild utterances of alarm such as, "I have control". After a few moments of slight discomfort apparently involving *g* forces in both directions, and some disorientation, things had calmed down enough for me to take over again, I responded to the instructor's inquiry as to the reason of my enterprising manoeuvre.

I explained that after releasing one should always do a steep turn so that the pilot could see the cable dropping away on its parachute. I think his reply was to the effect that this seemed harmless enough as long as one avoided going into a spiral dive in the process. I took the point, which I consider a good one.

The middle part of the flight was pleasant and undramatic. I felt old skills returning, the view was splendid, the air calm. It was on the downwind leg that the instructor went "phewstall". "Bless you" I said sympathising with the poor fellow's hay fever. Then I remembered another set of checks I had been told about, but by then things were beginning to get hectic as they sometimes do when the ground accelerates upwards.

In Germany, where the approach had been lined on both sides with poplars which always looked as if they would catch a wingtip on the final turn into the approach, I had developed my own technique. A fast downwind leg, a flat skidding turn over the trees to loose height, check the skid with aileron at the right moment and there you were pointing in the right direction at the right height and speed to let down gently over the potato field, and just over the fence so as to give the next chap the longest possible launch and no need to carry the wheelless Baby Grunau to the launch point. Although I say it myself I was good at this and only touched the fence once, a mere glancing blow which did no damage. Others say I am lucky to be alive.

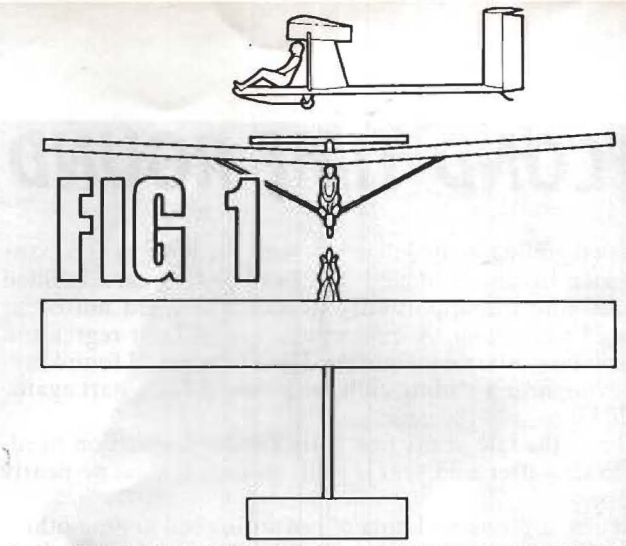
Half way through my skidding turn I learnt that my style is no longer in favour (if it ever was) as the instructor insisted on a clean turn into the aproach from the beginning of which it was patently obvious that I would land in the next field but one past the landing area. Until I hit the spoilers – sorry airbrakes. Then it was obvious we would not reach the landing area at all. I recollected that I had been told that these new fangled airbrakes were progressive and, sure enough, they were – despite the somewhat porpoising approach we hit the ground in approximately the right spot in reasonable comfort. I may have imagined it but I thought I heard the instructor let out a deep breath on our safe arrival (probably some respiratory affliction).

So ended the first flight of my second gliding career and in due course I was again flying and had learned these unfamiliar drills and controls. But there is a serious point to this tale. It is easy to learn new things, it is easy to unlearn old habits which make you look slightly ridiculous, like shaking the wings up and down, but other habits die hard. In due course I found myself, or rather an instructor saw me, making approaches based on reawakened judgment and responses to height, speed and distance based on my spoiler ridden days. I could soon land on a sixpence hardly using airbrakes at all (the mark of an expert in my young days), consequently final turns became lower and lower and would have become dangerously so if left unchecked.

So there is a moral for instructors. If you get a pupil with ancient gliding experience and nothing else it is probably easy to get him flying again, but watch him for a long time or he may find that modern ships and resurrected old techniques make poor bed fellows.

The Ultralight Enigma

J. L. SELLERS



The introduction of hang gliding caught the imagination of the general public, and of those who found conventional gliding too consuming of time, money, and storage space. The pros and cons of the first generation hang glider may be sumarised as follows:-

For	Against
1) Low cost of £200-£300 is within the capacity of an individual rather than a group.	1) Lack of manoeuvrability due to high stability and small effect of shifting body weight.
2) Can be transported by car roof rack and stored in an average garage, as no part is over 4.5m long.	2) Inability of single-surface sailwing to operate at nose-down attitude, giving poor upwind penetration.
3) Man-handleable to otherwise inaccessible flying sites as total structure weight is approx 25kg.	3) Non-compliance with Airworthiness Requirements and aeronautical practice as a result of low allowable structure weight.
	4) Low flying speed of about 32km/h (17kt) dictated by foot launching, leading to stalling in downwind turns.

Within a short time, pilots became frustrated with the limited performance of the Rogallo wing, which tied them to hill sites as firmly as their gliding forebears of the 1920s. The subsequent quest for performance has produced semi and fully rigid hang gliders which largely eliminate the first two defects in the list above.

As thermal soaring becomes marginally possible, taking pilots higher than they would care to fall from, airworthiness standards become questionable; but little can be done to improve them within the structure weight available. This defect, and those associated with low flying speeds, are direct consequences of the man-handleability and foot launching which together define the hang glider.

Concurrently with these developments, the conventional movement has been forced to concede that gliding can be enjoyed without large spans, waterballast, retractable undercarriages, and even canopies; a convenient realisation at a time when such niceties are becoming prohibitively expensive. There are signs that we are about to be engulfed by a series of ultralight gliders of a simplicity, nay crudity, which would have been unthinkable in the sixties.

Must this development take place haphazardly in the large area between the best hang glider and the smallest conventional types, or can it be concentrated at a point where it can produce the most benefit?

One more metre, one more time

Best glide slope is not the only arbiter of performance, or even that most relevant to the small glider, but it is one which is easily understood and readily appreciated.

It can be shown (Ref 1) that best glide slope G is given by

$$G = \sqrt{\pi A / 4k\, C_{D0}}$$

Making the substitution $A = \frac{b^2}{S}$ we have

$$G = \sqrt{\pi / 4k\, C_{DO}\, S} \quad x\ b$$

Consider wings of the same area S, but increasing span b and aspect ratio A, mounted on similar fuselages. The parasite drag coefficient C_{DO}, being based on wing area, will be the same for all gliders, as will the induced drag factor k.

Taking conservative values for a small glider, we have

$$G = \sqrt{\pi / 4 \times 1.1 \times 0.02 \times 9} \quad x\ b$$

$$G \times 2.0\, b$$

ie the best gliding angle is twice the span in metres.

Since spar weight is a small proportion of the total weight of a small glider, the wing area and loading, and hence the stall speed of all the gliders will be similar and all are equally practical. There is thus no "optimum" size for a small glider. If we maintain a constant wing loading the best glide slope will increase in direct proportion to the span up to say 30 at 15m. There is no point of diminishing returns, just "one more metre, two more glide points".

Having established that span is what you make it, we can look again at the bonus points of the hang glider and find an obvious limitation. Making due allowance for wall thickness, the longest wing that can be stored in an average British garage is 4,5m, giving a two-piece 9m span. Lovers of round numbers would doubtless prefer 10m, but that one extra metre would deter thousands of potential owners.

According to the above calculations, a 9m glider could have a best glide slope of 18, equal to that of the Slingsby Tutor (Ref 2). But rate of climb in a thermal is a more relevant figure for a small glider, especially if the pilot is inexperienced, and more detailed design studies are needed to confirm that a sufficient rate can be obtained from a 9m span.

Ultralight Design Studies

It has been suggested that the defective airworthiness and flying qualities of the hang glider stem from its "one man - one glider" definition. Observation of local hang glider operations indicates that all pilots do not wish, or are unable, to fly at the same time. Coupled with the restricted wind speed range in which they can operate, this means that hang gliders have low utilisation.

A specification is therefore proposed for a rigid wing ultralight to be owned and operated by a group of three, each investing the resources he might otherwise have invested in a hang glider. Each pilot should then obtain more and better flying for his money, due to the higher utilisation and performance.

Specification

1) Conventional rigid wing.
2) Conventional seat and controls.
3) Operable by three people including pilot.
4) Three main components, none of which is more than 4.5m long or more than 25kg.
5) Stalling speed 40-50km/h (22-27kt), *ie* intermediate between hang glider and conventional one.
6) Bungey or car launched.
7) Designed to British Civil Airworthiness Requirements (Section E, non-cloud flying) and built to aeronautical standards.

This specification has been used as a basis for design studies extending over the last three or four years. The configuraton shown in Fig 1 was established in late 1975 and has not been significantly altered since; its leading particulars and estimated performance are summarised below.

Span (m)	9.0	(29.5ft)
Wing area (m^2)	9.0	($97ft^2$)
Empty weight (kg)	75	(165lb)
Flying weight (kg)	150	330lb)
Wing loading (kg/m^2)	16.7	($3.4lb/ft^2$)
Stall speed (km/h)	40	(22kt)
Best glide slope	12:1	
Rate of climb (Standard thermals) (m/s)	0.96	(190ft/min)
Cross-country speed (km/h)	25	(14kt)

Fig 2 shows that the primary objective of a rate of climb comparable with that of a 15m glider has been achieved by circling slowly near the centre of the thermal. The best glide slope is less than predicted in the previous section because of the open fuselage. Further studies have shown that 18-20 is obtainable with an enclosed pilot and a higher aspect ratio, once it

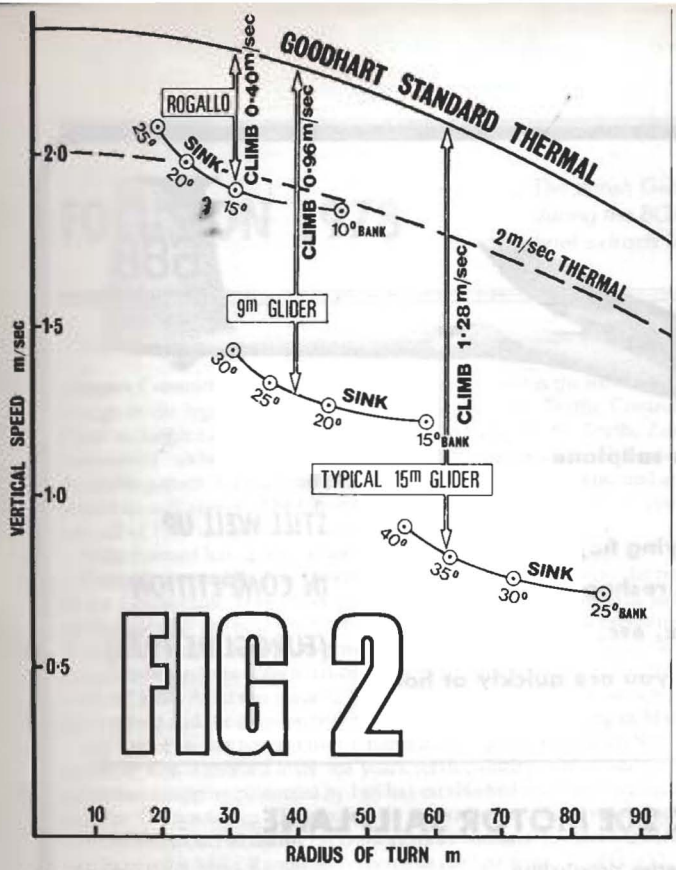


FIG 2

has been proved that the simpler design can be built down to the specified structure weight.

Several schemes for wooden wings have been investigated including one in which torsion loads were carried by a covering of diagonally orientated unimpregnated glasscloth or Kevlar, and one which used all-moving wings instead of ailerons. The wing has recently been redesigned as a conventional light alloy structure with full span ailerons and a prototype pair have been completed by a commercial concern. These have achieved the target weight of better than 5kg/m^2 (1.0lb/ft^2) and survived a 4.0*g* proof load. Present indications are that the fuselage weight will only be achieved by very careful design, justifying the decision not to attempt an enclosed fuselage at this stage.

I am confident that such improved versions will be developed once it has been proved that a 9m glider can have a worthwhile cross-country performance. Music lovers will doubtless appreciate that this hope lies behind the name "Enigma" given to the project. In addition to solving the enigma of the choice of span, I hope there will be at least as many variations of the basic design as Elgar's 14 "Enigma Variations".

A 9m Class

The greatest stimulus to the development of the 9m glider would be the establishment of National Class rules and competitions. In their absence, designers will rectify inadequate performance by adding "one more metre, one more time".

It might be argued that more than 9m is obtainable without losing the concept of garage storage, by resorting to large centre-sections fixed to the fuselage, or three-piece wings on short fuselages, etc. This would, in my opinion, introduce an undesirable element of rule dodging and probably end in pressure to drop the concept of garage storage and settle for a larger span limit. Whilst it is true that *some* larger gliders may be garage storable, it is equally true that *all* 9m ones are likely to be so.

Later on, some consideration might have to be given to limiting the stalling speed, if competitions became dominated by "lead sleds" of high aspect ratio and wing loading flown by experienced pilots who could manage to climb them in thermals before proceeding cross-country like a flying bomb. In this case a limit of 50km/h (27kt) would preserve the idea of a glider which is easy to launch, fly, and land.

It is anticipated that gliders competing in a 9m Class would be required to conform to recognised glider airworthiness requirements, thereby excluding developed hang gliders unless they so complied.

Airworthiness Requirements

As already stated, the design studies above have been based on British Civil Airworthiness Requirements, Section E, Non-Cloud Flying. These requirements were established just after the Second World War and the non-cloud flying category was intended to cover gliders very much of the sort being discussed. The non-cloud flying requirements are less severe than their cloud flying counterparts in three main respects.

1) Maximum positive proof load factor 4.0*g* instead of 5.0*g*.
2) Design diving speed 28kt lower.
3) No speed-limiting airbrakes required.

Although BCAR Section E is still legally current, it is now accepted practice for the BGA and CAA to ask designers to show compliance with the international OSTIV requirements. These later requirements are modelled on BCAR Section E, but do *not* include the non-cloud flying category.

When faced with an ultralight glider, the certifying authorities will have to consider whether Section E non-cloud flying is still applicable, or whether they will grant one or more of the three relaxations listed above as dispensations from the OSTIV requirements. Such dispensations could be specific to individual designs, or granted as a general dispensation to all gliders complying with acceptable Class rules.

From the point of view of the designer, these items are listed in reverse order of difficulty of compliance. Airbrakes are expensive in themselves and in their effect on wing layout. Unneccessarily high diving speed leads to problems of torsional strength in light wings. The higher load factor is the least problem, as spar weight is a low proportion of wing weight.

Final Recommendations

1) It must be demonstrated that a satisfactory 9m glider is technically possible in the only meaningful way. That is by building and flying one.
2) When this has been done, the BGA should give serious consideration to the establishment of a 9m Class, possibly with a stalling speed limitation. International pressure to increase the span limit, or replace it by a weight limit, must be resisted as not in our national interest.
3) The BGA Technical Committee should consider the certification of ultralight gliders in the light of 1) and 2) above, and if possible allow designers to work to something close to the BCAR Section E, non-cloud flying requirements.

References 1. *Irving and Welch,* **New Soaring Pilot,** *Chapter 3.*
2. *Ellison,* **British Gliders and Sailplanes 1922-1970.**

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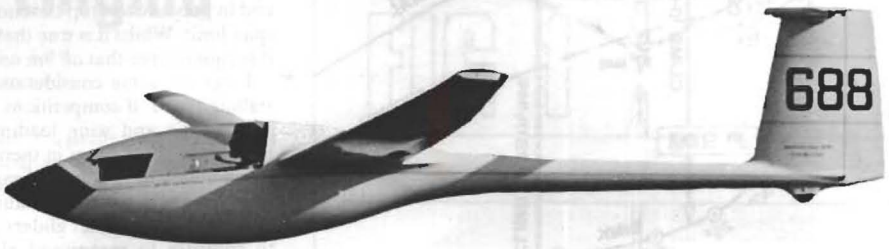
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FOCUS ON 1978

The British Gliding Association's AGM was held at the Post House, Leicester, on March 24, during the BGA Weekend which will be reported on in the next issue. Meanwhile here are brief extracts from some of the Annual Reports.

Airspace Committee. The only airspace change of note is the finalisation of a change in the legislation concerning aerodromes, Air Traffic Control, etc. Pilots no longer require operator permission to fly in the Air Traffic Zones of "unlicensed" airfields. Having entered an ATZ, a pilot must still conform to the traffic pattern, take normal precautions and, of course, the normal airmiss procedure still applies. The Chairman, John Ellis, considers it will probably take all of 1979 to find out whether this is a real problem.

Mike Emmett has agreed to become the new Chairman.

Competitions and Badges Committee. The main activities were the revision of the Competition Handbook to a format which should remain virtually unchanged over the next few years; changes in the method of presenting the Nationals Entry List for determining pilot eligibility for National-level competitions and the consolidation of proposed amendments to the Sporting Code for 1980. A bid was made to run the 1981 or 1983 World Championships at Cranfield and the decision will be made at the CIVV meeting in March.

Ian Strachan has handed over Chairmanship of the Handicap Sub-Committee to Ron Sandford after ten years service during which our system of glider handicapping pioneered by Ian has established itself with international acclaim. Gordon Camp, Chairman, also paid tribute to the conscientious hard work by Mike Garrod during his eight years as National Ladder Steward. The new Steward is Mike Randle as reported in the last issue of S&G, p32.

Development Committee. Since only a minority of clubs enjoy real security it is not surprising that the future of several clubs has been threatened during the year. The BGA is currently formulating a policy intended to help the movement make the best of whatever site opportunities become available.

Instructors' Committee. There have been changes in the structure of this Committee and it now comprises five civilian regional organisers, two RAFGSA, Senior National Coach, CFI RAFGSA and, following a change in the Committee's terms of reference by the Executive, one member whose special responsibility will be tugs. Vic Carr, Chairman, believes the emphasis will be on a larger element of training towards soaring skills, but not forgetting that much of its work concerns the improvement of basic training. So far quite a lot has been done to lift instructors' horizons and ambitions towards a greater element of "performance flying".

Since the BGA Twin Astir arrived in July over a hundred instructors flying more than 150 hours have had some form of advanced flying, some in a glass glider for the first time. The coaching operation also reflects the change. In addition to the 85 places on courses for assistant instructors there are plans for another 89 places on advanced flying courses and task weeks.

Safety Panel. While regarded in many ways as an average year with launches, hours, cross-country kilometres and accidents about the same as in 1977, there was one major variation - substantial accidents (74) exceeded minor accidents (56) by a considerable margin. In fact Arthur Doughty, Chairman, is unable to recall this happening before. There was an increase of 9.24% compared with 1977 (119 accidents) while launches were up by about 3.36% with no marked variation in the number of hours flown.

Thirty people injured

The overall accident rate increased to 0.39 per 1000 launches, a slight worsening compared with 1977 (0.37 per 1000 launches) but considerably worse when viewed in the context of substantial accidents to minor ones. Twenty-eight of the accidents resulted in personal injury to 30 people, the number of casualties being the same as in 1977 and the number of injury accidents up by one. Three produced fatal injuries and, regrettably, two of the fatalities were pupils in the front seat.

Field landings (24) and failed launches (23) in aggregate accounted for over a third of the total numberal of accidents. There have also been an exceptional number of accidents involving tugs - at least nine including two fatal, one being a double fatality. This has promoted the Executive to extend the terms of reference of the Instructors' Committee to include tug operations.

Accidents from 1974 have been reassessed and allocated a primary causation factor from a list of 22 phases of flight, enabling the principle accident cause to be identified. Also an accident record for each club has been prepared for a similar period and the accident rate per 1000 launches calculated for comparison with the national average. Information from these research projects should be of considerable value in accident prevention.

Technical Committee. Eight new types have been evaluated by test groups on behalf of this Committee. There were 129 BGA registrations issued making 1236 actively certificated BGA gliders in the UK. DIY activity in the UK remains at a very low ebb and it is hoped the BGA design competition will stimulate enthusiasm. A Permit to Fly was issued to the world's first solar sailplane.

The tug scene continues to require considerable effort and negotiations initiated in 1973 with the CAA to revise towing weights, to approve dual towing and to review Flight Manual limitations continue! The 17 Chipmunk tugs have been exempted from a costly and regular radiographic examination of undercarriages due to a BGA appeal to the Airworthiness Requirements Board against a decision by British Aerospace and the CAA. Tug maintenance continues to generate problems due to diminishing facilities for the less popular out-of-production types. Our application to the CAA for approval for maintenance is progressing. Clubs have been asked to respond to a questionnaire which will form the basis of extending such approval to the suitably qualified operating in premises acceptable to the BGA/CAA at sites where tug maintenance has become difficult. This scheme is the biggest development in airworthiness since the BGA was created.

Philip Wills Reserve Fund. The present balance is approx £4100. A further £2400 has been loaned to clubs at 4% bringing the total loaned since the formation of the Fund to £10 700. Loans are available for the purchase of land and buildings, or for the development of a site or buildings.

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Book Reviews

The history of Man-Powered Flight by D. A. Reay. Published by Pergamon Press, Oxford.

This is a most exhaustive and scholarly history of the subject, starting with China in AD 550, when a tyrannical ruler used condemned prisoners as his experimental subjects and carrying on to the Kremer Prize contestants, with much technical detail about the more promising designs throughout history.

There is so much in the book that a review cannot comment on it all, but of particular interest is the cluelessness of those who tried to imitate the flapping flight of birds. The index gives 29 entries under "Ornithopters", and in all but three of them the whole wings move straight up and down, so that, apart from the influence of slight camber if any, they would push up as much air on the upstroke as they push down on the downstroke.

The invention of the cinematograph in the late 19th century enabled the precise motion of a flapping wing to be seen: during the first two-thirds of the flapping cycle the wing is moved downwards *and forwards*, the outer part of the wing travelling about twice as fast as the bird's body (S. P. Langley had shown in his "Experiments in Aerodynamics" of 1902 that an aerofoil is more efficient the faster its airspeed); then on the upstroke the wing appears to be blown back by the airstream and simultaneously lifted by being given a large angle of incidence, no doubt helped by muscle power.

Even without help from the cinema, the true motions of flapping wings could have been discovered long before if the technique of "negative blink" had been thought of. Instead of keeping the eyes open except for a rapid shutting and opening again, you keep them shut except for opening them occasionally for a fraction of a second: this enables you to see, for instance, the wings of a flock of seagulls in an apparently stationary condition and you soon build up a picture of successive wing positions during the flapping cycle.

Yet the straight-up-and-down fallacy persisted well into this century and in at least two cases in the form of a spring-like oscillation. In 1936 Oskar Ursinus, founder of the German gliding movement and editor of *Flugsport*, in which he was publishing many research projects on man-powered flight, gave me a demonstration in his office by suspending a T-square in a horizontal plane, holding the bottom end of the T rigidly with one hand while giving the other end a succession of light downward taps until the T-square built up a tremendous oscillation. But it was not coupled to any wing.

The other oscillation enthusiast, J. D. Batten, wanted to store the energy for oscillation in twisted silk strands – a very light-weight piece of apparatus. When in 1923 Auger of France climbed to 720m in a sailplane, this, the only soaring flight mentioned in the book, was described by Batten as a "flight with locked wings", and his only interest in it was not that it had saved muscle power, but that if the wings had been "unlocked" his invention could have had a full-scale trial.

Another oscillation invention is the Upenieks of 1973, described as "a sort of flying pogo stick".

Of the 29 indexed "ornithopters" there are only two in which the whole wing does not move straight up and down. One of these, still under development when the book was published, is claimed by D. V. Curry to be based on intensive study of a bird's wing movements in flapping flight. The outer section of each wing moves forwards and backwards and twists. But the inner wing portion still moves straight up and down.

A physiologist, Dr D. R. Willkie, joined the RAeS Man-Powered Flight Group when it was formed and his work on the power output of animals and men is described; but there is no mention here of an important statement he made at the time, that human muscles could exercise more power if more oxygen could be brought to them per unit time and that the bottleneck in this process is in the lungs, where only in the smallest subdivisions of the air passages is oxygen transferred from the air to the blood. But in comparing men with birds he did not seem to be aware that, whereas the ultimate subdivisions of our air passages end in blind alleys, so that the air goes alternately in and out, it blows right through a bird's lungs from end to end, because the smallest subdivisions are tubes. So, whereas a man absorbs only about 24% of the oxygen he breathes in, a bird absorbs about 35%.

Around 1942 an experiment showed that if pure oxygen is injected into the blood stream, it gets absorbed at once. (If ordinary air is injected, it gets

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churned into froth as soon as it reaches the heart and the circulation stops.) More practical, if less efficient, would be to breathe oxygen straight from a cylinder in the usual way.

The book has a great number of photographs and other illustrations. The text is in photographed typewriting, not normal print, but readers should soon get used to it.

A. E. SLATER

Soaring with Yawstring by Tenrag. Published by Puckrin's Production House Ltd, 12644-126 St, Edmonton, Alberta, Canada and available at $6 including p&p, see advertisement below.

A gliding comic *Book! Wow! Gosh* and jolly good show and all that sort of thing. Can this reviewer – unkind fellow that he is – actually get a grip on himself for long enough to avoid talking like a comic book, to cut out the strip talk, so to speak? Can he do this and admit that he laughed, not once, but several times at the antics of the hero (?) Yawstring as he makes his way from bystander to pundit – well, almost!? The stiff upper lip trembled. Braces were badly overstressed. But despite all bromides and proper reserve, out came a *Laugh!* Tenrag's mildly acid eye and rather overripe drawing tool (a bruised stick, I think) have neatly and amusingly described several things we have all seen and heard yak yak yak at every gliding club here, there and absolutely everywhere else in the Universe, even in Cambridge. However, at five Canadian dollars *over there*, the final price in this country is not likely to be quite so funny! And it's **strictly** glider pilots **only** – the humour is **in** stuff guaranteed to bemuse anybody you know who knows next to nothing about gliding. I mean, would you as a glider pilot, understand an entomological funny about Marginated Bugs? Right! **Not** unless you knew what "Entemological" meant!

STEVEN LONGLAND

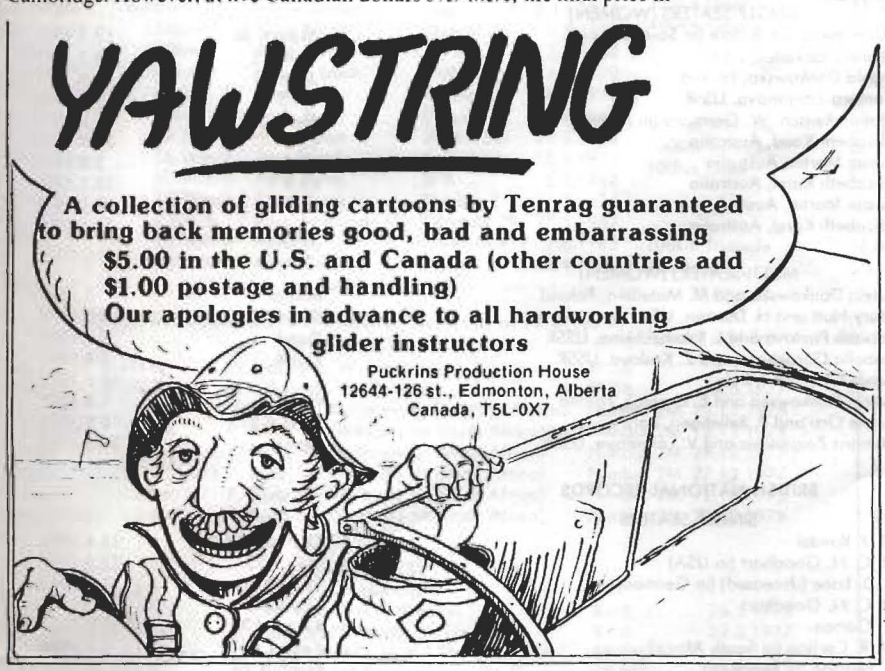
(Tenrag, or rather Garnet Thomas, has been flying for 25 years – power and glider – and is in a Std Jantar syndicate. ED).

Alianti-Soarers-Planeurs-Segelflugzeuge compiled by Ferdinando Galè. Published by Nucleo Applicazioni Sperimentali Aeromodellistiche "Falchetto" and available from the *Radio Modeller*, High Street, Sunningdale, Berks, at £4.95 plus 36p p&p.

Soarers is a compilation of drawings and associated data on over fifty glider types, produced mainly for aeromodellers. To simplify production the drawings have been reproduced as received from a variety of sources reduced where necessary to the book's A4 size. Therefore format, line weight and scale differ from drawing to drawing, making the extraction of some information more difficult.

However, as a compact source of information the publication is a useful addition to the bookshelves of both glider pilots and model makers.

JOHN GLOSSOP.





"In spring a young man's fancy . . ." Mike Bird.

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INTERNATIONAL GLIDING RECORDS (Correct as at 12.3.79)

SINGLE-SEATERS

Height Gain	12,894m	P. F. Bikle, USA	SGS 1-23E	25.2.1961
Absolute Altitude	14,102m	P. F. Bikle, USA	SGS 1-23E	25.2.1961
Straight Distance	1,460.8km	H-W. Grosse, W. Germany	ASW-12	25.4.1972
Goal Flight	1,254.26km	B. L. Drake, D. N. Speight, S. H. Georgeson, New Zealand	Nimbus 2	14.1.1978
Goal and Return	1,634.7km	K. H. Striedieck, USA	ASW-17	9.5.1977
Triangular Distance*	1,220km	H-W. Grosse, W. Germany (in Australia)	ASW-17	4.1.1979
100km Triangle	165.35km/h	K. Briegleb, USA	Kestrel 17	18.7.1974
300km Triangle	153.43km/h	W. Neubert, W. Germany (in Kenya)	Kestrel 604	3.3.1972
500km Triangle	143.04km/h	E. Pearson, Gt. Britain (in SW Africa)	Nimbus 2	27.11.1976
750km Triangle	141.13km/h	G. Eckle, W. Germany (in South Africa)	Nimbus 2	7.1.1978
1000km Triangle*	145.3km/h	H-W. Grosse, W. Germany (in Australia)	ASW-17	3.1.1979

MULTI-SEATERS

Height Gain	11,680m	S. Josefczak and J. Tarczon, Poland	Bocian	5.11.1966
Absolute Altitude	13,489m	L. Edgar and H. Klieforth, USA	Pratt Read G-1	19.3.1952
Straight Distance	970.4km	I. Renner and H. Geissler, Australia	Calif A-21	27.1.1975
Goal Flight	864.86km	Isabella Gorokhova and Z. Koslova, USSR	Blanik	3.6.1967
Goal and Return*	804km	S. H. Georgeson and Helen Georgeson, New Zealand	Janus	10.1.1979
Triangular Distance	762.72km	C. Greaves and C. Simpson, Gt. Britain (in South Africa)	Janus	28.12.1977
100km Triangle	147.19km/h	E. Mouat-Biggs and S. Murray, South Africa	Janus	21.11.1977
300km Triangle	135.51km/h	E. Mouat-Biggs and S. Murray, South Africa	Janus	16.11.1977
500km Triangle	140.06km/h	E. Mouat-Biggs and S. Murray, South Africa	Janus	17.11.1977
750km Triangle*	122.4km/h	E. Müller and O. Schäffner, W. Germany (in South Africa)	Janus	26.11.1978

SINGLE-SEATERS (WOMEN)

Height Gain	9,119m	Anne Burns, Gt. Britain (in South Africa)	Skylark 3B	13.1.1961
Absolute Altitude	12,557.75m	Sabrina Jackintell, USA	Astir CS	14.2.1979
Straight Distance	810km	Adela Dankowska, Poland	Jantar 1	19.4.1977
Goal Flight	731.6km	Tamara Zaiganova, USSR	A-15	29.7.1966
Goal and Return	714.7km	Hanna Reitsch, W. Germany (in Austria)	Std Cirrus	3.6.1978
Triangular Distance*	779.68km	Elizabeth Karel, Australia	LS-3	24.1.1979
100km Triangle*	139km/h	Susan Martin, Australia	LS-3	2.2.1979
300km Triangle*	121.54km/h	Elizabeth Karel, Australia	LS-3	30.1.1979
500km Triangle*	133.14km/h	Susan Martin, Australia	LS-3	29.1.1979
750km Triangle*	95.45km/h	Elizabeth Karel, Australia	LS-3	24.1.1979

MULTI-SEATERS (WOMEN)

Height Gain	8,430m	Adela Dankowska and M. Mateliska, Poland	Bocian	17.10.1967
Absolute Altitude	10,809m	Mary Nutt and H. Duncan, USA	SGS 2-32	5.3.1975
Straight Distance	864.85km	Tatiana Pavlova and L. Filomechkina, USSR	Blanik	3.6.1967
Goal Flight	864.86km	Isabella Gorokhova and Z. Koslova, USSR	Blanik	3.6.1967
Goal and Return*	593km	Adele Orsi and ?, Italy	?	18.6.1978
100km Triangle	124km/h	Adela Dankowska and E. Grzelak, Poland	Halny	1.8.1978
300km Triangle	97.74km/h	Adele Orsi and F. Bellengeri, Italy	Calif A-21	18.8.1974
500km Triangle	69.6km/h	Tamara Zaiganova and V. Lobanova, USSR	Blanik	29.5.1968

BRITISH NATIONAL RECORDS

SINGLE-SEATERS

Height Gain	8,870m	G. J. Rondel	Olympia 2B	18.6.1960
Absolute Height	11,500m	H. C. N. Goodhart (in USA)	SGS 1-23	12.5.1955
Straight Distance	741km	P. D. Lane (deceased) (in Germany)	Skylark 3F	1.6.1962
Goal Flight	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
Goal and Return	801.3km	C. Garton	Kestrel 19	22.7.1976
Triangular Distance	770.99km	M. R. Carlton (in South Africa)	Kestrel 19	5.1.1975
300km Goal and Return	141.3km/h	E. Pearson (in Rhodesia)	Nimbus 2	25.10.1975
500km Goal and Return*	121.1km/h	B. J. G. Pearson (in South Africa)	Nimbus 2	14.12.1978
100km Triangle	143.3km/h	E. P. Hodge (in Rhodesia)	Std Cirrus	30.10.1976
300km Triangle	146.8km/h	E. Pearson (in South Africa)	Nimbus 2	30.11.1976
500km Triangle	131.9km/h	E. Pearson (in Rhodesia)	Nimbus 2	5.11.1975
750km Triangle	109.8km/h	M. R. Carlton (in South Africa)	Kestrel 19	5.1.1975

MULTI-SEATERS (**Also Multi-Seaters (Women) Record)

Height Gain	6,300m	L. S. Hood and M. Slater (in France)	K-7	3.12.1970
Absolute Altitude**	9,519m	Anne Burns and Janie Oesch, USA (in USA)	SGS 2-32	5.1.1967
Straight Distance	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
Goal Flight	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
Goal and Return*	629.02km	M. R. Carlton and C. M. Greaves (in South Africa)	Calif A-21	23.12.1978
Triangular Distance	762.72km	C. M. Greaves and C. R. Simpson (in South Africa)	Janus	28.12.1977
300km Goal and Return*	105.44km/h	M. R. Carlton and C. M. Greaves (in South Africa)	Calif A-21	19.12.1978
500km Goal and Return*	113.08km/h	M. R. Carlton and C. M. Greaves (in South Africa)	Calif A-21	23.12.1978
100km Triangle*	137.22km/h	M. R. Carlton and L. Lawson (in South Africa)	Calif A-21	27.12.1978
300km Triangle*	93.32km/h	M. R. Carlton and C. M. Greaves (in South Africa)	Calif A-21	18.12.1978
500km Triangle*	108km/h	M. R. Carlton and C. M. Greaves (in South Africa)	Calif A-21	21.12.1978
750km Triangle	104.01km/h	C. M. Greaves and C. R. Simpson (in South Africa)	Janus	28.12.1977

SINGLE-SEATERS (WOMEN)

Height Gain	9,120m	Anne Burns (in South Africa)	Skylark 3B	13.1.1961
Absolute Height	10,550m	Anne Burns (in South Africa)	Skylark 3B	13.1.1961
Straight Distance	524km	Anne Burns (in South Africa)	Skylark 3B	31.1.1961
Goal Flight	528km	Ann Welch (in Poland)	Jaskolka	20.6.1961
Goal and Return	545km	Anne Burns (in South Africa)	Std Austria	6.1.1966
300km Goal and Return	107.5km/h	Karla Karel (in South Africa)	ASW-15B	1.1.1975
500km Goal and Return	102.6km/h	Karla Karel (in Rhodesia)	ASW-15B	16.10.1975
100km Triangle	110.8km/h	Karla Karel (in Rhodesia)	ASW-15B	2.11.1975
300km Triangle	109.4km/h	Karla Karel (in Rhodesia)	ASW-15B	15.10.1975
500km Triangle	108.9km/h	Angela Smith (in South Africa)	Libelle 301	28.12.1972

UNITED KINGDOM RECORDS (Correct as at 12.3.1979)

SINGLE-SEATERS

Height Gain	8,870m	G. J. Rondel	Olympia 2B	18.6.1960
Absolute Altitude	9,300m	G. J. Rondel	Olympia 2B	18.6.1960
Straight Distance	718km	J. Wills	Std Libelle	1.8.1976
Goal Flight	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
Goal and Return	801.3km	C. Garton	Kestrel 19	22.7.1976
Triangular Distance	606km	C. Garton	Kestrel 19	10.6.1976
300km Goal & Return	106.5km/h	D. G. Lee	Kestrel 19	17.8.1975
500km Goal & Return	89.7km/h	C. Garton	Kestrel 19	22.7.1976
100km Triangle	114.2km/h	R. Jones	Nimbus 2	30.4.1974
200km Triangle	97km/h	R. Jones	Nimbus 2	30.6.1975
300km Triangle	105.4km/h	R. Jones	Nimbus 2	29.5.1974
400km Triangle	90km/h	D. G. Lee	Kestrel 19	19.5.1974
500km Triangle	106.9km/h	R. Jones	Nimbus 2	31.5.1975
600km Triangle	88.8km/h	C. Garton	Kestrel 19	10.6.1976
100km Goal	128.4km/h	K. A. Harrison	SHK	13.4.1969
200km Goal	114.3km/h	I. W. Strachan	Skylark 4	2.6.1963
300km Goal	132.8km/h	A. H. Warminger	Kestrel 19	24.4.1976
400km Goal	73.8km/h	J. Wills	Std Libelle	7.6.1976
500km Goal	90.7km/h	H. C. N. Goodhart	Skylark 3	10.5.1959

SINGLE-SEATERS (WOMEN)

Height Gain	7,833m	Alison Jordan	Astir	8.10.1978
Absolute Height	8,701m	Alison Jordan	Astir	8.10.1978
Straight Distance	454km	Anne Burns	Skylark 3B	10.5.1959
Goal Flight	309km	Anne Burns	Skylark 3B	12.4.1958
Goal and Return	303km	Angela Smith	K-6E	14.8.1970
300km Goal & Return	60.8km/h	Anne Burns	Nimbus 2	26.7.1975
100km Triangle	80km/h	Anne Burns	Cirrus	12.6.1969
200km Triangle	69.3km/h	Anne Burns	Std Austria	22.8.1964
300km Triangle	76.8km/h	Jane Randle	Kestrel 19	18.8.1976
400km Triangle	60.6km/h	Anne Burns	SHK	5.8.1964
500km Triangle	76.1km/h	Anne Burns	Nimbus 2	31.5.1975
100km Goal	83km/h	Rika Harwood	Olympia 2B	27.5.1957
200km Goal	85.5km/h	Anne Burns	Olympia 419	2.6.1963
300km Goal	63.9km/h	Anne Burns	Skylark 3B	12.4.1958

MULTI-SEATERS

Height Gain*	7,469.5m	C. C. Rallings Katherine Woodthorpe	Twin Astir	26.10.1978
Absolute Altitude	7,620m	J. R. Manteith, USA and M. C. Mahon	Capston	2.11.1972
Straight Distance	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
Goal Flight	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
Goal and Return	350.2km	J. R. Jeffries and N. Foster	Calif A-21	17.8.1975
300km Goal & Return	81.9km/h	J. R. Jeffries and N. Foster	Calif A-21	17.8.1975
100km Triangle	83.5km/h	J. R. Jeffries and G. Love	Calif A-21	22.4.1974
200km Triangle	72.8km/h	J. R. Jeffries and A. Kirtly	Calif A-21	5.8.1974
300km Triangle	81.1km/h	J. R. Jeffries and Gillian Case	Calif A-21	29.5.1974
400km Triangle	68.4km/h	J. R. Jeffries and G. Love	Calif A-21	7.5.1974
500km Triangle	88.4km/h	J. R. Jeffries and Gillian Case	Calif A-21	31.5.1975
100km Goal	96.5km/h	D. B. James and K. O'Riley	Gull 2	27.5.1957
200km Goal	77.8km/h	B. J. Wilson and H. Daniels	Blanik	11.7.1970
300km Goal	69.2km/h	W. A. H. Kahn and J. S. Williamson	Eagle	14.4.1958

RESTRICTED CLASS

Straight Distance	718km	J. Wills	Std Libelle	1.8.1976
Triangular Distance	503km	C. C. Rallings	K-6E	20.4.1976
100km Triangle	109.7km/h	D. S. Watt	Std Jantar	16.8.1976
200km Triangle	96.2km/h	A. J. Stone	Std Cirrus	16.8.1976
400km Triangle	91.7km/h	S. J. Redman	Std Cirrus	31.5.1975
500km Triangle	77.4km/h	C. C. Rallings	K-6E	20.4.1976
300km Goal	131.1km/h	J. Wills	Std Libelle	24.4.1976
400km Goal	73.8km/h	J. Wills	Std Libelle	7.6.1976

MOTOR GLIDERS (**Also British National Record)

SINGLE-SEATERS

100km Triangle	57.3km/h	I. W. Strachan	SF-27M	13.6.1971
200km Triangle**	48.2km/h	I. W. Strachan	SF-27M	23.8.1976
100km Goal	85.7km/h	I. W. Strachan	SF-27M	16.7.1971

MULTI-SEATERS

100km Triangle	36.04km/h	P. T. Ross and H. Daniels	SF-28A	27.6.1976
200km Goal	66km/h	P. T. Ross and P. Fletcher	SF-28A	18.7.1976

UK 750km DIPLOMA

1. Goal and Return	801.3km	C. Garton	Kestrel 19	22.7.1976

INTERNATIONAL MOTOR GLIDERS (Correct as at 12.3.1979)

SINGLE-SEATERS

Height Gain	6,660m	H. Lehmann, W. Germany	RF-5B	4.5.1977
Absolute Altitude	8,280m	H. Lehmann, W. Germany	RF-5B	4.5.1977
Goal and Return*	706km	W. Collee, W. Germany (in South Africa)	Nimbus 2M	23.12.1978
Triangular Distance*	758km	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	18.12.1978
100km Triangle	152.16km/h	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	29.12.1977
300km Triangle	131.75km/h	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	27.12.1977
500km Triangle*	120km/h	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	12.12.1978
750km Triangle*	120km/h	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	29.12.1978

MULTI-SEATERS

Height Gain	4,523m	F. Jung and G. Marzinzik, W. Germany (in France)	K-16	26.3.1978
Absolute Height*	7,000m	D. Mayr and F. Adler, W. Germany	K-16	22.3.1977
Goal Flight	646.42km	G. Jacobs and G. Hüttel, W. Germany	SF-25E	28.4.1976
Goal and Return*	394km	G. Jacobs & W. Sandermann, W. Germany	SF-25E	28.5.1977
100km Triangle	73.83km/h	F. Kensche and H. Schäffer, W. Germany	SF-25E	19.4.1976
300km Triangle	67.42km/h	W. Hoffman & R. Schwarzer, W. Germany	Bergfalke 4M	6.6.1976
500km Triangle*	67km/h	W. Binder and G. Kerber, W. Germany	Janus M	18.4.1978

1000km Flights

(See April-May, 1978, p68, for previous list)

40 Triangle	1,113km	H-W. Grosse, W. Germany (in Australia)	ASW-17	30.12.1978
41 Triangle	1,161.8km	H-W. Grosse, W. Germany (in Australia)	ASW-17	3.1.1979
42 Triangle	1,220km	H-W. Grosse, W. Germany (in Australia)	ASW-17	4.1.1979

New records have to exceed the old ones by: Distance 10km. Heights 3%. Closed circuit speeds 2km/h. Straight Goal speeds 5km/h.
For records, no side of a triangle may have a length less than 28% of the total distance of the course, except that for triangles of 750km or more for International and British National Records, or of 500km or more for UK Local records, no side may have a length less than 25% or greater than 45% of the total distance.
Conversion Factors: Multiply km or km/h by 0.621 to get statute miles or mph. Multiply km by 0.54 to get nautical miles or kts. Multiply metres by 3.28 to get feet.

*Flights subject to homologation

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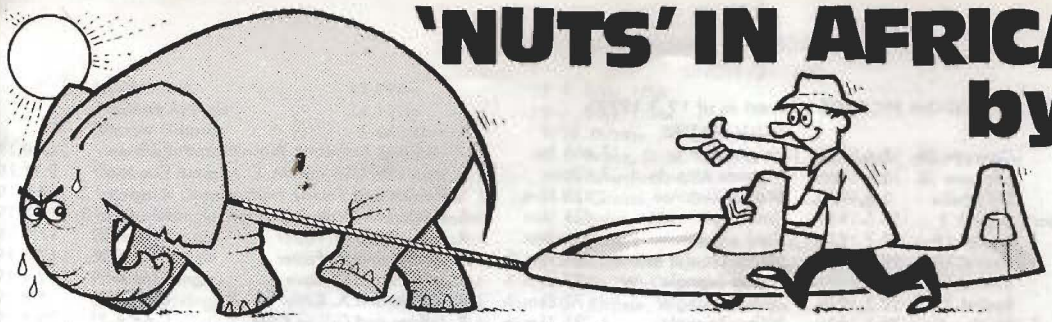
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'NUTS' IN AFRICA by





BIGGLES

His life is all flying – well almost! Pursues relentlessly high achievement. Got a world record in 1974 – no one told him how difficult it was – and has a touch of the Jonah about him; wherever he goes, the weather fails to measure up to known standards eg, SA, Australia. This trip his luck ran out.



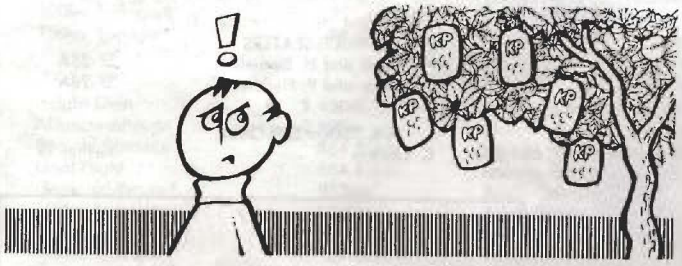
UN

Aptly titled mysterious UB 1969, ten gliding. He anything ab ond is well monumental he's a thorou acter. From ti in SA and record jus

An unconventional account of the South African Nationals at Vryberg from December 17-31 when five British National records were claimed.

If 5500km of competition cross-country flying in 11 days sounds like a lot then South Africa has a big reputation. The characters in the following saga are poorly disguised but for anyone who doesn't know them the following sketches will help set the scene.

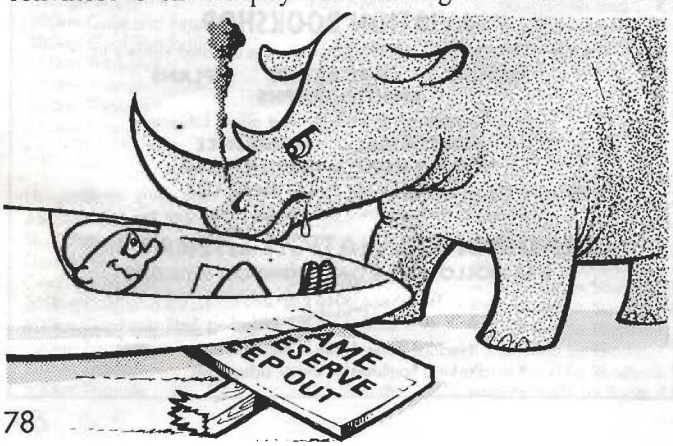
Go out in style, that's the way to do it. An 840km out-and-return sounds about right. Twenty minutes later with only 828km to go the field landing was imminent (when Biggles means imminent it really is!). The field was no ordinary one – perhaps there's a message in the fact that the crop was peanuts. (I always thought they grew on trees!). The local pundits had stood around the launch



point laughing at the performance of the mad dogs and Englishmen. These Englishmen are no ordinary pilots – nobody but a nut would glide out over semi-desert on the high veldt early in the morning.

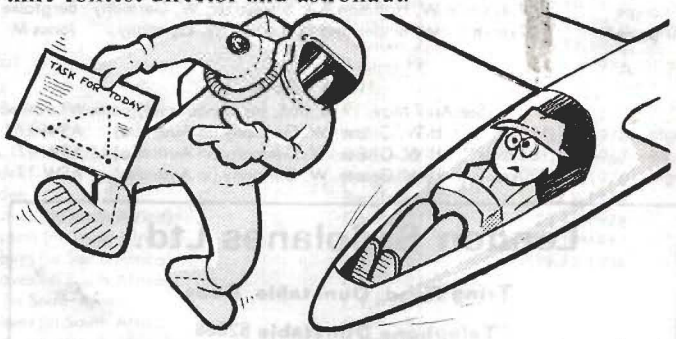
It was well after the midday sun that Murphy (*alias* Mark French) and our dreadful heap of a trailer appeared bouncing along the rutted highway navigated by the rest of the gliding smart alicks who had taken-off at a sensible hour after waiting for the weather to start. Never mind, it was an Englishman who first sailed single-handed around the world.

It was not always like this. Some days were worse: 40kt winds coupled with a raging sandstorm made even aviators of Fitchett's class tremble, leaving only the intrepid to consider a task. "How about rushing off downwind?" "Not on your nellie," says the old, wise one, "take Murphy, he knows the way." One look around Vryberg in the tug convinced even Murphy that hunting rhino in the local game reserve was a safer alternative to pitching around the sky in a tin tadpole avoiding sand by the bucketful.



Have you ever wondered why you do it? Gliding I mean. Sitting in some foreign field late in the evening, miles from home trying to explain in broken French/Russian/German/Spanish/English/Afrikaans (delete as appropriate) to some uncomprehending stranger, whose only wish, like your own, is that you weren't there. Add to this all the possible fumbles (if you think of the number and double it then you're in the right league for us) then the picture is complete. On the first day we tried a 500km triangle (the task set was 350km – might they have known what they were doing!) we managed to land almost as far away as possible. Our decision to retire from gliding was unamimous and reinforced by our crew's loss of the truck keys when we stopped at midnight to buy our usual fish and chips. Eventually climbing into bed at an ungodly hour of the morning the pain was only lessened by the thought of no more retrieves.

Only a quirk of fate led us back into the cockpit next day. Was it a 1000km day? No, but what else was there to do? Swim? Not very well and UB's too old. Horse riding? UB is too old and I can't. A game park visit? UB has done it already, many, many times. Drinking? Too early and UB doesn't. So we might as well go and fly. The task setting was by Alf Thompson, the former handsome six footer, one time contest director and astronaut.



With so many tasks it's difficult to remember how it all happened – breaking the records that is – but as even fair weather in Africa is better than superb weather in Europe the speeds were generally good enough. So it went on; the tasks got bigger and we got braver, helped assuredly by the thought that the alternative to getting back was being retrieved by Murphy accompanied by the cackling humour of those ubiquitous Yarpies (South Africans) who seemed to have little or no difficulty in rushing around the largest tasks at speeds which brought tears even to the eyes of our hero Bernard. Following in the footsteps (thermals) of the



NCLE BULGARIA
(to Womble fans) the JB won the Nationals in years after starting professes not to know bout glide calculators known for occasional hangovers. Nowadays oughly reformed char- time to time he turns up breaks the occosional to keep his hand in.

BILTONG
Now well known as the DOG of the BGA, a great connoisseur of smelly strips of dried ostrich meat and an author of biblical proportions on all matters of gliding.

Then there is MURPHY
"Crew" are the saints of gliding; endowed with patience, foresight, resourcefulness and all human attributes that their pilots lack they naturally take all the "stick".

few, we finally reached the pinnacles of enthusiasm, optimism, courage, etc, to declare a 1000km triangle. It seemed that we would have to fly around most of Africa so we set off long before it was sensible to creep at 1500ft above the ground and over the rocky outcrops. Alas to no avail. After some 350km it was clear that we would need to rely on lunar heating to get round so we turned back to clock up 700km – but at least we avoided the attentions of the dreaded Murphy.

We managed to avoid his attentions for ten days. The result was some of the most exciting gliding that either of us has ever done and included, more by luck than judgment, the breaking of most of the British National two-seater records. It is fair to say that while the weather is exceptional by European standards, we saw only a part of a day during the whole time which was classic South African. Although the tasks flown included one in excess of 700km, seven in excess of 500 and three in excess of 300, there was only one day on which 1000km was probably possible and we of course blew that by assuming that tomorrow would be even better.



One thing is certain; despite all the frustrations the atmosphere, opportunities and superb conditions make gliding in South Africa a marvellous experience. It is certainly the best gliding holiday that Con (blast! – I've blown his cover) and I have known and he should know after 93 years of gliding.

As you will see from the annual records list on p76, Mike has claimed five British National two-seater records, four with Con Greaves and the fifth flying the Calif A-21 with Leonie Lawson when they completed a 100km triangle at 137.22km/h. This fruitful expedition to South Africa also brought claims for the 300km, 500km goal and return and the 300km, 500km and 750km triangle records.

So What Do You Want Out Of Gliding?

RHODA PARTRIDGE

A nineteenth century philosopher whose name I've forgotten once said something on the lines of "Be careful of what you want young man, for you will very probably get it".

"Now what's she on about? What's that got to do with gliding?" I'll tell you. Gliding has such an extraordinary variety of delights on offer, that a lot of us never really think out what we want. We're often pressurised into trying to achieve what we haven't consciously chosen – or we may have achieved what suits us fine and be shamed into not enjoying it by those toffee-nosed so and so's who are better pilots. So let's consider what's on offer.

The number one goodie is the way you can give yourself a nice safe fright. I'm always scared and the post-adrenalin feeling is smashing. Then there is the pleasure of being airborne and moving over beautiful country with the sky to play with. Planning in winter with summer in view. Instructing, which gives you the chance of being useful, watching your pupils progress and sending them solo, taking your god-complex for an outing, getting great gushes of adrenalin (which is why I've never dared). Power-administration at club, national or even international level. Ingenuity and invention. Cheerful friendships, torrid love affairs. Gossip. Badges. Competitions, with the anxiety of the grid, the excitement of being sent off on hopeless tasks and the babel in the bar of everyone describing in detail how they did it with no one listening. Discovering gorgeous corners of the UK. Washing the glider on a beautiful morning and getting her ready to take you cross-country. Euphoria after a successful flight. Getting gliders out of impossible fields (or off islands). Lovely people who help you when you land out. Thermalling with birds. Now you add some.

"Solo I didn't want, it sort of happened . . ."

The first thing I passionately wanted was to fly Popsy (West Wales' T-21) in a straight line, using the runway as a guide, knuckles white, brows knit as she gently lolloped from side to side. Solo I didn't want, it sort of happened as I hadn't the nerve to say I wouldn't.

Then I wanted a Silver C and after six years flying club gliders at the Long Mynd, I got it. (Let me recommend the Mynd; that is a glorious place to fly). Next thing I wanted was a K-6E and, thanks to making pottery, I got one. She taught me a lot and suggested I should try for a Gold C. When I got the Std Cirrus she persuaded me that the odd Diamond would be nice. Aspirations change as one goes along.

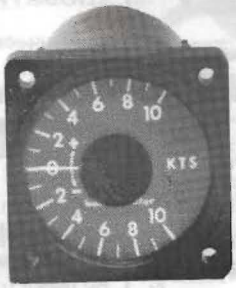
What I want out of gliding now is, quite simply, bliss. It's on offer flying over exquisite Britain on good days. Hanging on hills on marginal days. Climbing smoothly in wave when I'm not lost and it isn't going to close in under me. Arriving back at Shobdon tired and happy and eager for beer. Lots of interesting people to talk to. It would be nice to get my 500km, but I won't break my heart if I don't.

So what do you want? Whatever it is, I hope you get it. But don't despise the pilot who wants something different. One last question (and this one always makes me blush). So what do you put back into gliding?

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INSTRUCTIONAL TECHNIQUE "DO'S" AND "DON'TS"

RICHARD COLE of the Central Flying School, RAF Leeming, thought this guide they use as an introduction to the instructional flying phase of the flying instructors' course would make interesting reading for both gliding instructors and pupils.

DO'S

1. Give a clear briefing
2. Make sure he
   a) Is comfortable
   b) Can hear you
   c) Understands you
3. Make sure of your facts
4. Give good demos
5. Teach in simple terms
6. Teach from the "known" to the "unknown"
7. Compliment whenever possible
8. Match your demeanour to his temperament
9. Use his errors and mistakes (and yours if possible!) as teaching points
10. Encourage student to "think aloud"
11. Set a good example
12. Be patient
13. Remember when you were a student
14. Give a constructive debrief
15. Read the Instructors' Handbook (an amendment for glider pilots).

DON'TS

1. Use 12 words when six will do
2. Leave him in any doubt what you want him to do
3. Ask him to do something he hasn't been shown
4. Talk while he has control
5. Over estimate his deductive powers
6. Expect too much of him
7. Be surprised if he can't see the wood for the trees
8. Forget your airmanship
9. Hog the flying

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BGA AND GENERAL NEWS

COMPETITIONS AND AWARDS

Annual Awards. The BGA awards for 1978 were as follows:

Wakefield trophy (longest flight originating in the UK): the **Rex Pilcher** trophy (earliest pre-declared 500km of the year by pilot completing this task for the first time) and the **Frank Foster** trophy (fastest declared 500km triangle): A. B. Crease (Surrey & Hants) for a 515km triangle on June 19 at 72.7km/h (Kestrel 19).

California in England trophy (longest flight by a woman): Jane Randle (Oxford), 255km on August 27, Kestrel 19.

Volk trophy (longest pre-declared goal flight by pilot not holding Gold or Diamond legs on January 1, 1978): M. Clarke (London) for a 351km triangle on August 17.

Seager cup (longest distance in a two-seater): E. R. Lysakowski for 210km on July 25 (Janus).

Manio cup (fastest pre-declared 300km triangle): C. Garton (Surrey & Hants) for a 312km triangle at 92.8km/h on May 23 (Nimbus 2).

De Havilland trophy (maximum gain of height): A. E. Kay (Booker) for a gain of 28 000ft at Aboyne on October 26 (Jantar 2).

Douglas trophy (maximum cumulative distance by three pilots from the same club): Surrey & Hants for triangles by A. B. Crease, 515km on June 6; G. Metcalf, 304km on September 4, and C. Lovell 304km on June 9. Total 1123km.

Seager cup (longest distance in a two-seater): E. R. Lysakowski (Janus); V. Luck (K-13), D. S. Watt and R. Highfield (Twin Astir) and C. C. Rollings and B. T. Spreckley (Twin Astir) for 210km on July 25.

Robert Perfect trophy (for the club with the most instructors per member): Kestrel with 14 full category instructors for a flying membership of 64.

National Ladder trophies

L. du Garde Peach (winner in club aircraft): T. Cockett (Thames Valley), 2697pts.

Enigma trophy (winner in private aircraft): J. D. J. Glossop (Cambridge University), 5767pts.

New Records. The following women's UK local records have been homologated for a noteworthy flight by Alison Jordan (Imperial College) at Aboyne on October 8, 1978, in an Astir – absolute altitude, 8701m (approx 28 540ft) and gain of height, 7833m (approx 25 690ft).

Competition Handbook. The 1979 edition of the Competition Handbook is now available from the BGA, price 50p, although entrants will normally be sent copies by competition organisers inclusive with the entry fee. The only significant change from the 1978 edition is that the percentage of gliders required to exceed Qualifying Distance Y to make a contest day is reduced from 25% to 10%.

Gordon Camp,
Chairman, BGA Competitions Committee.

IMPORTANT STAFF CHANGES AT THE BGA

Two changes in senior staff responsibilities came into effect on February 1, 1979: Bill Scull was appointed Director of Operations and Barry Rolfe is now Administrator and Secretary of the Association. In addition Naomi Christy retires from the position of Development Officer at the end of March when she becomes FAI Certificates Officer and John Williamson will be joining the BGA on June 1 as our second National Coach.

Commenting on these changes Roger Barrett, BGA Chairman, said they were being made to put the Association in a better position to meet the challenges gliding is going to face in the 1980s.

"We shall be able to offer more help to clubs and their members. On the operational side Bill Scull's seven years of working with clubs as our Senior National Coach will make him well suited to take on wider responsibilities. He will work closely with our Airspace, British Team Training, Development, Instructors' and Radio Committees and with the Safety Panel. Bill will help co-ordinate and carry out the policies they decide. He will also be available to represent the BGA at many of the numerous meetings we have with officialdom.

"Bill Scull will retain overall responsibility for the work of our coaches. We are now putting greater emphasis on cross-country soaring instruction and when John Williamson joins Brian Spreckley as National Coach, clubs will benefit by their considerable experience as competition pilots of the first order.

"On the administration side Barry Rolfe remains in charge with increased responsibilities. Barry, like Bill, will report direct to the Executive Committee. From the beginning of April Naomi Christy retires from the post of Development Officer which she has held for the past ten years. Many club officials will, I know, want to join me in thanking Naomi for the tremendous help she has given to British gliding in this time. In future all of Naomi's work on development, including grants, planning applications etc, will be shared between Barry Rolfe, who will look after the admin, and Bill Scull who will take over the operational aspects.

"The Competitions and Badges and the Technical Committees, and Dick Stratton's work as Chief Technical Officer of the Association, are unaffected by these changes."

BGA DIPLOMA WINNERS

Congratulations to the three BGA Diploma winners who have given long service to gliding. **Joan Cloke,** BGA Treasurer, has been a member of Southdown GC for more than 25 years and a member of the Committee for some 20 years. During the last eight years she has been their Treasurer and kept the club on a good financial basis. She has done a great deal to help Southdown.

Joe Podolski has been CFI of the Norfolk GC

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for 17 years during which his concentration on good instruction and safe flying has given the club an outstanding safety record. As the club developed so Joe has acquired the necessary skills - he is a MGPPL examiner, he trains tug pilots and is a BGA Inspector with great experience as a repairer. He has also played a major rôle in all the club's non-flying projects and has been the principal negotiator in dealings with the landlords and other figures of authority.

Eric Richards founded the Colchester Flying Club at Boxted in 1960 and, after the site was sold, established the Essex and Suffolk GC at RAF Wattisham in 1965, becoming their Chairman. He effectively prevented the break-up of the Anglia RAFGSA at Wattisham in 1974 by taking over as CFI as they didn't have a full category instructor. Two years later he returned to the Essex and Suffolk GC, is now Chairman and has been acting as CFI for the newly formed Ridgewell Oatley GC. Eric has also led an intensive campaign against the local authority to stop them closing us down completely.

BGA 50th ANNIVERSARY DINNER

Arrangements for the 50th Anniversary Dinner of the BGA are now well advanced under the direction of John Delafield. It will be held in the Ballroom at the Grosvenor House, London, on Friday, November 30, and the BGA is optimistic that a Royal guest of honour will be present. Guests associated with the BGA's 50 years will be invited.

The occasion will take the form of a "grand dinner", with the appropriate speeches, but, thereafter the evening will become less formal with music and dancing. Seating will be limited to about 400, and tickets will be priced on an inclusive basis to include pre-dinner drinks and wine with the meal – the cost at January 1979 prices will be around £19 per head.

Clubs will be sent further details shortly, together with advertising material. Make sure you do not miss this unique event, unless, that is, you reckon on being around in the year 2029.

ENSTONE REGIONALS

Enstone Eagles GC are running their first Regionals at Enstone Airfield, Oxfordshire, from August 4-12 with Gordon Herringshaw as the Competition Director. The airfield owners are offering a Class winner's cup and it is hoped to have an Open and Standard Class.

STRUCTURE OF THE BGA

The membership structure of the BGA is now made up of 83 full members and 94 associate members. The 83 full members include three members which have affiliated clubs as follows: Army Gliding Association, two, RAF Gliding and Soaring Association, 13 and Royal Naval Gliding and Soaring Association three clubs.

Operations. During the year ending September 30, 1978 (1977 figures in brackets), civilian clubs flew a total of 89 456 (84 004) hours from club sites from 289 579 (302 428) launches.

Club owned gliders totalled 308 (317) and privately owned gliders 858 (789). The combined Services flew 20 545 (23 864) hours from 77 122 (91 009) launches.

Certificates. Certificates were issued as follows: A and B endorsements 1869 (1890), C endorsements 132 (120), Bronze C 483 (516), Silver C 226 (286), Gold C 47 (45), Diamond goal 22 (93), Diamond height 55 (16) and Diamond distance 4 (7).

A and B certificates were applied for by 974 (1080) holders of the ATC proficiency certificate.

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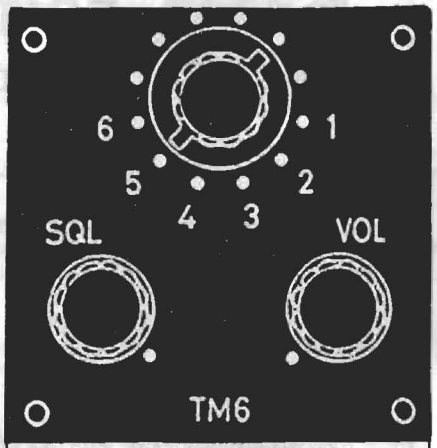
There have been recent cases of cracks appearing in the laminated beech booms of the tailplane spars on T-61E aircraft, the latest variant of the T-61 Falke. As a result an inspection notice (Technical Instruction No. 81) has been released and covers all Falke types.

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TUG PILOTS NEED DASH OF HUMILITY

Aerotowing is probably the most reliable but by far the most expensive method of launching a glider. It is economical only in the number of people required to carry out the operation, namely the tug pilot. When the glider pilot is at the back of the launch queue and conditions are brewing he may not care who tows him up so long as he gets there; sometimes this is just as well!

The tug pilot's job is to operate the tug efficiently and safely irrespective of whether he is paid to do it, he pays or is a volunteer. He must understand the problems facing the glider pilot and the only way he can do this is to be a glider pilot himself. Ironically not all good glider pilots make good tug pilots. Club committees, managers, CFIs and tug masters should all be wary of power pilots who want to tow for reasons of their own. These may range from blatant extrovert tendencies to amassing power hours for one reason or another.

The personal qualities of the tug pilot should include a dash of humility. With this he is more likely to be self-critical and considerate to other aviators in the air and on the ground. He should at all times only operate within his own capabilities and if in any doubt, he must be prepared to say so. He must be respected for this and be supported by those in authority. Undoubtedly many incidents and accidents occur because the tug pilot has failed to say "no". He must operate within the limitations for the aircraft which are set out in the Flight Manual; remember, there may be far reaching consequences if an accident occurs, particularly when towing and it comes to light in the subsequent investigation that the limitations have been exceeded or ignored.

Tug pilots, by all means enjoy your towing – not at the expense of others but through the satisfaction of giving value for money by doing your best in the most efficient and effectively safe way that you can.

DON HANSON,
Tug representative on the BGA Instructors' Committee.

REQUEST FOR PHOTOGRAPHS

We would be very grateful for the loan of colour transparencies or prints of British gliders to illustrate the special issue we are planning later in 1979 to mark the BGA's 50th Anniversary.

Also Steven Longland, who is arranging an exhibition of pictures to be on show at the Anniversary Dinner, would welcome any photographs taken over the last 50 years which reflect the development of UK gliding and club life. He is hoping for humorous as well as conventional shots.

If anyone is able to help, would they please send the photographs to the Editor at Cambridge (address on contents page).

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No.	Name	Club	1978
3/401	A. Kennedy	SGU	4.10
3/402	C. D. Rowland	Bath & Wilts	27.10
3/403	A. A. Shubert	in Canada	5.1.79

GOLD C COMPLETE

No.	Name	Club	1978
694	R. W. Hill	Norfolk	11.10
695	W. Fearon	Four Counties	4.11

GOLD C HEIGHT

Name	Club	1978
Elaine Johnson	SGU	26.11
R. W. Hill	Norfolk	11.10
W. Fearon	Four Counties	4.11

SILVER C

No.	Name	Club	1978
5191	T. Mitchell	Phoenix	22.6
5192	R. G. Songster	Aquila	11.9

OBITUARY

STUART MORISON

Stuart Morison died on January 16. A tremendous aviation enthusiast, he will be remembered with great affection by all his friends.

From his earliest days he flew whatever he could – the Short Nimbus two-seater glider to Valiants, Romanian powered gliders to Galaxies.

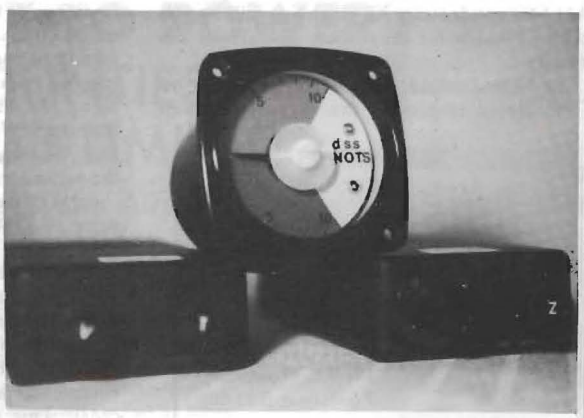
His sense of fun was enormous and contagious – kidnapping Sir Thomas Beecham for his University rag, to upsetting the clerk of the course by offering his fellow Nationals pilots a trip round the course in his Proctor.

Wally Khan

Correction: In the article "Vinon Swansong" by H. R. Dimock in the last issue, p17, there were two printing errors in the paragraph on solar cells. 0.02amps should have read 0.2amps and 0.03amps on the last line should have been 0.3amps.

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OVERSEAS NEWS

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

A "GLUT" OF WORLD RECORDS

Whilst Britain was in a grip of one of its worst winters, with flying severely curtailed in most clubs, soaring conditions during December and January in Australia, New Zealand and South Africa have produced no fewer than 19 World records, many of them being improved upon almost daily.

Hans-Werner Grossoose, Germany, on his annual pilgrimage to Australia with his ASW-17 had set his sights on improving his own 1000km triangle records which stood at 1063.53km and 109.71km/h.

The venue for these attempts was Alice Springs Airport in the isolated mountain desert of Central Australia. But before he got there he was taken ill and had to spend a week in a Perth hospital, followed by another week of convalescing before flying again.

Both on December 26 and 29 he had to curtail his flight and return to base before rounding the 2TP as he was not going fast enough to complete the task with a sufficient margin of safety, which over the moonscape surface is an absolute must. On December 30, 1978, however, he broke both the distance and speed with a triangle of 1113km at 124.5km/h. This was followed on January 3, 1979, with a triangle of 1161.8km at the tremendous speed of 145.3km/h (faster than the current world records for the 500 and 750km triangles).

According to Hans-Werner the weather was not perfect, but it was still the best day he has had so far for a 1000km plus flight. On this particular day it was slow in starting, barely climbing at 1kt and down to about 300/400ft on the hill, then 2kt and suddenly he was on his way being able to keep up a high average speed over long stretches during the best part of the day.

Even this flight was not enough to satisfy him and, with the weather still holding, he set off again the very next day having this time declared a 1229km triangle via Mount Olga, Vintinna and back to Alice Springs. (This is roughly a flight say from Gretna Green to Plymouth then to Lasham and back to Gretna Green or in other words simply four times round a 300km triangle!) This turned out to be a blue thermal only day, very strenuous to fly, rather less fun as well, he said. Although unable to match yesterday's speed he completed the triangle, landing at sun set to claim, for the third time, the triangle distance 1220km (allowing for curvature) and the speed record twice – all in one week!

He was full of praise for the assistance the Australian ATC and Met Office gave him, the latter even sending up a balloon to give an update on wind speeds. The pilots of a Boeing 727 airliner, which was kept on the ground during a 150km final glide by Hans-Werner and a USA Hercules, which was given a holding pattern, were most impressed when he arrived only 36 seconds out on his ETA.

Hans-Werner thought that given the "perfect day" a triangle of around 1300/1400km would be on. No doubt he will be one of the first to try it, but in the meantime he has assured himself another outstanding place on the world record list.

Also in Australia five women's world records were broken. On January 24, Elizabeth Karel claimed the triangle distance and speed records with a flight of 779.68km at 95.45km/h from Tocumwal in a LS-3. This was followed on January 29 by Sue Martin from Waikerie, who added another 20km/h onto the existing 500km triangle record which Sue now claims at 133.14km/h also in the 15m LS-3.

Elizabeth also broke the 300km triangle with 121.54km on January 30, which Sue followed up with 139km/h for the 100km triangle on February 2.

In New Zealand, Dick Georgeson and his wife Helen improved the recently broken (December 4) goal and return two-seater record with a flight of 804km in a Janus from Hanmer to Clyde (South Island) on January 10.

Moving now to South Africa, Erwin Müller (5th Open Class, Chateauroux) and Otto Schäffner of Germany flew from November 20 to December 7, 1978, seven German National records and two world records in their Janus (briefly mentioned in our last issue p37, and one of the world records now claimed by Dick Georgeson). Some of the National records were only a whisker away from world claims.

Motor gliders too showed their paces in South Africa. Willibald Collee and Fritz Reub, Germany, both in Nimbus 2M's broke various world and German records several times over (see annual record list p77).

Pilots from Britain included Bernard Fitchett who came sixth in the Open Class in a Nimbus 2, Mike Carlton and Con Greaves, the latter two claiming four British National two-seater records in a Calif A-21. Mike's fifth record claim is with Leonie Lawson. (See Mike's account, p78).

There were 11 contest days with seven tasks in excess of 500km, the largest being a 756km triangle. The Open Class was won by K. Goudriaan (ASW-17), 2 T. Mouat-Biggs (Nimbus 2), 3 B. van Niekerk (ASW-17). The Standard Class winner was I. Robertson (Cirrus 75), 2 P. Nouwens (ASW-15), 3 M. Otto (Cirrus). H. Stehr (Mosquito) was first in the Unrestricted Standard Class, 2 S. van Sandwyk (PIK 20) and 3 J. Harold (Libelle 301).

Let us hope that some of this weather they have been enjoying in the southern hemisphere will find its way to our shores R.H.

Late news: The altitude record held by Betty Woodward for 24 years has been broken in an Astir CS from Black Forest Gliderport, Colorado on February 14. (See records p76).

ROBERT KRONFELD COMMEMORATIVE CONTEST

The Gliding School at Oerlinghausen is to commemorate the World's first 100km plus cross-country which was flown in Germany on May 15, 1929, by Robert Kronfeld in his Wien.

To honour this milestone in gliding, Oerlinghausen, which is near the original route Kronfeld flew, is to hold a competition open to all cross-country pilots. All flights this season which take in the original start and landing points as turning points will be scored. Kronfeld flew along the Teutoburger Wald, a line of hills running NW to SE with Oerlinghausen at its foot. Documentation should be in the hands of the organisers by May 15.

In 1929 the newspaper *Grüne Post* offered a prize of DM5000, then equivalent to about £250, for the first such flight. Early in the year some attempts on the prize were made but pilots were brought down by gaps, *eg* in a mountain range (Nehring) or a line of sand dunes (Schulz) or, on Kronfeld's first attempt, after going 34kms. He finally succeeded by waiting for a cumulus to pass overhead before attempting to cross. This year's prize is DM1000, again equivalent to about £250.

It is hoped that Kronfeld's son Bill, a member of the Imperial College GC at Lasham, will present the prizes on May 18. Wally Kahn, who had close connections with Oerlinghausen immediately after the war, has also been invited. *Luftsport* and **Kronfield on Gliding and Soaring.**

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SOVIET YEAR

On Tushino airfield boys and girls from Moscow schools had guests from Novosibirsk schools for initial training on primary gliders of BRO 11M type (similar to SG-38 but with full span ailerons – CW). Their instructors were veteran glider pilots including Viktor Ilchenko who came to Camphill in 1954 to describe his two-seater world distance record flight from Moscow to Volgograd (then Stalingrad). This Moscow Youth Gliding School takes 900 pupils a year of whom 600-650 finish the course, many then becoming military or civil pilots or entering the aviation industry.

Records. Eleven Soviet national records were broken in two days last May. On May 20 Vaskov and Shaltoomba were first home on a 326km triangle task, each flying a Lithuanian LAK9 Lietuva. From 30 to 60 minutes after their unhurried start cloudbase rose almost to 2000m and lift was of the order of 2-3m/sec. They crossed the finishing line 45 minutes after the 2nd turning point, Vaskov having taken 2hrs 45 min at an average speed of 125km/h – a national record.

On May 21 a 750km triangle was set with an optional 500km triangle if the weather deteriorated. Paciechnik finished at 97km/h average, even with a detour which made the distance 765km. Ada Laan in a Jantar Standard finished the 750km triangle at 94km/h average.

High Mountain Waves. During October 1978 members of the Soviet National team went to Ordjonikidze in the Caucasus to try for altitude records using Blaniks and, for towing, giant single-engined AN-2 biplanes. On October 23 Anatoly Morozov and Natalia Ermakova reached 7460m, height gain being 5100m. Three days later Estonian woman pilots Ada Laan and Svetlana Timkova of White Russia climbed from 4160m, gaining 5570m, a national feminine two-seater gain of height record. On October 27 Oleg Pasiannik and Leonid Vaskov reached the limits of the lower stratosphere at 10 810m, with a height gain of 8645m. Thus six national height records were broken – Condensed and translated from Krylia Rodiny by C. Wills.

INTERNATIONAL VINTAGE RALLY

The seventh International Vintage Glider Rally will be at Thun airfield in the Bernese Oberland of Switzerland from July 14-21. The airfield, set in an outstandingly beautiful area, is 30km from the 4000m peaks of the Jungfrau, Mönch and Eiger which were the scene of the famous high Alpine gliding meetings of 1931 and 1935.

The organisers, Thun GC, are allowing an entry of up to 40 gliders. For further details contact Chris Wills, Huntercombe End Farm, Nettlebed, Oxon. Tel 0491 641 650 (evenings).

Stop press: Two gliding clubs start the season with missing barographs. Wycombe Gliding School have lost Winter barographs 58594/583081/53544 and 44193 and Cambridge University GC have lost a Fuess barograph, No. 1123002.

PUBLICATIONS

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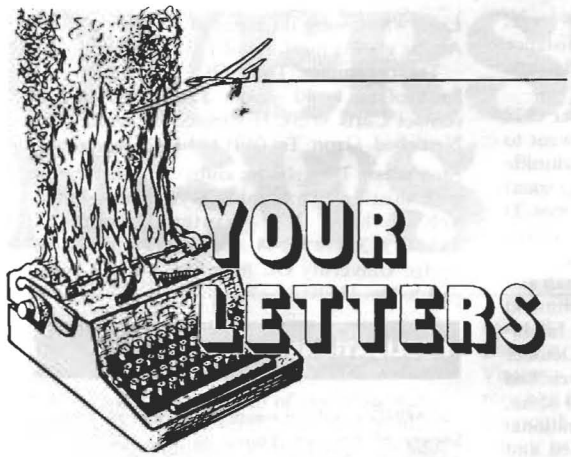
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EVIDENCE OF RELEVANT WITNESSES VITAL

Dear Editor,

I am the glider pilot involved in the fatal accident at Aboyne on October 11. I was amazed to read Bill Scull's report of weather conditions on that day (see S&G, December 1978, p284).

Light wind? At the airfield yes. At the scene of the accident we estimated the wind speed to be 25kt and we could not de-rig the glider until the trailer arrived to shelter the glider.

Moderate turbulence? The turbulence was severe. Dirt flew around the cockpit, instruments were rattling and although I was securely strapped in my head hit the canopy. I felt that any stronger turbulence would have overstressed the glider (K-6E).

I have witnesses to a conversation I had with a glider pilot who had flown on a previous flight. He stated that he had met severe turbulence, the worst he had encountered during four annual visits to Aboyne. Having had nearly 500 launches, including 148 aerotows, I do know the difference between moderate and severe turbulence.

Under such conditions I do not think that anyone can honestly say that the glider got too high. It is just as likely that the tug suddenly lost height. It all happened in seconds.

In conclusion, if any pilot is involved in an accident I would advise them to insist on all relevant witnesses being called to give evidence. This may prevent inaccurate statements being made.

Rudry, South Wales BILL SMART

THE PROBLEM OF SITES

Dear Editor,

I read with great interest the many technical, humorous or informative articles which appear in each issue of S&G. I do occasionally wonder, however, how much thought is given to one of the gravest problems which faces the gliding movement in Great Britain. That is, the problem of having a site to fly from. If gliding is to increase in popularity in the British Isles we must have lots of secure sites from which to fly. It is an unfortunate fact that the majority of the smaller clubs (to whom we must look for that expansion) do not enjoy anything like the security which is desirable of actually owning the site or having a very long lease.

The phenomenal increase in the price of land does not help matters. It means that land which was considered useless a few years ago (such as derelict runways) is now once again becoming valuable property and small gliding clubs may find themselves in the position of having to leave such sites in the future. The high price of land also means that these same clubs find it impossible to raise the capital to purchase a new site. Their members either stop flying or join another club, a situation which is not desirable and may eventually become impossible as the few clubs with secure sites become saturated with members.

The answer may lie in the amalgamation of two or even three local clubs if they are close enough to each other and a suitable site can be found. The basic problem of finance still remains, however, and I would like to ask whether any club having found themselves with the problem of having to raise £50-£100 000 to buy land has ever managed it, or if the BGA has a friendly financial wizard who could advise the best way of raising such an amount? If so, I would be very pleased to hear from them and would happily pass on any information received to any club having site difficulties, whom I would also like to hear from.

I would like to add that the site from which I fly (Wolds GC, Pocklington) is not in any immediate danger of getting "the chop". I have wirtten simply in the hope that more people might give a little more thought to what I believe is going to be one of the most serious problems to affect gliding in Britain in years to come.

117 Norwood Grove, Beverley, North Humberside R. L. FOX

K. R. Mansell, Chairman of the BGA Development Committee, replies: I am grateful to Mr Fox for raising the sites question. Of the 68 civilian sites in Britain only ten are freehold. Only a further 14 have leases longer than ten years. Many have no legal security at all. Such a degree of insecurity clearly has an inhibiting effect on development. Our existing site pattern has grown a little like "Topsy". We certainly need more secure sites and we need to run all sites as effectively and as effeciently as possible. The suggested amalgamation of small clubs is timely in that I am currently involved in discussions with a group of six insecure clubs with amalgamation on one secure site as their goal. A paper entitled "Site Policies" has been circulated in advance of a discussion at the BGA Weekend. The paper urges the establishment of area working parties to identify local problems and needs. Once identified appropriate action can be taken. We should be ready to respond to opportunities.

REICHMANN ON SPEED-TO-FLY

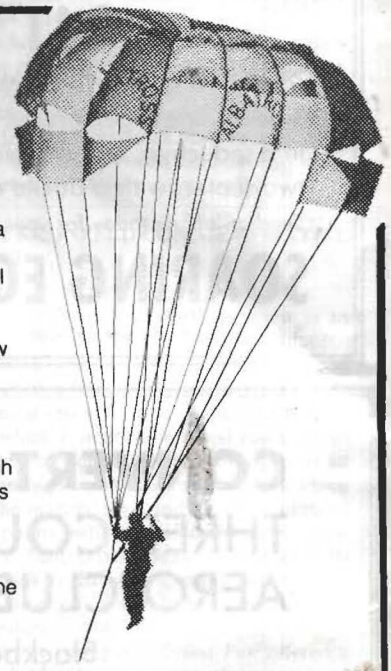
Dear Editor,

In his book **Cross-Country Soaring,** Helmut Reichmann has quite a lot to say about the best speeds at which to fly if you want to get somewhere in the shortest possible time. In particular, on pages 59 and 60, he points out that optimisation calculations based on an average rate-of-climb are

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"inaccurate" and should be replaced by a "refined" procedure, in which the initial (and final) climb rates are used instead of this average.

It is to be hoped that these observations by a leading world competition pilot will put an end to the specious mathematics which appear in most text books on gliding, in which the optimisation is related to average rate-of-climb. But what Dr Reichmann refers to as the "new" theory was given in S&G, October, 1964, p364, in an article entitled "The Armchair Pilot" by Anthony Edwards of the Cambridge University GC. René Comte, the Swiss pilot and coach, to whom Reichmann attributes the theory, did not publish his article, aptly entitled "Each (Pilot) his own Croupier", in *Swiss Aero-Revue*, until 1972. (Even that seems hardly to justify description as "new".)

Reichmann goes on to say that it is impossible to make accurate guesses at the initial rate-of-climb in the next thermal and in the theoretical section of the book he reverts to thermals which have uniform strength at all heights (but no mention of averages). The "Armchair Pilot", however, shows how to make the best of this bad job by a trial-and-error system. I believe that this is what most good pilots do in practice, whatever their theories may say. Everyone knows that strong lift is good and scraping around low down is bad (let alone actually arriving at ground level; see p58 in the book, where pilot No. 2 sets his ring to 600ft/min but finds his initial rate of climb 0ft/min at 0ft above ground).

Bridport, Dorset RICHARD FORTESCUE

SHOULD THE TUG HAVE BEEN FLYING?

Dear Editor,

I have great sympathy with Mr Hearne "to whom it nearly happened-"(see S&G, December, p263, "It Can Happen to You"). As "the chap on the end of the string", I would hate it if any tug pilot got into difficulties through not dumping me soon enough. Even crash landings are rarely fatal in a glider, but the same can't be said for tugs and death is rather permanent. Gliding is, after all, a sport to be enjoyed – as safely as practicable.

But, with respect, I wonder if Mr Hearne hasn't missed the essential problem? If it took *two* hard pulls to release the glider, should that tug have been flying at all? When was the release mechanism last checked under full load? Stiff or bent hooks are dangerous. Was the tow rope or its link rated to break at 1000lbs? The structure of the glider, the tug and the hooks and the *maximum pull* needed to release the rope are *all* designed around this load.

Suitable weak links can be made from 5mm diameter Polyester (Terylene) yacht rope. This rope is produced to a specification of 400kg maximum load and if loops are spliced on both ends it breaks in the centre-section at almost exactly 1000lbs (in my tests). It can be fitted quickly and spliced beforehand, so that delays on the field are minimal. It is also quite cheap and readily available.

Birmingham C. J. CHAPMAN

HOW ABOUT SHARING YOUR EXPERTISE?

Dear Editor,

I am amazed at the variety of technical and practical talent that lurks in a gliding club. When the weather is poor and soaring impossible many of us fettle or would do so for want of good ideas. Alan Calverd's recent design (S&G, June 1978, p123) for an audio monitor for an electric variometer illustrates how a sophisticated instrument can be built with modern easy-to-assemble integrated circuitry. Thank you Alan. Surely there is room for a do-it-yourself corner in S&G. While I would not like to see S&G full of junk gadgetry like a boffin hobby mag. there is room for mechanical devices such as a simple camera bracket, trailer and ground handling accessories – anything within a practical pilot's capabilities.

It's a pity that glider electronic instrumentation is so expensive. A brave project could be a serialised article on the construction of a modular electric variometer, complete with total energy, averager and SG.

How about it, all you Genii – don't hide behind your beer glasses, grab a pen and show us how it's done; but please try it out first!

Randfontein, South Africa. IAN ROBERTSON

(This is an excellent suggestion and we always welcome sound ideas, though prefer to use articles on their merit rather than committing S&G to a regular series. Ed).

THE HOME-BUILT SAILPLANE COMPETITION

Dear Editor,

It will be interesting to see what this competition brings forth and how it compares with the K-18. (Details of the competition given in the last issue, p284).

Schleichers scrapped the production of the K-18 to go over to glass-fibre single-seaters. If they are prepared to allow ASW-20s to be built under licence in France perhaps they would allow someone to reopen production of the K-18. After all any new K-18s would only affect the other manufacturers – Schleichers have tried to move out of the field and now cater for pundits in glass.

Royston, Herts A. W. Elliot

INFORMATION WANTED ON TROOP CARRYING GLIDERS

Dear Editor,

In my search for information on troop carrying gliders, I wonder if any of your readers would be able to help? I am particularly interested in any literature (magazines or books), photos, plans and maps pertaining to gliders used during the second World War, especially concerning attacks and landings at Arnhem and Crete. I have noticed that a few people have touched on the subject in articles in previous issues of S&G.

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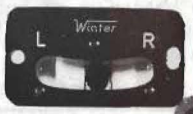


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January, 1979.



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COMPETITION NUMBERS

Dear Editor,

At risk of appearing controversial may I raise the subject of the new competition numbers to be introduced soon by the BGA? I understand that as numbers 1 to 999 do not provide sufficient scope, a system of three letters will be introduced. It is proposed that these letters be *allocated* to competitors rather than chosen.

I suggest that it is much more in keeping with the spirit of our sport that an individual should be able to choose the combination of letters which he might wish for his glider (for instance how appropriate to see Justin Wills in ONE). The administration of such a system should not present problems. Indeed the CAA manages to provide this flexibility of choice with powered registrations, such that some splendid examples of personalised marks are seen (Robertson's hot air balloon G-OLLI and the suberb G-KWAX of Dr Duck for instance).

A further point is the proliferation of markings on gliders particularly those which also carry a CAA registration. Whilst a three letter system does provide enough scope, might we not adopt a four letter system so that those gliders registered with the CAA could use the same combinbations for registration and competition.

Chester. RODNEY B. WITTER

Keith Mansell, Chairman of the BGA Sub-Committee on glider identification problems, replies: The BGA's triple-alpha glider identification scheme (see S&G, June 1977, p118) was devised to cope with more gliders than could the existing competition number system and to avoid the problems of that system. Most of these problems arose from the transferability of "cherished" numbers and hence the scheme features non-transferable identification. Please let me assure Mr Witter that the scheme does not take any privileges from the present holders of competition numbers who may carry on as before or opt for the scheme. Rather the scheme seeks to provide other glider owners who wish to identify their gliders with an inexpensive permanent identification. Powered registrations were allocated for some 70 years and in all the main still are. Commercial pressure produced G-BOAC and others followed. The administrative resources which handles and charges for "G-OLLI" etc are much larger than those available to the BGA. Implementation details of the BGA's scheme should be published shortly.

CITIZENS' BAND RADIO

Dear Editor,

For many years now I have listened to frustrated pilots moaning about having only two channels to talk on whilst airborne. However have any pilots considered the current range in the USA – the citizens' band radio? These are equipped with 40 channels, some manually operated to change channels by a large dial on the face, and the latest models have a scanning type LED readout.

The reason I mention this is because a pilot could quite easily have a talk on one channel and once every two minutes it would revert to the emergency channel for fear someone might be lost or couldn't make it back to the ridge, etc. Our organisation is looking for members as we still need 3000 so we can approach the Home Office and demand that CB is allowed in this country.

You glider pilots could tote this CB around in your car and talk to any motorist, whether you pass the time of day or warn each other of police radar traps, help a stranded motorist out of petrol, witness a road accident and not have to bother looking for an unvandalised 'phone booth because at arm's length you have all the help you need.

Going gliding, unclip it from your car and you have 40 channels to talk air to air or air to ground, to use during the winch launch or aerotow, and the price of these little boxes is £70. I know that some of the illegal ones are costing more in this country but that is because it is illegal. Once given Home Office approval the price will drop.

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A MODIFICATION TO THE UNDERCARRIAGE ALARM

Dear Editor,

I suggest that a push to make/release to break test switch should be connected across S1 and S2 in the "Electric Undercarriage Alarm" described in the last issue, p18. It is always nice to know that the alarm works and that the battery is switched on! A telephone earpiece has a large inductance and, if used, a small diode should be connected across it with the cathode band towards the positive supply. It damps out the voltage spiker and ensures a long and happy life for the transistor.

I agree that a warning buzzer in your ear is a bit unpleasant. I muzzled mine with masking tape and buried it behind the instrument panel. It cost under £2 and plugged straight in.

Birmingham. C. J. CHAPMAN

CAN ANY CLUB HELP?

Dear Editor,

The Royal Aircraft Establishment GC at Farnborough has a group of pilots at Silver C standard who are wondering what to do next. It would do them no harm to indulge in friendly competition, preferably with exposure to foreign sites, people and scenery. These pilots will come adequately staffed and equipped; they are already known for their beneficial effect on bar prices.

I would be grateful if clubs which organise suitable occasions, and would like to include them, would get in touch with me.

37 Napoleon Avenue, Farnborough, Hants. JOHN STONE, CFI.
Tel: Farnborough 44119.

UP, UP, BUT ERRONEOUSLY AWAY!

Dear Editor,

I hope that you do not think that I'm haggling,
But the 'plane in your picture was never a Dagling,
See, 'tis a gate, with wings, tail, and almost a seat on,
Produced years ago by Elliot's – called Eton:
The other has tubes at the back holding tight its frail rear:
We have one at Duxford, to fly some future year!
(And, if I may, setting your record quite straight,
– the Eton's just a copy of the old . . . SG Thirty-eight!

Duxford. MIKE RUSSELL, Russavia Collection.

(See last issue, p15).

FORTHCOMING EVENTS

APRIL 27-MAY 5: Hahnweide International Contest, Kirchheim/Teck, W. Germany.
APRIL 30-MAY 10: Inter-Services Regionals, Little Rissington, Glos.
MAY 19-28: Nationals, London GC, Dunstable.
MAY 19-JUNE 4: German Nationals, Bückeburg.
MAY 22-JUNE 2: Swiss Nationals, Schänis.
MAY 27-JUNE 16: Trans-European Out-and-Return Rally, Start from Angers, France.
JUNE 2-10: Western Regionals, Bristol & Gloucestershire GC, Nympsfield.
JUNE 9-23: Dutch Nationals, Terlet.
JUNE 14-24: International Club Class Contest, Örelero, Sweden.
JUNE 16-24: Competition Enterprise, Herefordshire GC, Shobdon.
JUNE 19-28: USA Open Class Nationals, Minden, Nevada.
JULY 1-13: 22nd Coup d'Europe (Huit jours d'Angers), France.
JULY 14-21: International Vintage Glider Rally, Thun, Switzerland.
JULY 17-26: USA Standard Class Nationals, Hutchinson, Kansas.
JULY 22-AUGUST 5: International Women Contest, Dunaujvaros, Hungary.
JULY 28-AUGUST 5: Lasham Regionals, Lasham Gliding Society, Lasham.
JULY 29-AUGUST 11: Two-seater European Cup Contest, Poitiers Biard, France.
AUGUST 1-14: Italian Gliding Championships, Rieti, Italy.
AUGUST 4-12: Northern Regionals, Yorkshire GC, Sutton Bank.
AUGUST 4-12: Enstone Regionals, Enstone Eagles GC, Enstone Airfield, Oxon.
AUGUST 18-27: Euroglide, Coventry GC, Husbands Bosworth.
NOVEMBER 30: BGA 50th Anniversary Dinner, Grosvenor House Hotel, Park Lane, London.

CLUB NEWS

Copy and photograhps for the June-July issue of S&G should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 47725, to arrive not later than April 18 and for the August-September issue to arrive not later than June 12.
February 15, 1979

GILLIAN BRYCE-SMITH

Once again Lasham had their Farmers' Party this winter – and an excellent one it was too. The clubs at Lasham invite their neighbours (farmers, landowners and air traffic controllers for example), and also those farmers from further ofield who involuntarily hosted out-landings during the previous summer. It is a chance for the clubs, and the cross-country pilots in particular, to say "Thank You" and the annual occasion has over the years become so successful that it is now eagerly anticipated by the locals. I did hear of one farmer who rang up Lasham this year to complain that he hadn't yet received his invitation – and it is rumoured that the local NFU arrange their own social events so as not to clash with the famed Lasham party. Any time a pilot based at Lasham lands out he gives his farmer-host a card that gets him a free glider flight whenever he presents it at the launch point. The farmer's name and address are also noted in the club's log so an invitation to the party can be sent later in the year. These are such obviously sensible ideas it surprises me that more clubs have not adopted them. Why not consider a similar scheme for your club in 1979? You will discover how very friendly formers *en masse* can be, and you will be helping to cement good relations between the BGA and the NFU at local level – which is where it really matters.

ROGER BARRETT, *BGA Chairmon*

AQUILA (Hinton-in-the-Hedges

After our very successful club expedition to the Long Mynd in October flying at Hinton has been very limited by the poor weekend weather. However, a benefit is the considerable maintenance and the many club improvements which have resulted.

Our winch now has a new engine, giving much improved launch heights. The K-7 fuselage has been recovered and a C of A completed.

The Long Mynd expedition produced many successful Silver durations, Bronze C legs and even one Silver height. In all 65hrs were flown in the four flyable days.

Finally, if the need arises or you are visiting us, please use one of our three runways. Regrettably last year two pilots thought better and landed in the crops beside a clear runway (one even landed downwind). Whilst our landlord is very understanding it would help us if others would be more thoughtful.

M.F.L.

BATH & WILTS (Keevil)

During this hard winter we have had a few days' flying in a northerly wind over Erlestoke ridge and one or two days of wave. On February 2 Peter Coward took the K-6E to the River Severn and back in 1½hrs and found wave to 7000ft in a westerly.

Richard Marsh and his helpers achieved their aim on Christmas Eve of starting up and driving the new launch vehicle before Christmas (albeit three feet forwards and back). However on February 2 it was used for launching and proved that it will be efficient – the cab has yet to be built.

On February 10 a party braved the snow with a trailer and lorry to collect the Auster we have bought from the West Wales GC.

J.A.L.

BLACKPOOL & FLYDE (Chipping)

The poor weather in 1978 had less effect than we thought possible, as our annual flying statistics were very similar to 1977, except that there were few opportunities for cross-countries. Only two Silver distances were achieved, both on the same day with local cloudbase at about 2000ft. However, an increasing number of local wave flights has provided further understanding of where the waves can be located within reach of our hill slopes. Even where marked by obvious cloud structure, they may be so narrow that they are easily missed.

The new central heating has kept the clubhouse unfrozen through the snow and ice. Although the weather has delayed completion of our glider workshop, the hardier members continued to unblock land drains and lay new ones, while the final touches are being added to the toilet block.

J.C.G.

NO SPACE FOR ROMANCE

Please don't think we are a lot of kill joys, but we just haven't room in S&G for all the many announcements made in the club news reports of engagements, weddings and births.

BRISTOL & GLOUCESTERSHIRE (Nympsfield)

Saturday, February 3, saw the reappearance of wave at the site with several members reaching 6000ft – not Aboyne standard but a nice change from the poor weather over the last few months. Our last Swallow has been disposed of leaving us with three two-seaters plus two K-8s and a Skylark 4.



C's of A are well underway and the workshop under "Chalky" White seems as full as ever with a variety of rather sad looking gliders receiving his attentions. "Chalky" and Sue's Christmas party was a rip roaring success.

Our dinner-dance will be at the King's Head, Cirencester on March 10.

R.A.R.

CAMBRIDGE UNIVERSITY (Cambridge and Duxford)

There were more than 100 members and guests at the annual dinner at St Catharine's College in February when trophies were presented to Sigfrid Neumann, Peter Baker, Richard Baker and Colin Dews with two going to John Glossop. The Brunt trophy, awarded annually for the best gain of height by a student member of a university gliding club, was presented to Robert Williams (Imperial College). Frank Irving, Tom Zealley and Doc Slater were among the guests.

Two members went to Germany just before Christmas to collect our new K-13 which we have bought with the aid of a Sports Council grant. This now gives us our third two-seater.

Congratulations to three 16-year-olds who have gone solo – Tim Preese, Paul Gelsthorpe and Neil Gregory.

A.N.

CORNISH (Perranporth)

There has been plenty of socialising if not much flying this winter. The main flying achievement was two Silver distances in one day by John Eaton (Oly 463) who went to Davistow but forgot to switch on his barograph, so he flew to Culdrose with the barograph on. Now that we have bought a K-6E, this Oly is now up for sale.

Unfortunately Clive and Jackie Stainer have moved to Nottingham but we are welcoming a number of new members.

Our thanks to Margaret Rail and Maureen Jordy for organising a party and to George Hodson for arranging the highly successful dinner-dance at which various trophies were awarded. We also presented a painting by club member, Dave Puttock, to Anthony Turner for his outstanding work as course instructor for ten years during which he hasn't missed a day. He is now working on our new winch with Brian Farrow.

A.L.J.

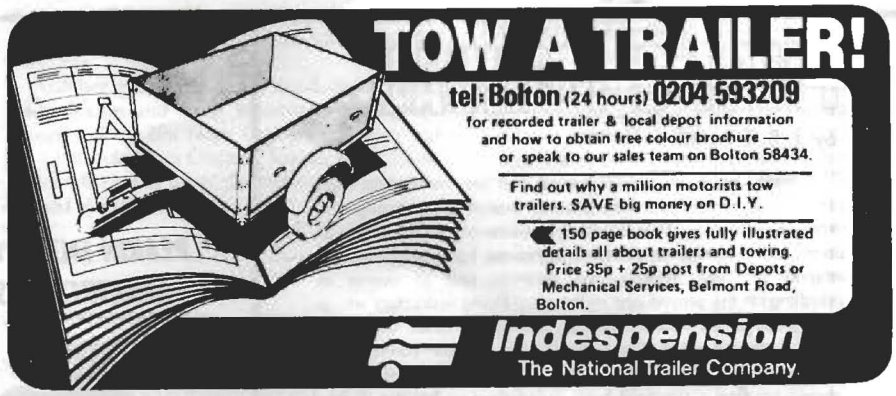
COTSWOLD (Aston Down)

Using the reverse pulley autotow we have quite a reputation as a training establishment but the thermal producing Cotswolds have steadily pushed up the amount of cross-country flying and now most weekends tasks are declared. A number of 500km have been flown from our site.

At the moment C's of A are taking place in numerous workshops around the area – as well as the club fleet we have 20 syndicate gliders. However, the club got together for the Christmas dance and award of pots. The most meritorious cross-country was unusually awarded for the first wave cross-country from the site. Dave Roberts took-off at about 5.30pm, landing his Kestrel back as darkness fell, having completed 190km entirely in wave and reaching 10 500ft. The Ladder trophy and Height cup (Diamond climb in a Cotswold cu-nim) was taken by Tim MacFadyen whilst Pat Sims won the pre-Silver cup for her mass assault technique on her 50km. She won in the end!

The dance was a great success and many stayed at the hotel overnight making it a mini weekend. Next is the AGM.

J.D.H.



DEESIDE (Aboyne)

Our Rallye is now flying after a few month's break and the Super Cub is due back at the end of February. The first wave flight of the year goes to Dave Innes and Mark Recht in the University Bocian. Mark has also just completed his first solo aerotow (as tug pilot).

The clubhouse fund has finally been launched with strong support from many members.

D.I.N.S.

DERBY & LANCS (Camp Hill)

In spite of the poor weather in 1978, we achieved a healthy bag of gains and badges:– three Diamond goals, seven Diamond heights, four Gold Cs, three Gold distances, 12 Gold heights and nine Silver Cs. In addition our instructors continue to send *ab-initios* solo with commendable regularity and our wave continues to bless us.

P. Blacklin whetted his future appetite by winning the Eastern Regionals' Sport Class and we welcome newly qualified instructors A. Stocks, G. Frankland and S. Duxbury.

The reconstructed club fleet will include K-4, K-7, K-13, Oly 463, two K-8s and a Motor Falke, which gives a fair spread of training aircraft, whilst our private fleet ranges from Prefects and Oly 2Bs to Kestrels and PIK 20s.

Our CFI is zealously guarding the lush new field and threatens to excommunicate anyone who carves it up unthinkingly. Judy and Doug Holes left for South Africa in January.

G.P.

DORSET (Tarrant Rushton)

Our season has begun with some noteworthy flights, led by Bruce Niven with the first hour in our Skylark 4 on February 3.

Our Olympia 2B syndicate have now exchanged for a Std Libelle and we are pleased to note this may generate a greater spirit of competition for the Regionals etc.

The annual dinner-dance in Blandford was completely "sold out" and proved highly successful, which we feel sure was due to members wishing to meet our new President, Dr John Jackson.

Sadly, with the knowledge that gliding started in Dorset during the 1930s, which enables us to celebrate this Jubilee year with the BGA, we have been given notice by our land-owners to leave Tarrant Rushton by next year; and although, at the time of writing, no alternatives can be mentioned, the overall feeling demonstrated at a recent General Meeting was conducive of there always being a club representing Dorset somewhere.

We now look forward to this year's three task weeks, especially the Anglo/Dutch event in July.

B.Mc.

DUNKESWELL (Dunkeswell Airfield)

Ray Busutill managed a first solo before the arctic weather engulfed us. The few day's flying we have since managed to achieve over snowbound Devon have excelled in aesthetic reward.

On a more practical level, plans are being made for a springtime club expedition to the Long Mynd as well as a programme of lectures on soaring, cross-country flying and Bronze C subjects, in preparation for the soaring season.

Our courses are filling rapidly and we plan to run an extra two.

B.H.F.

ESSEX (North Weald)

The club awards were presented at the annual dinner, the Chairman's cup going to Pete



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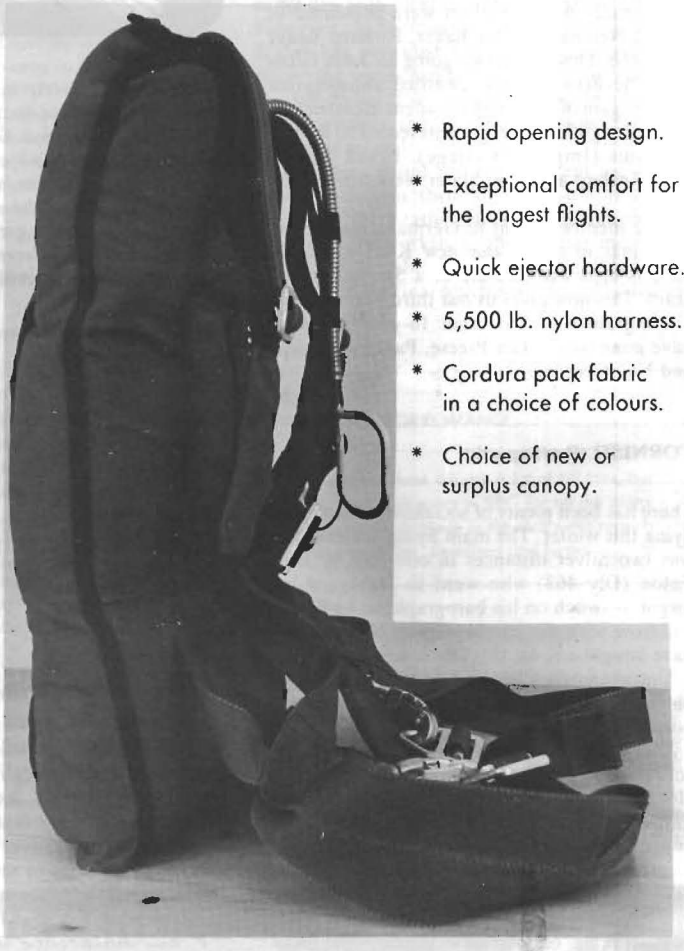
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Manley for a combined Diamond height and 8½hrs duration; Frank Rodwell memorial to Mike Jefferies for heading the club ladder; *Ab-initio* cup to Sue Holland and the Tyro trophy to Geoff Nicholson (to which he has added a K-6CR). The ladies behind the scenes were not forgotten with special votes of thanks to Liz Johnson for catering and Kath McElarney who organised the very successful 1978 courses.

Mike Jefferies took a clutch of early solo pilots to Aboyne with one of the club K-13s, with results which fully justified the time and effort involved. New Year's Day saw the club fleet and private craft out and about, despite the weather, and recent solos include Jean Norman and Roger Fry. With the new K-8 and launch equipment coming into service it only needs an early spring to get things really humming here at the Weald.

P.N.W.

HIGHLAND (Dallachy)

Where, we ask ourselves, looking at our frozen, silent winch and the iced-up strip, are all those marvellous wavy winters we used to have? And why, when we do get to fly, is the wave only contacted at sunset, with gliders vanishing, like cowboys, into the golden west?

In spite of the dreadful weather, we have been able to put up two new solo pilots, Tracy Grubb, who is just 16, and Richard Anderson; and we have attracted a new member, Eric Arida, from Gordonstoun; we hope that he will be joined by some of his schoolfellows when the weather improves.

Our landlord has just granted us a 25 year lease, which gives us much-needed security.

After ten break-ins in 12 months, we have recently opened a converted mobile control tower as our new clubhouse. We hope it will be almost burglar-proof. Our thanks are due to Martin Knight, Richard Anderson and Ken Nagle who planned and carried out the conversion which bought life back into the club.

R.E.T.

INKPEN (Thruxton)

Despite an abrupt halt to flying at the end of September, we are now active again and warming up for the coming season. We are again lucky to have use of a well maintained and effective Citabria tug and, with a current club fleet of three, with four privately owned gliders, we have plenty of spare launching capacity to offer.

Two "Fly for Fun" weeks are being arranged this summer, when there will be wide-ranging tasks set to suit all levels of pilot experience, including pre-solo (with instructor, of course). The invitation is open to all, so whether or not you have a glider to bring, come along on May 19-27 and August 18-26.

B.J.E.

KENT (Challock)

Despite the snow drifts flying has continued and we had one or two quite good ridge days in January. In fact getting to the airfield has been more difficult than actually flying from it.

Considerable changes have been made to the bar area of the clubhouse and many other site and airfield improvements are scheduled for this year.

Another glass ship has arrived, John Hoye, Mike Kemp and Cyril Whitbread having obtained a PIK 20B from Cambridge. Also our ex-Chairman, Ron Cousins, has an ASW-20 on order which will bring the number of privately owned aircraft to 17.

D.H.

LONDON (Dunstable)

January 1 witnessed a mini vintage rally on our bright snow covered field. Mike Boxall took the Minimoa on a final fling before its C of A, joining club K-13 and K-18s in the clear blue sky. Geoff Moore generously offered his Mü 13 to a favoured few, enabling Richard Brown to grapple with weak wave. The Weihe foresook its wheels, demonstrating the advantages of an all-skid undercarriage in the snow, and jettisoned waterballast in a somewhat compact white crystalline form upon suitable targets.

Wave has been a primary source of support in recent weeks, yielding some worthwhile flights. Naturally J.J. has taken the lead in its exploitations, even to the extent of landing out at Woburn Sands.

Access to the club by car has recently involved much velocity, skilfully applied, up our steep, well-glazed front drive and stranded cars around the entrance have been an extra hazard.

Bob Christey's delight with his new ASW-20 is shared by those lucky enough to have flown it. Meanwhile an ASW-19B demonstrator is about to emerge from the workshop and we await with interest the arrival of the first ASW-20Ls.

SHK (No. 349) has passed to a new syndicate which includes recent solo pilot Charlotte Wilson – may she soon amass the hours to fly it.

Dilys Yates, who formerly wrote this section, has fled the country. Our sincere thanks to Dilys for her previous efforts and we hope her absence in the USA will not be too permanent.

F.K.R.

MIDLAND (Long Mynd)

The arctic conditions reduced activity during January. The snow has made the roads impassable, drifted in front of the hangar and MT hangar and nearly buried the trailers. The very cold spell early in the New Year froze the whole cold water system forcing several joints apart and splitting the pipes in a few places. Even the diesel in the tractors froze!

Despite all the difficulties there are pilots who trudge up the long snowdrift that covers the road from Asterton so that they can dig the snow from the hangar doors, carry the aircraft through the snowdrifts to the launch point and fly. The obvious symptoms of withdrawal from an addiction have disappeared by the time they land.

The winter programme of film talks and lectures organised by John Allwood and held after hangar packing on Saturdays, is both entertaining and instructive.

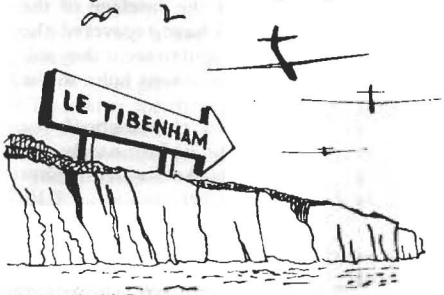
There are new daily and weekly temporary membership rates with reductions for members of other gliding clubs and during the winter months.

D.L.W.

NORFOLK (Tibenham)

A nostalgic and enjoyable evening of cine films and colour slides of gliding at Tibenham was held in a crowded clubhouse in January.

Our Falke is back in service with a three-year C of A and a reconditioned engine – and she flies beautifully. Condor flying is becoming more organised, a tug-pilots' rota having been introduced. We plan to enhance the club fleet this summer by acquiring a K-18 which currently belongs to a syndicate. The Skylark 2 will have to go and we are looking for grant aid.



Twinned with Rouen.

Rouen (France) is twinned with Norwich and the Rouen GC has suggested a twinning of their club with ours. We hope to set up links with them and to be represented at their 50th anniversary celebrations this year.

Our well-known CFI, Joe Podolski, has been awarded a BGA diploma for services to gliding and to the Norfolk GC in particular, over the last 20 years. Congratulations, Joe.

M.T.B.

OUSE

By the time this goes to press we will have left Church Fenton and I hope the next time I write we will have more definite news of another site. Our immediate problem is where to store all the equipment collected over 20yrs, so if anybody would like a double-decker bus or winch in their back garden, I'm sure our Chairman will be pleased to hear from them! Similarly, if anybody has an airfield they don't want, do let us know.

The past two months have been spent building a trailer for the club K-6 – the impending move has lent speed and urgency to this project. Barry Lumb is once again organising the annual pilgrimage to Portmoak at the end of March. The persistent snow and ice prevented us from using the runways but, with all the C's of As, no one has been idle. Finally, congratulations to John Empsall who went solo in January – we hope that he and everyone else at the Ouse, will have somewhere to fly from when the thermals appear again.

H.B.

OXFORD (RAF Weston-on-the-Green)

Nine members and three gliders set off for Portmoak in a burst of enthusiasm on Boxing Day, but throughout the ensuing week the only available view from Portmoak clubhouse was one of lengthening icicles and trailers disappearing under snowdrifts. Meanwhile back at Oxford thermals were popping to over 2500ft on December 30. As this is written the unopened

trailers are still stuck on Portmoak airfield, but our grateful thanks to the SGU for their hospitality and superb catering.

Paul Bayley has invented a device for mending stranded cables for use when the hydraulic press is u/s (which is quite often). Resembling a cross between bolt cutters and an instrument of medieval torture, its operation is simpler than the press although not recommended for wearers of tight jeans! Requests for information should be accompanied by a bottle of stout.

Phoebus 640 has gone to Farnborough and in its place Steve Evans has brought an SHK. C of A work on club aircraft is proceeding slowly since we had to recover the fuselage of the second K-13. The RAF have recovered the hangar roof and we now wait to see if they will do anything about the cavernous holes in the perimeter track.

Last season we kept a club logbook for cross-country flights but unfortunately the year's total was only 4600km, which cannot entirely be due to the weather. P.H.

PETERBOROUGH & SPALDING (Crowland)

The hardier members are about to depart on the annual snow-glide to Aboyne! The highly successful annual dinner-dance was on January 26 when the awards were presented and Brian Spreckley, Assistant National Coach, was guest of honour.

We continue to attract a steady number of new members, especially from the summer air experience sessions arranged in conjunction with the Sports Council.

The clubhouse is becoming more civilised, thanks to a small band of members. It has a new roof and additional toilet facilities.

We have acquired a club base radio (call sign Crowland base) and it is hoped to add to this facility in the near future. Incidentally, we are very pleased to welcome visitors. A.E.G.

RATTLESDEN (Rattlesden Airfield)

Four new members were elected to the Committee of nine at our AGM in January and our thanks to the retiring members, Kay Lee, Mike Thorp, Mike Irish and Steve Kiddy, for their tremendous effort during the year. Reviewing the year's performance it was agreed it was an excellent achievement considering the difficulties in the early part of the year. Treasurer, Colin Hincham, reported a healthy financial position. Chairman, Rager Watts, proposed a vote of thanks to the Norfolk GC's CFI, Joe Podolski, and their instructor, Jane James, for all their help. Our thanks also to the BGA for their advice and assistance.

Congratulations to Roger Watts on achieving his five hours in October at Portmoak. M.R.M.

ROYAL AIRCRAFT ESTABLISHMENT (Farnborough)

In contrast to our last contribution to club news, when I reported a sad lack of Gold for 1978, an expedition to Aboyne paid off in a big way. Gold height was gained by Jill Atkinson, Daphne Knowles, John Knowles and Colin Paterson with Diamond height for Tony Newburry and Pete Harmer. This was a fitting reward for the faithful who have been doing the long haul to Aboyne each year.

An indication of the progressive nature of the club compared with the old days, is the intention of some members to enter various competitions this year. The monotony of the winter C of A work has been broken by a positive glut of parties and the occasional flyable day. Boxing Day saw several autotow launches in excess of 2000ft!

Doug Watts has resigned as Chairman after years of service. It was Doug who researched alternative launching ropes to piano wire and came up with Parafill.

Our financial position is good at the moment but the shortage of *ab-initios* still gives concern. Unfortunately our membership is restricted to RAE personnel and civil servants or members of HM Forces living locally, consequently we cannot spread out nets very wide for recruiting. M.J.W.

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SCOTTISH GLIDING UNION (Portmoak)

One group of members were snowbound at the club for about ten days over Christmas. In fact bad weather has been the norm over the last two months to the extent that for the first time for a long while there was no flying over the holiday period. Smiles are broadening again, however, as climbs in wave of up to 7000ft have just been reported.

The Christmas dance and Burns' supper appear to have been a raging success.

One particularly sad piece of news is that Betty Barr has decided to retire after 17yrs with the SGU. Every member and her many friends from other clubs will wish her a long and happy retirement. R.H.

SOUTHDOWN (Parham)

We recently held a special meeting to vote for a new constitution. Our growth over the last five years since we moved to this site has made this change necessary so that we can manage the club under modern conditions.

We have had the approved tow release on our new Super Cub brought up to the latest requirements and there is the possibility of three new syndicates being formed.

Our annual party for farmers and local dignatories was a great success. We are very fortunate with our local farmers who, without exception, have been most helpful and co-operative when gliders have dropped in. The landing fee is a pint of old ale. B.A.B.

STAFFORDSHIRE (Morridge)

The AGM was on January 29 with a good attendance, considering the appalling weather. Members spontaneously contributed £5 per head to raise £170 towards the cost of a £250 septic tank for the site. "The 100 Club" was launched by Eddie Willis to raise money to improve the club amenities. Membership fees were increased from £30 to £40, launch fees from 50p to 60p and flying fees from 5p to 7p per minute. Our new Committee is: Gordon Brocklehurst (Chairman), Bill Hughes (Vice Chairman), John Graham (Treasurer), Judy Graham (Secretary), Barry Gilman, Geoff Davies and Pauline Gwynett (ordinary members) with Brian Thorpe (technical), Eddie Willis ("100 Club") and Peter Foster (PR).

Two club courses have been organised at Camphill, June 24-29 and September 23-28, thanks to the Derby and Lancs GC. A course is also planned for Whit week at Morridge.

Our winter lectures are continuing with Eric Clutton showing slides in February of how "Fred", his home-built, was constructed and Barry Gilman giving a tape/slide show in March on "Starting at the Bottom" (Cairngorms).

We have had the longest enforced lay-off from flying since we moved to Morridge because of the weather. P.F.F.

STRUBBY SOARING GROUP (Strubby Airfield)

The SSG was formed at the exRAF airfield at Strubby, Lincolnshire, in September 1978 and accepted into the BGA in December. We now have a T-31 and T-21 for dual instruction and a Skylark 2 for club solos.

With a choice of three runways we are getting excellent launches with a Chrysler V8 automatic. We are looking into the probabilities of sea breeze front soaring and expect to find good lift over the Lincolnshire Wolds only four miles away.

Congratulations to Terry Clark, the club's first solo pupil. We welcome visitors but if you are bringing your own aircraft please have a third party aviation insurance policy for £250 000 as we are on Crown Property. M.B.

SWINDON (South Marston)

Since last appearing in S&G we have aquired an Astir at the top of the club fleet, replaced a bent Skylark 3 with a K-8, built a new Perkins' powered autotow car, changed to Parafil, flown 300km on the same day and held a task week sponsored by Hambro Life.

Steve Foggin has taken on the job of CFI for yet another year and John Freke and John Baxter went off for full ratings – the former unfortunately having gone into retirement after giving much good service to the club.

The poor soaring season of 1978 was countered by the splendid and varied offerings from

the ladies' Social Committee – and we are now planning for a bumper 21st season of cross-country flying by building a new K-13 trailer, for the dual outlandings(!) and holding a series of lectures and films in the evenings. Our active and comprehensive fleet of private gliders, the latest addition being a Vega, is getting itself polished in anticipation of the soaring season.

J.R.B.

ULSTER (Bellarena, Co. Derry)

Flying resumed on February 3 after a two-month closedown, during which all the club aircraft were given C's of A and the Skylark 3F of our associated Queen's university club brought back into general operation after lengthy disuse. The Capstan was nearing the end of a major refurbish when flying began and the Twin Astir was handling the training load.

The year's first launches were straight into ridge lift, so we retain our 100% record of soaring *every* weekend since our move to the new site last Easter. Some hardy types, including three Dublin visitors, stayed on for the week in anticipation of wave and another wave week was being planned for mid-March.

On the development front the Sports Council for NI has offered us a grant of up to £2000 towards the costs of a small hangar to obviate the expense and inconvenience of remote tug hangarage more than 20 miles away. With planning permission expected, it was hoped at press time to begin erection about March 10.

Private ownership continues to grow, with yet another syndicate of early soloists intending to travel to Germany around March to pick up an optioned K-6CR. Chairman, Gordon Mackie, meanwhile, plans to replace his Banshee Lawnmower – the SF-27M – with another self-launcher, a PIK 20E, later this year.

To underline that we are no longer a Belfast-area club but are now firmly rooted in and completely committed to the north-west, we were to hold this year's AGM close to Bellarena, rather than at the usual city venue, on February 17. With a heartening influx of new members since the move there will be several fresh faces to make all the old complaints this year.

R.R.R.

YORKSHIRE (Sutton Bank)

There has been little flying in the past month and even some of the Saturday evening dinners had to be cancelled. Access to the club on one or two days was strictly by foot only from the main road.

Prior to all this, things were going nicely and as a result congratulations are due to Mark Dale, Bob Brown, Nusrat Khan and Fiona Spink on their first solos and to Steve Johnson on completing his Silver C. This adds to a very nice group of competent early solo pilots, which augurs well for the future.

We finished 1978 in a very sound financial position and with our new solo fleet and a nearly new Super Cub to replace the Commodore, we approach the new season very happily. Launch rates are virtually unchanged from 1978, whilst gliding rates are only a little up.

Course bookings are coming in very well and the entry list for the Northerns is nearly full already. A few reserves usually get in so anyone interested should write as soon as possible. E.S.

Service News

BANNERDOWN (RAFGSA)

Despite a few minor teething troubles, the club's first year at Hullavington has proved a great success. At the AGM in February, our Chairman, Adrian Grafham, announced that we are in a good financial position and in spite of poor weather during 1978 our flying was only marginally less than in 1977. We had a total of 6697 launches, with 1253hrs and 7503km flown, although our Badge achievements were markedly down on the previous year. Prizes were awarded to Sue Williams and Tom Eages, as our best *ab-initios*; Tom also collected the Hog of the Year award; Trev Hope, as best club member and the Demolition award to John Wright who, having built the club bar, proceeded to knock it down again! The clubroom and bar is now officially open and we were pleased to welcome old club members to celebrate this occasion.

The 1979 season has already got off to a good start with a strong membership and flying taking place at every possible opportunity. Thanks mainly to Trev Hope and Chris Bunn, our two two-seaters have been overhauled ready for the spring; Colin Masters now has his Skylark 2B on line and Mick Boyden has spent many hours on face-lifting the Cirrus.

By April we should have three more instructors, namely Trevor Hope, Chris Bunn and John Pirquet. John's tour of duty in UK has been extended and the club is fortunate in having the use of his motor glider for another year.

Geoff Brown has returned from Malta to take over from Den Britton as Aircraft Member. Many thanks to Den, who has been our Aircraft Member for countless years. Our only sad piece of news is that Bob Brown has been posted away, we all miss him, but his departure was "celebrated" with a Harvey Wallbanger party which cheered us all up again!

J.J.H.

CLEVELANDS/HAMBLETONS (RAF Dishforth)

The continued bad weather has affected our flying, morale and, even more so, club finances. We have had some hefty bills and need good weather to get us active again.

We are fortunate in having some hard working members who turn out in the worst of weather to work on equipment and aircraft. Cleveland and Hambleton members continue to work together as one club. One of our tractors has had new heart put in to it by the hard work of Terry Potter. Equipment, from battery chargers to club washing machines, has been brought back into working order, this time by Ken Smith and Ray Washer. One of our tugs is back in service after a lengthy C of A and another should soon be back on line.

We eagerly await the arrival of a Super Cub and replacement Motor Falke. The Cub to Hambletons and the Falke to Clevelands.

Congratulations to Ann Thompson on converting to the K-8. We hope to improve our cross-country flying this year by setting short triangles and photographing turning points before sending Silver C pilots on 300km tasks.

We are hosting a vintage glider rally at Easter when all visitors will be welcome.

J.A.S.

CRANWELL (RAFGSA)

We have said a sad farewell to two of our hardest workers. Nigel Heaton, full Cat and Secretary, has gone to Dishforth and John Hull, MT member for the last two years, has been posted to Goose Bay in Canada. In appreciation each was awarded a tankard.

Tim Dickinson completed his Silver C and gained his assistant Cat while Linda Meyer was rewarded for her determination by going solo. Well done both.

The Astir is fit again and the workshops are full with aircraft being fettled for the coming competitions. Our AGM on February 10 was followed by a well supported clubhouse party. Cranwell is six miles north of Sleaford on the A17 and we welcome visitors any weekend to our north airfield.

P.S.

CRUSADERS (Cyprus)

Our Oly 2B is now back on line and we're hoping to have our K-13 back very shortly, giving us a full fleet of six gliders.

Now for members' achievements: Chris Putt, Bill Baillie and Alan Sayer have their Bronze C; Avo Managoian has two Bronze legs and Steve Vaux one; John Salmons, Barbara Redding, Mick Long and Frances Sutcliffe have gone solo and John Garston has resoloed.

Chris Putt and Dave Lancaster have qualified to fly passengers and are hoping to attend an instructors' course soon.

We will soon be saying farewell to Bob Evans, Vernon Bradbrooke, Bill Baillie, Paul Janes, Danny d'Anastasi, Jock Shearer and Dave and Barbara Redding. We wish them all the best.

J.S.

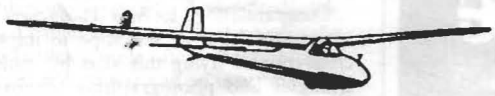
CULDROSE (RN & RMGSA)

Following the return of HMS Ark Royal from its States tour at the end of last year, we are happy to welcome home a number of our members. Once again many thanks to members of the North Florida Soaring Society at Herlong airfield for making the lads feel at home during their visit.

The annual dinner in January was a great success. Our thanks to George Lee for helping to make it a memorable evening by attending as guest of honour.

Flying has continued for much of the winter despite the poor weather. Congratulations to Raymond Tyler and Nigel Martin on going solo.

With minor engine repairs completed and a new C of A, our Chipmunk is now ready for the soaring season. One very welcome addition to the club fleet is the Dart 17R which joins the Pirat, Blanik and two Capstans. J.G.K.



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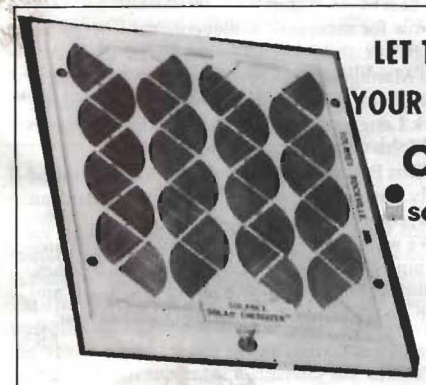
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EAGLE (DETMOLD)

As we haven't been in S&G since the October 1977 issue we at "Wetmold" thought it was time we put in a mention. With the weather situation as it was last year we, like many other clubs here in Germany, found the going extremely difficult. Despite all the problems we have come through it pretty well and managed to do 3288 launches and 869hrs. We also had one Gold height and two Diamond heights on the expedition by three members to Issoire in France last February, John Mitchen getting his to complete All Three Diamonds. The BFG Comps held here in June were very disappointing. It was the first time in some 19 years that we didn't get a single competition day.

"Chiefy" Alan Sommerville, our CFI for many years, eventually left us on retiring from the Army. Our best wishes and thanks to him and his family. John Mitchell has taken over as CFI.

Our new Chairman is Bill Hankins and we welcome him and his family. Our best wishes to Terry Colvert the outgoing Chairman.

The winter months have been very wet on the airfield so we have been to Gütersloh and Vennebeck on the flyable weekends. We have acquired a new bus and spent many weekends kitting it out. We bought a K-6E in December to bridge the gap between the K-8 and the Astir. We are also planning to sell the Phoebus in the near future and replace it with a 15m flapped ship.

By the time this has been printed nine of us will have been on a wave hunting expedition to Issoire and hopefully come back with a few Diamonds.

J.F.B.

FENLAND (RAF Markham)

Eleven pilots with four gliders are going to Portmoak for two weeks. The AGM was most successful and in spite of the poor summer the finances were in a healthy state. Three club pilots have been chosen for the Inter-Service Regionals in May and we wish them the best of luck.

Mike Alford, our MT member, has been posted to Bicester. His expertise and enthusiasm will be greatly missed.

Finally congratulations to Ben Benoist, our CFI, on winning the RAFGSA 100km triangle trophy and to our Chairman, "Doc" Bramwells, on his promotion to Group Captain.

F.P.G.

FOUR COUNTIES (RAF Syerston)

We thank Dishforth GC for their hospitality over the Christmas period and congratulate Dave Brereton on gaining an A and B certificate in the T-21 in January. Although with only one successful flying day, here's hoping next year will be more productive.

We say a sad farewell to two ambitious and hard working caterers, Malcolm and Sue Norris. Over the latter months they have supported flying activities with a constant supply of hot food and drinks in the club bus, often extending this service in the evening in the clubhouse. A sincere thank you and all the best to you both at Laarbruch. The bus catering has been handed over to Gary Stingemore.

L.B.

FULMAR (Kinloss)

The last few months have been very successful for the club, though soaring at the site has been disappointing when compared with last winter. The airfield is starting to take shape as the engineers get closer to finishing the new pans. They have been kind enough to build a big pan next to our hangar.

We had a very successful expedition to Aboyne in October with classic conditions on most days. Almost everyone came away with some achievement, Andy Bould, Clive Jennings and Wally Grout having a little extra bonus.

Our AGM in January was a great success and the Henry Dyce trophy for the highest climb of the year from the site (15 000ft) went to John Maurice. This was especially commendable as John was very inexperienced at the time and this was his first wave flight. The Member of the Year trophy went to Roger Hanson.

We wish Alan Ofee the best of luck on his posting to Benbecula. Alan was with the club from being a schoolboy in 1975 and has spent the early part of his Service career at Lossiemouth.

Our congratulations to John Harrisson on Diamond height; Bob Fox, Steve Partridge and Roger Hanson on Gold height; Alan Ofee and Bob Fox on their duration; Bill Ofee, Roger Bagnall and Dick Dawe on Silver height and Colin Ofee who achieved his A and B shortly after his 16th birthday.

R.G.H.

HUMBER (RAF Lindholme)

Congratulations to Vic Hearndon and Kenny Braithwaite on going solo and to Derek Wilson on gaining his Bronze C, but commiserations on missing his five hours by 16mins on a trip to Portmoak.

We have had a couple of short wave flights, 44mins each, by Keith Sleigh and Alan Clarke – all we need now is a tug!

Our AGM party and annual dinner-dance were a great success, as was the party on New Year's Eve. We have a ridge/wave expedition to Sutton Bank organised for the last two weeks in March.

K.M.G.

KESTREL (RAF Odiham)

At our recent AGM the Lasham trophy for the longest out-and-return flight of the year was awarded to Jerry Odell; the Alyson Farrell Memorial trophy for the best all-round *ab-initio* to Martin Eldridge whilst our newest pot, the Chairman's cup, was won by Trevor Cole for his hard work and enthusiasm.

Work has been proceeding on a trailer for our new Astir (which is now in UK awaiting Customs clearance) and also on the trailer for Pam Davies and Co's new Mosquito. Neil Brown is booked for an instructors' course at Bicester in early April and Andy Ginever and Roy Dalling are also awaiting a course.

The new winch, ex London Transport, is now in service and going extremely well. It started life as a single-decker bus. The body has had the centre-section removed and the rear joined to the front section. Thus we have a long chassis with a very short body and the winch mechanism is mounted on the exposed rear chassis.

We have a small expedition to Aboyne for the first three weeks in April. Last, but not least, Andy Mills has returned to the club after his sojourn in Spain.

P.W.A.

PEGASUS (RAF Gütersloh)

Our first year of operation finished with two successful AGMs, our own and that of the RAFGGA which we hosted. We also said goodbye to four hard-working regulars, Chris and Rochelle Pople, Dave Binnington and Mark Hussain, all of whom came to the club as novices and left as solo pilots, Chris and Dave having obtained Bronze Cs.

The club fleet of four aircraft has remained remarkably healthy throughout, thanks to the efforts of aircraft member, Barry Yeardley. We achieved 16 A and Bs, five Bronze Cs and three Silver Cs in club aircraft and the syndicate machines which now number four, ranging from a K-6E to our CFI's "Hot Ship", a recently acquired K-4. We have also had visits from the Detmold Motor Falke and one from a local German civilian club, which was very useful during the recent bad weather.

Our expedition to Vennebeck ridge, though dogged by bad weather, gave Barry Yeardley his five hours and there were several Bronze legs.

Another major achievement is the building and opening of a bar in our recently converted clubhouse. Special thanks are due to Al Eddie and Bob Bickers for their carpentry, design and wall-bashing skills, and to everyone who wielded a paintbrush. Pete Clarkson has taken over as bar member and with Lyn Woodman's tireless catering efforts we are well nourished.

K.H.

PHOENIX (RAF Brüggen)

We would like to say a very big thank you to Crusaders GC, Cyprus, especially to Colin Pinell, (Chairman), Roy Brownrigg (CFI) and Bill Bailey (chauffeur), for the warm welcome given our six members who visited Crusaders towards the end of last year: Dick Hunt, who has two Diamonds, converted to the Swallow; Pete Haig flew his first glass machine, an Astir, as did Roy Twigg; Eddie Shotton had his first solo single-seater aerotow and Steve Bunting was also aerotow-cleared. Kev Olver flew there too. In spite of being restricted to the Greek zone, Kingsfield proved friendly and interesting.

On the home front: snow stopped play for a month – one memorable day many hours of snow and ice shifting went on, with only one launch achieved! Since the thaw, however, it is only the rails for the hangar doors which have to be de-iced every flying day. On the bright side, we welcome John Ault, our new Chairman, we have sold our last K-7, both the Blanik and the Astir are currently being majored and fund raising efforts continue – we only need a final DM35 000 to buy the ASW-20, for delivery in May. Preparations are well underway for the

instructors' course and the Sisteron expedition, both to be held in March.

We have to say a fond farewell to three very hard working members: Kingsley Grant Guest, full Cat; Chris Hands and Al Thompson (not forgetting his wife Rose and young Graham). Thank you for all your efforts.

M.T.

PORTSMOUTH NAVAL (Lee on Solent)

There has been another change of club engineers officers with Fred Stephenson taking over from Paul Wheatcroft. Paul has recently left the Navy and is moving away from the area; we wish him well in his new job.

Gliding possibilities have improved slightly since the New Year, one member even managing to stay up long enough to qualify for a C certificate.

We welcome three new Chipmunk tug pilots, Jim Martin, Ian Normand and "Red" Garvin. They should help to take the pressure off Phil Moore who has managed almost single handed for the past two years. We also welcome Vic Philips who is helping out very well with the club MT.

Finally our congratulations to Admiral Salter, Dave Wadham and especially to Edna Clark on gaining their A and B certificates; to "Nobby" Clarke for a Gold height; Richard Fox for a Diamond height and to Ray Lambourne on winning the spot landing competition.

H.C.

TWO RIVERS (RAF Laarbruch)

The bar has contributed more to club funds this season than we have raised in flying fees. Because of the weather and other restrictions we only flew on half the available days up to the turn of the year at which point we were hit by the January freeze. Our achievements so far are three A and Bs.

The workshop has been the centre of great activity under the leadership of Leigh Hood and Felix Simkins. We will soon be saying goodbye to Felix who, thanks to his sterling work on club aircraft and help behind the bar, has been one of the most valuable members over the past three years.

The Twin Astir, having arrived but not been flown yet, provides the main point of conjecture – will the Tost get it off the ground?

K.S.

WREKIN (RAF Cosford)

Bad weather has kept flying to a minimum but a programme of lectures on Tuesday evenings has been well supported. Our New Year wave hunting trip to Dishforth was thwarted by easterly winds and intermittent blizzards which kept the Astir in its trailer.

Congratulations to Rod Evans on resoloing; to John Marriot on gaining his PPL and finally to the club on celebrating its 13th birthday with a barbecue and party on February 10.

P.G.

WYVERN (RAF Upavon)

There was a good attendance at our AGM on February 3 when the Merit cup was awarded to Merv Kelly; Mike's mug for most progress from *ab-initio* to Chris King and the Chairman's Challenge trophy for the longest flight to Robbie Roberts. A new trophy, Robbie's Wren, donated by Robbie who has now left, is to be awarded at the discretion of the CFI and the first winner was Andy Harkins (Secretary).

Mike Stamp has resigned as MT member – our thanks to him for all his work and to Ray Hornbuckle who has taken over.

J.S.

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MAR 27 1978

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Dear Mr. Katz:

This is in response to your March 16 letter regarding the acceptability of the NAVTRONIC 16 Flight Computer for use in taking Federal Aviation Administration (FAA) written tests.

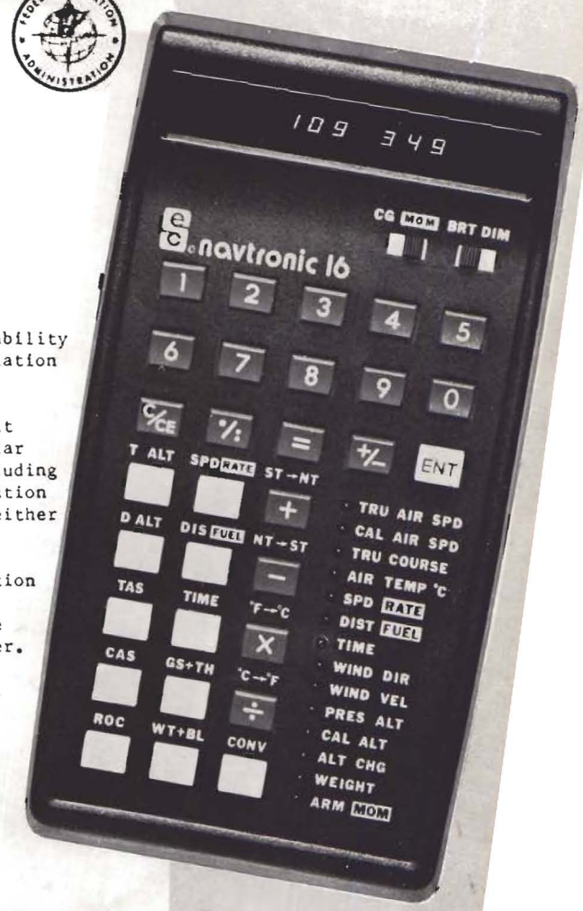
We have examined the NAVTRONIC 16 Flight Computer and find that it complies with all the guidelines set forth in FAA Advisory Circular (AC) 60-11. All information displayed on the unit examined, including the prompting lights, appears to be pertinent to the actual operation of the device and, therefore, need not be masked for use during either airmen written or practical examinations.

The use of any material containing instructions related to operation of the calculator, as is the case for all aids, is not permitted during the test. Each regional Flight Standards division will be notified of this decision through receipt of a copy of this letter.

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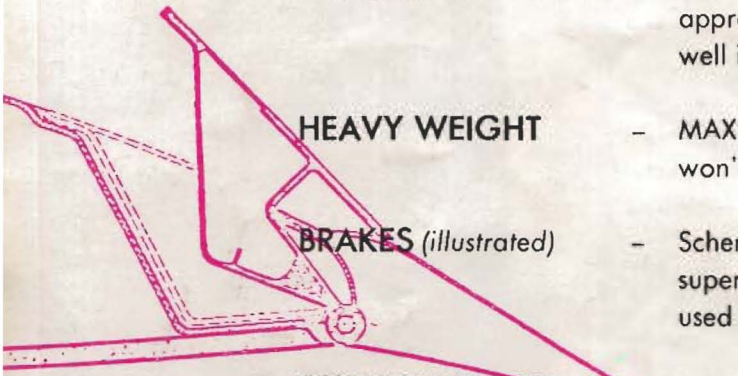
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THINKING FLAPPED 15 METRE?

The MINI-NIMBUS is the obvious choice, and the CARBON version is even better!

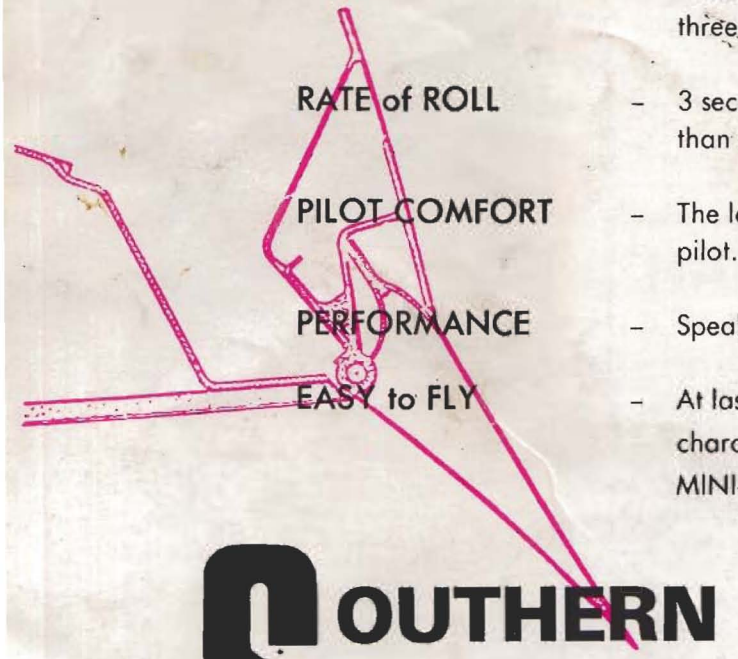


LIGHT WEIGHT – Approximately 515 lbs. for the glass fibre version and approximately 470 lbs. for the carbon fibre winged version. Climbs well in weak thermals.

HEAVY WEIGHT – MAXIMUM all-up weight of 1102 lbs. On "the" day the opposition won't even know you went by.

BRAKES *(illustrated)* – Schempp-Hirth have moved from their already good system to a superior flap/trailing edge brake which gives approach control we used to have in the 1950s.

FIXED TAILPLANE with ELEVATOR – Will even meet the requirements of that great authoritative body – the B.G.A. Technical Committee (provided, of course, there are three Rs in the month!).



RATE of ROLL – 3 seconds (at 49 knots, flap 0o, 45o to 45o). Over 1 second faster than some in its class.

PILOT COMFORT – The large, well designed cockpit ensures comfort for all sizes of pilot.

PERFORMANCE – Speaks for itself – WINNER of 1978 BRITISH NATIONALS.

EASY to FLY – At last performance has been combined with very good handling characteristics. You don't have to have hundreds of hours to fly the MINI-NIMBUS safely.

SOUTHERN SAILPLANES

Membury Airfield, Lambourn, Berks

(RALPH JONES) **Telephone Lambourn (0488) 71774**

SOLE UK AGENTS FOR SCHEMPP-HIRTH