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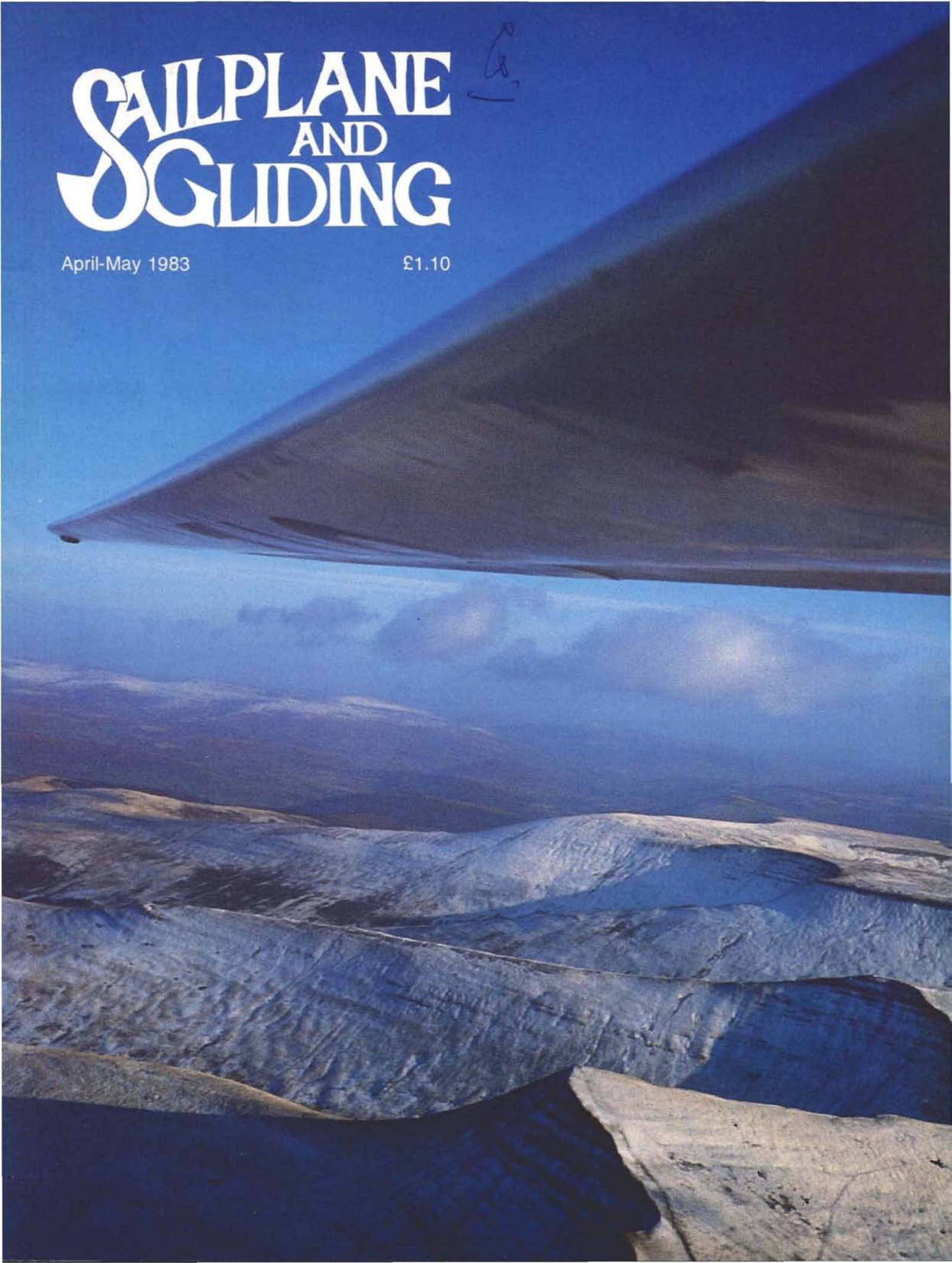

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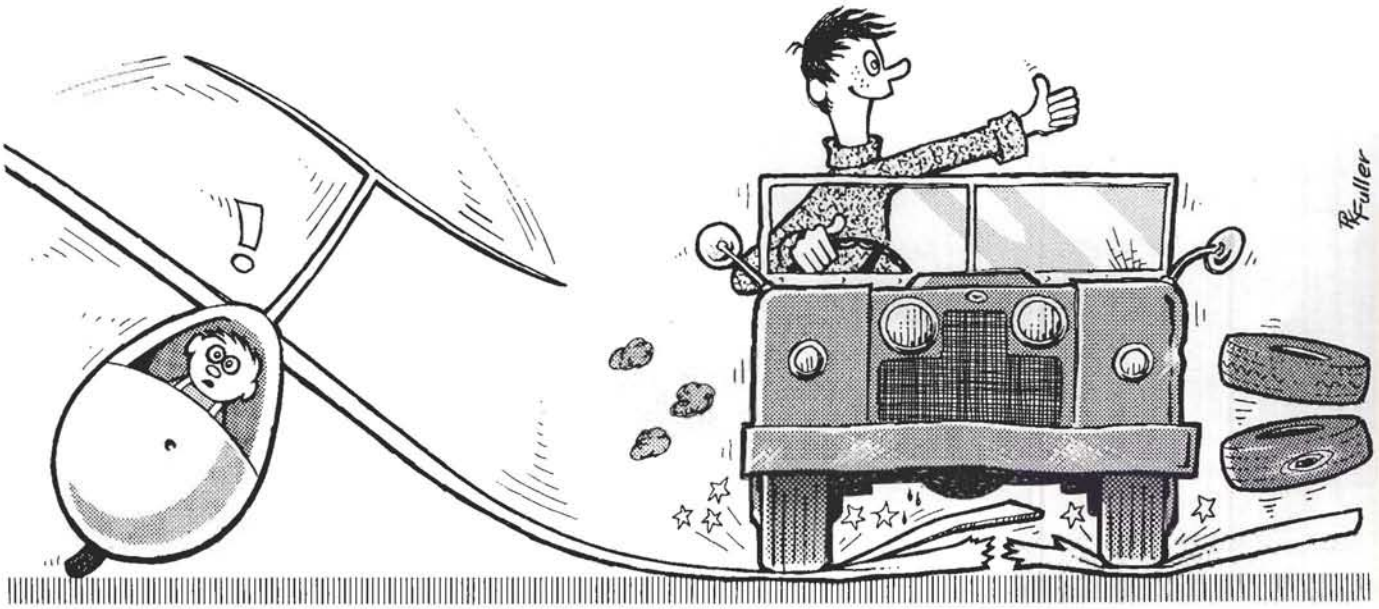

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SAILPLANE & GLIDING

Magazine of the BRITISH GLIDING ASSOCIATION

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Publisher:
British Gliding Association, (Barry Rolfe, BGA Administrator).

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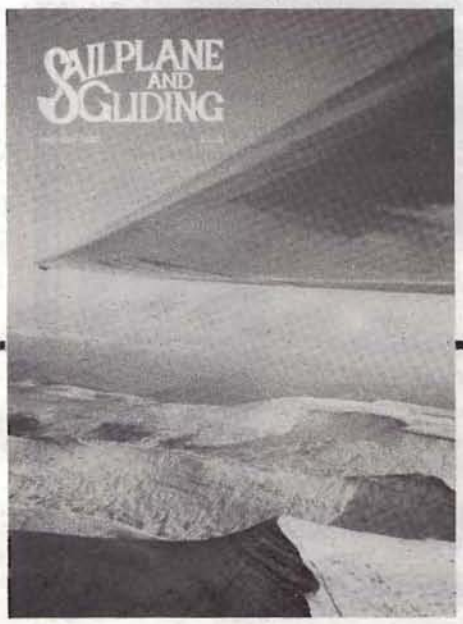
Cover: Paul Cullen took this photograph from an Olympia 419 over the Brecon Beacons.



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APRIL-MAY 1983 VOLUME XXIV No. 2

British Gliding Association
Kimberley House, Vaughan Way, Leicester, LE1 4SG. Telephone Leicester 0533-531051

Printed in England by Blackfriars Press Ltd., Smith Dorrien Road, Leicester

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CHAIRMAN'S REPORT, 1982

TOM ZEALLEY

The key event for Britain in 1982 was the Falklands Crisis and this had a direct effect on gliding also. Argentina withdrew from being host to the World Gliding Championships which were due to have been held there in January 1983. The Soaring Society of America has stepped into the breach and the World Championships are now to be held at Hobbs, New Mexico in July. Crossing the Atlantic with our team and their crews and equipment will be expensive and although the Americans are offering places for up to six pilots per country the BGA felt it could not afford to send more than its usual four pilot entry. Even so, the income from the recently introduced 50p levy and all the other usual sources, including team contributions, will fall well short of expected expenditure. The British team will still have to pass the hat around!

Echoes of past World Championships still linger. George Lee and the whole British team from Paderborn received awards from Prince Andrew at the Royal Aero Club ceremony in December 1982 — delayed due to the Prince's involvement in the South Atlantic. George got the FAI Lilienthal Medal and the Royal Aero Club Britannia Trophy while the team got the Royal Aero Club Prince of Wales Cup. At the same ceremony Dick Stratton received the Royal Aero Club Silver Medal for his work on Mogas. I might also mention here a word of thanks to the British Light Aircraft and Gliding Foundation for their important financial contribution to the Mogas trials. *(See centrespread).*

First British 1000km

Another important achievement was Bill Malpas's National Record for O/R — the first British 1000km badge, flown along the Appalachians in the USA in September 1981. I must also record the award of BGA Diplomas to Lionel Alexander, Barney Banks and John Holland for many years of service to gliding.

Successful National Championships for each of the three international Classes were held at Lasham, Dunstable and Booker — the latter being a first Nationals for this recently reconstituted club. The weather was at best "mediocre" for all three events. At Rieti, in Italy, the weather was somewhat better for the first CIVV recognised European Championships. The seven British pilots who entered did not, however, do too well; they were unable to match the specialised mountain soaring skills displayed by the winners.

Perhaps the most important item to report for the BGA in 1982 was the development of a substantial political lobby of MPs to support us in our battle with the Air Traffic Control authorities. The battle was over the plans to cripple Portmoak by the introduction of an airway through the middle of the wave soaring area there. The efforts of a wide range of glider pilots has ensured that MPs in constituencies throughout the country have become aware of the iniquities being threatened and have mostly offered their support. A hundred MPs signed an Early Day Motion in our support.

Sir Hector Monro MP has long been a supporter of gliding and sporting aviation generally, but he has now been joined by Bill Walker MP who has been formally appointed as the BGA's Parliamentary spokesman. He has been pursuing our interests most energetically and we are most grateful to him.

Apart from the improvements in the Portmoak situation we hope this political activity will ensure a more positive approach to the airspace needs of gliding in the future. Any future threat of serious injury to gliding interests should justify an independent appeals procedure. If this reveals the injury to be essential for some unquestionably greater public good, then financial compensation should be forthcoming. This must be our aim.

At ground level, there continues to be slow but steady progress in the securing of airfields for gliding use. Doncaster has achieved a long lease at Burne airfield, and Oxford have avoided eviction from Weston on the Green. The Philip Wills Memorial Fund continues to assist with loans that are mainly used to help with the purchase of sites. The Ouse club and Strathclyde have both recently benefited.

Aim to resolve conflicts

The joint use of gliding airfields by microlights and motor glider/power club operators has threatened to create problems for some clubs. This expands the area of such difficulties beyond those associated with hang gliders at some of our hill sites recorded in previous years. Hang gliding problems have come under the attention of a joint BGA-BHGA committee under the chairmanship of Lionel Alexander. This body hopes to agree some general principles which can be used as a background for local discussions to try and resolve the conflicts at Dunstable and possibly elsewhere.

The departure of Brian Spreckley who has been a BGA national coach for eight years will be a loss nationally, although hopefully a gain for Booker where he is now manager. We welcome Ken Stewart from Lasham in his place. The Executive Committee has seen the departure of John Ellis (previously Airspace Committee chairman) and Ian Strachan (previously CIVV representative) but it is hoped that both may return to BGA service when their work demands allow. The question of long serving voluntary officers of the BGA will be the subject of a formal motion at the AGM. It is important to ensure a correct balance between wise experience and fresh minds.

The year also saw the passing of a very old friend and gliding enthusiast — Any Gough. His service to gliding over many years has been noted elsewhere. Regrettably his death was one of three gliding fatalities which the movement suffered in 1982.

Steps to reduce accidents

Safety in the wider aspect is a goal for which the BGA must continually strive. One positive step which the BGA can take is to reduce cross-country related accidents. To this end, the Instructors' Committee have been deliberating for some time on methods of reducing out-landing accidents. Their proposals for tightening the standards for the Bronze badge — the necessary prelude to cross-country gliding — will be the subject of discussion at the AGM.

Last year saw a modest start to a new style of AGM Weekend. Mike Bird and other helpers organised a series of interesting talks and discussion sessions over the weekend period. The most notable speaker was Gerhard Waibel, designer of Schleicher's competition gliders in Germany. It is hoped that the success of the 1982 weekend will be repeated in 1983.

Finally may I conclude with the usual expression of thanks to all servants of gliding throughout the movement (whether paid or unpaid) without whom, as the saying goes, none of this would have been possible.

TEAM SUPPORT

MIKE POPE, **British team manager**

It would be only too easy to dismiss John Gibson's letters in the last two issues of S&G with a comment such as "Rhubarb" or "They are plural and they bounce"! Unfortunately, the letters show a complete lack of understanding of what is required to win World Championships and an assumption that no account is taken of expenditure.

If John's suggestions for economies were taken to extremes then why stop at reducing the team to three pilots in polypropylene overalls! Why not reduce the team to two pilots with a shared crew and one car between them?!!!

The last paragraphs concerning how funds should be raised are equally unhelpful and totally unrealistic. Let the Competition Committee find the money — stick a £10 levy on competition number fees or on competition entries. In other words, provided I don't have to pay, I will support the team.

The suggestion that each team member be charged the equivalent of a three week USA holiday for his flying or crewing efforts illustrates ignorance at what is actually involved. A World Championship is hardly a relaxing holiday. Our pilots fly against the best that each nation can provide and consequently they are under great pressure. The margin between success and failure may be one lapse of concentration over ten days of hard flying. The crew members devote their holiday time to working from dawn to dusk, preparing and maintaining the gliders and, when necessary, driving to retrieve a pilot who has landed out. At Hobbs they will be working in extremely hot weather conditions and may, in fact, never leave the airfield. They will certainly not get any gliding so it can hardly be described as a glamorous gliding holiday.

There is clearly a small minority of members of the British gliding movement who resent paying a levy on principle, no matter how small the amount. However much costs are trimmed, a substantial sum is required to send a fully equipped team to a World Championship, particularly when held in America or Australia. A levy on members is undoubtedly the fairest method of raising the necessary funds. Australia, and I believe various other countries, have adopted this method of raising funds over a number of years. As team manager and treasurer I am responsible for all expenditure and my efforts are currently directed at pruning costs wherever possible. A full account will be submitted at the end of the Championships and will be published in S&G.

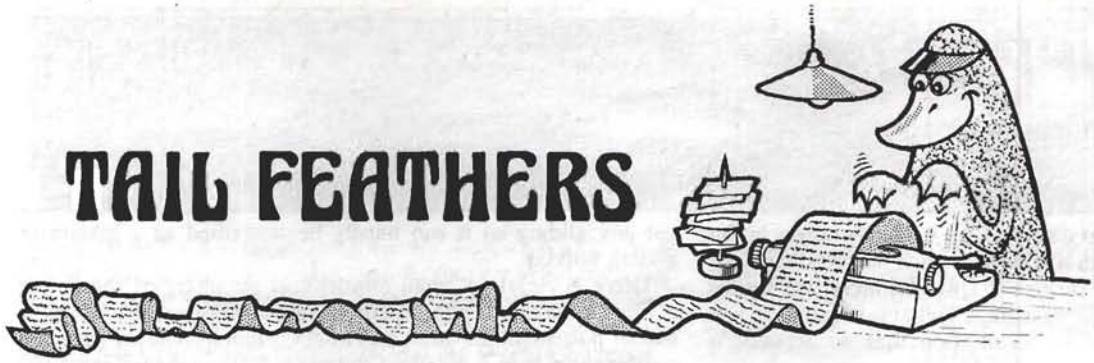
Our pilots in the team need the support of the movement as a whole, not only financial help but also moral help. They want to compete with the full backing of your support.

Preparations are now well advanced and the initial team training is to take place at Odessa prior to the official practice period at Hobbs. George Lee and John Delafield are to fly Nimbus 3s in the Open Class, Bernard Fitchett a Ventus in the 15 Metre Class and Andrew Davies an LS-4 in the Standard Class.

Grateful thanks go to the following for their generous donations to the British team funds: Tim Harrington, P. W. Lever, Ray Ashurst and Lloyd Forsey.

Donations should be sent to Mike at 123 Woodsford Sq, Addison Rd, London W14.

TAIL FEATHERS



by PLATYPUS

A SILVER ANNIVERSARY

It is 25 years since I first trudged from Dunstable bus station to — Mecca. I had read about Dunstable and Ivinghoe Beacon ever since I was a schoolboy. Terence Horsley's and Kronfeld's books were — are — simply marvellous. Now that I was earning all of £650 a year I could afford to go on a course. I *trudged* because I had my priorities right: gliding would come first; everything else nowhere. (I was onto my third syndicate share before I learned to drive, let alone own a car.)

Gliding comes first

So this was Dunstable, famed in song and legend! The first true soaring machines I had ever seen were crabbing sideways along the ridge just as in the books. I rested and gawped — but not for long.

At the entrance of the architectually famous hangar a stocky and seemingly ferocious man performed a sort of ballet while bellowing at a number of people in blue uniforms. The ballet was intended to convey how the wing of the Tutor should pass under the tip of the T-21 and over the tail of the Skylark 3. This, I decided, was the proprietor of the club and the people in blue were the employees. I was relieved to see what a large staff there was to do all the heavy work. It turned out that the stocky gent was Peter Fletcher* who was not really ferocious at all, and the staff were in fact ordinary members in Millett's ex-RAF flying overalls. Most people went about in these, or in rarer cases ex-fighter pilots' sheepskin-lined leather flying jackets, as worn by The Few: the more dog-eared and lived in (= flown in) the better.

Work of one sort or another started instantly. Before I had put my bag down I was asked to hold a wingtip and not on any account to move. It was the most beautiful Olympia ever built. Dudley Hiscox's bespoke Oly with clear-varnished ply and see-through fabric.

This done, the obvious innocent was immediately set upon by an American lady with enough persuasiveness to run a Presidential campaign — or even to be President — who recruited me into the Works and Bricks Committee. I wasn't even a member yet, just a prospective five-day course trainee, but that was no defence. Works and Bricks was not a committee at all — I mean, it didn't take minutes or pass resolutions or vote funds — it was really a chain gang doing the lowest and dirtiest jobs. It dug holes, uprooted hedges, shovelled sewage and got cold and wet and blistered. It needed someone like Bonnie to sell the idea as fun. At least the title Works and Bricks was honest. Nowadays it would be called something like Environmental Amenity Co-operative and you'd still be shovelling — from one hole to another.

Making progress at all in those days was excruciatingly slow. It took all season to go solo, and then the Tutors had such poor performance that the soaring "window" was tiny. If the wind was below 25kt on the hill, they wouldn't soar. If it was more than 25kt they were grounded as unsafe. I still reject the idea that lousy tools — and the Tutor was a lousy tool — help people to learn. You learn nothing sitting on the ground. Hundreds quit: only the fanatics and those with no homes to go to stuck it out, coming every available day to seize every opportunity to get airborne.

There was a real pecking-order. The Tutor pilots were sneered at by the Grunau Baby pilots, who were ignored by the Prefect pilots, especially those who had learned aerotowing,

Works and Bricks Committee dug holes

while none of them held a candle to the olympian Olympia pilots who were not in the same class as the Skylark 2 pilots, who barely touched the hems of those who flew the Sky, who couldn't wait to get their hands on the Skylark 3. Phew!

* *Still active today at Booker.*

After 90 hours and various hurdles such as mandatory 100km closed circuits to qualify for the next ship in the hierarchy, you were privileged to fly a glider that had an inferior performance to the aircraft people now go solo in. All the same, apart from the unspeakable Tutor*, the slow progress up the ladder meant you flew a vast variety of gliders in a wide variety of conditions. (Doing five hours between 300 and 400ft in an open cockpit in the rain is good for the soul, don't y'know.)

In the summer of 1958 a young friend came back to see us for an afternoon: she had quit Dunstable and gone to Another Place and there flew Olympias. We still grovelled at the bottom of the ladder three rungs below our equally inexperienced contemporary. How envious we were! A few days later she thermalled too far downwind of her new club and never made it back alive. Perhaps the treadmill had something to be said for it after all, or so we consoled ourselves.

In between breaking skids and digging ditches I played Chopin on Doc Slater's grand piano to please a beautiful blonde lady called Beryl. The flying may have been crude but the culture was refined. Today it's the other way round. There's billiards in place of the piano now but the gliders are very upmarket indeed. Well, you can't have everything.

Platypus improving his soul

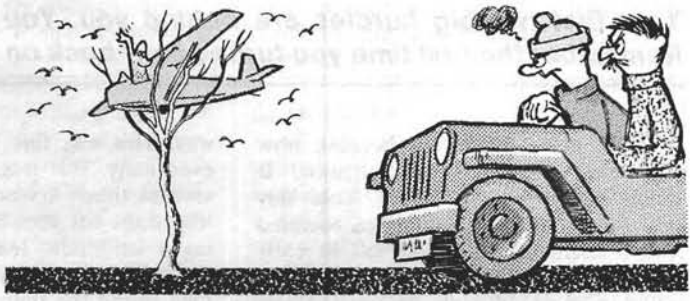
My only regret, though, is that I didn't take out a life membership for £100. When I think of the money I'd have saved. I grind my teeth. Even so it's been worth every penny I've paid.

The Shorter the Nastier

The disputes about who has inflicted the worst retrieves on his friends are usually won by Platypus, because the other disputants suddenly remember that there were the ones who retrieved him. It occurs to me that my worst retrieves have been within sight of the site, while the smoothest have been those that fetched up 200 miles away. The reason is obvious. You don't land 100 or so miles away without knowing that you are going on a long flight, so you get all the junk out of the trailer, check that the lights work, count the fittings, fill the car up with petrol, entrust the keys to someone who is willing to retrieve and tell him where you are going.

Unscheduled outlandings are quite different.

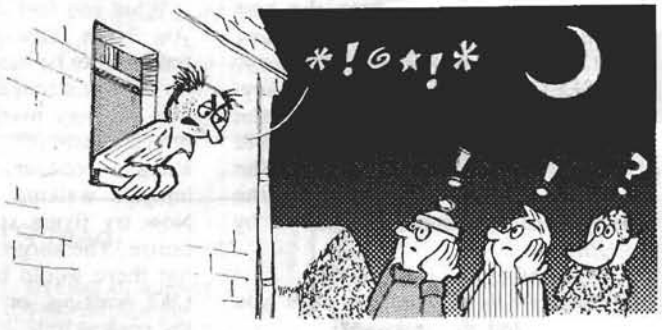
* *More speakable, I admit, if it can be aerotowed.*



Platypus inflicts the worst retrieves

While local soaring the east wind wave I overestimate my skill and the penetration of an Oly. I fall out of the bottom of a feeble lenticular and 400ft above ground I "pick" a field. No problem. But it's winter-time, and it's dusk before anyone arrives from the club — all three miles away. Never mind, I say, hot toddy in the bar for all of the retrievers (one) when we get back in half-an-hour. Damn! Clearly C of A time, eleven months ago, was the last time it was rigged. The b- mainpins just won't shift. A desperate phone request to the club for a three-pound hammer eventually produces one, accompanied by some more Olympia pilots wondering what the hell Platypus is doing to their favourite ship. (Their *only* ship.) Eventually a mighty blow expels the mainpin like a bullet: it richochets off the fin and whistles away into the mud. It is pitch dark by now and sleeting.

Eventually all the bits, including the wayward pin, are back in the trailer. Now off we go. No we don't. The little A35's wheels spin in the mud, up to the axles. Unhitch the car: lift and push it out of the mud. But walking in and out of the trailer with wingroots etc has bogged the trailer down to the axles too. It doesn't budge. After an age we give up. It is late Sunday night and there is no one left at the clubhouse. So we sheepishly knock on the farmer's door. We get him out of bed so that he can bring his tractor to tow the trailer to the road. He is amaz-



A tolerant farmer

ingly restrained in his comments. Probably because he is still asleep. There is no tow hitch that fits the trailer, so he drags it along with great chains. We sit in the back of the trailer with our feet dangling in the mud trying to stabilise it. Eventually we get back to the darkened clubhouse, filthy and exhausted. It is a few minutes to midnight and it is still sleeting.

When it comes to retrieves, small ain't beautiful.

You've Got The SILVER – Now For GOLD!

JOHN WILLIAMSON

Your first two big hurdles are behind you. You went solo, and finally you went cross-country. Remember the first time you turned your back on the airfield? So what's different now? you ask . . .

A great deal is different because now you must become time-conscious. It didn't matter for the Silver. Your day was chosen for you, you were cosseted and briefed, carefully sent off in early afternoon, perhaps with hours ahead in which you could sink or swim. Time didn't really come into it. Was it a downwind drift? Mine was! Fifty minutes in a Grunau Baby in a 25kt wind and that was it. Or maybe a bit of a flog cross-wind? Two hours or more to land 60 or 70km away. Add it up. Two hours for 60km equals 10hrs for 300. You won't make it, will you? So, time-conscious it must be.

But first you must work on your techniques. And most important, and above all, is your thermalling. Ever wondered at the speeds flown routinely in Nationals and Internationals? I'm not talking about some remote soaring paradise. Ninety, a 100km in every hour is commonplace in England, today. Try yourself out on the same day, in the same place, and you may find yourself doing 40km! It takes 7½hrs to do Gold at that speed and there aren't many days in each year with that much soaring time available.

Proper use of every thermal

The aces of the races have the best ships in their Class, to be sure, but they are all superb **thermal** pilots. Proper use of each and every thermal is the key. You see, your average speed through the air depends mostly on your average rate of climb. Not in just one or two of the thermals but in all of them. And the average rate of climb is degraded by three things:

1. Not finding the core quickly
2. Not remaining centred when you **have** found it
3. Hanging on when the thermal has faded, or is just not good enough.

Finding the core is the **art** of soaring. And finding the core quickly sorts the hares from the tortoises. While you were building up to your Silver cross-country you probably used tricks of sighting prominent clouds or landmarks to help guide you to where you hoped the core was. This was fine, and got you there, eventually. But it entailed going round several times in each thermal, spotting where the lift showed on the vario, noting a landmark, learning the hard way that varios lag by nearly a quarter of a turn round the thermal and making due allowance for **that.** And going round once or twice in each thermal to sort it out properly didn't matter in the least when you had all afternoon ahead and only 50km to fly.

Use available clues immediately

But now you will fly through or in dozens of thermals on your way round this 300, and if you spend only one minute in each just getting the feel of it, there's an hour gone straight away. No, you **must** sharpen up the centring. Use what clues are available at once. And that amounts to flying by the seat of your pants, literally!

Upend a big dinner plate, or a Chinese coolie's hat if you've got one, and draw concentric circles on it's base. That's the thermal, with the lift-value contours represented by the circles, increasing towards a core in the centre. Now "fly" your hand over the plate and imagine what you should feel if it were a glider flying into a thermal.

What you feel will depend on the way you fly in. Towards one edge and the tendency to be banked outwards — tilted — by the stronger lift under one wing may be very marked but you may not notice much lift. You would be flying **along** a contour. It may be easier to imagine walking round a conical hill. Now try flying straight in towards the centre. The surge of lift will be greatest but there would be no tendency to tilt. Like walking, or climbing, straight up the conical hill.

Now consider the lift sensation. The human frame cannot detect the **rate** of going up or down — except incidentally by the way your ears "pop". But it can feel **acceleration** — that is, the **rate of change** of lift. So if you feel "lift" you are accelerating upwards, crossing the contour lines towards the core. If you feel the "lift" slow or stop altogether — and lift stopping may even feel like sink — then you are now either flying along a contour line or you may be bang in the middle of the core itself, actually in the air which is going up fastest but with no sensation of lift at all.

Now work out for yourself what combinations of the two sensations are available and what you must do in response to them, for every conceivable entry path into your beautifully round, smooth and uncomplicated dinner-plate thermal, so that you finish up circling exactly round that core! Next imagine the thermal increased or reduced in size — thermals **expand** as they go up, remember, and then work out the optimum centring paths again. Come in at different speeds, add random turbulence and eventually you will realise that of **course** it's difficult and it's not just you. So go out and practise, practise, practise.

Sample and analyse

What is it that you have to practise? Centring above all. So don't just sit dumb and happy in one ginormous thermal all the way up to the inversion and kid yourself you're doing well. You aren't. You are wasting your time! Leave the thermal as soon as you are at a safe height and hound off and find another, and another, and another. Three hundred feet in each — discard — 300ft — discard — 300ft — discard. In an hour of local flying in the club tub you could sample and analyse a dozen thermals, be pitied by Sleepy Sam up there in the blue inversion — "Poor old Joe, scratching again!" — and land having learnt fifty times more of what really counts than he did!

Now go back to your dinner plate. Imagine yourself making beautiful round circles just off to one side of the core. You want to be flying **round** the core, not half in and half out. So work out when you should be widening the turn to get closer to the core and when you should be tightening. If you are reading your thermal correctly you should be widening as the lift — the **sensation** of lift, remember — increases and then falls

to zero, and then tightening quickly as the first sign of sink appears as you leave the core. You do have to be quick and decisive and that can only come with plenty of practice.

Now feed in turbulence, areas where surges of rising air bubble up, and you will realise that this technique of widening on the surge and tightening on the slack will be used time and again in the same thermal, especially if you have successfully climbed through the bubble and are sitting on top of it. But don't overdo these circle shifts in practice. Remember that every attitude change requires energy, that ailerons produce drag and drag is not good! The real pundits do it **smoooothly!** Oh! yes. And they invariably use at least thirty degrees of bank. Measure yours sometime.

So we have sharpened up the centring, maintained the rate of climb, so how about the third one. It is very difficult to throw away a thermal! When you first started soaring every thermal was magic! Each one had rarity value and was unique. It had to be hoarded, not wasted. You squeezed every last drop out of it in case there wasn't another to be had, ever. You couldn't actually bottle them and take them home but you did just that, in your head. You lived each one again in your dreams. But now you must learn to chuck them away! You must learn that there is another — and another, just waiting for you to find it, if your current model doesn't meet your specification. Even if you fly with your eyes shut (not literally, of course, but shut to the thermal clues around you) you will bump into eight or ten on the way down from the top of the inversion, on a blue day, just by random chance. Ah! you say. What if the inversion is lower? So what, I respond. The thermal spacing is directly related to the depth of convection, other things being equal, so you will still bump into eight or ten. They will be closer together, that's all, and smaller. So, armed with this astonishing revelation, off you can rush into the wide blue yonder, confident:

a) That you **will** find another thermal

and b) That you **will** be able to centre in it, because you practised it so effectively.

Of course, if you **don't,** or you are too fussy for too long, then you may have to land out! But that's another story which doesn't belong here.

I did say ". . . other things being equal." Large areas of clamp are not equal. You may have to pick your way round or through them. A big town, or a large lake, may upset the pattern of convection. A strong wind — 15kt gradient and you can be pretty sure the lift, the thermals, will street, line themselves up and down wind. With clouds to guide you these inequalities don't much matter, of course, so long as you have learned to discriminate between active-then, active-now, and active-when-I-get-there clouds. Think about it. Study the clouds. Use the regular(?) turns in your thermal to give you a time-lapse study of the clouds lying along your route-to-be, so that when you decide to discard and press on you have already decided **where.**

All this efficiency stuff will push up your speed so much that you may start running out of map. Do make sure yours is properly marked, sensibly folded and has ample margins either side of your intended track. And **do** mark in the observation zone of your TPs accurately, on the quarter million. You'd be surprised who nearly **didn't** get a goal and return record recently because his photo was taken on the extreme edge of the zone — which hadn't been marked on the map in advance!

* * *

You notice I haven't talked about dolphin flying, cloud street tactics, sea breezes, wave interference, final glides, hill soaring in emergency, shear line soaring. A step at a time. These delights are still before you. Get your Gold first! Good luck!

Yellow *for danger,* **Green** *for caution and* **Brown** *for go – sometimes*

EDWARD LONG, agricultural journalist and broadcaster, gives some advice on picking a safe field

Steve Bicknell's photograph of a K-13.

Over the past few years British agriculture has undergone some fundamental and pretty massive changes. These not only affect the summertime colour of the country landscape but also any glider pilot who decides to risk it and leave base.

Everyone knows that what goes up must come down — glider pilots are particularly aware of the law of gravity. The circuit bashing beginner knows where, and usually when, he will be back with the airfield daisies.

But cross-country pilots know that they face field-landings on every awayday journey. If they are to see the daisies from above and not from below they need to have at least some idea of the traps set for them on the ground.

Some years ago when I worked as a crops specialist for a national farming magazine I received a telephone call from a female journalist colleague on a mass circulation weekly women's magazine. She asked why farmers were growing so much mustard. I tried to explain that the sudden appearance of so much yellow in fields was not due to a sudden and sharp increase in mustard sales but to the growing need for edible oils. The yellow crop was rape — the oilseed variety.

I tried to explain that rape was grown for the oil that was crushed from the seed and that it was used in ice-cream, soft margarine, cooking oils and in lards and shortenings.

The journalist was not convinced. She "knew" that the crop was really mustard all the time.

The point is that no one other than a real expert can tell the difference. As far as a glider pilot is concerned it does not matter anyway for both crops are potentially lethal.

At the time of that telephone call there were around 20 000 acres of rape and just a handful of mustard acres. Since then there has been a massive boom in rape — the crop now accounts for over half a million acres. It is this country's second most widely grown arable crop —

after cereals. The boom is not over for the yellow-flowering crop as forecasts suggest that it will soon be grown on about three-quarters of a million acres. It is also expected to crop up in new, so far rape-free, areas.

The oilseed crop, which was grown here by the Romans, was revived in the 1960s in Hampshire. It rapidly spread to the East Midlands and to East Anglia. Now it is being increasingly grown in the north and in Scotland. It has performed so well in the Tayside area that Scottish cross-country pilots are likely to be seeing more and more blobs of yellow on the landscape in future.

A dense jungle

Most rape is autumn sown. It is of no consequence to any outlanding glider until March. As soon as temperatures warm up a little the crop takes-off. It rapidly develops a tall and dense jungle of crop canopy.

Its branches are sticky and any pilot wanting to avoid a sticky end should keep well clear of rape. The autumn sown crop comes into flower in April and May. After the yellow petals fall it is difficult from the air to spot rape crops as they, like most other crops, are green. Towards harvest, which is in July, crops gradually turn a browny colour.

In the main arable areas of the country there are few available landing sites in July. Even where the rape crop has been harvested fields are unsuitable because of the long stubble. The thick, armour-piercing stubble would cause more than a respray job on any out-of-luck glider.

Faced with an emergency it would be better to go for a crop of cereals than even a rape stubble. But caution — not all rape is harvested in July. Some is spring sown. This comes into flower later and is not harvested until September.

Barley a kinder crop

As a rule, a standing crop of barley is shorter and less likely to damage a glider than a standing crop of wheat. Barley has lighter green leaves than wheat — but the colour difference may be difficult to pick-out under conditions of high light intensity.

Nationally the acreage devoted to cereals has shot up in recent years — largely at the expense of grass and potatoes. A lot of grassland that offered a safe haven for a depressed pilot with an even more depressed vario has been ploughed-out for corn. In the west country a lot of grass has been replaced by barley — but elsewhere there has been a big increase in the amount of wheat sown.

Wheat sown in the autumn is ready for harvesting in July or August in the southern half of the country and in August or even later further north. Spring sown wheat is usually cut in September. There is little of the spring crop grown.

Modern farming practices demand thicker crops than used to be grown — so watch out for standing corn after about mid-May. Wheat has a broader leaf than barley and can damage outlanding gliders when it is wet. One way to detect the height of a corn crop from the air is to watch out for it blowing in the wind — if obvious ripples can be seen then it is likely that the crop is tall.

Since about the mid-1970s there has been a big swing from spring to winter barley. This means the crop is harvested sooner than it used to be. Winter barley is harvested after winter rape and before winter wheat. This is good news as it means there are more stubbles sooner.

Value of stubble fires

In the east a lot of these are burnt off. On many corn farms in the main arable areas of the country the "Bryant and May" baler is the cheapest tool on the farm. Few glider pilots are likely to join the clamour to ban straw and stubble burning. Not only do stubble fires send varios off the-clock but also open up vast tracts of the countryside to the almost-down-and-outs of the gliding world.

If a ban on straw burning is ever applied, and most farmers think it will be, we could return to the hazards of the bale. Fields dotted with little bales are easy to see — but far less visibly obvious are the modern big bales. Some of these weigh half a tonne or more.

Big bales are also appearing in grass fields. Grass cut for hay or silage and left in swaths in the field poses no real threat to visiting sailplanes. But now a lot is ensiled in big bales in black plastic bags. Often these are left in the field for some time before they are collected and stacked.

The acreage of sugar beet has remained at around half a million acres. The crop, which is grown in rows 18 to 20in apart, is reasonably safe for an emergency landing if there is nowhere else to go so long as the glider is flown in along the direction of the rows. The crop can easily be spotted from the air because of the rows and because its broad, light green leaves reflect a lot of sunlight.

Darker green coloured row crops are likely to be potatoes. Whilst it is preferable to land in a field of spuds to a field of rape, it is not to be recommended as the crop is grown on ridges.

The potato crop has declined in recent years being overtaken by both beet and rape. At the same time the crop has contracted to the better soils. The crop is still widely grown in the Fens — but so too are the very high value vegetable crops.

The aggrieved farmer

The main danger from landing in a crop of, say, onions is not what the crop might do to the glider but what the aggrieved farmer might do that matters.

So it is best to avoid the Fens — but anyway the black soil absorbs too much sunlight to make it much good for thermals.

From a pilot's point of view the decrease in the maize acreage grown here is good news. Last year only about 45 000 acres of this tall crop were drilled — a 13% drop over 1981. It is mostly ensiled for cattle feed and so lurks in fields in the south and west where cows are to be seen.

The predicted increase in the blue-flowered linseed has not yet taken place. The crop, grown for its oil which is used in paint, putty and as an anti-foaming agent in industrial lubricants, could be more widely grown in future.

Linseed is sown in the spring. Like rape, it is a thick, dense crop that looks a dull green colour from the air. In July it produces a mass of pale blue flowers. After these drop off the crop returns to being a drab green colour until it browns-up just before its harvest in September. Although not as tall as rape, linseed is a very sticky crop and should be given a very wide berth indeed.

No rules of thumb

Crop identification from the air is very difficult even for so-called experts. There are no rules of thumb to be mugged up regarding colour or stage of growth as a lot depends on the season, the weather and the light.

The best advice anyone can give is to start looking for a suitable field soon enough. No one can be expected to work out which crops are below in a split second from a fading thermal at 500ft or so.

As far as field landings in the mid-season are concerned no one's lucky colour is yellow, avoid blue and suspect even green. Brown is best — so long as it is not ripened rape waiting for the combine. Dark brown is the best bet — but then if a field is dark brown it is probably winter.

ERGONOMICS AND GLIDER INSTRUMENTATION

HAROLD DALE, **Ergonomics Research Group, Hull University**

When purchasing gliders it is common to separate the hull from the instrumentation. Instruments are regarded rather as the fittings in a house, a luxury which might be reconsidered and upgraded at some later time. This is the usual practice in aviation where avionics packages are negotiated separately even with major purchases such as new airliners. The airframe manufacturer will offer an empty aeroplane. An operator when purchasing will obtain flight instrumentation and avionics to suit his senior captains. The wisdom of this general policy is open to doubt since the level of expertise involved in selecting instrumentation may not match that of the airframe designers.

Try to economise

When buying a glider, performance will be a major consideration. To a large extent this is a matter of hull design. We may have a sneaking suspicion that some good pilots in old aeroplanes outsoar those of less ability flying sleek expensive new toys. Nonetheless, at time of purchase a pilot can anticipate better soaring from a better aeroplane. He is therefore likely to invest in the most expensive one he can afford. If his budget is fixed and his choice is largely determined by the hull, then he might well try to economise on instruments. A look around glider cockpits often reveals obvious economies such as the purchase of secondhand instruments that started their lives in much faster powered aeroplanes.

As an ergonomist I shall argue that poor instrumentation could prove to be a very bad economy. I am not concerned about the functioning of individual instruments. That is a matter of engineering about which I am unqualified to comment. My concern is with the ease with which the pilot can extract information from his instrument panel. If instrument and panel design is poor, he may take longer than is desirable to interpret instrument readings. At worst he may make errors. Prolonged reading times can be dangerous when eyes are needed outside the cockpit. Erroneous readings can lead to accidents. I will try to illustrate some of the deficiencies I have noticed in my limited experience.

Traditional aeroplane instruments display information on a clockface. There is a very good and simple reason for favouring rotating pointers with scales on the circumference: the display is magnified as much as possible. Within the 3½in square space allowed for standard instruments, the circumference of a circle with a 1½in radius is nearly 9½in. So a long scale is wrapped up inside this small box.

A selection of panels from a club fleet, illustrating the range of layouts and variety of designs, plus the panel of a syndicate Blanik kept in the hangar which has an ASI scaled to 220kt! Photos: John Spencer.

K-21

Blanik

K-8

Pirat

The usefulness of the scale depends upon adjusting the range according to needs. Typically car speedometers have scales which relate to their performance (small boys get very excited when they see a 150mph speedo in a Mini). Gliders with VNE of 160mph clearly have no need for an ASI with a range of 350mph yet I have seen such instruments. Presumably they have come from scrapped pre-war fighters. The serious disadvantage of such inappropriate scaling is that speeds a pilot needs to read with some accuracy are all crowded together at the bottom end of the scale. If the pointer position for 45mph is difficult to distinguish from that at 55mph the pilot will have difficulty in setting up approach speeds.

A case can be made for standardising ASIs, especially in training machines. I can remember taking dual checks in a K-7 when flying a club Swallow. The ASIs in these two aeroplanes had different scales. When set up for an approach at 55 the K-7 ASI needle was in the 11 o'clock position. To achieve the same speed in the Swallow the needle had to be at 1 o'clock. Inexperienced pilots could easily make the mistake of setting the needle of the Swallow ASI at 11 o'clock. This would result in an approach speed of about 45 which could prove dangerously low.

A risky business

In 1972 one of my students who was reviewing glider instrumentation noticed that if the Swallow at Rufforth were trimmed to 45kt the needle would be in the 10 o'clock position. On the Skylark 2 at the same club an ASI needle in this position indicated 30kt. So promotion could be a risky business.

Another error easily made where all instruments look alike, is to confuse one for another. I can remember an aerotow in still air that seemed to be stuck at 600ft for minute after minute until it eventually dawned on me that I was reading the ASI instead of the altimeter.

The risk of confusion between instruments is increased by the arbitrary panel

layout of glider cockpits. During World War 2 the RAF fitted a standard panel to all cockpits regardless of type or country of origin. This panel contained basic flight instruments, always set out in the same arrangement. With a standard panel the pilot always knew that the ASI was top left, and the altimeter immediately beneath it. The thinking behind this standardisation was that relatively inexperienced pilots might have to fly strange aeroplanes under stressful conditions. By RAF standards the majority of club glider pilots are extremely inexperienced, they maintain low levels of practice. They may drift into situations where they are stressed. Perhaps the simplification provided by a standardised panel layout would be a safety feature worth considering. Don Austin suggested a standard panel for gliders nearly twenty years ago (S&G, August 1965, p359).

Confessions later

Research into ergonomic aspects of aeroplane instruments began in earnest at the end of World War 2. Only when discharged and free from the risk of punishment by grounding would aviators confess to having mis-read instruments while flying. (Anonymous reporting in flight safety magazines is a relatively recent innovation.) Two instruments were the most common source of confusion: the altimeter and the artificial horizon. The latter is sufficiently interesting to warrant a separate article. Problems in reading the altimeter arise because of the length of scale required so they are relevant to issues already raised here.

Altimeters are basically barometers. In the very early days of flying they carried two scales: pressure in inches of mercury, plus an overlay of height in feet. By long-standing convention, an increase in a measure is represented by a clockwise rotation of the needle. So increasing barometric pressure was represented by clockwise rotation. Consequently an increase in height (which, of course, is accompanied by decreasing pressure) was represented by an anticlockwise needle movement. Purpose-built instruments with reversed needle drives did not appear until the end of World War 1.

The altimeters of 1908 had a range of around 7000ft, which was more than adequate for monitoring height record flights of the day. As aeroplane performance improved the range of height to be displayed increased very substantially. World War 1 aeroplanes patrolled at 15 000ft. Accordingly the Mk 5 service altimeter had a scale of 16 000ft. There are a number of interesting features of this instrument: (1) needle rotation is anticlockwise; (2) zeroing is accomplished by rotating the dial face (so needle position is not uniquely related to height); finally, (3) to achieve the full range the needle rotates through 540°, *ie* 1½ full rotations.

Pilatus B-4

Astir

Vega

Blanik (syndicate)

Later altimeters for powered aeroplanes were designed for service ceilings in excess of 40 000ft. To achieve this range a number of arrangements were tried in different designs. A widely adopted solution was provided by using three pointers, one for hundreds, one for thousands and one for tens of thousands of feet. This was incorporated in the widely used Mk 14 service instrument. These, together with the slightly improved Mk 19, are widely available on the secondhand market and are often found in gliders.

The problem with the three-pointer altimeter is that it is difficult to read. In teaching, to impress this upon a class, I show a slide with a three-pointer altimeter "in action" and ask them to attempt to read it. Two points always emerge: first they take an inordinately long time before volunteering a reading (and they are not shy or diffident), secondly among a group the range of readings varies widely, (so much so that I sometimes try to organise an auction).

Ergonomists have been aware of the difficulty of reading the three-pointer altimeter for a long time. A number of disasters have been attributed to "pilot error" associated with mis-reading. The worst kind arise when the 10 000ft scale is mis-read and the crew, who think they are letting down through 10 000ft, hit the ground. After much agonising reappraisal alternative displays, usually of the counter-pointer type, have been fitted in most new military and civil commercial aircraft. This leaves amateur flyers to pick up the discarded production as "bargains".

Catastrophic effects

The effect of sub-optimal display design is not immediately obvious, otherwise the three-pointer solution to the altimeter range problem would never have been adopted. Difficulty of instrument reading and interpretation may be hard to detect when a pilot is fresh and can devote all his attention to the task. It is when he is a little jaded, or mainly occupied with some flying task that he may make an error. Its effects can be catastrophic. Private owner, competition pilots well up the ladder are not immune from these effects. Even professional military pilots can make an error, such as shooting down another aircraft in a peacetime exercise.

It is a well worn ergonomic principle that the proper criterion for evaluating performance involves the man-machine combination, the complete system. Displays are a crucial part of this system. In the pilot-aeroplane system instrument design and layout must therefore be given high priority. Private owners might be wise to budget generously for their instruments instead of assuming performance is entirely a function of hull efficiency, and clubs should consider carefully the question of panel standardisation. Perhaps it would be even better if the BGA established a standard panel along the lines advocated so long ago by Don Austin.

An Inexpensive Variometer Calibration Rig

CHRIS CHAPMAN **of Aston University**

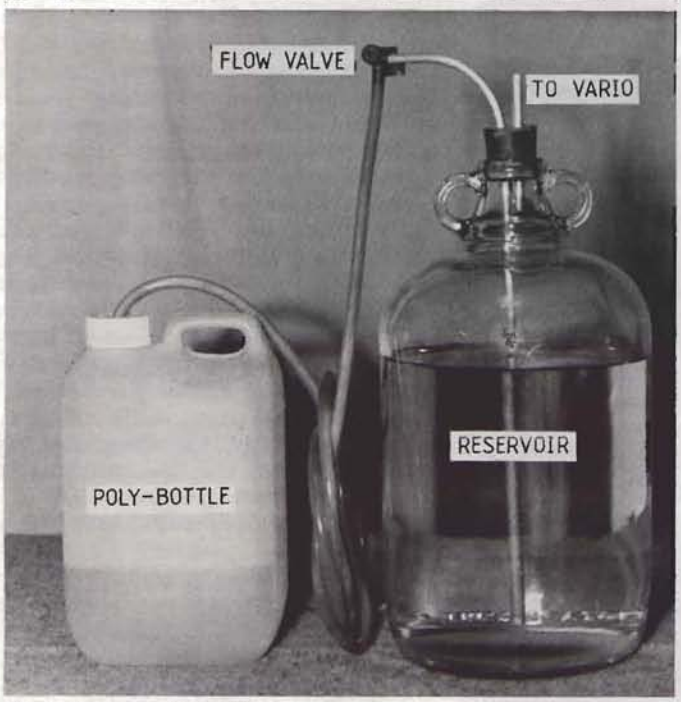


Fig 1. The assembled calibrator.

How many of us (Platypus included!) know that the readings we get on our variometer are reasonably accurate? Yet the variometer is our primary soaring instrument! Calibrations can change a lot as a variometer ages, and even some new instruments aren't perfect. A calibration rig, with some instructions for use, is described in the **New Soaring Pilot,** but it is a bit difficult to make and use. A. G. Moore's monograph on **Variometer Systems** gives an excellent account of total energy compensation and how to adjust it, but I couldn't find details anywhere of a simple rig that could easily be put together on a kitchen table. Mike Hutchinson was quite enthusiastic when I told him that I was writing this article. But he repairs variometers and there was a commercial gleam in his eye — so be careful!

PZL and Winter mechanical variometers are very delicate. Although they will tolerate quite large overloads, gradually applied, any puff of air that drives the vane "ping" up against the end stop can cause expensive damage. Electric variometers are generally more robust, but a blast of air can move thermistors out of position, or stretch a capsule or diaphragm.

The basic problem is how to generate very small, steady, airflows. The flow corresponding to 10kt from a 450ml flask is only 16.1ml/min. In comparison, the volume of an "AA" battery is about 6.5ml. The calibration rig shown in Fig 1 costs about £3 in components. It uses a wine jar, a fruit squash container, some plastic and metal tubing and a leak valve. This may sound a bit crude, but it works well and is quite safe and easy to operate. A watch with a sweep second hand can be used for timing, but for accurate calibrations a stopwatch, or a digital wristwatch with stop facilities, is much more satisfactory. The accuracy of the calibration depends on the precision of the altimeter used, but these instruments are usually very accurate.

The main reservoir is a one gallon wine jar with a rubber bung, from Boots. Rubber is difficult to drill, but two hours in a deep freezer will harden it up a lot. Drill two, well spaced, ¼in diameter, holes from the small end of the bung, through into a block of wood. Use a *sharp* metal drill or a Dormer wood bit for power drills. Some home winemaking suppliers sell bungs already bored, or will bore them for you. Two pieces of ¼in OD copper or aluminium tube, one 4in and the other 18in long, are required. Suitable tube is sold by suppliers of bottled gas and some model shops — 6mm OD × 0.6mm copper tube is also suitable. Enlarge the bore at one end of the longer tube using a 13/64in or 5mm bit in a hand drill. Starting 2in from this end, bend the tube at a right angle around a former or jar. The flow control valve is half an "Algarde two-way gang valve starter kit" available from pet shops and aquarium suppliers. These are made to control the air supply for domestic fish tanks, and have an internal rubber seal on the plunger.

Below atmospheric pressure

Other valves may be suitable, but they must be airtight, as the system operates below atmospheric pressure. The "two-way" half of the valve pair is sealed into the enlarged end of the long tube with RTV Silicone Rubber from Halfords, or bathtub caulk. It should be a tight fit, and the tube can be lightly crimped with pliers. The long tube is pushed through the bung until the end is about 1in above the bottom of the jar, with the bung in place. The short tube is pushed through the other hole in the bung. A smear of RTV rubber makes it much easier to fit the tubes, and can prevent leaks in a roughly bored bung.

The second reservoir is a 2½ litre polythene bottle with a screw cap. Remove the cap washer and drill two holes through the cap. The smaller ⅛in diameter hole is an air vent. The larger hole is made to be a *tight* fit for the outside of 5mm bore PVC tube. A 5ft length of this tube is connected onto the valve at one end, and the other end is pushed through the cap so that the lower end lies along the bottom of the bottle. Fill the main reservoir three-quarters full of water, and the plastic bottle one-quarter full, and firmly replace the stoppers. Open the valve and blow into the short tube on the reservoir until the plastic tube is completely filled with water. Close the valve and allow the apparatus time to come to room temperature.

All air bubbles must be removed from the tube as they will prevent water flowing smoothly through the valve. A 3ft length of 5mm PVC tube connects the short tube on the reservoir to the variometer system. Ideally, the instrument panel should be removed, but calibrations can be done in situ in a well sheltered place. An open field on a windy day is definitely *not* a suitable place, and you won't get consistent readings.

The variometer system and the altimeter are connected up as shown in Fig 2. If a Netto switch is fitted, it should be turned off. If all the tubes and instrument connections are labelled with numbered bits of masking tape, reassembly will be easy and

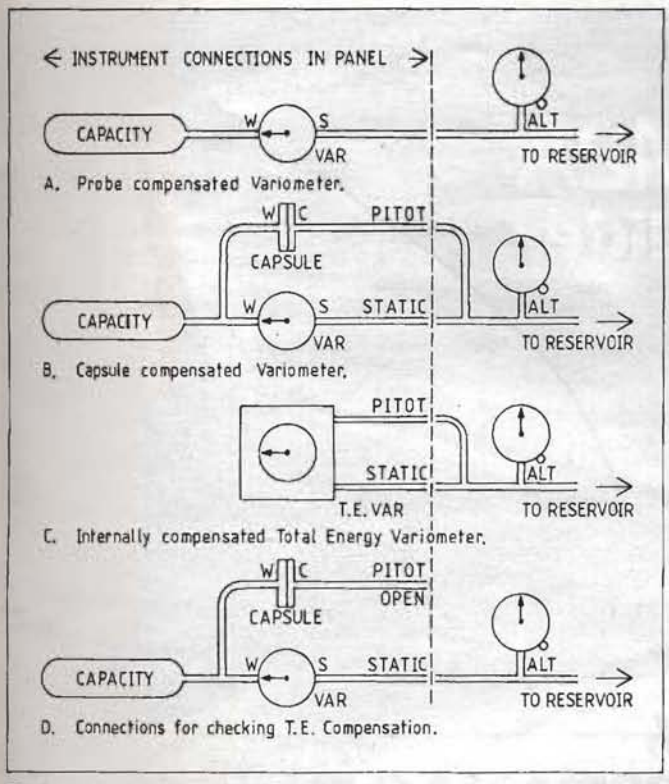


Fig 2. Calibrator hose connections.

wrong connections avoided. Put the reservoir in a secure place about 4ft above the ground. Check that *all* connections are secure, and zero the altimeter with the setting knob. The principle of operation is quite simple. If the water level in the bottle is below that in the reservoir, opening the flow valve will allow water to syphon out of the reservoir and so suck air out of the variometer system. Raising the bottle above the reservoir will allow water to syphon back into the reservoir. Since the valve controls the flow of water rather than air, a cheap valve is good enough for the job. The flow rate depends on the valve setting, the air pressure in the reservoir and the difference in water levels.

In use, the valve is left at a fixed setting and the height of the bottle is adjusted continuously to maintain a constant reading on the variometer. The altimeter reading is a measure of the pressure difference between the air in the reservoir and that outside. BEFORE disconnecting ANY part of the system, ALWAYS return the altimeter reading to zero by adjusting the water levels.

Check for air bubbles

The first *essential* action is to test for leaks. Hold the bottle below the reservoir with about a 1½ft difference in the water levels. Open the valve, allowing water to syphon out of the reservoir until the altimeter reads 200ft, and then close the valve. Check for the presence of air bubbles in the plastic tube between the valve and the bottle. Tap the *panel* regularly during *all* tests to prevent any instruments from sticking. After about half a minute the altimeter reading should have become constant and the variometer reading should be zero.

If the altimeter reading isn't constant, you will have to start hunting for leaks. Pinch off the connecting tubes momentarily in sequence, and note what effect each has on the variometer. Flask stoppers, total energy capsules, instrument glass seals and cases, as well as tubing connections are all possible sources of leaks. Plastic-Tee connectors often have flashings left from the moulding process. Trim these off carefully with a razor blade. Any tubing that has hardened with age or shows cracks MUST be replaced. Tubing is cheap: aerotows aren't cheap and a reliable instrument system is essential. When the system is free of leaks, syphon water back into the reservoir to zero the altimeter, and then close the valve.

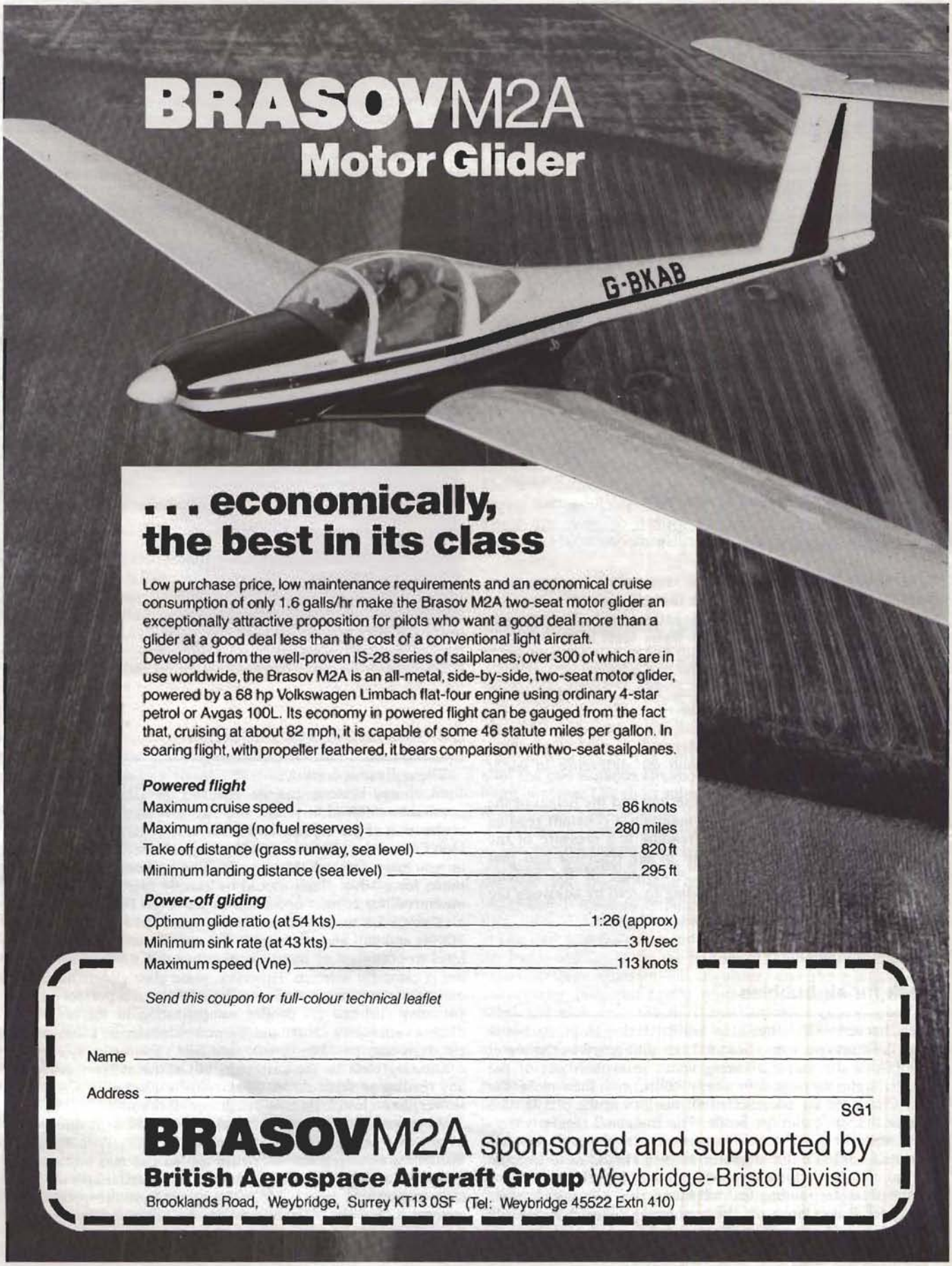
To calibrate the variometer, lower the bottle until the difference in water levels is about 1½ft. Slowly open the valve until the variometer reads about the chosen value. By this time, the altimeter will read 1-200ft. Raise the bottle above the reservoir until the altimeter again reads zero. Wait a moment and lower the bottle again until the chosen UP reading on the variometer is obtained. This reading is *held constant* during the test by slowly lowering the bottle. Allow a 100ft rise on the altimeter for the system to stabilise and then measure the time taken for the next 500ft rise. Allow the rise to continue for a further 100ft and then raise the bottle above the reservoir till the equivalent DOWN reading is obtained. Time a 500ft fall and allow the flow to continue until the altimeter again reads zero. Turn off the flow valve. It is a great help if you get your partner to do the timing and write down the readings, while you tap the panel and adjust the flow valve and the bottle position. Calculate the true readings as you go along and plot true against indicated readings on graph paper. Laying a ruler along the points makes it easy to spot any problems.

If the variometer read 5kt and a 500ft rise took 63sec, since 1kt = 101.3ft/min, the true reading is $\frac{500 \times 60}{101.3 \times 63} = 4.7$kt. It isn't usually necessary to plot every point on the scale, but do measure each calibration point at least twice. I usually check the 2,5 and 9kt points, UP and DOWN to start with, and then measure any other values that seem necessary. Remember to check the zero reading of the variometer before and after the tests. Don't expect the UP and DOWN calibrations to be identical — they rarely are, but the differences should be small and the calibrations linear.

Comparisons are possible

The correct operation of both capsule and dual capacity type total energy systems can be checked by taking readings for a suitable calibration point, say 5kt indicated, with the pitot connection of the capsule or TE variometer left open to the air. Don't allow the altimeter reading to go above 700ft at any time or you may damage the capsule. For both systems, the time taken for a 500ft climb should be exactly twice that previously measured, for correct operation at sea level. For capsules only, a value of 2.1 times that previously recorded will be correct at 3000ft and will give acceptable TE compensation from ground level to 6000ft. Any time variation beyond ±5% of these values is cause for concern. However, some glass gliders have serious static port errors, and even if your system is perfect on test, you may still not get proper compensation in the air. I will discuss variometer errors and TE compensation in another article. It is also possible to *compare* two variometer systems by connecting both to the reservoir, but allow at least 20sec for any reading to settle down. Mechanical variometers are usually slower than electric ones to reach equilibrium.

When you have an accurate calibration, the next question is what to do about it if it is unacceptably poor! With PZL and Winter variometers, the only cure for serious non linearities is to have them professionally serviced. The mechanisms are delicate and almost impossible to reset without the proper test apparatus. Simple scale factors can be corrected by changing the volume of the capacity, but this may upset a capsule type TE system. PZL variometers use 420ml capacities, Winter vario- ▶



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meters use 460ml capacities and the standard ½litre thermos is 450ml, so capacity mismatch problems are not uncommon!

The tubing connecting the variometer to the capacity forms part of the capacity — 5mm bore tube has a capacity of 20ml/m and ¼in bore tube has a capacity of 32ml/m. If the capacity is too large and the flask can be dismantled, one cure is to melt the required volume of candle wax, pour it into the flask and leave it to set. To correct a 10% over-reading on the variometer, put in wax equal to 10% of the flask plus tube volume. Wax can be removed, if necessary, with boiling water and detergent.

To accurately determine the volume of the flask, weigh it empty, fill it completely with water and then weigh it again. The difference in weight in grams is equal to the capacity in millilitres. Ordinary kitchen scales aren't much use, but your local post office will have an accurate set — you don't have to tell them you're not going to post anything!

Dry out the flask thoroughly after emptying it, and preferably leave it unstoppered in a warm place overnight. If the capacity is too small, some additional capacity, like a plastic fuel filter, can be added to the line, but do give it some thermal insulation and check it for leaks. Variometers scaled in m/sec can be converted to read in knots by adjusting the volume of the capacity. The accuracy of mechanical variometers when new is about ±7% of full scale reading, so don't expect perfection!

Most electric variometers have calibration potentiometers and zero adjustments that can be reset, although some are not easy to get at. To reset them, adjust the zero offset to give a convenient reading, check from the calibration what that reading should be and set the needle using the calibration pot. Then re-zero the instrument and *check* at least one calibration point again! The 240° deflection meters fitted to some electric variometers aren't always quite linear, and you may have to choose whether to have UP or DOWN correct, or both a bit off. If a speed-to-fly ring is used with the variometer, set the calibration to be correct for DOWN readings. Crossfell variometers tend to be non-linear above half-scale. A reasonable compromise is to set them to be correct at half scale on *each* range, and just accept that 6kt on ×1 isn't 2kt on ×3! If the UP and DOWN sensitivities of an electric variometer are *very* different, send it to the agent to be checked, as it will probably need a new sensor head.

If you are *not* reasonably confident of your ability to reset a variometer, *do not* fiddle with it — leave it to an expert. If your total energy system works off the pitot line, you should have the plumbing checked by an inspector before you fly again. Lastly, it is easy, once you start making measurements, to become *too* concerned over small errors. A calibration error of less than ±10% just isn't serious for most pilots, but if 5kt DOWN is *really* 10kt, action *is* required! I should know — I had one like that and wondered why I had so much difficulty in soaring!

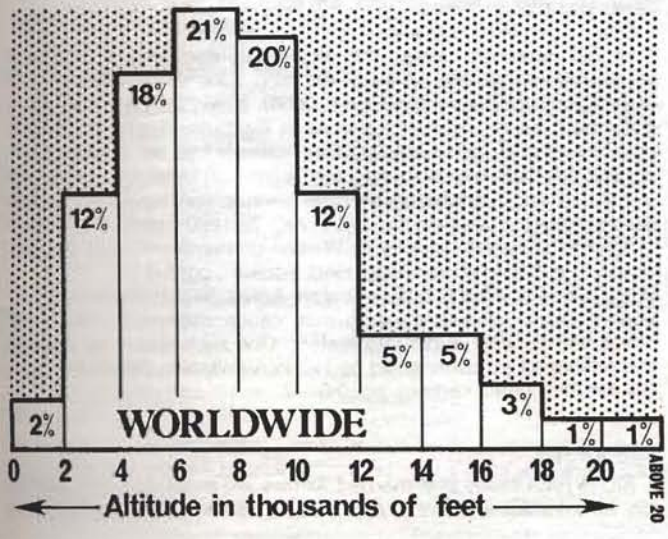
LIGHTNING DAMAGE

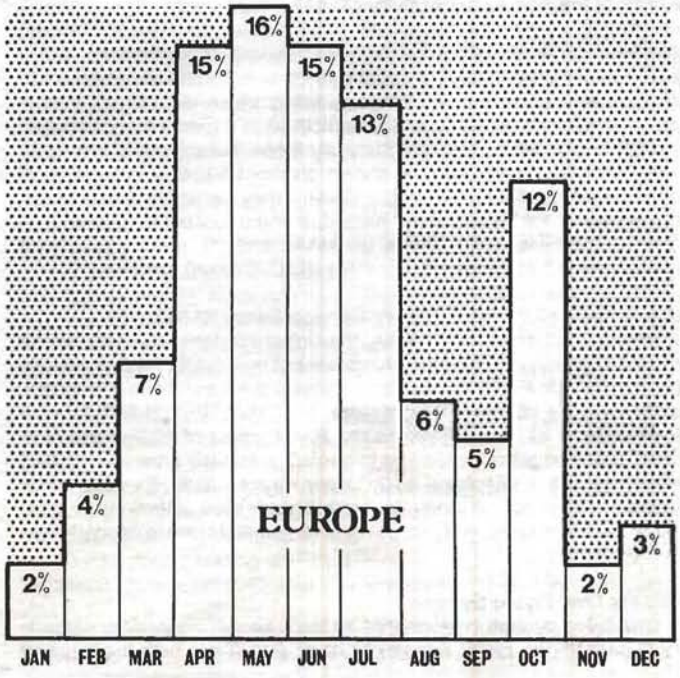
The CAA have listed three cases of lightning damage to aircraft in their General Accident Safety Information sheet. A Twin Otter was struck twice within five minutes while at about 4000ft over the Isle of Wight on March 1, 1982. The strike occurred at four places on the fuselage nose, slightly damaging the nose wheel and axle end-cap, and left *via* the right wingtip. All the bonding tags on the right hand flap and aileron attachment bracket were melted and there was internal distortion of the structure. The wingtip glass-fibre fairing was severely split making a 12in by 6in hole.

In an earlier case in May 1981 another Twin Otter was struck while cruising at FL90 east of Ibsley. Again there was a variety of damage with some of the instruments burnt out.

On March 4, 1982 a Beech 200 Super Kingair at 4000ft in IMC conditions between Luton and Clacton had both ADFs made unserviceable by a strike.

CAA comment: The damage in these three incidents shows the sort of thing that can be expected as a result of a lightning strike on this class of aircraft. The figures below were from over 500 strikes to transport aircraft; the situation for general aviation aircraft is thought to be similar. Unfortunately the only preventive measure is to avoid flying through or near cu-nim clouds.





GLIDING AND UK AIRSPACE 1983

MIKE EMMETT, chairman of the BGA Airspace Committee, has updated and added to this article which he originally wrote for the April 1981 issue of S&G, p56. The information relates to the UK mainland only and does not necessarily apply to powered aircraft.

Aerodrome Traffic Zone (ATZ)
All airfields, including gliding sites, have an ATZ which comprises the airspace extending from the surface to a height of 2000ft above the level of the airfield and within a distance of 1½nm of its boundaries, except any part of that airspace within the ATZ of another airfield notified as being the controlling airspace.

It follows that large airfields have large ATZs and *vice versa*. An aircraft may not take-off, fly or land within an ATZ without permission if the airfield is operated by the Government, the Armed Forces, the CAA or if it is licensed by the CAA, or has an ATC unit or Aeronautical Flight Information unit. At airfields in none of these categories (which includes many gliding sites, regardless of how busy they are) it is legal for an itinerant aircraft to penetrate the ATZ, providing the pilot either conforms to the traffic pattern or keeps clear of the circuit airspace, and observes the normal rules of good airmanship to avoid collisions.

Some airfields are designated PPR (Prior Permission Required). This usually means a telephone call, but full details are set out in the AGA section of the **UK Air Pilot.** All military airfields are effectively PPR and should be avoided. It is obviously unwise to linger near the extended centre line of a busy runway even when outside the ATZ.

Military Aerodrome Traffic Zone (MATZ)
A standard MATZ comprises the airspace within 5nm radius of the centre of the airfield extending from the surface to 3000ft above the surface. In addition there is a stub projecting from the above airspace 5nm long and 4nm wide extending from 1000ft to 3000ft above the surface, aligned with the approach to the main runway.

In some MATZs the stub may be absent or reduced in size. There are MATZs of different sizes and also some with stubs on both sides of the basic cylinder. The rules applicable to the penetration of a MATZ are not compulsory for civil aircraft, but inside every MATZ there is an ATZ: refer to the previous section.

Areas of Intense Aerial Activity (AIAA)
The RAC section of the **UK Air Pilot** defines an AIAA as "An airspace which is not otherwise protected by regulated airspace, within which the intensity of civil or military flying or a combination of the two is exceptionally high; or an airspace within which aircraft singly or in combination with others regularly participate in unusual manoeuvres."

Twenty-one such areas are currently listed, but curiously only Honington military control zone is shown on the 1:500 000 topographical charts used by most glider pilots. Gliders may penetrate these areas, but in view of the nature of the hazard, a sharp lookout is advisable. A chart is available which shows all AIAAs and the military low flying system: refer also to the **UK Air Pilot** (RAC Section), pgs5-7-1/5.

Upper Heyford Radar Advisory Service Zone (RASZ)
Although not listed as an AIAA, the Upper Heyford RASZ should be included here. Again the procedures are not mandatory for civil aircraft, but the **UK Air Pilot** contains the following advice: "Since it will obviously be in the interests of flight safety for Upper Heyford ATC to have knowledge of all aircraft flying in the RASZ, pilots of gliders and non-radio equipped aircraft intending to operate within the zone are advised when possible to telephone ATC (Upper Heyford 2331, Ex 4217/4843) before take-off and in order to make known their intentions. Flights made in accordance with standing arrangements are excluded from this procedure."

Military Low Flying System
Low flying by high performance military aircraft now takes place in most parts of the UK at any height up to 2000ft agl, with the greatest concentration between 250ft and 500ft. All gliding sites are notified to the military authorities and all club CFIs should by now have a supply of forms with which to report any dangerous infringement of their ATZ to the Ministry of Defence.

Prohibited Areas
There are atomic energy establishments in Gt Britain at

Winfrith	Capenhurst
Aldermaston	Calder/Windscale

Harwell, Springfield and Dounreay are classed as Restricted in order to allow aircraft to land at adjacent major airfields, but for gliding purposes they should also be considered prohibited. They all have a radius of 2nm and extend to between 2000ft and 2500ft amsl. It is most inadvisable to place oneself in the position of having to land within a prohibited area. Temporary prohibited areas may be established anywhere from time to time. Information about these is published in NOTAMs.

Danger Areas
The UK is littered with danger areas of many types, shapes and sizes. They are active permanently, or between certain hours of the day, or as notified by NOTAM. Full details will be found in the **UK Air Pilot** (RAC section) pgs5-2-1 to 5-2-21. The chart of UK airspace restrictions is also useful.

Glider pilots should regard all active danger areas as prohibited areas for the following reasons:

The **UK Air Pilot** lists only the type of activity most likely to be encountered, but in practice various hazards may be present in one area simultaneously.

Many danger areas contain areas over which flight is prohibited at times within the period of activity of the danger area, by reason of byelaws made under the Military Lands Act 1892 and associated legislation.

Violations of active danger areas by civil aircraft are causing concern to the authorities: Aeronautical Information Circular 69/1980 explains that the act will be used to apply airspace restrictions to all military danger areas where possible. It is also worth noting that the **UK Air Pilot** does not list danger areas with upper limits 500ft or less above the local surface, to which prohibiting byelaws may also apply.

Other Hazardous Areas
Other types of hazard are:

Free fall parachute sites. The airspace is contained in a circle of 1½nm radius from the centre of the drop zone up to a maximum of Flight Level 120 (approximately 12 000ft). It may not be apparent to a glider pilot, observing the drop zone in flight, whether or not there is parachuting in progress; parachutists normally free-fall down to 2000ft agl and are extremely difficult to see. A collision between a parachutist in free-fall and a glider would have serious consequences, as was demonstrated recently in the USA. AIC 76/1980 makes this point in relation to parachute training at Weston-on-the-Green, near Bicester. Details are in the **UK Air Pilot** (RAC Section), pgs5-8-1/2.

High Intensity Radio Transmission Areas. Within these areas are powerful radio emissions which may cause interference with glider radios and possibly audio variometers. One such area is so powerful that prolonged exposure could be injurious to health. Details are in the **UK Air Pilot** (RAC section), pgs5-6-1/2.

Red Arrows
AIC 5/1983 states that the Red Arrows are moving to RAF Scampton, Lincolnshire and that as a consequence Restricted Area EG R103

Kemble will be withdrawn on March 31, 1983, to be replaced by a similar Restricted Area EG R313 Scampton, which applied from January 20. the Scampton dimensions are a radius of 5nm up to 6500ft amsl. As before, during periods when the team is absent, a NOTAM will be issued to allow use of the airspace. At other times the Restricted Area may only be penetrated after clearance has been obtained, either by phone (Lincoln 730421 Ex314/330 or Lincoln 720271 Ex451/452), or by radio on 127.35 (Waddington approach).

Controlled Airspace

Controlled airspace sometimes occupies the same bit of sky as Specials Rules airspace (peculiar to the UK) and can lead to confusion. Controlled airspace is either notified for Rule 21 of the Rules of the Air and Air Traffic Control Regulations or it is not. Rule 21 makes airspace subject to permanent Instrument Flight Rules regardless of weather conditions. This involves the filing of flight plans, pilots holding instrument ratings, carriage of certain radio equipment etc. If it is not notified for Rule 21 it means that VMC flights are not subject to these requirements and therefore gliders flying in VMC are permitted.

Visual Meteorological Conditions (VMC)

To comply with VMC, either above 3000ft outside Controlled airspace or inside Controlled or Special Rules airspace, a pilot must remain at least 1000ft vertically and at least 1nm horizontally from cloud in a flight visibility of at least 5nm, as interpreted by the pilot. Outside Controlled airspace at or below 3000ft, with an indicated airspeed of 140kt or less, a pilot must remain clear of cloud, in sight of the surface and in a flight visibility of at least 1nm.

Bearing in mind that modern military and civil jet aircraft travel at very high speeds and are capable of high rates of climb and descent, and notwithstanding the minimum criteria stated above, it would be prudent to exercise the greatest care when flying in areas where such traffic is known to exist.

Airways

Airways are Rule 21, but an exception is made for gliders. The relevant paragraph in the **UK Air Pilot** (RAC Section) pgs3-5-3 states: "Gliders may cross an airway, except a Purple airway (see below), in VMC by day without compliance with any of the requirements . . ." It would obviously be wise to effect an airway crossing in the most expeditious manner possible.

Purple airspace is established from time to time, to protect Royal flights in fixed wing aircraft, within which ATC apply special procedures. Full details are promulgated by special (RF) NOTAM and it is important that gliding clubs receive this information because gliders are not permitted to fly in Purple airspace. The committee will take steps to ensure that these NOTAMs are sent to clubs.

Some control areas may be treated as if they were airways: Daventry, Worthing and West Scottish.

Control Zones/Areas and Special Rules Zones/Areas

Abbreviated to CTR/CTA and SRZ/SRA, TMA is an abbreviation for Terminal Control Area. The rules are complex, but the simplified tables which follow should suffice.

1. Areas in which gliders may fly provided they maintain VMC.

Cross Channel SRA	Stansted SRZ/SRA (But see table 2)
Bournemouth/Southampton SRA/SRZ	Leeds/Bradford SRA/SRZ
Lyneham SRA/SRZ	East Midlands SRA/SRZ
Halifax CTA	Aberdeen SRA/SRZ
Southend SRA/SRZ	Newcastle SRA/SRZ
Scottish TMA/SRA/CTR	Manchester TMA

2. Areas in which gliders may not fly, regardless of the weather.

Heathrow CTR/TMA	Prestwick SRZ
Gatwick CTR/SRZ/SRA	Manston SRZ
Birmingham CTR/SRZ/SRA	Lydd SRZ
Cardiff CTR/SRZ/SRA	Glasgow SRZ
Blackpool SRZ	Liverpool SRZ

Manchester CTR (except for a small portion up to 1250ft agl) Stansted SRA, only the portion between Stansted and Luton between 3500ft amsl and FL 65.
Luton SRZ/SRA
Brize Norton SRZ But see table 3 for exceptions.
Edinburgh SRZ

3. Areas in which gliders may fly provided certain rules are followed.

Luton SRA. Part of this may be used for taking-off or landing at Dunstable (London GC) Airfield. These rules are complicated and should be studied before flying into the area: refer to the **UK Air Pilot** (RAC Section), pgs3-3-13-1.

Brize Norton SRZ

Gliders may penetrate the SRZ at weekends in 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 pilot must contact the ATC watch supervisor on Carterton 842551 and pass an approximate zone boundary ETA. At this time, but not later, ATC may refuse permission for operational or safety reasons.
c) The pilot must call Brize Norton on 130.4MHz before penetration. In the absence of any reply the pilot may continue, assuming responsibility for lookout and separation within the ATZ, while listening out on 130.4MHz.

Edinburgh SRZ/SRA

Transits are available to gliders contacting Edinburgh on 130.4MHz. It will be necessary to activate the frequency by telephone before departing.

Airspace Above Flight Level 245

The entire country is controlled above FL245 but none of the rules are applicable to gliders.

The Airmiss System

Glider pilots are accustomed to flying in close proximity to other gliders and perhaps do not realise that it can be quite alarming for the pilot of a powered aircraft to suddenly encounter a glider at close quarters. The reluctance of most glider pilots to report airmisses is generally not shared by the powered fraternity: this usually results in extra work for the Airspace Committee! The airmiss system is a good one and glider pilots should take advantage of it whenever necessary. Full details are in the **UK Air Pilot** (RAC Section), but generally speaking the procedure can be activated by a telephone call to the nearest airfield with an ATC service on the day of the incident.

Further Reading

The airspace situation is complicated and changing all the time. The following list of publications will enable those with the necessary stamina to maintain a thorough and up-to-date knowledge of UK Airspace: **Laws and Rules for Glider Pilots (BGA); UK Air Pilot** (RAC Section); NOTAMs; General Aviation Flight Guide; Air Navigation Order 1976, Air Navigation Regulations 1976, Rules of the Air and Air Traffic and Control Regulations 1976 which are available as CAP 393 from the CAA, Greville House, 35 Gratton Road, Cheltenham, Glos; Aeronautical Information Circulars, available from the Aeronautical Information Service (AIS 2C), Tolcarne Drive, Pinner, Middx, HA5 2DU; Chart of UK Airspace Restrictions and Chart of UK AIAAs and Military Low Flying System which are both free from the Supt, MoD (PE) Central Stores Dept, Aston Down, Stroud, Glos, GL6 8HT.

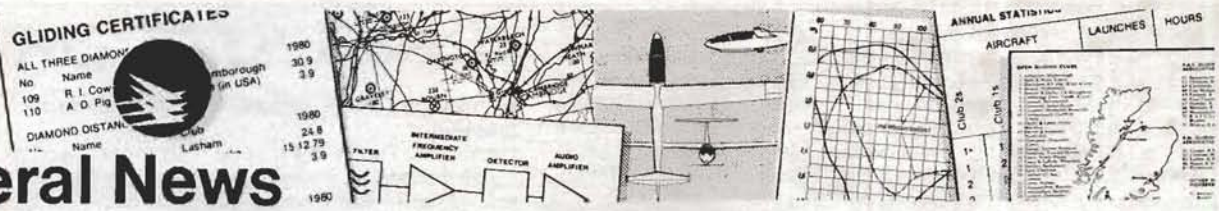
Stop Press

The CAA announced its intention to introduce airways between the Scottish TMA and Aberdeen from March 17. Details are set out in NOTAM A1/1983. In an attempt to meet the needs of Portmoak, the layout is rather different from the present Advisory Routes: hopefully the next edition of the half million topographical chart will include these changes.

The following points should be noted:
1. Gliders may fly in the Scottish TMA in VMC.
2. Gliders may cross the airway in VMC.
3. A dispensation has been agreed in principle which will allow IMC flying in part of the TMA and in all of the new airway south of Perth between certain Flight Levels, but only on Sundays, and for a six month trial period ending on September 17, 1983. Details of this dispensation have been published in a separate NOTAM released before March 17.

Pilots intending to fly in the Portmoak area are strongly advised to consult the latest map and the two NOTAMs referred to above.

BGA and General News



BGA DIPLOMAS

Our congratulations to Colonel Ted Shephard and Bernard Thomas on being awarded BGA Diplomas.

Ted has been involved with gliding for the last 36yrs and an active member of Army gliding for 30yrs. He started gliding with the ATC in 1945 and has flown in competitions for 25yrs during which time he has been Inter-Services Champion and been placed in the top ten of the Standard Class Nationals on 12 occasions. He has a Gold C and two Diamonds.

As well as being closely involved with the Army Gliding Association, Ted was a member of the BGA Instructors' Committee and the Executive Committee from 1975 to 1977.

Bernard was a founder member of the Derby & Lancs GC and has held about every office of importance including CFI and chairman and is currently their treasurer.

He has a Gold C and a share in a K-21 which he still flies occasionally. With Basil Meads, BGA president, Bernard was instrumental in helping Doncaster start up and has also been very much involved with National and International competitions when such things were held at Camphill.

STRUCTURE OF THE BGA

The membership structure of the BGA is now made up of 81 full member clubs, three of whom have affiliated clubs as follows: Army Gliding Association with two clubs, RAF Gliding and Soaring Association with 11 clubs and the Royal Naval Gliding and Soaring Association with three clubs.

Operations. During the year ending September 30, 1982 (1981 figures in brackets), member clubs (civilian and combined services) flew a total of 153 419 (159 836) hours and 793 626 (786 642) kilometres cross-country from 404 091 (398 649) launches from club sites. Club owned gliders total 450 (425) and privately owned gliders 1143 (1205).

Certificates. Certificates were issued as follows: A endorsements 2118 (2003), B endorsements 290 (331), Bronze C 444 (459), Silver C 297 (261), Gold C 70 (57), Diamond goal 104 (79), Diamond height 40 (31) and Diamond distance 29 (16).

A certificates were applied for by 1281 (1253) holders of the ATC proficiency certificate.

ESCAPE FROM GLIDERS

The BGA Technical Committee has considered the implications of recent accidents in the UK as well as the results of assessments of certain types of tandem two-seaters of modern design and construction. They wish to draw the attention of all pilots to the need to examine their gliders and equipment to ensure that escape is not likely to be delayed, or impaired, through inadequate training or provision of facilities.

The following is a quotation from **Joint Airworthiness Requirements** (JAR 22 807) on "Design and requirements for sailplanes and powered sailplanes" —

Emergency exit

(a) The cockpit must be so designed that unimpeded and rapid escape in emergency situations during flight and on the ground is possible with the occupant wearing a parachute.

(b) The opening and where appropriate jettisoning of each canopy must not be impeded by the presence of the appropriate aerodynamic forces.

(c) The opening system must be designed for simple and easy operation. It must function rapidly and be designed so that it can be operated by each occupant strapped in his

(Continued on p74)

FROM THE SECRETARY's DESK

Barry Rolfe, BGA administrator

I believe that the most constructive news recently is the issue, after nearly twelve months of negotiation, of an insurance policy to cover all currently rated instructors against liabilities incurred whilst duty flying. The policy, taken out by the BGA, came into effect on January 1 and offers cover of up to £250 000 against any such claims which are not already covered under any other existing policy. We received an enthusiastic response to this idea when it was first floated in the pages of S&G last year, and I am pleased that the initial annual premium is modest enough to be digested by our current general budget without recourse to a special charge on clubs or instructors.

The Executive were warned in January, by one of the professional Met men who voluntarily give so much time and effort for our gliding competitions, that expensive new equipment would be needed in future to interpret the raw meteorological data required for accurate forecasting at Nationals or Regionals. Whilst recognising the problem we did not feel able to commit the Association to capital expenditure in this area nor competent to retain this sort of technical equipment in good order and get it to the right place at the right time. We hope that the larger clubs regularly running National-level competitions or the professional meteorologists involved will be prepared to purchase the necessary items and then recharge the competitors accordingly for the service.

More encouraging news on the Met front is that TVAM, the new commercial Breakfast TV company, have told us that their early morning weather bulletins will contain data of use to glider pilots. We hope this trend can be followed by other sections of the morning media and perhaps a few letters from listeners/viewers/readers with this suggestion might bear fruit?

In February the Executive homologated a new British National triangular distance record of 840km flown by Charles Varley in a Mosquito in Australia last year. We also decided to award BGA Diplomas for 1982 for "services to gliding" to Ted Shephard of the Army Gliding Association and Bernard Thomas of Derby & Lancs GC.

An application for membership from the Kent Motor Gliding and Soaring Centre was rejected by the Executive because the operational emphasis of the club appeared to be heavily weighted in favour of power over pure gliding. However, it was recognised that use of motor gliders, other than for training, may be on the increase and a working party was set up to review future membership principles with regard to motor gliding clubs.

We were sorry to receive the resignation of Gillian Bryce-Smith as our press officer but recognised the frustrations inherent after several years in this thankless task. The Executive expressed their appreciation of Gillian's efforts and invited willing volunteers to step forward in succession! It has been suggested that we appoint one person to liaise with each major newspaper and radio/TV station, but it was still felt that a central co-ordinator would be required. Publicity assumes even more importance as our membership continues to show a slight decline in numbers over the last couple of years — we have asked Bill Scull to head a working group to investigate this problem and to report back with any recommendations.

ROYAL AERO CLUB AWARDS FOR 1982

HRH Prince Andrew, president of the Royal Aero Club, presented the 1982 awards in which gliding features strongly (see the October issue, p224) at a reception at the RAF Museum in December. The Prince is photographed (top left) with George Lee, our three times World Open Class Champion, who was awarded the FAI's Lilienthal medal and the Britannia trophy; with Dick Stratton, BGA technical officer (top right), who was presented with a Silver medal and below with the 1981 British team who received the Prince of Wales cup. The line-up (from left to right) is George Lee, Andy Davis, Michael Carlton, Brian Spreckley and Bernard Fitchett.

seat and also from outside the cockpit.

(d) In order to enable the occupants to bale out under acceleration conditions, sufficiently strong cabin parts, or grab-handles, must be available and suitably located so that the occupants can lift themselves out of their seats and support themselves. These parts must be designed to an ultimate load of at least 200daH in the anticipated direction of force application.

Dick Stratton, *BGA Chief Technical Officer.*

TOWING BRACKET BOOM

C. P. Witter Ltd have now produced two million towing brackets. They reached the first million during the company's Silver Anniversary year in 1976.

OBITUARY

Wing Commander Rex Stocken, FRAeS

Among those who took part in the first British gliding competition in October 1922 was Rex Stocken, who died on December 31 at the age of 89 after a fantastically full life in aviation, having survived a dog-fight in the 1914-18 war with the German ace von Richthofen, who suddenly flew away having apparently run out of ammunition. Among many activities he joined the Central Flying School at its start, and the High Speed Flight that practised for the Schneider trophy.

He described his part in the Itford contest at a 40th anniversary reunion at the Kronfeld Club in 1963. On his first attempt he could not become airborne until the launching crew was increased to 13. As he was being launched, his rudder bar snapped in half, but he glided on to a landing in the valley. As he touched down, all the piano wire went "ping" and the wing broke loose and slid down in front of him; but he fixed it back in position before any official could inspect it. This flight earned him a distance prize.

On Stocken's next attempt he was about to be launched into a fierce wind when, in his own words, "A Rolls Royce drove up and out came a gorgeous creature exclaiming 'Rex, darling, how marvellous to see you again.' " But before all was ready once more for a launch, "a sudden gust of wind turned the glider right over on top of the lady."

A. E. SLATER

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	Name	Club	1982
142	C. Davison	Deeside	21.7

DIAMOND DISTANCE

No.	Name	Club	1982
1/211	C. Davison	Deeside	21.7

DIAMOND GOAL

No.	Name	Club	1982
2/1199	V. Mallon	Two Rivers	29.5
2/1200	G. S. Fox	Coventry	8.10
2/1201	E. E. F. Giles	Enstone	28.8

DIAMOND HEIGHT

No.	Name	Club	1982
3/563	Joanna Murray	Deeside	2.11
3/564	P. Butcher	Essex	28.9
3/565	A. E. Wathen	Booker	27.10
3/566	M. Taylor-Beasley	Bath & Wilts	27.10
3/567	J. N. Hayes	Yorkshire	20.11
3/568	M. T. E. Smith	Stratford	15.10
3/569	D. M. Abbey	Coventry	15.10
3/570	D. R. Harris	Coventry	15.10
3/571	P. Walker	Coventry	15.10
3/572	M. Coffee	Stratford	15.10

GOLD C COMPLETE

No.	Name	Club	1982
919	V. Mallon	Two Rivers	29.5
920	P. Shambrook	Clevelands	20.11
921	C. M. Cruse	London	20.11
922	M. E. Lee	Cranwell	2.1.83
923	G. Kelly	Stratford	15.10
924	P. J. Walker	Coventry	15.10
925	M. E. Edwards	615 GS	29.1.79

GOLD C DISTANCE

Name	Club	1982
V. Mallon	Two Rivers	29.5
G. S. Fox	Coventry	8.10
E. E. F. Giles	Enstone	28.8

GOLD C HEIGHT

Name	Club	1982
P. Shambrook	Clevelands	20.11
M. Taylor-Beasley	Bath & Wilts	27.10
A. R. Fish	Borders	21.20
C. M. Cruse	London	20.11
J. N. Hayes	Yorkshire	20.11
A. M. B. Smart	Clevelands	5.12
M. E. Lee	Cranwell	2.1.83
M. Wilson	Cranwell	31.12
M. T. E. Smith	Stratford	15.10
G. Kelly	Stratford	15.10
D. M. Abbey	Coventry	15.10
D. R. Harris	Coventry	15.10
P. J. Walker	Coventry	15.10
Diana King	Midland	14.6
M. Coffee	Stratford	15.10
P. F. Gaunt	Stratford	25.9
M. E. Edwards	615 GS	29.1.79

SILVER C

No.	Name	Club	1982
6365	D. T. Kember	Kent	10.11
6366	G. S. Fox	Coventry	6.10
6367	D. C. Oddy	618 GS	4.10
6368	R. M. James	Two Rivers	1.11
6369	R. C. Martin	Lasham	24.11
6370	Alexandra Coppen	Surrey & Hants	23.6
6371	C. J. Mayhew	Lasham	19.7
6372	M. St Jean	Kestrel	17.7
6373	P. F. Gaunt	Stratford	25.9

PR course for glider pilots. The Gliding Commission of the German Aero Club recently organised a PR Seminar designed to teach glider pilots how to present information to the press and thus achieve maximum publicity for the sport. Course participants were taken to a newspaper office, a radio station and a press agency to give them an insight into how news is handled. They also listened to lectures and did some practical exercises.

BGA ACCIDENT SUMMARY — Compiled by ARTHUR DOUGHTY, Chairman, BGA Safety Panel

Ref. No.	Glider Type	BGA No	Damage	Date Time	Place	Pilot/Crew Age	Pilot/Crew Injury	Pilot/Crew P/Hrs	SUMMARY
167	SD3-15V	2020	M	28.08.82 ?	Blindhurst Fell Lancashire	61	N	334	Hill soaring in weak lift with thermals, the pilot had difficulty in maintaining position in lift and avoiding conflict with three other gliders. Explored further north where gradient is less steep and lost height in sink. Turned away from hill but contacted ground breaking wheel on rock and stopping on outcrop.

We now start the Accident Summary for the 1983 period

Ref. No.	Glider Type	BGA No	Damage	Date Time	Place	Pilot/Crew Age	Pilot/Crew Injury	Pilot/Crew P/Hrs	SUMMARY
1	K-6CR	2374	M	03.10.82 ?	Portmoak	52	N	6	First flight on type with 5kt crosswind. At 20-30ft after slow take-off the winch cable parachute deployed. Pilot released, landed ahead and ran into deployed parachute. Stbd wingtip caught uneven ground at side of runway inducing a ground loop.
2	Rollason D62 Condor	G-AZAV	M	03.10.82 10.30	Rufforth	20	N	109 Pwr	After briefing another member on hand swinging to start and starting up, pilot taxied forward. He forgot the fire tender was still parked immediately ahead and due to small stature failed to observe it on moving off. Ran into it damaging propeller, engine fairing and leading edge.
3	K-7	1959	M	03.10.82 15.00	Templeton	18	M	6	Pilot extended circuit too far downwind for strong wind conditions and approach was through downdraught where ground falls away. Airbrakes were used and pilot claims he closed them when wind gradient eroded speed and increased sink. Undershot landing area. Witnesses state airbrakes partially open.
4	K-2	2324	N	23.10.82 13.09	Falgunzeon P2	31 21	N N	150 60	Yaw developed during start of winch launch in light crosswind and glider ran off narrow strip into rough ground. P1 decided to abort launch and released but glider continued to take-off and climb. At top of launch cable remained attached although release was pulled. Winch driver operated guillotine but it did not work so he severed the cable with an axe. Relieved of tension the cable fell away. Subsequent examination showed there was a knot in the shock rope about 15in from the rings. Witness marks, paint deposits and marks at the knot, indicated it had jammed behind the middle skid mounting rubber.
5	K-2B	2662	S	31.10.82 15.00	Winwick	49	N	2	Pilot approaching with airbrakes open, misjudged height and levelled off too high at 6-7ft. Failed to recognise situation and glider stalled in dropping onto nose skid with airbrakes still open.
6	K-6E Skylark 3G	1496 1016	W/O S	20.11.82 14.45	Blindhurst Fell Chipping Lancs	32 36	F N	31 31	Skylark flying south at 1300ft and 100ft below cloud. K-6E appeared to descend in front flying left to right and banking away at 45°. Skylark attempted to avoid collision by diving but stbd wing struck rear of K-6E which crashed on fell. Skylark returned to site with 10ft of wing missing.
7	Bocian 1E	2013	S	24.11.82 14.20	Husbands Bosworth	27	N	1½	Circuit flown in strong wind 20-25kt with 60° crosswind. Approached at 60kt with full airbrakes then shut brakes at 20ft. Continued to touchdown then ballooned 12-15ft and overcorrected also re-opening airbrakes. Struck ground on nose skid dropping back onto tailskid. Total launches 39, 7 as P1.
8	K-7	1864	N	17.10.82 12.00	Farnborough P2	36 ?	N N	970 ?	The glider was well pickeled because of strong wind and included a tyre placed on top of the tailplane. When prepared for flight the tyre on the tailplane was not removed and was not noticed by the crew or ground handlers. The glider was launched, flew a circuit without adverse handling and the tyre was found on the tailplane after landing.
9	Beagle A61 Terrier	G2ASAN	S	20.11.82 12.10	Crowland	46	N	227	Opened throttle and relaxed back pressure on control column while wheels were in soft ground. Nosed over.
10	Skylark 4	1089	M	07.11.82 11.45	Challock	52	N	70	Rain on canopy obscured pilot's vision during approach and the roundout was commenced too late. Glider struck the ground on front of nose skid, bounced about 10ft then landed again. Airbrakes observed to be open throughout.
11	K-7	1729	M	04.12.82 15.20	Doncaster P2	44 21	N N	480 6 P2	Pupil flying and after rotating into climb signalled to winch driver that launch was too fast. The weak link then broke. Pilot recovered and landed ahead. After landing it was found the upper and lower surface of the port elevator were holed, consistent with having been struck by the weak link and rings.
12	K-13	?	M	27.11.82 11.30	Long Marston P2	41 41	N N	140 ?	P2 was practising simulated field landing on little used part of airfield. An undershoot situation developed which P1 allowed to continue to see if P2 corrected by closing airbrakes. P2 did not correct and P1 took over but too late to avoid stbd wing T/E striking a fence post which unfortunately was 16in higher than the other posts.

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

Please send all contributions to the editorial office at 281 Queen Edith's Way, Cambridge CB1 4NH and not the BGA office.

INTERNATIONAL GLIDING RECORDS (Correct as at 21.2.83)

SINGLE-SEATERS

Height Gain	12 894m	P. F. Bikle, USA	SGS 1-23E	25.2.1961
Absolute Altitude	14 102m	P. F. Bikle, USA	SGS 1-23E	25.2.1961
Straight Distance	1460.8km	H-W. Grosse, W. Germany	ASW-12	25.4.1972
Goal Distance	1254.26km	B. L. Drake, D. N. Speight, S. H. Georgeson, New Zealand	Nimbus 2	14.1.1978
Goal & Return Distance	1634.7km	K. H. Striedieck, USA	ASW-17	9.5.1977
Triangular Distance	1306.85km	H-W. Grosse, W. Germany (in Australia)	ASW-17	4.1.1981
100km Triangle*	195.18km/h	I. Renner, Australia	Nimbus 3	14.12.1982
300km Triangle	158.67km/h	H-W. Grosse, W. Germany (in Australia)	ASW-17	24.12.1980
500km Triangle	151.28km/h	G. Eckle, W. Germany (in South Africa)	ASW-17	10.12.1979
750km Triangle	143.63km/h	H-W. Grosse, W. Germany (in Australia)	ASW-17	6.1.1982
1000km Triangle	145.32km/h	H-W. Grosse, W. Germany (in Australia)	ASW-17	3.1.1979
1250km Triangle	133.24km/h	H-W. Grosse, W. Germany (in Australia)	ASW-17	9.12.1980

MULTI-SEATERS

Height Gain	11 680m	S. Josefczak and J. Tarczon, Poland	Bocian	5.11.1966
Absolute Altitude	13 489m	L. Edgar and H. Klieforth, USA	Pratt Read	19.3.1952
Straight Distance	993.76km	S. H. Georgeson and Helen Georgeson, New Zealand	Janus C	31.10.1982
Goal Distance	993.76km	S. H. Georgeson and Helen Georgeson, New Zealand	Janus C	31.10.1982
Goal & Return Distance	1000.88km	T. L. Knauff and R. Gannon, USA	Twin-Astir	28.9.1981
Triangular Distance	1112.62km	H-W. Grosse and H. Kohlmeyer, W. Germany (in Australia)	SB-10	28.12.1979
100km Triangle	158.30km/h	E. Müller and O. Schäffner, W. Germany (in South Africa)	MÜ 2	10.12.1981
300km Triangle	140.48km/h	E. Müller and O. Schäffner, W. Germany (in Australia)	Janus	30.11.1979
500km Triangle	146.69km/h	E. Müller and K. Senne, W. Germany (in South Africa)	MÜ 2	13.12.1981
750km Triangle	131.84km/h	H-W. Grosse and H. Kohlmeyer, W. Germany (in Australia)	SB-10	14.1.1980
1000km Triangle	129.54km/h	H-W. Grosse and H. Kohlmeyer, W. Germany (in Australia)	SB-10	21.12.1979

SINGLE-SEATERS (WOMEN)

Height Gain	9119m	Anne Burns, Gt Britain (in South Africa)	Skylark 3B	13.1.1961
Absolute Altitude	12 637m	Sabrina Jackintell, USA	Astir CS	14.2.1979
Straight Distance	949.7km	Karla Karel, Gt Britain (in Australia)	LS-3	20.1.1980
Goal Distance	731.6km	Tamara Zaiganova, USSR	A-15	29.7.1966
Goal & Return Distance	1127.68km	Doris Grove, USA	Nimbus 2	28.9.1981
Triangular Distance	814.01km	Karla Karel, Gt Britain (in Australia)	LS-3	9.1.1980
100km Triangle	139.45km/h	Susan Martin, Australia	LS-3	2.2.1979
300km Triangle	129.52km/h	Susan Martin, Australia	Ventus	8.2.1981
500km Triangle	133.14km/h	Susan Martin, Australia	LS-3	29.1.1979
750km Triangle	95.42km/h	Karla Karel, Gt Britain (in Australia)	LS-3	24.1.1979

MULTI-SEATERS (WOMEN)

Height Gain	8430m	Adela Dankowska and M. Mateliska, Poland	Bocian	17.10.1967
Absolute Altitude	10 809m	Mary Nurr and H. Duncan, USA	SGS 2-32	5.3.1975
Straight Distance	864.85km	Tatiana Pavlova and L. Filomechkina, USSR	Blanik	3.6.1967
Goal Distance	864.86km	Isabella Gorokhova and Z. Koslova, USSR	Blanik	3.6.1967
Goal & Return Distance	617.43km	Pelagia Majewska and V. Malcher, Poland	Halny	14.5.1980
100km Triangle	126.28km/h	Adela Dankowska and E. Grzelak, Poland	Halny	1.8.1978
300km Triangle	97.74km/h	Adeli Orsi and F. Bellengeri, Italy	Calif A-21	18.8.1974
500km Triangle*	93.7km/h	Adela Dankowska and S. Piatek, Poland	Halny	4.5.1980

BRITISH NATIONAL RECORDS (Correct as at 21.2.1983)

SINGLE-SEATERS

Height Gain	10 065m	D. Benton	Nimbus 2	18.4.1980
Absolute Altitude	11 500m	H. C. N. Goodhart (in USA)	SGS 1-23	12.5.1955
Straight Distance	949.7km	Karla Karel (in Australia)	LS-3	20.1.1980
Goal Distance	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
Goal & Return Distance	1000.88km	W. E. Malpas (in USA)	Mini-Nimbus	28.9.1981
Triangular Distance	840.2km	C. N. Varley (in Australia)	Mosquito	23.1.1982
300km Goal and Return	141.3km/h	E. Pearson (in Rhodesia)	Nimbus 2	25.10.1975
500km Goal and Return	137.63km/h	B. J. G. Pearson (in South Africa)	Nimbus 2	18.12.1979
100km Triangle	143.3km/h	E. P. Hodge (in Rhodesia)	Std Cirrus	30.10.1976
300km Triangle	146.8km/h	E. Pearson (in South Africa)	Nimbus 2	30.11.1976
500km Triangle	141.3km/h	B. J. G. Pearson (in South Africa)	ASW-20	28.12.1982
750km Triangle	109.8km/h	M. R. Carlton (in South Africa)	Kestrel 19	5.1.1975

MULTI-SEATERS

Height Gain	9836m	T. J. Wills and B. Iggulden (in New Zealand)	Twin Astir	13.1.1982
Absolute Height	10 607m	T. J. Wills and B. Iggulden (in New Zealand)	Twin Astir	13.1.1982
Straight Distance	472.43km	M. R. Carlton and M. French (in South Africa)	Calif A-21	18.12.1979
Goal Distance	472.43km	M. R. Carlton and M. French (in South Africa)	Calif A-21	18.12.1979
Goal & Return Distance	692.02km	M. R. Carlton and C. Greaves (in South Africa)	Calif A-21	23.12.1978
Triangular Distance	762.72km	C. M. Greaves and C. Simpson (in South Africa)	Janus	28.12.1977
300km Goal and Return	105.44km/h	M. R. Carlton and C. Greaves (in South Africa)	Calif A-21	19.12.1978
500km Goal and Return	113.08km/h	M. R. Carlton and C. Greaves (in South Africa)	Calif A-21	23.12.1978
100km Triangle	137.22km/h	M. R. Carlton and Leonie Lawson (in South Africa)	Calif A-21	27.12.1978
300km Triangle	112.59km/h	M. R. Carlton and C. Greaves (in South Africa)	Calif A-21	17.12.1979
500km Triangle	108km/h	M. R. Carlton and C. Greaves (in South Africa)	Calif A-21	21.12.1978
750km Triangle	104.01km/h	C. M. Greaves and C. Simpson (in South Africa)	Janus	28.12.1977

SINGLE-SEATERS (WOMEN)

Height Gain	9120m	Anne Burns (in South Africa)	Skylark 3B	13.1.1961
Absolute Altitude	10 550m	Anne Burns (in South Africa)	Skylark 3B	13.1.1961
Straight Distance	949.7km	Karla Karel (in Australia)	LS-3	20.1.1980
Goal Distance	528km	Ann Welch (in Poland)	Jaskolka	20.6.1961
Goal & Return Distance	545km	Anne Burns (in South Africa)	Std Austria	6.1.1966
Triangular Distance	814.01km	Karla Karel (in Australia)	LS-3	9.1.1980
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	125.87km/h	Karla Karel (in Australia)	LS-3	12.2.1980
500km Triangle	120.69km/h	Karla Karel (in Australia)	LS-3	20.2.1980
750km Triangle	95.42km/h	Karla Karel (in Australia)	LS-3	24.1.1979

UNITED KINGDOM RECORDS (Correct as at 21.2.1983)

SINGLE-SEATERS

Height Gain	10 065m	D. Benton	Nimbus 2	18.4.1980
Absolute Altitude	11 031m	D. Benton	Nimbus 2	18.4.1980
Straight Distance	718km	T. J. Wills	Std Libelle	1.8.1976
Goal Distance	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
Goal & Return Distance	801.3km	C. Garton	Kestrel 19	22.7.1976
Triangular Distance	606km	C. Garton	Kestrel 19	10.6.1976
300km Goal & Return	106.4km/h	D. G. Lee	Kestrel 19	17.8.1975
500km Goal & Return	89.7km/h	C. Garton	Kestrel 19	22.7.1976
100km Triangle	119.7km/h	T. J. Wills	LS-4	18.4.1981
200km Triangle	97km/h	R. Jones	Nimbus 2	30.6.1975
300km Triangle	105.45km/h	R. Jones	Nimbus 2	29.5.1974
400km Triangle	90km/h	D. G. Lee	Kestrel 19	19.5.1974
500km Triangle	106.9km/h	R. Jones	Nimbus 2	31.5.1975
600km Triangle	88.8km/h	C. Garton	Kestrel 19	10.6.1976
100km Goal	128.4km/h	K. A. Harrison	SHK	13.4.1969
200km Goal	114.3km/h	I. W. Strachan	Skylark 4	2.6.1963
300km Goal	132.8km/h	A. H. Warminger	Kestrel 19	24.4.1976
400km Goal	73.8km/h	T. J. Wills	Std Libelle	7.6.1976
500km Goal	90.7km/h	H. C. N. Goodhart	Skylark 3	10.5.1959

SINGLE-SEATERS (WOMEN)

Height Gain	7833m	Alison Jordan	Astir CS	8.10.1978
Absolute Altitude	8701m	Alison Jordan	Astir CS	8.10.1978
Straight Distance	454km	Anne Burns	Skylark 3B	10.5.1959
Goal Distance	309km	Anne Burns	Skylark 3B	12.4.1958
Goal & Return Distance	334.2km	Ruth Housden	Libelle	29.5.1982
300km Goal & Return	60km/h	Anne Burns	Nimbus 2	25.7.1975
100km Triangle	80km/h	Anne Burns	Cirrus	14.6.1970
200km Triangle	69.3km/h	Anne Burns	Std Austria	22.8.1964
300km Triangle	76.8km/h	Jane Randle	Kestrel 19	18.8.1976
400km Triangle	60.6km/h	Anne Burns	SHK	5.8.1967
500km Triangle	76.1km/h	Anne Burns	Nimbus 2	31.5.1975
100km Goal	83km/h	Rika Harwood	Olympia 2B	27.5.1957
200km Goal	85.5km/h	Anne Burns	Olympia 419	2.6.1963
300km Goal	63.9km/h	Anne Burns	Skylark 3B	12.4.1958

MULTI-SEATERS

Height Gain	6740m	J. R. Monteith (USA) and M. Mahon	Capstan	2.11.1972
Absolute Altitude	7650m	J. R. Monteith (USA) and M. Mahon	Capstan	2.11.1972
Straight Distance	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
Goal Distance	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
Goal & Return Distance	407.3km	J. S. Williamson and C. Buchanan	Twin Astir	24.8.1980
300km Goal & Return	81.91km/h	J. R. Jeffries and N. Foster	Calif A-21	17.8.1975
100km Triangle	83.5km/h	J. R. Jeffries and G. Love	Calif A-21	22.4.1974
200km Triangle	72.8km/h	J. R. Jeffries and A. Kirtly	Calif A-21	5.8.1974
300km Triangle	85.87km/h	B. Fitchett and A. Miller	Janus	9.5.1979
400km Triangle	68.4km/h	J. R. Jeffries and G. Love	Calif A-21	7.5.1974
500km Triangle	88.4km/h	J. R. Jeffries and Gillian Case	Calif A-21	31.5.1975
100km Goal	96.5km/h	D. B. James and K. O'Riley	Gull 2	27.5.1957
200km Goal	77.8km/h	B. J. Willson and H. Daniels	Blanik	11.7.1970
300km Goal	69.2km/h	W. A. H. Kahn and J. Williamson	Eagle	12.4.1958

RESTRICTED CLASS

Straight Distance	718km	T. J. Wills	Std Libelle	1.8.1976
100km Triangle	119.7km/h	T. J. Wills	LS-4	18.4.1981
200km Triangle	92.2km/h	A. J. Stone	Std Cirrus	16.8.1976
400km Triangle	91.7km/h	S. J. Redman	Std Cirrus	31.5.1975
300km Goal	131.1km/h	T. J. Wills	Std Libelle	24.4.1976
400km Goal	73.8km/h	T. J. Wills	Std Libelle	7.6.1976

15m CLASS

200km Triangle	93.49km/h	B. T. Spreckley	ASW-20	14.7.1979
300km Triangle	99.46km/h	D. S. Watt	ASW-20FL	19.5.1980

UK 750km DIPLOMA

1. Goal and Return	801.3km	C. Garton	Kestrel 19	22.7.1976
2. Distance	761km	D. S. Watt	ASW-20L	6.5.1980

MOTOR GLIDERS (†BRITISH NATIONAL RECORD ONLY)

SINGLE-SEATERS

Straight Distance*†	652.7km	B. J. Willson (in Australia)	PIK-20E	10.1.1983
Goal Distance*†	414.8km	B. J. Willson (in Australia)	PIK-20E	11.1.1983
100km Triangle	57.3km/h	I. W. Strachan	SF-27M	13.6.1971
200km Triangle	48.2km/h	I. W. Strachan	SF-27M	23.8.1976
500km Triangle†	71.75km/h	B. J. Willson (in Finland)	PIK-20E	22.5.1980
100km Goal	85.7km/h	I. W. Strachan	SF-27M	16.7.1971

MULTI-SEATER (†Also BRITISH NATIONAL RECORD)

Height Gain†	4355m	R. I. Lloyd and J. Fox	SF-28A	22.10.1982
100km Triangle†	35.6km/h	P. T. Ross and H. Daniels	SF-28A	27.6.1976
100km Goal	76.2km/h	P. T. Ross and K. Winfield	SF-28A	22.8.1976
200km Goal	66.3km/h	P. T. Ross and P. Fletcher	SF-28A	18.7.1976

INTERNATIONAL MOTOR GLIDERS (Correct as at 21.2.1983)

SINGLE-SEATERS

Height Gain	8923m	G. Cichon, W. Germany	Nimbus 2M	27.5.1979
Absolute Altitude	10 408m	G. Cichon, W. Germany	Nimbus 2M	27.5.1979
Straight Distance*	652.7km	B. J. Willson, Gt Britain (in Australia)	PIK-20E	10.1.1983
Goal Distance*	530km	F. Andersen, Denmark (in Australia)	?	20.1.1983
Goal and Return Distance	1008.89km	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	7.1.1981
Triangular Distance	1013.21km	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	31.12.1979
100km Triangle	152.16km/h	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	29.12.1977
300km Triangle*	141km/h	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	8.1.1983
500km Triangle	127.51km/h	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	24.12.1980
750km Triangle	120.21km/h	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	29.12.1978
1000km Triangle	109.94km/h	F. Rueb, W. Germany (in South Africa)	Nimbus 2M	31.12.1979

MULTI-SEATERS

Height Gain	5044m	M. Niebler and G. Kraus, W. Germany	G-109	26.9.1982
Absolute Altitude*	6650m	K. Doser and J. Prasser, W. Germany	Dimona	8.11.1982
Straight Distance	952.53km	W. Binder and K. Heimann, W. Germany	Janus M	16.5.1980
Goal Distance	646.42km	G. Jacobs and G. Hüttel, W. Germany	SF-25E	28.4.1976
Goal & Return Distance	617.95km	L. de Preter (Belgium) and D. Sohn (W. Germany) (in South Africa)	Janus CM	29.12.1981
Triangluar Distance	756km	W. Collee and K. Pummer, W. Germany (in South Africa)	Janus M	31.12.1979
100km Triangle	128km/h	W. Collee and E. Doerr, W. Germany (in South Africa)	Janus M	15.1.1980
300km Triangle	129.72km/h	O. Wegscheider and A. Ascher, W. Germany (in South Africa)	Janus CM	12.12.1980
500km Triangle	109.96km/h	O. Wegscheider and K. Zoulek, W. Germany (in South Africa)	Janus CM	5.12.1980
750km Triangle	98.97km/h	W. Collee and K. Pummer, W. Germany (in South Africa)	Janus M	31.12.1979

* = Subject to homologation

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

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or 0865 890517 (outside office hours). Access & Barclaycard accepted with pleasure.

Peter Treadaway of the Cambridge University GC discovered this intriguing article by W. W. Wakefield, at the time director of the Air Training Corps, in the April 1943 issue of the *Air Training Corps Gazette,* ***which we reprint by kind permission of the AOC Air Cadets.***

Last year, in face of many difficulties, gliding was started in the ATC. Thanks to the keenness shown by officers, instructors and cadets, good progress was made, but if gliding is to play a major part in the activities of the Corps opportunity must be taken to use every facility that exists.

Last autumn I considered that there was a gap which needed filling. There were speed-boats available, and good stretches of water surrounded by hills which ought to provide good soaring conditions. Here, then, was a field for exploring. Accordingly, I arranged for a Falcon I single-seater glider to be sent to Windermere for modification by Major Cooper Pattinson, DFC., an old flying-boat pilot. He added two wingtip floats, cut off the skid, put a ply hull with two steps on to the fuselage and made the fuselage watertight. The quick-release attachment was altered so that the pull came in the correct position for towing off water, and the airspeed indicator was placed into a position on the wing where the water would not splash into it.

Wireless or loudspeaker

On my first flight there was a steady northerly wind of 12 to 15 miles an hour blowing down Lake Windermere. About 300ft of cable was let out from the speed-boat. Signalling was done by the hand. Wireless or some form of loudspeaker between glider and speed-boat is advisable. It is better that oral rather than visual means of inter-communication should be used. Voice transmitted by loud-speaker and compressed-air booster might be a suitable method.

On the first take-off I tried to pull the glider off the water too quickly, and instead of getting it up on to the step I got it right off the water, and as a result porpoised a bit. After taking the air, however, I quickly gained height, quick-released and made a satisfactory landing.

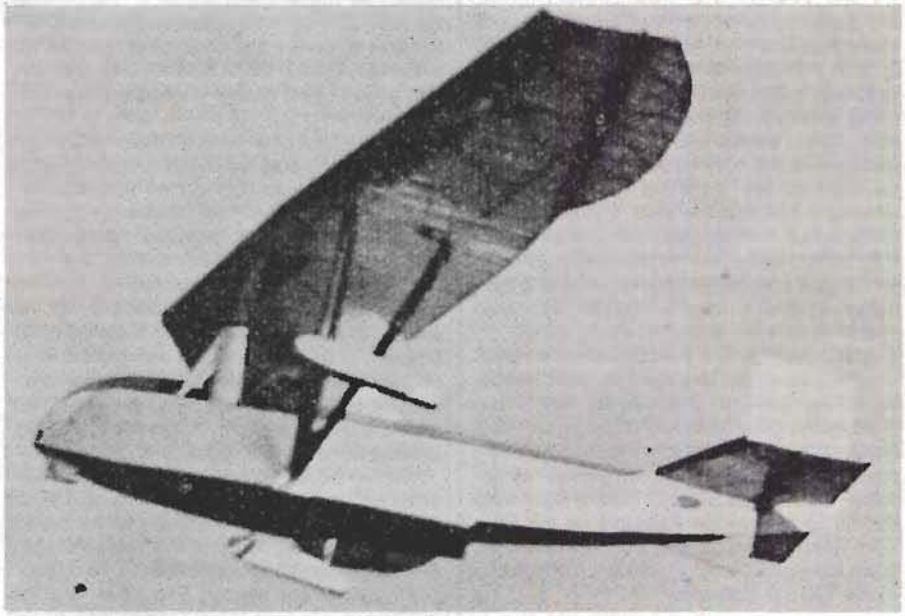
On the second take-off I got the glider up on to the step and it took off beautifully. Here again I only went up to about 200 or 300ft, and then quick-released and landed in the roughest water I could find in the wash of the speed-boat. The glider behaved perfectly on alighting.

On the next occasion there was very little wind, with the result that the weight of the sagging cable tended to pull the glider underneath the water, and a series of waves came over the cockpit, giving me a good ducking. After a few seconds of this I quick-released before I was able to become airborne or, as seemed possible, being pulled to the bottom of the lake.

On the second run the cable was shortened to about 200ft. This time I got off comfortably, and climbed to about 700 or 800ft before quick-releasing over Bowness Bay, where I tried without much success to find an up-current. The glider again landed perfectly.

On the third run, again with longer cable, I got another ducking, and had to quick-release again without becoming airborne.

For the fourth run the cable was shortened once more and I got comfortably into the air. We ran down the lake, heading into what little wind there was, and the cable was let out to its full extent, so that I was soon flying at 1200ft. I was towed several miles down to the end of the lake at this height, where I quick-released. I made a hill which stuck out into the lake in another endeavour to do some soaring. But the wind was up and down the lake and was too light to provide enough up-current for me to remain long in the air. I was able to make another satisfactory landing.



The modified Falcon

The experience of these water-gliding tests shows that there is a lot of fun to be had out of gliding from water. I particularly look to two-seater gliders to provide the best form of instruction for ATC cadets. Good up-currents should be obtained from the hills which invariably surround lakes or rivers. Valuable training could be given to Sea Cadets in seamanship in the speed-boats, while ATC cadets receive air experience in the gliders.

Experiments and development work are continuing with other types of gliders. The details of the technical work done by Major Pattinson will be given to the Corps as a whole, so that others desiring to follow suit will have plans and specifications for making the necessary modifications to existing land gliders.

Your Letters

NOSTALGIA DEPARTMENT

Dear Editor,

The photograph in the last issue, p25, of the aerotow meeting at Lindsay Everard's private airfield at Ratcliffe, Leicester reminded me of an interesting flight. My diary at Easter Bank Holiday 1938 says: "Still no gliding for me but Dr Grant took me in his Klemm to Leicester to see aerotowing."

I was attending the Imperial College GC camp at Dunstable and could fly only when the wind was very light because my longest flight to date was 45sec. The pundits had all gone to Leicester with their gliders and at Dunstable we had a few primaries and a visitor with a Klemm monoplane, a tandem two-seater light aeroplane. To my astonishment the pilot asked me at breakfast if I would like a trip to Leicester to see the gliding. Would I not!

There was some distrust between glider and aeroplane pilots at that time but I was impressed when he suggested that he would take-off and hand over so that I could fly to Leicester. I had flown in light aeroplanes but never handled the controls, but then I **had** done 45sec on my own! Over Dunstable he waved his arms, handed over and pointed NW up the A5. We managed reasonably well although the Klemm kept trying to turn towards Luton. Eventually he took over and we reached Leicester. He said cautiously that he thought I had more experience and it then transpired that a dreadful mistake had been made.

All the week Ken Wilkinson had been chatting this pilot up and extracted the promise of a trip to Leicester. I did look a bit like Ken (Philip Wills always greeted me with "Hullo Ken") and Dr Grant's mistake was explicable. His surprise was magnified by Ken's gliding reputation — he had his Silver C from a flight from Dunstable to Croydon ("straight up the Edgware Road. You can't miss it"). He would have flown the Klemm well. Poor Ken, lucky me.
ALAN YATES, **London.**

A WRONG DECISION?

Dear Editor,

I think that the decision to send four pilots instead of a possible six to the World Championships at Hobbs was totally wrong and absolutely incomprehensible.
DAVE WATT, **Booker.**

Mike Pope, British team manager, replies: I would love to have sent a team of six pilots to Hobbs but unfortunately we do not have the available funds. A couple of donations of, say, £5000 from philanthropists such as yourself, Dave, would have made it quite possible, but as it is we are going to be hard pressed to pay for a fully equipped team of four.

COMPETITION NUMBERS

Dear Editor,

The BGA Executive chose to ignore the straw vote taken at the last AGM which clearly showed a strong feeling against raising the registration fee for competition numbers from £3 to £10. So be it. We elect them and must abide by their decisions.

Yet I wonder whether they were right? Numbers on gliders are not only used for start and finish lines, but also by all pilots when flying as it is comforting to know with whom you are circling in a thermal and, sometimes, to be able to report or deny any lapses in good airmanship which might result in a severe penalty for the pilot or even our sport.

Some 1000 numbers are in use and less than 500 gliders are flown in contests each year. If the Executive feel that more numbers should be made available, let it recommend the RAFGSA scheme whereby a club's training fleet is given a site code letter followed by a number. Thus D for Dunstable, L for Lasham and so on. That would release quite a few numbers.

The £10 impost will ensure that many numbers will not be paid for and thus duplicated on gliders. This would be the start of mild anarchy. Once any BGA "law" is seen to be bad law and is therefore ignored rather than changed, which one will be next?

Our freedoms are threatened by unwarranted and unjustifiable regulations on all sides. It is a time when our self-discipline must be seen to be of the highest order to prove to the faceless encroachers that we are responsible users of airspace and land. Any relaxation or revolt on the part of our members will play into the hands of our detractors.

We were once threatened with State registered glider letters — visualise the outcome of two gliders bearing the same number being involved in alleged near-miss or airspace infringements. **They** would have a field day!

Please — our elected Executive — think again, but this time leave Competition pilots' emotion out of your discussions.
WALTER KAHN, **Long Sutton, Hants.**

Tom Zealley, BGA chairman, replies: Identification of gliders by number or letter has been a contentious issue for a long time. In the early days, and maybe still, there was strong resistance to any requirement that we should carry registration letters or numbers at all. More recently with the filling up of the original competition number list a BGA working group had the greatest difficulty in producing a scheme which reconciled all the conflicting interests of different members of the movement. Many involved in the arduous job of competition startline observation complained that the triple letter system made their job almost impossible. Some have said that we should never have allowed the numbers to continue and that the triple letters should be made compulsory for all. There is resistance to making it compulsory to have on the glider only those letters or numbers which are properly registered with the BGA. Whatever is decided there are bound to be many who are dissatisfied. As Wally says, the movement elects the Executive Committee. The range of conflicting views were well reflected within this body. What was finally decided is the outcome of the democratic process.

MORE ON COMPETITION NUMBERS

Dear Editor,

The BGA Executive are to be congratulated on raising the competition number fee to £10. Rather than using the large sum thus generated for general use, let them sponsor a time recording camera which can be manufactured in quantity and then hired out to competition pilots for (say) £5 per contest.

The ongoing resultant sum can then be used to buy blazers and trousers for each successive British team, pay all expenses for squad members and their friends to practise in foreign countries full-time and buy lots of lovely blazer badges bearing the message "I nearly made the British team once".

That will sate the elitists and let the rest of us get on with our gliding in peace.
IAN MICHAEL SICK *(BRONZE C),*
Much Binding, Berks.

ANGRY AND FRUSTRATED

Dear Editor,

We are three post-solo pilots looking to improve our flying experience and enjoy the brotherhood of gliding. To this end we have taken to visiting several different gliding sites and so are used to many problems that can occur. However the experiences of today, December 5, have forced us to write, not as a case of sour grapes but to enlighten the club to how outsiders see them. We were told of the excellent ridge soaring to be had at the Derby and Lancs Gliding Club at Camphill by a club member, and invited to come and try it for ourselves.

We set off early on the 130 mile trip to the club, arriving at about 9.00am. We signed on the flying list and quickly got involved in the work load of the club. There were three two-seater aircraft, a K-13 and two K-7s. We checked on the flying list and we were 6-8th for a two-seater check flight. It was a super day with the slope working well and wave evident all around. We worked on, checking the list and as the day went on we started to realise we might not fly. We certainly never expect to fly everywhere we go but on investigation

we found out why. There was no time limit on flights and two-seaters were being used for over two hour solo flights. At 3.30pm the wind dropped to nothing and it started to get dark, so by the time we left at 4.00pm flying had stopped. After the effort we put into the day we left very angry and frustrated that no one bothered to explain why they ran such a selfish system. We look forward to receiving an answer.

D. I. SHELLEY, S. BROWN, M. FORBES, **Bromsgrove, Worcs.**

David Salmon, chairman of the Derby & Lancs GC, replies: I am indeed sorry that Messrs Shelley, Brown and Forbes were so disappointed on their visit to Camphill, but as usual in these matters there are two sides and if they had asked a few questions they might have understood the situation better. The club K-13 landed out on its first (wave) flight of the day and did not fly again until mid-afternoon, whilst one of the K-7s referred to as a two-seater doing extended flights was in fact privately owned. The club has two K-7s, one of which was u/s at the time, and the other, being a replacement for a K-8, is used as a matter of club policy as a single-seater whenever possible.

We do welcome visitors to Camphill, as I am sure many pilots will confirm, but it is extremely difficult, especially on short winter days, to fit in visitors for check flights when they have not made prior arrangements. I am sure if our friends come again and perhaps give us a little notice we will do our best to let them fly.

TIME TO ADD "TAIL DOLLY"?

Dear Editor,

With the increase in gliders with flaps we have added "flaps" to our pre-flight checks, but now there are considerably more sailplanes with a detachable tail dolly surely it is time to add "tail dolly"?

A tail dolly can weigh up to 4 or 5kg and if left attached will undoubtedly effect the handling of the glider, possibly to a degree where it would be difficult to recover from a spin. Do we need an accident before we act?

JOHN MARRIOTT, **RAF Coningsby, Lincs.**

A METER UP

Dear Editor,

As most of your readers know there is nothing worse than waiting on the ground with your parachute on when it is your turn to fly and not a glider in sight. Why? Because a pilot didn't bother to note what time he took-off, or ask how long he should stay up for, or maybe he switched off his radio and was too selfish to land. When he does eventually land this type of chap usually comes up with some technical excuse such as "Sorry chaps, my watch was twenty minutes slow."

This season I hope to finally bring an end to all of this by installing in all our club gliders "Pay as you Soar Meters".

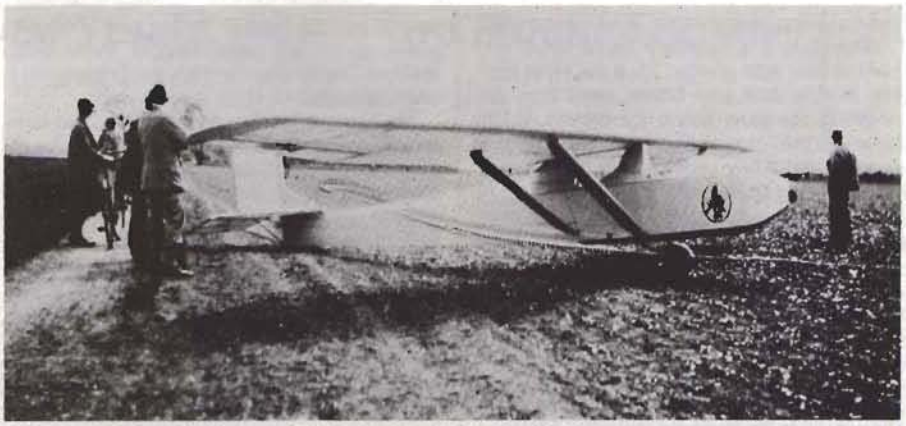
Yes folks, it is the latest thing from the States and can be adapted for any glider. Here's how it works. At the start of the day the duty instructor sets the soaring time on the meters, eg one hour, then just before the pilot takes-off he has to pop 10p into the meter (this allows the release box to be opened) and away we go.

During the rest of the flight as long as he keeps feeding the meter with coins he has nothing to worry about, but if he does run out of change the meter cuts in and automatically pops open the airbrakes and down he comes — good system, eh!

Phase II is better! As our unsuspecting pilot approaches his 60 minute mark the meter is activated again and snatches the control column fully back and throws in some right rudder. At this point klaxons fitted on the wingtips warn gliders below to get out of the way as it spins down.

At 300ft the barometric switch turns off the meter and frees the controls so that a normal recovery can be made. This system has created a great interest among some of our pilots and we hope to have the first meter installed in our ASW-19 early in the spring. **Visitors please note: "Change will not be available from the bus".**

PETE BURNS, **Fenland GC** *(April 1).*



Can anyone identify this glider? Peter Janes of Farnham Common has sent us this photograph of what he thinks may be a Graf Zeppelin which landed in a parsnip field somewhere in the vicinity of London Heathrow. The field was owned and farmed by Herbert Purser, the father of his sister's late husband.

"What puzzles me is how did it get there and from where?" he writes. "Wasn't that in the days of bungy launches and wouldn't the nearest sites then have been Dunstable or the Oxford University GC's site at Aston Rowant near Chinnor, Oxon?"

Peter remembers reading last year in the "50 years ago" column of a local paper that in 1932 the Graf Zeppelin and many private aircraft and some gliders were at Hanworth.

SINGING ITS THEORETICAL PRAISES

Dear Editor,

In S&G for August 1980, p175, Dr Brennig James gave a new kind of polar diagram (*"A New Polar for Speed Records"*) which I recognised as a diagram I had already used for another purpose. Since nobody has commented on the Brennig James polar, may I sing its theoretical praises?

Brennig plotted height against time for a given distance. I had plotted gliding angle (actually sinking speed/forward speed) against reciprocal of the forward speed. However, if the distance in a Brennig James polar is one unit the reciprocal of the forward speed *is* just time and the gliding angle *is* just height, so we were plotting the same thing.

Why was I using this plot? Because it is the answer to the question "What transformation applied to the axes of a conventional polar gives a diagram in which mixtures of flight strategies through different stretches of air are represented by the weighted mean of the individual points?" In my article *Dynamic Polars* (S&G, February 1980, p10) I had shown how to construct the mean point in the conventional diagram (I now know that J. L. de Jong had given this in the Dutch magazine *Thermiek* in 1978) but it was rather complicated.

Plotting $y=s/v$ against $x=l/v$, where s is the sinking speed and v the forward speed, does the trick. Mixture points are simply weighted averages. The fundamental Dewing equation of cross-country flight is transformed into $r=-dy/dx$, which says that the ring setting is equal to minus the gradient in a Brennig James polar.

A miracle then follows: the basic theorem of dolphin flight (fly to the MacCready ring) is easily proved geometrically, far more easily than with the conventional polar.

THE ARM-CHAIR PILOT

ON THE DETECTION OF THERMALS

Dear Editor,

Anyone wishing to follow up the reference in Dr James' letter in the October issue, p231, should consult *Nature*, Vol 297 No. 5866, June 10, 1982, pp461-468 "Radar Research on Thunderstorms and Lightning" by W. D. Rust and R. J. Doviak. This is a comprehensive review article with many references. It also gives details of the air circulation in and around thunderstorms and their associated invisible and dangerous gust fronts.

No doubt it is possible to build a radar set that would fit into a glider and also have reasonable power requirements. It would be technically quite difficult and very expensive. There is, however, one fundamental problem which would seriously limit its use. Both phased array aerials and parabolic dishes emit radio energy at large angles to the main beam. The intensity is low, but the earth is a

very large target and would reflect much of it.

A thermal is a relatively small target and reflects very little energy. Thus the echo from any thermal that was further away than the height of the glider above the ground, would be lost in the "ground clutter" echoes. I would suggest that if any glider pilot is *that* worried about staying up, he transfers his interests to power flying!

Temperature and humidity detectors have both been tried with some success, but the effects cease at the thermal boundary and they don't give any long range location. The history of temperature sensing is rather interesting. The thermal leaves the ground layer with a temperature excess of about 1.5°C and cools quickly as it rises. By about one third of the way up to the inversion layer the difference has almost disappeared. In the top quarter, the thermal is generally colder than the surrounding air. The detectors were developed by relatively inexperienced pilots who tended to fly at the lower levels, where they worked. They were then flown at higher levels by experienced pilots and, naturally, they didn't work!

The thermometer heads need to be compensated for aerodynamic heating, shielded from sunlight and located away from the compressive flow over the wing surfaces, whereas the original heads were very unsophisticated. Considerable precision is needed, as the wingtip sensors must agree within about 0.02°C or better over a 10°C range. Full scale deflection on the difference meter needs to be about ±0.3°C. These could be useful below 1000ft, say after a winch launch, when you have to differentiate between thermal activity and random turbulence, and need to know which way to turn.

There is one suggestion for remote detection which, as far as I know, has never been made before. When a thermal takes-off the local temperature at ground level falls, due to the warm air being replaced with cold, and it should be possible to spot this with a "heat camera". I would expect to get the clearest pictures where the ground is fairly uniformly cropped, such as over the wheat fields of East Anglia. While heat cameras currently cost about the same as a glass glider, if the cold areas are very noticeable, a fairly simple scanning radiometer, based on the technology currently used in burglar alarms, could be made at a reasonable price.

It would also be worthwhile scanning the sky to see if the colder thermal heads show up at all. However it must be noted that perspex is almost opaque to long wave infra-red radiation, and any observations made from a glider would have to be done through the DV panel.

C. J. CHAPMAN, **Nuneaton.**

ANOTHER WAVE SITE — DISHFORTH

Dear Editor,

Your excellent article in the December issue, p254 surely made a major omission by not mentioning Dishforth.

We are the easiest to get to of all the wave sites, being a mere 6ft from the A1. Contrary to popular belief, Dishforth is not a military only site. The Cleveland and the Hambleton clubs share the same facilities with a combined fleet approaching 30 aircraft. The airfield is well positioned for the best Pennine wave, giving two Silver heights, three Gold and one Diamond so far this year (January 31) with numerous 15 000ft near misses.

There are three long runways and the surrounding Vale of York has an abundance of large fields for safe outlandings, although these are rare. Favourite local pastimes include gazing down on northbound glider trailers from 16 000ft and disputing a certain ex-RAFGSA member's claim that his present club has the best wave site in Europe.

Dishforth is able to entertain a number of pre-arranged visitors on weekends and public holidays. Those who have visited keep coming back for more.

PETER WHITEHEAD, **RAF Church Fenton.**

(We are delighted to have these details about Dishforth but the site was not overlooked. We wrote twice to the club when we were preparing the article but thought their reluctance to answer meant they didn't want visitors. Perhaps the post office can be blamed! Ed.)

THEN THERE IS CAMPHILL

Dear Editor,

Following the Wave Site article we would appreciate our site being mentioned. Camphill is in the Peak District National Park, half way between Sheffield and Buxton. Wave is frequently contacted off the launch or from hill and thermal lift and the site record is 24 000ft. The Pennine hills generate their own wave and also reinforce wave generated by the Welsh mountains in south-westerlies and by the Lake District fells in north-westerly winds.

Winds in the SW and NW quadrant give the best wave for height and cross-countries when a large percentage of members have gained their Gold and Diamond heights. Wave is also soared locally in N, NE, E and SE winds.

This is a hill top winch only site with west and south hill soaring slopes adjacent to the field. Visiting pilots need to have a Bronze C, be in current practice and to have experience of a hill top site, winch launching, hill soaring or wave. If you need a significant amount of training to meet these requirements, then visit us before you envisage solo soaring to tick off the various exercises. We have three two-seaters and a Falke.

Club accommodation and domestic facilities are second to none and reasonably priced. Ring Ray Hamshaw (steward) on 0298-871-270 to make your arrangements. Club expeditions welcome.

JOHN SHIPLEY, **DCFI.**

DIRECTOR'S BRIEFS

Dear Editor,

If more time were spent on task briefing and less on task flying, I have no doubt Martin Clarke would have been warned of the problems of Welford (see last issue, p16). However as most pilots prefer flying, briefings need to be concise and pertinent. It has to be assumed that pilots are capable of interpreting the information on their maps with only timely reminders on important airspace restrictions.

For those unfamiliar with a particular area, it is always a good idea to visit the airfield prior to the competition to find out the relevant information. At Booker, there is a book in which pilots may write comments on these so-called "dis-used" airfields, as it is well recognised that they should always be treated with caution. Welford is mentioned in this book.

DENIS CAMPBELL, **Booker.**

(Director of the 1982 Standard Class Nationals)

DÉJA-VU AND OVERKILL

Dear Editor,

If my memory serves me correctly, Martin Clarke's description of his out-landing at Welford with consequent one-sided Anglo-US diplomatic negotiations must be the fourth such case (at least) to be mentioned in this magazine during the 22yrs of my involvement with the sport.

Since the locals get to know about the reception awaiting pilots at Welford, such published mentions tend to appear as "funnies" in competition reports or club newsletters when a visitor from another part of the country gets caught low there. Added to these might be a further number of reports of "overpowering" hospitality proferred by our transatlantic cousins following landings at other sensitive airfields (even, apparently, disused ones!).

I once witnessed the hairiest of successful out-landings; it was on a small military arena completely surrounded by 20m high trees, only half a mile from Farnborough airfield, by an early cross-country pilot flying from another site. This occurred whilst gliders were actually being launched from Farnborough; he had apparently been briefed to avoid the nearby airfield "at all costs".

Shortly after reading Mr Clarke's article I overheard a couple of our newly-fledged (Silver C) members making ambitious plans for the forthcoming season (and why not? We need a little fresh optimism about the weather!); these included lines on the map passing over or near Welford. Knowing that both read S&G from end to end, I asked them if they would consider landing at Welford. Both said they would take their chances in a field rather than risk a likely repetition of Mr Clarke's experiences. Intrigued by the apparent power of the pen I asked discreetly the same question of other club members of different experience levels. Only those with about three or more seasons of substantial cross-country experience gave a less emphatic reply along the lines of "it depends on circumstances, *ie* how desperate things looked".

At the risk of stating the obvious (I shall nevertheless — it might trade the cost of a broken glider or worse against another afternoon's "hospitality" in a guardroom!), might I suggest the following

(a) The pecking order for priorities in outlandings must be:
   1. Safety of pilot
   2. Ditto glider
   3. Other circumstances (including getting locked up).

(b) If such an incident is deemed sufficiently newsworthy to warrant an article, could not the editor recommend that, for the benefit of those who follow, it be concluded with a moral

such as ". . . nevertheless, I would rather risk losing £51 of maps, cameras etc than risk losing the glider by ending up in a hedge or pirouetting in deep corn"?
(c) Could we compile and publish in S&G each year a list of "less than warmly receptive" supposedly disused airfields?
TONY GEE, **Godalming, Surrey.**
(We would be happy to print any such list so do let us know if there is an airfield you would rather avoid. ED).

NOSTALGIA

Dear Editor,
I would like to comment on two of your photographs featured in the Nostalgia 2 feature in the last issue. B. In the photograph of my father's glider being flown at Amberley Mount in Sussex, on the far left is my brother, Bernard Weiss, author of **Gliding and Soaring Flight** written in memory of his father, standing near him is Alec Keith and on the right is my father.
J. shows my father's derigged glider but standing with it is Alec Keith — not my father as stated in the caption.
JOSÉE MOSELEY-WILLIAMS, **Storrington, Sussex.**

BOOK REVIEWS

The Gliders by Alan Lloyd. Published by Leo Cooper/Secker & Warburg at £8.95.
This account of the glider-borne forces of the Second World War is only of limited interest to sailplane pilots since technical and flying details are mostly skimmed over, but it is a horrifying reminder of the damage associated with some of the early landings, and of the ill-fated Arnhem expedition. It was at Arnhem that three well-known future members of the Cambridge University GC first crossed each other's paths — one towing, one towed, and the third on the ground "shall we say acting as an Official Observer".
There are some excellent photographs of massed gliders both in the air and on the ground, together with shots of the Slingsby Hengist and a Hotspur built by Slingsby — an amazing design looking more like a seal than an aeroplane.

THE ARM-CHAIR PILOT

Jane's All The World's Aircraft 1982-83 edited by John W. R. Taylor. Published by Jane's Publishing Co Ltd at £50.
Jane's is with us again and at £50 represents good value as a reference book for all aviation enthusiasts. However, there is a reduction in the sailplane section from 36 to 35 pages, while the microlight aircraft and hang glider section has increased from 28 to 37 pages. Perhaps this is a sign of the times as the UK section on sailplanes is sadly reduced to three entries only, Slingsby's Vega and Venture, Swales' SD3-15T and the Wright Falcon, although none are in production.
A more encouraging note is sounded by the appearance of the Firecracker, the Lear Fan and the Slingsby Firefly, which will hopefully indicate a rebirth of Britain's long dormant light aircraft industry.

B. H. BRYCE-SMITH

50 YEARS AGO – The Mount Everest Flight

A. E. SLATER

Towards the end of 1932 Lady Houston, rich widow of a millionaire, who had already subsidised a Schneider cup entry, offered to finance a flying expedition over Mount Everest. She published a blatantly extreme right wing weekly paper called, I think, *Saturday Review*, and the avowed object of her offer was to prove to her satisfaction that members of the white race could put more feet between themselves and sea level than anyone of different complexion resident at lower levels. Still, whatever its motive, her offer was not to be sneezed at, and work was at once put in hand to design an engine and aircraft capable of reaching the required height.

Watched through cockpit floor

The Times air correspondent, E. Colston Shepherd, gave full coverage to the preparations, accompanied the team to India, and finally "ghosted" the book **First Over Everest** by Lord Clydesdale, one of the pilots (now the Duke of Hamilton). The other pilot was D. F. McIntyre, RAF, then Flight Lieut but now far up the ladder. Each was to have a companion who could keep watch through the transparent floor of the cockpit.
The most aggravating feature of the preliminary publicity was a continual harping on the "queer" air currents around mountains which were regarded as the most dangerous hazard of the whole expedition. I wrote to the BGA chairman suggesting that the two meteorologists on the BGA Council should meet the pilots and give of their expert knowledge. Perhaps as I had only just begun editing S&G, and the BGA hierarchy admitted "after all, publishing *The Sailplane* is the only thing the BGA does nowadays", and there was no other editor in prospect, it was thought I had better be humoured and such a meeting was arranged at the Royal Aero Club on February 14. But as I should have guessed, both meteorologists, Sir Gilbert Walker and Frank Entwistle, deliberately kept off the subject of meteorology from start to finish.
When the party had settled in India and the great day came for the flight, Lord Clydesdale was first to set off along a line drawn on the map ending at Everest summit. All went well until he flew into a violent downcurrent in the lee of Chamlang, when he began to lose height at an alarming rate and his companion, looking through the transparent floor, saw the peak of the mountain coming up at them. Then just as suddenly they got into a violent updraught and were saved. The only explanation of this climb, which Lord Clydesdale could think of, was that "our trusty motor had not let us down after all."
At that meeting at the RAC I spoke to Flt Lt McIntyre, who was sitting next to me, and told him that there were downcurrents in the lee of high ground. He was obviously surprised to hear it, so I told him a bit more.
Whether because of this or not, the fact is, as he himself said, as soon as he flew into the violent downcurrent which had already put the other machine in danger, he did not plough on towards the lee slope in the hope that his motor would eventually become "trusty"; on the contrary, he turned aside and flew out of the sink as fast as he could.

Utterly useless briefing

Soon after having published a critical account of the affair in S&G (April 11, 1933) I happened to be on a particular pavement outside the S&G office at the same time as Entwistle and, evidently referring to my article, he said it was he who had given the pilots their final briefing just before they left England, and that he had told them nothing whatever about mountain currents, but had only said how high they would have to fly in order to be able to ignore those currents. As in fact they were unable to reach that height, the entire briefing was utterly useless. Yet, if we had not been on the same bit of pavement at the same time on the same day, I would not have known to this day about this briefing, which was one of the most astonishing features of the whole show.

FORTHCOMING EVENTS

MAY 6-14: Hahnweide International Contest, Kirchheim-Teck, West Germany.
MAY 9-20: Dutch Nationals, Terlet, nr. Arnhem.
MAY 17-26: USA 15 Metre Class Nationals, Iona, Michigan.
MAY 21-30: 15 Metre Class Nationals, Booker.
MAY 21-JUNE 5: European Women's Championships, St. Hubert, Belgium.
MAY 21-JUNE 11: Trans-European Rally, Angers, France.
JUNE 7-16: USA Standard Class Nationals, Cordele, Georgia.
JUNE 7-16: USA Open Class Nationals, Marana, Arizona.
JUNE 11-19: Western Regionals, Nympsfield.
JUNE 20-JULY 10: OSTIV Congress, Hobbs, New Mexico, USA.
JUNE 21-JULY 11: World Gliding Championships, Hobbs, New Mexico, USA.
JUNE 25-JULY 2: Competition Enterprise, Aboyne.
JULY 9-17: Booker Regionals.
JULY 23-31: Open Class Nationals, Lasham.
JULY 23-31: Lasham Regionals.
JULY 23-31: Northern Regionals, Sutton Bank.
AUGUST 2-11: Inter-Services Regionals, RAF Henlow.
AUGUST 7-13: Inter-University Task Week, Lasham.
AUGUST 13-21: Standard Class Nationals, Husbands Bosworth.
AUGUST 27-SEPTEMBER 4: Enstone Regionals, Enstone.

Club News

Copy and photographs for June-July issue of S&G should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 0223 247725, to arrive not later than April 5 and for the August-September issue to arrive not later than June 7.

February 9, 1983 GILLIAN BRYCE-SMITH

AVON SOARING GROUP (Bidford Airfield)

Congratulations to Rex Mann on going solo and to Graham England who re-soloed. Dave Harris reached 3500ft in wave just before Christmas and was fairly well iced up.

Two notable flights for the time of year were by Albert Etchells (Skylark 4) and Peter Light (304) who both reached 4200ft on January 22, Albert having 1hr 43min, the longest flight so far this year.

We have increased our winter flying tremendously and coupled with our series of lectures we should be ready for the cross-country season. Once again we will have a non-rated competition — May 7-14.

D.J.C.

BATH & WILTS (Keevil Airfield)

The year has started well with two solos on January 2, Terry Knight and Bill Simpson. There have been several wave and ridge soaring flights, notably on January 16 when Mervyn Pocock (DG-100) and Mike Taylor-Beasley (LS-4) went to 10 000ft over Keevil in a WNW wind.

On February 6 in a strong NW wind Ron Lynch, our CFI, flew the DG along the Westbury ridge to Upavon village in one direction and Longleat in the other — 20 miles in all. We've also had wave in a southerly off Sailisbury Plain.

We plan to hold four flying weeks this year, including a task week at the end of May.

J.L.

BLACKPOOL & FYLDE (Chipping)

The year ended sadly with the fatal accident to Stan Billington in a mid-air collision (see last issue, p29). Stan was a complete aviation enthusiast, in his work at British Aerospace, membership of the prize-winning Zephyr light aircraft design team, his willing work in the glider workshop on club Cs of A and in the high standard of his flying ability which he was beginning to put to good use in his K-6ε.

The second pilot, John Richardson, made an immaculate recovery to land safely with 11ft of wing missing from his Skylark 3.

Despite a wet and nearly non-flying last quarter, flying figures reached record levels in the year. The patient efforts of "Drain Brain" John Todd are paying off in improving field conditions and by mid-January most solo pilots had been checked out for 1983.

A new winch is being built by Ken Fixter and Alaister Murray. Our present winch can be traced back to 1954 and we expect to rebuild it to the new design, probably next winter.

J.C.G.

BOOKER (Wycombe Air Park)

Happy birthday Booker! One year old today! Thanks to the enthusiasm and hard work of staff and members alike. The initial impetus was not slowed by the winter season and amongst the many projects sparked off, the building of the new workshop is proving invaluable for our own maintenance and repairs. The bunkhouse is next!

Bargain aerotows in January enticed a lot of people into the air, getting the season off to a truly flying start.

Under the new regulations wearing of flying suits may soon be made compulsory; but flat caps remain optional.

P.R.

BORDERS (Milfield)

The new year has seen the arrival of a K-13 to join the club fleet and lots of good wave days, made all the more accessible by the tug. D. Donald gained Silver height and G. Carr went solo and claimed a Bronze leg.

We have also made further improvements to the clubhouse, namely flushable loos.

F.W.

BRISTOL & GLOUCESTERSHIRE (Nympsfield)

After three years Ron Sandford, who is working abroad for a while, has handed over as CFI to Graham Morris. Our thanks to Ron for his diligence.

The extension to the north hangar has started after a delay of several years. The concrete base and steelwork are being done professionally and it is hoped members will do the cladding and block-work.

The north-westerlies of January 15 and 16 produced wave that took several lucky members to over 10 000ft.

Our G102 is having a mod to the fuselage structure to strengthen the undercarriage attachment and new trailer fittings are being made.

Owen Harris is resigning after four years as chairman as he is working away. He has contributed a tremendous amount of time and effort and we wish him well in his new post.

J.R.B.

COTSWOLD (Aston Down)

The annual dinner-dance was a great success and our thanks to Tom Zealley and Ken Stewart for representing the BGA. The cup winners were: Simon Evans (best pre-Silver flight); Ruth Housden (best cross-country); Ken Lloyd (best height gain) and Tim Macfadyen (Club Ladder trophy). Les Norman was presented with a bottle of whisky for his outstanding service to the club and Geoff Cumner the Irish mug for his 300km with a switched-off barograph.

The full Cat course with John Williamson and Bernard Morris in charge was well attended. Congratulations to our latest soloist, Alan Young.

P.K.

COVENTRY (Husbands Bosworth)

The opening of the new clubhouse extension coincided with the annual dinner-dance, enabling us to entertain a record number of over 170 members and friends.

CFI, Les Johnson, summarised a very successful year, commenting on four exceptional days — May 8 (151hrs); May 9 (191hrs); May 29 (204hrs) and June 5 (163hrs). Flying hours in 1982 beat all previous records by 500.

The guest of honour, John Williamson, officially opened the extension and presented the annual awards as follows: best progress by a female member, Helen Wright: *Coventry Evening Telegraph* cup for best progress, Ian Pettman; Kettering cup for first Silver leg of the year in a club glider, Mike Smith; Migration cup, Frank Pozerskis; Gimmick trophy, John Ellis; Grotty Potty, C. Rhodes; Group cup, John Westley and Jeremy Landrick; Clipstone trophy, Alan Kangurs and Reg Ludgate; Barge trophy, Jim Cooper, Task Week tankard, M. Guard; best performance during the task week, Open Class, Claude Woodhouse; President's cup and Ladder trophy, Roger Goodman; Open Ladder trophy, Nick Hackett (1st on National Ladder) and the Boomerang trophy, Mike Costin.

By Christmas 85% of the places were filled on the courses which start in May with Reg Ludgate instructing. A new two-drum winch is in operation, thanks largely to the efforts of Mike North and Stuart Cooper. Our thanks also to Pete Beardmore who provided the new winch wire.

The club now has an ASW-19 collected from Holland. Our congratulations to Peter Walker, Derek Abbey and Derek Harris on gaining Diamond heights at St Auban (see last issue, p9). Peter also completed his Gold C.

The Ladies Committee organised a splendid Christmas party for our children.

N.B.

CRANFIELD (Cranfield Airfield)

We ended last year with a record number of Silver and Bronze legs, a 20% increase in launches and a respectable number of cross-country kilometres logged.

A word to anyone intending to use our hangar for a TP — it's going to be painted soon and might be difficult to see.

We are planning a spring expedition and a programme of air experience flights and short courses during the summer.

D.P.S.

DEESIDE (Aboyne Airfield)

The turn of the year saw some pleasant flying and one pilot achieved his 21st Gold height of 1982 at Christmas. He then lost 9500ft mak-

ing ten miles into the 55kt wind — such is the challange of cross-country flying from Aboyne.

Pilots can easily get Diamond height here before completing their Silver Cs and are disappointed **Laws and Rules** apparently don't allow Diamonds on Bronze badges. Silver distance is the biggest problem. With the contact heights normally needed, there isn't enough land downwind to fit in a 1% distance. It has to wait until the thermal season.

K.A.M.

DEVON & SOMERSET (North Hill)

There were almost 100 members and guests at our 25th anniversary dinner in October with Justin and Gillian Wills and Bill and Yvonne Scull as guests of honour.

Eddie Bromwell, Tony Price and Mike Robins have gone solo, Jeremy Wilkinson has his Bronze C and John Boley and Dave Millmore their Silver Cs. Congratulations all.

With improved launches, flying hours and liquor consumption during 1982 up on 1981, the club is in a healthy financial state; thanks to our committee for careful guidance in difficult times.

The following were awarded trophies at our AGM: Dave Andrews (progress); Dave Reilly (gain of height); Eric Shore (best cross-country — Austria again); Tim Gardner and Albert Bourne (task week); Tim Gardner (club ladder) and Simon Minson and Chris Dobbs (best competition performance, which was at Enterprise). The "Wily old bird" was John Boley (and his K-6E).

David Minson, our chairman, has found a Mosquito to partner him in his furtherglide campaign.

The summer should attract temporary visitors with our two task weeks — June 6-11 and August 15-20 — and six training courses. Our telephone number is 040484-386 (weekends) and we'll tell you who to contact.

I.D.K.

DONCASTER (Doncaster Airfield)

The lease for our new airfield at Burn (Nr Selby) was signed on February 6, by our chairman, Frank Thompson, and secretary, Joe Millward, with the event being suitably celebrated with free drinks by all the other members. Preliminary work started on clearing the runways whilst we await final planning approval for our hangar and clubhouse.

The club trip to St Auban has had to be cancelled again due to no places being available (even with one year's notice). The one month notice that St Auban seem only possible to give makes life a little difficult.

Congratulations to Colin Wheat on his Bronze C and to Sue Webster, Pauline D'Arcy and Adrian Berner on going solo.

U.F.F.

DORSET (Old Sarum)

We start the season with optimism having increased our fleet with a K-7 and, hopefully by the time this is in print, a K-6CR. It was sad, but economic and storage reasons meant the T-21B had to go.

With only our two-drum winch operating we had the most launches last year since 1975 so this season, with our twin-drum winch, single-drum winch and aerotow facilities we should have a record launch rate.

Congratulations to Alan Tyler on going solo and converting to the K-8.

We have a dinner-dance at the end of April and any old members or friends wishing to attend should telephone 871283.

C.A.W.

DUMFRIES & DISTRICT (Falgunzeon)

Congratulations to Mike and Peter Richardson (father and son) on going solo, Mike after some years away from the sport and Peter ten days after his 16th birthday when he achieved a 30min soaring flight. Bad weather prevented him soloing on his birthday.

We flew at the beginning of January which marks an improvement in our site and confirms that we are now able to operate all year round. Membership is still small and new members (*ab-initios* particularly) would be welcome, as would visiting pilots with or without gliders. Our rates are very reasonable. Please contact Frank Smith on Dumfries 64944.

The site is rather rough for glass ships, however we operate our club K-2 safely and a privately owned Skylark 3B, Pirat and Oly 460.

We had some notable flights on our hill in strong westerlies and hope to improve our cross-country efforts this season. Are any clubs such as Milfield and Northumbria interested in setting up "first to get there" plate flights?

Dave Chesney has constructed a septic tank for the clubhouse.

F.S.

DUNKESWELL (Dunkeswell Airfield)

The summer courses produced first solo's for Neil Robinson, John Cheeseman, Martin Bollen, Clive Harder, Hans Schuricht, Nick Lunn, Dave Martin and Chris Davison — the relatively few good soaring days were utilised to gain Bronze Cs for Ian Mitchall, Ray Griffiths, Geoffery Darragh, Les Baskwill, Ian Davison and Mike Sanson, Mike also climbing to Silver height in wave.

Richard Harris has proved an invaluable assistant instructor and John Street is joining our small team of instructors.

We have at last settled our tenancy problems and are looking forward to the new season and the start of the five day and weekend courses.

B.H.F.

EAST SUSSEX (Ringmer)

Congratulations to Fred Bishop on becoming deputy CFI; to Johnny Johnson on his Diamond goal; Neil Kelly on Gold height at Sutton Bank and Ray Norton and Bill Nicholson on completing their Silver Cs. A fine crop of Bronze Cs go to Alan Hall, Tony Kerwin-Nye, Larry Matthews, Colin Simpson, Mike Kitson, Tony Challoner, Dave Martin, Mike Harman and John Johnson. Paul Tickner has successfully completed his instructors' course and Graham Pratt is now fully rated. Congratulations also to Peter Burgess and Peter Twort on going solo.

The tug has returned with a healthy undercarriage in time for us to take advantage of the loan of the BGA's ASW-19.

We had a very successful Christmas dinner-dance and thank John Williamson for his entertaining speech and for presenting the prizes. Our thanks also to Ken Stewart, also a national coach, for his recent enjoyable and informative talk.

The club K-8 is being re-covered, due to Tony Challoner's efforts.

Several of us had an enjoyable trip to Talgarth over Christmas and the New Year and thank Derek and John for their hospitality. Can we claim the last cross-country of the season with Neil Kelly's inadvertent flight to Shobdon from Talgarth on December 26? It was the only place he recognised!

D.C.

ENSTONE (Enstone Airfield)

There were several changes at the AGM. Geoff Dixon has taken over from David Wilson as chairman and Brian Jackson as CFI from David Shadrach. Our thanks to both retiring officers.

Our motor glider department, expanded by yet another G109, continues to prosper which is hardly surprising when the enormous contribution to advanced training is considered. Pilots from surrounding clubs are regular and welcome visitors, some for a cheap PPL and others for field landing and navigational training and practice.

We started soaring here on January 2 with sufficient thermal and wave for some one hour flights.

Belated congratulations to Pat Blackburn and Dave Potter on their Silver Cs.

L.S.

ESSEX (North Weald)

We have two new K-13s to give us a two-seater fleet of four. Of the other two, one has been rebuilt and the other will be ready soon.

Lionel Callow is taking bookings for the courses, which are filling up nicely, and we will be passenger flying again in the evenings.

We welcome back Ian as course instructor and Judy who will be organising the catering.

M.R.T.

HAMBLETONS (RAF Dishforth)

The wind has caused a bit of damage to caravans, but between the gales we have had some pleasant wave. Clive Armstrong and Mandy Edis have claimed Silver heights.

We have also had several first solos: congratulations to Howard McDermott-Row, Dave Gibson and Stuart Slabber.

J.P.

HEREFORDSHIRE (Shobdon Airfield)

We had superb wave just before Christmas and those who took advantage of our wave membership certainly got their moneys' worth. On December 27, Anthony Maitland (Mini Nimbus) got to 16 000ft, whilst the majority of members reached 11 000ft.

On January 8, Ken Martin and Andy Williams (Twin Astir) reached 8500ft, Ken later getting to 9000ft while giving a check flight to a wave member. The next day saw the Twin Astir and Sport Vega at 10 000ft.

The Avro Club visited us with their Sport Vega on January 22.

B.J.H.

Please note that the deadline for club news reports for the next issue is April 5. We regret we can't print any reports arriving after that date.

HIGHLAND (Dallachy)
Last season was successful with a large number of soaring hours helped by the arrival in August of a privately owned Kestrel.

Congratulations to Bod Reid, Keith Millar, Alan Clarke, Neil Anderson, Glenda Anderson and Gordon Armstrong on their Bronze Cs (Gordon also has his Silver height); to Trevor Armstrong on Diamond height and Gerry Robson on Gold height, both gained at Aboyne, and to Stewart Youngson, Dave Spong (Buccaneer pilot) and Ruth Mullineaux (power flying instructor) on going solo and converting to the K-8.

Ken Stewart, national coach, visited us in October and made it a very enjoyable day.

G.A.

INKPEN (Thruxton Airfield)
We are in the process of raising sufficient capital to buy our tug and sailplanes. Leasing and renting ships is rather a drain on resources, so the decision to buy was an easy one: achieving it is slightly more difficult! We have been much encouraged by our progress so far, both through members' financial support and grants applied for.

We are offering all-inclusive courses to would-be pilots for the first time this year. We have a record number of members, a large supply of instructors and a new magazine editor which will ensure greater continuity of communication.

T.D.

KENT (Challock)
We are looking forward to the John Williamson soaring course from April 18-24 and have a task week from August 13-21 when members from other clubs are welcome to join us.

As you will have seen in the last issue, p21, we have adopted an Andean Condor at London Zoo. This has already proved beneficial in terms of advertising for the club.

Our thanks to Alan Garside for organising the winter lectures which are most useful. Congratulations to Dave Beams, Steve Noad and John Salt on going solo and to Phil Holliday and Ann Johnson on gaining their Bronze Cs.

J.B.

LAKES (Walney Airfield)
We regret the resignation of Geoff Bailey as CFI and thank him for all his efforts. We welcome Dennis Carey as his successor.

The new club ladder is to promote soaring and cross-country flying and to exploit the site to a greater degree. The rules include a bonus system for badge flights, a de-rating system for experienced pilots and the ability for pupils to claim 50% of the points on a dual soaring flight.

E.K.

MENDIP (Weston-Super-Mare)
The 1982 season ended, unusually for us, in a wave day when several pilots experienced the phenomenon for the first time with climbs to 5000ft. We have now discovered the existence of wave in south-easterlies and north-westerlies.

This year didn't have a very inspired start with the Bocian having a field landing on the first flight of 1982, to be closely followed by a single-seater.

Trevor Bailey photographed Clive Bailey in the syndicate Tutor.

Congratulations to Trevor Bailey, Doug Massey, Hillary Perry and Paul Marsh on their Bronze Cs and to Chris Crabb, Ken Buckingham and Stan McCafferty on their durations.

Following his recent accident Barry Hogarth is recovering well but has requested a retraction of our item in the last issue when we congratulated him on coming first at North Hill's task week — he came second. As he wants to fly there again this year he felt this should be put straight!

T.B.

MIDLAND (Long Mynd)
Over the Christmas/New Year period we enjoyed the company of groups of Nympsfield and Booker pilots. January produced some lovely bungy days and some good wave which prompted several cross-countries.

Congratulations to Anne Smith, Peter Townsend and Tim Guy on going solo.

Our course starts in March with a fairly brisk rate of booking.

We are enhancing the club solo fleet by replacing the K-6CR with an Astir, making this our third glass aircraft. This should be a useful line-up for our lead and follow course in May, organised by John Williamson.

Don't forget our task week from August 20-29 when visiting pilots will be very welcome.

M.D.A.

NENE VALLEY (Winwick)
There was a club expedition to Germany in January to buy a K-7 which we are now waiting to fly.

A number passed the Bronze C paper and Ted Booker became the first member to complete a Bronze C. The AGM on February 4 was enjoyed by everyone.

J.S.

NEWARK & NOTTS (Winthorpe)
The Christmas party, attended by some 65 members, was a great success. Many thanks to Steve Evans for his work as CFI. He has handed over John Sentance.

The annual awards were as follows: John Sentance, the Cross-Country shield; Peter Saunderson (who has recently joined a K-6 syndicate), the most progressive pilot award; Mike Noon, the wooden spoon for forgetting to switch on his barograph on a 50km flight and Bob Grant, the Chairman's award for all his hard work.

Helen Hepworth and Dave Sharpe have gone solo, Dave after a break of 11yrs. Strong winds in January kept the K-8 in the hangar but the K-7 flew the *ab-initios*. We hope to boost funds with an air experience weekend in February.

D.P.

NORFOLK (Tibenham Airfield)
Many friends from East Anglian clubs joined us for our annual dinner-dance in January. Most of the cups were won by our chairman, John Tarrant, for several notable flights. A special presentation was made by our guests, Arrow Air Services, to our tugmaster, Eric Titman, of a beautifully polished Tiger Moth propeller mounted with a brass barometer.

Our red K-13 is being restored in time for spring. We have an Easter expedition to Aboyne.

N.F.S.

NORTH DEVON (Eaglescott)
On January 1 we moved to our new site at Barrington, just south of the NATS radar station, and local people and organisations have shown great interest in the club which is now managed by Soaring Southwest. The site, which is open to visiting aircraft, is easy to find. Just head for the radar, don't over-fly it, and the strip is aligned roughly 250Mag, all 3000ft being usable which is very different from Eggesford.

We have a twin-drum Tost winch, a Bergfalke 2 and a 40 x 18ft workshop to house the club two-seaters until a hangar is built. Bob Peake has bought a Swallow, making a total of six aircraft on site. We are flying seven days a week and Barry Pearson, CFI, is running courses from April with the probable addition of a glass-fibre motor glider later in the year.

Congratulations to Richard Burgess, John Hill, Jane Tilly, Tony Bailey and the Langdon family, A. J., Sue and Steve, on going solo last year and to Jackie Mason on being the first to solo from the new site.

A.G.

OXFORD (RAF Weston-on-the-Green)
For many years a complete spare engine for the winch has been sitting in a packing case in the corner of the hangar. Winch performance has been going downhill and for two seasons the pundits have been eyeing the packing case but most considered engine replacement a daunting task.

Strangely, the right combination of

John Sentance, the new CFI of Newark & Notts GC, after being awarded the Cross-Country shield.

enthusiasm and experience came together at 4pm on a cold January after the latest breakdown and the job was finished four hours later. Many thanks to all concerned.

A novel idea to cut down on the number of flat batteries thrown away is under trial in the red K-8. A microswitch under the seat is activated by the pilot's weight and when he gets out everything switches off.

Richard Hall, Tom Lamb and Mick Moxon now have a Speed Astir and their Skylark 4 has been taken over by Alf Barnes, Nick James and Willy Daser.

P.H.

PETERBOROUGH & SPALDING (Crowland Airfield)

The 600 sheep on our site have gone and a substantial portion of the airfield has been ploughed for cultivation. But this is beneficial as the airfield is much more visible from the air and we don't have to worry about sheep on the approach. (Norfolk GC, please note.)

Anyone wishing to call in on our open day over Easter, either by air or otherwise, is most welcome. One aim is to sell instructional courses to the public — we are proposing to offer a series of mini courses. Costing £55, they will be run over a weekend by a single instructor with a maximum of four pupils who will have six aerotows each. We feel it should work well and prove attractive financially.

Work on the clubhouse has been completed and we have a splendid new kitchen and bar which will stand us in good stead on the Inter-Club League weekend in August. The club Pirat has been stripped of the old paint and resprayed. Our thanks to Dave Almay for this painting and to all those who worked on the Pirat and clubhouse.

M.C.

RATTLESDEN (Rattlesden Airfield)

Our AGM was well supported and we thank retiring committee members Mick Arnold, Dick Histed, Dave Cornish and Jim Bage for their tremendous efforts and welcome Roger Davis, Andrea Arnold, Bob White and Neville Theobold.

Projects for the year include renovating our World War II control tower clubhouse and, having bought a sweeper, keeping our runway in a fit condition to accept glass.

The syndicate Grunau Baby has been completely stripped for a major and found to be in excellent condition. Ken Stewart, national coach, is coming with the Twin Astir to give members a taste of cross-country gaggle flying. This will combine with our *ab-initio* flying week.

Congratulations to Judy Lacey and John Pemberton on going solo, John having flown Beaufighters during the last war and powered aircraft since.

The weather has been enough for us to maintain a decent average launch ratio at weekends.

R.W.

SOUTHDOWN (Parnham Airfield)

It's chocks away early this summer. Hangar doors will be opened at 8am with briefings and launch priorities decided at 9am. We are buying a Pawnee to operate with our Super Cub with the aim to launch our 20 syndicate

and five club gliders during the two peak hours for cross-countries on good days. We hope there will be sufficient demand to operate two tugs throughout the year.

We are selling our K-7 (which has been replaced by a second K-13) and our K-6CR to upgrade the fleet with a new single-seater. We have designed and costed out a successor to our geriatric winch.

The bar has added greatly to the club's social life.

A.V.S.

STAFFORDSHIRE (Morridge)

January has given us a flying start to 1983, with west winds and a high cloudbase. Mike Ruttle has gained his Bronze legs, his son David has converted to the K-8 and Ken Fern flew his Olympia 2B for two hours. At our last winter lecture Len Kirkham delighted us with a slide show of his Sierra Nevada soaring sprees.

The Leek & District Sports Council have arranged a grant of £100 towards the cost of a vario for our K-18.

Ken Blake has generously allowed us free use of his universal trailer in exchange for its free hangarage.

P.F.

STRATFORD ON AVON (Long Marston Airfield)

Two parties of members enjoyed their stay at St Auban and returned with height badges. Congratulations to Tom Smith and Mike Coffee on their Diamonds (24 000ft) and Gerald Kelly (18 000ft) and Peter Gaunt (16 000ft) on their Gold heights. It seems the Diamond boys had to break off the climb because dinner was ready — such is the discipline of this superb site.

Our site proves more interesting each year as wave patterns emerge with some workable lift during December and January in SSW winds. The Meon hill (450ft) three miles from the airfield has been soared, particularly by the K-6Es, on several occasions.

Several syndicates are reforming with higher performance ships. Congratulations to Ken Walls on his Bronze C and Tom Smith on his assistant instructor rating.

The hangar floor has been refurbished to make hangar packing less fraught with nasties and the Christmas party was voted our best ever social event. Holiday summer courses will again be in June, July and August with air experience evenings from April to October.

H.G.W.

ULSTER (Bellarena)

The year began well with excellent ridge, wave and some thermal soaring throughout January and, on January 23, the return after a long absence of some decently high-level *weekend* wave. Gordon Mackie reached over 13 000ft in his PIK 20E and Alan McKillen, who the previous day had made a marginal Silver C height gain, reached more than 9000ft.

Earlier in the month our hardworking Yank, John Nusbaum, gained Silver height with a rocketing ascent to 5700ft. The rush is on to squeeze in John's full Silver before he and Nancy return to Wisconsin in the early spring. We'll long remember the contribution John has made to the club since he started with us as an *ab-initio* less than 18 months ago.

Despite a poor second half to 1982 we logged 1386 launches during the year, well above the budget figure of 1200, and we expect once again that the BGA stats will show our average flight time to be up near the top of the league. We've held our charges unchanged for 1983 with the happy exception of a discount now on any aerotows taken before 11am to encourage early starts.

The clubhouse is now largely complete and should be a cosy refuge for the Dublin GC and assorted English parties that are planning to visit us, again, for a nine-day Easter camp. All are welcome and if you've nothing fixed, phone 0232 654366 and plan to come. Meanwhile, planning proceeds for Competition Enterprise 1985. Three statutory bodies have pledged their full support: the NI Tourist Board, the Sports Council for NI and Limavady DC. Negotiations are now starting for what we hope will be valuable commercial sponsorship.

R.R.R.

WELLAND (Middleton)

Work continues on the airfield, thanks to the same willing and cheerful helpers. A recent party, including a video of last year's flying, was a resounding success. A programme of Bronze C lectures is in progress, thanks to our CFI.

There are plans for increasing our cross-country mileage this season and we welcome John Crosse's K-6CR to the airfield.

R.H.S.

WOLDS (Pocklington)

Great news! We have today (February 6) exchanged contracts for the purchase of our site. The land we have acquired includes two runways which were previously used plus half a runway width of glass along the side of each, as well as a perimeter track to our present 60 x 60ft hangar and 4½ acres behind the hangar for a caravan and camping site, rigging area and space for a new clubhouse.

We have been helped by a Sports Council grant of £50 000. Our foresight in setting up a site fund has enabled us to accumulate enough capital so that flying has continued unabated and we haven't had to sell any of our fleet to raise capital. Our thanks to the BGA (Bill Scull) and everyone who has helped.

Congratulations to those who have completed their Bronze Cs during the favourable winter — too numerous to list.

We continue to look forward to friends flying in. Simply land on the runway in use. We are on the A1079 midway between York and Hull.

N.C.

YORKSHIRE (Sutton Bank)

Congratulations to John Hartup on going solo and to Ian Stromberg on his Diamond height.

Dave Chaplin is now chairman and Tony Kane has taken his place as clubhouse director. They make an excellent team and both hope to realise David's plans for an improved clubhouse early this year.

Chris Riddell is building a winch, providing he can tear himself away from his computer, which should also be ready this spring.

Plans continue for updating the club fleet with a K-21 due in the autumn, which means saying goodbye to our Blaniks.

The Pawnee tug has been coping well with the exceptionally strong winds, towing pilots into wave, and there have also been some excellent ridge days, giving us a good winter season.

H.H.

SERVICE NEWS

BICESTER (RAFGSA Centre)

More than 80 enjoyed our excellent Christmas party. At the AGM on January 15 Ken Stephenson was presented with the Daniels trophy (best contribution to the Centre) and Steve Hymers with the John Delafield trophy (fastest 100km △). Jeremy Beringer took over as entertainments member from Ken Stephenson and Dave Campbell replaced Colin Bamfather, who has gone to Cranwell, as publicity member. Our thanks to them both for their hard work.

Some members have had aerotows to Halton to sample ridge flying and others have had high tows in search of our occasional and ever elusive wave. Congratulations to Brian McDermid, Mark Wilkinson and David Aknai on going solo. We are planning a ridge/wave flying expedition to Talgarth.

D.M.C.

BANNERDOWN (RAF Hullavington)

The winter has been kind with few flying days lost and even some soaring flights in January. General interest and enthusiasm is very high.

The workshop team, headed by Trevor Hope and Alan Quartly, are busy. Our K-13 is back on line while the other is now having its C of A plus a complete re-cover. John Wright and Mel Dawson are building a K-21 trailer to be followed by a trailer for the Ventus which is due in March when the ASW-19 is being re-allocated.

The new station commander, Grp Cpt W. Mears, went solo as did Rob Urwin, "Noddy" Williams and Nick Breasley, Nick during a course at Bicester. Mike Hall has his Bronze C.

We recently enjoyed two parties, and have an expedition planned to Talgarth in March.

V.R.D.

CLEVELANDS (RAF Dishforth)

We are going from strength to strength under new management and our problems of a year ago seem to be largely solved.

Wave has been plentiful since Christmas with soaring possible almost every weekend. The New Year camp was well attended by RAFGSA and civilian visitors and they took away several Gold heights and much party spirit, vowing to come again next Christmas.

January 29 was a remarkable day with

nobody above 17 000ft but nearly 2000km covered from the site, including Andy Smart's 144km O/R for Silver distance and Dick Parker's 120km in a T-21. Mick Wilson got his Diamond height later the same week, breaking off a 3kt climb at over 23 000ft to land at sunset.

We wish well to deputy CFI, Chris Sherlock, who leaves to become a helicopter instructor.

P.W.

CRANWELL (RAFGSA)

It's been quiet during the winter with the usual stalwarts keeping the launch rate going. The medieval banquet and February party were a great success.

G.A.B.

CRUSADERS (Cyprus)

We have had a successful year which has included 18 first solos, 13 Bronze legs, eight Silver heights, with a Silver height and duration by Dave Braine, 27 conversions and three members have become assistant Cats.

Our thanks to Vernon and Norma Bradbrook who have left us — Vernon was CFI — and welcome to our new members.

Our membership is now 70 strong and we enjoy flying all year in the Cyprus sunshine. We extend a welcome to all readers if ever they find themselves in the country.

S.A.M.

FENLAND (RAF Marham)

We welcome Graham and Pat Heady from Phoenix and George Baber, giving us an increase in full Cats, and Clive Bernard from Chilterns.

Real ale available in our bar makes us unique within the RAFGSA. The AGM in December was very successful and enjoyed by the many visitors.

We are planning expeditions to Aboyne and Portmoak.

A.D.S.

FULMAR (RAF Kinloss)

We had a successful AGM and Christmas party on December 19. Keith Tegg won two trophies (first hour off the winch and highest flight), Colin Slade the Nimbus model for being the most advanced Bronze C pilot and Richard Arnall the award for the hardest working member.

Over the winter we lost a few weeks' flying due to the airfield being waterlogged, but this didn't prevent Dave Edwards converting to the K-8 and John Bibb re-soloing.

Our publicity campaign and lecture programme should give us a good crop of solo and Bronze C pilots later in the season.

P.G.

HUMBER (RAF Scampton)

The hurricane force winds on February 1, played havoc with our trailers, parked in the open. Two were smashed to matchwood and the others had varying degrees of damage. There is a lot of work to get them repaired or rebuilt in time for the soaring season.

On a more happy note, Sue Gildea and Birgit Pleiner have completed their Bronze Cs and Sandy Weaver and Mike Hearn have gone solo. We had a week's flying over Christmas and New Year, which helped to boost the koffers, and our membership is steadily increasing.

Three members are flying in the Inter-Services Regionals and two in the Bicester week.

There was a printing error in our last write-up — Nick Harriott should have read Mick Marriott.

K.M.G.

KESTREL (RAF Odiham)

There was only one committee change at the AGM, Mick St Jean takes over as MT member. After an accident-free year charges and subscriptions are being kept at the 1982 level. The chairman, Col Peter Swinhoe, announced that Pam Davis has been given a life membership of the club.

The awards were presented as follows: the Reid trophy (first cross-country), Pete Charnell; the Chapple trophy (longest handicapped flight), Martin Durham: the Lasham trophy (longest closed circuit flight from Odiham), Bev Cook; the Andrews trophy (last cross-country), awarded jointly to Peter Richie and Peter Swinhoe; the Allison Farrell memorial trophy (*ab-initio* with the best club spirit), Jeff Seamen and the Chairman's trophy and the O'Donovan cup (for personal effort and hard work), Ernie Downing who is a well deserving recipient.

We send our best wishes and hopes for a speedy recovery to Lynn Gristwood still in hospital following the Ballykelly disco bombing in December.

P.W.A.

PORTSMOUTH NAVAL (Lee-on-Solent)

There have been some successful expeditions to other sites and we congratulate Stuart Savage on Diamond height at Aboyne in November. Phil Moore has returned as CFI.

The Chipmunk is at last to get a new engine. Our enthusiastic mechanics are starting on the conversion of another new bus into a winch.

As you read this the spring gliding week will be about to start and we hope for as much fun as last year.

S.B.

Overseas News

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

The South African Nationals, held at Vryburg from December 20-31, had 11 contest days with 512.54km set for all Classes on December 28 when six competitors had speeds of over 140km/h.

The results were: Open Class, 1 K. Goudriaan (ASW-17) 10 058, 2 P. Beatty (B-6) 9323; 3 G. Anderson (Kestrel 19) 9257pts; 15 Metre Class, 1 L. Goudriaan (ASW-20) 10 246, 2 J. P. Castel (ASW-20) 9336, 3 W. Muller (Ventus) 9302pts; Standard Class, 1 G. Dunbar (Cirrus) 10 713, 2 K. Pummer (LS-4) 8042, 3 T. Welgemoed (LS-4) 6670pts; Team Class, 1 B. Pearson/G. Dunbar.

Pyrenean wave. An O/R from the Mediterranean to the Atlantic, the old dream of gliding folk in SW France, has been accomplished by Gerard Lherm, a member of the French team for the 1983 World Championships. On November 6, 1982, he flew 833km at an average of 130km/h in a Nimbus 3, using the magnificent wave system set up by a stable southerly airflow over the Pyrenees. There was enough moisture in the air for the wave bars to be clearly marked and at times there appeared to be one gigantic lenticular stretching from the Atlantic to the Mediterranean coast. At several points in the flight Lherm was able to maintain 20 000ft at 100kt, and at no time did he appear to encounter any difficulties. The Pyrenean wave is underexploited. Only two other flights in excess of 400km were made on this plainly exceptional day.

Gliders from Japan? Having gained experience of building the Pilatus B4 under licence, the Japanese are about to launch a two-seater version, the prototype of which is currently undergoing trials. The general configuration of the B4 is retained, but the fuselage is stretched to accommodate a second seat in tandem and the wingspan is increased to 17m. The wings are swept slightly forward. Series production is due to start late in 1983.

British Army in Oerlinghausen. Sixteen sappers from the 43rd Field Support Squadron, based in Osnabruck, helped the Oerlinghausen Gliding School extend their airfield by spending six weeks uprooting pine stumps. The new area will be used as an extra landing area for the 135 gliders based at Oerlinghausen.

Trans-European 1983. The next Trans-European Rally — the first to be organised officially by the French Gliding Federation — from May 21 to June 11 will take competitors along a route from Strasbourg to Trento in Italy, then to Logrono and Fuetemilanos in Spain, and finally back to Angers. Details from: J. C. Penaud, 10 ave de la Grande Gree, 49240 AVRILLE, France.

classified section

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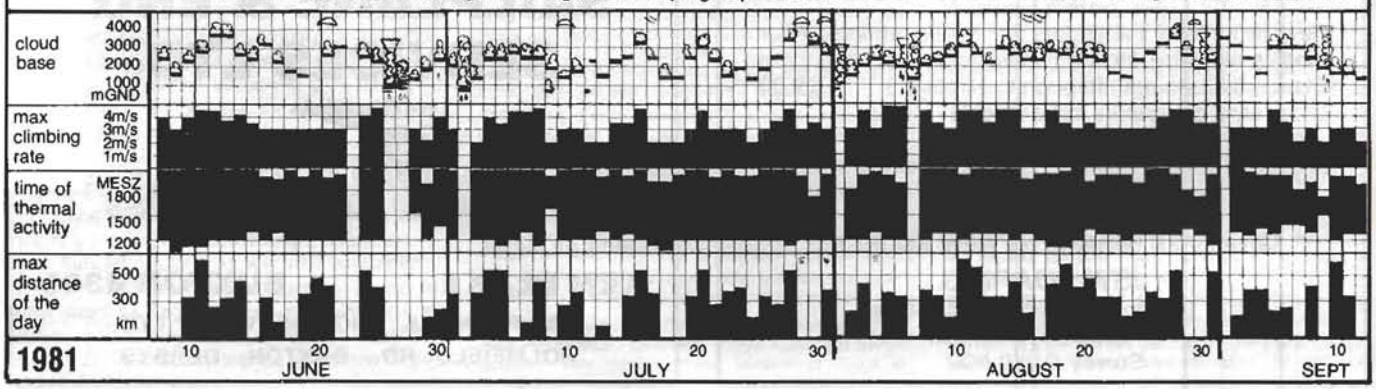

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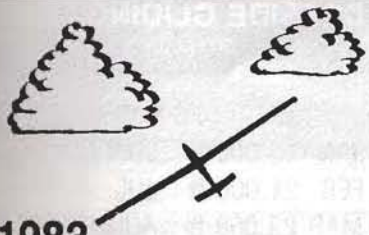

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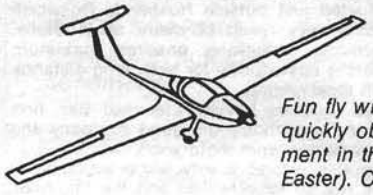

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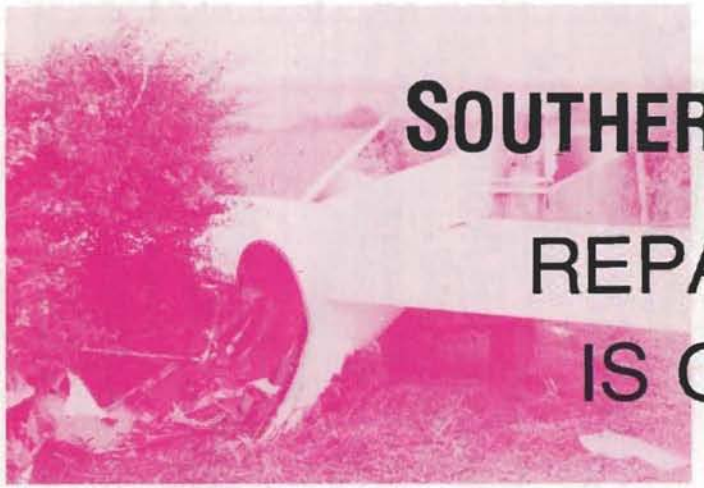

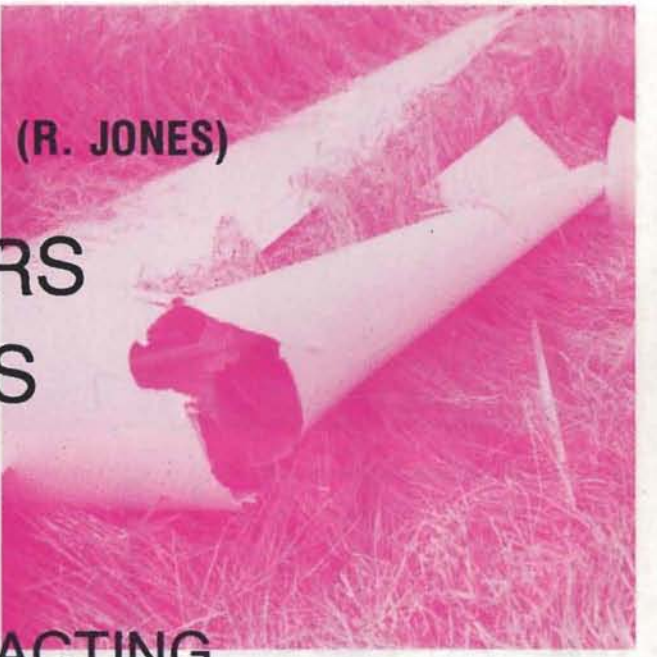

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