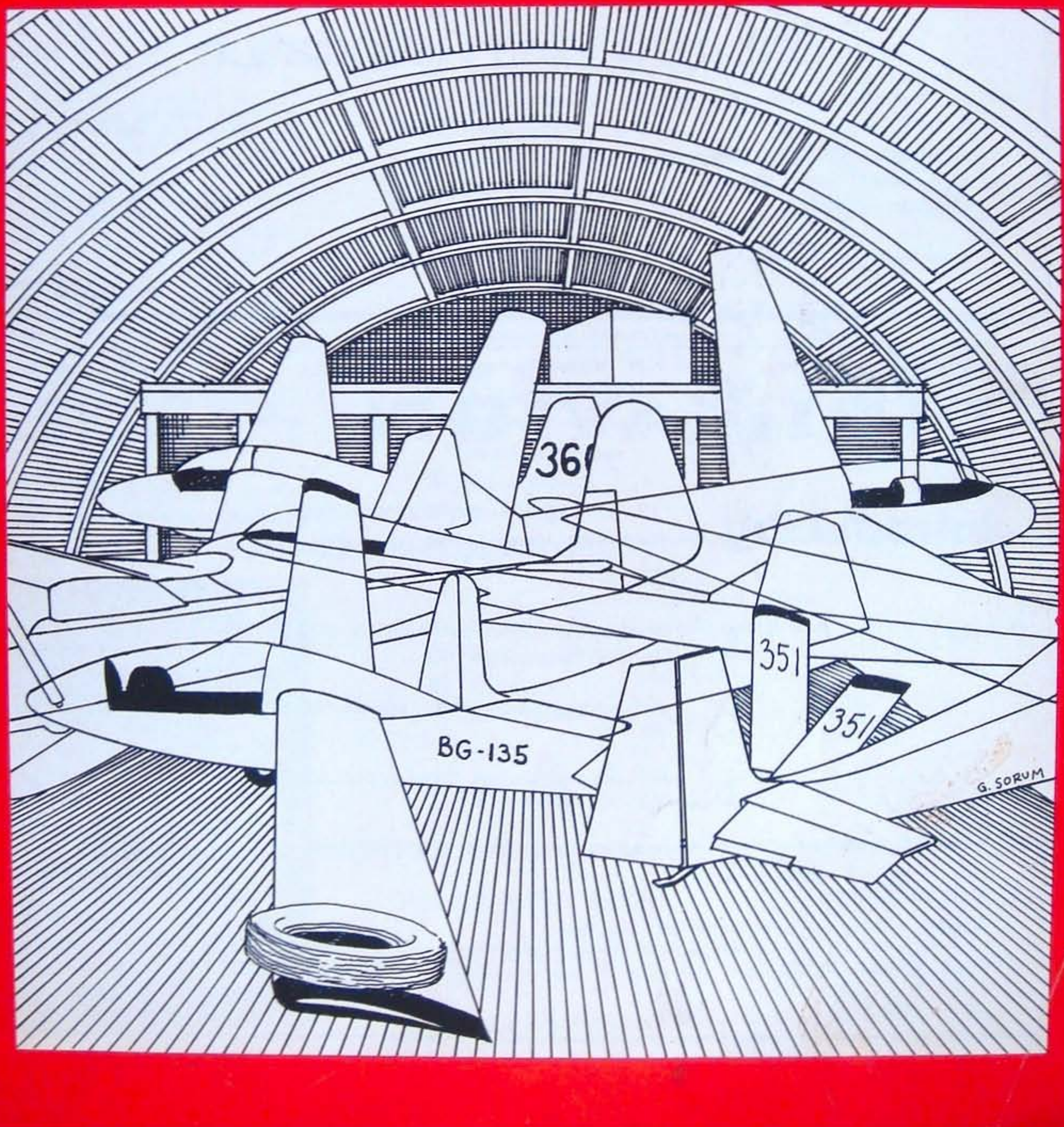
SAILPLANE & GLIDING

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Magazine of the BRITISH GLIDING ASSOCIATION

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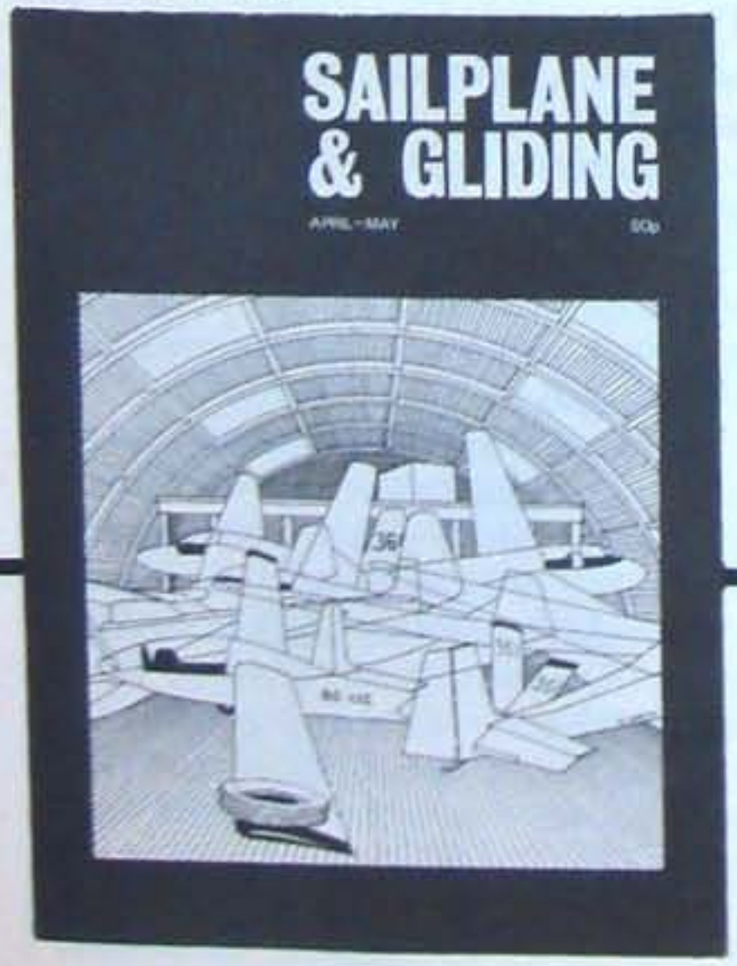
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Our Cover, "Hangar packing at the Midland Gliding Club, June 1972," was designed by Gardner Sorum. The picture is a perfect square with all the radial lines from the exact centre.



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CHAIRMAN'S REPORT, 1975

The soaring this year has been the best that I can remember. The weather throughout the summer can only be described as of continental dimensions and this is reflected in the enormous amount of flying that has been done.

January saw Britain gain a world record for the first time for 14 years, when Mike Carlton completed a 771km triangle in South Africa in a British built Kestrel 19 to establish the first-ever world record for distance over a triangular course.

In March the move of BGA Headquarters from London to Leicester was completed. This has in every way proved to be a complete success and has helped to prevent our administrative overheads from exploding, which would certainly have been the case if we had remained in London. Nevertheless, the finances of the Association have still been hit fairly hard this year, mainly because increased grant aid from the Sports Council has not been forthcoming. Coupled with the heavy inflation common to all businesses, particularly postage and telephone charges, this has meant a sizeable loss on our annual accounts. The Treasurer will be rectifying matters in 1976 but this will mean increased charges for all services supplied by the BGA.

Modest concessions despite stormy representations

In his budget in April the Chancellor of the Exchequer announced that gliding would be subject to a VAT rate of 25%, except for instructional flying. Despite very strong representations, in which we, with other branches of sporting aviation, were assisted by financial support from the British Light Aviation and Gliding Foundation, we only succeeded in getting very modest concessions. The increased yield to the Treasury from the decision to impose higher VAT can only be described as derisory and the political attitudes of those who suggested it demonstrated uninformed prejudice to a frightening degree. When will those who do not glide realise and appreciate that gliding is not the preserve of the wealthy?

April also saw the introduction of the revised London TMA, much wider in scope than its predecessor and from which gliders are completely banned. Despite our very vigorous protestations it seems that this will not be lifted in any circumstances—not even, for special events, such as Regional Contests at Booker and elsewhere. The Essex Club is particularly hard hit since it is now very difficult indeed to soar away from North Weald with the TMA low overhead.

May saw the National Championships at Husband's Bosworth. The first day was marred by the very sad death of Barrie Goldsbrough, one of the World Championships squad for the British Team, from a totally unpredictable heart complaint. Later in the Championships a 500km triangle was set for the Open Class when all 23 pilots completed the course and Ralph Jones set up a new UK record of 106.9km/h.

In August, Euroglide was held at Dunstable and despite the fact that this time there was no sponsor an excellent competition was held. Following this in September the final selection of pilots to represent Britain in Finland in 1976 was made and Bernard Fitchett, George Lee, Ralph Jones and George Burton are to be congratulated on their selection.

Royal Aero Club has been restructured

The Royal Aero Club of the United Kingdom has for many years fulfilled the rôle of being both a social club and the national aero club. The social club has for many years provided Britain's subscription to the *Fédération Aéronautique Internationale.* Now that the social side of the club has, like many other West End clubs, ceased, the Royal Aero Club has been restructured so that it is at least a national aero club on the same basis as those of other major countries. It is now a forum where each aviation sport can be represented and discuss common problems. We are fortunate that our President, Philip Wills, is its first Chairman, and our Treasurer, John Large, is its Treasurer. An inevitable consequence of the cessation of the social activities is that each sport will have to bear a proportion of this country's subscription to FAI.

John Williamson is to be congratulated on his award by the Royal Aero Club of its Silver Medal for 1974. Nearer at home John Jeffries, Ansgar Sambale and Ted Warner have been awarded BGA Diplomas for the same year.

The coaching aspect at national level of the BGA continues to fulfill an important rôle and a Super Falke for use by the National Coaches has been purchased with the aid of a grant from the Sports Council.

On the technical front Dick Stratton has now completed his first year as Chief Technical Officer and is currently investigating every aspect of gliding from a low-cost angle.

Ian Strachan has taken over from Ann Welch as our representative on CIVV and our thanks are due to Ann for the many years of hard work which she has put in on our behalf in the international field.

Finally, you may be glad to learn that this is the last annual report from my somewhat laborious pen. I have now been your Chairman for four years and this was preceded by four years as Vice-Chairman. It is now undoubtedly the time for a change of face and I shall retire in March, 1976. I have, however, much enjoyed those years and not least the friendship of many people. My thanks are due to everyone, both on the BGA staff and outside, without whose support I would never have been able to carry out my duties. I wish my successor every success.

C. R. Simpson, Chairman.



COMPETITOR

Just what makes a competition pilot?

We asked JOHN WILLIAMSON, current Euroglide Standard Class Champion and British team pilot in four World Championships, for his assessment

No one need feel ashamed of being thought competitive. Competition is the mainspring of Evolution and Man is the most highly developed—evolved—of all creatures. His competitive instinct is proportionately strong and finds expression in many ways. Assuming that the individual has achieved the basic requirements for personal and family survival, the instinct to compete becomes channelled into other spheres—amassing wealth or power; attaining promotion at work; beating the next chap in games or sport. In our sport the instinct is satisfied by flying longer, higher, faster, further than our fellows.

ATTITUDES

It is fashionable in some quarters to decry the competitive attitude when sport is involved and to excuse our failures by the "unsporting" attitudes of others. In truth the successful others usually have only applied a rare personal dedication to the detail of their competitive effort, in terms of perfection of equipment and of personal preparedness. But given that all *is* prepared it is still necessary to *want* to be first or whatever. A competitive pilot must be a press-on type. His attitude in a car might be "Quick! Before the lights change to red!" rather than "Steady! The lights may change to red." Of course, the driver's attitude must be tempered by road and traffic conditions—it is no good hurrying through a green light only to skid on a greasy road into the back of a lorry slowing down beyond.

In the same way the glider pilot must temper his press-on attitude with some commonsense. Hopeless to set off across a known patch of bad ground with not enough height to use the next thermals when you reach them, but equally hopeless never to attempt to cross the gap because of a chance that the thermals might not be there anyway. I am reminded of a race to Dunkeswell some years back when the route crossed the Bridgewater flats from around Cheddar. The flats were swept clean by a westerly sea breeze and the next thermals were clearly going to be not until we reached the lee of the Quantocks, some 15 miles ahead. The bold ones took a (literally) calculated risk that thermals would be available there and most arrived with less than 1000ft but got away all right. The less bold (less competitive?) detoured round to the east and took hours longer to cover that last 40 miles.

ABILITY

One is often asked what special ability the top pilots possess that is apparently denied other folk. It is not only modesty which precludes a reasoned and detailed answer. One thing I *am* sure of is that the top pilot is more an artist than a technician in his flying. A very real affinity exists between an in-form pilot, his craft and the air round them both. No amount of science can replace that affinity and I feel that some may hope to buy their way into the top slots but only distract themselves with unduly complex displays of information in the cockpit. Artistry is a gift, not an acquisition—a gift with which each individual is presumably endowed in different degrees. This being the case each must seek to exploit what gift he has and this is where experience and attention to detail pay off, in preparation for the season, the contest and for each flight in the contest.

PREPARATION—THE PILOT . . .

The pilot, the craft and the link between them—the instruments. Each has to be prepared to peak at the right time, the moment of take-off. The successful pilot's preparation can entail a long apprenticeship. To use his gift he must have access to a store of information which can only be built up in person, in the air. Knowledge of terrain and the micro-meteorology of countryside are a start. Experience in the clouds, learning where to expect ice; how to avoid the rain so disastrous to the performance of sleek glass wings; how to centre and re-centre the lift with certainty in the grey turbulent mists. Experience of the long undulating waves, the winds that provoke them, the shears that destroy them. Experience of the sea breeze fronts, the milky fronds of cloud hanging low; the sudden turbulence and sink on the "wrong" side, the exhilarating torrent of lift on the "right". Experience of the hills, the thermal lifting away from the ridge that demands the steepest of turns if it is to be contained; the hidden clutching hand waiting for the unwary in the lee of the peaks. Experience of the form and shape of clouds, in the patterns of which lies the secret of the energy paths to be followed by those who would be swiftest to the goal.

Also in his experience a pilot must include what, at the time, he may have counted as failure—field landings. He must know of the behaviour of wind in the tree tops, the appearance of bad ground, of deceptive slope. Without this experience he may come to grief when faced with a difficult field, his mind already stressed by thoughts of failure in the contest task. Or he may feel vulnerable and nervous of crossing bad ground, staying needlessly high or diverting, while the veteran pushes on with confidence. All these facets of experience must be available to the top pilot, to be stored and used to give the largest possible proportion of right answers to the problems which arise at each moment of a contest flight.

The pilot must also be physically fit. Not a superman, but he must have a clear head and possess the mental and bodily stamina needed to fly accurately and decisively for many hours at a time. He must be able to sustain a concentration so intense, in his quest to save every spare second, that the hours pass almost unnoticed. It follows that his preparation should include a proper measure of sleep and a light hand on the beer glass!

. . . AND THE AIRCRAFT

To the earnest competitor the state of his aircraft is next to Godliness! The surfaces will be smooth and clean. The inevitable bugs and flies plastered to the leading edges will have been cleaned off before derigging or picketing out for the night. I am often surprised to see gliders lining up for a contest launch with the debris of yesterday's thermals still showing! I once flew an Eagle in the evening calm at Lasham. While flying the dew had dulled the forward part of the wings top surface, under the laminar flow so carefully contrived by Slingsby's craftsmen. Except that a few specks of dirt marred the surface, specks so small as to be barely discernible with the finger tips. Behind each speck a vee of shining surface, clear evidence of turbulent flow. The knowledge that each vee provokes skin-drag ten times as high as it need be set me to cleaning and polishing all the way to take-off!

Once in the cockpit the pilot must operate efficiently. His equipment should cater for his essential needs but no more. Everything should be in its place, accessible without fumble, preferably fixed or stowed so that it can't go astray. Camera mounted firmly for ready use, angled down so that one wing tip is just in-picture at the top, thus reducing the degree of wasteful bank needed to take the required pictures. Drink flask fixed, with drinking tube (and tap—a loaded tube is a fine syphon!). Microphone boom-mounted, transmit button on control column. Knee pad with minimal vital notes and space to jot numbers of rivals seen at turning points. Pencil clipped to cockpit side. Maps folded so that more than the prescribed course is to hand in case diversions are necessary. (Don't do as did one friend who flew a dog-leg race on sparsely folded ¼-million maps and then went 50 miles off course. Imagine the scene!) Calculator mounted within easy view, not left loose to disappear beneath the seat when needed most.

. . . AND THE INSTRUMENTS

The bushy tailed pilot, his spotless craft, cockpit the very essence of ergonomics. Time to throw in a few instruments. And this is just what some people appear to do. Quantity was one man's ploy, with four variometers and three stop watches on his panel! Quality should be the mark, with simplicity a close second, combining to add up to reliability. I think the panel I found most impressive was that of Helmut Reichmann. A World Champion, the resources of Germany's gliding fraternity at his back, Helmut sallied forth with (so far as I could see) only four instruments—altimeter, airspeed indicator, compass and a vane-type variometer with audio attachment. He would have had a turn and slip but cloud flying was banned!

It's what you do with the variometer that counts. It is worth stopping to consider what you really want the thing to tell you. Not merely the rate at which you are going up or down, although this is obviously important when you are optimising a climb. During the glides, however, you really want to know for sure whether the *air* is going up or down, and by how much. You need to know this at any moment, regardless of your own speed—fast or slow or in-between—so that you can moderate that speed to the optimum. Fortunately we are able to make the simple, reliable, vane-type vario do all this for us with a little pneumatic assistance. (We can also enlist the aid of the heavies with complex electronics, multiple printed-circuit boards and a tidy repair bill if it goes wrong. But we said simple and reliable so I'll stay with Reichmann for the moment.) First we must iron out the sink and zoom effect of our changing speed. Total energy systems have been with us for years, starting life as a venturi system and later turning into panel mounted capsules to escape the drag. Now we have the Brunswick tube which to my mind is far and away the best of all. True, it does suffer a bit in the rain but perhaps that too will be overcome. Modern venturis are available too, but are prone to yaw errors.

Next we would wish, in our perfect system, to eliminate from the variometer reading the normal sink of the glider. Paul MacCready thought up a way of doing this in 1955, but the system, rechristened Netto, is only recently

back in fashion. MacCready reckoned that, for all intents and purposes, the sink of a glider flying fast increased in proportion to the square of the airspeed. Not exactly true but nearly so. Thus, to keep its inner pressure the same as that outside, the vario flask needed to sip in air at a rate proportional to the speed squared, and the vario needle swung down in response. If the vario flask could be given an air supply that would exactly satisfy its needs without that air needing to be drawn through the vario, the needle would settle back to zero. This supply may be drawn, through a carefully calculated "leak", from pitot, a pressure which, conveniently, also increases in step with the square of the airspeed. As long as the glider is speeding through still air, the needle stays at zero. But as soon as the surrounding air sinks (or rises), the flask needs more (or less) air than is coming from the pitot "leak", and the extra (or surplus) air is routed through the vario. The needle is deflected to show the degree of sink (or rise) of the air mass.

The system can even be extended to offer limited use as a zero-reader—that is, you fly at a speed which results in a given reading on the vario, a reading which is different for each climb rate. But flight safety demands a good look-out and one should not be required to watch an instrument all the time. So it is prudent to add an audio to the system so that at least you are warned when you fly into rising air. This is easily done by putting the sensor of almost any conventional electric audio vario in series with the vane-type vario, so that what you see on the dial you may also hear. A two tone audio, with separate up and down tones, is even better. Armed with this rationalised vario system the competitor is ready to compete.

SPEED FLYING

Virtually all contest tasks nowadays comprise set races, with the bulk of marks awarded for speed achieved. Much as I enjoy racing I nevertheless regret the modern policy, which by no means tests all the attributes a soaring pilot should possess, in particular his ability to extend his concentrative powers for eight or even ten hours. What a day it will be in England when some brave task setter declares cat's cradle on a booming day and half the field tops 750kms! But speed flying is the in-thing so I'll stick to that.

The first big decision is choice of start time. There are usually two options. Early, with a chance to return and start again, or at theoretical optimum, to encompass the very best of the day within the expected time span of the flight. The former is the cautious and the latter the bold choice, and you may well be swayed by your overall standing in the contest. But if there is the slightest doubt about the forecast or the feasibility of the task then experience has shown that the early bird has tended to get the worm!

Next it is important to make a clean start. Races are won and lost by mere minutes after hours of intense flying. It is possible to make up to two minutes difference just in the way you muster maximum permitted speed at exactly 1000m precisely over the start line. A faultless start is hard to achieve and it is worth knowing just how much height you will use up reaching your maximum speed, and how far the dive will carry you. To be sure of this you will have had to practise it again and again, and have learnt to adapt to the majority of occasions, when you are at neither the best place nor the best height for the perfect start.

Once on your way you must become a time-miser. Every un-needed turn adds seconds to your tally, every foot needlessly lost is another fraction to be made up later. You must be able to sense, before any instrument can tell you, which way the next lift lies, and every vestige of rising air must be treasured and acknowledged by a corresponding adjustment of your speed. Again it was Paul MacCready who taught us this and the principle of adjusting speed to the momentary condition of the air mass is universally known.

"Netto" is particularly useful to this adjustment, especially with an added audio to herald the friendly air mass. To fly at the optimum speeds without Netto the pilot needs to watch his vario for much of the time, when he should be paying full attention to the sky ahead, picking his way across the stepping stones that form the energy path to success. With Netto the optimum speed to fly (average) is indicated against the zero of the vario when the speed ring has been set to the achieved climb rate. The trim may be set to this speed so that while the glider stays in trim the pilot knows that his speed is substantially correct. The audio will warn him when he needs to adjust the speed, so that he may concentrate on the outside world, developing his affinity with the sky.

LONG STREAMS OF ENERGY

Properly flown, the sky is capable of providing astonishingly long streams of energy, even when the clouds are not in obvious streets. My biggest surprise was on the day at Husbands Bosworth last year when our Nationals task was a 500km triangle. After starting I left HB at 3000ft and did not need to stop to circle until reaching Lasham, 55 minutes and 140km later!

Most race tasks go round corners and the business of photographing the turning point can be a great time-waster. It requires a technique which is well worth practising. You wish to take your picture as soon as you possibly can, turn round and head off on the next track. Your camera should be mounted to be on the inside of this turn. You must be in the right zone when the photograph is taken, and it is worth having this zone marked up accurately on your map. The trouble is the finer you wish to cut the corner the narrower becomes the zone and the easier it is to make a mistake.

With the turning points behind you and the goal at last in prospect the last opportunity to save valuable time presents itself. It is tempting, knowing the cloudbase, to reckon in advance that from a certain point you will be able to glide in. On reaching that point one may become obsessed with climbing to cloudbase in order to start final gliding at once, even if the local lift is inferior. Instead you should continue to fly normally and wait for the current energy path to intercept the final glide slope, at whatever height this occurs. Effectively you will have extended your final glide well beyond the theoretical maximum distance as related only to cloudbase. You should still fly to the speed ring even on final glide, and use the calculator as a continuous monitor of "Howgozit".

If you have done everything right you will cross the finish line with the eminently satisfying knowledge that, for once, you have beaten them all!

AIRSPACE AND UK GLIDING 1976

JOHN ELLIS (Chairman of the BGA Airspace Committee)

This article is intended to shed some light on the current (spring 1976) airspace maze and hopefully to clear up some misconceptions on those areas where gliders can, or cannot fly. It concerns mainland UK only and does not necessarily include information applicable to any power aircraft.

Air Traffic Zones

All aerodromes, including gliding sites, have an Air Traffic Zone (ATZ). It extends 2000ft above aerodrome level within a distance of 1½nm from the boundary. Since the lateral dimension specifies "from the boundary", it is obvious that large aerodromes will have large ATZ's and *vice versa*. An aircraft may not fly within an ATZ, without permission, unless it intends to land at that aerodrome. Some aerodromes are designated as PPO—Prior Permission Only. This means that, without permission, an aircraft cannot fly into such an ATZ even if the intention is to land. The only foolproof way of ascertaining the PPO state of airfields is by reference to the UK **Air Pilot** (AGA section). Permission can often be obtained by telephone, VHF not necessarily being essential. All military aerodromes are effectively PPO and generally they should be avoided.

Obviously, most aircraft operating from an aerodrome cannot remain inside its ATZ even when flying circuits. Therefore, regardless of legalities, airmanship and "politeness" points to the fact that extended centre lines of busy runways, particularly on the approach side, should be treated with caution and glider pilots should beware of lingering in their vicinity.

Gliding site ATZ infringements by itinerant power aircraft are not uncommon. If these are considered to be a continuing hazard, clubs should contact the BGA Airspace Committee with full details.

Military Air Traffic Zones (MATZ)

These fluctuate in number and enclose an area within 5nm radius of the aerodrome from the surface up to 3000ft. They usually have a stub 5nm long and 4nm wide, from 1000ft to 3000ft aligned along the main approach runway.

The MATZ Rules do not apply to civil aircraft, but it should be remembered that inside every MATZ there is an ATZ where the Rules do apply. Along extended centre lines, outside the ATZ, the same general airmanship principles should be applied.

Prohibited Areas

Excluding Northern Ireland, these are all Atomic Energy establishments at

Winfrith Heath	Capenhurst
Harwell	Springfields
Aldermaston	Calder/Windscale

They all have a radius of 2nm with heights around the 2000 to 2500ft mark. Regardless of legalities, it is not advisable to put oneself into such a position that a landing within these areas is unavoidable. The possibility of danger and the potential cost of any damage is very high.

Short term prohibited areas may be established anywhere from time to time for such events as political conferences etc. Information about these can only be obtained from NOTAMS.

Danger Areas

The country is littered with danger areas of every dimension and containing all sorts of nastiness. They are active part-time or permanently. Full details can be found in the UK **Air Pilot** (RAC Section) from which the following short extract is taken: "Pilots should . . . take every precaution to avoid infringing the boundaries of active danger areas . . .".

Other Restricted or Hazardous Areas

As might be expected these are very varied, ranging from bird sanctuaries through to Military training areas etc to radio transmissions of such high intensity that they are considered to be injurious to health. None of these areas are prohibited, they are notified in the UK **Air Pilot** (RAC Section) to advise pilots and obviously airmanship and common sense should be applied when flying within them.

Controlled Airspace

This is where the complications start and the first one is that the term "Controlled Airspace" only applies to Control Zones and Areas and Airways. "Special Rules" are peculiarly British and are not included. However, since a glider pilot is only really interested in whether or not (or maybe) he can fly in a particular chunk of airspace, the distinction is really only academic. Nevertheless, because of the distinction, the legislation as written can be very difficult to sort out, particularly in areas where a Control Zone and a Special Rules Zone occupy the same bit of sky. It is hoped the tables opposite will sort out these complications.

Controlled Airspace is either notified for Rule 21 of the Air Traffic Control Regulations or it is not. Rule 21 is the old Rule 22 which, in simple terms, makes airspace subject to permanent Instrument Flight Rules regardless of weather conditions; therefore subject to Air Traffic Control procedures, Flight Plans, minimum radio requirements etc. If it is not notified for Rule 21, it means that VMC flights are not subject to these requirements and therefore glider flying in VMC is permitted without the necessity of making position reports etc.

Visual Meteorological Conditions (VMC)

The requirements for VMC outside Controlled Airspace below 3000ft asl have recently changed but above 3000ft outside and inside Controlled Airspace and Special Rules Airspace they remain: "At least 1nm horizontally and 1000ft vertically from cloud and in a flight visibility of at least 5nm"—as interpreted by the pilot. When applying these criteria, pilots should remember that modern commercial aircraft away from terminal airfields may be descending at a rate of up to 5000ft per minute at airspeeds up to 360kts.

Airways

Airways are Rule 21 but an exception is made for gliders. The relevant paragraph states: "Gliders may cross an airway, except a purple airway, in VMC, by day, without compliance with any of the requirements . . ."

There are a few other Control Areas which may be treated exactly as if they were Airways: Worthing, Daventry, Halifax and West Scottish.

Control Zones, Areas and Special Rules Airspace

These are known variously as CTR's, CTA's, TCA's, TMA's, SRZ's and SRA's. It is simpler in this article not to go into the

why's and wherefores of the applicable Rules; those pilots who have a week or two to spare can do this for themselves. The information is presented in the form of tables below.

1 AREAS IN WHICH GLIDERS CAN'T FLY, REGARDLESS OF WEATHER CONDITIONS

London CZ
London TMA
Gatwick CZ/SRZ/SRA
Birmingham CZ/SRZ
Manchester CZ, except for a small portion up to 1250ft agl of little use to glider pilots.
Manchester TMA
Blackpool SRZ
Prestwick SRZ
Manston SRZ
Rhoose CZ, SRZ/A
Glasgow SRZ
Liverpool SRZ
Lydd SRZ
Stansted SRA—the portion between Stansted and Luton from 3500ft up to Flight Level 65.
Luton SRZ/SRA—but see Table 3 for exception
Brize Norton —ditto—
Edinburgh SRZ —ditto—

2 AREAS IN WHICH GLIDERS CAN FLY, PROVIDED THEY REMAIN VMC

Airways and some Control Areas—see under the heading Airways.
Birmingham TMA
Cross Channel SRA
Bournemouth SRZ/SRA
East Midlands SRZ/SRA
Lyneham SRZ/SRA
Southend SRZ/SRA
Bristol Channel CTA
Scottish CTR/CTA
Southampton SRZ/SRA
Leeds/Bradford SRZ/SRA
Aberdeen SRZ/SRA
Newcastle SRZ/SRA
Stansted SRZ/SRA except that portion in Table 1.

3 AREAS IN WHICH GLIDERS CAN FLY, IF CERTAIN RULES ARE FOLLOWED

Luton SRA

Parts of this may be flown in for the purpose of taking-off or landing at Dunstable (London GC). The Rules are too complicated for this article but pilots obviously must be aware of them before attempting any such flight that is likely to enter this airspace.

Edinburgh SRZ/SRA

Edinburgh has 130.4MHz and is prepared to consider glider crossing flights provided that they are contacted first. It may be necessary to pre-activate the frequency by telephone.

Brize Norton SRZ

Can be used for cross-country flying as follows—gliders may penetrate the SRZ for the purpose of record attempts, at weekends in full VMC provided that:

a) Transits are made for cross-country record attempts on triangular routes which cannot be arranged to avoid the SRZ.

b) On the day of the proposed flight the glider pilot is required to telephone the ATC Watch supervisor through CATERTON 842551 to give notification and pass an approximate Zone boundary ETA. At this time, but not later, ATC may refuse permission on operational or flight safety grounds.

c) The pilot is required to call Brize Norton on 130.4MHz before penetration. In the absence of any reply the pilot may proceed with flight assuming responsibility for look-out and traffic avoidance within the SRZ. Listen out on 130.4 until clear of the Zone in case ATC do wish to pass information/instructions. (Brize Norton ATC may or may not wish to use the frequency.)

NB It is not certain whether or not this arrangement applies on non weekend public holidays, but it's worth a try.

4 ABOVE FLIGHT LEVEL 245

In effect the entire country above FL245 is controlled, but our intrepid high altitude pilots need not worry since none of the Rules are applicable to gliders.

Radio

It will have been noted that two of the exceptions above require the use of radio; 130.4 was deliberately chosen as the relevant frequency because the majority of serious cross-country pilots would have it. There are now some pilots with 360 channel radios, which are of course very useful in some circumstances. Examples might be dire emergencies, weather information, goal record flights etc. Use for Control purposes is a different matter and could lead to a requirement for 360 channel radio for all, which certainly would be against the interests of the vast majority. Don't be misled by those odd friendly chats with Controllers. It is known that they are helpful at the moment but consider the situation if every cross-country pilot has to call up on every occasion. Glider cross-country flying is so extensive nowadays that the system would quickly be swamped and the friendly Controller might easily respond to a request for a "clearance" with a negative. Even the simple passing of "information" on a glider flight may lead to a requirement for all to do just that, which would be no safer for anybody and much more dangerous for those very few glider pilots that think that radio is a substitute for the Mark One Eyeball. Use of any frequency other than those allotted for gliding purposes requires the user to obtain an R/T licence which is not the same as the licence obtained for the installation.

Air Missery

Because glider pilots are used to flying in very close proximity to other gliders there seems to be a reluctance to report air misses between gliders and power aircraft. The power pilots do not have such qualms and certainly report if they think they have a case. The air miss system in this country is generally a good one and we should take advantage of it whenever necessary. Full details are in the **Air Pilot** (RAC Section), but generally speaking the procedure can be activated by a telephone call to the nearest airfield with an Air Traffic Control Service on the day of the incident.

Further Reading

The airspace situation is complicated and cannot be more than touched upon in an article such as this. There are many publications dealing with the subject in greater detail at very varied cost, a useful sample might include the following: *Laws and Rules for Glider Pilots, UK Air Pilot (RAC Section), General Aviation Flight Guide, Rules of the Air and Air Traffic Control Regulations, Air Navigation Order and Information Circulars.*

Danger Areas

Reference Aeronautical Information Circular 15/1976. At certain times some of these are in fact prohibited by Byelaws made under the Military Lands Act 1892 and similar legislation (to cater for pedestrians and horse riders, but possibly also for balloonists and in case the Pilchers of the day ever came to anything). The next edition of the chart of UK Airspace Restrictions will be annotated accordingly and the **Air Pilot** eventually.

"SEE AND BE SEEN" and "HEAR AND BE HEARD"

COLIN STREET *(Chairman,* Radio Communications, Airspace Committee)

Recently the CAA circulated two proposals for new legislation. One was based on the premis that the use of VHF/RT is necessary for safety. The idea was to make VHF/RT mandatory for all *powered* aircraft flying more than ten miles from base. Gliders are obviously not powered but motor gliders and tugs are. As might be expected there has been considerable opposition and the CAA have agreed to re-think this paper, either to give up the idea or, more likely, to make revised proposals for discussion at a later date.

The other proposal is mainly concerned with alterations to the Rules concerning aerodromes and the rights of pilots flying into or out of them. Basically, VHF would become almost a necessity since included is a mandatory requirement for licensed "Aerodrome Flight Information Service" Controllers at those airfields with over 5000 movements per annum and for a full Air Traffic Control Service at those with more than 25000. This proposal has also engendered opposition.

Imagine the effect at say Lasham of trying to impose such ground control. There it is demonstrated that pilot controlled separation, using "See and be Seen" works to the tune of over 70000 movements annually, the aircraft involved ranging from solo training gliders to Boeing 707. Often, more movements are achieved in a day than at London Airport. If reverse logic is applied, it could be suggested that all the Controllers at Heathrow be made redundant. This of course is equally nonsensical, but it does illustrate how wrong the CAA can be, using movements as the sole criteria for control.

No evidence it will make flying any safer

There is no evidence to suggest that, in uncontrolled airspace, the use of VHF for control purposes will make flying any safer. It may even be that a reliance on R/T and radio navigational aids has in fact resulted in a lowering of basic standards of airmanship.

The BGA has, of course, not accepted these proposals but, although some other organisations will certainly also object, the extent of that objection is not yet known. Again, it is possible that CAA will revise their ideas and present a modified paper later in the year in the light of overall comments. In any case, it is likely that gliding sites would be exempt from the Controller requirement should that requirement remain.

Pilot Controlled Separation

See and be seen. Following the introduction of glass-fibre gliders, the amount of cross-country gliding has increased considerably. At the same time, due to improved techniques, its nature has changed. Further, due to constrictions imposed by controlled airspace, in some areas it has been compressed. Brize Norton SRZ, for example, in the middle of one of the most active gliding areas, forces gliders around its periphery and into high concentrations in such places as Didcot and Down Ampney. This does not cause any problem for powered aircraft, but since gliders tend to use and track along the same energy sources they can be a real risk to themselves.

The risk may be compounded by the fact that most gliders are white and not easily seen near cloudbase. The highest risk probably occurs when opposite direction gliders are "dolphining" at high speed near the base of the same cloud street. The responsibility is entirely ours and perhaps we should look at ways of making gliders more visible. In spite of what the manufacturers say, contrasting colour is a real possibility, and the BGA Executive is considering some proposals along those lines.

Another possibility is strobe lighting which can be most effective in poor light conditions. A few gliders already have this and it is hoped to properly evaluate an inexpensive version this summer. (Comments on any system for increasing conspicuity would be most welcome—via the BGA office.)

Hear and be heard. Although the use of VHF for Control purposes in the Air Traffic sense is not required, the responsible use of radio can play a significant part in pilot controlled separation of gliders, in cloud and out of cloud as an addition to "See and be Seen."

There are now three frequencies available for gliding use and although the situation is complicated, both by the number of single channel sets in use and by the poor supply of 130.1 crystals for some makes of radio, the point has been reached when frequencies can be allocated for different purposes. 130.4MHz has been allocated for "Pilot Controlled Separation" and the general chat that has bedevilled and congested the frequency in the past should no longer be necessary—if it ever was. The specific allocation for 130.4 is:

1 Cloud flying
2 Cross-country position reports
3 Area broadcasts (warnings to cross-country gliders).

The integrity of this basic safety frequency is entirely dependent on the self discipline of R/T operators in the air and on the ground. It is up to each club and its members to handle any required education and where poor discipline and unnecessary usage is evident, to take effective steps to remedy it.

Cloud Flying

a) There is a need to be more specific and precise in the giving of position at cloud entry points. Positions should be established relative to obvious locations, not those requiring detailed local knowledge.

b) The call should be made prior to entering cloud to allow time for liaison, not as often happens only after the pilot is established within the cloud.

c) Separation relies to a large extent upon the integrity of the altimeter. The accurate calibration of the subscale is no guarantee to the accuracy of the altimeter with gain of altitude. The BGA tolerance for altimeters is that they are accurate to plus and minus 100ft at 5000ft. This check can be carried out by inclusion of the altimeter in the vacuum chamber with the baro-

graph on annual calibration. Altitude calls in cloud can then be made with some confidence.

d) When calling altitude in cloud, insert the normal R/T phraseology of "passing", "reaching", "leaving", or "out of" between callsign and altitude.

NB. There is some confusion over the use of the words "height" and "altitude." "Height" is the vertical distance above the site level or QFE. "Altitude" is the vertical distance above sea level or QNH.

Cross-country Position Reports

These in the past have been biased towards progress reports to the crew in the car, now the trend is for fewer mobiles to leave the site. With the build up in cross-country traffic the emphasis is changing to information on position and progress for other pilots. ("Hear and be Heard".) To be of real value for separation, the report should include the intended track and should always be made when transmitting areas of intense gliding activity particularly when there is any doubt in being able to "See or be Seen."

When a car is used, the operator should be experienced enough or properly briefed not to initiate calls to pilots without good reason, nor to interfere with the proper airborne functions of the frequency and, where protracted messages are likely, be prepared to change to 130.1—reverting to 130.4 after the interchange.

Area Broadcasts

The purpose of this facility is to provide a voluntary gliding "Safeguard Service" from gliding sites that have a multi channel base station. The intention is that a responsible person would make a one way area broadcast on 130.4 to warn and inform cross-country gliders in the local area. Examples would include Notam warnings, Royal Flights, adverse weather etc. Any subsequent two-way communications should be on 130.1.

It is again emphasised that the usefullness of "Hear and be Heard", as a supplement to "See and be Seen", is entirely dependent on the unselfish and responsible use of radio by all users.

Remaining Frequencies and their Allocation

129.9 Ground to Ground Communication. This frequency is approved for ground to ground only and should be used whenever the occasion permits, thus avoiding the unnecessary use of the airborne frequencies. It should be remembered that 129.9 is shared with other aviation interests, unlike 130.4 and 130.1 which are exclusively for gliding.

130.1 General Communications. In order to free 130.4 for its stated uses, this frequency should be used for everything else but specifically for:

1 Site frequency
2 Contest start and finish lines
3 Inter pilot communications (other than those on 130.4 for separation purposes)
4 Test flying
5 Met research
6 Retrieve organisation after out landing
7 Local flying
8 Cross-country instruction

Obviously until clubs and gliders are all equipped with at least the two airborne frequencies, there is going to be some cross use (and misuse) of the allocations. However, the vast majority of cross-country pilots will realise that the current shambles can't continue and that some plan is necessary. It must be voluntarily implemented and followed if radio is going to be of any lasting use to the gliding movement.

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British agriculture is changing rapidly with the introduction of such crops as maize, linseed, rape, sunflower and lupin transforming the pattern of our countryside and confusing the cross-country pilot searching for a likely landing field. EDWARD LONG, feature writer for *Farmers Weekly,* has up-dated his article "Spotting Your Crop for the Drop" (S&G, August 1974, p162) to help us improve on crop recognition.

Choose a colour . . .

EDWARD LONG

Although sympathetic, my wife is not a gliding type—but can spot one from 100 metres. She reckons that anyone who is constantly looking skywards must be at least an A and B type.

She is probably right, for unless it starts to rain, Concorde flies over or a spray plane beats up the TV aerials, few people, apart from gliding types, ever bother to look up.

What I tell her is that we also look down. Not at the poor unfortunates who have yet to become "hooked" with the gliding drug, but at the ground.

But I wonder how many of us know just what we are looking at? From a car or train window it appears that most of the country is built up—but from the air we can see that this is just not so. There are vast tracts of farmland still untouched by the spread of urbanisation, yet this does not mean that the fields are safe for us to use all the year round.

If we only fly over our home site it does not matter much that we cannot interpret what we see below. Unless we get caught out we do not need to know what our friendly neighbourhood farmer has in his fields. On a cross-country things are very different and everyone should know what lies below, for even the pundits get caught out and have to land.

Failure to spot a dangerous crop could mean the difference between an ordinary field landing and an expensive and embarrassing prang.

A little idea of what is growing below could keep down insurance premiums

This is true even for the "know it all" brigade because British farming has changed so much in the past few years that "new" crops are appearing and spreading all over the country. A little idea of what is growing below and what to expect in a particular area at a certain time of the year could help to keep down insurance premiums and prevent club membership from declining.

Twenty years ago it could have been said that the eastern and southern parts of the country was where the corn, sugar beet and potatoes were grown and the northern and western parts where the grass, milk and beef was produced. But now this division is not nearly so clear cut with a lot of cereals being grown in the south-west, increasing acreages of cereals and roots in the north and west and a whole range of new crops in the east.

At the start of the soaring season a lot of crops appear as a greenish colour—it is the shade of that green that gives a clue to the crop identity. Wheat has a much more lush, dark green colour than barley which is a paler crop. Most of the wheat grown here is sown in the autumn and winter while most of the barley is sown in the spring.

This colour difference could be very important in May. Because it is sown sooner the dark green wheat will be nearly fully grown by the end of May, while the later, paler barley will still only be a few inches tall. A month later both wheat and barley are fully grown and to be avoided if at all possible.

Because of the mild autumn and because an acre of wheat is worth a lot more than an acre of barley, a record wheat acreage was sown—over a third of the 3¼ million acres going in on East Anglian farms. This does not mean that wheat is not a potential hazard for glider pilots in other areas, but in the cattle rearing areas of the north and south-west the chances are that any cereals being grown are for feeding. Barley is a better feed grain than wheat so the chances are that in these areas a corn crop will be barley.

A "sticky" crop more likely to rip the tailplane off a glider

Early in the soaring season a forced landing in wheat is more likely to damage the glider than a landing in barley—especially if the crop is wet. Wet standing corn is very "sticky" and far more likely to rip the tailplane off a glider than a dry standing crop.

It is at this time of the year when, to the uninitiated, a green corn field may be mistaken for grass. But there are also a lot of grass fields about. Gone are the days when cows were allowed to stand and stare in meadows. For better or worse farming has become very industrialised and grass is now farmed, in many areas, very intensively.

This means it is sown every few years, just like a cereal crop. In southern areas grass can be cut for silage in May and June. On other farms it is conserved for winter feed as hay. Haymaking is usually later than the first silage cut. The whole calendar is a little later in the cooler north. In all areas more than one silage cut is usually taken. What all this means to us is that in mid-season when cereal crops are beyond the safe stage for field landings there are alternatives—if care is taken. A grass field left for grazing is always a good bet, so long as the cattle are not in residence. They are noted for the passion for licking and chewing gliders.

Where grass has just been cut for silage it will appear from the air as a yellow crop. This is because the crop is cut right down to the lower stems. It stays a yellow colour for a few days before regrowth appears. These fields are safe. Grass cut for hay is usually left for a few days in swards which after the sun has dried them out turn a silvery colour. Hayfields are safe until the baler gets busy.

If there are two shades of green in a field it could be that wheat and barley are growing together, but it is probably best to suspect it is a grass field divided off with an electric fence. When farmers drill corn they always drill the outsides of the fields first. What

can happen is that they start to drill wheat in the autumn and are caught out by bad weather and complete the sowings with barley in the spring.

So it could be corn—but suspect grass. If there are no cattle to be seen and it is late afternoon it could be that the cows are being milked. Often the gateways and access routes to the field show signs of treading which is the usual giveaway if cows are about. Intensively grazed grass is often strip-grazed and electric fences can be lethal to a straying glider.

Easily spotted because they are ridged up

Seen from the air potato fields are also green, but the main-crop are not usually planted to until April and do not emerge for three to four weeks after this. The full leaf canopy is not out until late June or early July. Potatoes can easily be spotted because they are ridged up and the foliage is usually a dark, dull green colour.

In spite of the fantastic prices from the 1975 harvested crop fewer acres are expected to be planted this year, and as yields are improved every year the acreage planted is expected to slowly decline from the 400000 acres grown nationally at the moment. In the past few seasons a lot of potato growers have switched from 30in to 36in wide rows. The wider rows need shallower ridges, so if you have to come down in a spud field and there is a choice there will be less damage if you land along the wide rows.

From the air sugar beet look a much paler green than potatoes. The crop is grown on the flat in 18in to 24in rows, drilled in March and April. It is very slow to develop and usually quite safe as an emergency landing area right through until the end of the soaring season. It is always best, from both the pilot's and farmer's angle, to land along the rows of beet.

This year there will be over half a million acres of beet grown, another record. This is about 30000 acres more than last season. While the bulk of the acreage is grown on the eastern half of the country, it has always been grown in Shropshire, Worcestershire and Herefordshire. Now there are moves to grow a further 27500 acres in south Lancashire, north Cheshire and north-east Wales in the not too distant future.

One simple way of identifying beet from the air in mid-to-late season is from the diseased patches the crop often suffers. From July onwards disease turns green leaves bright yellow, spreading out from a focal point into characteristic yellow patches in an otherwise green crop.

From a small beginning a few seasons back, the bright yellow flowering oil seed rape crop has caught on fast and now over 100000 acres is sown. The crop is grown for its oil which is used to make soft margarine and cooking fats.

Crazy to take a glider anywhere near this crop

Rape can be sown in the autumn or spring. It grows to a height of four to five feet and is very thick. It would be crazy to take a glider anywhere near the crop.

The autumn sown crop reaches full height in early May and flowers soon afterwards. The spring crop flowers about a month later. After the bright yellow leaves fall, the crop looks a pale yellowy green until the pods start to ripen when the crop turns a darker dirty-brown colour. The autumn crop is harvested in mid-July and the spring crop in September. As the stubbles are very long and very sharp they should be avoided as well.

Mustard is a cousin to the rape crop but it flowers late. Little mustard is grown outside Norfolk and Suffolk. Like its yellow flowering cousin, it should also be avoided.

Another crop that should be avoided is linseed. A relative of the wartime flax that was grown for the fibre to make linen, linseed is grown for its oil which is used to make paints and putty. Last year only 6500 acres of linseed was grown in the east and south. Within three seasons the experts reckon about 40000 acres will be on farms.

The crop is sown in the spring and by late May and early June is between 12in and 20in tall. It is a dense crop that has a drab-green colour until it flowers in early July. When it flowers it turns a breathtaking pale blue but the flowers only last a few hours. After flowering the crop reverts to a drab green until it starts to turn light brown in August and September.

Maize is another crop to be avoided. A few seasons ago only a few acres were grown in the south. This year over 100000 acres will be sown.

In May or early June it might be safe but not later

It is planted in late April and early May on wide rows. It is a slow starter so a forced landing in May or early June in a maize field will do little damage. In these early stages of growth the crop can be spotted because of the wide rows of thinly spaced, rather sickly, pale green looking plants.

After mid-June the crop roars away to reach heights of six to twelve feet. At this stage of growth maize has a coarse, wide leaf which reflects light easily. So although the crop looks dark green from ground level, it can look a silvery-green from the air if the sun is out. Towards late August the crop turns colour to a grey-yellow just before harvest in late September and October.

In some parts of the east and south, sharp eyed pilots might have noticed small trial plots of sunflowers. These are being tested to see if they could be grown here commercially to provide the food industry with high quality cooking oils.

Bright yellow flowers which can be seen from miles away

Until they flower in July sunflowers are a pale green colour. But from mid-July until they are harvested in September their bright yellow flowers can be spotted from miles away. One interesting identification feature with sunflowers is that the heads always turn to face the sun.

So sunflowers is one possible crop for the future but far more likely to be grown on a wide scale in the next few seasons is the lupin crop. Lupin seed is crushed for the high-grade oil which can be used in a wide range of human foods. The meal can then be milled and used as a flour to make cakes and pastries.

The sort of lupins that are likely to be grown here are distant cousins of the flowers that grace our gardens. Because farmers are only interested in the pods, plant breeders are working to produce small bushy plants. These will be grown on wide rows and could pose further problems of crop identification as the types being developed are yellow, white and purple flowering types.

No one can possibly learn from reading a few words how to spot crops from the air, it can only come with experience. What is a good idea is to have a glance down at growing crops on every flight. Even non-soaring flights can be turned to advantage if they are used to see what is growing around the airfield.

Then a few seconds spent on the way home to look at what is in the field from the roadside should help enormously. A few minutes spent on non-soaring flights could reap big yields in safe field landings throughout the season.

Investigation into Standing Wave Conditions

BOB LYNDON and ALAN DIVER

The BGA granted the 1975 Churchill Award for this project which was started in November

The Inter-Services Regional at Cosford last May prompted a considerable amount of thought about a task wholly related to standing wave conditions. It has been talked about in the past but rarely put into practice, especially since the general forecasting element is a little hazy for gliding. A deeper investigation into the forecasting of wave is needed to give tasksetters more reliable information. Also, glider pilots on wave projects in mountainous regions could benefit immensely from such forecasting. At the moment, pilots have an educated guess based on previous experience, or wait until wave clouds develop before rigging. Frequently, wave conditions are missed through mis-interpretation of conditions or forecasts, plus lack of on the spot Met information.

This is why a detailed investigation into the forecasting of standing waves with the requirements of glider pilots in mind has been started by myself and Alan Diver, a professional forecaster with competition Met experience. The British Gliding Association has granted us the 1975 Churchill Award for this project which will help us a little financially.

Found wave on four of five days

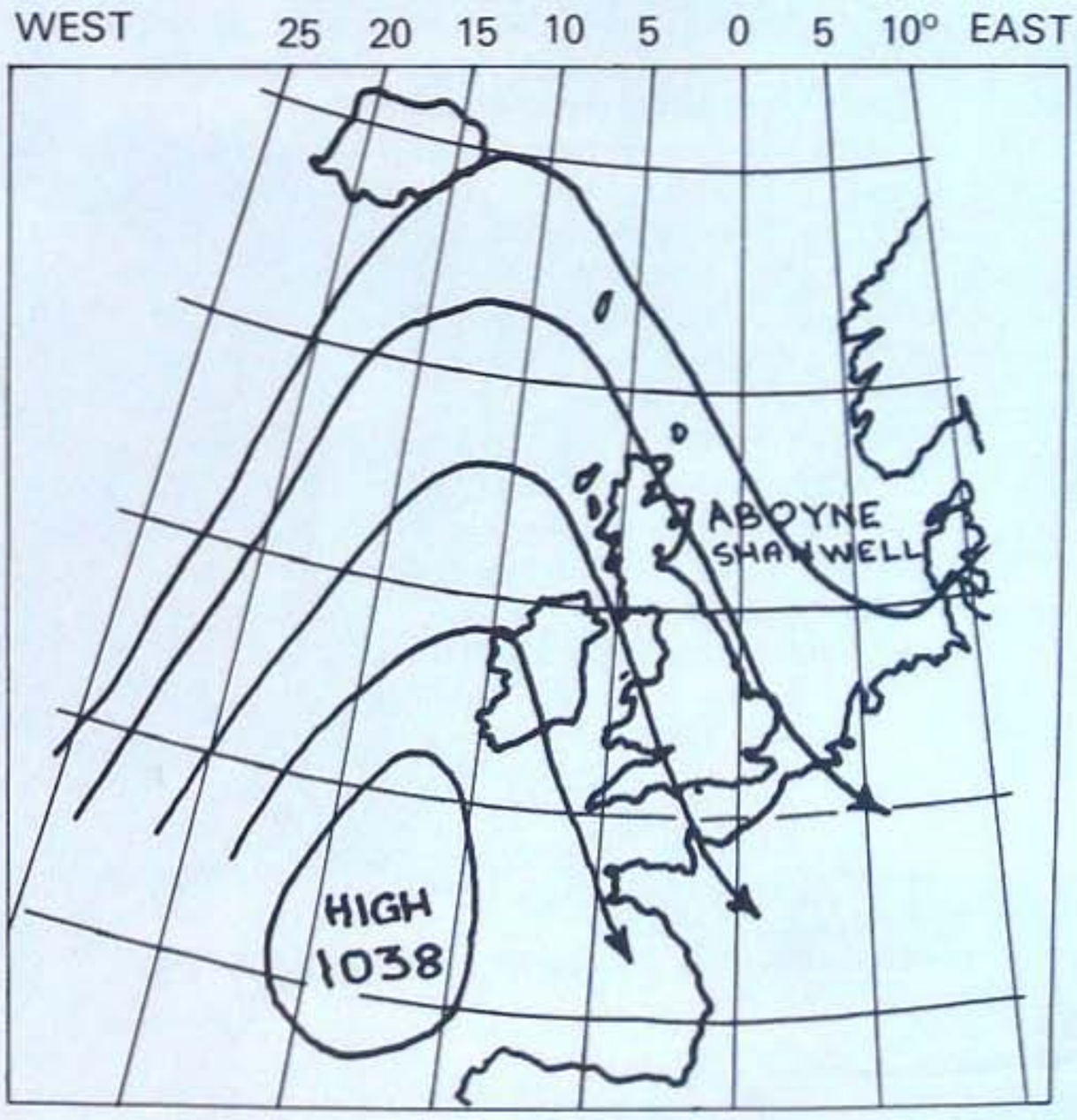
We started the project during the first week of November 1975 at Aboyne, using a Blanik, and were fortunate to find wave on four of the five days. The investigation is expected to last for at least 12 months and the initial flying phase at Aboyne has provided some very useful data, also aided by a group of pilots from Booker who were at Aboyne at the same time. They gave us additional information as well as gaining a clutch of Diamond heights for themselves.

To get a continuing flow of information during 1976, we are requesting the aid of all gliding clubs in the UK. The next phase is the gathering of information from pilots who carry out wave flights, not necessarily from their home site, and who are willing to make observations and to submit them to us for evaluation at Gatwick Airport Meteorological Office, by Alan Diver. We have designed a simple observation form for pilots to fill in after landing. The airborne observations could be made in chinagraph on a kneepad.

A letter outlining our request has been circulated to all UK club CFI's including a sample observation form. We would be most grateful for any co-operation from pilots who have successful wave flights from their home sites or elsewhere in the UK. The following account is from a good wave flight we had at Aboyne on November 6, 1975.

Alistair Kaye and Brian Spreckley got Diamonds and Dave Watt a Gold height. The details of the Met situation may well be of interest. The calculations of the wave length, maximum velocity and height of maximum velocity were made by using the Casswell method of wave forecasting which Mike Garrod wrote up in S&G, February—March, 1974, p28, "A Glider Pilot's Guide To Wave Forecasting."

Synoptic Situation



The synoptic chart for 12.00GMT that day shows an anticyclone centred to the south-west of the British Isles with a marked ridge to the north of the centre. Aboyne is shown to the forward side of the ridge in the north-westerly which was maintained at height with increasing wind speeds with height. The ridge of high pressure was moving slowly east.

Alistair Kaye contacted wave at 2500ft east of Morven, near the Lochs. He climbed at 5kts increasing to 8kts at 4000ft and

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continued to 8000ft. He had maximum wave velocity of 10kts at about 6000ft. Climbing in 5kts at 10000ft up to 16000ft he later re-contacted wave and climbed to 24000ft and Diamond height. Alistair experienced turbulence between 17000 to 18000ft which was confirmed by Brian Spreckley. They also confirmed a definite decrease in wind between 18000ft and 20000ft from 65kts to 50kts estimated.

Brian Spreckley climbed to 6000ft in 5 to 6kts then in 4kts to 9500ft. He then moved up the Dee Valley close to Ballater to the forward side of a lenticular cloud, which he considered was associated with Geallaig Hill (2437ft). He climbed in 6kts to 15000ft, then a slower climb through the turbulence to 20000ft. Lift decreased to 1 to 2kts to 21000ft, then ½ to 1kt to 24000ft when the climb was curtailed.

Flight Logs

The following is an extract from the flight log which the authors made on the same day:

Take-off:10.10GMT

10.14: Moderate turbulence (assumed rotor turbulence) between Aboyne airfield and Loch Kinrod.

10.18: Over Loch Kinord: 3000ft climbing at 6kts: wind 300/40 (41kts corrected height and temp +6°C).

10.20: 4400ft : plus 6kts

10.31: 6300ft : plus ½kt −2.5°C

10.33: 1km north of Dinnet: zero climb: wind 315/35 (38kts corrected)

Lenticular cloud bands observed along Dee valley: estimated wave length 5nm

10.38: Over Lochs at 7900ft climbing at 2kts

10.43: Over Loch Kinord at 8000ft: wind 300/33 (37kts corrected temp —8°C)

Top of lenticular cloud 9000ft: base was 3000ft above airfield height

10.47: 1nm west of Lochs: wind 330/40 (45kts corrected)

10.49: Changing position towards west

11.05: 4nm west of Ballater at 9500ft : climbing at 3kts : wind 315/44 (50kts corrected temp −11.5°C)

11.06: Climbing at 4kts increasing to 6½kts : oxygen on

11.10: 7nm west of Ballater (over Balmoral) at 13300ft climbing at 5kts : wind 320/41 (50kts corrected)

11.15: Over Balmoral at 16000ft : climbing at 2kts : wind 325/45 (57½kts corrected)

11.30: over Balmoral at 16500ft: climbing at 1 to 2kts: temp —20°C

11.35: 16800ft

11.38: 16600ft about zero sink: wind 320/58 (75kts corrected) near Braemar

12.05: Out of oxygen whilst descending through 14000ft
Landed 12.24.

Note: At 11.38 with zero sink the polar diagram for the Blanik shows that the surrounding air was rising at 4.5kts.

Wave Calculations

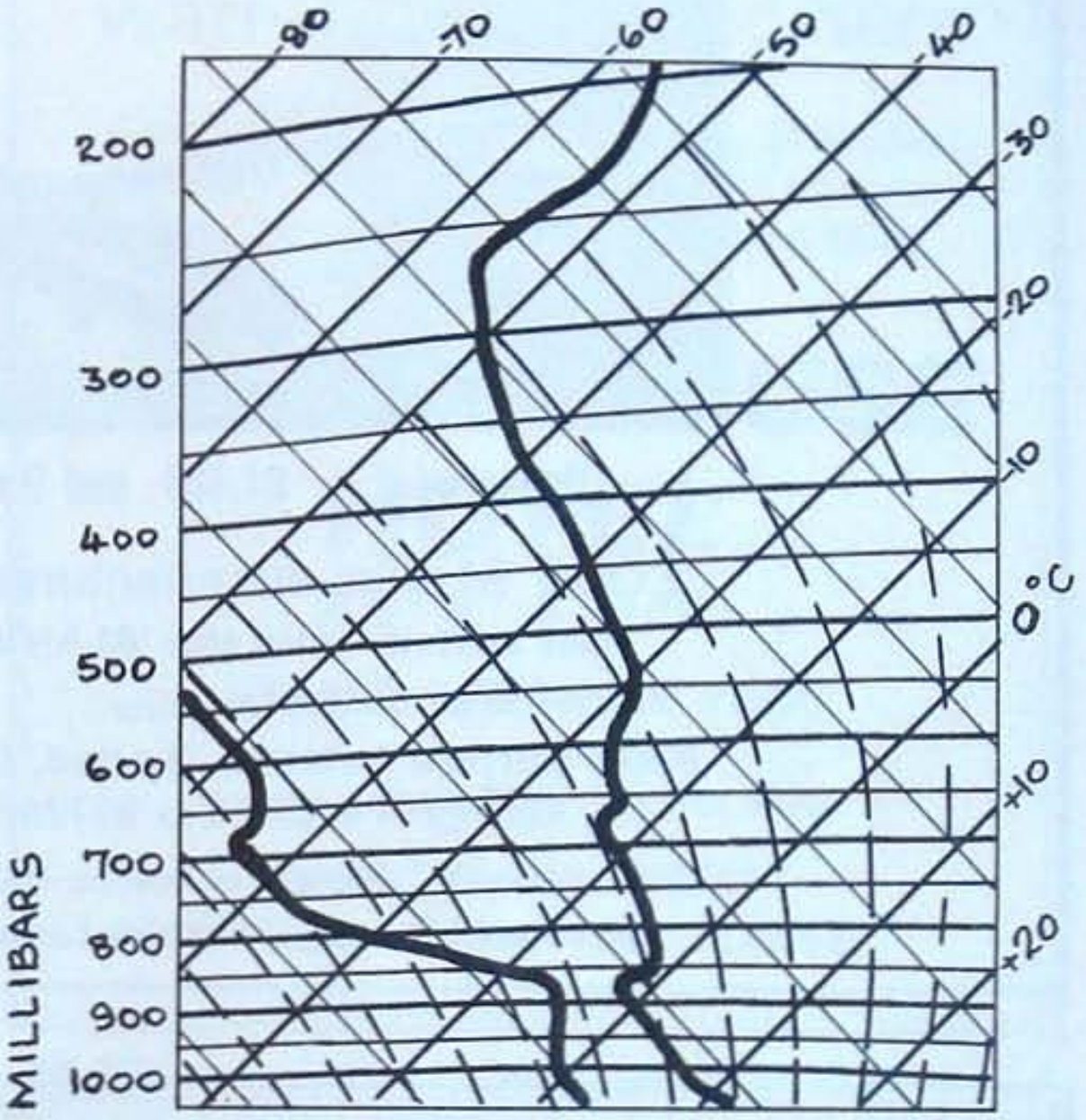
The temperature lapse between 1000mb and 700mb = 18°C.
The mean wind speed over that height range = 25kts
The temperature lapse between 700mb and 300mb = 39°C.
The mean wind speed over that height = 72kts

These values give an L_{850} value of 0.84
L_{500} value of 0.31

From the graphs the wave length = 7.5nm
the height of Max velocity = 8000ft
the Max velocity = 4.3kts
(432ft/min)

In calculating the Max velocity, the wind speed at ridge height was taken as 18kts and the constant value from the graphs was 24. Therefore the multiple 18 × 24 gave the Max velocity in feet per minute = 432ft/min. (=4.3kt)

The Tephigram for Shanwell shows the airmass to be unstable up to about 860mb capped by a well marked inversion with less stable air above the inversion. The winds show a steady increase of speed with height and a gentle veer of direction with height, so that the shear was not enough to inhibit wave flow.



TEPHIGRAM

SHANWELL	**6.11.75**	**12.00GMT**				
	Surface	240/14	10000ft	700mb	325/27
	1000mb	265/14		600mb	330/48
(3000ft)	900mb	290/20	18000ft	500mb	335/81
	850mb	330/27		400mb	335/75
	800mb	325/24	30000ft	300mb	345/111
				250mb	340/99

Wave flow

Fig 1 WAVE FLOW

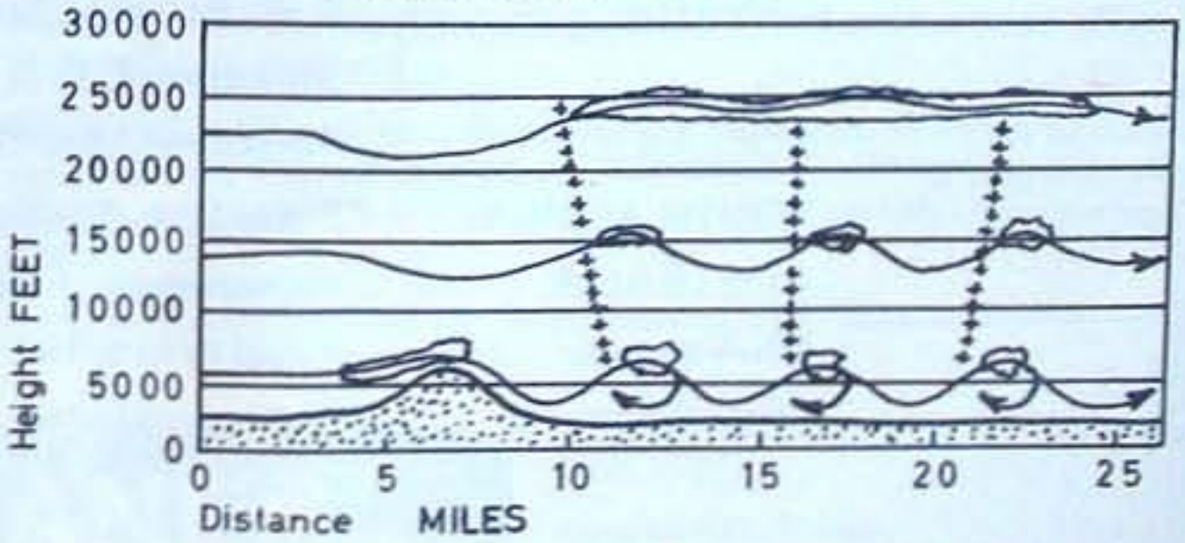


Fig 1 shows the typical air flow over a mountain barrier in wave. conditions. The plus signs indicate the region of most rapidly ascending air.

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Fig 2 CROSS-SECTION THROUGH MORVEN
ORIENTATION 300° Mag (290° T)

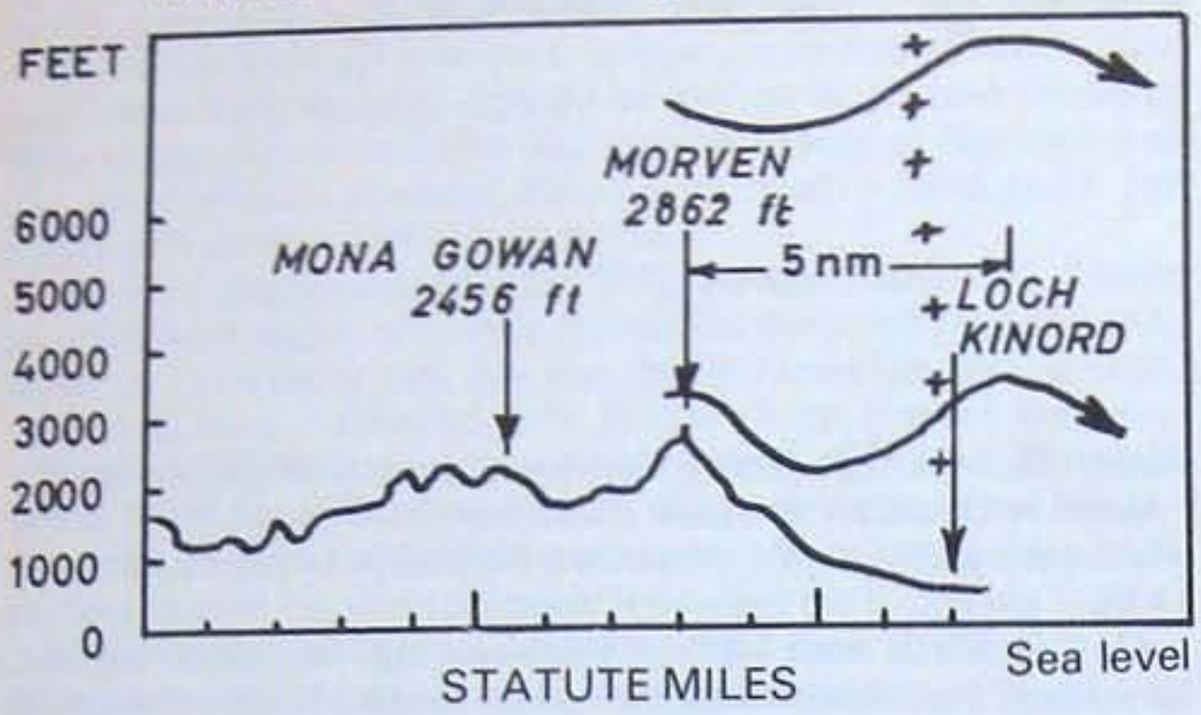


Fig 2. It is generally accepted that the lee slope is the most important factor of the mountain profile. The lee slope from the summit of Morven shows a smooth slope into the Dee valley conducive to wave flow. Two streamlines of suggested wave flow are shown on the cross section with a wave length of 5nm which was observed from lenticular clouds in the Dee valley. Plus signs indicate the area of best lift as observed in the flight logs.

Fig 3 CROSS-SECTION THROUGH BALMORAL
ORIENTATION 300° Mag (290° T)

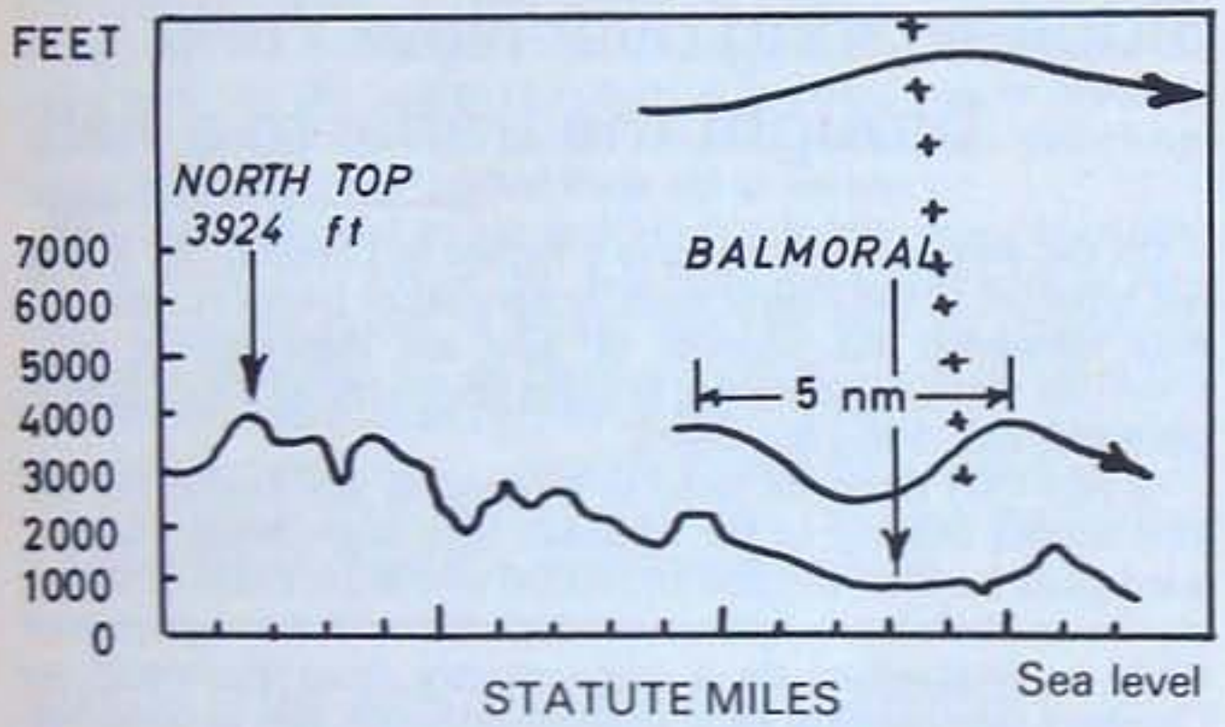


Fig 3 shows again the smooth lee slope into the Dee valley towards Balmoral. Suggested stream lines with best lift areas are also shown.

Max Velocity

The Casswell method gave a value of 432ft/min (4.3kts). The actual values observed were 8 to 10kts by the single-seater gliders on to which we must add the glider's sink speed in order to obtain the true vertical velocity of the air. Mike Garrod remarked that if the Max vertical velocity observed was greater than Casswell gave, at any particular site, a proportional correction factor could be made. In the original Casswell paper the Max velocity = Height of the mountain barrier × Horizontal wind speed at that height ÷ A constant. The height of the mountain is assumed to be a general figure of 300m (about 1000ft). Thus

. Yet he was not lacking in enterprise. In the early days he ned and built an aeroplane; he learned to fly in 1911 (on a iot), and a few years later he became the chief creator of the ıl Australian Air Force.

is rather amazing that during the whole of the first three s of British gliding I only twice saw anybody turn a circle.

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since Morven is 2862ft, a multiplying factor of around 2.8 would give a vertical velocity of 4.3 × 2.8 = 12kts which would seem to be about the real value.

Wave length

The wave length was about 5nm observed from lenticular cloud with base 3000ft and tops 9000ft. Casswell gives 7.5nm which was probably true in middle levels since there is a tendency for wave length to increase with height (see wave length and plus signs on Fig 1).

Final Remarks

Temperatures measured from the Blanik were taken with an accurate mercury-in-glass thermometer projecting into the airstream from the rear cockpit, shading the bulb from direct solar radiation. These readings were in good agreement with the Tephigram. The fluctuations of observed vertical velocity are associated with pilot skill, but, however skilful, any pilot must do a fair amount of searching along and across the wave in an effort to keep in maximum lift.

Our thanks to Harry Orme and members of the Fulmar RAFGSA Club for their help and loan of their Blanik, Alan Middleton at Aboyne and the Deeside GC for the use of their facilities, as well as the Met Office at Dyce Airport.

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They Circle?

A. E. SLATER

It was exasperating. For over two years people in other countries were circling in thermals; readers of S&G began to hear about it, and then to be told just how to do it, yet nobody ever tried to get away from slope lift by that means, or even practise circling at all.

Octave Chanute, who started gliding in 1896 on the shores of Lake Michigan, had an article on soaring in *Flight* for July 3, 1909, p395, in which he must have been the first ever to tell glider pilots how to circle in an upcurrent: "Rise spirally like the bird. Steer with the horizontal rudder, so as to descend slightly when going with the wind and to ascend when going against the wind."

This is just how Leonardo da Vinci thought the birds did it, but he explained it as dynamic soaring, being unable to distinguish between air speed and ground speed. Leonardo understood slope-soaring, but thought of upcurrents only as an upward deflection of the wind, and there was nothing to deflect the wind upwards over a flat plain, above which birds could be seen circling.

Did Chanute, similarly, confuse absolute with relative vertical motion in advising pilots to put the glider into a climbing attitude on the intowind side of the circle? When a *Daily Express* reporter visited Lasham and was taken up in a corking thermal, some ignorant sub-editor thought to ginger up the story by saying the glider's nose was pointed skywards. Anyway, it was fortunate that nobody took Chanute's advice to make a climbing turn, as a few years were yet to pass before an aviator called Parke became the first to discover how to get out of a spin.

Wilbur Wright guessed by 1902 that birds circle in upcurrents, and the only reason why the brothers did not try a cross-country flight from Kill Devil Hill, according to Chanute, was that "if they rose on the ascending currents of air at the front and began to circle like birds", they "might" be forced down on to the marshy ground to leeward of the dune.

It was to be nearly another 30 years before anybody even tried to get away on a thermal cross-country from slope lift.

Early in 1930, when organised gliding had begun under the BGA, I watched gulls circling over the banks of the Thames but could only imagine they were using the increase of wind with height, like the albatross. But people were already explaining the lift under cumulus clouds, which Kronfeld had first used two years before, as being due to the latent heat of condensation giving a boost to the cloud's growth and thus causing it to suck in more air from below.

But in May that year, at Rossitten, I first heard the word *Thermik*, which seemed to mean vaguely a local condition of the atmosphere in which heated air could rise. For instance, when Ferdinand Schulz left a dune, glided over a grassy meadow, and returned to the dune without loss of height, he was said to have encountered *Thermik*. But the Germans still have no specific single word for an isolated thermal. They use substitutes such as *Ablösung*, a "release" from ground level, or *Bart*, a "beard" dangling below a thermal's head, or the double word *thermische Aufwind*, which incompetent technical translators persist in rendering "upwind" instead of "upcurrent". So I didn't even then conceive of isolated thermals.

Prolonged slope-soaring began in Germany in 1922, and cumulus cloud lift was used from 1928 onwards to get away from slopes. But the first pilot to get away from a slope on "dry", "blue" or cloudless thermals alone was the German Wolf Hirth while taking part in the American Nationals at Elmira, NY, in 1930.

On October 2, when all were slope-soaring, on a cloudless day, he noticed that another sailplane at his height, 1000ft, was going up like a lift, so he joined it and then, by tight circling, reached 3000ft, leaving it far below. Then he set off on a goal flight which he had intended in the expectation that clouds would appear, and then saw two birds circling at a lower altitude, so he joined their thermal and was soon climbing again. He located the next thermal by being jerked suddenly upwards, and then another, similarly diagnosed, took him back to 3000ft. After more slope-soaring and a last thermal, he landed 53km (33 miles) from Elmira.

Slope-soaring over New York brought the traffic to a halt

On the way home Hirth gave a lecture in London, but it was not reported in S&G and I seem to have taken no notes, and can only remember his account of how his slope-soaring over Riverside Drive in New York brought the traffic to a halt so that the police had to flag him down.

In mid 1931 Kronfeld came to England to win a prize for the first double crossing of the Channel, each flight being a downward glide from an aerotow to 10000ft (the BGA's idea of showing the public what sailplanes are for). He took the opportunity while in England to do a cross-country from Hanworth to Chatham, and another back to Hanworth next day, using cloud lift from aerotows. He described the flights in S&G, but made no mention of circling, the nearest to it being when he suddenly hit lift at 450ft above a sunlit cornfield, "at once turning . . ." But a non-gliding friend who had seen Kronfeld passing overhead said he was circling continuously.

At the 1931 German Nationals continuous tight circling was seen at the Wasserkuppe for the first time, performed by three or four of the "aces" while soaring in a south-east wind over the Eubeberg at the southern end. The lift was weak, and those who tried to get away had to return to the slope.

Eventually Kronfeld, in his Wien, circled away in a thermal until nearly out of sight. Professor Georgii, writing later about this flight, said there was "not a cloud in the sky". But I took a series of photographs of a line of vigorous cumulus along the northern horizon which was giving off anvils, to be blown away by an upper easterly wind. I am sure the observant Kronfeld noticed these clouds, and have often wondered whether he deliberately diverted to this line of instability, because he left the Wasserkuppe going NNW, but landed at Magdeburg, which is 170km to the NNE.

This meeting was reported in S&G by Waplington, the BGA Secretary, who gave the particulars of some of the gliders and personalities and cross-country distances (omitting Kronfeld's), but made no mention of the circling, which would have had no significance for him.

Here I heard for the first time of the current technique of getting into a thermal. First you fly through it from, say, north to south, noting the position of its boundaries on the ground below; then you do the same from east to west. Then you go into it once more and start circling, keeping an eye on its ground position. This sounds like Kronfeld's idea, for his theory of thermals was that they are like streams, flowing up from a fixed point for about half an hour and then stopping.

Much circling was done at the 1932 German Nationals, though by a limited number of people. I reported the event for S&G and, as far as I can make out, this was the first time the circling technique had been mentioned in it. Furthermore, I noted the times taken per circle by some of the pilots: Riedel 38—48sec, Kronfeld 40sec, Hirth 21—45sec. Apparently it had never occurred to anybody else in the world to time such circles, for Hirth incorporated my figures into his first text-book published the following year.

In the course of that report I described how Hirth, nearly at the bottom of a group of sailplanes close around him, "suddenly started going round in a series of extraordinarily tight circles" and "rose rapidly past his neighbours, *not one of whom attempted to follow him* . . . apparently the time has not yet come when we shall see the human counterpart of dozens of gulls circling together in the same thermal."

At last came the breakthrough, though at first only a potential one which took six months to incubate. At the end of 1932, Wolf Hirth was invited to the London Gliding Club to give a series of lectures on "thermal and cross-country soaring". Unlike Kronfeld's stream, Hirth's model thermal was a rising bubble, elongated vertically, through which the glider slowly sank while being lifted up vertically relative to the ground. (Only some 30 years later did the Scorer-Goodhart-Woodward theory produce an even more promising "toroid" model that heaved gliders up through its centre and belched them out at the top.)

One obviously had to get into Hirth's bubble more hurriedly than in Kronfeld's stream. So, assuming you would want to perform 20-second circles, it would take just over six seconds to cross their diameter. So, on encountering lift, you must count the seconds, best done accurately by saying to yourself *hundert-und-eins, hundert-und-zwei* . . . (or their English equivalents) until, if you were still in lift at *hundert-und-sechs,* you knew the thermal was wide enough to circle in, so proceeded to do so.

Why this reluctance in Britain to circle in a thermal?

But six months more went by, and still nobody in Britain circled in a thermal. Why this reluctance? I would suggest two reasons: first, conservatism—an inhibition against trying anything new until others have done it first; and second, that most hill-soaring was, in the early years, done so low down that the prospect of being swept downwind into or behind the hill when half-way round the turn, before one could get back into wind again, was too terrifying to contemplate. Personally I never tried it until, in 1938, I had my first aerotows (solo) at the Cambridge University Club's Easter camp in Wiltshire, and practised tight circles all the way down.

An outstanding example of conservatism was Henry Petre, a veteran aviator who helped to found the London Gliding Club and was a most valuable member of its committee: you will find him in the history books as "Peter the Monk". In the discussion after a gliding lecture in 1932 he complained: "If only these foreign pilots" (he was too xenophobic to mention their nationality) "would tell us how they do it . . ." He flew beautifully, and would plough sedately from end to end of Dunstable Downs, well above everybody else; yet during the whole of his gliding career from 1930 to 1950, I never once saw him attempt a circle. Yet he was not lacking in enterprise. In the early days he designed and built an aeroplane; he learned to fly in 1911 (on a Hanriot), and a few years later he became the chief creator of the Royal Australian Air Force.

It is rather amazing that during the whole of the first three years of British gliding I only twice saw anybody turn a circle. One evening at Dunstable in 1931 there was lift all over the club ground and Mungo Buxton made a circuit of it. Years later, Cochemé the meteorologist, having the same experience, explained it as the cool surface air being banked up against the Downs and acting as a "false hill" in front of the real one.

Then in 1932, at the first British Nationals on the south bank of the Duddon estuary in the Lake District, Sebert Humphries flew the Kassel 20 far out over the estuary before turning, but admitted that, even with heaps of room to turn back intowind, he did not feel too comfortable at seeing the hill coming at him so fast.

After Hirth's lectures, did everyone—or even anyone—start practising thermal circling? They did not—not for six whole months, though the lectures were published in detail in S&G. In February 1933 Eric Collins was seen to perform one circle (still only the third I had ever seen) very low down at the Whipsnade end of Dunstable Downs, in stable air with cloudbase close overhead, in the not very manoeuvrable Kassel 20; it looked most fraught. but it was prophetic as indicating who would make the breakthrough—and even become Britain's first Silver C pilot the following year.

This breakthrough came in July 1933 during the BGA Nationals at Huish in Wiltshire, which were combined with a "gliding school" consisting of Collins as instructor, his wife as book-keeper, a BAC-7 two-seater with a wheeled undercarriage, and about a mile of autotow run along the top of Marlborough Downs giving launches to 600 or 700ft.

There was a heat wave in progress; the water table must have gone down quite a way towards the earth's centre, and thermal lift over the hilltop was almost continuous though not often strong enough to keep up the glider and its wheels.

Under cloudless skies Collins, by circling, made the first small thermal climbs, solo, on July 1 and 2, helped by a Dent variometer. Then on July 3 he took up his wife, climbed 900ft, and flew six miles across country to All Cannings near Devizes. Next day he climbed solo to 2150ft. Newspapers included these flights in their Heat Wave News.

Philip Wills, who had only recently come into gliding, in consequence was soon teaching himself thermal soaring at Dunstable; Jack Dewsbery circled up to 3000ft (no barograph so no record); Collins, back at Dunstable, caught a thermal low down in the Poppenhausen (a sort of two-seater Hols der Teufel) without a variometer, and the game was on.

And that's how it all began.

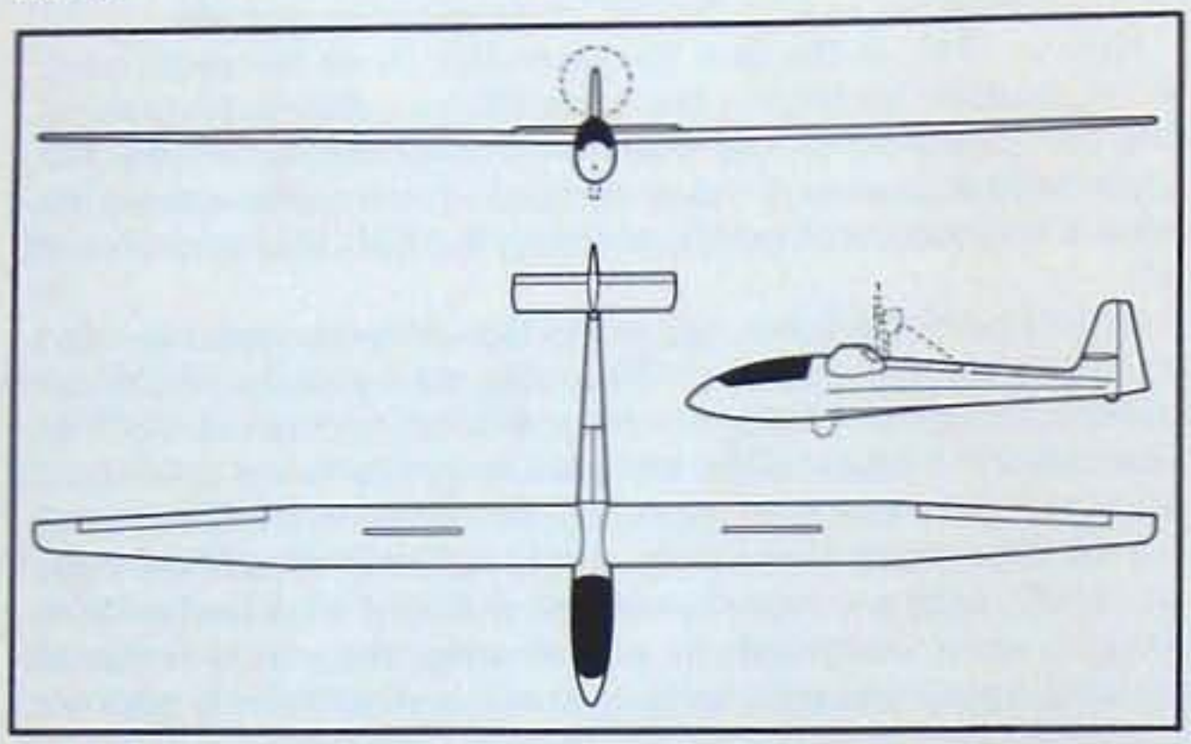
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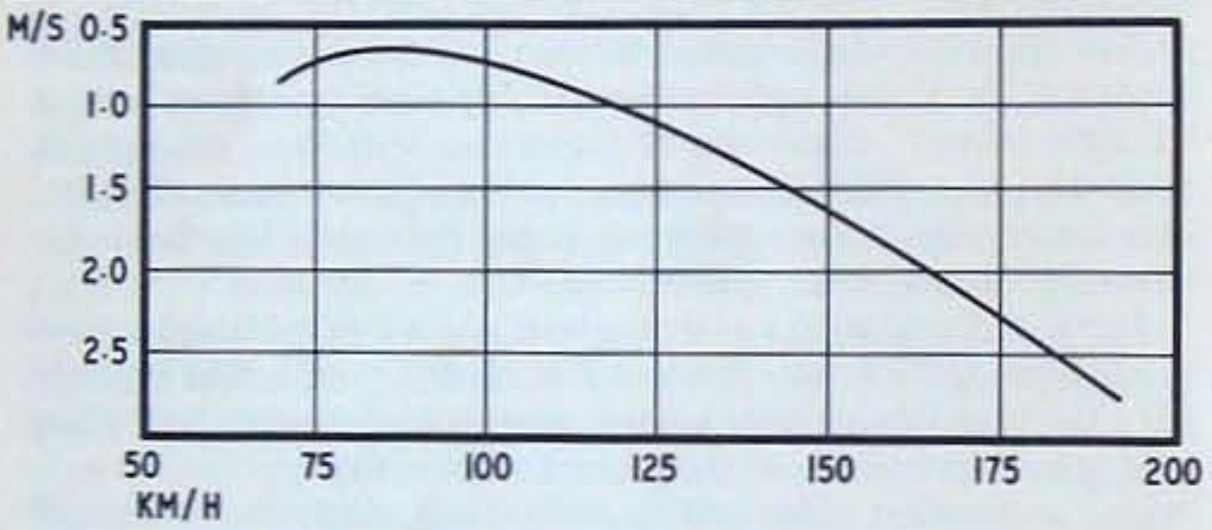
NEW MOTOR GLIDERS

RIKA HARWOOD

A New Motor Glider from Scheibe

SF-32





A new single-seater self-launching motor glider with a retractable engine is taking shape at Scheibe-Flugzeugbau, of Dachau. Development of the SF-32 is based on the experience gained with the SF-27M designed in 1967, of which some 30 examples are now flying. Since the SF-27M's steel-tube fuselage has given good service—and to reduce cost—it has been retained, with a few modifications, in the SF-32. It now has a glass-fibre skin. The wing was taken from Switzerland's Albert Neukom Elfe AN-17A. It has a span of 17m and a surface quality equal to that of a glass-fibre wing. The Elfe AN-17A has a rate of sink of 0.55m/sec at 75km/h and with a weight of 370kg; L/D is 40:1. The wing has a two-part aluminium spar; the wing shell is 6mm and built of plywood with glass-fibre honeycombs. Schempp-Hirth airbrakes are fitted on the top-surface of the wings, and there is provision for clip-on stabilising wheels.

The retractable wheel measures 380 × 150mm; the tail wheel is steerable and coupled to the rudder pedals, so that the SF-32 can taxi independently. The horizontal tail unit has a fixed tailplane.

Power is supplied by a 40hp two-cylinder two-stroke Rotax 642 which has also been used successfully in the Braitschka HB-3. The Austrian Rotax company is chiefly a producer of sled motors, and has converted a small batch of these into aero engines, giving them for example an electric starter, a dual ignition system and a big noise-reducing exhaust system which will keep the new motor glider's noise level well down. Propeller speed is reduced by a ratio of 1:1.95 by means of a belt system.

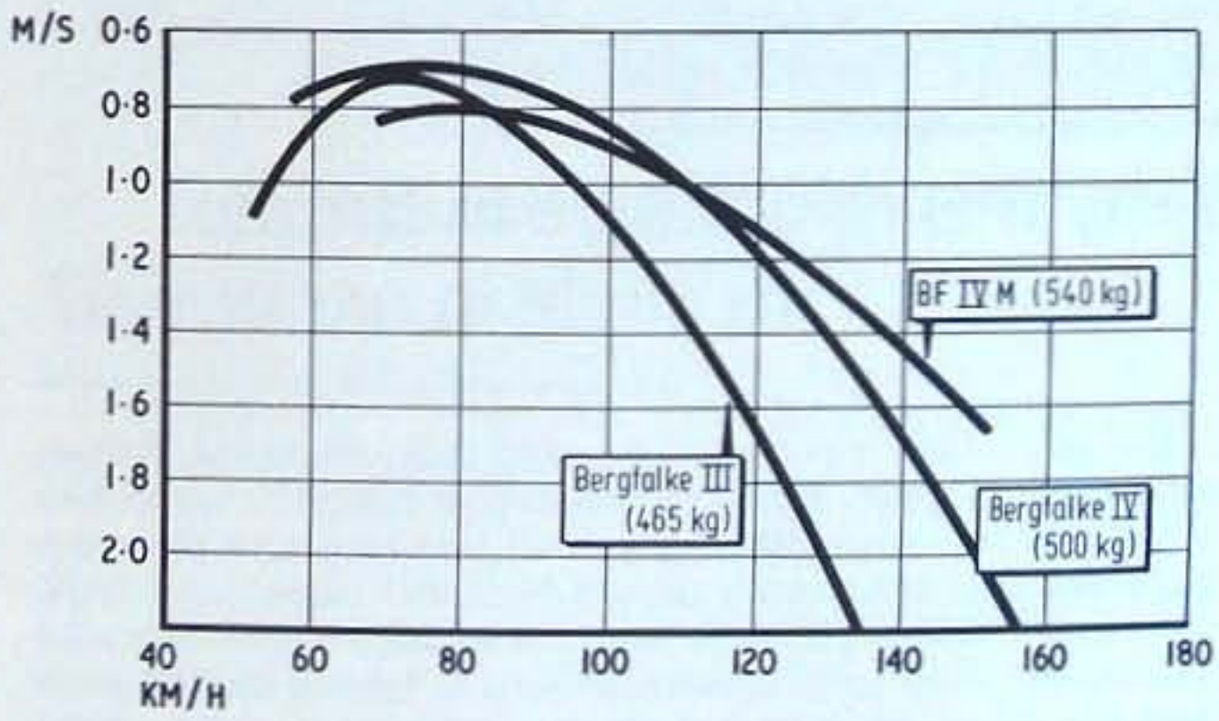
The engine is raised and lowered electrically and consumes 10 to 12 litres of fuel per flying hour. With the 20-litre tank, this gives an endurance of two hours. Certification of the engine in Austria is expected very soon, and Scheibe hopes to get certification for Germany shortly afterwards.

Technical data—SF-32		Single-seater
Span (m)		17
Wing Area (m²)		13.30
Aspect ratio		21.73
Max wing loading (kg/m²)		33.8
L/D ratio at 90km/h		37:1
Min sink (m/sec)		0.65
Min speed (km/h)		70
Power plant	Rotax 642	40hp
Empty weight (kg)		340
Fuel (kg)		15
Max take-off weight (kg)		450
Max wing loading (kg/m²)		33.8
Max power weight (kg/hp)		11.25
Rate of climb (m/sec)		2
Max cruising height (m)		3000
Range (km)		300
Endurance (h)		2
Take-off (m)		200
Stall-speed (km/h)		68

The Bergfalke 4M Motor Glider

In addition to developing the new SF-32, Scheibe has been busy 'motorising' the Bergfalke 4, which is well suited to take an engine (some amateurs have already tried it of their own accord). Roughly 50 examples of this two-seater trainer and high performance airplane, which made its first flight in 1969, are flying today. With the co-operation of Willibald Collée, the keen supporter of the motor glider idea, Scheibe is now working on the powered version, for which Collée has provided a 52hp Hirth 0 28 engine. This is fitted behind the second seat on a fold-down boom. It can be raised or lowered within 20secs. The Bergfalke 4M is at present in the test stage.

Further details: Scheibe-Flugzeugbau, 806 Dachau, August-Pfaltz-Straße 23, W. Germany.



Technical data—Bergfalke 4M		1(+1)
Span (m)		17.25
Wing area (m²)		17.52
Aspect ratio		16.98
Max wing loading (kg/m²)		34.20
L/D ratio at 90km/h		31
Min sink at 80km/h (m/sec)		0.80
Min speed (km/h)		70
Power plant	Hirth 0 28	52hp
Empty weight (kg)		400
Fuel (kg)		15
Max take-off weight (kg)		600
Max wing loading (kg/m²)		34.20
Max power weight (kg/hp)		11.54
Rate of climb (m/sec)		1.50
Max cruising height (m)		2000
Range (Km)		250
Stall-speed (km/h)		70

ACCIDENTS TO GLIDERS—1975

A review by John Ward, Chairman of the General Aviation Safety Committee, of the second accident bulletin published by the BGA and distributed to clubs. Available from the BGA at 60p, p&p included in price.

One of the most difficult tasks confronting anyone engaged in a flight safety activity is in getting those most likely to be at risk, the pilots, to read, mark, learn and inwardly digest accident statistics and reports. Of course most of us are well aware of the rather ghoulish tendency among human beings to lap up the gruesome and often over-dramatised details of an accident as published in the "popular" Press. But when it comes to a laconic statement of the facts, or a brief but perceptive description of the cause, many of us who are directly involved or should be concerned tend to back away, presumably because either these details remind us of the less attractive aspects of our sport or profession, or because we are confident that "it will never happen to me."

I was disappointed when the CAA decided not to include glider accident statistics or reports in their annual summary of accidents to aircraft on the British Register during 1974, because I feel it is useful for power and glider pilots to read about each other's problems. The reason given was "because of the unique nature of gliding activities and the high standards of control exercised by the British Gliding Association."

I need not have worried! Not only has the BGA now published its own excellent accident summary, but it covers 1975 and so really is up-to-date. We all can benefit from a frank and objective study of the misfortunes of others, and the advantages the BGA has gained from publishing its own summary are that it is possible to use the terminology glider pilots use withour fear of misunderstanding, the list of accidents can include any that are relevant to the activity without worrying whether or not they are legally "notifiable", it is possible to comment on individual accidents with greater authority and frankness and advice on accident prevention can be offered in greater detail than would be possible or appropriate in the CAA's summary. In its "**Accidents to Gliders—1975**" the BGA has made full use of these advantages and the Safety Panel are to be congratulated on the result. It should be compulsory reading for all glider pilots—and for a number of powered aircraft pilots too for that matter!

FLYING IN A GLIDER

An unusual sensation comes over me before taking off. As I move slowly I get more confident, then I find myself soaring up high with the wind brushing against the sides of the plane.

I swoop down like a bird before catching its prey.

The trees down below look diminutive as they wave their branches like arms as if to catch me.

Turning round and round there seems to be a mixture of land and sky. Dodging the swiftly passing birds as some fly one way and others another.

Flying past a house the dazzling sun shines onto the window and seems to leap back into my eyes.
Coming down to land the same sensation of fear comes into my stomach.

The wheel screeches like car brakes as I land safely.

HELEN, aged ten.

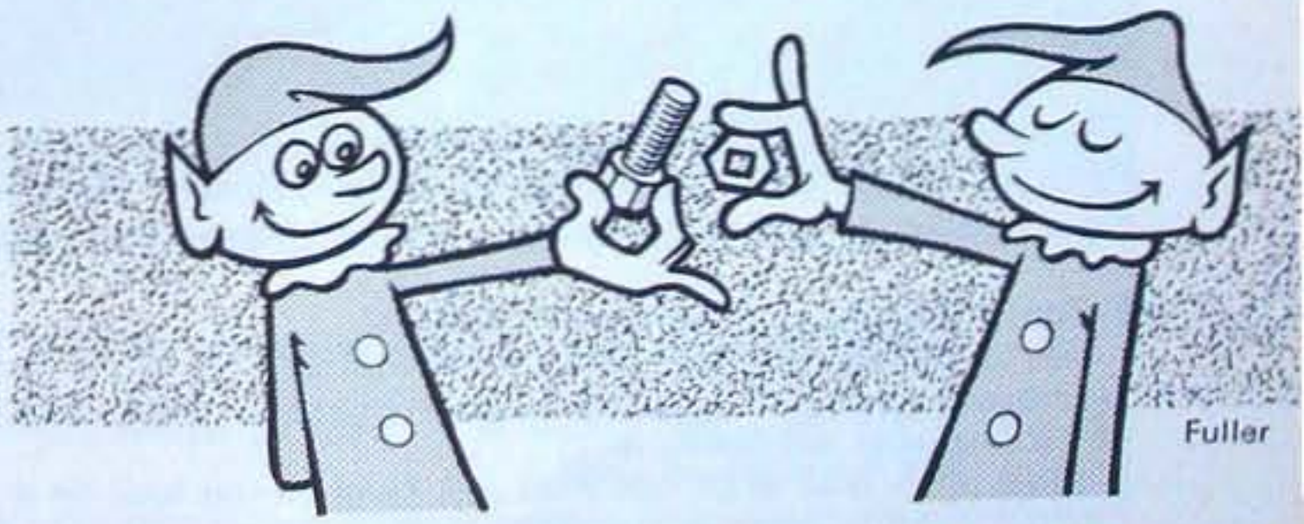


If you do your own C of A and are not the greatest mechanical whiz since Wilbur Wright, try not to go to bed worrying about it. I awoke a few minutes ago (it is 2.30am) and had to write this piece down.

There was this great forest and in a clearing in the middle there was a teeny workshop with a big sign saying "GLIDER DESIGNERS' SCHOOL". It was full of little gnomes all playing with bent slide rules and logarithmic graph paper and roulette wheels and all the other aids to deciding what shape gliders should be. Anyway, there was a little fellow in the corner wearing a dunce's cap; we asked what he had done and the instructor went quite wild: "What's he done?" he screamed. "Only disgraced the whole perishing class! He—you won't believe this—he designed a bearing that a normal human with two hands, with four fingers and a thumb on each, could actually *reach!* And not only could it be reached, it could be taken out, cleaned and put in again in a few minutes! You *miserable* little gnome. What-are-you?" he bellowed rhetorically, between each word walloping the dunce with his aged and yellow slide rule (no wonder it never worked properly, I thought). "For that, you renegade, you louse, you malingerer, you betrayer of our highest ideals, you will *not* come on the school treat! So there!" At which the little gnome burst into floods of tears.

"What's the school treat?" we ask. "Ah, now that's something special" says the chief gnome (more of a hobgoblin really, which is a sort of Open Class gnome, with unrestricted powers of mischief. The little gnomes are Standard or Sport Class with fewer opportunities to foul things up, which all the same puts a premium on ungenuity). "The treat is a seminar on mandatory mods. There's a super *prize*" he beamed evilly "for the gnome that devises a mandatory modification that first" (waving each gnarled digit in turn) "looks easy but is impossible; secondly, sounds cheap but is ruinously expensive and thirdly, is announced—wait for it—*the day after the owner has just taken delivery of the glider!* Heh! heh! heh! heh! hoo! hah! ho! hooh!" He fell about and rolled on the ground, for the first time displaying reasonable good humour.

"*Extra* special prizes for mods (known as syndicate-wreckers) that are announced in mid-May and must be done before June 1! Hah! hah! Oh, lord, my sides are killing me, dear me oh, where's my hanky?" I slipped away downstairs to make myself a cup of tea. It's getting cold now down here. I hope he's not still running around on the ceiling when I go back up . . .



The following two articles put the emphasis on Launch Accidents. DEREK PIGGOTT writes about cable break procedure and BILL SCULL looks at some of the consequences of a lack of training or practice, or simply not being alert enough, in the launch phase.

ADVICE ON CABLE BREAK BRIEFINGS

DEREK PIGGOTT

A large proportion of our gliding accidents are still caused by power failure or cable breaks during winch or car launches. In 1975, by far the majority of these accidents occurred following trouble during the initial part of the launch. However, the reports (for 1974) showed a completely different trend.

Obviously cable break procedure is an aspect of training which needs special attention and the accidents show that some pilots have not grasped the fundamentals or have not had sufficient practice since their initial training. In normal club flying it is usual to do the majority of any briefing out on the airfield between flights. This means that often some aspects of cable break procedure are not covered at all because pilots receive part of a briefing from one instructor and part from another.

The standard of competence required for safe flying depends very largely on the shape and size of the gliding site. Instructors like students are liable to try to simplify the procedures by using fixed heights to decide whether to land straight ahead, turn off, or make a circuit. This is not a safe procedure and can lead to critical situations at many smaller sites, particularly if the launch is very slow and has to be abandoned. There is no substitute for experience and no amount of briefing can take the place of practice with real or simulated cable breaks at all stages of the launch. Extra training is essential if the site is one with particular difficulties. Where available the motor glider can be used to supplement the training and to give more experience in decision making.

One simple way of improving the standard of instruction on cable breaks is to insist on a comprehensive briefing for all students and to make sure that this is reinforced by consistent instruction on the flying field.

Cable break procedure is one subject which every instructor must be capable of explaining clearly and comprehensively, but some do not realise what points should be covered. It is not satisfactory to leave some aspects of the problems to a later date since this just means that they will be forgotten.

Too often, I suspect, students are confused by the different advice they are given so that they never learn a systematic method of thinking and making the necessary decisions.

A briefing on cable breaks can be divided into various stages.

1) Cable breaks where there is room to land ahead.
2) Cable breaks involving a decision to turn off or make a full circle.
3) Emergencies such as over-running the cable, slow launches and cable hang ups.

Probably it is better to teach a basic procedure before going into special details relevant to the particular site, and a good basic briefing should be much the same for any gliding site.

Points to include in a comprehensive briefing

The most dangerous situations are usually caused by very slow launches and stop and go launches where the power of the winch or car fluctuates and finally fails.

Most pilots tend to be optimists and hang on too long on a slow launch so that their position becomes very critical if the cable breaks or the launch fails completely.

Near to the ground

Abandon the launch if the glider does not continue to accelerate after leaving the ground. Level out and release the cable immediately or, if height permits, lower the nose to *the approach attitude*, release and land ahead.

Do not teach or think of the reaction to a cable break as stick forward. This will result in diving into the ground if the cable breaks a few feet up. Do not watch the instruments during the take-off or climb, watch ahead at the attitude and glance quickly at the ASI to check the speed. Watch ahead as you lower the nose and put it down into the normal approach attitude, then glance and check the speed if the height permits.

Never use the airbrakes unless you have actually checked that the speed is adequate for a round out and landing with airbrakes open, (50kts minimum on most gliders) or unless there is a real danger of reaching the far boundary. If there is not time to glance and check the ASI reading, make a landing without the airbrakes and open them immediately after touch down. On most sites there is ample room to land ahead if the failure occurs close to the ground. If height and speed allows, use plenty of airbrake without delay, it can always be reduced for the landing if necessary. Do not open the airbrakes unless the speed has been checked and is adequate.

If it is obvious that there is plenty of room to land ahead, do not try to be clever and get back to the launch point—land ahead.

If there is the slightest doubt about being able to get down in the space available, or if this is impossible, *do not dither*, check the speed and turn off with a well banked turn. Turn off at least 90° so that you will not be using up more of the field ahead and consider: "Can I land by turning back into the wind?" Again, if there is the slightest doubt about being able to get down in the space left or if this is obviously impossible, keep turning and make a continuous, well banked turn. Unless there is plenty of height just keep turning, checking the angle of bank 30°—45° (not less) and the speed, 50kts (not less). Do not forget to use the airbrakes once the turn has been completed.

Where the site is wide a so called S turn involving turning off more or less at a right angle and then turning into wind for the landing, is most useful and it is seldom necessary to make a 360° turn at low altitude. However, if the field is narrow, a circuit of some sort will be better and easier. The height loss for a 360° turn accurately flown is seldom much more than for turning off and then turning back into wind. It is worth noting that an S turn with more than one beat inevitably involves more turning and a greater loss of height than a continuous circle. Of course the landing does not have to be directly into wind but can make use of the shape of the airfield in order to obtain a longer landing run.

Turns of 360° become critical if either the angle of bank is allowed to become too shallow or too steep. A shallow turn uses

up much more height because of the time taken and also because most pilots finding themselves in a gently banked low turn tend to over-rudder causing a loss of speed and greater height loss. If the bank becomes very steep the glider will usually gain excessive speed as the nose drops in the turn. This looks and seems dangerous but it should be noted that the excess speed may be turned back into height or used to complete the turn with little or no further loss of height. Most pilots tend to get worried if the turn is getting rather low. However, it is only being low and slow which is really dangerous. There is never any reason to collide with the ground when turning at high speed. Of course, if space allows the glider can be landed across wind if the height is marginal to complete the turn.

If after turning off, the decision is made to continue turning, this turn should not be stopped to extend the circuit downwind unless it is obvious that there will be *more than enough* height to complete the turn and still have a sensible approach. (Twice the height of tall trees for example.)

Before turning always glance and check that the speed is adequate.

Remember—if there is the slightest doubt or if it is difficult or impossible to land ahead, *do not dither*. Check the speed, turn off immediately and *then* decide what to do. *It is not how much height you have, but how much room there is ahead* which dictates what you should do. A slow launch and cable break will leave the glider much further up the field for the same height, making a much more critical situation.

Normally a landing downwind from a winch or car launch is not possible. Even using full airbrake the gliding angle is so flat and the float so long that the glider will not get down inside the field. Usually a landing downwind is impractical and unsafe unless the glider is making its approach from well outside the upwind boundary and then only if the pilot uses the airbrakes to ensure that the landing is in the middle of the field.

The various factors which determine the best direction to turn off need careful explanation. The pilot should always consider the wind strength and direction and the shape of the available safe landing areas before each flight.

If the wind is at an angle to the launch line the best direction is almost invariably a turn to the downwind side. This allows a longer effective run into the wind, or if a continuous turn is made the turn can be far less than a full 360° to come back into wind.

Most keen pilots will visit and fly at various gliding sites and it is important to discuss briefly at least one other site where conditions are abnormal or different to their own. For example, at a narrow site (such as Nympsfield) it may be best to land back in the opposite direction to take-off when the ridge wind is blowing at right angles to the winch lines. A series of rules based on height would almost certainly be dangerous in this case.

The basic routine for cable break procedure can be summarised as follows:—

Nose down—release the cable—Can I go ahead?

a) If so, check the airspeed, use the airbrakes and land ahead.
b) If unsure or there is insufficient room to land ahead, *do not dither*, check the speed is adequate, turn off promptly and then decide: Can I get down if I turn back into wind now or must I make a circuit.

Check and re-check the speed and angle of bank in the turns. Be ready to use the airbrakes promptly for the approach.

If height allows an extension of the circuit, maintain at least 50kts, compare your height with trees or buildings and turn in with plenty of height. Do not attempt to get right back to the launch point—safety first.

Emergencies

Every pilot must understand the dangers of an over-run, where the rope or parachute may become caught in the wheel or skid. Over-runs are common occurrences but seldom cause serious problems. However, they can be very dangerous, particularly if the glider is launched by the skid or wheel and the cable cannot be released by the pilot.

Hang ups are even less common and should never occur. However, they can be lethal and the pilot has only a few seconds in which to act if a hang up occurs and the cable catches an obstruction on the ground or is not guillotined by the winch driver. Every pilot should be briefed about hang ups. It would be criminal to assume that it will not ever happen to you or your student.

A more common hazard is being launched with the airbrakes unlocked. Emphasise the dangers of a cable break or abandoned launch where the pilot is unaware that the airbrakes are open.

Finally, remember that briefings can only help to reinforce instruction and experience. There is no substitute for actual training. An accident is usually the sign of inadequate training or of lack of practice. Keep in practice. Do not fly if you are tired or unfit. Think about the best procedures for the worst situations before you take-off. Do not be surprised when the cable breaks—expect a cable break on every launch and be surprised when it does not break!

. . . "but then accidents only happen to other people" . . .

Reprinted from the BGA publication, **Accident to Gliders—1975.**

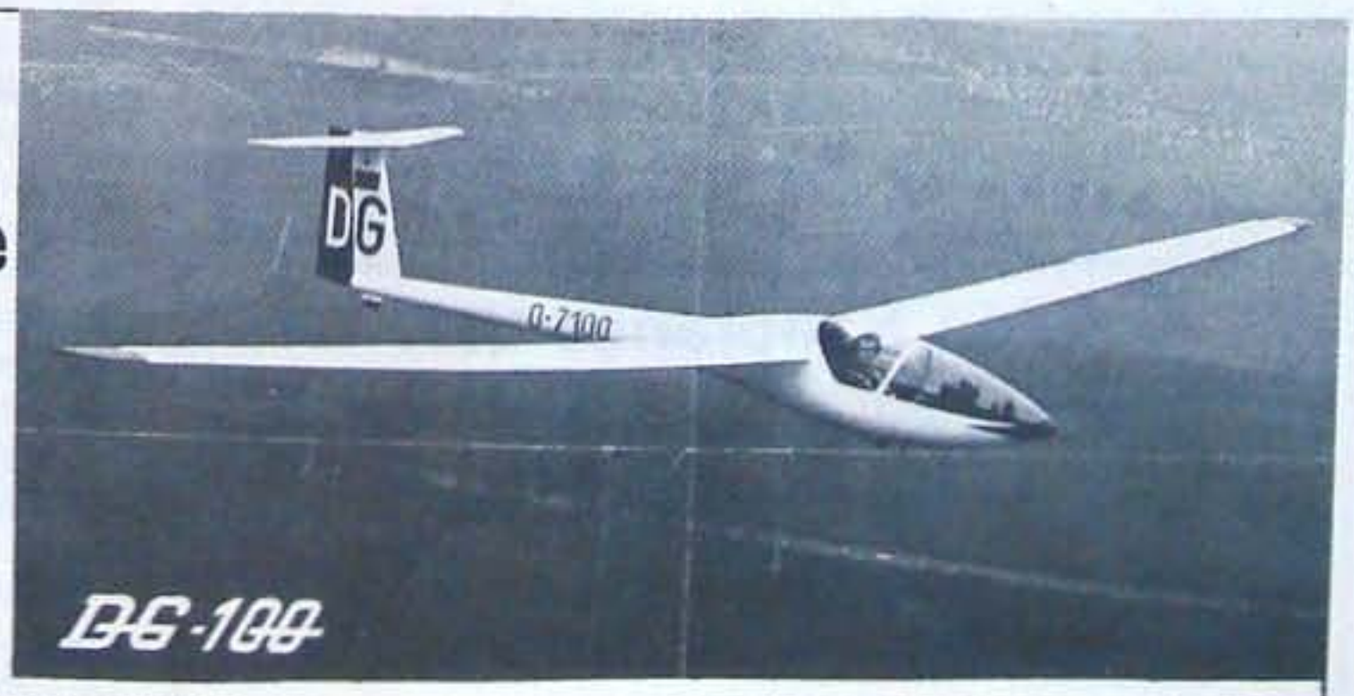
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LAUNCH ACCIDENTS

BILL SCULL, Senior National Coach

The variety of launch failure accidents is considerable and the following selection clearly illustrates the need for comprehensive training. The fundamental problem is that practical experience of every contingency can not usually be gained during basic training. Discussions and briefings are the only way in which a pilot can be made aware of all the possibilities. Neglect of this makes for complacent pilots—sometimes even unaware that a particular risk exists. A good imagination is one of the best protections against an accident.

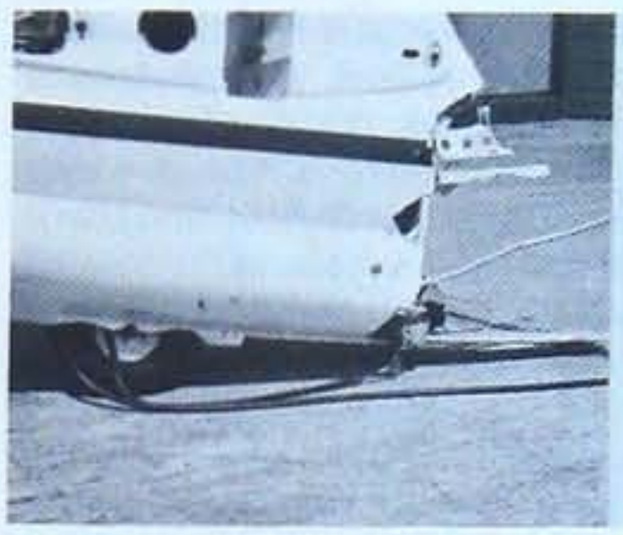
In certain phases of the launch, the ground run for example, a pilot may be slow or reluctant to release the cable for a number of reasons. In training he needs to be made aware of the extra risks when the psychological and habit factors start to affect him:

1 The fumble caused by abandoning the launch.
2 Previous successes in dealing with a ground run which has gone wrong for any reason.
3 The "odds". What proportion of flights have you had to abandon during the ground run, 1%—2%? This builds a habit pattern with long odds against releasing in time.
4 Experience gained in gliders which are easy to control on the ground often results in a degree of over-confidence when sorting out a ground run which is going wrong (even only a wing drop) in a glider which is known to be difficult.

Each of these factors is significant in making a pilot reluctant to release. Even if the pilot releases immediately the consequences can be serious. The following accident shows an enterprising pilot:

"The start of the launch was quite normal. During the early part of the ground run there was a fall-off in power. The glider over-ran the cable and the cable strop (ie trace) immediately became entangled in the wheel box. I realised what had happened. The power came on again as the towcar picked up speed. My reaction was to try and break the weak link or the cable and avoid becoming airborne at all costs. I applied full left rudder which brought the glider broadside on to the cable. It did not break the weak link which was itself jammed in the wheel box, but it drew the attention to my plight, both warning the signaller that I was in trouble (he gave a 'stop') and by putting an excess load on the towcar. The glider was dragged along the runway for about 20yds in the broadside position and the launch stopped."

I wonder how many pilots would have reacted quickly enough. Certainly this relatively rare situation needs very quick reactions from the pilot. In the event it may be the signaller's action which will avert a potentially nasty accident. If the pilot fails to take any action and the signaller fails to give a stop signal, or the winch driver doesn't see it, then disaster may not be far away. The following pictures show the re-construction of a similar case but this one was fatal. It happened abroad and the pictures tell the story.





There is another variation on the failure-to-release-in-time theme very relevant to modern gliders (*ie* glass-fibre); this one was an aerotow launch:

"The initial run forward appeared normal but the starboard wing dropped and when it touched the ground the glider was diverted from its original 'flight path.' I released the towline but the airspeed was not sufficient for recovery action and a ground loop was inevitable. The machine turned through 180° and was in contact with the ground at all times."

Accidents of this type are regularly causing substantial damage and an occasional write-off; with waterballast on board the problems appear to be even greater.

Travelling hopefully

Most pilots go through phases of over-confidence and one way in which this shows up is in climbing just a little too steeply at an early stage of the launch. In this phase the wind gradient gives a bonus (the opposite effect of losing speed when descending through it), a factor not appreciated by a lot of pilots. Now imagine a glider 20—30ft in the air, a little on the slow side, 40kts or thereabouts and that 2 or 3kts of this have been gained from the wind gradient. Should the launch stop then, even if the glider is level, which it usually isn't, then any delay coupled with the speed loss in descending through the wind gradient can cause pretty substantial damage.

"After a stopped launch due to cable over-run the glider was pulled back and the cable reconnected. Take-up was smooth and the take-off normal although somewhat slow. Due to this I climbed at a shallow angle. (Should he have been climbing at all?) At a height of approximately 30ft the launch became slower still, so I lowered the nose to allow the winch to gain power. As I was doing this the power went completely and the cable back released at this same height. I was then sinking through the wind

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gradient, unable to gain speed, and struck the ground in a slightly nose down attitude with little forward speed."

The fuselage broke in half behind the wings and the wingspars were broken at each wing tip.

Power failure is insidious and, when combined with a tendency to travel hopefully, can be disastrous. A particular problem from the instructing standpoint is the difficulty of simulating these circumstances. Indeed, should they have been allowed to come about then pulling the release on the student will actually cause an accident. So before we are a few feet from the ground you have been in three distinct risk phases—hang-up, ground loop due to a swing on take-off and a heavy landing due to a failed launch when the airspeed is marginal. Yet another possibility is the problem of the cable parachute. One detects from accident reports the introduction of a slight variation in launch technique in order to keep the tension on the cable (to stop the parachute from opening):

"It was my second launch of the day. There was a long delay for the slack to be taken in. After the 'all-out' the launch proceeded as normal to a height of 10—15ft. Then the drogue chute billowed up in front. I checked back to tighten the cable (Really!). I realised that the speed was falling off and took cable break procedure—stick forward and then released—but had insufficient height to recover and stalled in."

This technique has crept in, it seems, due to the use of very large ribbon chutes. There is something very wrong with the cable/parachute system if the pilot has to alter the launch to stop the parachute deploying. Possible modifications are to reduce the diameter of the chute by shortening the shrouds or cutting away some of the ribbons.

Yet another variation in this first phase of the launch is the one where the pilot over-controls; hasty, hurried action suggests a pilot who is "up-tight" or over-confident. In this next accident there is not much of relevance in the pilot's statement except . . . *"the speed dropped off so I pushed the stick forward . . ."* The witnesses' statement sheds more light on the accident.

" . . . at about 40ft the glider pitched from its climbing attitude to a nose down attitude . . . there was a slight reduction in the nose down attitude to about 20° before hitting the ground with the point of the nose skid. The glider bounced in the air for about 15yds." The CFI's statement declares *"that the launch was terminated because the winch driver mistakenly thought that he had seen a stop signal. The pilot appears to have put the nose down over-enthusiastically and flown at the ground. The total forward distance moved by the glider was less than 200yds of which about 80 constituted a bounced landing (there was no wind) suggesting that flying speed was present at impact. The nose down pitching response of the Swallow, and the lack of awareness of the proximity of the ground by the pilot, were the major factors contributing to this accident."*

Another feature of the early phase of the launch is the tendency (often unconscious) of the pilot to rely on stick positions and/or forces as a first approximation of how to carry out a launch (note for instructors: you should avoid using these as cues for the launch; pilots who do use them will often fail to deal with circumstances such as a snatched launch and conversion to a new type). The only criteria are airspeed and attitude. When something untoward occurs—such as a snatched launch—then accidents may happen.

"Launch normal until the glider began to move. Then snatch occurred which reared the glider into a full launch attitude but only at 20ft approximately. The cable broke. I then made the error of opening the spoilers during the attempt to regain correct attitude. The glider hit the ground in a tail down attitude".

Bad winch driving is obviously contributory here but the other information sheds some light on pilot technique and reaction, especially the reflex action of opening the spoilers. This isn't surprising when a pilot has made virtually all his landings with the brakes or spoilers open. Whether it would have made any difference in this case is doubtful; often though in the sequence of actions lower nose/release cable/commence the approach is carried out too hastily. Missing from the sequence is "check the airspeed" after "lower the nose". Indeed, particularly if speed has been lost, then a pause will be necessary to allow speed to build up. Many gliders have descended to the ground in a steep nose down attitude with brakes open and *stalled*. Needless to say the arrival causes substantial damage and often injury.

Suffice to say then that the early stage of the launch presents considerable risks. Because of the difficulty of simulating all the alternatives in basic training, pilots must try and be aware of the risks confirmed by these accidents.

This review started with an accident involving cables and that is how it will end. In winch launch operations where two cables are used there are occasional fumbles because the cables have not been pulled out in a straight line, usually the first cable picks up the second one. The result—a ball of knitting down the airfield. Frustrating in the extreme no doubt but what if the second cable is picked up by the glider itself?

"The glider picked up a second cable during initial take-off run causing a sharp nose high pitch. I took control from the student but at this stage the winch driver stopped. Despite forward elevator the aircraft entered a violent stall, striking the ground with almost a normal attitude but a high vertical rate of descent". But that isn't all the story; a witness says: *"The glider was launched on the first of two cables. As soon as it started moving it veered to the right at about 45° to the normal launch track. The glider ran over the second cable picking it up with its tailskid and then climbing very steeply to about 150ft with the cable and the open parachute still attached to the skid. A signal was given to stop the launch . . ."*

The rest you know. This may have been one of those cases when it might have been better to continue the launch (it's so difficult to decide on the spur of the moment); would the extra cable have fallen off? Who knows? The signaller's reaction is predictable in the circumstances. The principle fault was not releasing after the initial swing which should serve to reinforce the same point made earlier. The consequences this time were substantial damage to the glider and serious injury to the instructor.

Most pilots will at some time or other have taken what they will think of as a "calculated risk" in this or similar circumstances. In reality "calculated risk" constitutes travelling hopefully: who can really hope to be aware of the position of another cable whilst carrying out or monitoring a launch?

Without wishing to end on a gloomy note—after an article like this I have a day parading in Oxford Street with an "end-of-the-world-is-nigh" sandwich board—it is worth reminding everyone of the ghastly accidents involving cables which happen occasionally. In the combined operation of aerotow and winch or autotow most clubs now have quite strict rules to avoid the risk of the tug picking up the wire. Has yours?

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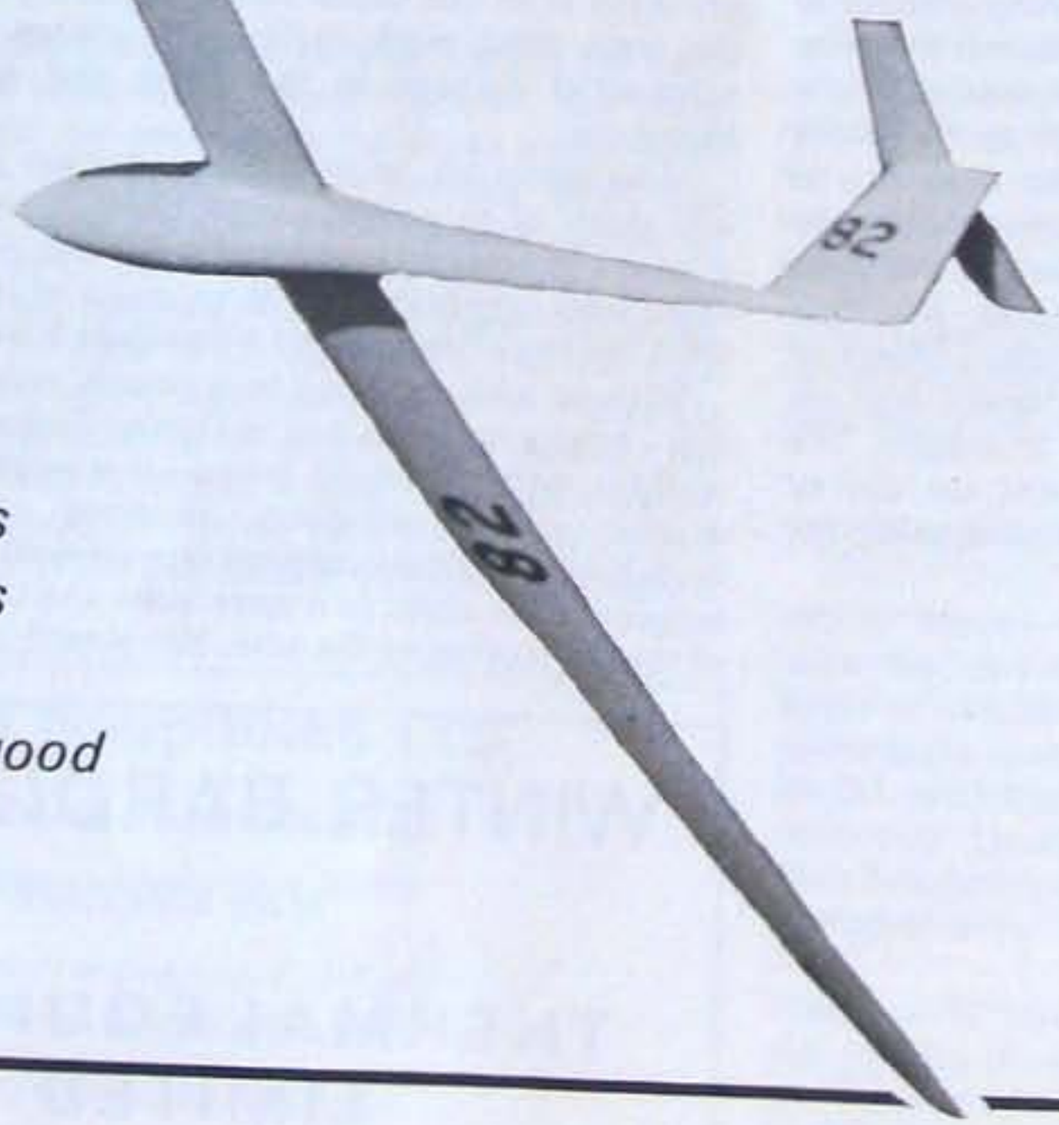
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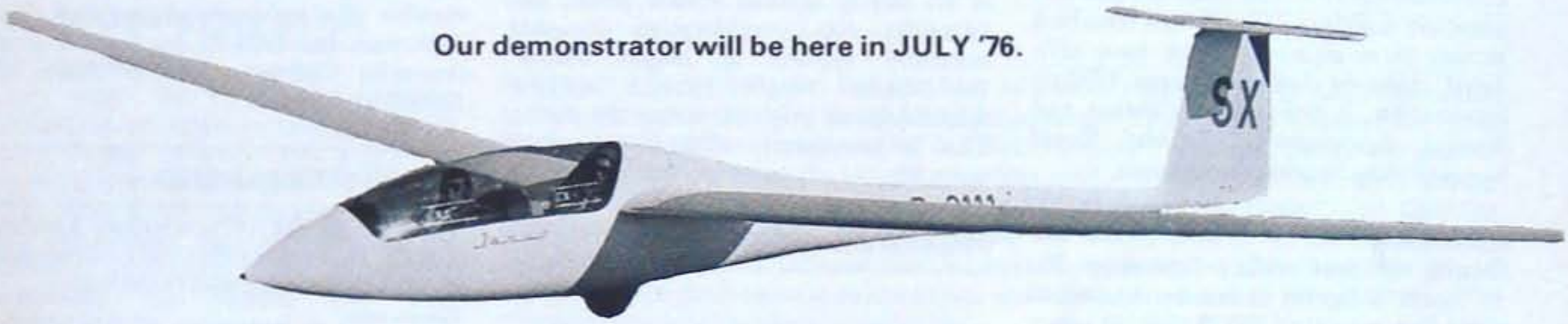
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BGA & general news

STRUCTURE OF THE BGA

The membership structure of the BGA is now made up of 79 full members and 101 associate members. The 79 full members include three members which have affiliated clubs as follows: Army Gliding Association, 2 clubs, RAF Gliding and Soaring Association, 13, and Royal Naval Gliding Soaring Association, 3.

Operations

During the year ending September 30, 1975, (1974 figures in brackets), civilian clubs flew a total of 98979 (84854) hours from club sites from 311170 (284112) launches.

Club owned gliders totalled 293 (285) and privately owned gliders 660 (597). The combined Services flew 29326 (25389) hours from 107881 (95873) launches.

Certificates

Certificates were issued as follows: A and B endorsements 2046 (2236), C endorsements 182 (167), Bronze C 544 (500), Silver C 347 (337), Gold C 49 (68), Gold C distance 79 (106), Gold C height 95 (120), Diamond goal 79 (106), Diamond height 29 (30) and Diamond distance 29 (15).

A and B certificates were applied for by 1142 (1315) holders of the ATC proficiency certificate.

HEIGHT CLAIMS—"LOW POINT" ON BAROGRAPH

Pilots are reminded that the FAI Sporting Code Section 3, Class D, Gliders (para 2.9) requires the pilot of a glider to ensure that a low point is indicated on the barograph trace following release, to determine starting altitude.

Pilots should deliberately dive after release, or use airbrakes, so that the release point is clearly marked on the barograph trace.

Unless the tug also carries a barograph the tug pilots release certificate on its own on the claim form is not in itself acceptable for marginal height claims. It must however be signed whether or not the release point is clear on the glider pilots barograph trace.

In theory claims can be rejected if there is no clearly marked release point, but naturally this consideration is only normally applied to height claims. So—*MARK YOUR TRACE AFTER RELEASE* or you risk losing the claim. This is particularly critical in smooth wave lift.

WORLD CHAMPS STAMP



This stamp commemorating the 1976 World Championships in Finland and featuring the PIK 20, manufactured in that country by Eiri Avion, was released on January 13.

BGA DIPLOMAS

This year they have been awarded to Leslie Allard (Southdown GC), Jack Minshall (Midland GC) and Jock Wishart (RAFGSA Centre) for services to gliding. Full details will be in the next issue.

WHITBREAD AWARDS 1976

We are delighted to announce that Whitbreads have donated a sum of money again this year to enable us to make £15 awards to young pilots. Any member of the BGA or RAFGSA club (not ATC) achieving the Bronze C before their 19th birthday is eligible, but application must be made to the BGA Office at the same time as application for the endorsement to the certificate.

THE BRUNT TROPHY

The Brunt Trophy, awarded each year for the best gain of height by a student member of a university gliding club, has been won for 1974-75 by Tony Porter (Imperial College), with a climb of 12300ft at Aboyne.

THE WINTER LADDERS

The first of the 1976 National Ladders finds I. D. Parker (Imperial College) and R. Henderson (Deeside) in the lead.

Private Ladder

Leading pilot	Club	Pts	Flts
1 I. D. Parker	Imperial College	1350	2
2 I. Bell	Southdown	412	1
3 C. Backwell	Southdown	400	1

Club Ladder

Leading pilot	Club	Pts	Flts
1 R. Henderson	Deeside	1080	1
2 A. Vincent	Essex	965	1
3 M. Throssel	Essex	945	1

EXTRACTS FROM ANNUAL REPORTS

The British Gliding Association's AGM was held at Imperial College, London, on March 20.

The following are brief extracts from some of the Annual Reports for 1975.

There were 15 instructor courses and 86 new instructors trained.

Of the 139 accident reports received, 107 were flying accident reports from BGA, Army and Navy clubs who had a total of 316778 launches for the year. This is an accident rate of .34 per 1000 launches for the year, which is a better figure than for some years.

Sports Council grants towards buying land, buildings and equipment were awarded to several clubs.

The Flying Committee had a busy year with a big trend towards internationalisation of Rules and procedures.

There are now more than 1050 gliders registered with the BGA (excluding RAF, RN, Army and ATC gliders) and 34 motor gliders. Some 124 types of gliders have been certificated or validated by the BGA Technical Committee over the years.

Foreign sailplanes are being registered with the BGA at the rate of approximately 100 a year and British types at the rate of ten a year—these figures are for new and used gliders. As a result of a detailed investigation and flight testing by the BGA, the K-16 motor glider has been certificated in the semi-aerobatic category in the UK.

BGA Inspectors are being appointed at the rate of approximately 40 per year and there are now some 250, of which 60 or more hold Senior ratings in respect of major repairs.

No loans have been made from the Philip Wills' Reserve Fund during 1975, so the total sum loaned out to clubs remains at £8300. The present balance is at £4000 of which £3500 is on offer to two clubs for site purchase and buildings.

FLYING COMMITTEE NOTES

UK Local Records

Last year the Flying Committee decided, in principle, to recognise a UK local record category for gliders of restricted performance (S&G April 1975, p79). Since CIVV has decided to introduce two Classes, the 15m Class and the Restricted (Standard) Class, the Flying Committee has decided UK local records will be recognised in the CIVV Restricted Class. To include gliders of similar performance not conforming with Restricted Class Rules, it has been agreed to recognise flights by gliders handicapped at 102% and below on the final handicap list published in the BGA Contest Handbook for 1976.

Turning Point Photographs

All pilots are reminded that for competition, badge and record flights turning point photographs must be taken from a zone located according to the Bisector Rule. Failure to comply can result in the flight not being ratified, even though the required distance may have been flown.

John Glossop
Flying Committee



GLIDING AWARDS FOR AIRMEN

Sgt James Lawrey (left) and Cpl Geoffrey Millward, both from RAF Little Rissington, with trophies presented for their gliding achievements by Air Chief Marshall Sir Neville Stack, the Air Officer Commanding in Chief, Training Command. James was awarded the Daniels cup for being the most outstanding novice at the RAFGSA Centre, Bicester. He started gliding last March and by August had completed two Silver C legs. Geoffrey, who is the deputy CFI of Chilterns, gained the Martin trophy for the fastest 100km triangle (81km/h in a K-6E) competed for annually by members of the RAFGSA. He has represented the RAF twice in competitions and been selected for the 1976 RAF team.

SPORTING CODE CORRECTIONS

We have been asked to print corrections to the 1975 edition of the Sporting Code. Under Section 3, Class D, Gliders, insert:

"1.5.4. Starting Altitude. The altitude of the glider above sea level at the Departure Point."

2.2. Add at the end of the first paragraph "Only one flight course (1.4) may be declared for any flight."

3. Table A. Insert "X" in Claim Statement column against "Recognition Time Interval." Delete the last line in the main table (4.5. FAI Sporting Licence and X). It has been stated higher up.

8.7.2. After "The glider must be fitted with airbrakes" add "which cannot be used to improve performance."

RAF GREENHAM COMMON

Due to resurfacing work on the runways at RAF Upper Heyford, the USAF will transfer a wing of F111 aircraft to RAF Greenham Common, Nr Newbury.

The airfield will become active with effect from mid-April when radar calibration flying will commence. The F111 operations are expected to start on May 1 for a period of 100 days.

Glider pilots are requested to avoid circling on the extended centre line of Runway 11 between Ramsbury and Greenham Common.

Full details will be forwarded to all clubs by April.

C. D. Street
Airspace Committee

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AIR TRAINING CORPS

WORLD CHAMPIONSHIPS' FUND

The BGA acknowledges contributions to the 1976 World Championships' Fund, received from October 9, 1975, to January 31, 1976, from the following:

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D. C. Austin
C. T. Bailey
Barbara Bird
M. Bird
P. S. C. Boyle
H. F. Brown
H. Campbell
O. Constable
H. R. Dimock
J. Edyvean
L. Forsey
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Sedgwick Forbes Aviation
John Simkins
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R. E. Thomas
C. Westwood
A. A. G. Winter
E. Wright
I. A. Wright

TOTAL CONTRIBUTIONS TO DATE £772.71p.

SHUTTLEWORTH COLLECTION

At Old Warden aerodrome, Biggleswade, the Shuttleworth historical aircraft collection lays on its first display of the 1976 season on Bank Holiday, April 19, with aerobatics, free-fall parachuting, etc, in addition to demonstrations by historic aeroplanes. Gates open 11am, flying from 2.30pm; entry: car with all occupants £3, separate adult 50p, child 25p.

STOP PRESS

1 The 1976 BGA Contest Handbook is now available from the BGA Office. All pilots in rated contests will require a copy. The final handicap list shows three differences from the provisional list published in the December 1975 issue of S&G, p269—the Janus is now 104% and the Std Jantar and DG-100 at 102%.

2 In 1975, Ian Strachan said he intended retiring as Chairman of the Flying Committee this June and it has just been announced that "Lemmy" Tanner will succeed him.

3 **CIVV.** The International Gliding Commission (CIVV) met at FAI headquarters in Paris on March 5 with 24 countries represented. The BGA delegate was Ian Strachan. Some items from his report to the BGA were:

a) Pirat Gehriger (Switzerland), who has been CIVV President for 25 years, retired and was replaced by Bill Ivans (USA). Presentations were made to "Pirat" at a lunch given to mark his unique services to the gliding world.

b) The new CIVV Sporting Code, paragraph 8.9, contains the guidelines for a Club Class. This is intended to be a cheaper and simpler Class than the existing ones and the following limitations were agreed:

1 15m span
2 Fixed undercarriage
3 No jettisonable ballast
4 No tail parachute
5 One lever airbrake operation.

Further criteria will be finalised at the next CIVV meeting in November and may include a minimum approach speed and/or a wing loading limitation. Figures being discussed are 70km/h (38kts) and 28kg/m² (5.7lb/ft²).

4 Italian Gliding Championships. Two pilots per foreign country have been invited to fly at Rieti from August 2—16. Pilots who must be of National Championship experience, should apply in the first instance to the BGA.

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	Name	Club	1975
57	D. C. Austin	Yorkshire	27.12

DIAMOND DISTANCE

No.	Name	Club	1975
1/105	V. F. G. Tull	London	31.5
1/106	H. D. Campbell	in Australia	4.12
1/107	F. G. Wilson	in Australia	22.11

DIAMOND GOAL

No.	Name	Club	1975
2/674	M. Sutherland	in South Africa	8.11
2/675	C. V. Perkins	Cambridge Univ	17.8

DIAMOND HEIGHT

No.	Name	Club	1975
3/254	C. R. Hurst	in Australia	28.12.74
3/255	W. V. Ogley	Surrey/Hants	3.10
3/256	C. Walker	Clevelands	27.12
3/257	B. F. Nowell	Clevelands	27.12
3/258	A. Kay	Thames Valley	6.11
3/259	D. C. Austin	Yorkshire	27.12
3/260	L. E. N. Tanner	Coventry	11.1.76
3/261	M. A. Greaves	Hambletons	27.12

GOLD C COMPLETE

No.	Name	Club	1975
511	M. Sutherland	in South Africa	8.11
512	C. I. Joslin	Wrekin	6.10
513	C. J. Backwell	Southdown	6.11

GOLD C HEIGHT

Name	Club	1975
J. W. Hunter	SGU	17.11
K. Stewart	SGU	17.11
F. Hemmings	Staffordshire	24.10
J. L. Houghton	Doncaster	17.11
C. White	Oxford	26.10
J. A. Marshall	Borders	23.11
K. E. Harsent	Wrekin	6.10
C. I. Joslin	Wrekin	6.10
P. R. Johnson	Essex	3.10
J. W. Turnbull	Anglia	6.11
C. J. Backwell	Southdown	6.11
A. Currie	Southdown	6.11
A. L. Phillips	Bannerdown	28.12
B. Morrell	Clevelands	5.10
J. A. Bell	Cotswold	26.12
C. Davison	Deeside	6.10
W. N. Ferguson	Borders	12.12
G. A. Hobben	Highland	26.10
R. S. Falconer	Clevelands	28.12
I. F. Fleming	SGU	11.1
J. Dabill	SW District	6.10
J. W. Turnbull	Anglia	6.10
J. W. G. Heyer	Highlands	25.10
Valerie Peddie	SGU	24.12
Janis McGill	Oxford	25.12
I. B. Reed	Culdrose	7.12
M. A. Greaves	Hambletons	27.12
		1976
P. M. Holland	Hambletons	18.1
D. H. Roberts	South Wales	11.1
P. Goddard	Humber	18.1
H. W. Bishop	Hambletons	18.1

GOLD C DISTANCE

Name	Club	1975
M. Sutherland	in South Africa	8.11
C. V. Perkins	Cambridge Univ	17.8
M. J. Cleaver	Bristol/Glos	19.1
M. Overstreet	London	3.7

SILVER C

No.	Name	Club	1975
4220	W. A. D. Thorp	Doncaster	25.8
4221	M. J. Hellewell	Norfolk	14.6
4222	Jill Pennell	Bicester	13.9
4223	Kimberley Slawinski	Fenland	3.10
4224	A. J. Craig	Chilterns	26.8
4225	J. A. Bell	Cotswold	28.8
4226	C. D. Parsons	644GS	23.7
4227	R. E. Hudson Jnr	Fenland	1.10
4228	Corrinne Bubier	Fenland	3.10
4229	P. W. Bubier	Fenland	1.10
4230	K. Thompson	SW District	28.9
4231	B. T. Bushell	Upward Bound	17.8
4232	C. Masterman	Bristol/Glos	21.6
4233	J. M. Beattie	Essex	3.10
4234	D. R. J. Gray	Cranwell	20.9
4235	R. E. Leaviss	Fenland	1.10
4236	C. M. Hathaway	Cotswold	25.8
4237	J. W. Hunter	SGU	6.10
4238	S. Roberts	Bristol/Glos	3.7
4239	M. H. Brooke	Crusaders	4.10
4240	R. S. Page	London	26.9
4241	P. E. Williams	SGU	6.11
4242	J. G. Evison	Yorkshire	12.10
4243	M. R. Mayes	Surrey/Hants	13.9
4244	D. Richardson	Bristol/Glos	17.8
4245	R. M. Oldfield	Cambridge Univ	4.9
4246	R. N. Johnson	Four Counties	1.6
4247	K. L. Fixter	Blackpool/Fylde	21.7
4248	J. Davis	Herefordshire	20.9
4249	D. Blore	Enstone	25.8
4250	R. Brown	Bannerdown	13.9
4251	R. J. Millward	Doncaster	13.9
4252	J. E. Moseley	Cambridge Univ	17.8
4253	C. Wales	Surrey/Hants	6.9
4254	B. O. Penrose	Cornish	20.9
4255	B. E. Drake	South Wales	12.4
4256	P. D. Bell	Thames Valley	21.9
4257	M. Spencer	Heron	3.7
4258	S. A. Heppell	Fenlands	24.10
4259	L. S. Jaworski	in Holland	28.8
4260	R. M. Parks	Surrey/Hants	21.9
4261	M. Overstreet	London	30.6
4262	B. G. Swanson	SHAPE	4.3
4263	B. Morrell	Clevelands	28.6
4264	J. R. Horst	Bicester	25.8
4265	R. A. Spencer	Buckminster	12.1.76
4266	B. G. Hemstock	Two Rivers	9.1.76
4268	L. G. Cross	London	11.8
4269	M. Eastell	Southdown	25.1.76
4270	J. G. Kosak	Culdrose	5.12
4271	T. A. Harrison	Blackpool/Fylde	20.9

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INTERNATIONAL GLIDING RECORDS (correct as at 17.3.1976)

SINGLE-SEATERS

Height Gain	12,894m	P. F. Bikle, USA	SGS 1-23E	25.2.1961
Absolute Height	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
Triangular Distance	1,040km	H-W Grosse, W. Germany (in Australia)	ASW-17	6.2.1976
Goal and Return	1,260.44km	W. C. Holbrook, USA	Libelle 301	5.5.1973
Goal Flight	1,231.8km	H-W. Grosse, W. Germany	ASW-17	16.4.1974
100km Triangle*	175km/h	K. Goudriaan, South Africa	ASW-17	22.11.1975
300km Triangle	153.43km/h	W. Neubert, W. Germany (in Kenya)	Kestrel 604	3.3.1972
500km Triangle	140.33km/h	M. Jinks, Australia	Nimbus 2	31.1.1975
750km Triangle*	124.98km/h	E. Mouat-Biggs, South Africa (in Rhodesia)	Nimbus 2	16.10.1975

MULTI-SEATERS

Height Gain	11,680m	S. Josefczak and J. Tarczon, Poland	Bocian	5.11.1966
Absolute Height	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 and Return	751.30km	E. Minghelli and R. Gravance, USA	Prue 2A	26.7.1975
Goal Flight	864.86km	Isabella Gorokhova and Z. Koslova, USSR	Blanik	3.6.1967
100km Triangle	142.92km/h	K. Holighaus, W. Germany and U. Plarre (in Switzerland)	Janus	15.8.1974
300km Triangle	122.06km/h	E. Makula, Poland and J. Serafin (in USA)	Calif A-21	24.8.1974
500km Triangle	114.86km/h	E. Makula. Poland and Adele Orsi, Italy (in USA)	Calif A-21	20.7.1974

SINGLE-SEATERS (WOMEN)

Height Gain	9,119m	Anne Burns, GB (in South Africa)	Skylark 3B	13.1.1961
Absolute Height	12,190.2m	Betsy Woodward, USA	Pratt-Read 195	14.4.1955
Straight Distance	749.20km	Olga Klepikova, USSR	Rot Front	6.7.1939
Triangular Distance	769.4km	Adela Dankowska, Poland	Jantar 1	2.6.1975
Goal and Return	672.2km	Adela Dankowska, Poland	Jantar	29.5.1973
Goal Flight	731.60km	Tamara Zaiganova, USSR	A-15	29.7.1966
100km Triangle	127.24km/h	Adele Orsi, Italy	Kestrel 604	19.8.1975
300km Triangle	114.45km/h	Susan Martin, Australia	Kestrel 17	11.2.1972
500km Triangle	113.9km/h	Yvonne Leeman, South Africa (in Rohodesia)	Libelle 301	16.10.1974
750km Triangle	73.62km/h	Adela Dankowska, Poland	Jantar 1	2.6.1975

MULTI-SEATERS (WOMEN)

Height Gain	8,430m	Adela Dankowska and M. Mateliska, Poland	Bocian	17.10.1967
Absolute Height	10,809m	Mary Nutt and H. F. Duncan, USA	SGS 2-32	5.3.1975
Straight Distance	864.86km	Tatiana Pavlova and L. Filomechkina, USSR	Blanik	3.6.1967
Goal and Return	515.82km	Isabella Gorokhova and N. Tinkova, USSR	Blanik	6.6.1973
Goal Flight	864.86km	Isabella Gorokhova and Z. Koslova, USSR	Blanik	3.6.1967
100km Triangle	104.1km/h	Adela Dankowska and I. Kostka, Poland	Halny	12.8.1975
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 (correct as at 17.3.1976)

SINGLE-SEATERS

Height Gain	12,700m	M. J. Field	Skylark 4	9.5.1972
Absolute Height	13,050m	M. J. Field	Skylark 4	9.5.1972
Straight Distance	741km	P. D. Lane (deceased) (in Germany)	Skylark 3F	1.6.1962
Triangular Distance	770.99km	M. R. Carlton (in South Africa)	Kestrel 19	5.1.1975
Goal and Return	703.5km	C. Falkingbridge (in South Africa)	Std Cirrus	14.12.1974
Goal Flight	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
300km Goal and Return	141.3km/h	E. Pearson (in Rhodesia)	Nimbus 2	25.10.1975
500km Goal and Return	117.3km/h	C. M. Greaves (in South Africa)	Kestrel 19	1.1.1975
100km Triangle	137.2km/h	E. Pearson (in Rhodesia)	Nimbus 2	19.10.1975
300km Triangle	130.9km/h	E. Pearson (in South Africa)	Std Cirrus	1.1.1972
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

Height Gain	6,300m	L. S. Hood and M. Slater (in France)	K-7	3.2.1970
Absolute Height	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 and Return	362km	A. H. Warminger and R. Tucker (in South Africa)	SGS 2-32	4.1.1969
Goal Flight	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
300km Goal and Return	81.9km/h	J. R. Jeffries and N. Foster	Calif A-21	17.8.1975
100km Triangle	83.52km/h	E. Pearson and A. Martin (in South Africa)	Kranich 3	7.1.1968
300km Triangle*	97.4km/h	C. Lucas and B. Turner (in Rhodesia)	Calif A-21	12.10.1975
500km Triangle	88.4km/h	J. R. Jeffries and Gillian Case	Calif A-21	31.5.1975

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 and Return	545km	Anne Burns (in South Africa)	Std Austria	6.1.1966
Goal Flight	528km	Ann Welch (in Poland)	Jaskolka	20.6.1961
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

MULTI-SEATERS (WOMEN)

Absolute Height	9,519m	Anne Burns and Janie Oesch, USA (in USA)	SGS 2-32	5.1.1967

(*Flights subject to homologation)

UNITED KINGDOM RECORDS (correct as at 17.3.1976)

SINGLE-SEATERS

Height Gain	12,700m	M. J. Field	Skylark 4	9.5.1972
Absolute Height	13,050m	M. J. Field	Skylark 4	9.5.1972
Straight Distance	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
Goal and Return	543.46km	A. D. Purnell	Nimbus 2	14.5.1974
Goal Flight	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
300km Goal and Return*	106.4km/h	D. G. Lee	Kestrel 19	17.8.1975
100km Triangle	114.2km/h	R. Jones	Nimbus 2	30.4.1974
200km Triangle	97.0km/h	R. Jones	Nimbus 2	30.6.1975
300km Triangle	105.4km/h	R. Jones	Nimbus 2	29.5.1974
400km Triangle	90.0km/h	D. G. Lee	Kestrel 19	19.5.1974
500km Triangle	106.9km/h	R. Jones	Nimbus 2	31.5.1975
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	92.1km/h	E. A. Moore	Skylark 2	27.5.1957
500km Goal	90.7km/h	H. C. N. Goodhart	Skylark 3	10.5.1959

MULTI-SEATERS

Height Gain	6,740m	J. R. Monteith, USA and M. C. Mahon	Capstan	2.11.1972
Absolute Height	7,620m	J. R. Monteith, USA and M. C. Mahon	Capstan	2.11.1972
Straight Distance	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
Goal and Return	324km	B. J. Willson and H. Daniels	Blanik	27.7.1969
Goal Flight	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
300km Goal and 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. E. 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	81.12km/h	J. R. Jeffries and Gillian Case	Calif A-21	29.5.1974
400km Triangle	68.4km/h	J. R. Jeffries and G. E. 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. Willson and H. Daniels	Blanik	11.7.1970
300km Goal	69.2km/h	W. A. H. Kahn and J. S. Williamson	Eagle	14.4.1958

SINGLE-SEATERS (WOMEN)

Height Gain	5,820m	Rhoda Partridge	Std Cirrus	18.3.1974
Absolute Altitude	6,530m	Rhoda Partridge	Std Cirrus	18.3.1974
Straight Distance	454km	Anne Burns	Skylark 3B	10.5.1959
Goal and Return	303km	Angela Smith	K-6E	14.8.1970
Goal Flight	309km	Anne Burns	Skylark 3B	12.4.1958
100km Triangle	80km/h	Anne Burns	Cirrus	12.6.1969
200km Triangle	69.3km/h	Anne Burns	Std Aùstria	22.8.1964
300km Triangle	70.82km/h	Anne Burns	Nimbus 2	29.5.1974
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

RESTRICTED CLASS

100km Triangle	91.8km/h	A. J. Stone	Std Cirrus	29.7.1975
400km Triangle	91.7km/h	S. J. Redman	Std Cirrus	31.5.1975

MOTOR GLIDERS

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

New records have to exceed the old ones by: Distance 10km. Heights 3%. Triangles and O&R 2km/h. Straight Goals 5km/h. Back-dated to 1.1.1975 performances better than 75% of the single-seater General records will be required to activate Restricted Class records, there are no height records in this Class.

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.

No side of a Δ may have a length less than 28% of the total distance of the course when the flight is made to obtain a record, except that for Δ of 750km or more no side may have a length of less than 25% or more than 45% of the total distance of the course. (FAI Sporting Code 1.1.1975, Section 3, paragraph 1.4.4). Available from BGA.

INTERNATIONAL 1000km FAI DIPLOMAS

At the CIVV meeting on March 5, 1971 it was agreed to issue FAI Diplomas to pilots who achieve, or had achieved 1000km flights. So far the following pilots have exceeded that distance:

1	Straight Distance	1,041.52km	A. H. Parker, USA	Sisu 1A	31.7.1964
2	Goal Flight	1,032.02km	H-W. Grosse, West Germany	ASW-12	4.6.1970
3=	Straight Distance	1,153.82km	W. A. Scott, USA	ASW-12	26.7.1970
3=	Straight Distance	1,153.82km	B. W. Greene, USA	ASW-12	26.7.1970
5	Straight Distance	1,460.80km	H-W. Grosse, West Germany	ASW-12	25.4.1972
6	Goal Flight	1,051.20km	K. Tesch, West Germany	LS-1C	25.4.1972
7	Straight Distance	1,021.94km	W. Scott, Jr, USA	ASW-12	18.8.1972
8	Goal and Return	1,001.94km	S. H. Georgeson, New Zealand	Kestrel 19	7.9.1972
9	Goal and Return	1,025.02km	K. H. Striedieck, USA	ASW-15	7.10.1972
10	Goal and Return	1,056.64km	J. Smiley, USA	Libelle 301B	9.10.1972
11	Straight Distance*	1,057.33km	W. C. Holbrook, USA	Libelle 301	15.10.1972
12	Goal and Return	1,098.54km	K. H. Striedieck, USA	ASW-15	15.10.1972
13	Goal and Return	1,260.44km	W. C. Holbrook, USA	Libelle 301	5.5.1973
14	Goal Flight	1,231.8km	H-W. Grosse, West Germany	ASW-17	16.4.1974
15	Straight Distance	1,020km	S. Baumgartl, West Germany	ASW-17	16.4.1974
16	Failed Triangle (1,004km)	1,001.3km	K. Goudriaan, South Africa	ASW-17	?.2.1975
17	Triangle	1,012.2km	H-W. Grosse, West Germany (in Finland)	ASW-17	6.6.1975
18	Failed Triangle (1,040km)	1,003km	H-W. Grosse, West Germany (in Australia)	ASW-17	.1976
19	Failed Triangle (1,040km)	1,025km	H-W. Grosse, West Germany (in Australia)	ASW-17	26.1.1976
20	Triangle	1,040km	H-W. Grosse, West Germany (in Australia)	ASW-17	6.2.1976

overseas news

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

SOUTH AFRICAN NATIONALS

The 1975/76 Nationals held this time at Hendrik Verwoerddam, OFS, started on December 26, 1975 with 47 entries (18 Open, 23 Standard and six Sports Class): There were five entries from Rhodesia and three from Germany. The remainder of the 14 man German team flew *hors concours* in an endeavour to break German and world records!

One of the main features this year was the presence of a resident Met man—a service the South Africans have been wanting for a long time.

An early morning thunderstorm interrupted the opening ceremony and sent officials and spectators scurrying to the clubhouse for shelter. By the time the contest had been declared open, however, there were signs of a clearing and the Director, Gerald Matchett, was able to set the first task of the contest.

The 212km out-and-return for the Open and Standard Class, and 113km triangle for the Sports Class proved, however, to be too difficult in conditions which deteriorated to heavy rain and hail. All except four Open Class machines landed out in saturated fields and fairly deep mud. Ted Pearson damaged his glider to such an extent that he had to withdraw at this early stage. Most of the early starters in the Standard and Sport Class managed, not without difficulty, to make it back to base. Winner Open Class, K. Nouwens, ASW-17, 106.9km/h. Standard Class, Chris Falkingbridge, Std Cirrus, 122.9km/h.

Saturday, Dec 27. The 310km triangle for the Open and Standard and 208km out-and-return for the Sports Class were carried out in weather one normally expects in that part of the world and all completed with finishes which were a joy to watch and the pilots felt that a longer task could easily have been achieved. Winning speed in the Open 129.6km/h by Klaas Goudriaan, ASW-17, and Klaus Ahrens, Germany in an Astir at 107.8km/h in the Standard Class.

Another short and difficult task followed; 199km out-and-return Open and Standard, and a 100km triangle for the Sports Class. Machines which finally managed to return, were heard to be "scratching" their way back. Bobby Clifford, Kestrel won with 107.1km/h while Jim Harrold from Rhodesia in a Std Libelle turned in 79.8km/h in the Standard Class.

Although conditions indicated a definite improvement on yesterday the forecast was "flat" in the afternoon. A 310km triangle Open and Standard, and 224km out-and-return Sports Class were set. A strong wind on the outward leg and early failing conditions, however, made this another difficult task to complete. Tim Biggs, Nimbus, having had a dose of flu for the last two days, showed his more usual prowess to win the day at 100.9km/h. But it was a hard day for many, Peter Eich damaged his Elfe beyond repair and van Sandwyk, PIK 20, spent that night and the next day repairing his machine to get it back into the air. Jim Harrold led the Standard Class by four seconds at 81.74km/h

Hopes high for really good flying

The fifth day on Dec 30 was a typically very hot Free State day, and hopes ran high for some really good flying. This was not shared by the Met man, however, as strong winds up to 60km/h were anticipated, and in fact did occur, resulting in the most numerous away landings and abandonment of the 234km out-and-return and 115km triangle for the Sports Class which had been set. Only three Open and two Standard Class pilots completed the task with Tim Biggs in the lead at 78.1km/h. Wesley Shields and Klaus Ahrens both flying Astirs made it home at 62.5 and 56.8km/h.

Again several gliders suffered damage, one beyond immediate repair, while some others were mended overnight. Due to the high winds, this was considered the worst flying day during the contest.

The forecast for day 6 sounded uncomplicated and, provided the winds remained below 20kts, conditions were a welcome improvement on yesterday's disappointments. A cautious 303km triangle Open and Standard, and a 208km out-and-return for the Sports Class were set. The latter resulted in a no-contest day. It was Brian van Niekerk, ASW-17, who won the Open at 122.2km/h. Klaus Ahrens, suffering with a bad dose of flu, had a tough day retaining the lead to win with 98.70km/h in the Standard Class.

New Year's day smiled with a fantastic Free State day, and was a tasksetters delight and there was no hesitation in setting a 502km and 302km triangle for the Open/Standard and Sports Class respectively.

The day turned out as stimulating and enjoyable as hoped for and good speeds were recorded. Klaas Goudriaan set the pace in the Open with 126.7km/h while Sandy van Sandwyk, PIK 20, after his mishap on day 4 made up for this by winning the Standard Class at 100.4km/h. Klaus Ahrens, still seedy with flu did not attend briefing, but with a last minute appearance to collect task details and late take-off still managed to finish third and thus maintained his overall lead.

Another fabulous forecast of ideal conditions for Jan 2. The long awaited 763km triangle was set for the Open Class with 550 and 358km out-and-returns for the Standard and Sports Class. All gliders were on the grid by 10.15 for an early start, but alas, launching for the Open had to be delayed as a layer of altostratus was becoming noticeable along the first leg of the track. After hurried consultations with the Met the task was reluctantly, but very wisely, changed to the more modest 502km triangle they had flown the previous day.

The other tasks were unaltered as the direction of the courses were different. In fact, a good race was enjoyed by the competitors and all but one completed. Klaas Goudriaan was again first in the Open with 127.4km/h and Chris Falkingbridge had his second day win with 105.6km/h.

Unfortunately, rain, moist air and low cloudbase prevented tasks being set for the last three days. So the contest ended after eight days; the majority of which

had been very taxing in conditions which in previous years, had been termed the most ideal in the world—but had this time not quite come up to expectations. Even so the German contingent claimed three Diamond distances, a German two-seater record for the 500km triangle at 115.14km/h for the Janus; as well as three world motor glider records for the 100, 300 and 500km triangles in a Motor Nimbus by Willibald Collée.

Final leading results Open Class: 1, Goudriaan, ASW-17, 7178pts; 2, van Niekerk, ASW-17, 6851pts; 3, Clifford, Kestrel, 6370pts.

Standard Class: 1, Ahrens, Germany, Astir, 7006pts; 2, Shields, Astir, 6471pts; 3, Botha, ASW-15, 6132pts. Sports Class: 1, Winter, Zugvogel, 6508pts; 2, Butler, K-6CR, 4919pts and D. Becke, K-6E, 4410pts.—*(Condensed from an article sent by Peggy Matchett).*

HANS-WERNER KEEPS TRYING

According to reports in the Australian *Advertiser* Hans-Werner Grosse of Germany has been at Waikerie with his ASW-17 since December in an attempt to break his own triangular world distance record of 1012km which he set up in Finland last June.

Some of the "unsuccessful" flights included distances of 958 and 1003km on uncompleted △, followed by another "failure" of approx 1025km on a 1040km △, which he flew on January 26. The 12hour flight took him to Deniliquin, NSW, then to Nhill in Victoria, but on the way back to Waikerie a stiff sea-breeze forced him to land short. Undaunted Hans-Werner vowed not to leave Australia until he broke the existing record.

Another chance, although not in ideal conditions for the attempt, came on February 6, having declared the same △ as above he took off at 10.39am to land 1040km later at 8.30pm back at Waikerie, an approx speed of 111km/h.

During his visit (about three months) Hans-Werner Grosse flew some 13000kms cross-country and this combined with his present total score of seven over 1000km flights is a record few will equal.

SOVIET PLANE FOR FINLAND

A new Open Class Sailplane, the BK-7A Lietuva, developed in Lithuania for the Soviet team to take to Finland, is described in *Flyg Revyn* (Sweden). Designed by B. Karvelis, it is of conventional shape, with the elevator one-quarter way up the fin. Span 20.2m, length 7.21m, weight 480—570kg, Max wing loading 32—38kg/m², ballast 100 litres, Max speed 210km/h, Min 70km/h, Max L/D 46 at 91km/h, Min sink 0.51m at 74km/h.

NEW ZEALAND CHAMPIONSHIPS

Tasks could be set only on the first four days of the New Zealand Nationals which were held in January at Waikato.

The last ten days were spent by the 32 Open/Standard and 17 Sports Class pilots in rain, low cloud and unmitigated general misery. The tasks flown also had their problems and the first day for the Open/Standard Class had to be devalued as well as reduced in length. Tasks Open/Standard Class: 198km reduced to 135km triangle; 147km quadrilateral, a 248 and 234km triangle. Sports Class: four triangles of 136, 127, 135 and 128km.



Ian Pryde, Open Class Champion

Day 1 started with overcast which took some time to break up and a strong inversion later kept the thermals low and weak and only the 4 Nimbus's managed to get home led, but only by two points, by Dick Georgeson. The first three places in the Standard Class were even closer with one point separating Rory Gordon, LS-1F, Tony Timmermans, Std Cirrus, equal first, and Alan Cameron, PIK 20, third.

Twenty-four out of the 32 Open/Standard Class completed the course in much better conditions on day 2 and thermals up to 8kts were encountered. The Sports Class, however, launched at 14.30, only saw three pilots home and the day had to be devalued for the second time. Pryde, Nimbus 2, and Finlayson, Std Cirrus, won their respective Classes.

On day 3 the Nimbus's were ahead again with Ian Pryde fastest at 84.93km/h for second place as Ian White won on handicap in a Kestrel 19. Alan Cameron led the Standard Class and for the first time nine out of the 17 Sports Class pilots made it home.

A slight easterly crosswind and full loads of water resulted in half-a-dozen ground loops, luckily with only minor damage to two machines, on what was to be their last day's flying.

The differences in speed between the Open and Standard were so slight that on handicap the Standard Class took the first six places in the Open handicapped Class, followed by Yarrall (Nimbus). The best speed in the Sports Class was 57.97km/h. And that was how the 13th New Zealand Championships ended—it sounds as if we have heard it all before. No doubt they wish to forget this episode as soon as they can.

Final leading results: Open Class, Pryde, 3698; Yarrall, 3664 and Georgeson with 3415pts all in Nimbus 2. Standard Class: Gordon, LS-1F, 3673; Cameron, Pik 20, 3653 and Timmermans, Std Cirrus, 3425pts. The Sports Class was won by T. Mollard in a K-6E with 2567pts.

After allowing 40% of last year's score and 60% of this contest the team selected for Finland are: Ian Pryde and Doug Yarrall, Open Class. Tony Timmermans and Alan Cameron, Standard Class.—*(News received from Ross Macintyre).*

AUSTRALIAN NATIONAL CHAMPS

Tocumwal aerodrome, an old American military base dating from the Second World War, was the site of the first ever Australian Gliding Championships in 1957. At that meeting, at which Tony Goodhart took the team prize in his Lo-150 and Derek Reid, another "Pommie", won the individual Championship in a Skylark 2, there were about a dozen gliders, launches were by winch, and the competition was abandoned on one day when the weather was very hot, so that everyone could cool off in the nearby Murray River.

This year, the Nationals returned to Tocumwal after an absence of 19 years. Nothing could present a greater contrast with the 1957 occasion. There were 65 competing sailplanes, all glass, including several spanking new PIK 20s, Hornets, and LS-1F and DG-100, and in the Open Class of course, Nimbus's, Jantars and Kestrels, with a solitary Cirrus. The competition was without question the toughest ever held in Australia. Conditions were not good by local standards, yet the tasks set were rarely less than 300km and averaged over 400km for the Open and 350km for the Standard Class. There were some very tired pilots by the end.

The weather for the majority of days was clear, with strong inversions limiting convection. Thermals early in the day hardly ever went above 4000ft, and even when ground temperatures rose in the mid-afternoon, it was unusual to get above 6000ft even on what were considered relatively good days. A tropical cyclone, 'David', that brought devastating floods in parts of Queensland

and northern NSW, affected the flying in the second week by causing heavy overcast skies to the north and strong winds, though fortunately the worst weather never reached Tocumwal itself. Two contest days were lost.

In the Open Class Malcolm Jinks again won, his eighth Australian Championship. He ended, after eight contest days, more than 600 points ahead of Alan Wilson, the runner up. Russell Dunn third over-all, won the 19m honours in his Jantar and Tony Tabart was placed fourth, having landed out on the second day. Paul Mander, still recovering from a serious accident earlier in the season when his Nimbus 2 was caught in very severe turbulence while landing out in hilly country, saw his chances of winning the 19m prize vanish when he failed to score in his borrowed Kestrel on the penultimate day of the Championships. This brought him from third to eighth place.

In the Standard Class, the conditions not conducive to very fast flying, no advantage seemed to accrue to the flapped PIK 20s against either new Hornets, four of which competed, or the well tried Std Cirrus. Even the old Std Libelles were able to keep up with the front runners, Mike Giles holding third place until the last day when, for some reason, he did a slow time and slipped down the list. Ingo Renner, once again, won the Class outright, but was hard pressed by John Rowe, who ended the fortnight only 31 points behind. They flew PIK 20 and Hornet respectively. David Jones finished third in the Waikerie Club's Cirrus, and David Pietsch in his Hornet, fourth. Brad Edwards, PIK 20, followed and then Giles in the Libelle.

The organisation at Tocumwal was superb, all the lessons of the 1974 Waikerie World Championships having been applied and some details improved upon. The Victorian Soaring Association deserve the praise bestowed on them from all sides. As a site for future contests, Tocumwal leaves little to be desired. It lies on the Murray close to the State Border between Victoria and NSW, is almost centrally placed with respect to the main centres of population, and is surrounded by superb soaring country, although there are irrigation areas nearby that can make things tricky. The Great Dividing Range, providing some variety of conditions, can be reached on the longer tasks.—*Reported by Martin Simons.*

SOVIET CHAMPIONSHIPS

All pilots flew Blaniks solo at the 37th Soviet National Championships for males, which also served as the sixth Aerial Spartakiad, held at Orel from July 18 to 31, 1975. The seven tasks flown were triangles of 195, 310, 104, 100, 250, 140 and 112km.

Winner was the previous year's Champion, Vladimir Panafutin, aged 27, of Dniepropetrovsk, who has won 11 medals, six of them Gold. Second was Pasiechnik and third Kuznietsov, both from Moscow.

The "Sixth Aerial Spartakiad for Women", was held at Kaunas, Lithuania's capital, near the River Nieman. Blaniks were flown solo by 12 competitors. Weather was poor and the only task days were July 19, 20 and 29. The first, a 100km triangle, was won by Ludmilla Kluieva of Latvia in 2hrs 24min; the second, a 240km triangle, by Regina Garmutye of Lithuania at 63km/h. Nine finished the course each day. Last task was a 300km out-and-return to Vilnius (Vilna) and back, won by Isabella Gorokhova of Moscow. The new Champion is Isabella Kluieva, who started gliding 14 years ago.—(Condensed from a translation by C. Wills from *Krilya Rodiny.)*

OBITUARIES

AIR COMMODORE L. P. MOORE, CBE

Pat Moore died on January 15, aged 69. He was a career pilot in the Royal Air Force, and started gliding in 1932. After the war he flew at Hereford, and helped form the RAFGSA. For long a member of the Midland Club, Pat wrote the pre-war history of the Long Mynd.

However it is as a glider designer that he will be remembered. In S&G April 1947 he suggested a simple, cheap sailplane, which emerged in 1965 as the "Gipsy". It was offered to every glider and aircraft manufacturer in Britain and rejected. But evidence of the stir it caused at Kirbymoorside comes from Ellison; compare the later designs of Reussner, Monk and Sellars!

Pat invented a wing using foam core to stabilise a thin skin, ideal with plywood. But when Birmingham Guild took up the design they wanted metal, and the prototype first flew with 12m wings using 0.3mm dural skin, successfully. However, it was not easy to ensure a perfect bond between dural and foam, so it was discarded for production.

The saga of BG-135 and the Yorkshire Consort will be written one day, but the design of the glider came through with

pik 20



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JOHN HULME

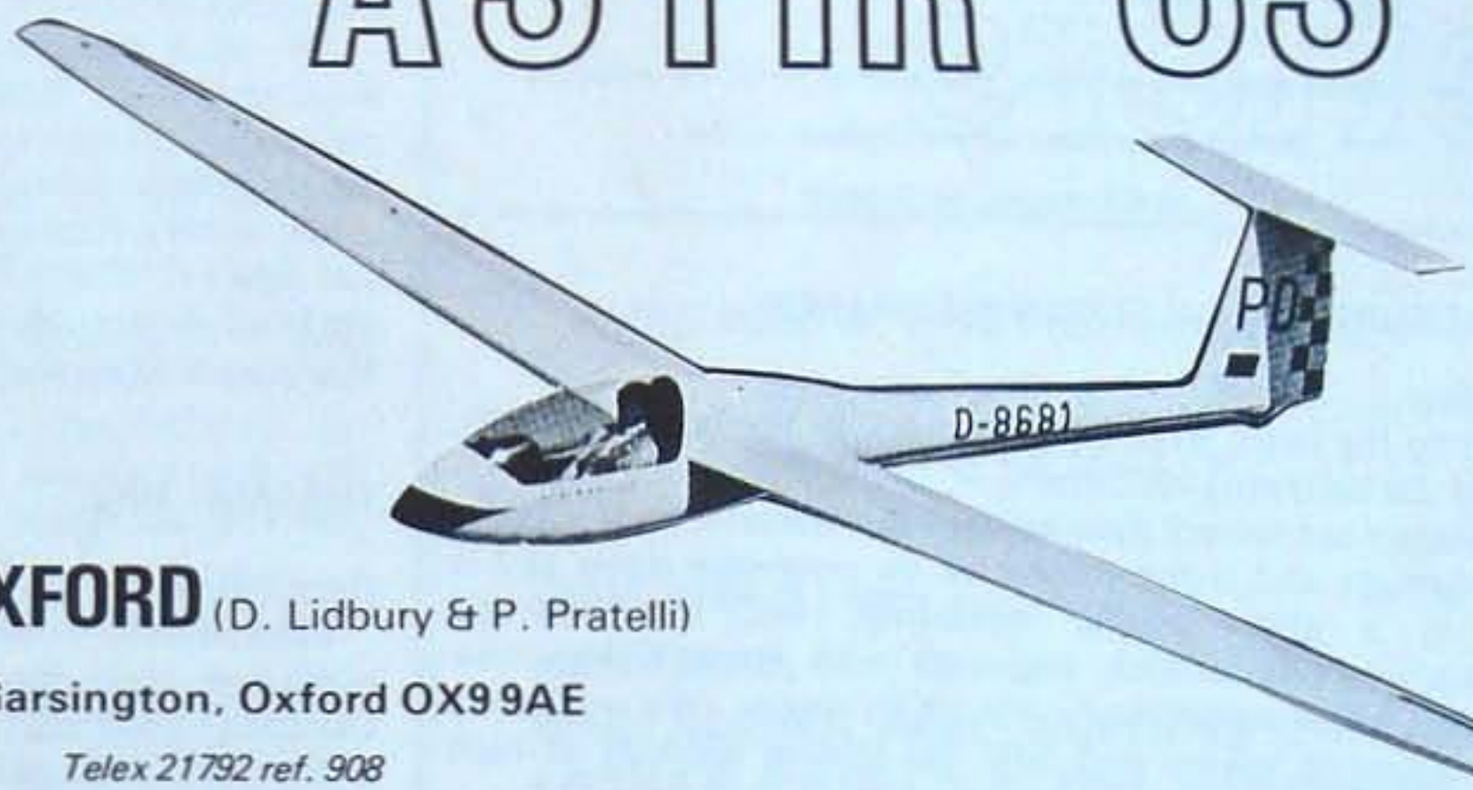
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credit; eight were built. The jigs and materials were rescued by Bryan Swales, who is building an improved version called SD-3; two have flown so far.

Pat Moore remained active, and was delighted with the praises of all who flew them, though sadly he never flew one himself. He hoped to see the RAFGSA adopt SD-3, but separately or together they both remain as living monuments to a grand gentleman.

We offer sincere condolences to his wife Doreen, and to both daughters and their families living in Australia.

K.E. and J.G.

Patrick Moore's earliest involvement in gliding, though it started in 1932, was of rather limited duration compared with his continuous activity in post-war years. But his intense interest in the aerodynamics of wings showed up as early as in the issue of S&G for December that year, when his discussion of a proposed tailless glider of the "flying plank" variety led to a controversy with Latimer-Needham in our pages. Later in 1933 he was active throughout the month-long BGA meeting at Huish. I had to miss Eric Collins's pioneer thermal flights, but S&G was lucky in receiving from Patrick a detailed account of those events which nobody else could have written, and is now of great historical value. He positively radiated aeronautical enthusiasm and I have no idea why he then disappeared from gliding, until his reappearance at the Long Mynd after the war marked the start of a continuous and fruitful involvement which has now sadly come to an end.

A.E.S.

A. M. LIPPISCH

Dr. Alexander Lippisch, who must be the most famous sailplane designer in gliding history, died on February 11 in the United States, to which he emigrated from Germany after the war.

Lippisch spent most of the 1920s on the Wasserkuppe in company with his friend Fritz Stamer, who ran the gliding school there and developed the method of solo training by bungey launches which many other countries copied throughout the 1930s.

Some of Lippisch's earliest designs were produced specially for this method of training, such as the Zögling open Primary, the Prüfling for soaring practice, and the Professor, the first high-performance sailplane to be produced in quantity. On its prototype, called Rhöngeist, Kronfeld made the first cross-country in cloud thermals in 1928; then in 1929 Lippisch produced a more refined version, the Wien, in which Kronfeld achieved the spectacular distance and altitude flights that stimulated the formation of the BGA at the end of that year.

Next came the beautiful Fafnir, unstrutted and with gull wings, flown by Groenhoff in 1930-32; and then the Fafnir II, also called Sao Paulo, in which Heini Dittmar won the first World Championships in 1937.

With all the designs published in von Langsdorff's *"Der Segelflugzeug"* of 1930, together with subsequent ones, Lippisch must have produced at least 15 glider types. One of these, the tailless Storch of 1928 with swept-back wings, developed later into the world's first delta-winged aeroplane, demonstrated by Groenhoff at the 1931 Nationals (the Press were asked not to photograph it). The Falke, a highly stable improvement on the Prüfling, was adopted by Slingsby as his first product, called British Falcon; a Dunstable pilot was heard to remark: "I always let the Falke fly itself—Dr Lippisch's brains are so much better than mine."

Lippisch's versatility demands mention of the world's first rocket-propelled flight, performed in 1928 by Stamer in a tail-first glider with solid-fuel rockets just behind the pilot, designed by Lippisch; it took off from the Wasserkuppe and, after flying about 300 yards, landed back on top. Long after, in 1944, Lippisch designed a rocket-propelled fighter, the Messerschmitt Komet, with liquid fuel.

For over a decade Lippisch was part of the Wasserkuppe landscape; an Englishman in the thirties, back from a short visit, said: "The Wasserkuppe is still its good old self—there was Lippisch running around trying to launch a model autogiro."

Little of Lippisch's writings appeared in English. A joint book by him and Stamer on glider construction, instruction and elementary soaring, published in 1927, was translated into English and published by John Lane in 1930 with the title *"Gliding and Sailplaning."*

Just after the war, when Allies from East and West vied with each other for the services of the best German brains, Lippisch went to the United States; but I heard, I forget from whom, that he had refused to do any work connected with military preparations. Eventually he set up the Lippisch Research Corporation at Cedar Rapids, Iowa, where he died at the age of 81.

A.E.S.

your letters

THE BACKGROUND ON GLIDER INSURANCE

Dear Editor,

I refer to the letter from Ivor Shattock in the last issue, p36, and offer the following comments:—

1 Insurers are neither dictators nor law makers, so if a glider suffers damage and is the subject of an insurance claim and is moved to a glider repair workshop, we, the Insurers' representatives (all aircraft engineers with some flying crew experience) will consider each case on its merits. We work as a team in complete unison and hold the gliding industry in high regard.

2 Glider repair shops are usually small and do not have "slack" or much spare capacity, so the number of workshops able to absorb a repair at any one time is minimal. Hence the vast majority of accident repairs can only be accomplished at one workshop in a certain region, otherwise transportation to another glider repair shop makes the claims' costs unnecessarily high.

3 Competitive bids as suggested in the article are always considered but usually uneconomic. We can estimate ourselves and provide, in effect, our own competitive bids.

4 A Lloyd's Surveyor personally inspects and vets each significant repair method and attendant costs. If an alternative bid by another accessible repairer was deemed feasible, we would consider same.

5 Insurers do care about costs, competitive bids, safety and attendant satisfactory repairs—the latter forms the backbone of the Surveyor's task in that the Assured has to accept the glider back after repairs. We also have to interpret BGA requirements in our work and always consider same in respect of all cases.

6 Perhaps Mr Shattock should visit Lloyds with some of the main glider repairers and the sphere of insurance claims and attendant procedures could be explained in detail. We would then hope that Mr Shattock would cease to have similar complaints as set out in his letter, in future.

PETER J. SPOONER
Principal Surveyor and Adjuster

A GLIDER REPAIRER'S REPLY

Dear Editor,

There was I all set to take delivery of my second Rolls Royce (to be used when driving down the "corridors of power" referred to by Brennig James in his letter in the last issue, "Gliding as a training for business administration," p37) when Ivor Shattock (see his letter on the same page, "Is there something wrong?") spilt the beans.

In his letter he revealed how us glider repairers were amassing our fortunes. I say "were" because after this there will no doubt be a Government Inquiry and we will all be asked to hand back millions of pounds, as is usual in the case of aviation firms who dare to try making a profit. But no doubt this experience will be useful when I become Chairman of a company like BAC or Ferranti.

RALPH JONES
Lambourn, Berks. (Proprietor, Southern Sailplanes)

EXPECTED TO IDENTIFY WITH A NUMBER

Dear Editor,

John Peacock's remarks in the February issue, p36, are very much in line with my thinking. Colin Street's comments on John Peacock's letter seem to indicate that the point has eluded him.

The BGA does not ask us to identify over the gate with our Registered Call Sign but with our Competition Number. My registered call sign might well be "Toast and Marmalade" but I am expected to identify with a number. As John Peacock says ". . . numerals are spoken singularly . . .". If we were to register our call sign as "Thirty Six" we would have difficulty in remembering to announce ourselves over the gate as "Three Six".

Walton-on Thames, Surrey. HAROLD DREW

THERMAL DICE

Dear Editor,

Unaccustomed though I am to corresponding with your magazine, there was one article by The Armchair Pilot in the December issue (p277) that has forced me to write to you. As an ardent fan of the game of Thermal Dice, as devised and sold by Martyn Wells, I thought that your write-up did not do it justice.

In my opinion the game is great fun and mind absorbing for the glider pilot, and of special interest to the cross-country and would be cross-country pilot, helping them enormously with the calculation of final glides. How the game could be played on anything but an aeronautical map I fail to see. The entire object of the game would be destroyed.

May I suggest Armchair Pilot that you get out of your chair and try genuine gliding. You may then appreciate this game as we flyers do.

Witney, Oxon. ROGER BUNKER

THE AVOIDANCE OF ARRIVAL ACCIDENTS

Dear Editor,

Mike Bird's *cri de coeur* in the December S&G (p242), after Derek Piggott's article on cockpit drills in the preceding issue (p205) have combined to spur me to contributing the following twopennorth.

When I first learnt to fly Tiger Moths in early 1943 we were solemnly drilled to intone these incantations:—

Before Take-Off **TMPFF**
Before Landing **BUMPF**

As I recall it, these mystic mnemonics represented drills of vital actions which served to ward off potential disaster at the two critical periods of departure and arrival. That used before take-off need not concern us further, the landing check stood for:—

B for Brakes Off, but operable
U for Undercarriage down
M for Mixture rich
P for Pitch fine
F for Flaps selected

Those readers familiar with the Tiger will realise that this series of invocations had very little to do with the fixed pitch, fixed undercarriage, mixture permanently wired rich, flapless, brakeless Service Moth of the war years.

However the drill was there, firmly instilled as we gyred and gymballed our way round innumerable circuits; moreover it remained basically unchanged as we graduated by way of the Harvard to our operational aircraft—in my own case to the Swordfish, for which the runes were almost equally inapplicable. In postwar years the take-off drill became rather more of a mouthful, I believe at one stage at CFS we were repeating HTTMPFFGCS, but BUMPF still met the landing situation for

as long as I was flying fixed wing, provided one remembered to add another H (for Hook) for carrier landings.

BUMPF appears to me to possess all those qualities of terseness, memorability and rudeness for which Mike Bird appeals; let me suggest with all diffidence an appropriate decode which may satisfy the needs of the forgetful glass-fibre glider guider:

B for Ballast jettisoned
U for Undercarriage down
M for Manoeuvring speed set
P for Tail Parachute deployed, or not, as the case may be
F for Flaps set for landing

The pundits may quibble about the details of the drill or add their own embellishments. The need for a standard landing mnemonic is the main thing, just the act of crying BUMPF, or some similar ejaculation, whilst setting up the approach will serve to remind that there are some details which are best not overlooked in the euphoria of a Happy Return.

'WAGTAIL Wunate'

FORTHCOMING EVENTS

APRIL 17—19: Vintage Club Easter Rally, Yorkshire GC, Sutton Bank.
APRIL 28—MAY 9: Inter-Services Regionals, Henlow.
MAY 5—16: Swiss Nationals, Birrfeld.
MAY 17—28: Dutch Nationals, Terlet.
MAY 21—29: Hahnweide International Contest, Kircheim (Teck), W. Germany.
MAY 22—30: Belgian Standard/Club Class Nationals, Saint Hubert.
MAY 22—31: Open, Standard/Sport Class Nationals, Lasham GS, Lasham.
MAY 29—31: Vintage Club Spring Rally, Bristol & Gloucestershire GC, Nympsfield.
MAY 29—June 6: Motorglider Championships, Burg Feuerstein, W. Germany.
JUNE 5—13: Competition Enterprise, Devon & Somerset GC, North Hill.
JUNE 13—27: World Gliding Championships, Räyskälä, Finland. (Practice week: June 5—12).
JUNE 17—26: OSTIV Congress, Räyskälä, Finland.
JUNE 19—27: Western Regionals, Bristol & Gloucestershire GC, Nympsfield.
JUNE 29—JULY 9: USA 15meter Class Nationals, Williams County Airport, Bryan, Ohio.
JULY 3—4: Vintage Club Safari, Buckminster GC, Saltby.
JULY 3—11: Scottish Regionals, Scottish Gliding Union, Portmoak.
JULY 6—24: French International Mountain Competition, Vinon.
JULY 13—22: USA Standard Class Nationals, Sunflower Aerodrome, Hutchinson, Kansas.
JULY 17—25: Belgian Open/Two-seater Class Nationals, Balen.
JULY 31—AUGUST 7: International Vintage Glider Rally, London GC, Dunstable.
AUGUST 3—12: USA Unlimited Class Nationals, El Mirage Field, Adelanto, California.
AUGUST 7—15: Northern Regionals, Yorkshire GC, Sutton Bank.
AUGUST 21—30: Euroglide, London GC, Dunstable.
AUGUST 28—30: Vintage Club Late Holiday Rally, Midland GC, Long Mynd.
OCTOBER 2—3: Vintage Club End of Season Rally, Coventry GC, Husbands Bosworth.

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club news



Doc Bradwell landing the Olympia 2B at Morridge, home of the Staffordshire Club. Photo: F. Boyce

Copy and photographs for the June—July issue should be sent to the Editor, S&G, 281 Queen Edith's Way, Cambridge CB1 4NH: tel Cambridge 47725, to arrive not later than April 21 and for the August—September issue to arrive not later than June 9.
February 20

GILLIAN BRYCE-SMITH

BLACKPOOL & FYLDE

Though the field is soft, our retrieve winches have enabled us to keep flying as they are kinder to the launch strip than tractors. Thus we have been able to use some good soaring weather and to continue exploring the area. With a south-east wind our home ridge is five miles long, but Derrick Sandford showed how to jump a wide gap to reach a further good slope, turning back at nine miles.

The position of rising air often bears little relation to the windward slopes, even when there is no sign of wave cloud, so the hill soaring is always interesting if not spectacular. Several definite contacts with minor wave have been made, and our best day recently was February 1 when most of the fleet climbed above cloud in good waves. Bob Gordon (Olympia 2B) formated at 8800ft asl with a Kestrel from Walney.

Gil Haslam took his Kestrel 17 to Aboyne during November and made several Gold climbs in wave, getting his second Diamond on the last day.

At the AGM our finances were reported as sound and our assets adequate, even though we can not develop further until the original loans are repaid. There were several committee changes. Stanley Race retired as Vice-Chairman, being replaced by Eric Ripley. Stanley has been appointed our first Vice-President in recognition of his efforts. He drew the plans for our site, designed the clubhouse, for several years has given his time and knowledge as a civil engineer and his contacts with various official bodies were vital while we were seeking planning permission.

K.E.

BORDERS

We are in the wave season at Millfield, following an average summer for thermals. Even our local hill has been less active than usual.

Several members have gained Silver legs and Alan Urwin and Bill Ferguson have completed their Silver C. Bill and John Marshall have been to Gold height.

Aerotow opportunities are rare at our site and the visit by the Cambridge Super Cub in November and the Newcastle and Teesside Auster two weeks later was most welcome.

We had a talk by Bill Scull followed by Brian Spreckley coming for a weekend in November with the Falke.

Alan Urwin, George Anderson and Gordon Beal have finished the reconstruction of the winch. Our first open day will be on June 26 in co-operation with Millfield Youth Week.

J.T.F.

BRISTOL & GLOUCESTERSHIRE

Mike Munday ran another course for budding Bronze C pilots and was helped by Keith Aldridge, who gave more advanced pilots tips on how to succeed on those 300km flights.

There has been a lot of wave and ridge flying and Arthur Duke missed his Diamond height by only a few hundred feet. That was not his only adventure. While instructing, a gust caught under the Blanik starboard wing on take-off and Arthur had to find a new landing site in the dreaded Woodchester Valley. Both he and the pupil were safe.

Bob Osborne and Bernard Smyth have completed their Bronzes.

The Christmas party went with its usual swing. The club has decided to sell the Oly to help out finances, which have also been helped by all the caravan plots being taken.

B.S.

BUCKMINSTER

A bleak winter has resulted in little flying other than our expedition to Portmoak in February. However work in the hangar has been hectic, the K-6 is now resplendent in its new colour scheme and the myhtical Dart 17 has emerged after three years of trials and tribulations. On July 3—4 we are hosts to the Vintage Glider Club and plan our summer barbecue for that weekend.

Visitors by air or road are welcome to visit us at Saltby (midway between Grantham and Melton Mowbray).

D.R.B.

CORNISH

We have sold our Airedale tug owing to its unacceptably high fiscal drag and a petrol-driven winch is being built by Carl Knight, Stuart Keogh and helpers. It should be ready by late spring for use in a satellite field near Truro. We are also in the market for a self-propelled two-drum diesel winch.

David Pentecost visited Aboyne last autumn and returned with a Gold height. Our 1976 courses, again being run by Tony Turner, are already booking up fast.

T.L.J.

COTSWOLD

We have had five more first solos with Pat Simms our third lady to go solo in 1975. David Breeze and Charlie Bromage gained Gold height at Portmoak in October and in early January Ken Lloyd visited Nympsfield for the day and returned with his Silver duration. Some of the recent brisk northerly winds have given 2000ft launches which have encouraged members to glide the 10km to the Bristol Club and borrow their ridge for a few hours.

The two K-7s have been given C's of A and work is progressing on a new towcar, a replica of last year's successful vehicle—a diesel with automatic box. Last year's car has been overhauled and the electronic strain gauge changed for a less sensitive hydraulic job which seems the best devised yet. Radio equipment is to be installed in these vehicles with a command set in our bus/control tower. This will help reduce delays between the pulley end and launch point and improve safety by better communication. Gliders with this channel can communicate with the towcar during the launch.

Another team are constructing a mobile winch for use in bad crosswinds and on expeditions. Like our other vehicles, it has a Perkins 6.354 diesel engine.

Naomi Christy, BGA Development Officer, was the guest of honour at our annual dance and presented the awards. Tim MacFadyen, who came third on the National Private Ladder, won the club ladder trophy, which he has done every year since the award was introduced. Not bad going with a K-6CR.

Larry Bleaken, who landed 3km short of a 500km triangle, won the Harry Daniels trophy for the best cross-country as well as the height gain trophy for two flights to 15000ft from a winch launch at Portmoak. The Holland trophy for the best Silver C performance went to Chris Batty who gained his distance on his first cross-country and his Gold distance and Silver duration on his second cross-country.

We are speculating what will happen to our precious runway now that the RAF is to stop using it.

J.D.H.

COVENTRY

The sewage scheme and our hangar have been completed and we are re-arranging the trailer park. To level the field, a strip has been ploughed and re-seeded. This will be back in use in the summer but any early visiting cross-country pilots are warned that the new strip (along the road to the south) is fenced and not suitable for landing.

We have had several accidents lately, the most serious when the Capstan was written-off trying to land back on the airfield after a low cable break. The motor glider was extensively damaged during field landing practice and the propeller tips were damaged when a Chipmunk went to retrieve our Bocian.

The PIK 20 has arrived and other syndicates are awaiting a DG-100 and an IS-28B. We will have a variety of gliders for our task week in July.

C.T.

DEVON & SOMERSET

Our AGM on December 13 was followed by the usual party. Annual awards were presented as follows: the President's shield (best progress by an *ab-initio*), Alan Barnes; Brian Masters' trophy (top of the club ladder) and the Francis Bustard trophy (best gain of height), Tim Gardner; Kennedy trophy (winner of the task week), Mike Lee of Essex & Suffolk and the Kelsey plate (best cross-country), Robin Munday.

Alan Barnes replaces Nick Jones on the Management Committee. Ken Bunyan has resigned as Secretary after seven years and his place is taken by Andrew Blackburn. Our membership and flying fees have been increased slightly to keep up with rising costs. Our new lecture room is now in full use.

This time of year soaring is mainly confined to our ridge, running both south and west, which has produced several flights of over an hour.

J.R.H.

DORSET

We have had to abandon autotow launching due to a ban on the use of the main runway. However, thanks to the generosity of the Heron GC, who have lent us a winch, we have re-established wire launching.

These circumstances have imposed basic re-thinking of our launching policy, since in the foreseeable future we may lose the use of Tarrant Rushton. Our problem now is how to provide our own winch.

When repairs to the tug have been completed and our winch drivers are expert, we shall be in a good position for the coming soaring season, particularly since we have refurbished both the Eagle and K-13 and both Swallows have had their C's of A.

Congratulations to Terry Linee for flying himself into the Rating List, to Peter White for his Diamond height and Maurice Pack-Davison for completing his Gold, both at Aboyne in October.

S.L.

DUNKESWELL

Arctic conditions in January failed to deter us from flying most weekends and the occasional non-gliding days gave an opportunity to overhaul equipment.

Our T-53 has had its C of A and our tug aircraft should be back in a few days after its extensive winter overhaul.

Excessive demands for places on our summer courses have induced us to run a tenth course which is now also fully booked. However, we extend a welcome to any private owners wishing to fly mid-week at Dunkeswell during our courses.

W.J.E.

DUMFRIES & DISTRICT

After years of frustration we are looking forward to Easter when we transfer to our new site at Falgunzeon, where conditions are far superior in every respect. In particular, visitors will appreciate the excellent access road being developed with the aid of a grant from the Scottish Sports Council.

A recruitment drive is in progress now that we have improved facilities, including a hangar, and it is hoped to up-date the fleet of T-21 and T-31 in the near future.

I.J.C

ENSTONE

The gales during the evening of January 2 caused destruction and havoc to our club. The recorded 110mph wind lifted our blister hangar, which moved about 20ft and then collapsed. All the gliders in the hangar were badly damaged, together with our tug and several other small powered aircraft. The syndicate owned Std Libelle (321) parked behind the hangar was also damaged and the trailer written-off. There were very few members absent from the club on January 3. Work started just after dawn recovering the gliders and aircraft from the wreckage of the hangar. By dusk all the machines were "trailered" and ready for delivery to various repair centres.



The gale damage at Enstone with the trailer containing the Std Libelle, owned by Martyn Wells and Mary Wales, squashed by the hangar.

Not to be beaten by the elements, we continued flying through January using borrowed gliders. The beginning of February saw our tug and T-21 back on the field with many patches and the T-21 with a new wing.

On February 8 Martyn Wells proudly drove his newly built trailer and repaired Libelle onto the field, and despite complaining of the exhaustion caused by burning the midnight oil trailer building, proceeded to have the first soaring flight of the season.

Our lack of hangarage facilities is somewhat compensated by the magnificent effort that has been put into the redecoration of the club lounge—now a room to be proud of.

M.W.

ESSEX

The trophies were presented at the dinner-dance in January. Frank Rodwell's mother donated a trophy in his memory for the pilot who heads the club ladder, and this year it went to Mike Thrussell, our CFI. The Chairman's cup was awarded to Alan Vincent for a gain of

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height at Aboyne and Margaret Swallow won the *ab-initio* cup.

Our thanks to Jim Riddoch and his band for the tremendous effort on the workshop. We are sorry Jim is retiring as Technical Officer, but we are grateful for all he has done.

The Tyro competition has proved a great success, not only because competition has improved the quality of airmanship and knowledge, but because of the feedback to the CFI which will enable him to make modifications to the basic training. The trophy was won by Peter Gill with Geoff Tunwell and Leon Roskilly as runners-up.

We are running courses for three months and welcome Stan Harris, an old friend of Essex, as the instructor.

Sadly we report the impending resignation of our CFI. We wish you every success in your new life Mike. You will be sorely missed at North Weald.

S.C.

ESSEX & SUFFOLK

The year started badly with the 100mph gales rolling over the trailer housing the SHK and damaging the glider. However, it will be ready for the soaring season if a canopy can be found. But Cedric Vigar's Falke was a write-off, a sad end to many hours hard work.

Members have been working on the K-6, with special thanks to Tony Langford, the Skylark 4 and the Pirat, the latter being given a newly designed panel and trailer.

At the annual dinner-dance in February, the Instructors' pot was awarded to Stephen Wallis as the most successful *ab-initio*. Anne Winterbottom is our second lady pilot to go solo.

C.C.S.

IMPERIAL COLLEGE

The annual recruiting drive in October produced another crop of members and the club is now as large as is practicable. Five newcomers went solo by Christmas including our first lady member for some years, Alison Jordan.

We had a couple of soaring days in February but our single-seaters were still having Cs of A.

A.P.P.

INKPEN

Much to our surprise the "Dismal Jimmies" of the gliding world already have us closed down and our airfield under the plough. The outcome of our planning appeal is probably several months away, yet we are fully confident that the result will be in our favour. In the meantime we are carrying on as though nothing has or will happen. Summer is coming, so to all our friends we say: "Come and see us, we are in business as usual."

Like most other clubs the close season is being mainly utilised to fettle our ships and try to carry out such improvements as we are able to the club amenities. Our annual dinner-dance was on November 28 and we welcomed as guest speaker Mr. J. D. Cherrington, the agricultural correspondent of the *Daily Telegraph*. He is one of our local farmers willing to stand up and be counted at our inquiry as one who does not consider gliding to be the modern scourge of the rural community.

R.G.W.

KENT

Despite poor weather with few ridge days, some of our newer members have gone solo including Jon Vowles, Dave Whatmough, Alan Smith and Dave Elliot. Most are booking up for Glyn Richards' advanced course in March for conversion to single-seaters.

There has been a lot of ground activity with repairs to winches and C's of A going on apace in Peter Kingsford's workshop. Leslie Wickens has organised a very good series of films, with some flying documentaries, on Saturday evenings.

C.B.

LAKES

Unlike some of our friends in the south, we have until recently enjoyed substantial freedom from interference by the authorities and the lunatic fringe. Two events have brought this idyllic situation to an end.

During the petrol crisis a temporary diversion of Amber 1 was introduced over the Lake District to save aviation fuel. We now find that what was intended originally as a temporary encroachment of our airspace, has become established permanently over our site as an airway. Not mid-week, as one might suppose, but at the weekends only.

Loss of airspace at heights above 10000ft is not a particularly serious problem at a thermals only site, but since wave flying is the principal attraction at Walney, this represents an additional hazard to those already existing from natural causes. It also restricts the airspace for badge flights to a triangle bounded by Coniston in the north, Ulverston and Newly Bridge to the east.

Then someone undetected used our Capstan for target practice, putting a hole in the tailplane and rudder with what appears to be a 0.22 calibre bullet. Fortunately the pilot, Neil Braithwaite, a 16 year-old on his third solo flight, was not injured. Hopefully this is an isolated incident.

D.J.C.

LINCOLNSHIRE

We have now changed to piano from stranded wire for winch launching and the record launch is 2500ft. In average conditions we can launch from 1200 to 1400ft, compared with 900 to 1000ft when using the stranded wire.

Due to increased costs and poor demand, the tug syndicate are selling the Auster, but other means of providing aerotows are being considered. The club fleet has grown with the acquisition of an Oly. Three syndicates are selling their aircraft within the club and buying a Pirat, Skylark 4 and Dart 17R, which should balance the vintage fleet of Weihe, Gull 4 and EoN Baby. We can still just get everything into the hangar fully rigged.

The Bocian had a spectacular prang, cartwheeling through the woods on the airfield perimeter—fortunately the pilot and glider were in one piece.

The club's first trophies were presented at the dinner-dance with Arthur Tubby claiming half for his 220km flight to Hereford in the Gull.

S.H.

LONDON

Our clubhouse proved its strength during the January gales although some of the First World War huts had minor damage. Our anemometer and TV aerials stayed in place even though the wind speed was beyond our 95kts scale.

Ironically the only major damage was caused by a "flying" Blanik trailer which landed on the trailer rack before being tossed like paper into the car park. Two months earlier the Blanik itself was a write-off when blown over in a 72kt gust. Although some trailers were damaged by the gales and a few were write-offs, only two gliders were damaged. Les Collins' beautiful Scud 3, which wasn't insured, was the worst with substantial damage to the trailing edges of the wings. The other was Philip Wills' Weihe which he "liberated" from Germany in 1945 and is now owned by an enthusiastic syndicate. It emerged from a completely crumpled and distorted trailer with only trailing edge damage.

The flying continues with strong westerlies for hill soaring mixed with wave making winter conditions quite exciting. Colin Ansen, Simon Marks, Bob Cutler and Don Searle have completed their five hours. Francis "Lofty" Russell put in seven hours hill soaring over the last weekend in 1975 to clock up 150hrs for that year. As "Lofty" isn't an instructor and has a full-time non-flying job, that represents a lot of serious soaring.

The non-flying excitement continued when an armed lunatic was discovered in our caravan site (not a club member either!). The preceding weekend two burglars were found asleep in a caravan and a hunt followed across the downs with members and police in pursuit. Security has now been tightened.

The clubhouse is having a coat of paint and the fleet, which will be enlarged with the arrival of the two new K-18s in March, is being prepared for the summer. We have another Chipmunk, bringing our tug fleet up to five, and our three double-drum winches have been professionally overhauled.

We welcome back last year's professional tug pilot, Robert E. Lee, and winch driver, Ron Page, for the 1976 season. During the winter entertaining lectures have been given by members on a wide range of subjects.

D.Y.

MIDLAND

There is nothing we like better than a good stiff westerly, but the wind speeds on the night of January 2 really were a bit much. Three heavy, well-staked caravans were written-off and the metal cladding of the MT workshop doors was shredded. The club fleet, all hangared, and the private trailers were not affected, but one of the club trailers, empty, was toppled and damaged. As the winds moderated on Saturday, 3, there was some good rough soaring and quite good wave. Rob Cook (Pirat) got 11000ft asl, and there was Silver height for Dave Woolf and Paul Barnes.

We arranged flying for members from Boxing Day through to New Year's Day and the period included some good days with hill and wave. Brian Hillier went solo on Jan 1.

We are trying to rest the hard worked turf on the field by utilising some of the newly acquired land, but it is not easy. Launching with our retrieve-winch system through the cut heather has, to put it mildly, some snags. Nevertheless we are experimenting with launch runs just outside the heather which should keep cables and tractors off the worn patches.

W.J.T.

NORFOLK



The Norfolk Club are "full of Easter promise."

We have decided to order a new Super Falke which we expect to be in service in a few weeks time. Our present Falke is six years old and has been sold to a group whose own aircraft was damaged during the recent gales. Despite the freak conditions we suffered very little damage at Tibenham, but, in an attempt to prevent future trouble from trailers being blown into each other, we have installed a row of picket-points.

Our holiday gliding courses are gradually being booked, but we still have about 40 vacancies.

C.E.H.



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NORTHUMBRIA

At our AGM we learned about the healthy state of the club's finances. We have our greatest number of renewed memberships, 137, since we started. We are now modernising our fleet with plans to exchange our Capstan for another Blanik and hopefully to add a further good performance single-seater.

At a first class winter social at the clubhouse, the annual prizes were presented. The Cawthorn cup went to our new CFI, John Greenwell, for a 132km triangle, and the wave trophy to Bob Grey. This magnificent trophy was made by Tony Moss who qualified for the Clanger cup for his own out landing in the Whinney.

R.R.H.

OUSE

We had extremely good soaring conditions in 1975. Roger Mortimer and John Mawson gained Diamond goals and five pilots completed their Silver C.

We had a successful competition week in May. The weather was fair but pilots made the most of the average conditions. The week following was organised for pre-solo pilots and anyone else who wanted to fly. Seven members gained A and B certificates and two completed two Bronze C legs. The success of these weeks has prompted us to do the same this year.

We again invited various groups to come and glide during the summer evenings and the scheme, organised by Ray Rogers, was very worthwhile.

J.G.

OXFORD

The severe gales of January 2 left us virtually unscathed, but our neighbours at Enstone were not so lucky. We were able to help by providing flights for some of their *ab-initio* members for several weeks.

C of A work on club aircraft is proceeding quite well. The Skylark 3 was put back into service at the end of January and diverse opinions about possible fleet changes are being put forward.

Janis McGill celebrated Christmas Day with a Gold climb to 13500ft in the K-6E at Portmoak. Recent first solos include Rob Whitcombe.

G.P.H.

SCOTTISH GLIDING UNION

Early arrivals for the wave season began in February and by the time this report appears, wave conditions will be producing the usual crop of Gold and Diamond heights. After April the flood of visitors will have settled down to a steady stream until September's resurgence.

We have an Open Day on Sunday, May 23, and of course the Regional Contest in July. A great deal of work has been completed on the airfield during the past years—grass aerotow strips levelled, ditches filled and roads lowered to the grass level. Provision for a caravan park has taken a long time but the new toilet block is now complete.

Apart from our present two Piper Cub tow planes and winches, two new diesel buses are



Northumbria Club's new wave trophy made by a member.

being converted for launching by the mechanical experts. Because of this and the fact that we now have 200 acres of airfield, we feel ready to resume participation in the competition game.

We have planning permission for an extension to the clubrooms. This will give increased space to the office and bar with a new upper storey lounge/lecture room.

A.J.T.

SOUTHDOWN

January gave us a good start to the year, with not only the return of our BA-4 tug after a prolonged absence but also some good hill soaring days. Mark Eastell notched up the first Silver distance of the year flying his Oly 460 along the South Downs to Eastbourne. We were pleased to see Derek Piggott arrive that day, too, hill soaring a Falke.

Bill Scull is coming to talk to new and aspiring instructors, as well as to give a seminar on safety. We are giving a party at the end of February for the many farmers who have played host to caught out, or lost, glider pilots from Parham. In 1975, our first full year at Parham, we achieved 1420hrs flying which was an increase of 93% over the last full year at Firle in 1973. The number of launches also increased by some 47% over the same period.

I.D.B.

SOUTH WALES

Ivor Shattock, our CFI, has encouraged and led flights exploring the largely untapped mountain soaring potential of the Brecon Beacons; an impressive area of ice-formed bowls with peaks between 2500ft and 2900ft. These are excellent wave generators and the lift goes up to 5000ft.

Brian Edwards, Brian Drake and John Barry are new intructors; the latter having had a similar experience to Tom Paxton of Border GC when he landed his Oly 463 in a seemingly empty field near Leominster, only to be visited by a bull from the adjacent field. A frightening two hours ensued, with pilot and bull both circling round the glider until the battle finally ended when the bull claimed a damaged rudder.

The Glamorgan Club's small enthusiastic team and K-7 have been affiliated to our club and progressed well, gaining many first solos, followed later by several Bronze Cs.

This, the most southerly wave site in Britain, and the only one in Wales, saw few good autumn wave days. However, from Boxing Day onwards, and during January, the sky was almost daily stacked with lenticulars of all kinds. Danny Roberts (Oly 463) and Adrian Thomas (K-6E) both claimed their Gold heights in mid-January, while other members were busily jumping slots and one K-13 spent most of the day above 9000ft.

The club has sold the T-21, will shortly sell the Swallow, and has bought a Pirat; so the fleet now consists of two K-13s and a Pirat, plus the privately owned tug and eight sailplanes. We are at present negotiating for the possible purchase of our 43 acre site to secure our future as the biggest club in Wales.

J.D.S.

SOUTH YORKSHIRE & NOTTINGHAMSHIRE

We have made immense strides during our first season at Winthorpe and are optimistic for the future. Harry Haworth began 1976 well by going solo in the T-21 on New Year's day.

Fortunately our only casualty in the January high winds was the T-21. It is to be repaired by our new technical officer, Ray Greenslade, who has been virtually rebuilding our K-4 which suffered extensive glue failure.

Brian Spreckley, Assistant National Coach, visited us recently and has promised to return in the autumn with the Super Falke. Two members, Dennis Snowden and John Marsland, are going on instructors' courses. We now have five lady members under instruction with Pat Cawrey soon to go solo.

J.M.

STAFFORDSHIRE

Rising costs have forced us to increase our annual subscription and flying fees, but our launch fees have been reduced so that short duration circuits are not penalised. Our total launches in 1975 were down on 1974 but the average flight time has increased, reflecting the improving ability of our pilots.

At the AGM in January there was one committee change when Frank Davies replaced Len Kirkman who decided to stand down. The Instructors' cup went to Roy Mountford and a new trophy, the Chairman's cup, was presented to founder member Boris Clare for his many years of work for the club.

After last year's successful week, another expedition to Shobdon is planned for June.

F.B.

STRATFORD-UPON-AVON

With our new Blanik we now have three two-seaters in additon to the Skylark 3 and Grunau. Much credit is due to Bernard Poole, Secretary, and the committee for planning club

policy to make the best use of resources. The reverse autotow pulley system continues to give excellent launches and the Tiger is now added to the Commodore for aerotows. Several new members have gone solo and a number of Silver Cs reflect credit on the instructors.

We have been given permission to convert the Long Marston control tower into a club-house-cum-lecture rooms. Peter Kenealy and 'Humph' Yorke have achieved miracles with the towcars.

Congratulations to Bernard on his Gold height claim and hard luck Roland Greenhalgh for missing out by 1500ft in the Cirrus.

NB Retrieve parties please note the airfield is on the Stratford/Broadway A46 road three miles from Stratford-upon-Avon. Visitors must use the perimeter track to approach the launch point.

H.G.W.

SURREY & HANTS

This is a year of change in our club. Our oldest high performance gliders are now being phased out; Dart 470 and Phoebus 265 have been sold and will be replaced later in the year with two 15m Astirs. A fifth K-8 is also in action now as last year the greatest bottleneck occurred at the low end of the fleet. One of the K-8's did 460hrs!

Valentine's Day brought back the love affair with the skies over Lasham. Cloudbase was 4600ft asl most of the day and launch point discussions included: "You do an hour now then I'll have it for the afternoon . . ." Also on February 14 the Lasham—Dunstable Plate was collected by an intrepid aviator from the other place—but it was in a Kestrel and it was a NE wind and it's down hill and the Plate needs cleaning again anyway and it's their turn . . .!

C.L.

THAMES VALLEY

"Four years, £42000 later and here we are back again where we started" said "Bungey Baker" and "Amen" said the rest of us while diligently de-junking, scrubbing and painting our new "old clubhouse" which we recently re-occupied. Our old "new purpose built architect designed clubhouse" has been taken over by private enterprise to be operated as a proper restaurant/bar because it failed miserably as a refuge for tired, scruffy glider pilots during typical Wycombe weekend weather.

G.C.S.

TRENT

Congratulations to two new Bronze C pilots, George Nelson and Mick Elmore, and to our new solo pilots, R. Lines, M. Lee, P. Foster and P. Marshall. Our Chairman, John Rice, and CFI, Vin Fillingham, have gone to Scotland in the hope of gaining Gold heights in wave.

We had an enjoyable Christmas party, organised by Georgina Stewart, and look forward to the annual dinner-dance.

J.P.N.

ULSTER

Vickers-Slingsby are currently building only two Kestrel 22s and the second one is coming here. Delivery to the Bryson-Sands partnership to replace the recently departed Kestrel 19 is eagerly awaited in the spring.

The Kestrel's trailer is already built. The floor was finished when George Burton called to say the fuselage was being lengthened by about nine inches over the drawings from which the partners were working. Fortunately, they hadn't sawn the spare lengths of the longerons and all was saved.

Richard Mayer has also been trailer building on the club's behalf, with a new conveyance for our Skylark 2.

With the re-covered Queen's Skylark 3 due to fly again at the beginning of March, the single-seat fleet should be on top line again.

R.R.R.

WOLDS

Adverse weather conditions quickly checked the outburst of Christmas activity. High winds, while giving good launching value, prevented effective instruction. Nevertheless the upsurge of qualified and aspiring instructors augurs well for 1976.

The Christmas dinner-dance was a great success and business and pleasure are combined each Wednesday when Mike Quinn lectures on Bronze C theory.

The new workshop is now in use and work has begun on the conversion of an ex-City of Leeds bus to a mobile control tower and tea bus. With the Skylark away for an overhaul and C of A and the K-6 restricted to Bronze C pilots, the K-7s are in considerable demand.

G.H.H.

WOODSPRING

We are going from strength to strength with the tally of solo, Bronze and Silver gains getting more impressive each month. Our first very successful year ends with the AGM and dinner-dance on February 27.

Our new winch is in service and performing well. The first major expedition was to Portmoak recently when Ken Wiseman set a new club duration of 6hrs 17min, just pipping John Ward's month old flight of 6hrs 8min. Bob Keen completed his five hours on the North Lomond Hill, soaring between 900 and 1400ft.

P.T.

WYCOMBE AIR PARK

The past year was exceptionally successful. Bronze and Silver legs are too numerous to catalogue and the number of distance Diamond legs achieved was impressive. A member who should remain anonymous sneaked off to South Africa to fly his 500km Diamond, however, five other members were successful on home ground.

An achievement unlikely to be equalled was by the members of the Kestrel 606 syndicate—the three members each flew over 500km on three *consecutive* days; Ken Wilkinson and Sid Davis for their Diamond distance and John Ellis flying 578km of a 600km triangle. Others to have obtained Diamond distances were Harry Cook and Michael Pope.

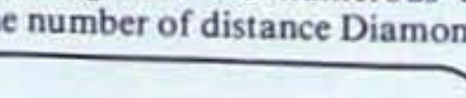
An expedition to Aboyne in November netted Diamond heights for Alistair Kay, Rex Pilcher, Peter Sheard, Chris Rollings and Richard Aldous. Laurie Beer has won the Enigma trophy coming top of the Private Ladder, taking the title from another of our members—Richard Aldous.

Part of our field was exceptionally active during the autumn with the filming of "Aces High."

The January gales wrecked our Pilatus trailer and more damage would certainly have been done but for the valiant efforts of several members moving and securing trailers during the height of the gale.

We are holding our Regionals from July 24—August 1 and expect a substantial entry despite last year's disastrous weather!

M.H.B.P.



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SERVICE NEWS

CHILTERNS (RAF Weston-on-the-Green)

The winter brought postings for a good few club members. Tony Blyth, aircraft member and renovator of the Doppelraab, has left the RAF and his place has been taken by Robbie House. Rob was immediately involved in major servicings on the K-8, K-4 and K-13. A new Cirrus and K-18 will soon be replacing our Kestrel and K-6E.

In the January gales the K-6E trailer was blown some 250yds by the 80kt gusts. During the winter one of our aged Wild winches was given a new engine.

Club pilots are well represented in forthcoming competitions; Rob House, Eddie Wright and Geoff Millward in the Inter-Services with Malcolm Norris sponsored in another Regional or Euroglide, depending on entries.

Catering in the club bus has taken on a new look with Gloria House providing home-cooked meals almost every weekend. Gloria takes over from Barbara Bird, one of our K-4 pilots, who is soon to be posted to Scotland. Barbara will be missed by us all.

G.M.

CRANWELL (RAFGSA)

This winter it has been mostly 5—10min circuits; however Graham Moss managed 40min in weak wave. Our B-4 is due to return from a

very successful stay at Portmoak. The K-4 is undergoing a major service and our newly arrived SF-26 should soon be airborne. The K-7 and K-8 continue to give excellent service.

The Christmas party was a roaring success and our thanks to Ann Cole and Jayne Denham for the superb catering. Finally, it's farewell to Rod Rea who has moved to Yorkshire.

E.G.N.

EAGLE (Detmold)

We now have a well balanced fleet of K-13, K-7, Falke, K-8, Swallow, Oly, K-6E and Phoebus. The syndicate owned Rallye Morane is invaluable as a tug when the airfield is too waterlogged for winching.

We are hampered by constant comings and goings of members to Northern Ireland for four months at a time and with many absentees due to exercises in the area. However, we have a keen core of members, some from as far afield as Hohne, Osnabrück and Soest. We said farewell to Ray Washer and hope to soon welcome replacements from the UK.

Martin Hardy is working on the Fauvette and Leigh Hood and helpers the K-3, while another team are renewing the K-13 fabric.

M.A.H.

FOUR COUNTIES (RAF Syerston)

During the first year at Syerston there have been great improvements in club facilities with good hangarage, workshops, spacious bar and kitchen, plus bunkhouse with mod cons and shower—all under one roof.

Chy Chinn and Trev Gorley, two of our best DIY men, have made good use of the new welding kit on the winches and trailers.

Postings mean the loss of George Lee, who has gone to the north, and many others including Den Ballinger. Before leaving for Germany, Den was presented with a glider painting in appreciation of his six years of outstanding club work.

Full category ratings have been gained by Hamish Brown, Dan Dare and Geoff Meacham. Several task weeks are organised for this season, there will be more mid-week flying, particularly in May and June, and we are being well represented in competitions.

It is hoped to have a new K-18 soon to replace our K-8 and there may be a third syndicate Kestrel 19 for Andy Miller and Mick Elsom. Fortunately Andy and Liz are keeping their superb 460 here.

D.D.

FULMAR

Last year saw a lot of changes in our equipment with a number of replacements. A group of members are taking three gliders to Aboyne to again join the GSA expedition during March.

The most notable recent event has been a Diamond height from a winch launch by Grant Guest. The next day he took the K-4 with an unsuspecting pupil to 10000ft.

Our Bocian, which the Highland Club has bought, is nearly finished and in immaculate condition after all the hard work by our CFI Harry Orme. The MT and winches are in fine fettle, thanks to Al Fasc and his team of experts. We even built two new trailers in the last ten months, and modified a third, so all our fleet is mobile.

Our thanks to the GSA Centre for the help we have had, including a spare winch.

E.N.

HUMBER (RAF Lindholme)

Our annual dinner-dance at the end of November was a great success and to follow on from that, two of our members had wave flights, from winch launches, to 6000ft and 10000ft. Bob Sheffield landed at Doncaster while trying to move upwind and Ray Milner just missed Gold height. This is the highest anyone has been in wave over our site.

Three of our members are flying in the Inter-Services and one in Euroglide.

K.M.G.

PHOENIX (RAF Brüggen)

We have had many changes. Bob Jones has been promoted to Wing Commander and retires as Chairman, his place being taken by Gordon Massie. Neil Stagg retires as CFI and is replaced by Kev Keily. Our thanks to Neil for keeping us on our toes for two years. Tim Oulds takes over from Jane Tobias as Secretary and Ron Cawthorne, social member, is replaced by Bob Rae.

Plans include an expedition to Aosta and competitions at Detmold and, hopefully, Hahnweide. Our sights are set on a new glider, a K-18.

At the AGM on November 30, the *ab-initio* prize went to Keith Roberts and the CFI's trophy to Bob Greenwood. We hosted the GGA AGM on December 6. Peter Bryan, Treasurer, revealed that due to clubs now paying their insurance in advance the GGA no longer have to act as bankers and so DM3000 was available to each club. We have to submit plans to the GGA for a special project in order to obtain the money.

The two K-7s are out of action, one for a major and the other for repairs to a damaged wing caused by damp. The old cloth hangar, finally blown asunder in the December gales, has been the bane of our lives. The aircraft are now in the all metal hangar. Our thanks to Wally Lombard, the driving force and brains behind the hangar project, and to Tom Jones, John Foey, Neil Stagg and many others for their help in the construction.

To add to our fleet we now have a Club Libelle, Geier, K-6CR and a L-Spatz, all privately owned. In spite of drawbacks, there has been a great improvement in the flying hours and launch rates compared with last year.

The Christmas party was on December 21 and we now look forward to occupying the new clubroom when Ken Mackay and his helpers have finished the renovations.

A.M. and J.D.W.

SOUTH WEST DISTRICT (RAF Upavon)

We now have a fleet of two K-13s, a K-8, K-6CR, K-6E and Std Cirrus as well as the Jackeroo which provides good aerotow experience. During the successful 1975 season and with an October expedition to Aboyne, members achieved Silver, Gold and Diamond legs. The winter servicing of gliders and refitting of trailers has progressed at great speed.

The addition of the Tost winch has been a tremendous boost to the ground equipment and we are grateful to John Welsh for his efforts. We now have three new full category instructors, John Bradley, Andy Hancock and Chris Marren.

Our new Chairman is Sid Falla who has taken over from Don Scarfe. Our thanks to Don for his years of hard endeavour.

J.H.

WREKIN (RAF Cosford)

We enter the soaring season with more *ab-initio* members, a new winch and an increase in the number of launches made by this time last year. The syndicate Skylark is resplendent in new red and white colours after a six month refurbishment, and joins the rest of the fleet which is well balanced and fully serviceable.

We mounted an expedition to Portmoak in February, with 12 members and three gliders—the Cirrus, Std Libelle and Blanik. The weather was not at all favourable, and success was very limited, but we were very well looked after by the Army in Scotland.

I.D.M.

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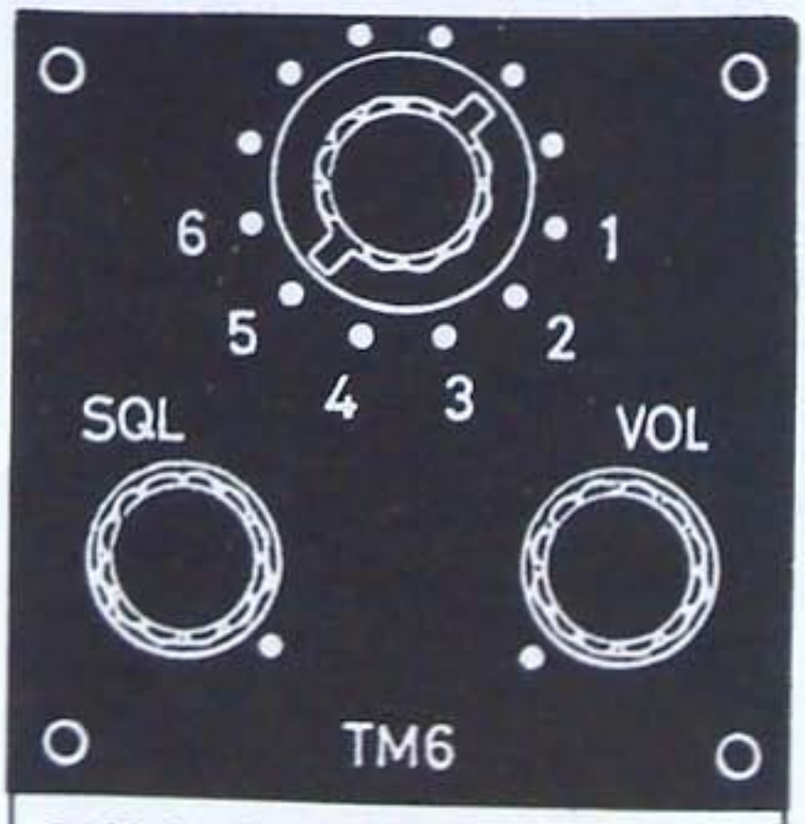
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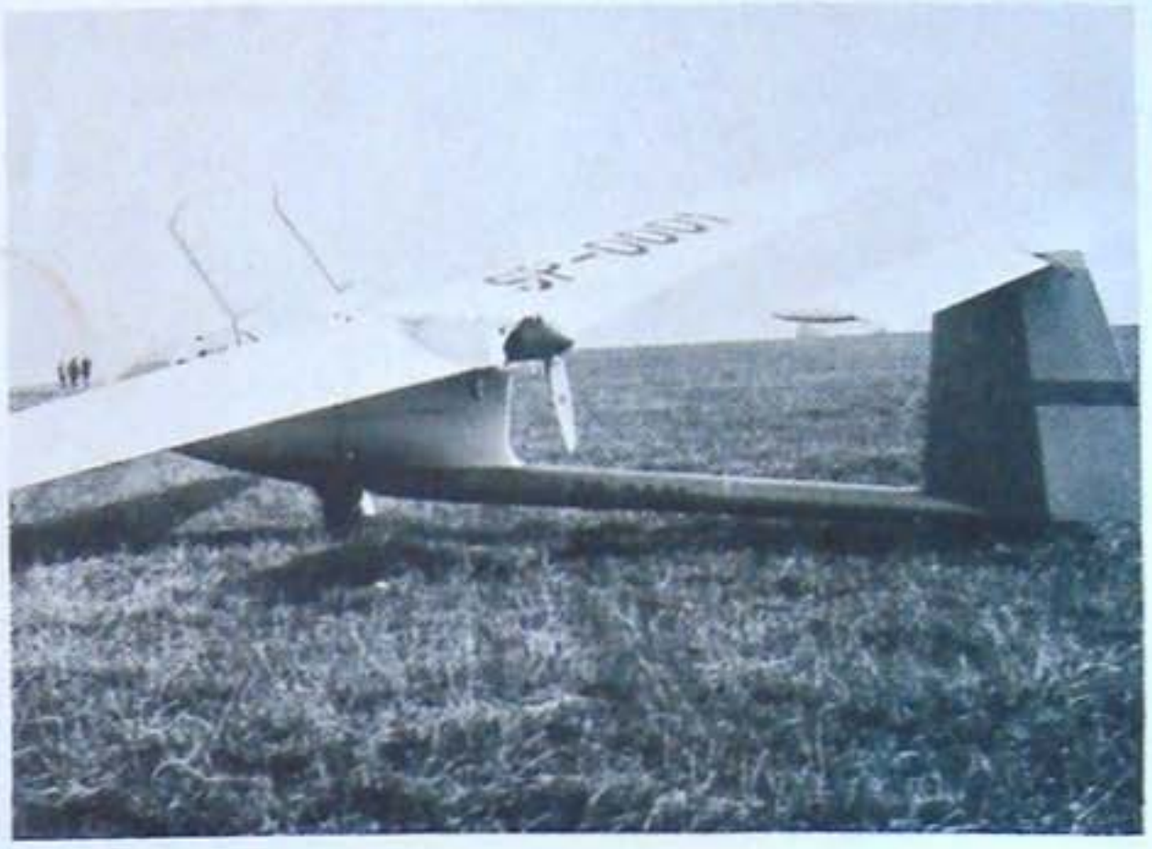
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