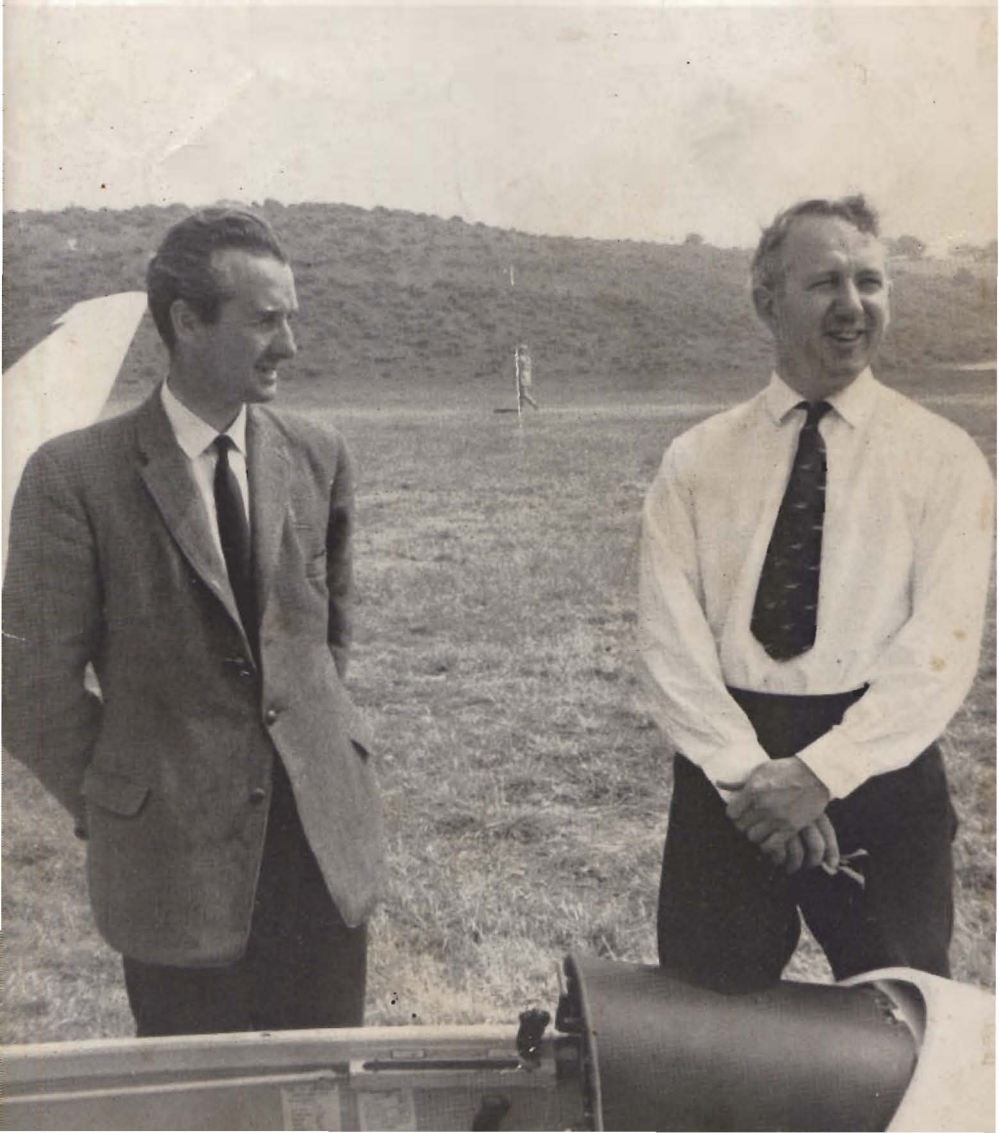
SAILPLANE & GLIDING

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Cover photograph: (L. to R.) Con Greaves, National Champion, Sports-Standard Class, and George Burton, National Champion, Open Class. *Photo by* ANNE INCE

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THE GIPSY 12/15

By L. P. MOORE

A new efficient — and low cost — Standard/Sports Class sailplane.

IN 1939 the retail price of a high-performance sailplane in the United Kingdom was about £250. Today, however, it is some ten times that figure and, even when allowance is made for more demanding design requirements, stiffer and better-finished skins called for by modern wing profiles, airbrakes-cum-spoilers, full canopies, retractable wheel and a wider range of basic instruments and equipment, the increase in cost is yet disproportionate to that of labour, materials and overheads. This situation reflects a remarkable lack of advance in constructional efficiency.

Moreover, these additions have increased also the empty weight of 15-metre sailplanes from the order of 250-350 lb. to that of 375-550 lb. Encouraged by a singular bias towards the high-speed end of the performance scale, where excess weight — and hence structural efficiency — is not nearly so important, great weight has come to be associated inevitably with penetration in the minds of scores of confused pilots. In reality, in our home thermal conditions at least, equal attention must be paid to the low-speed end; the right solution for tropical flying is to provide for removable wing ballast. Those who have not yet done so, might like to read Ian Strachan's account of the technique which won him last year's Standard/Sports Class contest as an illustration of what I mean — see SAILPLANE AND GLIDING August-September, 1968, page 300.

The Significance of Structural Efficiency

By SE is meant the ratio of structural strength and stiffness to weight. The designer, striving to improve the breed of the Standard Class machine, is working hard to bring the span loading down to a minimum because — other factors being equal — this is the main criterion of sinking speed; at the same time, he is endeavouring to increase aspect ratio with a view to improving gliding angle. But, as he reduces chord in the process, up goes the wing loading and, hence, up goes the optimum circling speed and radius with consequent loss of thermal-ability.

Now, possibly, he can restore the situation by increasing the taper ratio of the wing planform, but here with limited scope, lest he spoils the aerodynamic efficiency of the wing. He is left, then, with only one remedy, and that is to increase the basic SE of the sailplane to bring its weight and "density" down.

Thus a higher SE enables the designer the better to reconcile limited span with high aspect ratio and normal area and span loadings. And this same conflict applies equally, of course, to the Open Class, but the latter allows the designer to creep around the problem by yet a further increase in span at the expense of extra weight and cost. The popular misconception that in this great design contest the higher span inevitably must prevail, applies only to one common standard of SE.

The Significance of Stabilisation

Until the advent fairly recently of the sandwich form of construction in other than experimental machines, the big failing for years had been that skins had been supported only at wide intervals — wing skins by ribs and fuselage skins by frames — thus dividing the skin into panels having no support over most of their surfaces. Such unsupported areas tend to buckle long before the inherent strength and stiffness of the skin, *per se*, can be exploited, and for years the remedy continued to be thicker and heavier skins and more closely-spaced ribs and frames. The best solution, however, is a stabilising support distributed evenly over the entire surface; panels are thereby eliminated altogether.

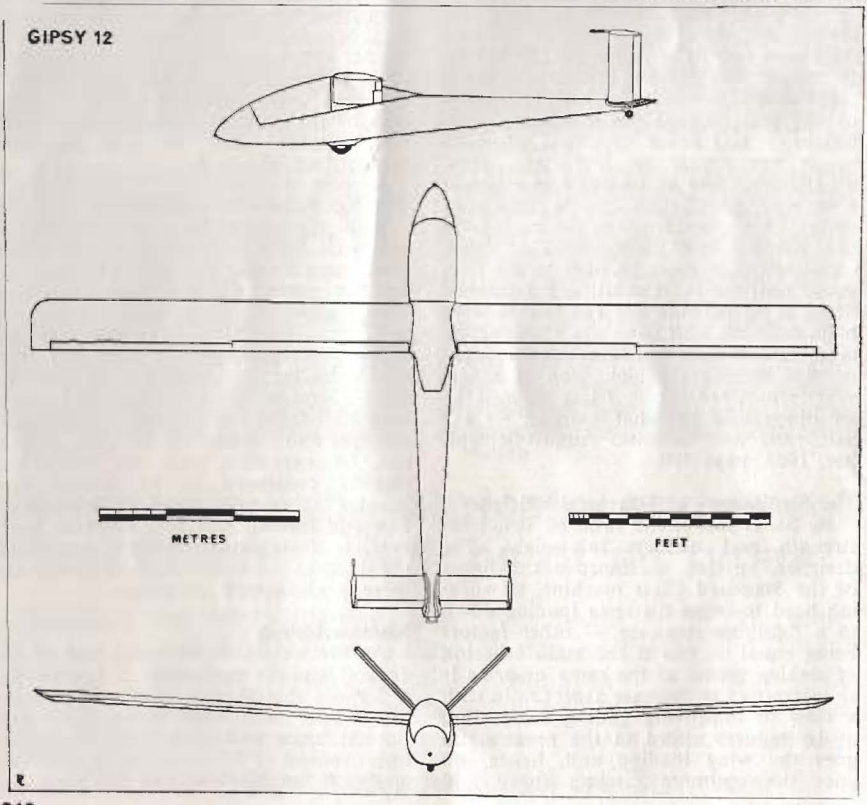
Miniaturisation

As the weight of the pilot and of his cockpit and its equipment is irreducible, it follows that shorter span can be combined only with high aspect ratio and normal span and wing loading by an improvement in SE. Particularly does this apply to the fuselage and tail unit, be-

cause excess weight here is reflected immediately in the wings, in which extra material is required to take the additional loads, thus putting both components at fault. Fortunately, a reduction in span and chord of the wing makes it possible to embody a smaller fuselage and empennage possessing a better streamline shape and less skin drag.

Miniaturisation in this way reduces not only the cost, weight, size and unhandiness of the sailplane itself, but also those of its associated trailer, tow-car and launching equipment, thereby cutting running and insurance costs and manual effort for all of them almost proportionately. How often has a syndicate had to be increased beyond its happiest size in order to raise the money? How often has it occurred that only one member of the syndicate has a car powerful enough to tow its pride up to the mountain sites? And, how often is he available when wanted?

Inspired by the products of the Darmstadt University design groups over the decades — commencing with the truly marvellous Windspiel which, with an empty weight of merely 122.36 lb., achieved almost solely by refinement of contemporary design and engineering practice and hence at great cost, won nearly every trophy for which it competed in open competitions in the mid-1930's — the writer embarked upon a study of the problem of SE. The main conclusion was that, whatever the material chosen, its stabilisation is of supreme importance, that the basic concept should be ideally a monocoque structure in which the skin, suitably thickened where loads were concentrated, should take most of the



load, and that the whole should be filled with a stabilising core — providing, of course, that this filling does not offset the saving in weight in the stressed skin. Even compressed air was considered seriously for the core but considerations of deformation and of safety ruled this out, giving way to cores of so-called "expanded materials". It took years of spare-time work to conclude this study, and yet more to work out practical applications, and further years still to find someone prepared to build a sailplane on a basis of one's findings.

* * *

Gipsy 12/15 project

Five years ago I formed a design group with John Gibson and Keith Emslie, with a view to designing a low-cost, lightweight, Standard/Sports Class sailplane in which either a medium-performance 12-metre wing or a high-performance 15-metre wing — both conforming basically to my patent — could be fitted to a common fuselage and tailplane unit. The project was to be known as Gipsy 12/15.

A recently computerised calculation had shown that a modern optimised 12-metre sailplane should have an empty weight of not more than 230 lb. and should have an aspect ratio of 17, and this coincided with our previous conclusions. We decided, however, that the fuselage and the tailplane unit should be enlarged above the optimum for the 12-metre machine in order to take the 15-metre wings, that in the interests of low cost the wings should be untapered, and that as many as possible of the 12-metre components should be applicable to the 15-metre wings. Again, for economy, it was decided that all of the components — with the exception, of course, of the main spar booms — should be of constant cross-section. This foredoomed Gipsy 12 to be well above the idealised weight but, nonetheless, still well below that of machines of comparable performance.

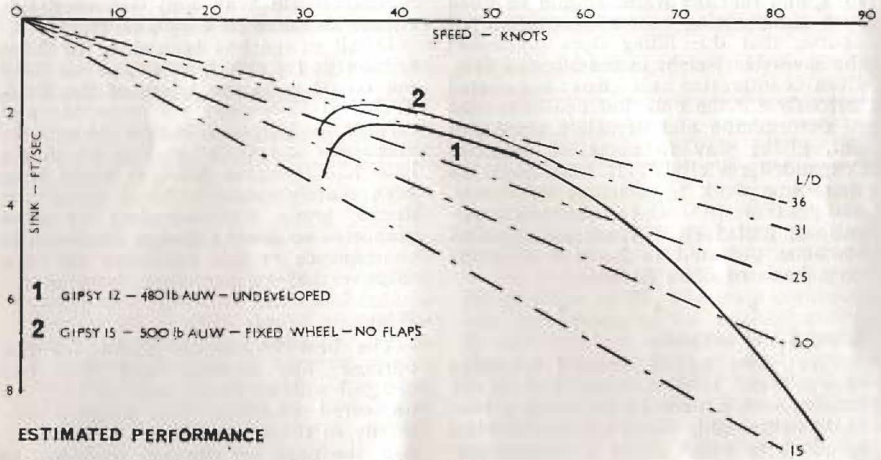
Early last year, after years of fruitless negotiation elsewhere, we enlisted The Birmingham Guild Ltd., of Birmingham, to construct the prototype Gipsy 12. This versatile firm had been making aircraft components for giants of the aircraft industry since the beginning of the Second World War, and welcomed this chance to make its own aircraft.

Detail design has been done by John Gibson and Keith Emslie, and we have put ourselves in the hands of the BGA Technical Committee for inspection and certification purposes. But for the remarkable help and understanding which we have had from the BGA, it would have been quite impossible for a spare-time design group like ourselves to have pioneered so novel a design. However, in consequence of this assistance we hope to have the first prototype flying soon.

Wings

The best Wortmann profile for our purpose was selected and this was coupled with an aspect ratio of 17.2. An untapered planform was adopted primarily to reduce costs but also to eliminate the need for physical wash-out, to provide good stability and spin characteristics and to give a relatively favourable Reynolds Number at the tips. All of this, of course, was at the cost of some extra weight above that of the tapered counterpart. Exceptionally narrow half-span ailerons offer negligible drag within the normal working range applicable to lateral trimming during normal cruising flight and they are actuated by rods. Inboard of the ailerons are airbrake drag-flaps, hinged so as not to improve the performance of the wing and hence to conform to the unfortunate law applicable to the Standard Class requirements. Need I mention the advantages over the orthodox mid-chord type? Much care went into shaping the glass-fibre wingtips to give an efficient vortex shed and good grounding properties. The mainspar is a narrow metal box section, while the leading edge and the rear spars are simple metal channels. Ahead of its spar the leading edge is filled with balsa wood.

In other respects the cavities of the wings — except those of the ailerons and flaps — are filled with rigid expanded foam, bonded to contingent members so as to support and stabilise them over most or all of their surfaces. This has made possible a metal skin of merely 30 g. thickness, while the pressed metal ribs spaced 3 feet apart take concentrated loads at root and tip and at control stations. At a later stage, in the interests of work-saving and to insure



ESTIMATED PERFORMANCE

against extra drag from skin-wrinkling throughout the entire speed range, it was decided to eliminate the original lightening holes and slots in the solid foam cores. At once, this doubled the weight of foam but we were prepared to accept this burden. And, lest those pokers fear that their fingers might go through a skin of such thinness, please remember that the well-proved Fauvette has withstood years of hard usage with a plywood skin of only 0.4 mm. thickness. Rigging is simple and quick, as much by virtue of ease of handling of the light wings as by the simplicity of design.

Fuselage

The fuselage is of orthodox construction and of a carefully streamlined form, fronted by a metal-braced glass-fibre cockpit and having pressed metal frames, metal longerons and a metal-skinned cone terminating at the rear in a lifting handle. The hinged canopy extends nearly to the nose, providing, by virtue of its deep, steep and straight nose, a very good field of view and a well-lit instrument board. With this canopy and the hood behind it removed, exceptionally easy access is available to the controls and the wing-root fittings. Generous headroom and elbowroom will be enjoyed and the pilot will not have to lie down or be forced to peer down his nose. For the time being, the main wheel of the prototype is fixed and a tailwheel is fitted.

Empennage

A vee-tail, of relatively high aspect ratio which is generous in area and in range of operation, embodies all of the requisite functional features which — hitherto — have not always characterised others of this form. A full-span tab is fitted and the unit is constructed on the main basic principle of the wings.

Structural testing

In view of the novelty of Gipsy's wing design, the BGA quite rightly expected proof and ultimate structural — torsion — testing from us. The first test was carried out on a wooden version, skinned with 1 mm. plywood and only half-backed by foam, which sailed through its trials with plenty of reserve. With full foam support and a 30 g. metal skin, the test went not only beyond OSTIV design ultimate and back to zero without permanent set, but did so without showing skin-wrinkles. Our torture machine actually failed to break the test piece although, by then, it had demonstrated handsome reserve factors both of strength and of stiffness. There is to be no "hungry horse" about Gipsy at any speed and all design stressing has been to the higher level of the OSTIV/BCAR requirement.

Repair and maintenance

Care has been taken to ensure ease of repair and maintenance, and we have tested our claim for this by stripping and

rebuilding complete bays of a wing at its root end.

Performance

Our aim has been to make Gipsy 12 compete favourably in the Sports contest field with the outgoing generation of Standard Class machines, such as the Ka-6 and the EoN 463, and to make the Gipsy 15 competitive with the best of the latest Standard Class. We feel confident that this aim will be achieved.

We anticipate the day when, inevitably, the Standard Class rules will enable us to replace the present no-lift flaps by performance "lift" flaps; then, the reserves of strength and stiffness in the Gipsy wing will make it possible for us to make this conversion — and other developments which we have in mind — with minimum fuss and expense. In this connection, the narrow-chord performance flap offers a truly exciting improvement in performance at both ends of the speed range.

Conclusion

Gipsy 12 is meant to bring to the gliding world what the racing dinghy brought to the yachting world and what the mini car brought to the motoring world. They demonstrated in a most convincing way that a "good little 'un" can engender as much excitement and skill in competition, and as much pride and satisfaction in ownership, as do the big machines with the wealthy owners. The potential of Gipsy 15 for development, within its own Class and then into the Open Class field, speaks — we believe — for itself and, perhaps, I may be permitted to enlarge upon this later.

Specification — Gipsy 12

Wing	Span	39 ft. 4 in.
	Chord	2 ft. 3.5 in.
	Area	90 sq. ft.
	A/R	17.15
Tail	Span	10 ft. 6 in.
	Chord	1 ft. 6 in.
	Area	15.75 sq. ft.
	A/R	7
Fuselage	Length	19 ft. 8 in.
	Width	2 ft. 2 in.
	Depth	2 ft. 10.5 in.
Weight	Empty	270 lb.
	Max.	520 lb.

This is to introduce ourselves to the readers of "Sailplane & Gliding" as manufacturers of the "Gipsy 12/15" glider. We have been closely associated with the aircraft industry for 35 years and manufacture important components for modern aircraft.

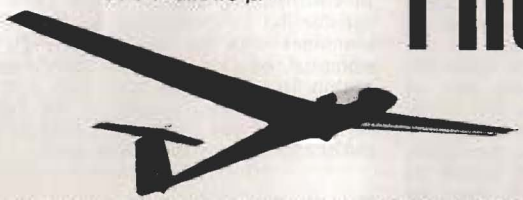
"Gipsy 12/15" is the result of co-operation between a very qualified design team and ourselves. We are also indebted to the British Gliding Association for their help and advice.

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THE DANAVOX STETOMIKE

Product Review — By R BRETT-KNOWLES, Radio and Instrument Co-ordinator

"I have heard of Thee by the hearing of the ear: but now mine eye seeth Thee."
JOB 13 : 5

I HAVE written before on the subject of combined headsets and microphones, with the object of converting loudspeaker users to their use. The loudspeaker addict has much in his favour, his head is unencumbered and he can hear the sound of wind or audio variometer. The chief disadvantage is that nobody makes a boom microphone all on its own and so a hand-held mike with push-to-talk is needed.

The Almighty only gave us two hands and if these are fully occupied with control column and brakes, radio just cannot be used on finals — many will bless this.

For those who can cope with just that little bit more, DANAVOX have made a device that will appeal, giving the advantages of a boom microphone without the dog on a lead feeling that some headsets can inspire. The attenuation of external noise is nothing like as great as that of a normal headset, so that a proper appreciation of the audible input from the glider or instruments can be made, with the radio output adjusted to suit the user.



Superficial examination leads you to think that only one ear will get any signal, but the under-the-chin strap is hollow and conducts the sound from the one transducer to the remote ear, this principle no doubt being the motivation for naming it Stetomike. The microphone is held at the right distance to suit the user's face by a boom hinged from the centre of the chin strap. The entire device is supported by the ears only, but since its weight is in the ounce region this will not create any fatigue. Moreover, if it is desired to remove them while still being able to hear faintly, the position clipped around the neck — favoured by actors taking the part of doctors — may be adopted. On no account should the device be clipped on to or in very close proximity to the compass, as, like all electromagnetic transducers, its internal magnets will deviate the compass.

One final point for intending users; radio manufacturers have not standardised on the impedance of transducers associated with their products, and DANAVOX, realising this, make the Stetomike in a variety of impedances, to suit all common glider radios, including the Pye Bantam and Ultra 3A4. If you don't know what impedance is required by your set, you should find out before ordering a Stetomike, since use of the wrong impedance will only result in disappointment. You have to provide a press-to-talk switch, which you can now build into the control column.

Southdown Aero Services Ltd.

We regret that the telephone number given in recent advertisements for Southdown Aero Services Ltd., has been incorrect. The correct number is HERRIARD 359 or 0256-83 359, We apologise for any inconvenience which may have been caused to our readers.

HUISH REVISITED

By ANTHONY EDWARDS, Cambridge University Gliding Club

EVER since I was bunjied off Priest's Crag on 15th March, 1958, I have known what heaven is like; it is watching the bunjy stretch on some unflown hill, with enough wind to make the ASI needle twitch but not enough thermals to spoil the hill lift — *pace* Bill Crease. Before *Penguin* was three months old we were launching her gaily out of Bill's hen-run on the Clwyds. I count myself fortunate to have learnt to fly at Cambridge in the days when mountain expeditions were annual events and, when I returned to Britain after four years abroad, one of my first purchases was a bunjy. During the spring of 1966 I built a mountaineering trailer for my Olympia 463 *Cockleshell* and now, whenever the evenings start drawing out, my thoughts turn to the hills. In 1967, with the invaluable help of our wives and Laurie Vandome, John Griffiths and I bunjied ourselves around some Highland mountains — see *The Freedom of the Hills* in SAILPLANE AND GLIDING, August-September, 1967. Last year we repeated the exercise, although a week-long anti-cyclone kept us grounded until, in desperation, we launched off in an attempt to soar the sea breeze — to the consternation of the Montrose constabulary. In between expeditions I had half-a-dozen launches from various sites, some of them with only Catharina's help, and the flying was always immensely enjoyable.

Now we are back in Cambridge and, when the days lengthened this year, thoughts of distant hills arose. It was eight years since a Club glider had been on an expedition, so what better place to introduce the new generation to the noble art than the Wiltshire hills at Huish? Gentle, accessible and nostalgic — the Club had held two camps there in 1938. Laurie and I set off to explore, and one of our calls was at the farm where the campers had stayed 31 years ago. How extraordinary! The land is now farmed by a glider pilot, Neil Swanton, whose father had been so hospitable before the war. But he could hardly have helped our predecessors as much as Neil helped us for, from delivering the milk in the morning to squaring the neighbouring farmers in the evening, he was a tower of strength — thank you!

So, with a warm welcome assured, we arrived on Easter Saturday for a week. Easter Day produced a howling anticyclonic easterly — not the most desirable wind for the Vale of Pewsey. The only suitable face within miles was a short spur called Martinsell Hill, with a beat of 500 yards, a slope of 300 feet and a very friendly farmer. We took the Skylark 3 and *Cockleshell* up to the top, which was surrounded by the earthworks of an ancient encampment. It was surely the windiest place in England that day. For a couple of hours we dared not unhitch the trailers, but then our courage rose and we got as far as putting the centre-section on the Skylark and laying out the bunjy. There were six of us and, on the steep slope, five could just stretch the three strands of elastic by hand, so we decided to anchor the top retaining wire to a Land Rover and use our land anchor at the lower end. Another two

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Laurie Vandome watches Ian Pringle preparing to fly his Skylark 3 from the Wiltshire Downs.

hours must have passed before our combined courage overtook the wind, which was, if anything, still increasing. We manoeuvred the Skylark carefully over the switchback of the earthworks, which were clearly intended to protect Ancient Britons from glider-borne invasion, and tipped and tailed it at the launch point. The bunjy was stretched on to the land anchor and the Skylark attached. When the pilot — Cecil Willcocks — closed the brakes the bunjy was released at the top end, and Cecil became airborne several times faster than ever before in his life for a flight of three hours.

Cockleshell, being much lighter and having a two-piece wing, was more of a problem to get over the earthworks and launch. It is not often that, on the hills, she compares badly with an 18-metre bomber. As we moved her to the launch position I noticed that the spare wheel from my Land Rover, which we had used as a wingtip weight for the Skylark, was no longer lying on the ground where it had been. There was only one direction in which it could have gone — and that was down. We looked accusingly at the few spectators around us — but without response. It was bad enough to have lost the wheel, but infuriating to think that we had missed seeing a gravity launch. The farmer's son-in-law, who was helping us, promised to search for it in the strip of woodland at the bottom of the hill the next morning.

Soon, I was launched in *Cockleshell* for a pleasant — if rough — flight. Cecil and I landed in the same field as dusk was falling; we felt pleased with our first day — two static bunjy launches at a cost of one spare wheel.

By Easter Monday the wind had blown itself to a standstill and we accepted the Moonrakers' hospitality at Upavon. They check-flew us efficiently, launched us smoothly and scolded us rightly when we misbehaved. After a couple of winch-launches in *Cockleshell,* I was convinced that the air was likely to be stable for hours and I took one of those precipitate decisions which so often pays off — this time I fell flat on my face. Since the light air was coming from the east, I asked to be towed to Martinsell Hill. Hill-scraping, I argued, was better than circuits. For 20 minutes I scraped that tiny spur — to the amusement of the Bank Holiday crowd. Then the weather worsened suddenly — *it became thermally.* Thermals, you will remember, spoil the hill lift and strong thermals ruin it. Along came one, and I turned with the birds but, as it drifted over the top of the hill, the birds continued circling through the beech wood and I was stumped. Along came the down and there was only one escape — stick forward, speed up and my 300 feet gone in a flash. Around the oak tree, between the sycamores, pull up and there — two fields away — was yesterday's pasture within easy reach. Plonk!

In the Skylark, Ian Pringle was more patient. After the thermals had started,

he flew for three hours from an Upavon aero-tow. I set off to find the farmer. He was out but, by his gate, was my spare wheel. Since I had mislaid *Cockleshell's* wingtip pegs it was doubly welcome! It had been found well into the field beyond the wood at the bottom of the hill. Once, long ago, the farmer had let slip a reel of barbed wire at the top of the hill and it "went clean through the top of an oak tree" so, on this occasion, his son-in-law knew where to look. I spent the rest of the afternoon watching a manned hydrogen balloon saunter across the sky. And I had been trying to hill-soar!

By Tuesday no wind from the east had become no wind from the south, so we amused ourselves with agricultural efforts on Neil Swanton's hill, which was covered with large tussocks of grass. Laurie dealt with these by trawling a loop of winch cable from his Land Rover, while the rest of us dug, heaved and carried until an 18-metre launching run was clear. The bunjy was laid out and we waited for the wind. By early evening the handkerchief-of-a-windsock *moved*, so we rigged *Cockleshell*. I love nothing more than to be bunjied into a marginal breeze and, in anticipation of a happy scrape, I added some lightness by taking everything removable out of the cockpit. The bunjy was stretched, and effortlessly *Cockleshell* took to her element, airborne at Huish at last! Smoothly and silently, she rose to an equilibrium 200 feet above the hill and I wandered along five miles of Wiltshire Down, from Martinsell in the east to Milk Hill in the west. As the sun sank lower, the smoke from Pewsey rose ever straighter until I seemed to be suspended like a satellite, with no force to sustain me nor any needed. All the noises of the valley farms were mine to savour as, at 32 knots, *Cockleshell* is very quiet. It is remarkable how, in some conditions, practically no wind at all will balance one well above a hill.

Roy Brown, launched some time later, had an unequal struggle. The breeze was dropping, the Club Olympia sank more quickly than mine, and it was his first flight so close to a hill. I watched him settle slowly to the bottom field where, he says, there was a flat calm. As the weary crew coiled up the bunjy and drove the trailers slowly along the crest of the hill, I made full use of their efforts and my freedom, swooping over them time and again until the chilling air had no more energy to lend me and I, too, sank to the bottom. By my accounting, one such flight is worth more than the biggest triangle I have ever rounded, or the greatest height that I have climbed.

On Wednesday a light south-westerly developed and, in spite of its southerly aspect, we decided to try the home hill again. First, we launched Philip King in the Olympia and he was soon up and away in thermals — how nice to see an undergraduate bunjied off a new site after all these years. He spent four happy hours wandering around Wiltshire before making his first field landing on the top of the hill, about the details of which he is strangely reticent! Next to go, as the wind freshened and veered a little, was Ian in the Skylark. He, too, was soon



Preparing the launching site on the Downs near Huish.

scorning the hills and exploring Wiltshire, returning in the evening for some more hill-soaring before landing at the bottom after three hours.

There remained *Cockleshell* and, with a stiff breeze at 45 degrees to the launching run, I went off and up without a care in the world. Well above the hill I turned in rising air. No . . . the thermal is the other way . . . reverse the turn . . . thump . . . that was a mistake. *Cockleshell* cried in agony as I forced her round but she was caught — first in the thermal sink and then in the curl-over from a spur called Adam's Grave. The wind was more westerly than I had bargained for and I, foolish fellow, compounded my error by trying to force my way over Adam through the down. "Beware the clutching hand!" says Ken Machin's code for experimental sites. "If you've never experienced it, ask a pilot who has!" In the mountains of Wales, Scotland and the Lake District, the clutching hand has never been far from my mind — but to be caught out behind a Pewsey pimple! Adam was adamant, I was obstinate, and down I went. I had half a mind to use my speed to sneak around his shoulder and cheat him still, but the other half of my mind directed me to an ample field, where I spent the rest of the afternoon. On the hills one is learning always, one of the most difficult lessons being that one must assess a situation and react to it very quickly.

On Thursday and Friday it rained and we fettled. Saturday, our last day, produced a north-westerly gale of such violence that we dared not rig at all. Only in the evening did the wind abate enough for us to put the Skylark together on the lip of Pewsey Hill but, as so often happens, it then died so quickly that, if we had launched five minutes later than we did, Ian might have done a rather extended ground-slide. As it was, he had a struggle to keep the Skylark up for 20 minutes. He landed in the largest field in Wiltshire — if not in all England — but how we got him out of it is a long, long story. It was well after midnight before we started cooking our supper and, during the retrieve, we managed to prang the Skylark just enough to make us feel that, as in days gone by, this had been a *real* expedition. Which it had been . . .

A FLIGHT TO REMEMBER

By F. W. BUTLER

DURING a recent visit to an Australian Naval Gliding Site at Nowra, 110 miles south of Sydney, I was treated to one of the most rewarding flights of my gliding career. It was one of those days when everything was perfect for soaring — the wind was light, the sun warm, and the humidity at around 30%, with small cumulus forming fairly high. The first aircraft off was a club Boomerang on a Silver C duration and club duration record attempt, which turned out to be very successful, both club record and Silver C being obtained in a flight of 7 hr. 15 min. Next to take the air was the club two-seat Kookaburra, a glider just a little smaller than the T-49 and which has a staggered side-by-side seating arrangement, together with a full-width canopy hinged at the rear edge. During the day, this aircraft managed to average one hour per flight, reaching 8,000 ft. without trouble.

In mid-afternoon, I was invited to take my place in the Kookaburra and, after going through the usual formalities, we were hitched on to the Auster tug. After take-off we assumed the low tow position, which is standard throughout Australia; this caused a little consternation, as I had never flown in this tow position before; at the time I was a little out of flying practice and the tow was not taking place in very smooth air. However, on reaching 2,000 ft. we cast off in a real "corker", which, when we were roughly centred in it, gave 8-10 knots. As my flying was a little rusty we climbed rather more slowly than we could have done, but my Australian passenger was quite content, so we continued gaily upwards. At around 6,000 ft. the lift had increased

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to 10-15 knots; this astonished even my instructor in the seat alongside. But this was not all for, a few moments later, a surge under the inner wing threatened to throw the Kookaburra out of the thermal. With equal speed I forced the wing down again to get into the core of the lift and the subsequent change in vertical speed was quite noticeable. A swift glance at the variometer showed that we were nearly off the scale at 25 knots, but this was short-lived and the turbulence soon upset my circle — which by then was quite tight and steep. We were forced to return to 10 knots climb; in spite of this we passed the club's other sailplane — the Arrow — which was in a nearby thermal. By this time the atmosphere was pleasantly cool, a contrast to the 90° on the surface. Cloud base was reached at 10,300 ft. where, out of sheer joy at reaching such a height, we both decided to try cloud flying on the turn-and-slip only. However, this was not really a success and, after a series of swooping circles, we came out of the side at 10,700 ft. The view from this far surpassed any other we had seen — as far as the eye could determine the dry brown Australian landscape, dotted with tell-tale shadows, stretched away. In the distance the occasional bush fire served to remind us of the heat far below and the coast, a mere five miles distant, revealed a fantastic variation in shades of blue, where the azure Pacific meets the golden sands of Jervis Bay. The clouds around us — sparkling in the afternoon sun — made the sky seem like a fairyland of cotton wool puffs, to be darted in and out of with gay abandonment.

On returning to reality we decided that it was time that we gave someone else a view, but this was more easily said than done. Within the limits, of course, all manner of manoeuvres were employed to lose height and, eventually, we settled for full airbrake and 70 knots on the clock. Even at this speed we found ourselves rising occasionally at one knot. Slowly we fought our way down, passing the still circling Arrow, to the waiting spectators in the heat below. Arriving over the airfield at 5,000 ft., we did three circuits of it, still with brakes out and with anxious eyes watching from an empty launch point as we flew the downwind leg over a small bush fire on the fringes of the airfield. We turned on to final approach and lined up on a runway which was literally streaming with heat haze; no doubt this would be the next express to 10,000 ft. for the following launch soon to go.

Thus ended a most memorable flight, the like of which I shall find it difficult to better in the very changeable climate of the British Isles, so very different from those at Nowra which, on that day, made it possible for soaring to continue until 7 p.m., when gliders were still climbing to 7,000 ft. in a blue sky.

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GLIDING POLITICS

By Brennig James

ONE of the most amusing spectator sports in gliding is following the machinations of club politics and guessing who is next to get the bullet. Later, when you see the poor wretch staggering around with a glazed look in his eyes, at first you feel sorry for him, but, when you realize that it happened simply because the other fellow got his in first, you can't help seeing the funny side.



Some of us have found it impossible to advance on to better aircraft because the chap in charge doesn't like the colour of our eyes. The solution to this is to earn enough to buy one's own glider and be completely independent of such people, but, to do this, we have to do boring, well-paid jobs instead of more interesting ones which are less remunerative — which seems a pity.

When you read the newspapers you see that politics on a national or global scale is just as bad, but one of the lesser-known facts is that a fair slice of the people booted out in a takeover become psychiatric casualties and often commit suicide.



Now we all agree that business inefficiency is undesirable — but it's not a capital offence. Right through the gliding movement people seem to be using energy fighting each other, energy which, properly, they should be using for the good of us all.

I once wrote to the chairman of an important gliding committee, enquiring why it was composed solely of his friends? His reply was sublime — these were the only people he could get on with! There are few professionals in the gliding movement who have held down a job for longer than two years. Sooner or later they get the chop, and they can't be all that bad. If this sort of thing continues, we shall never get any decent people to do these jobs at all. We make our own rules for ourselves, no one else calls the tune and we can either play according to the rules of cricket or the rules of all-in wrestling — which way is it to be?

Finally, a few words of advice to all newly-appointed instructors, committee members, etc.

1. Now that you have got authority, make sure that everyone knows about it.
2. If you give an order, never explain why.
3. If there is a better pilot than you in the club — don't give up hope. Sooner or later he will make a mistake.



4. Make things unpleasant for undesirables, i.e. people you don't like. They will often leave and join another club.
5. When in doubt, get yours in first.

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ITFORD HILL, 1930

By C. H. LATIMER-NEEDHAM

The author of this second article in our series of reminiscences of early British gliding was the first British C pilot, first Chairman of the BGA Technical Committee and author of "Sailplanes, their Design, Construction and Pilotage", published in 1932.

IT all started at the Comedy Restaurant, Haymarket, on 4th December, 1929, when — following what was named The Gliding Lunch — the British Gliding Association was launched and the London Gliding Club owes its birth to the same occasion.

After an initial meeting at Guildford on 16th March, 1930, when short hops were made on a Dagling — built at R. F. Dagnall's factory from a set of plans which came from America — and on an imported German Zögling, the London Gliding Club started operating the following weekend at Down Farm, near Ivinghoe; a week later — at Easter — the Kent Gliding Club, headed by the indomitable C. H. Lowe-Wylde, joined us with their home-built Primary. On the afternoon of 30th March, Lowe-Wylde and I qualified for our A certificates although, since we had known nothing of the art of gliding, it was very much a case of the blind leading the blind. By 18th May the Club had moved to Ivinghoe Beacon and, on that day, I had the pleasure of making the first flight from the Beacon top in the Zögling, which enabled me to qualify for the first B certificate.

Colonel the Master of Sempill — later Lord Sempill, who probably did more than any other man for private flying in this country — believing that the best way to get gliding on a sound basis was to obtain the services of an accomplished exponent, flew in his Puss Moth with E. C. Gordon England, then Chairman of the BGA, to the Rhön-Rossitten Gesellschaft in Germany to secure the services of a well-qualified pilot. Professor Georgii, President of the RRG, recommended strongly Robert Kronfeld, the winner of the 1929 Wasserkuppe competition, and so arrangements were made for a prolonged tour in England, which was to start in June. Getting word of these demonstrations, the *Daily Express* was quick to engage another German pilot, Carli Magersuppe, together with a Professor sailplane, with the intention of participating in the flying meetings arranged to take place in various parts of the country. Since this was likely to augment interest in gliding, the BGA agreed to combine forces.

The first, and main, meeting was fixed for Whitsun at Itford Hill, where the *Daily Mail* gliding competitions of 1922 had been hurriedly convened, and as I commenced the long steep climb at West Firle — wondering whether the car would keep going to the top — I felt that I was entering land venerated by the pilots of the legendary event of 1922.

The gods were obviously benevolent, for a fair 30 mph wind was blowing up the steep north face of the Beacon, and this provided ideal soaring conditions along the South Downs. Tents and marquees had been erected along the brow of the hill, Gaumont British were installed in force with a battery of ciné cameras set up in position, and people from the aeronautical world and the sight-seeing public were arriving in considerable numbers. Kronfeld and Magersuppe were soon launched — the former with his beautiful Wien, a truly elegant aircraft designed by Dr. Lippisch and with a span of 63 feet and aspect ratio of 20. As a masterpiece of construction and finish, combined with its translucent

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Latimer-Needham ready to launch in the Prüfling for the first British C flight. Watching (l. to r.): Lord Sempill, Gordon England and Kronfeld

wings and tail surfaces, nothing like it had ever been seen in this country. Kronfeld made one flight to open the proceedings, whilst Magersuppe was kept pretty busy flying the blue and gold Professor, which had the words DAILY EXPRESS emblazoned along both sides of the fuselage.

Kronfeld then made a short flight in the London Gliding Club's Prüfling to demonstrate how a five-minute soaring flight should be made in order to qualify for the C certificate, and then suggested that I should be launched. Conditions were ideal and it was obvious that the Prüfling had a little engine secreted in the nose, which enabled me to reach a height of some 500 feet and to follow the contours of the hill, turning outward at the end of each beat, as instructed. There was no difficulty in conversing with those on the ground and, two or three times I suggested landing but, on each occasion, Gordon England, in his capacity of master of ceremonies, bade me continue. This was not a difficult command to obey and my landing was made eventually at the point of launch after a flight of 1 hour 6 minutes, thus qualifying for the first British C certificate. Marcus Manton, a pre-1914 instructor at the Grahame-White School of Flying at Hendon (we were the first joint honorary instructors in the London Club), then followed in the Prüfling and qualified also for the three-gull badge.

I believed that the proverbial tea-tray could be made to soar under the buoyant conditions prevailing and, as a Dagling had arrived at the hill-top, I suggested to Kronfeld that even the Primary would soar. To this he replied in the negative but said that there was no harm in trying, so I was duly launched and, to my delight, the Dagling stayed aloft. At first, flight was confined cautiously to within the well-defined funnel of rising air but, becoming more accustomed to juggling the controls — the Dagling had come direct from Dagnall's factory at Guildford without being even flight-tested and the control cables were very sloppy — it was possible to advance some distance forward of the hill-face and over the open countryside, although it was rather a weird sensation to be perched 1,000 feet, 200 feet added to the height of hill, above the lowland, with no part of the glider visible other than the rudder bar. It was possible also to wander with impunity right back, across the heads of the onlookers, and I remember well

Lowe-Wylde's look of surprise as he and his team arrived towing the Kent Club's Primary. After some 20 minutes I followed some swallows along the hill-face, an indiscretion which resulted in a landing a short way down the hill after a flight of 22 minutes, which — I think — remained for some years the longest duration in this country for a Primary glider devoid of any sort of fairing. Later, in the afternoon, I was asked to repeat the performance and, after another pleasant flight of 15 minutes, a landing was made — this time at the launching point.

Kronfeld was launched once again in the Wien at about 5 o'clock to demonstrate, for nearly three hours and for the first time in England, the true serenity of gliding flight. Climbing to 2,500 feet above the starting point, he explored thoroughly the up-currents of the north face of the range and penetrated four or five miles across the flat open country between Lewes and Hailsham.

The event had been well publicised in the Press and the Sunday papers had full accounts of the first day's activities, so that on Whit-Sunday it seemed that the whole population of Britain had found its way to the hill-top. *Flight* reported: "The Sussex Constabulary had their work cut out to keep any semblance of traffic order, and both on Saturday and Sunday there was an enormous number of cars which ascended the steep hillside." The day was devoted largely to instructional flights, mostly for experienced power pilots such as Flt. Lt. Stainforth, of Schneider Trophy fame, and Lord Gage, who had kindly allowed the use of the Itford Hill site, also made a flight in the Dagling. We were favoured, too, with a visit by Air Vice-Marshal Sir Sefton Brancker, the Director of Civil Aviation and President of the BGA, another man who did so much for civil flying in the 1920's and who was to lose his life so tragically only four months later in the crash in France of the ill-fated R-101. Frederick Handley Page, our Vice-President, was another spectator. Magersuppe continued with demonstration flights in the *Daily Express* Professor and we managed also to get in a few flights with the Prüfling.

Unfortunately, on Whit-Monday what little wind there was had shifted to the south-west — in which direction the hill slopes only gently — and this ruled out

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Kronfeld's Wien in flight.

all soaring flight. However, instructional flying continued with the Dagling and the Kent machine and, in the afternoon, when the wind was a little stronger, Kronfeld introduced us to a novel method of gliding, which involved the minimum expenditure of energy by the launching and retrieving crew. Launched in his Wien, he gained a fair height flying direct into wind but, beginning to sink about half-a-mile out, he executed a 180° turn, returned down-wind and, running the main skid hard along the ground, rapidly shed the high speed of a down-wind landing to finish almost on his launching spot. The manoeuvre, carried out with such a fine machine and by such a skilled pilot, thrilled the onlookers, who formed up in the shape of a horse-shoe encircling the launching/landing ground, whilst all that had to be done by the team of helpers was to attach and extend the launching elastic for each flight.

It had been planned to continue the meeting the following weekend and so, after a gap of four days, we were back again at Itford on Saturday, 14th June. For my part, I was kept busy throughout the day supervising instruction with the London Club's Dagling, with the gratifying result that several A and B licences were gained, and I was rewarded with two six-minute flights in the Prüfling. The Master of Sempill gained his C certificate in the Prüfling, the wind miraculously having gone round to the north-east.

Sunday was largely the mixture as before but, as the wind had shifted rather further to the east, it made soaring flight a little tricky. Kronfeld and Magersuppe were in the air alternately to keep the crowd interested, and the club aircraft also were kept busy. During the whole of the meeting Kronfeld's thoughts were on an extended flight along the South Downs, and it was agreed that, as a climax to the proceedings, he should make the attempt at about 4.30 p.m. on the last afternoon, after the onlookers had been regaled with more soaring flying than had ever been seen previously within these shores. It had been arranged also for Kronfeld to visit the Portsmouth Gliding Club after the conclusion of the Itford meeting, and Portsmouth was therefore the obvious choice for his intended destination. The start was delayed owing to Magersuppe having landed at the foot of the hill half-way through the afternoon, and as this meant that the Professor was out of action for quite a while, as its retrieval up the steep north face was rather a slow process, Kronfeld was asked to "hold the stage" with an extra flight in the Wien.

However, he did get away at 5.27 p.m., although with conditions not at their best, and flew in the vicinity of Firle Beacon (718 feet) for about a quarter of an hour, while gaining an initial height of 660 feet. From that point he crossed the valley to Cliffe Hill, at Glyndebourne, both the sailplane and our spirits sinking as he dropped out of sight to the lowest level of the whole flight — 130 feet below his starting point. After a few minutes, excitement rose as he came into view again, gaining altitude in a strong up-current on the east face of the 540 feet high Cliffe Hill and this, he said afterwards, had provided the best lift of the flight, to enable him to climb again to 530 feet above the start. Passing Lewes, he flew along the steep face of Ditchling Beacon (813 feet) and there rose to 820 feet, the maximum for the flight, to head for Fulking (700 feet) and to the north-east face of the 783 feet

Washington Hill, where he recouped again some of his lost altitude. The Wien then carried Kronfeld to Butser Hill (890 feet) just south-west of Petersfield, to arrive there at about 8 p.m., having experienced little difficulty after leaving Cliffe. He managed to regain his greatest height — 820 feet — but it was now a fight against time and deteriorating conditions as he turned south-west, following the main London-to-Portsmouth road, with little in the nature of hills between Petersfield and Portsmouth. Losing height the whole of the way, he arrived at Portsdown with only a few feet to spare and made an immediate landing at 8.30 p.m., having covered a distance of 45 miles measured in a straight line. His flight of 3 hours was the first cross-country soaring flight in England, and the distance of 45 miles for an unprepared flight compared favourably with the world record of 93 miles, which the same pilot had achieved from the Wasserkuppe to Bayreuth during the previous August.

Meanwhile, we waited excitedly at Itford for news but did not hear of the landing until about 11 o'clock, when the Wien's trailer — towed by a large chauffeur-driven Mercédès car, which had been placed at Kronfeld's disposal by the Mercédès company — and a small party set off for Bedhampton. I remember that as we — Gordon England, Ashwell-Cooke and I — pulled in to a filling station in Brighton the clock struck midnight, so it was after 1 a.m. when we arrived at Portsdown. The Portsmouth Club, under the leadership of their Chairman, Councillor Webb, had rallied to the scene, and I was grateful to note that the Wien had been dismantled and only had to be packed away in the trailer. This being accomplished, I drove home with Ashwell-Cooke asleep on my shoulder as far as London — where I dropped him — and then on to Wendover, where I arrived at 7 a.m., in time to snatch one hour's sleep before starting the day's chores at RAF Halton. And so ended a wonderful experience — one of the first milestones in the history of British gliding.

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GLIDING AT NIGHT

By HUMPHRY DIMOCK

SOME wit in the past said of me that I sell furniture in my spare time to pay for my gliding. To a certain extent this is true in so far as for many years I have spent at least one full day and three half-days working for my local club most weeks, winter and summer.

Because of my connection with the furniture trade I was aware of a huge bonfire of old furniture which was being promoted at Woburn Abbey on Sunday, 30th October, 1966, by the Duke of Bedford. Here was the chance which I had been waiting for, to do soaring by night. Most competition pilots know how a small bonfire can generate a good thermal even when there is no sunshine to help it, and given a good lapse rate such as that which happens after the passage of a cold front, a big bonfire can generate a big thermal even at night. Therefore preparations were made in advance, hoping for the right weather.

Now, the law states that a glider flying by night must have normal aircraft navigation lights, or a red light of at least eight candles visible from every direction. Therefore, to make sure, I fitted two red lights, one above and one below the cockpit. Then, the law states, that a glider may not fly at night under V.F.R. This means that the flight must be controlled by the local authority, in this case Luton. "Luton Approach" agreed to co-operate, as did the London Gliding Club at Dunstable. A daylight flight was made to check with "Luton Approach" that the radio was satisfactory, but unfortunately, as so often occurs, the weather did not co-operate, and the bonfire flight had to be cancelled. However, as all the necessary preparations had been made, I decided to do a local night flight anyway. I was released at 3,000 ft. at the commencement of "night", which is defined as being half an hour after sunset, and was able to stay up for 40 minutes under clouds which gave occasional weak lift. The countryside after dark takes on entirely new look, prettily bejewelled with lights of all colours, lines of orange sodium street lamps, mercury vapour lamps in the side streets, and the continual movement of motor traffic in long fingers of red rear-lights and white headlights running north and south along the M1. One has time to sit and stare with a superior air and admire all this in a glider, turning at will to admire the fairyland scenery.

Landing after dark presents no problem to me as I am fortunate enough to have very good night eyesight and require no other assistance than from my wife in my car with the sidelights on to mark the corner of the landing field. There was too much chatter on the radio to tell "Luton Approach" that I was about to land, and they rang up to enquire if everything had gone according to plan. I wrote to thank them for their courtesy, and compliment them on their efficiency.

In the past I have done an enormous amount of flying at night from fields by aeroplane without any lights whatsoever, but before anybody else attempts to do so I would recommend they should get instruction. When I eventually get my competition two-seater glider I hope to fly at night regularly, enabling others to enjoy this added interest in gliding.

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THE MYTH(TERIES) OF SCOTIA

By REG. CURWEN

THERE are three questions usually asked by members of the gliding fraternity when they visit North of the Border :—

1. Does the Loch Ness Monster really exist?
2. What does a Scotsman wear under his . . .?
3. Is there really a wave at Portmoak?

By the time that our visitor leaves the SGU, it is hoped that one or more of these questions may be answered.

Many of us do not treat the first question seriously, although an American gentleman — equipped with miniature submarine — is preparing to investigate the depths of Loch Ness and tempt the wrath of "Nessie". We hope he will be as successful as his lunar contemporaries.

The second question may be more difficult to answer. Would a true Scot be willing to tell? On your next visit to the SGU, visit the "Nip Inn" at Balgedie, near Portmoak, and ask Mine Host Bertie — he may oblige.

What of the wave at Portmoak? Is it as unpredictable as the windsock at the south side of the airfield? The pilots who were here last week . . . A long-range met. forecast for next week indicates . . . But the wave is quite elusive during your stay — or so it seems.

During March of this year, the reports of wave contact were not as good as for the same period for the previous two years, but we did experience good flying conditions when other clubs were grounded because of weather. We were looking forward to a visit from Rhoda Partridge, but the dear lady went to Aosta to read naughty words on the sides of gliders — a pity!

At least, we are pleased to report the first Gold C distance from Portmoak. Our Chairman has led the way and we hope there will be more to follow. How was it done? Tom won't tell — so it still remains a myth(tery).

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CATCHING WEATHER ON THE HOP

By ANN WELCH

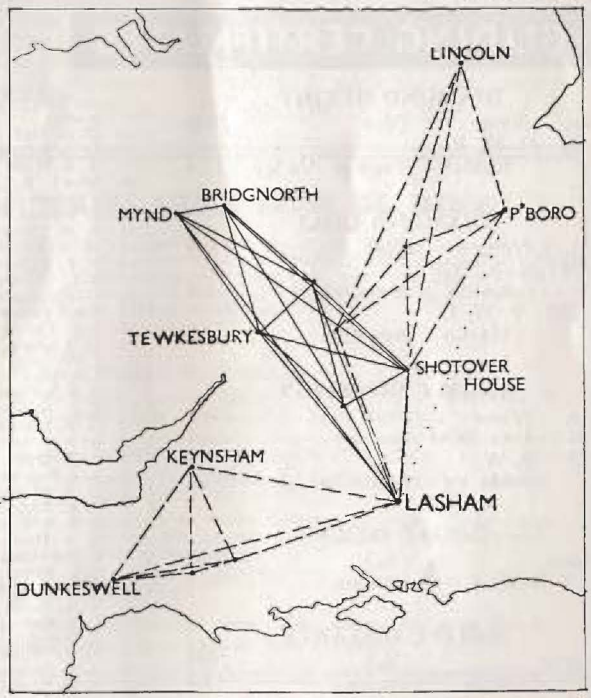
THERE is little doubt that the big leap in aircraft performance is making championship flying in this country somewhat more weather-sensitive, and not less so. This may seem paradoxical, since soaring conditions can obviously be used more effectively as the performance of the glider improves. But this does not always work out. The weather in Britain brings a few superb soaring days, some moderate days, and some poor — or just soarable — days. In the average championship period, the proportion appears to be about two good, five moderate or poor, and two unflyable days. It is in the less good weather that the problem arises. Even a few years ago, it was possible to have good "small" tasks in a substantially poor met. situation; a 120 km. race with some downwind component, a drift-off free distance, or a weak-weather 100 km. triangle all required sufficient *work* to achieve competition in which comparison could be made. So, adding several of these together gave full and fair results.

With exotics and orchids, tasks of this sort can play havoc with fairness when it comes to results. A 100 km., even as a triangle, is too small and certainly so for the Open Class; it is like giving a sprint champion a 50 yard running race — almost beneath his dignity. If the weather improves, only three thermals may be needed to gain 1,000 points. A short, partly-downwind race becomes merely a joke if the forecast were pessimistic, but free distance may be even worse. In poor weather, the distance can almost be calculated from the performance of the glider and the launch time, but an unexpected improvement can scatter gliders irretrievably out of reach of the next day's flying. Setting off into wind in poor conditions does not really help, since it produces a reluctance to go in case conditions improve later, as well as collision risk, bunching and big gaggle progress.

For the results to really mean anything in top class competition, the task should require some three hours airborne time. This gives time for the skill of the pilot to be properly demonstrated and for the luck element consequently to be reduced. In good soaring weather, the large triangle — 250-500 km. with or without an open end — provides the sort of work and achievement necessary and, also, it gives enjoyable and satisfying flying to the competitors, which is most important. Unfortunately, Britain's weather does not so often permit it. So the need is to find a big task, with greater flexibility than a fixed-line triangle, which will provide a proper comparison of performance. Since the old maximum-flexibility task of free distance is now out, an alternative is needed which gives pilots plenty of freedom to extract the best from whatever weather exists, without the disadvantages of ending up too far away. Fortunately, the alternative exists. Cat's Cradle — or Bikle's Basket, a not-too-complimentary reference to its inventor — gives freedom of choice over a large given area. The pilot is free to make his own decisions as to which route to take in the light of actual — as against forecast — conditions, and it allows him to turn his understanding of the weather and his powers of observation and deduction fully to his own advantage. Further, it permits more flying to be obtained from days of irregular lift distribution, e.g. cu-nim, spread-out, or flat areas caused by intermittent high cover, since the pilot can change his mind and go to another turning point if one is obliterated or dead. If Cat's Cradle is set over the general best weather area of the country with five or six turning points, even poor-to-moderate conditions can give sufficient flying for proper comparison, with the advantage that, should the weather improve on the forecast, it becomes a really tough task with flying until thermals cease. Since the home base is also a turning point, retrieves may be short — or even non-existent — if the last thermal brings the cunning pilot home. Obviously, if the forecast indicates lift conditions suitable for a big triangle, Cat's Cradle should not be used, but, if the weather is likely to be weak, erratic, thundery or just plain unpredictable,

Cat's Cradle gives — by quite a long way — the best chance of obtaining good competition.

Another problem, certainly highlighted in this year's Open Nationals, was dealing with days in which the weather cleared only in the late afternoon. Once past the peak of the day, the first pilots off will have an advantage over those whose launch turn is later. As the afternoon goes by, the situation worsens steadily until, regardless of their skill, the last ones off cannot do the task. If this happens the competition is unfair. In a Regionals — where people come to get as much flying as possible as well as to compete — this may not be important but, in a pre-World Championships Nationals, it is. Although Designated Start gets everyone airborne in the shortest elapsed time, it carries a major disadvantage in poor, or late-starting, weather. The point is, quite simply, that the Contest Director *must* work in the interests of all competitors equally, and calculate on the total launch period — say 40 gliders. On a poor day, there may be several periods when it is just possible for a few gliders to get away, but throwing everyone in the air at a set time does nothing more than lose most of them a launch. On a late-starting day, when the time comes at which it is calculably unfair on the people at the end of the line, the Director has no alternative but to cancel the task. This may be infuriating if better weather is actually in sight, but it is nonetheless essential if fair competition is what is required. If we had better weather, there would be no harm in completely discarding poor days, but we do not possess it and so have to make the best of the poorer days. The answer to this one, I am convinced, is for the Director to opt out of the decision whenever possible and to provide for Pilot Choice of Start Time. If launches are offered to competitors before thermals start, say from 10.30 until 18.00 hours, it may be possible to obtain



Cat's Cradles based on Lasham. The centre one was used twice during the Open Nationals.

a reasonable contest out of a day which would have been impossible with Designated Start. Even if it does not end up with a situation in which some had a chance to get away and some had not, at least this came about from a pilot, and not an organiser, decision; also, it may be that it was not just luck that the best pilot went at the best time.

The reasons for the introduction of Designated Start were to deal with two-class competitions, and to get pilots off in the shortest overall time in strong conditions. We do not now have both classes at the same time, so that particular reason no longer exists. Pilot Selected Start will always take a little longer because pilots change their minds or are less ready, but on doubtful days it offers the best chance of getting a fair contest out of a day which, with the best will in the world, could not reasonably have been given with Designated Start.

OBITUARY

O. H. FURLONG

"POP" Furlong was the name bestowed on John Furlong's brother, Otho Herbert, when he first came into gliding as a member of the Anglo-German Camp in July, 1937, at Dunstable — the camp at which Ann Welch also had her first introduction to gliding. Not long afterwards, being already an aeroplane pilot, he flew his "five hours" in a gale, having to maintain at least 60 m.p.h. airspeed in his brother's Cambridge 2 to keep in one place.

A most cheerful and amusing character, he stayed with the writer at Whipsnade while awaiting an opportunity to complete his Silver C. "Pop" became an R.A.F. pilot and was stationed at Haddenham (Thame) in the early days of military gliding. He earned the Royal Humane Society's Certificate while in Air Sea Rescue. He was 64. A. E. S.

GLIDING CERTIFICATES

DIAMOND HEIGHT

No.	*Name*	*Club*	*1969*
3/90	D. M. R. Riddell	Thames Valley	12.4

DIAMOND GOAL

No.	*Name*	*Club*	*1969*
2/282	N. A. Wilkinson	Moonrakers	4.4
2/283	P. W. J. Martin	Australia	16.1

GOLD C COMPLETE

No.	*Name*	*Club*	*1969*
224	J. G. Wild	Bicester	18.4
225	P. W. J. Martin	Australia	17.1

GOLD C HEIGHT

Name	*Club*	*1969*
S. T. Soames	London	30.3

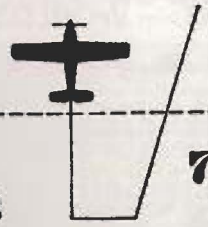
GOLD C DISTANCE

Name	*Club*	*1969*
D. F. Hanson	Bicester	19.4

SILVER C COMPLETE

No.	*Name*	*Club*	1969
2357	D. G. Day	Norfolk	30.3
2358	D. A. Vennard	Bristol	2.4
2359	A. B. Webb	Culdrose	7.4
2360	Miss L. E. L. Brown	London	3.4
2361	B. Wyman	London	4.4
2362	R. W. Clemo	Clevelands	4.4
2363	M. G. Throssell	Essex	8.4
2364	N. F. Cunningham	Surrey & Hants	8.4
2365	B. C. Hockley	Essex	9.4
2366	G. Morgan	Dorset Flying Club	19.4
2367	Carol Foster	RAFGSA	20.4
2368	J. R. France	Cranfield	20.4
2369	D. J. Clark	Kent	20.4
2370	J. W. Stone	CISAVIA	7.4
2371	J. E. Hart	Yorkshire	13.4
2372	B. P. L.Church	Surrey & Hants	18.4
2373	T. C. Harrington	Bicester	19.4
2374	G. R. Middleton	Airways	19.4
2375	A. F. P. Newns	Cambridge	19.4
2376	K. B. Duffy	Bicester	19.4
2377	A. J. Brenner-Milne	Anglia	5.4
2378	D. A. Monkton	Kent	20.4
2379	A. C. Nightingale	Wrekin	19.4
2380	B. R. E. Collings	Essex	20.4
2381	R. A. Hayne	Cotswold	19.4
2382	F. Hemmings	Staffordshire	19.4
2383	S. C. Kovac	Surrey	7.4
2384	E. A. J. Hibbard	Essex	20.4
2385	T. A. North	Moonrakers	18.4
2386	I. M. Bell	Bicester	17.4
2387	K. Kieley	Wrekin	1.4
2388	M. L. Williams	Bannerdown	20.4
2389	A. E. Jones	Midland	20.4
2390	R. H. Beazley	Eagle	20.4

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THE confidence over the decorations expressed in the last issue of S & G was, regrettably, premature. We have found that the rising damp in the walls in the bar has risen to such an extent that the plaster is coming off under the wallpaper! Also, we suffered a minor flood a little while ago, which didn't help. The results of the repairs, etc., will be new walls and wallpaper and a new carpet in the not-too-distant future.

Where do all the members go in the summer? This has always happened, though, and the club has been opening on Tuesdays and Wednesdays only for the last three months. The Wednesday feature has continued and we shall revert to opening on Mondays, Tuesdays, Wednesdays and Thursdays in September. The club rooms are bookable, as always, for special meetings or private parties, by arrangement.

Lucy Connolly is our new Membership Secretary. Lucy is one of the BGA staff, so you can find out all about the Club when next you visit Artillery Mansions. The simplest way to join, of course, is to arrive any Wednesday evening.

We were fortunate in being able to con Con. Greaves to London on 25th June to tell us how "he-and-others-dun-it in the Nationals" — a most interesting evening. Good luck to him and his confrères at Marfa next year. We shall look forward to hearing their experiences at first hand when they return. J. H. S.

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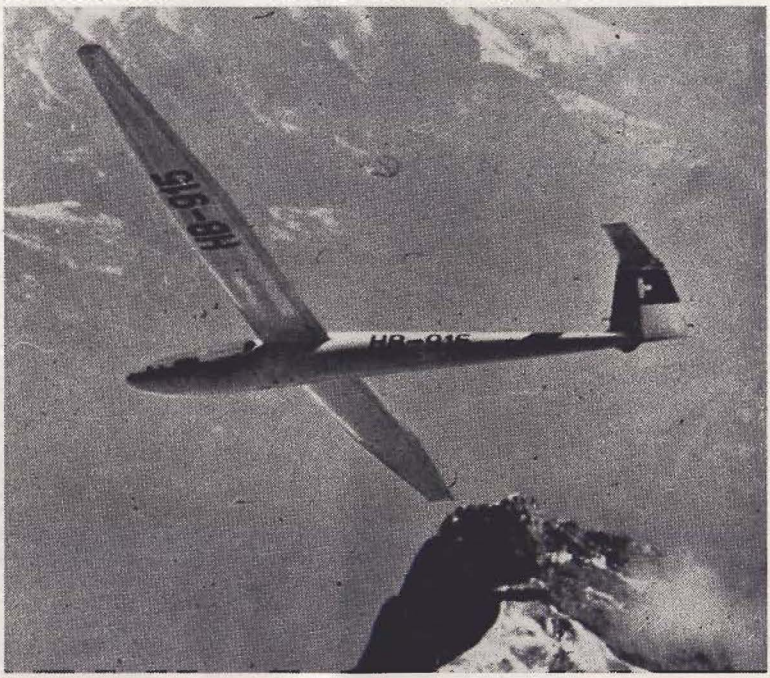
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A SEA BREEZE FLIGHT AT COOMA

By J. PICKETT-HEAPS

THE frustrations and limitations inherent in operations at the Canberra gliding club's site at Gundaroo, Australia, has stimulated members to venture further afield for more interesting flying. This has turned out to be a blessing in disguise in some ways for those of us who don't mind the 140 mile round trip to the Cooma gliding club near Bunyan, just north of Cooma. It is becoming apparent that the soaring prospects in the region may be some of the most interesting to be found in Australia, and each trip adds to this impression.

First, there exists a lack of airspace restrictions that one is beginning to doubt the existence of in this country. Secondly, the terrain is surely amongst the most beautiful and impressive in Australia; finally, diverse forms of lift abound. For instance, here must be a potential wave site comparable with those so lyrically described elsewhere.

The wave systems generated over the Snowy Mountains vary greatly in size and height, and they appear with considerable frequency. Particularly in winter and spring, when the cold winter winds howl across the Crackenback Range at 40-60 knots, making skiing impossible amongst huge clouds of whirling snow, one can gaze instead at the truly enormous stacks of lenticulars that form overhead. Smaller wave systems abound interspersed with cumulus, which should make their attainment fairly straightforward. Geoff Neeley has shown the way, by doing his five hours in wave around the 11,000 ft. mark — in a Grunau Baby. Determination!

Another phenomenon frequently observed is the sea breeze frontal system that regularly sweeps into the area late on a summer's day. (Cooma, incidentally, is about 60 miles from the sea.)

On Saturday, 6th December last, soaring conditions started late on a hot, fairly windless day, but by one o'clock Wally Wallington was climbing away rapidly into a sky that was becoming a dream. Wally screamed back to earth 90 min. later, at about 2.30 p.m., reporting strong thermals that were petering out at about 8-9,000 ft., well below cloudbase (all heights asl — the club site is about 2,700 ft. asl). I had just become very interested in a few wisps of scruffy cloud which had suddenly appeared well below cloudbase about 10 miles away, and Wally said these were quite active.

As I put the 'chute on, the sun disappeared, and a few minutes later a brisk tail wind sprang up — Sod's Law at work. To begin the launch, the Skylark's reluctance to get airborne was matched only by its pilot's determination. Inevitably,



The first wisps of sea breeze cloud under the high cumulus.



Confused mass of sea breeze cloud over a wide region.

The two distinct layers of cloud.





A very active strand of cloud; this was "slope-soared" in the clear air to the right.

too, a large swarm of those small Canberra flies appeared all over the canopy. However, the tail wind had been indicating a thermal, which took me straight from the top of the launch at a steady 2-3 m/sec. to about 8,000 ft., whilst I engaged in a methodical insect elimination campaign until the lift became sluggish.

Looking south, the wispy cloud had indeed grown; small vaporous vertical strands of it were appearing over quite a wide area. With a great sense of anticipation I flew over to these wisps, which were based at about 8,500 ft. and as I approached them began to encounter quite severe turbulence. After some moments of strong sink I emerged underneath and up-sun of the nearest bit of cloud and into the typical, narrow band of sea breeze lift.

Initially, it was rough, with short-lived surges, but soon off-the-clock lift carried me rapidly in clear air up past the tenuous and billowing cloud, which was visibly increasing all round. At about 10,000 ft. I was well above the wispy cloud in my immediate vicinity, but to the south, a couple of miles away, some other of the constantly re-forming strands of cloud were reaching higher than I was. These, and all the cloud masses, were obviously very active and ephemeral, often lasting but a few minutes. However, the gently whirling mist indicated clearly the band of lift and sink, and as I approached the up-sun edge again, the strong surges carried me rapidly up another 1,000 ft.

It was a rather weird and strange experience to watch these vaporous streamers gently twisting and writhing at this height. The air was not as turbulent as expected from the activity of the cloud. By now scattered lumps of this rather transparent and claggy cloud had developed over the whole area around Cooma — there was no clearly defined front, and most of it was far below us. In fact, I was often flying peacefully sandwiched between the two layers of cloud.

After waiting around a bit longer, I moved over to an even larger and more active looking billow. As the silhouette of the Skylark flickered over the white expanse close below, I slope-soared the clear air in front of the cloud, and was at last carried right up to the convective cloud base at around 13,000 ft. These clouds were evidently of the self-stoking variety, as gentle lift was to be found everywhere.

Descending clear of cloudbase, I could see the whole extent of the sea breeze convergence zone, which was not moving at any detectable speed inland. It was marked everywhere by the widely-scattered active cloud, mostly far below, whilst overhead, extending over the region, was the convective cumulus. Further towards the coast, a uniform layer of very low strato-cu covered the country to within about 20 miles of Cooma.

From east of Cooma, I now flew westwards for about 25 miles under the cumulus, temporarily leaving the sea breeze effect. This run lost me no height at all, with the broken cumulus sucking up gently all around. At Berridale, the usual Australian hole appeared, with hardly a cloud for 30 miles except behind, so I went out into the sunshine a few miles further and enjoyed the scenery.

It was magnificent beyond description. Visibility was fantastic and I could see beyond the Victorian border. I was also looking down on (instead of at) the broad sweep of the Australian Alps, still covered with huge snowdrifts. Koscuisko and the familiar Crackenback Range and Thredbo Valley looked quite diminutive at this height. Nearby Jindabyne lake, and farther along the mighty waters of Eucumbene, lay placid in rolling country, deeply scored by myriad streams and rivers, whose mysterious dark pools, even from this height, promised huge numbers of monster trout! One's powers of description cannot possibly do justice to such a scene viewed from the roomy cockpit of the silent Skylark.

After taking more photos, I swung back to the sea breeze zone and gradually lost height till I reached 9,800 ft. over the first few wisps. No sink extended until I reached the familiar surging and twisting billows of a larger strand of cloud, and in a couple of beats along it I was soon back at 12,500 ft. This cloud had now penetrated another 5 miles inland; below and up-sun, I could just make out with polaroid glasses a slightly milky texture to the air that all the textbooks promise.

I now flew gently northwards for about 20 miles, with the sea breeze cloud far below. There was apparently a tail wind component, as I lost very little height in this quick trip. Again the scenery was breathtaking and I was tempted to fly homewards towards Canberra, at least to the edge of the controlled airspace; but with no radio on board Wally and my wife, Chi, would take hours to locate me, so I reluctantly turned back to the field. I soon ran into heavy and smooth sink, and noted the head wind component as I dropped into the sea breeze itself, but a run-in at 70 knots brought me back with 4,000 ft. in hand. The field was covered by an area of no sink, but it was nearly 6 p.m. and the cool sea breeze air was blowing strongly below, about 20 knots from the east. I rapidly descended, therefore, resisting the impulse to indulge in some low-level hill-soaring. Wally said that the wind had sprung up quite suddenly, as normal, but the frontal region was still not much further inland.

This sort of sea breeze is obviously quite common around here, as the characteristic streamers frequently appear over Canberra on summer days. Doubtless, keen young lads will soon be using it to break records; I covered about 80 miles, needing only to circle in the first thermal, but not thereafter. Having withstood many sessions of "cross-country at all costs" indoctrination over the years, my personal view is that such a marvellous spectacle would have been entirely wasted by flashing all over the sky like a maniac. Cries of "heresy"? Anyway, you pundits can keep your incredible cross-countries over hundreds of miles of desert at ridiculous speeds! Give me thermals, waves and sea breezes over the Snowy Mountains and Monaro plains — and the inexhaustible kindness and cheerfulness of the boys at Cooma, who so readily help rig my bird and fling it skywards — to them, many thanks!

THE HAZARDS OF LIGHTNING

By F. G. IRVING (Chairman, BGA Technical Committee)

THE object of this note is to explain, early in the soaring season, the limitations of the electrical bonding systems fitted to cloud-flying gliders in this country and to warn pilots of the hazards associated with lightning discharges.

Since 1966, it has been mandatory for wooden and glass-fibre gliders to be fitted with a simple bonding system if they are to be certificated in the cloud-flying category. This bonding system consists of providing electrical connections between all the control circuits where this is not inherent in the construction of the machine and to connect them to other metallic components which the pilot can touch, such as the instrument panel. All the connections are normally in the vicinity of the cockpit.

Such bonding is only intended to protect the pilot against electric shocks due to electrostatic charges by equalizing potentials at the cockpit end of the control circuits.

It does not afford much protection against the effects of voltages induced by major discharges of lightning in the immediate vicinity of the glider. In the case of the glider being subjected to a major direct strike, it is unlikely that the bonding conductors would withstand the currents involved and little protection would be provided to either the pilot or the airframe. The discharge can involve a current of up to 100,000 amps., sufficient

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to vaporize control cables and to produce local temperatures of the order of 3,000°C.

These limitations of the simple bonding system were indicated in a Technical Committee note dated 1.7.66, It should be noted that the "General Instructions" issued by the Slingsby Aircraft Co. (in conjunction with detailed instructions for incorporating bonding in specific glider types) may have been somewhat misleading, since they are headed: "Bonding against Lightning Strike — Wooden Gliders". This could give the impression that the bonding affords protection against direct strikes, whereas it is only intended to equalize electrostatic potentials.

Since the incorporation of simple bonding systems, few incidents involving electric shock have come to the notice of the BGA. This may be partly because pilots are treating atmospheric electricity with more respect. There have been two incidents of lightning strikes in which the pilots suffered little discomfort, despite some damage to the aircraft in one case.

Whilst the incidents are too rare to be of statistical value, they do suggest that, within its limitations, the bonding has achieved some measure of success.

The only real protection against major lightning strikes is to avoid being in their vicinity when they occur. The Technical Committee has no wish to discourage enterprising soaring, but would like to repeat the warnings of 1966: major lightning strikes are very dangerous. They can cause severe structural damage and/or injury to the pilot. Deliberately exposing oneself to conditions in which they are likely to occur is, to say the least, very imprudent. It should also be remembered that the present bonding system will prevent the pilot from receiving small shocks which previously might have been interpreted as a warning, although static charges are not necessarily associated with lightning strikes.

The degree of protection afforded by a metal structure is obviously considerably greater than that of a wooden or glass-fibre structure. Also, some gliders — generally of Polish origin — have much more extensive "primary" bonding than that required by the BGA. In both cases, the degree of protection is appreciably enhanced but, even so, the effect of a direct strike is likely to be serious.

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GLIDER PILOTS' MEDICAL STANDARDS

By PHILIP WILLS, Vice-President CIVV, FAI

FURTHER to my paper published in the last issue of SAILPLANE AND GLIDING, the general case made can be summarised as follows :—

1. An analysis of past accidents/incidents shows conclusively that
   (a) The imposition of compulsory medical requirements for glider pilots does not beneficially affect the accident rate.
   (b) Accordingly, such imposition does not beneficially affect the risk to persons and property on the ground, which, in any case, is exceedingly small.
2. In view of this, the imposition of compulsory medical requirements for glider pilots is unnecessary and undesirable.
3. Therefore, in the case of pilots flying solo, all that is needed is to advise them — before starting to glide — of the general nature of medical disabilities which might increase the risk so far as they personally are concerned, and leave them — as in other sports — to decide whether to accept or not. It is, of course, up to each club whether or not to permit a medically deficient applicant to use its equipment.
4. Nevertheless, for policy reasons, it may be desirable to require some logically defensible medical requirements for pilots carrying passengers and/or instructors, particularly professional instructors.

Since writing this paper, Wg.Cdr. P. J. Stevens, OBE, MD, MC Path., of the RAF Institute of Pathology, Halton, has sent me a draft of the chapter on Gliding Accidents, which is part of a thesis he has prepared on The Medical and Pathological Investigation of Fatal Civil Aircraft Accidents, which is to be published in 1970.

In this chapter, he has added to my schedule of the fatal accidents experienced in British Civil Clubs those experienced by Service Clubs and the Air Cadets, and has extended the time scale to the 18 years 1950 until 1967 inclusive. This produces the staggering total of 4,473,275 flights, including 35 fatal accidents.

His conclusion is as follows :—

"In my opinion, the latest regulations on medical standards imposed by the British Gliding Association are likely to result in an acceptable level of medical fitness among those who glide in this country; medical investigation of 14 of the 23 fatal gliding accidents that have occurred in the last eight years has not provided any evidence to show that a system of licencing and medical examination of glider pilots would materially increase the safety of the sport."

After this, can even ICAO maintain the reverse?

EVENTS — 1969

July 26-Aug. 3. Regional Comps., Lasham.
„ 27. Shuttleworth 1910-45 Military Pageant, Biggleswade.
Aug. 1-15. 2-seat International Champs., Poitiers, France.
„ 3-13. Cenni Trophy, Rieti, Italy.
„ 9-17. Regional Comps., Booker.
„ 16-24. Northern Regionals, Sutton Bank.
„ 23-Sept. 1. Inter-Services Comps., Bicester.
Sept. 13-14. Air League Rally, Sywell.
„ 28. Shuttleworth Open Day.



OPEN CLASS NATIONALS
LASHAM 17–26 MAY



By Rika Harwood & A.E. Slater

"THANKS very much, I didn't know it was as easy as that," said Fred Slingsby, on finding it took only a few seconds to introduce him to the assembled company as the man who was going to open the Championships.

Going back in memory to the first British Nationals of 1932 at Barrow-in-Furness, Fred Slingsby brought up for the first time a matter which had troubled him ever since. He brought to the meeting a Falcon built by himself, "which started all this gliding business", and in it Mungo Buxton, then the leading British glider pilot, earned the Wakefield Trophy for it by soaring 13 miles (incidentally, a British distance record). But the name carved on the Trophy was Slingsby, not Buxton, "so if somebody could come along and take it off" (laughter), "it would ease the burden quite a lot." Lots of wonderful things had happened between 1932 and 1969. There had been quite a lot of progress in airmanship but only the shapes of the gliders seemed to have changed. Making them had given him lots of pleasure and, he added: "I did notice with a certain amount of satisfaction that some of you, at least about seventeen, are using British gliders" (laughter). "A nice thought, that" (more laughter); "I suppose you can't afford the others " (still more laughter). Fred Slingsby's final words were: "I haven't seen any champagne, so I just say, 'You can start'."

Ann Welch followed with useful information but could only say of the weather: "It's psychologically unstable and doesn't know what it's doing." So she postponed briefing till 2 p.m., with mention of a possible small triangle, and meanwhile a watery sun shone weakly through a thin overcast and a few cumulus clouds tried to form below.

At the 2 p.m. briefing the met. man turned up with a cheery "Good afternoon, ladies and gentlemen: you may remove your raincoats but keep your umbrellas." He promised, "the kind of clouds you like to see but perhaps a lot too much of them," going up to 17-20,000 ft. but then spreading out.

At another briefing, at 3 p.m., a task was set: a 127-km. triangle via Didcot Junction and Worthy Down, no take-off till cloud base had risen to 2,000 ft. above ground, and "Avoid the Thames Valley — it's wet".

By 4 p.m., with everyone rigged and ready, the weather looked worse, if anything, with thick alto-stratus cover thinning to the SW, where some grey cumulus masses appeared; so the task was scrapped.

Sunday, 18th May

At 6 a.m. the sky was almost clear. By 8 a.m. it had become overcast, and at 8.30 it was raining. At 9.30, when everybody had come in from the wet,

For task map see dotted lines on map on page 316. (Photo above: H. Howitt)

Ann postponed the briefing to 11 a.m.

The met. man told us that yesterday's Low had moved off eastwards, a High had rebuilt itself over the Atlantic with the intention of coming our way, but in between was a northerly stream straight from the Arctic, containing a trough which would pass through between 11 a.m. and noon, and thereafter bring heavy showers and thunder. The Atlantic High, when it came, might be short-lived, lasting only 24 or 48 hours.

At 11 a.m. the hail nearly drowned Ann's voice, and later, as more troughs came through, the cat's cradle task was cancelled.

Monday, 19th May

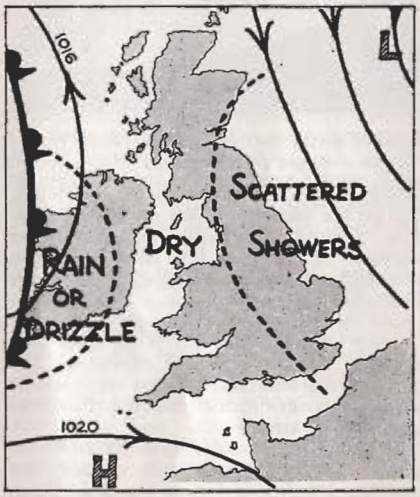
Again a clear sky at 6 a.m., only to be occupied later by cumulus and then cu-nims. As the met. man said at briefing, it was "too bright too early". A cold pool still lay over the North Sea, but a trough had appeared in the Merseyside area. Showers would not appear before noon, but it would be quite late before they dried out. There might even be snow inside them, with freezing level at 3,000 ft. or less, and tops possibly reaching 12,000 ft.

Saying, "It is not a 300-km. day," Ann announced a 240-km. triangle to the west via Sherborne and Melksham. The local weather certainly did look somewhat better than before, and an improvement could also be actually seen to the SW of Lasham. But although pilots were on the grid by 10.30 it was still not good enough to start, and at 12.15 they were told they could go and get a sandwich but must be back by 13.00 hrs. However, at 15.00 hrs. the task was cancelled, as it was thought that a fair competition was now out of the question. Just then an Olympia 463 landed at Lasham and out stepped Judy Haslam, an ex-Lasham staff member, announcing very happily that she had just completed her Silver distance with a flight from Tarrant Rushton, approximately 73 km. SW of Lasham. It had been an easy and straightforward flight, starting at 13.00 hrs. She had flown mostly between 4,300 and 4,600 ft. just below cloudbase, she said, much to the chagrin of the competitors.

Of the 44 very frustrated pilots on the grid, 39 took off to do some local flying, some of them setting off along the first leg of the original task. John Delafield landed somewhere near the first TP. Good climbs up to 8,500-9,500 ft. were made and several out-and-returns were made to Salisbury (50 kms.) and back. Thermal strength of 4-6 knots was found by most, and convection lasted until about 19.00 hrs.

Peter Scott had some trouble with his undercarriage on landing the BS-1, but luckily this was not serious and was put right by next morning.

Tuesday, 20th May



"Rig before briefing" was the cry this morning. At the 9.30 briefing another Cat's Cradle was set. The outside of the polygon measured approximately 414 km. The turning points to be used were: 1, Lasham; 2, Faringdon Folly; 3, Tewkesbury waterworks; 4, Long Mynd; 5, Bridgnorth; 6, Stratford Theatre; 7, Wheatley. X = 20. Y = 50 km. Pilot selected take-off. On grid 10.00 hrs.

A weak ridge of high pressure covered the British Isles. Scattered showers were expected in eastern districts, and a weak occlusion was giving cloudy weather with rain and drizzle over Ireland. For the remainder of the country, the airstream was still cool and cloudy with rather unstable air with an inversion at 8,000-10,000 ft. Breaks had developed in the



John Cardiff in his ASW-12. (Photo: T. Thompson)

clouds, however, in the west Midlands, due to the passage of the air over Wales. The ground was still wet from the showers of the past few days and there was still considerable moisture available aloft. On the basis of this a forecast was made of good convection, possibly one or two showers, but a risk of over-convection, due to excessive moisture. The cat's cradle was set because of possible areas of over-convection, but this was less than feared.

It was little wonder that by now the pilots hardly believed in either the weather, the forecasters or the task. However, at 10.16, when the first competitor took off, the contest had at last started. Most pilots streamed but a few stuck to their selected times, one doubting Thomas taking off with only two shots left in his camera, which rather cramped his style during the flight. Within an hour everyone was airborne and only 5 pilots needed relights.

Between 10.45 and 11.00 hrs. the clouds in the Basingstoke area were working overtime, with pilot after pilot radioing "entering cloud Basingstoke". Separation was obviously too narrow for comfort at times, and either they left in search of a cloud less crowded, or just went on their various courses.

Chris Lovell was the first to announce that he was at 7,000 ft. over Kingsclere and making for Faringdon. Another 30 pilots did likewise; 5 went to Wheatley and 4 to Tewkesbury, a further 3 steamed straight to Stratford.

Some pilots used codes to keep their crews informed of their progress. Nick Goodhart used one for altitude as well, so when for the first time he reported that he was at 14,000 ft., a momentary hush prevailed on the radio. It even made one official on the ground go to the met. man to check if this was possible, as tops were only forecast to about 8,000 ft. It was not until much later in the day, when Wally Kahn was flying in Nick's vicinity and heard him report his height, that it was realised that he was using a height code.

As pilots got further away one could still hear them on the base radio at Lasham, but it was difficult to know where they had been or where they were going. Renewed interest and excitement came, however, in the middle of the afternoon, when it was realised that a number of pilots had elected to turn Lasham. By 16.10 John Delafield had come and gone; unknown to the onlookers he had turned 4 points and after Lasham did another two, finally landing near Basingstoke on his second return to Lasham at 19.40 hrs.

At 17.00 Peter Scott rounded Lasham. By this time sea air was coming in to the area, which gave a type of convergence zone. Peter had to fly west for quite a while before he set off for either Tewkesbury or Stratford. In the end he decided for Stratford, and on his way back he landed at Moreton-in-the-Marsh, after 9 hours in the air.

George Burton arrived 5 min. after Peter and made straight for a line of clouds SW of the airfield, but they did not work. He was saved by a Ka-13 local-soaring nearby and soon he was out of sight, going once more to Wheatley and Faringdon. He very nearly had a nasty accident when on the final roll-out at Grove he hit an invisible electric fence. The wire slid between the canopy and the cockpit and was luckily arrested by the canopy locating pins, stopping just in front of his chest.

Conditions over Lasham were now deteriorating, but, according to the radio, there were many more pilots on their way. John Williamson turned Lasham at

17.20 and was followed 10 min. later by Bernard Fitchett. John was not doing too well at the time but he overheard Bernard on the radio saying that he had 4 knots, so John shot over to where Bernard was and soon they were out of sight. At 17.45 John was still at Kingsclere at 2,000 ft., but lift improved again and by the time he reached Aldermaston he was back at 4,500 ft. At 18.50 one could still hear him in 2 knots over Oxford, but rain was coming in from the north and after a few detours he landed at Enstone, whither he was followed later by Bernard and Nick Goodhart, who had turned Lasham at 17.45, just after Wally Kahn.

Many pilots had now been airborne for 7½ hours or more, and with the low freezing level (about 4,500 ft.) they had suffered intense cold throughout the day. Some of them were indeed only too keen to land, if possible at Lasham. They had such frozen feet that they could hardly get out of the cockpit on landing.

John Cardiff, who had been out of radio range most of the day, turned Lasham at 18.03 then managing to fly back as far as Kidlington. He was one of the very few pilots who had not bothered to cloud fly, having stayed north after he heard Frank Pozerskis say that it looked better that way. He was the only one to have gone round the Mynd. He said later that the cold had not bothered him and cloudbase was high enough in the north so that cloud flying was not necessary. He had made one cloud climb to 6,000 ft., and was able to fly at 70 knots during the best part of the day.



Con Greaves and crew member. (Photo: Anne Ince)

David Ince also did little cloud flying and kept warm. He thought that he might have encountered some sort of wave lift whilst flying from the Malverns to Bridgnorth. Even at 19.00 hrs. pilots still turned Lasham on their final glides, but most of these landed either at Lasham (7) or between Basingstoke and Kingsclere.

The majority of pilots logged their longest flight and hours on this day, three, Peter Scott, Nick Goodhart and Fred Plumb, did 9 hours.

As one can imagine, the photographic department worked overtime to develop the films, and the scorers had nightmares trying to sort out all the variants of the turning points. The data were then passed to the computer by telephone and this showed that John Cardiff had flown 537 km. in his ASW-12.

4	covered	between	484 — 457	km.
4	covered	between	427 — 410	km.
3	covered	between	386 — 372	km.
8	covered	between	349 — 304	km.
7	covered	between	296 — 259	km.
8	covered	between	249 — 205	km.

The rest flew between 184-66 km. The total kms. flown was 13,069 in approx. 300 hrs. The crews drove approx. 8,000 miles (12,874 km.), which is just below 1 km. for every km. flown.

Leading	Results	TP order	Kms.	Pts.
Cardiff	ASW-12	76543721	537	1000
Fitchett	Cirrus	267261	484	896
Goodhart	SHK	265271	481	891
Williamson	Diam. 18	267321	467	864
Scott	BS-1	2367216	457	843
Greaves	SHK	356371	427	787
Delafield	Phoeb. 17	2367127	426	785
Burton	SHK	23672172	420	773

Wednesday, 21st May

Competitors were busily comparing notes on yesterday's marathon task. The nervous tension which had built up over the previous few days had disappeared and pilots looked much more relaxed, especially those who had done well.

Again there were problems with the weather, but, according to the forecast, a 204-km. triangle was set to Wheatley,

to the north, then to Northleach and back to Lasham. On grid by 12.00 hrs.

During the morning one could see an improvement to the SW of Lasham, and for a period around 13.00 hrs. it looked as if the weather would clear enough to make a start. However, some pilots were not happy and wanted the task changed. By general agreement this was put to the task setter and at 14.00 hrs. the task was reduced to a 100-km. triangle; Welford, Thruxton, Lasham. The met. man remained optimistic that the forecast clearance would come through around 16.00 hrs. A stand-down for lunch was given and everyone had to be back on the grid by 15.00 hrs.

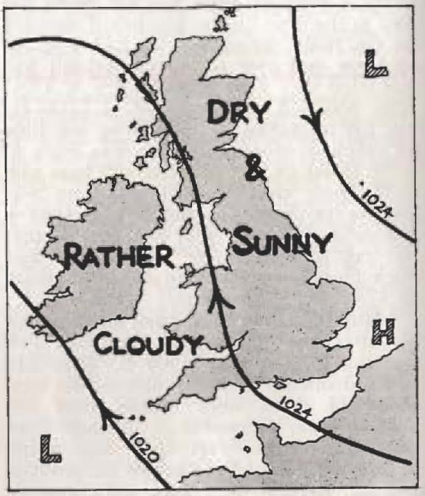
For a time the weather deteriorated locally, which did not help matters at all. In the end the task setter took off in a tug at 15.45 but she could only report that the air was as smooth as silk with not a bubble anywhere, and so the task was cancelled at 16.00 hrs.

The weather cleared dramatically 10 min. later, so many pilots launched for some local soaring, whilst 14 of them decided to try the 100-km. triangle. Twelve of them went round in between 1¾ and 2¾ hours. It remained soarable at Lasham for the rest of the day.

There were, of course, lengthy discussions going on about whether or not the task should have been cancelled or changed to a SW direction. But as not all pilots took-off nobody will ever know if a fair contest would have been possible.

It would perhaps be a good idea to try and find out from British competitors if they want as much flying as possible in a contest, even though a fair contest may not result on a particular day. It could be said that British conditions are so changeable from day to day, and sometimes from hour to hour, that one can seldom guarantee a fair contest day in any case. One could also argue the case of having more pilot selected take-off times on race days. Obviously, designated starts are more convenient for the organisers and no doubt quicker. But if the conditions were not safe to launch at the first selected take-off time, the organisers would hold back launching in any case; but by the time the OK is given it is more than likely that the majority of pilots would stream.

Thursday, 22nd May



Most crews had rigged before briefing this morning, as the weather gave every indication that an early task would be on, and at the 9.30 briefing a 318-km. triangle was set. First to Bath racecourse WNW, then to Stratford Theatre NNE, and back to Lasham. X = 20. Y = 50 km. Pilot selected take-off from 10.30.

A ridge of high pressure covered most of the British Isles but a deepening depression to the south-west was inducing a south-easterly airstream over western and southern districts. A good soaring day was forecast, with vigorous convection by 10.00 hrs. with tops to 6,000 ft., base later rising to 4-5,000 ft., tops to 8-9,000 ft. Visibility good, with 4-6/8th cu. Winds light south-easterly (about 10 knots). Sea air might penetrate as far as Lasham in the late afternoon, possibly forming a sea-breeze front, and causing "dead" conditions to the south of it.

Several club members hurried to take-off, before contest launching began, for their attempts for Gold C distance, but none of them completed 300 km.

At 10.31 contest launching began, with a few pilots from the bottom end of the day order list going off first. After that most pilots streamed more or less in order.

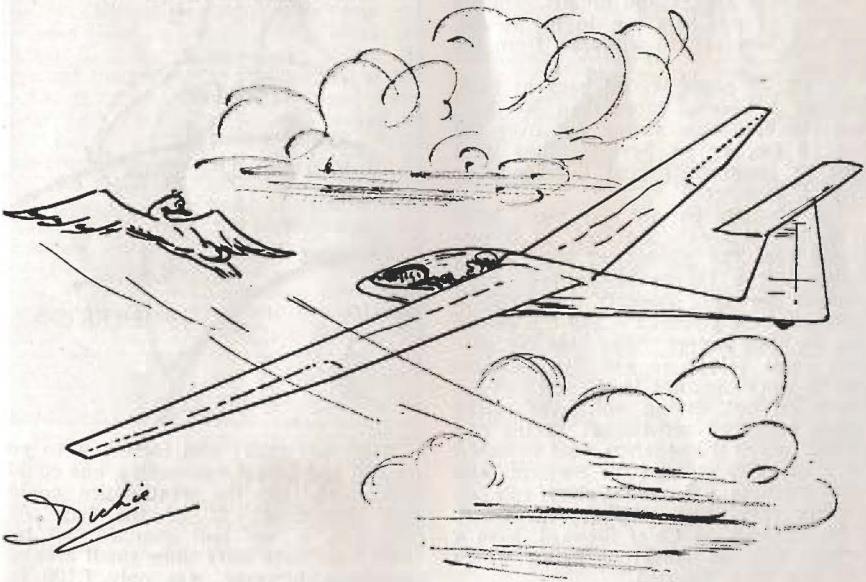
In general, the start line was crossed within 30 min. after take-off, only a few

pilots hung back for a later start. Radio reports revealed that everything was not quite as easy as it looked and a number of pilots had a troublesome first leg. On hearing this, Nick Goodhart, on his 3rd startline crossing, went well south of track and by doing this kept out of trouble. Also, David Ince kept south, though not as far as Nick. John Cardiff was among the first to turn Bath and by about 13.00 hrs. some 4 or 5 pilots had done likewise.

Gerry Burgess, owing to some radio fumble between him, his crew and the start line, came back for another crossing and was thus the last to leave. He had quite a struggle for the first 20 miles or so.

The weather must have improved quite a bit in the area around the 2nd TP, as by 15.00 pilots had approached as far as Chipping Norton and Witney along the last leg. At 15.50 John Cardiff announced that he was final gliding from Aldermaston; he had obviously made a good speed. In fact, it took him 4.28.00, and this was enough to break the current speed record, which had stood since 1957 at 66.3 km/h. Somewhat later Nick was heard to be on finals and his time across the finish line gave him 4.25.00 for the trip; thus for the second time the record was broken. He found the second leg most tiresome and could not make any decent heights; he also had misgivings as to whether his photo of the 1st TP would be acceptable, as he thought something might have gone wrong with his camera. However, he caught up with John Cardiff and George Burton, who were flying together, and when they diverged he followed George . . . into nothing. Nick's last leg was easily the best, with several good climbs to 7,000 ft. or so. The last one near Abingdon gave him a clear run across the airway, "which was delightful". He met Bernard Fitchett just as he started on final glide, but Bernard did not follow Nick along the edge of a nearby cloud street. His slightly different course from Nick's gave him no end of trouble, as his glide took him through heavy sink for about 10 miles and he only just made the finish line.

Peter Scott, John Williamson and George Burton all made times under 5 hours; but Con Greaves, who was



"Bless my soul, it's Peter!"

amongst the first to get back, completely failed to cross the finish line. When he was told over the radio he hurriedly tried to get somewhere near the line but all he could manage was to roll over it from the wrong direction. Also, David Ince made the same mistake, but luckily for them the observer was asked to note the time when this happened, otherwise there would have been no official record, proper crossings only being observed. Later the matter was put before the Stewards and they decided to fine both pilots a penalty of 100 points each off the score they would have made had they crossed properly.

As excitement rose at the finish line, with more and more pilots on final glides, several ran into trouble. The unluckiest of them all was Ray Foot in his Skylark 3. He told his crew that he might not make it; this was followed by him asking if the field short of Lasham was landable in, but before he could be given an answer, and to the horror of everyone watching, he was seen to hit a power cable between two trees, badly damaging his machine. With great presence of mind he calmly announced over the radio that he was alright and unhurt, while a number of watchers ran to his rescue. He had, however, to withdraw from the contest.

In all, 29 pilots landed back at base, another 5 covered more than 300 km., and the rest were strung out over the last 50 km. or so. Several pilots were able to claim their goal Diamonds or Gold C distance.

The troubles for the day were, however, by no means finished, as it was found that the photos of the turning points left a lot to be desired. After another Stewards' meeting the pilots in question were given 10% and 5% penalties on their scores. After this the protests came rolling in and the Stewards had to work overtime to try and sort the whole lot out, during which period the scores remained provisional. In the end all but two of the penalties were squashed by a majority vote of the Stewards and next morning a supplementary rule on turning point photography was issued. John Furlong, as Chief Steward, gave a serious talk on dangerous flying, which had also been reported.

Lorne Welch flew the task in the Ka-14. It took him 6½ hours to complete and he used the engine three times for a total of 40 min.

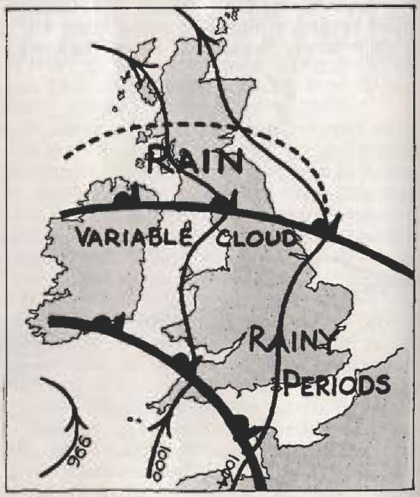
Leading Results		km/h	Pts.
Goodhart	SHK	71.9	1000
Cardiff	ASW-12	71.4	987
Burton	SHK	67.9	900
Fitchett	Cirrus	67.1	880
Williamson	Diam. 18	66.6	867
Scott	BS-1	65.0	827
Greaves	SHK	66.0	= 752
Carrow	Dart 17R	62.0	= 752

Leading Results 2 Days			
Cardiff	1987	Burton	1673
Goodhart	1891	Scott	1670
Fitchett	1776	Greaves	1538
Williamson	1731	Delafield	1499

Friday, 23rd and Saturday, 24th May

There was complete alto-stratus cover and rain on Friday. Saturday also brought an overcast sky, though with a promise of improvement later. At the fourth briefing a small triangle was set, but cloud base never rose sufficiently and the task once again had to be cancelled.

Sunday, 25th May



With only today and tomorrow to go we still had no championships, one could only hope that the weathermen could pull something out of the bag. At 9.00 a.m. it was still overcast but by 10.00 a.m. there were some small breaks, cloudbase, however, was only 1,100 ft. An unstable southerly airstream still

covered the British Isles, areas of alto-cu and cirrus were still probable, with thundery rain likely to spread from France late in the day. Taking all the weather problems into account, the same cat's cradle was set as on the 20th May. First pilot-selected take-off from 13.00 hrs.

Fred Plumb was first off, the sky looking very unpromising; there was still thin alto-stratus and 4-5/8 cu below it. Of the first 20 launched, 12 landed back at base, plus another few just outside base. Those who had managed to hang on had been able to have short cloud climbs near Alton and Basingstoke. Their heights were slowly improving and Fred Plumb reported his position at 5,000 ft. near Aldermaston at 13.30.

John Delafield, Nick Goodhart and Bernard Fitchett all shared cloud near Basingstoke but they only averaged 2 knots, climbing eventually to about 8,000 ft. In the meantime, at 13.25.00, George Burton had also been launched, but because of the variable cloudbase he had to pull off at 1,600 ft. Twenty minutes later he was at 2,600 ft. north of Basingstoke, but the clouds in that area were very crowded and so he went on to Kingsclere, where he was rewarded with a rather slow climb to 6,000 ft. Like several other pilots, he crossed the airway at Hungerford at the 5,500 ft. level. However, between Fairford and Faringdon he was struggling for nearly an hour at 1,000 ft. With patience he slowly got back to 3,000 ft. but the cloud he had entered was shedding rain so he set north towards Broadway. By the time he had reached the Evesham valley cu's were forming in bands, due to wave, and, in fact, he flew into wave lift over Evesham town. His last climb, near Pershore, brought him out of cloud 8 km. south of Bridgnorth. Recognising the river Severn, he flew straight to the TP but soon after rounding it a heavy rainstorm forced him down.

Fred Plumb, who had to land at Fairford, took off for the second time at 17.00 hrs. With a climb to 8,000 ft. over Basingstoke he final glided, taking in Wheatley, to land near Lechlade, thus improving on his first distance quite a bit.

Bernard Fitchett made a mistake when



Ron Cashmore giving the forecast. (Photo : P. Lewis)

he had a climb to 9,000 ft. just south of Faringdon. Instead of flying straight towards Stratford or Bridgnorth, he felt that he should take Faringdon as a TP, but he had to lose a lot of height in order to photograph it. After that he went to Stratford and landed just south of Nick Goodhart near Redditch.

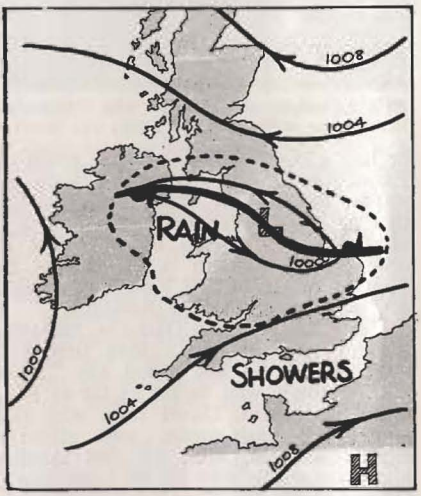
Gerry Paddick, in a Dart 17R, managed to stay airborne for a long time and although he did not round any TP he did extremely well to get as far as Kidderminster. Also, David Ince, who had landed at Basingstoke, was airborne exactly 45 min. after his first landing and managed to turn his nil score into a scoring flight.

On the whole the day itself was rather miserable for most pilots, the valleys being very damp and lift weak. What annoyed pilots more than anything, however, were the infringements some pilots were heard or seen to make. This left a rather nasty taste, as those pilots who obeyed the rules felt that the culprits had an unfair advantage. However, as no official complaints were made there was not much which could be done to rectify this. Many pilots also felt that only the early launches had had a chance, but this just was not true, as the many relights showed. All pilots scored and although the day had been far from ideal in many respects we had now achieved a championships. George Burton had taken over the lead but he was only 28 points ahead of Nick Goodhart, while John Cardiff dropped to fourth place.

Leading Results		Dist.	Pts.
Burton	SHK	184.5	1000
Jones	Cirrus	173.0	930
Paddick	Dart 17R	158.0	839
Goodhart	SHK	144.0	754
Fitchett	Sirrus	143.5	751
Greaves	SHK	140.5	732
Delafield	Phoeb. 17	132.0	680

Leading Results 3 Days			
Burton	2673	Creaves	2270
Goodhart	2645	Delafield	2179
Fitchett	2527	Jones	2149
Cardiff	2483	Paddick	2133

Monday, 26th May



A 150-km. triangle, Didcot Junction, Pewsey White Horse, Lasham was set. John Williamson knew all about the White Horse and explained where it could be found, adding that it was cut in 1935 for the Coronation.

Launching would be from 12.00-16.30 only. Designated start. The early closing was to enable the scorers to get the final scores out before the prizegiving and also to get the first 21 names on the handicapped list, for, immediately after the prizegiving, they would select the British Open Class pilots for Marfa.

We were in a SW flow, with the wind 20 knots at 3,000 ft. Outbreaks of showers were likely to occur, but in general the weather would improve during the day. According to the met. man, relights would have a fair chance to get away later.

It was quite clear after briefing that the wind was much stronger than forecast. The grid had therefore to be rearranged, so that take-offs were into wind rather than across wind. When launching commenced at 12.00 hrs. few pilots believed that the task was on because of the strong wind and many did not bother to cross the start line. Like yesterday, many relights were necessary. Those who managed to stay airborne drifted away with the wind or tried to stay locally to assess the weather. George Burton was at 2,700 ft. 4 miles west of Lasham at 12.15, while Nick Goodhart was saying he was coming back for a relight. At 12.31 George crossed the startline and a few minutes later he went into cloud near Basingstoke, climbing to 5,000 ft.

By 12.55 Wally Kahn was approaching Aldermaston and 10 minutes later we heard him near Hampstead Norris. Soon after this reports of showers over a fairly large area, and warnings of "may have to land" and "getting low" could be heard. In fact, one of the first casualties was George Burton, who landed at 13.20 NE of Hampstead Norris. Unknown to everyone, he had rounded Didcot and was therefore quite a way ahead. Would he get back in time for another launch? Nick had taken his second launch at 13.05. No doubt each was aware of what the other was doing!

Despite the difficulties with the storms along the first leg the majority of pilots managed to stay aloft, and at last reports of rounding Didcot could be heard. This, of course, was only the beginning of the battle, as the second leg had a very strong headwind component. Many spent up to an hour being blown backwards and going forward again.

Peter Scott landed in the same field as George had done some time earlier. George's trailer had completely bogged-down in the very soft field and they just could not move it with a single crew. They had more or less given up hope to get back to Lasham on time for another start. However, now that Peter's crew were able to give a hand they got George's trailer on the move again. George offered to wait for Peter in return to give him a hand, but Peter insisted that George should hurry back for another go.



Gerry Paddick won the Dart Trophy. (Photo : A. E. Slater)

Nick, in the meantime, was somewhere near Didcot, to find conditions extremely difficult. He reported very low 2 miles NW of Didcot at 13.50. After struggling for about ½ hour he finally had a good climb to 12,000 ft. but found he could not get clear of cloud, so he had to steer WNW for ages in order to stay out of the airway, which he had hoped he could cross in clear air. But the heavy icing and diversion soon brought him down to the lower regions and by 14.50, an hour later, he was heard near Lambourn at 5,000 ft. Con Greaves mentioned later that he could well have been in the same cloud as Nick, he also had to divert north of Shrivenham to get clear of cloud.

Wally Kahn, who seemed to be slightly ahead of the others, reported from Hungerford that conditions were once again difficult and scratchy. This was soon followed by a whole lot of others announcing that they, too, were scraping. This bad patch covered quite a large area, and brought many pilots down between Hungerford and Wantage, only the odd few managing to scrape by or had to divert. Wally landed at Ramsbury, just in front of the large gaggle landing behind him. It had taken him nearly three hours to cover 82 kms.!

David Ince, in his Ka-6E, was at Didcot at 14.25 and by the time he had caught up with the rest at Hungerford he was scraping like the best of them. He went from one crisis to the next between 15.35 and 17.00 hrs. when at last he announced that the situation was under control and he was flying under a cloud street towards Pewsey.

Several pilots had landed back at Lasham for relights, including Gerry Paddick, who had landed early on. There was still no sign of George or Peter Scott and it was now nearing 16.00 hrs. The sky was absolutely blooming by now and it looked almost a classic day, with the wind dropping off. At 15.50 George's trailer came thundering in, and at 16.05 he crossed the line once more. In 15 min. he had rigged, was launched and had started! To his surprise, he still heard Nick fighting his way home. At 16.55 Nick was still airborne, but only just, so George realised that it must have taken him a pretty long time.

Suddenly Con Greaves announced Final Glide. The observers and watchers had only just arrived at the finish line, to find that the markers were rather far into the field; so Con was asked for his e.t.a. "Three minutes," came back the answer. Just enough time to move the line into the correct position and, with one minute to spare, Con flashed over the line. He had had a climb to 10,000 ft. near the 2nd TP and was able to start his final glide from Chilbolton. His time 3.26.00. This surely must win him the day!

Peter Scott, who took off 2 minutes before closing time, George Burton, as well as Gerry Paddick, who had taken off before George, were now trying to go as fast as they could. By 16.40 George approached Didcot again, while Nick was at last on his final glide. He had had a most difficult trip and had to work for it every inch of the way, taking 4.20.00 for the trip.

The second leg, which had been such a bugbear all day, was now streeting and cloudbase was higher than it had been all day. David Ince was also still aloft and near the 2nd TP at 17.35.00. Unfortunately, he went out too far into the Pewsey valley and so lost valuable time, and in the end he had to land at Upavon.

Gerry Paddick came unstuck near Didcot, so the only two still flying were Peter and George. George had the



Nick Goodhart talks about his 300-km. flight on Day 2. (Photo : P. Lewis)

obvious advantage, as he had started 20 minutes ahead of Peter and the sky was beginning to flatten out. At 18.15.00 George was ¼ of the way along the last leg, while Peter was heard to land near Pewsey. So if George could make it back he would be certain of winning. Well, you can almost guess the end when his confident voice announced his final glide. It had taken him only 2.40.00 when he crossed the finish line, and this gave him the Championships.

Leading Results		km/h.	km.	Pts.
Burton	SHK	56.6		968
Greaves	SHK	44.0		946
Goodhart	SHK	30.0		922
Scott	BS-1		100	550
Cardiff	ASW-12		99.5	546
Ince	Ka-6E		97.5	532
Day	Dart 17R		88.5	470
Kahn	Dart 17R		82.5	429

Prizegiving

By 7.30 p.m. the scorers had worked out enough of the leading scores to establish which pilots deserved to be awarded the various "pots" and assorted gifts available for distribution on these occasions.

Ann Welch introduced the prizegiver, Mr. Merton Maydler, a solicitor who lives locally and has been a Spitfire pilot, a deep-sea sailor, author, and, as Ann said, "is just the sort of person we want to encourage". He had been on a 30-minute call all day, because we could not forecast when the flying would finish and the scores be ready.

Mr. Maydler had not expected a computer to decide his time of arrival, and admitted that he was going to say, "To hell with computers". In Western Europe, he said, we are becoming ciphers.

His reminiscences of gliders went back to 1944, and once as a young man of 23, when he was horrified to hear the most frightful language floating down from a glider overhead, he decided that gliding was not the sport for him. But, nevertheless, he allowed Norman Smith to take him up in a glider and then say "it's yours". After a few more words in praise of those who refuse to be stereotyped, Mr. Maydler presented the prizes. George was asked to speak, and said that he had been second so often, three times in fact, that he thought it was going to be another one like that. "Ann Welch," he remarked, "said this morning that 'there was no luck in gliding'. In fact the fantastic conditions enabled me to win through. Apart from my crew, Bill Swift being almost psychic of my whereabouts, it was, of course, a piece of luck that Peter Scott landed in my field, as without his help we would have been too late."

Ann then read out the leading ten scores in the Championship and added: "The rest of you are still in the computer".

And so another national contest had finished. Peter Scott remarked on the first day that what he liked about gliding competitions is that it is so nice when they stop. Many pilots felt the same on the last day and only wanted to go home to forget the whole thing as quickly as possible. No doubt we shall see some of them turning up at this year's Regionals — they will be back fighting.

We are indebted to Norman Ellis for providing the weather charts and notes which have been incorporated in this article.

FINAL RESULTS, OPEN CLASS (Figures in italics denote handicap scores. Figures in brackets denote daily placings).

	Pilot(s)	H'cap %	Sailplane	Day 1 1000	Day 1 1000	Day 2 1000	Day 2 1000	Day 3 1000	Day 3 945	Day 4 968	Day 4 816	Total Points	
1	Burton, G. E.	86	SHK	773(8)	*867(7)*	900(3)	*892(2)*	1000(1)	*945(1)*	968(1)	*816(1)*	3641	*3520*
2	Goodhart, H. C. N.	86	SHK	891(3)	*1000(1)*	1000(1)	*1000(1)*	754(4)	*710(5)*	922(3)	*778(3)*	3567	*3488*
3	Greaves, C. M.	86	SHK	787(6)	*833(5)*	752(7=)	*738(6)*	732(6)	*689(6)*	946(2)	*798(2)*	3217	*3108*
4	Cardiff, J.	74	ASW-12	1000(1)	*960(2)*	987(2)	*714(10)*	496(12)	*375(18=)*	546(5)	*370(9)*	3029	*2419*
5	Fitchett, B.	82	Cirrus	896(2)	*957(3)*	880(4)	*784(5)*	751(5)	*665(7)*	385(11=)	*292(12=)*	2912	*2698*
6	Delafield, J.	82	Phoeb. 17	785(7)	*837(9)*	714(9)	*612(17)*	681(7)	*600(8)*	320(18)	*238(24)*	2500	*2287*
7	Jones, R.	82	Cirrus	627(15)	*667(17=)*	592(22=)	*485(27=)*	930(2)	*830(3)*	330(15=)	*247(20)*	2479	*2229*
8	Scott, P. M.	80	BS-1	843(5)	*877(6)*	827(6)	*688(11)*	222(33)	*172(37)*	550(4)	*414(5)*	2442	*2151*
9	Paddick, G. R.	90	Dart 17R	678(12)	*800(12)*	614(19)	*650(14)*	840(3)	*833(2)*	209(33)	*176(36)*	2343	*2459*
10	Warminger, A. H.	82	Phoeb. 17	695(11)	*740(14)*	624(15=)	*516(24)*	599(9)	*526(10)*	385(11=)	*292(12=)*	2303	*2074*
11	Williamson, J. S.	80	Diam. 18	864(4)	*899(4)*	867(5)	*730(8)*	256(27=)	*202(34)*	192(35=)	*127(37=)*	2179	*1958*
12	Redman, S. J.	86	SHK	575(17)	*643(20)*	692(11)	*666(12)*	508(11)	*470(11)*	336(14)	*272(15)*	2111	*2051*
13	Ince, D. H. G.	96	Ka-6E	630(14)	*793(13)*	562(25)	*715(9)*	328(23)	*348(22)*	532(6)	*507(4)*	2052	*2363*
14	Plumb, F. A.	90	Dart 17R	707(10)	*832(10)*	577(24)	*608(18)*	435(13=)	*425(14=)*	330(15=)	*284(14)*	2049	*2149*
15	Gough, A. W.	86	SHK	499(24)	*558(27)*	654(14)	*625(16)*	414(17)	*379(17)*	402(10)	*328(10)*	1969	*1890*
16	Carrow, D. D.	90	Dart 17R	495(26)	*581(24)*	752(7=)	*809(4)*	334(21=)	*324(23)*	354(13)	*306(11)*	1935	*2020*
17	Innes, D. S.	86	SHK	755(9)	*846(8)*	620(17=)	*587(20=)*	271(25)	*242(20=)*	264(23=)	*209(30)*	1910	*1884*
18	Tanner, L. E. N.	96	Ka-6E	268(41)	*337(40)*	672(13)	*829(3)*	669(8)	*715(4)*	258(26)	*243(22)*	1867	*2124*
19	Wilkinson, N. A.	96	Ka-6E	637(13)	*803(11)*	592(22=)	*733(7)*	365(19)	*388(16)*	264(23=)	*250(19)*	1858	*2174*
20	Kahn, W. A. H.	90	Dart 17R	567(18)	*667(17=)*	602(21)	*638(15)*	176(38)	*164(39)*	429(8)	*375(8)*	1774	*1844*
21	Pozerskis, P.	82	Cirrus	408(30)	*431(34)*	607(20)	*500(25=)*	435(13=)	*375(18=)*	295(20)	*218(28)*	1745	*1524*
22	Simpson, C. R.	90	Dart 17R	532(21)	*625(21=)*	364(29)	*364(29)*	435(13=)	*425(14=)*	299(19)	*257(18)*	1630	*1671*
23=	Waller, F. F.	96	Ka-6E	548(20)	*690(16)*	297(39)	*298(39)*	553(10)	*590(9)*	226(31)	*213(29)*	=1624	*1791*
23=	Lovell, C. D.	90	Dart 17R	626(16)	*736(15)*	620(17=)	*656(13)*	234(30=)	*222(31=)*	144(38)	*117(39)*	=1624	*1731*
25	Ellis, J. J.	96	Ka-6E	497(25)	*625(21=)*	472(27)	*587(20=)*	420(16)	*446(12)*	199(34)	*186(33)*	1588	*1844*
26	Dimock, H. R.	80	Diam. 18	523(23)	*540(29)*	687(12)	*545(22)*	106(42)	*68(42)*	268(22)	*188(32)*	1584	*1341*
27	Tull, V. F. G.	80	Diam. 18	558(19)	*577(25)*	624(15=)	*482(28)*	228(32)	*177(35)*	113(40)	*64(41)*	1523	*1300*
28	Burns, Anne	82	Cirrus	366(33)	*386(36)*	700(10)	*596(19)*	207(36)	*166(38)*	69(41)	*32(42)*	1342	*1180*
29	Day, C. G.	90	Dart 17R	281(40)	*327(41)*	332(33)	*310(37=)*	252(29)	*242(28=)*	470(7)	*412(6)*	1335	*1291*
30	Bird, M.	90	Dart 17R	392(31)	*459(31=)*	482(26)	*342(31)*	167(39=)	*155(41)*	285(21)	*244(21)*	1327	*1358*
31	Brownlow, J. B.	96	Oly. 419	387(32)	*486(30)*	339(30=)	*339(32)*	350(20)	*371(20)*	237(29)	*223(26)*	1313	*1419*
32	Evans, J. A.	96	Oly. 419	443(28)	*557(28)*	316(36)	*318(35)*	256(27=)	*269(26)*	254(27)	*240(23)*	1269	*1384*
33	Hogg, A. J.	96	Oly. 419	305(38)	*383(37)*	309(37)	*310(37=)*	210(35)	*220(33)*	423(9)	*403(7)*	1247	*1316*
34	Austin, D. C., Morgan, K. C.	96	Ka-6E	—		420(28)	*521(23)*	—		192(35=)	*180(34)*		
				358(35)	*449(33)*	—		265(26)	*279(25)*	—		1235	*1429*
35	Watson, B. B. C.	98	Skylark 4	357(34)	*459(31=)*	334(32)	*342(31)*	334(21=)	*365(21)*	182(37)	*177(35)*	1207	*1343*
36	Ellis, C. A. P.	100	Skylark 3	435(29)	*572(26)*	298(38)	*312(36)*	198(37)	*222(31=)*	220(32)	*221(27)*	1151	*1327*
37	Hanson, D. F.	96	Ka-6E	524(22)	*659(19)*	320(34)	*321(34)*	152(41)	*158(40)*	137(39)	*127(37=)*	1133	*1265*
38	Burgess, P. G.	98	Dart 15	294(39)	*378(38)*	317(35)	*324(33)*	234(30=)	*256(27)*	264(23=)	*258(17)*	1109	*1216*
39	Marriott, S. H. C.	86	SHK	316(36)	*350(39)*	295(40)	*262(41)*	6(43)	*– (43)*	330(15=)	*266(16)*	947	*878*
40	Purdie, P. G.	96	Ka-6E	312(37)	*392(35)*	124(43)	*124(43)*	219(34)	*230(30)*	251(28)	*236(25)*	906	*982*
41	Cousins, R.	90	Dart 17R	232(42)	*269(42)*	89(44)	*81(44)*	295(24)	*283(24)*	234(30)	*198(31)*	850	*831*
42	Foot, R. A.	100	Skylark 3F	464(27)	*608(23)*	339(30=)	*355(30)*	(withdrawn)		—		803	*803*
43	Brook, G. F.	102	Oly. 463	90(44)	*121(44)*	268(41)	*286(40)*	371(18)	*427(13)*	65(42)	*70(40)*	794	*904*
44	Bellew, J. B., Marlow, T.	96	Ka-6E	—		239(42)	*238(42)*	—		0(43)	*0(43)*		
				104(43)	*129(43)*	—		167(39=)	*175(36)*	—		510	*542*

LASHAM & DUNSTABLE









Top row: Roger Barrett, Dunstable. Towing out to grid, Lasham. Ann Welch, Lasham. Met. man, Norman Ellis, deliberating, Lasham. (Photos: P. Lewis)

Bottom row: Tug pilots' briefing, Dunstable. The wet, wet runways, Lasham. John Williamson after his record flight, Dunstable. (Photos: A. E. Slater and P. M. Warren)







BGA NEWS

Insurance

Clubs are reminded that it is essential to keep the scope of their insurance fully in line with modern trends. A case has come to light recently where the insurance cover carried by a club was not as all-embracing as the club had envisaged.

It is not possible to summarise briefly all of the aspects of club operation which should be covered by insurance, but a competent insurance broker can advise fully in the light of each individual situation. It should be emphasised, however, that aviation insurance is very specialised and, in consequence, it is advisable to consult brokers who specialise in this field. In particular, such brokers are placed best to ensure that the "small print" in a policy does not limit its scope unduly, and they are also in the best position to deal with any awkward claims which may arise.

Balance of Trailers

It is thought to be fairly well known that some trailers wag behind some cars and some do not. A lot of this trouble is caused by the trailer being badly balanced. Because so much depends on the spring rate and on the damping of the rear suspension of the car, it is difficult to be specific but something of the order of 50-100 lb. down-load on the back of the car seems to be about right in most cases.

What must *never* be tolerated is an up-load on the back of the car. This, definitely, is dangerous, as it reduces the adhesion of the back wheels of the car, and can lead to complete instability of the steering.

Claims Forms

Please note that the forms for Silver and Gold claims are now *green*, and that — whichever form you use — the fee is £1 per leg. Please try to get it right first time and thereby save everyone's money and energy. The "season" is here and the claims being returned are mounting!

Capstan for Sale:— The best-known Capstan in the gliding movement, Slingsby T-49, BGA 1106, maintained to the highest standards, £1,450. Including trailer, ASI, altimeter, Crossfell, PZL, T & S, E2a compass, "G" meter. C. of A. to May, 1970. Completely recovered this year with cellulose finish. Apply BGA Secretary.

GET YOUR WINGS!

White wings on a blue background with the Gliding emblem are on sale for all solo pilots to display on flying suits, anoraks, "thermal" hats, etc,.

Get yours now from

The British Gliding Association, Artillery Mansions, 75 Victoria Street, London, S.W.1.

Cost: 6/- plus 1/- postage & packing

Please quote your Gliding Certificate Number

New Records

	British National Multi-seaters			
100 km Triangle	E. Pearson & A. Martin (in S. Africa.	7.1.68,	Kranich 3	83.5 Km/h
	United Kingdom Single-seaters			
400 km Triangle	A. D. Purnell	19.4.69	Cirrus	66.36 km/h
300 km Triangle	H. C. N. Goodhart	22.5.69	SHK	71.9 km/h
200 km Triangle	J S. Williamson		Dart 17R	74.7 km/h
100 km Triangle	G. E. Burton	21.6.69	SHK (subject hom.) approx.	96 km/h
100 km Gl. Speed	K. A. Harrison	13.4.69	SHK	128.4 km/h
	Multi-Seaters			
200 km Triangle	B. J Wilson and H. Daniels	20.4.69	Blanik	64.63 km/h
100 km Triangle	B. J. Wilson and H. Daniels	19.4.69	Blanik	77.57 km/h



SPORTS - STANDARD CLASS DUNSTABLE 7-15 JUNE

by Rika Harwood & A. E. Slater

We are indebted to Peter Wickham for supplying the weather charts and notes which have been incorporated in this article.

Lasham, 13-22 May, 1961 — 9 contest days
Aston Down, 2-11 June, 1962 — 8 contest days
Dunstable, 7-15 June, 1969 — 8 contest days

These, no doubt, are the vintage years and will still be talked about for many years to come.

In general, the weather at Dunstable was very similar to that at Aston Down, except that the easterly wind was more of a problem at Dunstable.

A High had been developing over the country for the past few days and the RAFGSA, who ran a practice week at Bicester for the Services, made good use of this.

On Thursday, 5th June, four pilots flew to Devon to claim goal Diamonds, while on Friday the majority flew to Dunstable via Husbands Bosworth and Royston, 200 km. After reaching Dunstable, six pilots went on to Bicester and back again, thus completing about 300 km. A splendid practice week for most, many totting up between 20-30 hours soaring in this week alone.

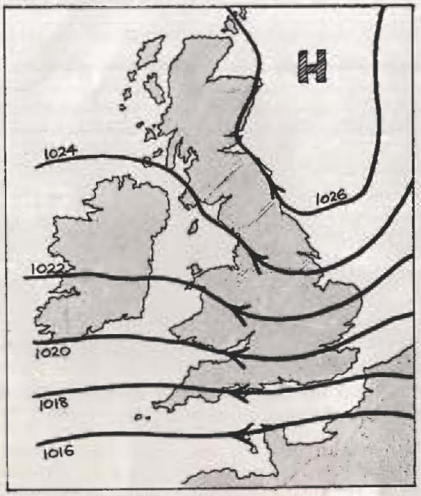
It was little wonder, therefore, that on the eve of the contest Dunstable was full of excitement and everyone looked forward for things to come. The organisers had done a tremendous job preparing for this championship. One of several features was that every pilot was issued with a folder which had the principal turning points clearly marked on a 1:25.000 map. It must have taken Geoffrey and Beryl Stephenson many, many hours to prepare this. The TP photos shown at briefing were also of a very high quality.

The scoring was done by a "human computer", in the form of Robin Harper, with Gordon Clemenson and Rika Harwood helping out. The electronic calculator, "Busicom", supplied by Broughtons of Bristol Ltd., was a huge success. Unless a computer can be installed on the site itself, a calculator such as the Busicom is definitely to be preferred, especially for Press purposes. This was one of the drawbacks at Lasham, where a computer was only available by telephone for a couple of hours in the evening. thus making it very difficult to get any Press information beforehand.

Pilots and crews appreciated indeed the human touch, when they could watch the magic figures coming up in front of their eyes within a few seconds after they had booked in. Although slightly distracting at times, when pilots were crowding round, it certainly helped to create an atmosphere, which is all part of a championships.

The information supplied by the Royal Corps of Signals was another boon. They had radio links with the various TP's, and seconds after the TP had been rounded the information was available to all those interested.

Saturday, 7th June



The day started bright and early. By 8 a.m. two club members, Peter Langford and Laurie Ryan, were seen lazily hanging in the sky in their brightly coloured hot-air balloon at 600 ft. or so. The day had that *feel* we so seldom experience in Britain. At 8.15 there were some small cu to the SW, with some ground mist clearing in the valley. By 9 a.m. this had increased to 3/8 cu and by 9.30 cloud base was already in the region of 2-2,500 ft.

At precisely 10.02.00 Tom Zealley, Chairman of the London Gliding Club and a competitor, asked Peter Scott, Chairman BGA, to introduce the guests.

"You'll be pleased to hear that I am not flying," he said, "neither am I setting the tasks, so your triangles should all be 28%." (Last year's 300-km. triangle set by Peter did not meet this requirement, and many pilots could not claim their Gold C.)

On introducing Lord Kennett, Joint Parliamentary Secretary, Ministry of Housing and Local Government (Peter's half-brother), he intimated that this was the day of days and, facing his half-brother, said, "Keep it short".

Lord Kennett was only too willing to oblige, as he admitted he knew but two stories in any case, one on disaster and the other one on housing. "So I won't tell you either," he said. Quoting a few "titbits" from the regulations he declared the contest open.

Roger Barrett, Contest Director, pointed out that we had all gathered to try and achieve a fair contest with a worthy champion at the end. In the past we had often been lenient on the rules on the first day, but this time it was going to be tough from the word "go". Photographic evidence assessing would be strict and pilots should expect penalties. Visual observation by another competitor would not remove such penalty if the photograph were found unsatisfactory. John Furlong, as Chief Steward, followed this up with a warning against ungentlemanly or dangerous flying, which would certainly incur a penalty or even disqualification.

Geoffrey Stephenson then announced the task. Owing to the opening ceremony, etc., he had kept it down to a modest 216.5-km. triangle. Husbands Bosworth (not the airfield), Earith Bridge, Dunstable. X = 20. Y = 50 km. Designated start.

Peter Wickham, the met. man, started off with, "When the rain stops", the usual opening, but quickly went on to say that it was a nice, fine day with light winds and 2/8 cu. Well distributed thermals between 3-6,000 ft., with possibly some streeting. There was nothing more to say except "get on with it".

First take-off was at 12.00.00 but 2 minutes later, on the third tow of the day, Jeremy Wheeler hit some strong turbulence at the bowl in the lee of the hill, the glider back-released and the first away-landing of the contest had been recorded within four minutes of the start.

Lemmy Tanner was first across the start line, at 12.20.00, and by 13.00.00 all but three had left. Only Wheeler, Greaves and Goldney started after 13.00.00. Shortly after 14.00.00 pilots were reporting from the first TP. Their optimistic voices on the radio gave enough indications that the conditions were as good as promised, if not better. Only a few pilots had slight trouble near the first TP and there was a rather blue patch along the second leg; although there was no danger of having to land, some valuable time was lost here.

It was only 15.39.00 when Ian Strachan, in the ASW-15, came zooming across the

finish line — his time of 2 hrs. 59 min. was not quite fast enough to claim the UK 200-km. triangle speed record. John Williamson, however, was shortly afterwards heard on final glide and when he came over low and fast he had the record in the bag. His speed (unhandicapped) was 74.7 km/h.

All but one pilot landed back; the handicapped speeds ranging from 67.2-43.0 km/h. The slowest was perhaps a little surprised that, under the new scoring system, he only received 49 points for his efforts.

The contest had certainly begun with a roaring start! Total distance flown 8,872 kms. in approximately 160 hours. Two pilots received a penalty for their unsatisfactory photographic evidence.

All scores, distances and speeds will be given throughout after handicap has been applied.

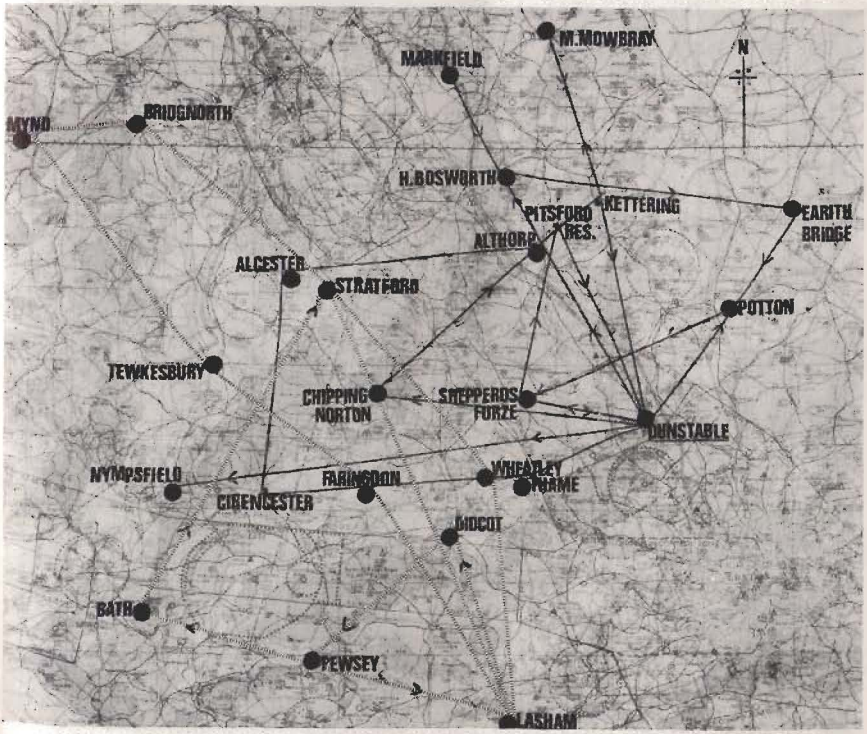
LEADING RESULTS

		km/h.	*Pts.*
Williamson	Dart 17R	67.2	1000
Greaves	Ka-6E	66.4	969
Harrison	Ka-6E	63.7	862
Fitchett	Dart 17R	62.9	831
St. Pierre	Ka-6E	62.4	812
Strachan	ASW-15	62.1	800

Sunday, 8th June

The High was well established but overnight the easterly winds freshened to around 15 knots and they would be 18 knots in the north. Thermals were to be moderate to strong, with rather narrow cores and blue to start with. Conditions further north were expected to be rather better, but in the event this expectation proved to be wrong; a fresh burst of air from the North Sea moved across eastern England, bringing a lower lid to the thermals, with very disjointed and unreliable areas of lift underneath.

The task was a 202.5-km. out-and-



The turning points used in both Nationals. (Photo on page 315 by P. M. Warren)



Discussing the task after briefing. (Photo : A. E. Slater)

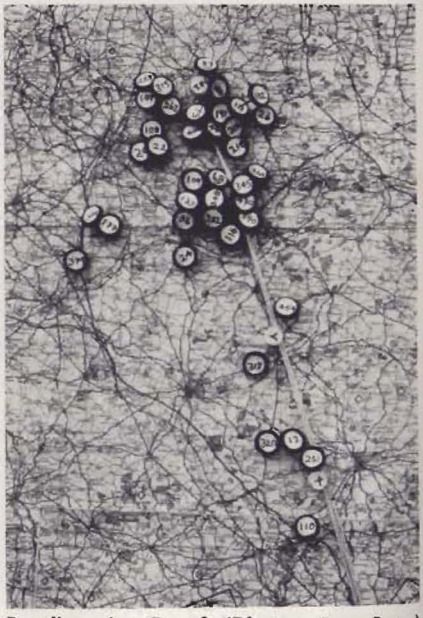
return to Melton Mowbray. X = 25. Y = 50 km. Designated start. On grid 11.30.00.

First take-off was held back to 13.12.00. Because of the turbulence in the lee of the hill the Tiger Moths only just managed to stagger away. Those who could crossed the start line before drifting downwind too far, but Barry Goldsbrough, in the Sky, had great difficulty in getting to the start line. However, there were several gaggles in the vicinity, so the risk of having to land was small.

By about 14.20.00 most were on their way; this was just as well, for soon afterwards a large patch of cirrus covered the site. Progress was slow and heights reported were only between 2,500-3,000 ft. In general the whole outward leg was a series of "getting low", "expect to land" and "final glide".

Lemmy Tanner, one of the first to go, felt that keeping upwind of track served him well; but John Cardiff disagreed — he stayed downwind of track over the high ground and used any streeting that was available. Somehow, 10 pilots, all with different techniques and tactics, managed to go round the TP. Ian Strachan was the first at around 16.00.00. He was sure that Leicester would produce some lift, but when he arrived there, rather low, he could not get away again and had to land on the outskirts of the town.

One of the secret weapons was something Peter the Met. had not mentioned. Both Con Greaves and Martin Seth-Smith found and used wave lift between



Landing pins, Day 2. (Photo : Anne Ince)

Leicester and Oakham before and after the TP. The main struggle for nearly everyone was from Corby to the TP, and very few got above 1,800 ft.; the cruising height was more like 5-700 ft. Andy Gough, who had been scraping at least three times below 500 ft., felt he was high at 700 ft. The strong cross-wind had made this a difficult day and no one got farther than Corby on the way back.

LEADING RESULTS

		Kms.	*Pts.*
Tanner	Ka-6E	95.0	1000
Greaves	Ka-6E	92.6	975
Brisbourne	Dart 17R	91.1	959
Cardiff	Ka-8	85.2	897
Fitchett	Dart 17R	81.7	860
Somerville	Ka-6E	80.6	848
Seth-Smith	Ka-6E	80.1	843
Zealley	Ka-6E	84.0	840*

*Penalty

Ian Strachan and Pete Lane, the only others to round the TP, were placed equal 10th and 13th respectively — they both had an 86% handicap. Lemmy Tanner was in 10th place overall, after 38th yesterday, but John Williamson dropped from 1st to 17th.

LEADING RESULTS 2 DAYS

Greaves	1944	Cardiff	1614
Fitchett	1691	Strachan	1537
Brisbourne	1641	Harrison	1528

Monday, 9th June

Peter Wickham started with, "Rather like yesterday only more so." But when he prophesied "strong easterly winds coming up from the south" there was laughter. All those under 30, who were eligible for the Centenary Trophy, were asked to stand up. When there were seen to be 13 of them, John Williamson quipped, "Too many youngsters in gliding." Briefing was then postponed to 11.30.00.

A 121.5-km. goal race to Nympsfield was set. X = 25. Y = 50 km. Designated start. On grid 13.15.00.

Peter the Met. had warned, "Before you reach Nympsfield you must get away from here" (laughter). With a 20-knot wind at 3,500 ft. he expected the thermals to be as broken as yesterday. There was little change in the general situation, and broken blue thermals from 2,500-6,000 ft. with isolated cu in the late afternoon were forecast.

In the event, Dunstable appeared to



Barry Goldsbrough. (Photo: Anne Ince)

be favoured with rather better-than-forecast wind and thermal conditions for an hour or so. Also, the downwind nature of the task eased the problem somewhat.

Only a 35-minute delay was necessary before launching commenced. A number of gaggles in the vicinity gave indications that there was plenty of lift, and between 14.00.00-14.40.00 the start line had been crossed by all, except for one gaggle of seven, obviously waiting for the optimum time to go. However, of these seven only two, Gough and Cardiff, got to Nympsfield; the others, Strachan, Williamson, Tanner, Fitchett and Garrod, all landed short. As on the previous day, pilots had to scrape here and there, although not to the same extent; no particular fast times were recorded, on average 1 hr. 40 min. being needed for this trip. Also the cruising height was basically between 2,500-3,000 ft. Only two pilots reported going up to 4,500 ft.

Barry Goldsbrough, in his Sky, rather enjoyed this trip, as this time he did not have to cope with the cross-wind. When he heard that he had won the day his delight can be imagined.

Tom Zealley had a most hair-raising arrival. Twice he had to dig himself out of the valley in front of the goal, just managing to get over the edge at Nympsfield and crossing the line at 5 ft. He was then committed to a 20-knot downwind landing; fortunately the field had just been cleared of what looked like the

"invasion at Arnhem" a few minutes earlier, so there was nothing in his way and all was well!

Bernard Fitchett, on returning for another launch, found that the wing fittings in the trailer had given way, damaging one of the ailerons rather badly. He was given permission to fly another Dart next morning until his machine had been repaired.

The overall scores as a result of the various outlandings showed a lot of changes. Strachan dropped from 5th to 20th place, Fitchett from 2nd to 18th, Tanner from equal 10th to 28th and Williamson from 17th to 30th place.

LEADING RESULTS

		km/h.	*Pts.*
Goldsbrough	Sky	81.6	1000
St. Pierre	Ka-6E	74.3	831
Hale	Skl. 3	74.2	829
Williams	Skl. 3	73.8	820
Shephard	Ka-6E	73.4	810
Cardiff	Ka-8	72.8	797

LEADING RESULTS 3 DAYS

Greaves	2627	St. Pierre	=2259
Goldsbrough	2472	Brisbourne	=2259
Cardiff	2411	Gough	2216

Tuesday, 10th June

There was some thin cirrus in an otherwise clear sky early in the morning. A forecast of dry thermals with small cirrus patches and haze was given. The wind would still be strongish 090°-15 knots. By noon it was hoped thermal depth would be about 1,500 ft., increasing to 3,500 ft. by 15.00.00, with a tendency to streeting.

A cat's cradle was set with TP's at 1, Althorp; 2, Alcester; 3, Cirencester; 4, Thame; 5, Dunstable — the outside of the polygon being 288.5 km. X = 25. Y = 70 km. Pilot selected take-off from 12.45.00.

The take-off board was quickly filled, with the last half of the pilots all selecting to go early in the spaces left by the first selectors. A couple of minutes before first take-off, small cu suddenly popped up all over the sky. Although they were not very significant, they did help pilots to find lift quickly, and while launching was still in progress the early ones had already left the site. Con Greaves, the only one who had stuck to his rather late take-off time, was still on the ground 10 minutes after everyone else had launched. He told us later that he had done this so that he would not be tempted or forced to take the downwind leg first.

It was obviously difficult to decide where to go first. There were quite a few who should have done better on the previous days who decided, perhaps too easily, that they would go downwind; if then they had to land early they would at least have flown a greater distance. As it turned out, the field was fairly evenly divided to start with. Eighteen went either willingly or perforce to Cirencester, the majority taking in Thame en route. Twelve took on the struggle to go to Althorp, and from what we gather none of these later knew *how* they had managed it. Especially in the Wolverton area things were difficult. The centres of thermals shifted and the air was extremely turbulent, "most unpleasant" Ian Strachan told us later. This was by far the most difficult flying they had done so far in this contest.

Barry Goldsbrough also took on the battle of Althorp, and this paid off handsomely in the end, when, for the second day running, he won the day, while everyone kept exclaiming — "The Sky's the limit!"

It was perhaps not surprising that, of the 12 who turned Althorp, nine of them finished in the first 12 places of the day. But Jeremy Wheeler was the only one to be placed high after taking the down-



Ian and Stella Strachan. (Photo: Anne Ince)

wind route to Thame and Cirencester and then turning Alcester to get back as far as Broadway.

LEADING RESULTS

		TP order	*kms.*	*Pts.*
Goldsbrough	Sky	2, 4	186	1000
Wheeler	Ka-6E	3, 4, 1	170	904
Tanner	Ka-6E	1, 4	166	877
Strachan	ASW-15	2, 1, 4	165	868
Seth-Smith	Ka-6E	1, 4	163	856
Greaves	Ka-6E	2, 1	162	850

LEADING RESULTS 4 DAYS

Greaves	3477	Wheeler	2849
Goldsbrough	3472	Shephard	2825
Strachan	3043	Gough	2744

Today Carr Withall received a penalty.

Wednesday, 11th June

At briefing a question was raised about the 10% penalty (later cancelled) for an incorrect TP photo. Supposing a pilot's points would be down by less than 10% if a particular TP were ignored altogether, would he nevertheless have 10% deducted for taking a wrong photo of that same TP? He would then be punished merely for taking a bad photo instead of his avoiding punishment by taking no photo at all.

A 133-km. triangle: Shepperds Furze, Pitsford Reservoir, Dunstable. X = 25. Y = 50 km. On grid 12.00.00. Designated start.

Very early there was some stratus overcast and thin mist in the valley.

"I have only changed the date on the weather map," Peter began. Moderate to strong thermals with 3/8 cu, base 4,500, tops 6,000 ft. Wind 070°-17 knots locally and 13 knots in the north, was today's recipe. Asked if the wind direction was magnetic, Peter finished off with: "All met. winds are true — but they may be wrong."

By 14.00.00 twenty gliders had crossed the start line. Again there were a lot of gaggles, but the clouds looked bigger and better than yesterday. Almost for the first time pilots could leave at maximum height. The next 20 gliders were rather slower in crossing, and Ian Strachan and John Williamson came back 30 min. after their first start at 14.18.00 and set off once more at maximum height, going very fast. By 14.20.00 the shortest leg to the first TP had already been rounded by a number of pilots. However, soon afterwards, at 14.35.00, Lemmy Tanner and Tony Deane-Drummond were in trouble near the first TP. It took them quite a time to recover enough height to carry on.

Barry Goldsbrough, in the Sky, reported heights between 6-800 ft. in the Buckingham area north of the first TP. The majority of pilots ran into difficulties along this second leg. The clouds had disappeared and conditions completely changed.

At Dunstable, where it remained very good throughout the day, we could not understand what had gone wrong; but when Bill Swift arrived, after driving down from the north, he explained that the sky was very blue and he had seen a lot of gliders struggling in the Northampton area. It was well after 16.30.00 when the second TP was beginning to be approached and only 12 pilots finally rounded it. The rest, if they had not already landed in the Buckingham region, fell to earth around Northampton. One gaggle contacted wave; Ron Newall going up at 2 knots to 3,500 ft. It was this gaggle of ten, plus a few more later, who were able to turn the reservoir. It was a most impressive sight, we were

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told, when they approached the TP more or less in line abreast.

On the last leg it was again the Wolverton area which presented most of the trouble. Several pilots had to drop out of the bottom of their gaggle and landed mainly between Sywell and Olney at around 16.45.00; the last few survivors trying desperately to keep going. Bernard Fitchett reported from Bletchley at 17.00.00, being at first hopeful of being able to final glide shortly. He had to give up the struggle finally and landed near Bletchley, but was sufficiently ahead of the others to win the day.

LEADING RESULTS

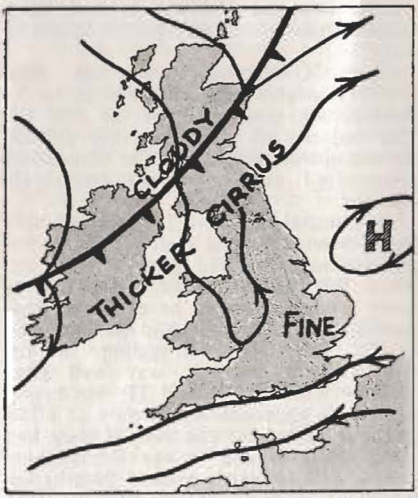
		kms.	*Pts.*
Fitchett	Dart 17R	103	1000
Greaves	Ka-6E	101	977
Zotov	Ka-6E	99	946
Gough	Oly. 419	98	940
Newall	Ka-6E	95	896
Tanner	Ka-6E	94	878

LEADING RESULTS 5 DAYS

Greaves	4454	Fitchett	3596
Goldsbrough	4051	Zotov	3541
Gough	3684	Shephard	3445

Livesey, Garrod and Beer received penalties.

Thursday, 12th June



At briefing Roger Barrett concluded his report of a complaint about yesterday with the words, "Manners, gentlemen, in thermals." Another was about

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pilots thermalling in the Luton approach.

An alternative out-and-return, either Marksfield, 209 km., or Melton Mowbray, 202 km. X = 20. Y = 50 km. Designated start. On grid 11.30.00.

Peter Wickham, as a reward for keeping us in a high pressure system, was introduced this morning as "High Wickham". Today he had to work harder because he had to alter the map (yesterday it was the date). The High was beginning to collapse, and he expected the day to be good; cloud base at 11.00.00 2,000 ft., rising rapidly to 4,000 ft. at noon or earlier. Strong, well-formed thermals in most areas — but some "dead" patches could be expected. 4/8 cu with small areas of strato-cu spread out, where possible, in the north. Wind 070°-15 knots, 090°-10 knots in the north, and "for those who cruise at 500 ft. the wind will be NE-ly" was his closing remark.

The alternative TPs were to allow for unforeseeable local variations; as someone remarked, "until you have landed, you won't know which TP you should have gone to".

Launching began at 11.50.00 and the start line was soon at work, with John Cardiff first at 12.14.00. The last 10 pilots to go did so between 12.50.00 and 13.00.00. By then, Lemmy Tanner being already over Cranfield at 4,000 ft., and John Cardiff approaching Northampton at 13.05.00; the going was good and heights reported were in the 4-4,500 ft. level.

The indications were that most pilots favoured to turn Melton Mowbray. Shortly after 15.40.00 the reported heights had increased to the 5-5,500 ft. level and by 15.40.00 several pilots hoped shortly to start on final glides. In fact, it was

Ian Strachan who was back first, at 16.12.00.

The last 20-30 kms. were probably the most difficult. Bernard Fitchett found two thermals, which petered out on him near Newton Pagnell. By the time he was at Bletchley he was at 3,500 ft., but rather than lose more time he final glided from there and just scraped over the finish line flying at min. sink.

Andy Gough started his final glide from Northampton, but he also had to break off to gain more height — first at Cranfield, which produced nothing, and then over Woburn, which saw him safely home. However, he was still fast enough to be able, with John Williamson, to claim equal 1st place.

The first eight places all went to the late starters. John and Andy had left together at 12.59.00; and although John was back 13 min. sooner than Andy the handicapped score worked out at exactly the same points. The speeds ranged between 55.3 and 43.4 km/h. Six pilots failed to complete the task and only 10 pilots turned Marksfield; the rest went to Melton Mowbray.

LEADING RESULTS

		km/h.	*Pts.*
Williamson	Dart 17R	55.3	= 1000
Gough	Oly. 419	55.3	= 1000
St. Pierre	Ka-6E	54.9	972
Fitchett*	Dart 17R	54.8	965
Shephard	Ka-6E	55.0	959*
Withall	Dart 17R	54.5	944
Harrison	Ka-6E	54.3	930

*Penalty. (Fitchett turned Marksfield.)

Con Greaves and Barry Goldsbrough, although placed 12th and 18th for the day, were still holding 1st and 2nd place.

LEADING RESULTS 6 DAYS

Greaves	5245	Fitchett	4561
Goldsbrough	4707	Shephard	4404
Gough	4684	Withall	4267

Friday, 13th June

A 203.5-km. triangle. Chipping Norton, Kettering, Dunstable. X = 30. Y = 60 km. On grid 11.30.00. Designated start.

With very light winds and the High collapsing, the forecast was excellent, as the photograph of the board shows. The Texan type weather promised did not, however, quite come off. The thermals were disappointingly slow to become organised, and the start was rather delayed. There were a few "strong, fat thermals", but they were conspicuous by their rarity over most of the route.

After exploratory flights by several "snifters", at last the sky was suddenly "boiling" — according to the task setter, who was airborne in the Capstan. Launching began immediately at 12.07.00. The start line was crossed by all in 45 min. from 13.39.00 onwards.

It was, however, soon apparent that the conditions on the first leg were not as forecast. Barry Goldsbrough was down to 700 ft. near Wing at 14.00.00. From this awkward situation he managed to recover, and it was a timely warning to the rest who followed that



The "strong, fat thermals". (Photo: A. E. Slater)

conditions might well be tricky. The average time taken for the first leg (70.3 km.) was between 1 hr. 17 min. and 1 hr. 50 min.

Carr Withall, one of the first at the first TP, at 15.20.00, was at 3,200 ft. climbing well and 5 min. later half the number of competitors seemed to be going round as well. By this time the lift had improved but before they reached Northampton it began to slow down again and again times taken for the second leg (76.3 km.) were in the 1 hr. 50 min. mark.

Part of the trouble was that the thermals were rather widely spaced, with fairly heavy sink in between. However, 35 pilots were able to round the second TP; and by now it was realised that not many pilots would be able to make it back to base, yet at 17.20.00 there were still no landing pins on the map.

At 18.00.00 John Williamson arrived, the first to get back, followed 2 min. later by Andy Gough. They had pair flown most of the way and it had taken them 3 hr. 58 min. Ted Shephard who, on the first leg near Wing, was in a large gaggle, had to take avoiding action from a Victor, also got home. The Victor was from Upper Heyford, which station had been properly notified of the day's task beforehand.

John Cardiff was in great trouble a couple of kms. away from the finishing line, but with great patience he finally got high enough to scrape in. In all, eight pilots finished the task.

Jeremy Wheeler, the next nearest home, spent over an hour at 300 ft. before getting up to 1,300 ft. but the lateness of the day and the lack of evening thermals prevented him from making further progress. Peter Goldney did a similar thing over the second TP, where he circled for 1¼ hrs. at 500 ft. and could only get as far as Northampton.

Peter Williams, Terry McMullen and Ian Strachan all damaged their machines, but only Ian could fly again next day, after all night repairs at Bicester.

Peter Williams was, indeed, lucky in his accident. After deciding to land, his airbrakes would not come out, and he found himself committed to overshoot his chosen field into one of standing corn and other obstacles. The glider damage was considerable. It is of special interest that Peter, knowing a prang was inevitable, gave a MAYDAY call, believed to be the first time from a pilot in a glider in this country. This was heard at Dunstable and by airborne pilots — but R/T rules were disregarded and the chatter went on unheedingly. Friday the 13th had, indeed, been "unlucky for some".

LEADING RESULTS

		km/h.	*Pts.*
Gough	Oly. 419	48.7	1000
Shephard	Ka-6E	47.9	971
Williamson	Dart 17R	46.0	904
Withall	Dart 17R	45.3	879
Fitchett	Dart 17R	45.0	868
Cardiff	Ka-8	44.2	840
Zealley	Ka-6E	44.1	836
Zotov	Ka-6E	43.9	829
Wheeler	Ka-6E	158.2 km.	686

LEADING RESULTS 7 DAYS

Greaves	5860	Shephard	5375
Gough	5684	Goldsbrough	5327
Fitchett	5429	Zotov	4945



Bernard Fitchett. (Photo: P. Lewis)



The ice-cream van of "Mr. Whippy" was very popular throughout the contest. (Photo: A. E. Slater)

Con Greaves was 20th with 615 points, enough to keep him in the lead, but there were now only 533 points separating the first five. John Williamson was back in 9th place overall with two days still to come.

Saturday, 14th June

A flat 127.5 km. triangle was set. Potton, Shepperds Furze, Dunstable. X = 20. Y = 50 km. On grid 12.30.00. Designated start.

The weather situation was basically the same as yesterday. Blue thermals locally with cu to the west and thundery weather much further west. Thermals on the first leg would be blue 4,500-6,000 ft. second leg 5,000-8,000 ft. with 4/8 cu and the return leg would be blue thermals again. Wind 240°-5 knots in the north and nil in the south.

Take-off was held back to 12.58.00, just as a small amount of cu became visible at about 2,500 ft.

Con Greaves and Lemmy Tanner decided to have a go at pair flying, as they found their flying techniques are rather similar. They were first across the start line, at 13.19.00, at which time conditions were much better than forecast, with cumulus to be seen everywhere.

It even looked as if it might overdevelop!

Various pilots came back for a re-crossing, but by 14.26.00 everyone had gone. In general, those who had left early were better off. Cumulus was still forming and the first TP was reached fairly easily, with 4-6 knots lift up to 5,000 ft.

A few, however, ran into difficulties. Ted Shephard missed out on one cloud on the last leg, and then had to scrape for 40 min. This meant that he was one of the slowest to finish.

It was John Williamson, however, who really lost out badly today. On deciding that his time along the first leg was too slow, he flew back to base to re-cross the line. This he did at 14.23.00 but, unfortunately, conditions were not nearly as good as he had hoped, and he was one of the only two who failed to complete the task!

Con Greaves and Lemmy Tanner had a climb to 8,500 and 7,000 ft. respectively on the second leg. They lost sight of each other temporarily, but on their final glides they were together again and they crossed the finish line in close formation only seconds apart, and 14 min. ahead of everyone else.

Carr Withall, with a late start time at 13.57.00, didn't use any lift below 3 knots. He was down to 1,500 ft., however, just before he started on his final glide.

Jack Harrison, who was in 25th place overall, had, so he said, "nothing to lose", and went as fast as he could, and this won him the day with ease.

Twenty pilots had a second go to try and improve their times, but they all landed out. Speed range 64.3 to 42.7 km/h.

LEADING RESULTS

		km/h.	Pts.
Harrison	Ka-6E	64.3	1000
Fitchett	Dart 17R	63.5	966
Morrison	Ka-6E	62.6	908*
Strachan	ASW-15	61.1	863
Greaves	Ka-6E	60.7	846
Tanner	Ka-6E	60.0	842

*Penalty.

LEADING RESULTS 8 DAYS

Greaves	6706	Goldsbrough	6024
Gough	6500	Strachan	5654
Fitchett	6395	Withall	5622

Sunday, 15th June

Briefing was delayed to 10.30 a.m. A small 105 km. out-and-return was set to Duxford, provided that launching commenced not later than 13.30.00. If not, the task would be scrubbed. There were thunderstorms over the Channel and layer cloud was expected. Peter was not too hopeful that the task would be on, as he feared the lift would be rather disorganised.

The snifters were not very successful and only just before cancellation time did they manage to find the odd thermal. The task was duly cancelled but by about 14.15.00 it became quite soarable locally. Con Greaves, who had been leading for seven consecutive days, never winning one, was proclaimed the new "very worthy" Sports Class Champion.

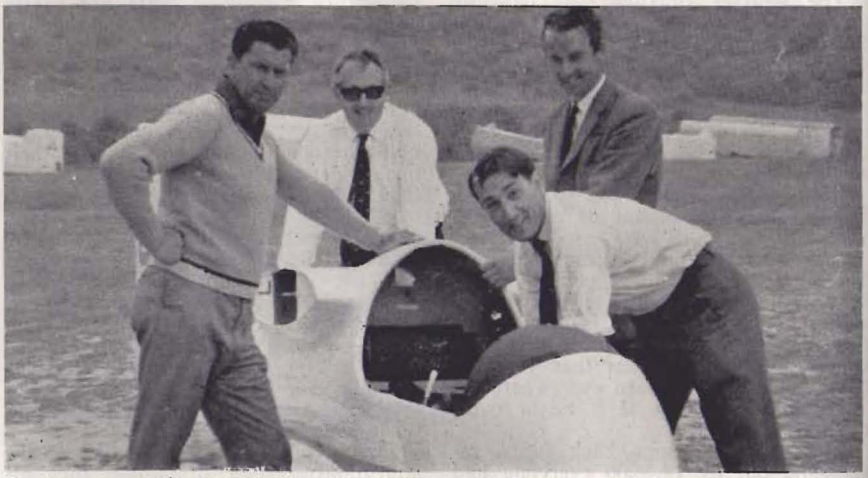
Prizegiving

Roger Barrett explained the reason for cancelling the task — it was not that the weather was unsoarable, but that there was much medium cloud on the proposed route. Later that afternoon there were several heavy thunderstorms in the TP area.

Air Chief Marshal Sir Theodore McEvoy, Vice-President of the BGA, accompanied by Lady McEvoy, distributed the prizes. Tony Deane-Drummond, on behalf of all the competitors, described the contest as "such great fun", the best he had ever been to. He thanked all the organisers, officials and helpers for all the work they had done. There was much cheering and, finally, Roger Barrett got the biggest ovation of all.

BRITISH TEAM FOR MARFA

At the finish of the Open Class Nationals at Lasham, George Burton and John Delafield were selected to fly in the Open Class at Marfa. After the Sports-Standard Class Nationals at Dunstable, Con Greaves and Andy Gough were selected to fly in the Standard Class.



L. to r. — Andy Gough, George Burton, Con Greaves and, leaning over cockpit, John Delafield. (Photo : J. Pullen)

FINAL RESULTS, Sports-Standard Class

Pilot(s)	H'cap. % Sailplane	Day 1 1000	Day 2 1000	Day 3 1000	Day 4 1000	Day 5 1000	Day 6 1000	Day 7 1000	Day 8 1000	Total Points	Std. Class Order
1 Greaves, C. M.	96 Ka-6E	969(2)	975(2)	683(11)	850(6)	977(2)	791(12)	615(20)	846(5)	6706	2(6666)
2 Gough, A. W.	96 Oly. 419	729(11)	737(10=)	750(8)	528(23=)	940(4)	1000(1=)	1000(1)	816(8)	6500	
3 Fitchett, B.	90 Dart 17R	831(4)	860(5)	78(39)	827(7=)	1000(1)	965(4)	868(5)	966(2)	6395	
4 Goldsbrough, J. B.	112 Sky	674(20=)	798(9)	1000(1)	1000(1)	569(18)	666(18)	620(17)	697(12)	6024	
5 Strachan, I. W.	86 ASW-15	800(6)	737(10=)	201(32)	868(4)	814(11)	847(10)	524(30)	863(4)	5654	1(6677)
6 Withall, C. L.	90 Dart 17R	678(18=)	504(31)	600(20)	787(14)	498(27)	944(6)	879(4)	748(11)	5622	
7 Tanner, L. E. N.	96 Ka-6E	367(38)	1000(1)	167(33=)	877(3)	878(6)	861(9)	598(23)	842(6)	5590	6(5442)
8 Zotov, D. V.	96 Ka-6E	659(22)	571(25)	563(23)	802(9)	946(3)	575(23)	829(8)	641(15)	5586	3(5699)
9 Wheeler, J. H.	96 Ka-6E	568(29)	733(12)	644(16)	904(2)	503(26)	902(8)	686(9)	553(21)	5493	4(5486)
10 Shephard, E. G.	96 Ka-6E	768(7)	525(30)	810(5)	722(15)	620(15=)	959(5)	971(2)	77(37)	5452	5(5485)
11 Zealley, T. S.	96 Ka-6E	497(33)	840(8)	658(13)	459(30)	645(13)	700(16)	836(7)	667(13)	5303	7(5398)
12 Deane-Drummond, A. J.	96 Ka-6E	760(8)	267(36)	713(9)	602(19)	620(15=)	603(20)	623(15=)	799(9)	4987	9(5077)
13 Livesey, M. H.	100 Skylark 3	595(27)	647(16)	0	799(11=)	848(8)	707(15)	668(10)	658(14)	4922	
14 Newall, R. W.	96 Ka-6E	721(12)	222(37)	593(21)	528(23=)	896(5)	742(14)	609(21)	577(19)	4888	10(4906)
15 Williamson, J. S.	90 Dart 17R	1000(1)	277(35)	225(30)	614(18)	816(10)	1000(1=)	904(3)	34(38)	4870	
16 Morrison, S. A. J.	96 Ka-6E	623(24=)	591(22)	649(15)	827(7=)	178(36=)	526(24)	513(32)	908(3)	4832	12(4885)
17 St. Pierre, A. H. G.	96 Ka-6E	812(5)	616(19)	831(2)	784(13)	178(36=)	972(3)	517(31)	120(35)	4830	11(4893)
18 Cardiff, J.	106 Ka-8	717(13=)	897(4)	797(6)	125(37)	488(28)	185(34)	840(6)	761(10)	4810	16(4065)
19 Lilburn, D. W.	98 Skylark 4	552(30)	671(14)	637(17)	287(33)	866(7)	756(13)	582(24)	345(29)	4696	
20 Harrison, K. A.	96 Ka-6E	862(3)	666(15)	167(33=)	122(38)	282(35)	930(7)	634(13)	1000(1)	4663	13(4403)
21 Hale, R. J.	100 Skylark 3	490(34)	611(20=)	829(3)	84(40)	621(14)	584(22)	535(29)	829(7)	4583	
22 Stanley, J. H.	98 Skylark 4	615(26)	537(29)	709(10)	801(10)	483(29)	415(26)	631(14)	355(28)	4545	
23 Atkinson, G. B.	90 Dart 17R	752(9)	566(26)	165(35)	482(29)	510(24=)	596(21)	660(11)	440(27)	4171	
24 Williams, P. W.	100 Skylark 3	695(16)	626(17=)	820(4)	556(20)	615(17)	387(27)	420(37)	DNF	4119	
25 Hood, L. S.	102 Oly. 463	678(18=)	43(39)	776(7)	501(27)	554(20)	673(17)	646(12)	201(32)	4072	17(3621)
26 Seth-Smith, M. P.	96 Ka-6E	407(37)	843(7)	471(25)	856(5)	110(39)	331(28)	459(35)	457(25)	3934	15(4095)
27 Grenet, P.	96 Ka-6E	442(36)	444(33)	676(12)	543(22)	380(32)	192(33)	623(15=)	603(17=)	3903	14(4208)
28 Stevenson, J. N.	100 Ka-6CR	454(35)	574(24)	341(28)	799(11=)	365(33)	255(29=)	509(33)	564(20)	3861	19(3571)
29 Lane, P. D.	86 Std. Libelle	548(31)	728(13)	401(26)	500(28)	522(23)	206(32)	450(36)	492(23)	3847	8(5247)
30 Orme, H.	100 Ka-6CR	741(10)	626(17=)	556(24)	134(36)	538(22)	125(38)	618(18)	487(24)	3825	20(3557)
31 Staines, R.	96 Oly. 419	674(20=)	581(23)	248(29)	528(23=)	55(40)	819(11)	603(22)	248(31)	3756	
32 Garrod, M. P.	90 Dart 17	717(13=)	0	136(37)	644(16)	811(12)	171(35)	580(25)	607(16)	3666	
33 Goldney, P., Welsh, J. H.	102 Oly. 463	352(39) —	— 558(27)	651(14) —	— 545(21)	542(21) —	— 127(37)	567(27) —	— 303(30)	3645	22(3226)
34 Brisbourne, R. P.	90 Dart 17R	682(17)	959(3)	618(19)	250(34)	20(41)	255(29=)	570(26)	171(33)	3525	
35 Watson, A. J.	96 Ka-6E	536(32)	611(20=)	203(31)	388(32)	510(24=)	512(25)	617(19)	135(34)	3512	18(3588)
36 Somerville, A.	96 Ka-6E	20(41)	848(6)	623(18)	30(41)	823(9)	241(31)	126(41)	603(17=)	3314	21(3549)
37 Beer, L., Davies, S.	100 Ka-6CR	623(24=) —	— 84(38)	144(36) —	— 503(26)	481(30) —	— 610(19)	412(38) —	— 453(22)	3110	23(2945)
38 Jeffries, J. R.	110 Ka-13	591(28)	0	40(40)	621(17)	440(31)	139(36)	337(39)	543(22)	2711	
39 McMullen, T. A., Fairman, M. C.	96 Ka-6E	710(15) —	— 419(34)	570(22) —	— 101(39)	147(38) —	— 117(39)	554(28) —	— DNF	2618	24(2765)
40 Keogh, B.	96 Ka-6E	49(40)	500(32)	355(27)	390(31)	565(19)	95(40)	496(34)	29(39)	2479	25(2604)
41 Smith, N. W.	110 Ka-13	654(23)	547(28)	114(38)	139(35)	350(34)	63(41)	199(40)	115(36)	2181	

SOME NOTES ON HANDLING QUALITIES

By JOHN C. GIBSON

THAT growing body of people who believe that pilots should tailor their servo responses to suit the handling qualities of a glider — however bad these may be — rather than that these qualities should be tailored to the pilot, should give some thought to the millions of dollars and a great many pounds spent over the past 15 years or more on research into the inter-action between aircraft and pilot behaviour.

While a pilot may be able to perform a task quite well, even with an execrable aircraft, this is at the cost of an excessive work-load on the pilot, which can lead to disaster if attention is relaxed momentarily or if some emergency arises. One aim of this expenditure has been to discover what handling qualities an aircraft should have, so that the pilot will have a good opinion of it while performing any particular task.

Considerable progress has been made in establishing how a pilot compensates for inadequacies in the aircraft qualities by behaving in a manner very analogous to a servo mechanism. The amount and type of compensation which he has to use to obtain the desired overall pilot/aircraft closed-loop response determines his opinion of the aircraft, although it need not necessarily affect his performance very much in normal circumstances.

Given knowledge of this type, the aircraft designer attempts to produce an aircraft and control system which allows the pilot to pay the maximum attention to his tasks and the minimum attention to actually controlling the aircraft. The object of all this attention is the Service pilot, who is very highly trained and experienced by comparison with almost all glider pilots. Even the most highly skilled pilot of all — the test pilot — can come to grief when an aircraft makes excessive demands on his learning or compensation techniques, as witness the case of the NASA pilot whom Frank Irving mentioned in SAILPLANE AND GLIDING for February-March, 1969.

Why on earth, then, should we expect glider pilots to put up with handling characteristics which would be rejected by any Air Force in the world?

Only one type of artificial feel has continued to prove completely satisfactory over the years on aircraft which lack natural feel in pitch — and that is "q" feel. This simulates the aerodynamic hinge moments of an elevator due to its deflection from trim, although not due to local angle of attack changes, i.e. artificial b_3 only. Contrary to a recent assertion in these pages, "q" feel is neither particularly complex nor is it neglected, and it contributes to the excellent qualities of several military and civil aircraft of today.

On the other hand, almost every aircraft which uses spring-feel and a bob-weight — in the interests of cost-weight-complexity arguments — has had pitch control problems, including severe PIO cases. The cure usually involves non-linear springs and gearings, which may only just avoid the problem in critical flight regimes and which degrade the control qualities in others.

A bob-weight is a simple device for increasing steady stick force per g, but it is actually quite likely to decrease it during dynamic manoeuvring situations. The already low resonant frequency of a push-rod control circuit as on most modern gliders — restrained by a relatively light spring — is reduced still further by the bob-weight inertia to the point where it may be close to the airframe short-period oscillation frequency. A vertical acceleration produces a bob-weight force, which moves the control circuit, which causes a further vertical acceleration, etc., and the inter-actions may be such as to reduce the stick-free damping to a low level. The stick force per g for a cyclic stick movement may be only a quarter of the steady state value, and this has been a major factor in many PIO incidents.

Further objections to bob-weights are that the stick force from them provides no anticipation of the final manoeuvre — because the force arises from the manoeuvre and not from the preceding control input — and that friction masks their effect for normal flight. For example,

2 lb. friction with a 2 lb/g bob-weight needs more than 1g increment before the bob-weight provides any force at all. The latter, in particular, has been associated with some PIO cases, because of the sudden change in stick-free damping as the bob-weight becomes effective.

Thus, even a positive bob-weight can have pitfalls for the unwary, but many modern gliders have a built-in negative one — namely, the pilot's arm. With a supine seating position and the stick cranked back to give good crotch clearance, inadvertent stick motions as a result of vertical accelerations acting on the pilot's arm may be unavoidable. Unfortunately, they act in the wrong direction, i.e. they reinforce the original motion. When the stick forces are very light and the glider's response to stick motions is very big — as at high speed — the effect is likely to be highly unpleasant, both steady state and dynamically when the control-circuit resonance and short-period motions may inter-act.

I believe that such inter-actions may be a principal cause of some of the control difficulties discussed in recent issues of SAILPLANE AND GLIDING. The PIO tendency noticed by some new Dart pilots is probably caused by using excessive gain during the aero-tow take-off, where very precise positioning is necessary, this is, perhaps, natural in view of probable nervousness and possibly rather lighter stick forces than those to which they have been accustomed, and which have been exaggerated by the arm mass negative bob-weight. In free flight there is less problem, because the basic stick forces are reasonable and the control task less demanding. The control-circuit spring stiffness is aerodynamic and increases rapidly with speed, so there is less tendency for control-circuit/airframe inter-action.

On the Diamant, I think that the explanation for Brennig James's "scalloped curve" is likelier to be found in the foregoing than in any muscular frequency problem. Here there is also the addition of structural response modes to complicate the inter-action picture, bringing in a third mode of comparable frequency to the control circuit and "rigid" airframe. "Comparable" in this situation means within a factor of 3 or so. It is often assumed that pilots can develop

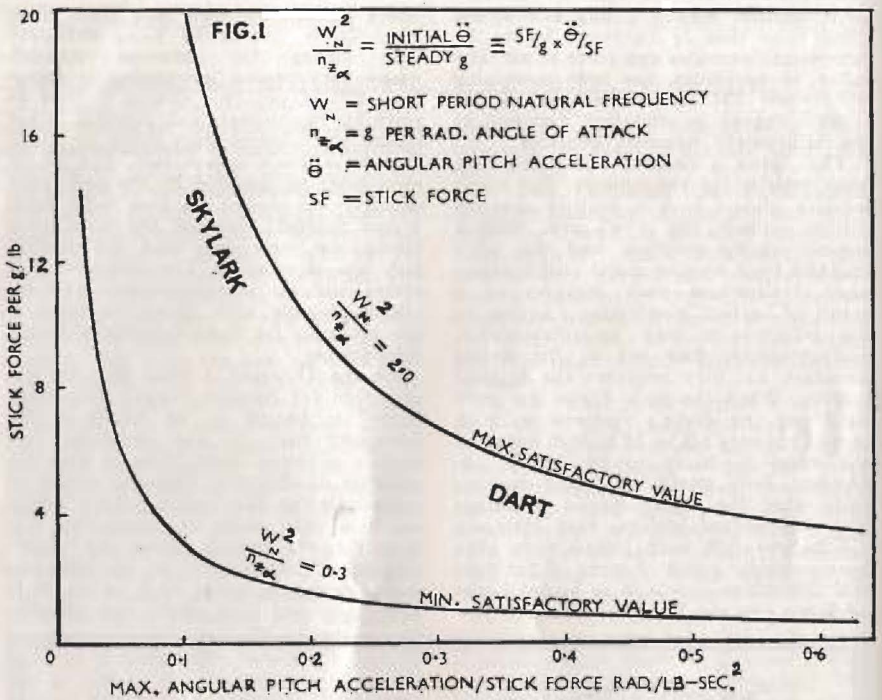
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the slight lead compensation necessary to cancel muscular lag effects without difficulty, although a full model of pilot behaviour certainly does include them. However, there is a "transport delay" of signals through the nervous system which can be destabilising and which is not cancelled normally, although it is sometimes assumed to vanish during a PIO occurrence.

At the high speeds at which the Diamant PIO occurs, it is most probable that the pilot flies using a vertical acceleration feedback loop rather than the attitude loop used at lower speeds. The wing bending mode may produce a significant lag in the g response — without altering the attitude response — for which the pilot could compensate by appropriate modification to his technique, at the expense of his good opinion. However, since the Diamant is statically unstable and picks up speed quickly, he could easily arrive at a critical speed unawares and without having developed the modified response. A sudden control input could then trigger the PIO, particularly as the stick force is so small that excessively high gain is difficult to avoid. Even a deliberate speed increase could lead to trouble if turbulence is suddenly met after a smooth period with no control activity. A proper level of stick force per g and an uncranked stick would reduce the chances of a PIO considerably.

Glasflügel attribute some control difficulty on the BS-1 to the offset stick, and have designed the Kestrel stick to avoid just this trouble. The Kestrel appears also to use a conventional elevator, and control is described as "good and not overly sensitive and out of proportion" — see the article by Dr. Edward Byars in the November, 1968, issue of *Soaring*. A case of a lesson learned?

I should like to make one or two remarks concerning the PIO data in Frank Irving's article in SAILPLANE AND GLIDING of February-March, 1969. It requires a

fairly unusual airframe layout to obtain a PIO criterion of less than 1.0, but the effective value may be easily less than 1.0 if the stick-free damping — including bob-weight/circuit inter-actions — is used instead of the basic stick fixed value. There is some convincing correlation of PIO cases on this basis.

The closed curves in Frank Irving's figure may be too restrictive. Each pilot involved produced satisfactory points to the right. The data in the reference form a part of those used to obtain the handling qualities requirements mentioned above, but which appear in a different form. It can be shown that, by making some slightly simplifying assumptions, the equalities shown in Fig. 1 are valid.

Upper and lower values of $\frac{\omega_n^2}{nZ_\alpha}$ are now thought to produce satisfactory airframe qualities, provided the damping, etc., is adequate.

It can be seen that the Fig. 1 boundaries enclose neatly the curves in Frank Irving's article, and that the Dart lies within them. Note, however, that complete equality occurs only if the stick force is proportional to elevator deflection and not to angle of attack, g, etc. If a 2 lb/g bob-weight were added to the Dart, the points would move upwards to the boundary.

A stick force per g of less than 3 lb. may be satisfactory or not, depending — for example — on the factors described above. If the stick-free damping is at least 70% of critical, the dynamic force per g will be the same as the steady value, and little difficulty should result. If the damping is low, due to the various inter-actions, even a 3 lb/g steady value may not be high enough, since the dynamic value could be $\frac{1}{2}$ lb/g or less. Hence the real lower limit depends on factors other than those on the figure.

The whole subject is vast and fascinating, and I have only skimmed the surface here. As Frank Irving says, care must be taken not to extrapolate too far from data applicable to different aircraft carrying out different tasks. However, serious research into such matters costs a lot of money and, short of some sponsored research at Cranfield, for instance, there is no alternative to trying to make intelligent use of the great mass of information available already.

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BOOK REVIEW

First Annual Symposium on Competitive Soaring. Presented by *Soaring Symposia.* Edited by ED BYARS and BILL HOLBROOK, Cumberland, Maryland 21502, USA. Price £2, post paid.

In March this year the first of what is expected to be an annual series of Soaring Symposia was held in the USA. Proceedings of *The First Annual Symposium on Competitive Soaring* is the verbatim report of this two-day meeting at which three of the foremost American competition pilots presented their views on how to win soaring competitions and exposed themselves to questions; a paper on variometers and another on soaring meteorology and forecasting completed what was obviously an extremely successful session.

Compared with USA, competition pilots are thick on the ground in UK and yet, despite this, the spread of know-how on competition flying is slow and uncertain; not much is written and most pilots do not discuss to any extent the techniques and methods they have developed. The organisation of *Soaring Symposia* in USA is a conscious attempt to overcome this problem and obviously a very successful one if this first report is anything to judge by.

The three pilots who spoke (Dick Schreder, George Moffat and A. J. Smith) had obviously analysed their competition flying in considerable detail. Reading what they had said I found myself continuously thinking "Of course! That's exactly it, that's what one does and why." Many of one's automatic reactions are set out in detail with a clear analysis of the reasons. This clear thinking is obviously an important contribution to the spread of competition know-how; instead of each pilot laboriously building up his stock of competition knowledge and experience the hard way these symposia could provide a really sound source of basic know-how on which to build.

The pilots' views are, of course, slanted towards USA conditions, though they do mention experiences in World Championships in UK and Poland; as a result there are a number of points on which the consensus of UK opinion (for UK conditions) would probably be significantly different. For example, George Moffat suggests entering a thermal area at inter-thermal speed and holding it right up to the time the decision is made to start circling; he then enters the thermal in a climbing (clambering swerve?) to exchange the speed for height.

The paper by A. Gene Moore on variometers is a comprehensive analysis of the whole field and includes a great deal of advice on setting up total energy systems that really work.

Charles V. Lindsay's paper on soaring forecasts and weather covers both the meteorologists' and pilots' point of view and should be required reading for meteorologists trying their hand at competition forecasting. There is lots in it too for pilots, as well as some excellent photographs.

The pages (124) are loose leaf with stiff paper covers and the whole thing is well worth its price.

H.C.N.G.

The Theory of Modern Cross-Country Gliding. By F. WEINHOLTZ. Translated into English by D. Hope-Cross. Published by NZ Gliding Kiwi, Tauranga, New Zealand, 1969. Obtainable from BGA, price 25s., including postage and packing.

In this little book of 61 pages the author purports to set down the secret of Heinz Huth's success; however, I doubt if he achieves his aim. But that is not to say that the book is not worth reading and, in fact, I believe that even the most experienced pundit will find points worth thinking about. For the pilot just entering into serious cross-country flying there is a lot of information, although—at times—I found it hard to believe that the discussion referred to practical cross-country flights.

There is little distinction between what is established fact and what is opinion. Similarly, one way of solving a particular problem is put forward as if it were the only way, but—at least—there is an answer to many of the questions a novice might ask. There is certainly no surfeit of books covering this particular aspect of gliding and, as such, *The Theory of Modern Cross-Country Gliding* should find a place on the bookshelf of every cross-country pilot who wants seriously to achieve or improve his competition standard.

The translation is a little stilted in places but—nearly always— the meaning is clear. The basic units are kph for speed, m/s for sink and climb and metres for height, but the translator has added the mph and feet values for speed and height. However, after one try—wrong—at converting m/s to knots, he gives up on sink and climb and gives only the m/s value.

H.C.N.G.

CORRESPONDENCE

O WAD SOME POW'R THE GIFTIE GIE US
TO SEE OURSELVES AS OTHERS SEE US! BURNS

Dear Sir,

Now that the 1969 Nationals have mercifully passed over and the customary post-mortems have been held, may I make a few comments relative to the competition as it appeared to me?

Speaking as a professional in my own vocation, I am amazed at the degree of pseudo-professionalism displayed by the majority of the pilots with regard to sensibility and safety, compared with their aggressive attitudes on the emotional side. They are, after all, presumably engaged in a sport — slightly more than a game and not a bitter battle or a deeply determined endeavour against the elements in a struggle for life, but a simple sport, and utilising expensive toys during a 14-day holiday at that. The serious faces, the grim and unhappy looks, the quick irritations and complaints seem far removed from the intentions and attitudes originally developed with regard to gliding. Singularly few of the competitors seemed to have arrived at Lasham for fun — they came grimly determined to beat the next fellow and appeared incapable of seeing anything further than this. It's not the competitive spirit — which should be combined with joy — which I'm considering, but the lack of sensible emotion, perspective and humour. Possibly it is a consequence of the misuse of the type of glider now being flown — sophisticated, over-instrumented, virtually computerized and dedicated to speed. A personal view sees it as the prostitution of an extremely beautiful thing. Is there any place at all for human — truly human — characteristics?

With regard to the site of the Nationals, is there perhaps any chance of the competition being held in one of the great deserts of the world? After all, the weather which customarily accompanies this competition ruins gliding for everyone else. By holding the whole affair outside of Britain, immense benefits would be gained on all sides — we keep decent weather in Britain, the pilots would find the competition engendered rain in the Sahara identical with rain elsewhere, and the desert gains by being watered for two weeks. Economic advantages would be tremendous — particularly if we insist on payment to the UK for rain imported to a dry and dusty desert. Alternatively, the Nationals could be held in Scotland during February. I recall at least four soarable hours, and this closely approximates the total time available to the pilots during May.

The emotional intensity displayed by the pilots has reached the point where anthropologists and social psychologists would predict the need for a sacrifice to transfer guilt feelings and developing hatred of the gods. I see little need to offer up meteorologists as the sacrificial lamb. Perhaps a suitable alternative could be found

by drawing lots from amongst pilots high on the ladder. The historic need for the sacrifice to be a virgin should present little obstacle — they seem to have time for nothing else other than gliding. Has it ever struck one of them that polar curves are things Eskimo ladies have?

In the ultimate I am left with one thought, one question, and a comment: the thought — that it is the *quality* and not the object of the passion which truly matters; the question — whether or not anyone in the upper echelon flies purely for love of flying and because it is there to be enjoyed? And the comment . . .? This last sets it all in place for me. When, with all meteorological assistance and overall capacity the powers-that-be had declared a no-contest day, a young lady flew 83 km. from Tarrant Rushton in an Oly. 463 on her first cross-country and remarked on landing that "all those hot ships looked really lovely in their rows on the ground".

London, S.W.1. S. L. JAVETT, F.R.C.S., F.R.C.S.E.

NEXT GENERATION GLIDER

Dear Sir,

There is great speculation at the moment about what the next new gliders will be. The Diamant, Phoebus 17, Cirrus, SHK, etc., are all very good machines and the ASW-12 appears to be a slight step up on these — but what comes next? There are the odd "next generation" designs around, but none of these is in production yet and, when eventually they are, we shall have to wait the usual 2-3 years for delivery. In other words, there is no prospect of acquiring a higher-performance sailplane for at least four years—and probably not even then.

The obvious answer is to do something about it in this country. I should like to suggest that we form a group of people interested in owning a "next generation" machine in the next 2-3 years. We can then collectively set about the task of purchasing a design and then build the number of machines required. I do not envisage any production for sale. I can provide the workshops and skilled labour necessary, but — obviously — if anyone else also has facilities or technical skills to offer, this will cut down the construction time. What will be required is enough money to pay for the design, purchase materials for construction of jigs and materials for the machine itself. I do not think that this will be above what one would expect to pay for a sailplane of this class. Will anyone interested please contact Box No. 999 c/o the BGA as soon as possible, bearing in mind that, unless the project gets under way this winter, the whole object will be defeated.

(Name and address supplied)

TWO-SEAT GLIDER DATA

Dear Sir,

Recently, the writer was involved in investigations prior to obtaining a syndicate high-performance, two-seat sailplane for Club operations, and it came somewhat as a surprise that — despite searching through S & G dating back to 1958 — there were hardly any flight test reports for this type of machine.

I should like to submit the following proposal, so that the BGA can assist syndicates and clubs by providing information in this magazine to give valuable guidance on the subject.

The initial study would be a data list, covering all types of new high-performance two-seaters, available on either short or immediate delivery in this country. This would cover also such types as the T-49 which, although now out of production, is available on the secondhand market and is not a vintage machine. The data should include not only relevant performance details, but list price — in the case of foreign aircraft, delivered UK and duty amount, if applicable — and the number of that particular type currently holding UK Certificate of Airworthiness. In the remarks column, I would suggest comments by the BGA Technical Officer on (a) availability of spares, (b) ground handling problems — if any — and (c) approximate cost of a normal C. of A., excluding required material replacements. The reason why I feel the latter item is essential is that my investigations revealed that one particular popular type is so inaccessible serviceability-wise, that a *normal* professional C. of A.

charge was in excess of £300! This, I hasten to add, was not an isolated case.

The initial data article would then be followed by a bi-monthly unbiased flight test of, say, two aircraft, evaluating the manufacturer's performance data sheet against the particular models mentioned, and could include a technical survey of repair or important servicing aspects found to date on those types.

The Class evaluation is not intended to be a *Which* type Best Glider Survey, but merely a much-needed guide which can be of help to proposed syndicates and clubs alike. Having got this information, a similar exercise could be done on the less-advanced solo machines suitable for normal club use . . . or am I jumping the gun?

Peterborough, Northants. J. V. LOVELL

2-1-0 SCORING

Dear Sir,

I was very pleased to see Jack Harrison's article on 2-1-0 scoring in S & G February-March, 1969, page 42, as it must be one more nail in the coffin of the old points system.

Mr. Harrison's arguments for a new system are those which I have been advocating for several years. The reason for my not using a pure 2-1-0 system is as follows.

As Mr. Harrison rightly suggests, pilots who do not achieve a minimum distance, X, should not be counted as independent individual pilots. He suggests that they should be counted as one, and — in the placing system — I count them as not more than three. The reason for both of our procedures is fairly clear and generally acceptable; the fewer the pilots who manage to get past X, the likelier it is that they have a bit of luck which is denied to other pilots.

Now, the same argument should apply not only to the first X km., but to any sharp deterioration of weather or terrain conditions *en route*. If a group of pilots come up against a sudden "clamp" or inhospitable terrain, or just run out of land, and are forced down together, their scoring distances should not be counted as separate and independent achievements. Otherwise, if one of their number does have the luck to glide on just a little bit further, he will get a disproportionately high score. Furthermore, the prospects of many points for just a tiny bit of extra distance will encourage pilots to take unwise risks. John Fielden pointed this out in S & G April-May, 1965, page 151.

This might sound rather alarmist, but study of national and international championships over the past 15 years shows that this problem is real and ought to be considered in any scoring system. On a World Championship task in Germany, for example, 11 out of 35 Standard Class pliots ran out of land and achieved soaring distances within 2 km. of each other. On the 2-1-0 system these 11 pilots would have got 58 points but, if the leading pilot had managed to find and reach a landing spot just a bit further on, his score on the pure 2-1-0 system would have increased to 68 points, while the other 10 would have dropped back a point to 57. On the other hand, if one of the 11 pilots had just failed to get within 2 km. of the leader his score would have decreased to 48, while the other 10 would have gone up one to 59 points.

Thus the pure 2-1-0 system does not eliminate entirely the possibility that the points per distance can be unintentionally and unjustifiably high at some places *en route*. Rules committees and task setters have been at great pains to eliminate this possibility — or just hope that it will not occur.

To deal with the problems we need first to recognise when it occurs. Analysis of many competitions suggests that it is rare for more than about three pilots to land within about 2 km. of each other, unless they have all been brought down by some significant weather or terrain barrier. This is why more than three pilots in a tie are counted as three only in the placing system. If this or any other criterion is accepted as evidence of either a persistent or transient barrier, the next step is to make allowance for it in the scores. This could be done by applying the 2-1-0 system and then reducing the points of each pilot by an amount depending on the number of pilots in landing gaggles below him in the day's order of merit. During

trials of this method I found it very easy to use but the procedure sounds terribly awkward. An alternative method is to start at either the top or bottom of the order of merit and work down or up through it, setting the difference in points between successive pilots according to some simple formula. This method, which I use in the placing system, is also very easy to apply and not quite as awkward to describe.

It is a pity that the question of tied places cannot be dismissed in a few brief words because random ties are not common enough to be a serious problem. The example which Mr. Harrison uses to illustrate the differences between the two systems is not quite realistic, as, in an analysis of many competitions over the past 15 years, I have never come across a case of two ties to three or more pilots adjacent in a day's order of merit. Furthermore, when conditions are difficult, it is extremely rare for landings to be spread uniformly over just a few kilometres. The occurrence of landing gaggles of three or more is also not common but, when this does occur, it is wise to treat it as evidence for a sharp weather or terrain deterioration and take proper account of it, as is done in the placing system. Being a keen advocate of simplicity, I would certainly not recommend a slight but awkward-sounding modification to a simple basic system unless events showed a real need for it.

I hope that Mr. Harrison does not take these comments as severe criticism of the 2-1-0 system. His views on the subject are very refreshing and should be encouraged. We are obviously in agreement in principle and his article makes this principle sound more attractive and intelligible. If he would be happy competing in a 2-1-0 system, he should have no worries with a placing system — it has the same advantages. In most competitions the daily scores would be exactly the same and they would be just as easy to work out. But the placing system has a built-in protection against anomalous rates of points per distance along a course. It could also be modified towards Mr. Harrison's views on handling ties without losing this protection.

Canberra, Australia. C. E. WALLINGTON

SIR ROBERT HARDINGHAM

Dear Sir,

Philip Wills, writing in the April-May issue of SAILPLANE AND GLIDING, paid me a kindly compliment, for which I am most appreciative.

I have, as he wrote, tried to be a supporter of the gliding fraternity and have always had the greatest respect for the BGA.

However, Philip quotes what is perhaps an unfortunate example of my support in which, by implication, I failed to support my own staff. My own distant recollections are that, because of an argument as to the facts of the handling qualities of the Sky, I sought a further independent assessment and, in the meantime, small changes were made to the geometry of the aircraft. In the event, ARB — and not myself alone — was satisfied.

I would like to put the record straight because, while I like to be remembered as a friend of the gliding movement, I am also disinclined to ignore my Board's very capable staff.

Gerrards Cross, Bucks. R. E. HARDINGHAM

PHILIP WILLS writes :—

Damn! Damn!! Damn!!! If anyone else reads into my remarks the implication that Bob Hardingham over-ruled his own staff — in this or any other matter — because of the BGA's blue eyes, this is entirely false, and I apologise most humbly. It is simply untrue; in fact, to this famous meeting he brought with him his colleague, the test pilot concerned, and we had to convince both of them of the correctness of our technical assessment.

What I was trying to say was quite different. During its whole life, the Air Registration Board has been working at more than full pressure — on matters of prime importance and extreme technical complexity, such as the Certification of the Viscount, the Comet, the 707, and nowadays — no doubt — the SST.

Here was a case of a spot of trouble in an insignificant corner of Bob's bailiwick — and in 1951 British gliding was more insignificant than it is today. Yet

the head man himself found time to come, with his colleague, to an after-hours meeting in Londonderry House to help sort it out promptly — and time was crucial. It would probably have been eventually solved, anyway, but we would then have missed the boat — the 1952 World Championships.

The success and prompt outcome of this meeting proved the key to the subsequent growth of the British gliding movement. Just as the boss always gets the blame when things go wrong, so, I believe, he should be given the credit when they go right.

CLOUD FLYING

Dear Sir,

While re-reading SAILPLANE AND GLIDING for April-May, 1965, I came upon a statement that surprised me. Discussing *Cloud Flying* by Flt. Lt. Bridson, on page 121 :—

"Turn and Slip Indicator.

1. Centre the slip needle with rudder . . .
2. Simultaneously centre the turn needle with aileron . . ."

He is talking about flying in cloud, but this is not the way that I was taught, even in 1937. Quoting from an accepted instrument flight manual used in this country, *Instrument Flight Manual*, by William K. Kerchner, Iowa State University Press, Ames, Iowa, page 53 of the First Edition, 1967 :—

"For instance, in using the needle and ball . . . the airplane is turned with the rudder and the ailerons are used to keep the ball centred . . ."

This is specifically flying in instrument conditions, not with visual reference to the horizon, and is so stated.

I should be interested to know whether, in England, you do indeed use the rudder to correct the ball and the ailerons for the turn needle while on instrument-controlled flight, or whether the text is confused.

Fairfield, Conn., USA. STEPHEN DU PONT

DOUGLAS BRIDSON comments :— It is surprising to find that a modern textbook on instrument flying contains the statement that "the airplane is turned with the rudder". Control of the turn needle with the rudder and the slip ball with the ailerons is rather different and is an old-fashioned method of instrument flying. It is even more surprising to find this vintage technique recommended in a 1967 publication. The inference that a different technique is used when flying visually is interesting. Perhaps the visual method is to control the slip ball with the rudder.

Mainstream civilian flying schools, the Royal Air Force and the United States Air Force, among others, teach that the slip ball is controlled with the rudder and the turn needle with the ailerons. The rudder controls the aircraft in yaw, both in visual and instrument flight. Also, and without getting too involved, an aircraft turns because its total lift component is inclined to one side by banking. Bank is applied with the ailerons and so there is an obvious turn needle/aileron relationship.

The method described by Mr. du Pont's letter was used in the early days of instrument flying at a time when aircraft tended to be rather slow, stable and lacking in aileron power. A bootful of rudder worked wonders in assisting the ailerons to apply bank — shades of the Falcon III — but, contrary to the impression gained from the *Instrument Flight Manual*, it was the inclined lift component which turned the aircraft and not the action of the rudder alone.

As experience was gained with instrument flying and the performance of aircraft — both in speed and handling — improved, it was considered unnecessary and confusing to have different control techniques for visual and instrument flight. The old method was discarded. Some pilots were unwilling to change their instrument flying techniques and the old method crops up from time to time, perpetuated usually by pilots who were flying before 1939.

If a pilot is satisfied with his ability to fly on instruments using the old method, then there is probably little point in changing, but the old method does lead to a greater risk of overstressing the aircraft during recovery from unusual attitudes.

BEWARE!

Dear Sir,

As gliding's newest recruit, may I offer a warning?

It seems to me that gliding is now where yachting was about 10 years ago. Yachtsmen were a band of enthusiasts enjoying the peace of their anchorages, using their auxiliary engines only when necessary, content to pull ashore in their dinghies to their modest clubs and not minding a bit of mud on the way. They sat in their cockpits in the evening after a day at sea, soaking up the quietness and watching the oyster-catchers working along the tideline. Harbour dues were a couple of bob a night.

Then Mr. Average Man took up yachting. The yachting press welcomed him and factories turned out mass-produced boats for him. But Mr. Average Man was not an enthusiast — boats were but a hobby to him. He didn't like pulling an oar, so ear-splitting outboard motors were provided for him. He didn't like mud or modest clubs — he wanted comfort equivalent to that of home. So the waterside was paved for him and shops and restaurants were built where the seabirds roamed. Deep-water moorings had to be provided for him with water and petrol laid on; now a slot in one of these marinas will cost the small yacht-owner about £200 a year.

Mr. Average Man does not love his neighbour. He charges around the harbour with no thought for the rules or the age-old courtesy of the sea, and the enthusiast finds that he has to go ashore to seek peace and quiet.

Harbour authorities discovered that money was to be made out of the yachtsman; for instance, recently I had to pay £2 to moor overnight in a Devon harbour and drinking water was extra.

Take heed, brothers. It is too late for the yachting enthusiast . . . you still have time.

Sidcup, Kent. TOM JENKINS

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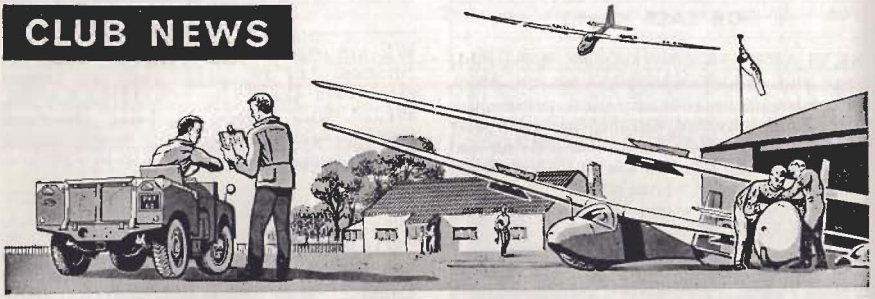
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CLUB NEWS



IT'S a pleasant change to see that this season's better weather is reflected in most of the reports from the clubs, which record plenty of good flying.

Copy and photographs for inclusion in the October-November issue should reach me, typed, double-spaced, on foolscap paper, not later than 13th August and, for the December-January issue, not later than 15th October. Please send news to me at 11 Great Spilmans, Dulwich, London, S.E.22. Telephone : 01-693 3033.

11th June, 1969

YVONNE BONHAM (MRS.),
Club News Editor

BATH AND WILTS

WITHOUT a clubhouse since the RAF reclaimed its control tower nearly 18 months ago, Bath and Wilts Gliding Club should soon have a roof over its head once more, as permission has been obtained to put a prefabricated building alongside the club's Nissen hut hangar at Keevil airfield. Volunteers have already dug the foundations and will soon be pouring concrete, but the building operation is to be done by professionals.

C. of A. examinations on the Bocian and Swallow and a three-day Army exercise in the middle of the Whitsun soaring week have restricted flying activity. Both Bannerdown and Swindon have been hospitable to temporarily homeless Keevil pilots.

Early June sunshine brought a flurry of soaring; Len Edyvean kept the Olympia high for five hours to complete his Silver and secretary Roy Jenkins got Silver height in the Ka-6. On the other side of the world, Bert Boor got his Silver height with 11,000 feet in the Masterton wave in the Skylark 4 owned by the Wairarapa and Ruahine Aero Club, 65 miles NE of Wellington, New Zealand.

The Bath Club has a new chairman — Vince Griffith. Welcome to him and our thanks to Ken Stephens, his tireless predecessor.

R. C.

BRISTOL AND GLOUCESTERSHIRE

APRIL and May were disappointingly wet and cloudy but, when the few good days did arrive, aircraft were rigged and flown frantically and quite a few Silver C legs came into the bag.

Ken Sandford flew a Dart 17R at the Staverton Air Display and gave a very good performance in aerobatics. Our courses are now in full swing and, by the time that these notes are published, our competitions will be over.

During one recent weekend, visitors included two Cessna 150s, a Motor Falke and a Tiger Moth; together with the Club's tugs and Tony Gaye's Rallye it looked more like a Flying Club. The Motor Falke gave trips to several of us.

B. F. W.

CAMBRIDGE UNIVERSITY

AS usual, our soaring season started in earnest at Easter, when David Evans made two notable flights. On Friday he flew around the 100 km. Slazenger triangle in the syndicate Olympia 463 and on Saturday he just missed his Diamond goal and Gold distance by flying 268 km. to Chard.

The Easter Term saw three Silver C goal flights — Peter Newnes flew to North Weald in the Olympia, Paul Sears flew to Tibenham in the Skylark 4 and

Philip King flew to Clacton in the Swallow. Brian Warren gained his Silver C height and almost completed his distance. Catharina Edwards completed her Silver C with a five-hour flight in thermals from a winch launch, which was achieved with a minimum crew of wing-tip holder and winch driver. On the first of June, Paul Loewenstein achieved a climb of 7,200 feet in the Ka-7, but it cannot be entered for the Brunt Trophy, as we do not equip our two-seaters with barographs.

Thanks to John Garrood's effort in renting Duxford airfield for auto-towing, our training facilities are now greatly improved. At present, our operations are limited to flying circuits, but we are building a reverse pulley mechanism and hope to increase our flying there if restrictions are lifted. P. A. K.

COTSWOLD

Inter-Club Task Week 1st-5th June

"WAGONS HO!" would have been a suitable cry on Sunday, 31st May, as twilight saw a convoy of assorted glider trailers leaving Aston Down, home of the Cotswold Gliding Club. Skylarks, Olympias, Ka-7s and Darts in close formation zoomed out of the gate to head north-west to Bickmarsh, home of the Worcestershire Gliding Club and site of the second annual Inter-Club Task Week.

Once again, Cotswold emerged victorious, but only after much scraping, retrieving and fierce competition from the opposition. The tasks were chosen to enable Bronze C pilots to complete their Silver Distance, and Silver C pilots to attempt elusive Gold legs. The weather was planned to co-operate and, after a dubious start, decided to be friendly, so that, by mid-week, the sky became soarable. The wind was persistently north-easterly, and by Friday many of us were getting to know the fields to the south-west of Bickmarsh quite well!

Honours were evenly shared. Monday's task to Husbands Bosworth saw one pilot from each club about 25 miles from home. Quote of the week went to a pilot who will remain anonymous. On being retrieved from two fields downwind, he was asked at what stage he decided to attempt the task. Came the reply of a true pioneer, "At 800 feet I lose the . . . airfield, so I go . . ."

Because overcast skies persisted, Tuesday saw pilots from both clubs engaged in a fierce battle over the 6d. football machine in the clubhouse. No flying, and I think Cotswold sixpences ran out first!

By mid-day Wednesday, the airfield was a hive of activity and anticipation. By mid-afternoon fields *en route* to Nympsfield were liberally scattered with gliders of both denominations, while trailer crews searched frantically for their intrepid pilots.

Ron Hayne, in the Cotswold syndicate Ka-6E, completed the out-and-return to Nympsfield on Thursday, closely followed by two more Cotswold pilots, who landed just short. The Worcester Blanik got Mike Munday his Silver distance, and Frank Smith, in their Swallow, outdid superior performance machines by arriving at Nympsfield in a blaze of glory.

Determined that the contest should end with a flourish, the weather surpassed itself on Friday. While lesser mortals were sitting in cornfields awaiting their retrieves, the two club CFIs in Blanik — Bob Baker — and Ka-6E — Roger Bunker — were fighting a desperate duel

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for the leadership. Having strapped themselves in their respective weapons, they were taking their 300 km. task steps before facing each other in the bar that night, both having acquitted themselves admirably, Roger winning by a skid's length. Stan Lewington, Cotswold, completed his Silver and gained maximum points on reaching Nympsfield, and Geoff Aucott, Worcester, finally arrived back at Bickmarsh at 5 a.m. on Saturday morning, having completed all Silver legs at once! Worcester had the slight edge on the day, as they succeeded in smuggling away the Nympsfield bell!

A great deal of fun and flying was had by pilots and ground crews, and, thanks to the hospitality of the Worcester club, the week was an enormous success.

A fierce and friendly rivalry exists between the two clubs, and high standards of flying pertain. It's good practice for the "real thing", and our appetites have been whetted; stories of the longest scrape and the smallest field will provide bar talk through many a drab winter evening.

Thank you, Worcester, and we look forward to next year.

GILLIAN HOWE

COVENTRY

IT is with great regret that we have to open this report by recording the death of our member Jim Parkes in a gliding accident in his Dart 17R at Honeybourne, Worcs., on Sunday, 8th June. Jim was one of those who are the backbone of any club; he was hard working and imbued with a wonderful club spirit and a passionate zest for gliding. He will be sorely missed by his fellow members at Bosworth and our deepest sympathies are extended to his wife and children.

One of our Tiger Moths has been sold to a private buyer, but we hope to have the use of this aircraft as a standby tug during the summer months.

Having decided to put in a belated appearance, the sun has enabled a few interesting flights to be made. Peter Partridge completed his Gold C with a 12,500 ft. climb in his Dart during the last week in May, and on Saturday, 7th June, Vic Carr completed a 312 km. triangle Nympsfield - Booker - Bosworth, which has put him back on top of the ladder.

B. F.

DEVON AND SOMERSET

FLYING over the Easter weekend involved coping with a very strong NE airstream which, whilst it inhibited to a certain extent thermal and ridge soaring, certainly provided scope for exploring the wave which develops in these conditions. On the Saturday afternoon, Tim Gardener was able to remain at 6,000 ft. for some hours over Collumpton, but found difficulty in exploiting the wave fully, owing to the wind velocity, which, at this height, he estimated to be well over 40 knots.

Whitsuntide was disappointing, with heavy rain and low cloud, which finally curtailed the activities of even the circuit bashers, although their enthusiasm is apparently undampable. Colin Weeks has now gone solo and Ken Bunyon has completed his Bronze C. A great deal of work has been put in on the new clubhouse and workshops and, on a midweek visit to North Hill, your scribe found three guests from the Essex Club laying bricks to the manner born.

The Club participated in the RAF Air Display at Exeter on the 28th June and we are looking forward to a visit from Ann Welch with the BGA K-14 motor glider in August.

We have heard with deep regret of the collapse and subsequent death of Howard Randall, who obtained his Bronze C over Whitsun. He was a very popular and respected member and our most sincere sympathies are extended to his wife and two young children.

A. E. R. H.

ESSEX

WE'VE all read about Easter weekend's fabulous weather in the last issue of S & G, but even that comes nowhere near the record breaking conditions that we've had since. No fewer than 21 Silver C legs have been completed by Essex club members since Easter, with Bronzes, Cs and first solos too numerous to mention.

The fine weather has brought our would-be cross-country pundits out early in the mornings — we actually had Mike Audritt on the field by 10.30 a.m. one day! However, Mike has been rewarded with the club's longest flight of the year, just missing Gold Distance by a bare

20 kms. On 19th April Peter Newns became our first visitor by flying in from the Cambridge Club on a declared goal flight for his Silver distance.

We were delighted to welcome the BGA's development officer, Naomi Christie, to North Weald some weeks ago, and were all most impressed with her enthusiasm and interest in our problems; her help will be invaluable in our fight to divert a power line around our airfield boundaries instead of through them.

The RAFA's flying display on Whit-Monday grounded everyone except Ludwig (Wiggy) Esser, who impressed the crowds with a brilliant show of aerobatics in the Foka 4, and our static exhibition of four aircraft included the Diamant 16.5 m.

After many months of extremely hard work and effort, Owen Harris, our chairman-cum-CFI, has handed over the chair to John Fricker, in order to devote more time to instructing and to the instructors. Three more club members, Mike Throssell, Eric Neave and Wally "Smiff" have completed BGA instructors' courses, and we are most grateful for the occasional services of Allan Currie and Dick de las Casas — instructors with the Southdown and Kent clubs respectively. Please note that our new tel. number is NORTH WEALD 2222. G. F. M.

IMPERIAL COLLEGE

IMPERIAL College returns to these columns with news of an impending addition to the club fleet. We shall soon be obtaining another single-seater, which will release our Skylark 4 for cross-country flying — something it has not done very often this year. As a further incentive, Frank Irving has presented a trophy to the club to be awarded annually for the fastest closed circuit performance over 100 km. in a club aircraft. At the moment Tony Abbs has the best claim with a speed of 54 kph around Lasham-Welford-Thruxton-Lasham.

Training has continued successfully and we have sent five pilots solo this year. There are also three new instructors, which should ease the strain on our established instructors.

The Skylark visited Portmoak, Challock and Dunstable over the winter, and we were received warmly by all three. The Portmoak expedition also captured the Brunt Trophy from the Cambridge University Gliding Club, with a gain of 7,000 ft. by Tim Tuck.

As this is the end of the college year, the old committee hands over to the new and our thanks go to Dave West, the retiring Captain, who has done a great deal of work for the club this year; in recognition of his services he has been awarded Imperial College Union Social Colours.

D. B. W.

KENT

HIGH point of April was the thermal climb of full-time instructor Glyn Richards, plus course member, in a T-21 to 6,750 ft. and still going up — the climb being broken off only because of the necessity to keep within VMC. Howard Johnson, in the Capstan, also got to within 200 ft. of this height at the same time.

Much of April was spent in preparing for our At Home on 3rd-4th May, and we could not have had a more successful two days. The weather was most co-operative, the attendance of just under 4,000 being more than we dared hope for.

For what must be the first time since moving to Challock, the number of Silver C height claims have outnumbered duration claims; this is the result of cloud base occasionally going high enough to allow VMC intrusion into Green One. The number of Silver leg claims so far has been six for height, two distance and one duration. This means that Nobby Clark, Dennis Monckton, Dick de las Casas and Hugh Gardiner — our chairman — have now completed their Silver Cs. There have been too many A and Bs to note individually, but mention must be made of Charles Bettles, who got his at the spritely age of 75.

A Ka-6E from the Essex club at North Weald flew in on 19th April and a recent addition to the aircraft on the site is 174 — the SHK of Peter Hearne and Ron Howard — which Nick Goodhart flew when he broke the 300 km. triangle record during the Open Class at

Lasham this May. Competing at Lasham was club member Ron Cousins, flying in his first Nationals.

On the social side, our annual birthday party on 10th May was very successful and the AGM, on Saturday, 7th June, went on until the late hour of 11.30 p.m.

Lastly, congratulations to Glyn Richards and "Tee", who were married on 7th June and held a very enjoyable reception in the clubhouse lounge.

M. H.

LEICESTERSHIRE

I SUPPOSE all clubs are very depressed with the lack of soaring conditions so far this year, but we appear to have kept up our training programme and put our two T-49's to good use. Our records show a considerable drop in cross-country flying, which — no doubt — our pundits will soon put right. Recently, two members — who shall be nameless — had an attempt at a National Record, but finished up 20 miles from the start in a very muddy field. However, we did fly from dawn until dusk for two days one weekend but still had some twenty disappointed members who never got off the ground. We are anxious, therefore, to get back our Skylark 4, which has been away for several weeks awaiting repairs following a prang. On Wednesday afternoons — weather and tug pilots permitting — we are also managing a spot of mid-week flying, which we hope to keep going through the summer.

M. M.

LONDON

THE last two months have not produced any spectacular flights, the weekends — in particular — being very mediocre. Late May was certainly better, and the beginning of the Sports Class contest must have been one of the best days we have had for a long time.

The Cardiff/Beck/Jeffries ASW-12 has appeared on the scene, to be met with envious eyes. Apart from John Cardiff's efforts in the Open Class, it has not done much flying yet but, once the group get used to it, we shall certainly see some results. The approach with this aircraft is most interesting, particularly when the parachute fails to deploy!

After fourteen years with the Club, the Bentsons have left us to set up house in Germany. Chuck and Bonnie have both done a great deal for us and gliding generally; they will be greatly missed by us all and we wish them luck.

Our AGM created no real changes in our General Committee, which is still captained by Tom Zealley. Since his election as chairman of the Club three years ago we have seen a steady improvement in all aspects of Club operations, and much of this is due to Tom's efforts and guidance.

At the time of writing no decision has yet been made on the Luton SRZ, but is imminent. We are still campaigning our cause in many different fields, in particular with local members of Parliament. I am glad to say we have met 100% sympathy, but whether this will have any effect on the demands of BALPA and the Luton authorities remains to be seen.

M. P. G.

MIDLAND

OUR season started well, with a few good days in April, including a wave day, when Paul Stevenson gained his Gold height. The month yielded about fifty per cent more flying that did April last year.

On Sunday, 20th April, we held an informal general meeting, so that a free interchange of ideas could take place between the members and the committee. Immediately prior to this meeting the Pyrene company gave us a demonstration of their various fire extinguishers — particularly relevant to a club such as ours, situated miles away from a fire brigade or even from mains water supply.

May was not such a good soaring month, although a few first solos were achieved, including those of Ann Rotter and Sue Laflin. On 17th May there was a very successful party in the clubhouse and Cambridge University paid us their customary visit for two weeks in June, bringing with them their winch, aircraft and private supply of good met.

August Bank Holiday week will be an open week at the Mynd, when full facilities will be available, details of which have been circulated to clubs.

K. R. M.

NEWCASTLE AND TEESSIDE

DURING January we had our AGM and Adam Dodds, our Treasurer for a considerable time, eventually found an able successor in Edwin Burnett, who works in a local bank and so is well versed in financial matters.

In April we had a surprise visit from some RAFGSA types, who, it seemed, viewed from afar our site at Carlton, noticed that its charms were not exploited during the week and proceeded to the site with the Sutton Bank tug.

Since the delivery of the Ka-13 we are producing a new generation of pilots and are allowing them to solo on the Olympia.

N. M. J.

NORFOLK

THIS year the club has grown to such proportions, with a membership of well over a hundred, that we felt that we could afford a President as well as a Chairman and so, at the AGM on 3rd May, we persuaded Alf Warminger to fill this office for the first time in the club. At the same time we elected Colin Shield, our former Technical Officer, as Chairman. There is in the club a rather sad Ka-6 syndicate at the moment without a Ka-6 since its unfortunate brush with a pile of concrete; however, we hope that our beautiful machine will be back on the launch point before long

Thermal conditions have been excellent in Norfolk since March and almost every flying day has been a soaring day. George Day has completed his Silver and the following pilots Silver legs — Nigel Mutimer his height and Derek Hills his distance and height legs in the club Swallow on 7th June with a flight to Stradishall. There has also been a good crop of Bronze legs, Dick Burton gaining two in the last few weeks and a Silver height — alas, without a barograph. Brian Lockwood has managed two Bronze legs in a week and both Nobby Hall and Woody Woodhouse have recently acquired their Bronzes; Jane James and Ivan Estgate have collected one leg each.

The new hangar is now almost complete and is considerably bigger than originally intended.

D. R. S.

OUSE

WHEN the rains of May went away, and the golden sunshine days of June arrived, we flew virtually from dawn until dusk. Richard Boddy, our Hon. Treasurer and an instructor, went up for four hours in John Mawson's Ka-6E and Margaret Edwards, of Leeds, one of our most recent solo pilots, managed 40 minutes. Derek Moore and Barry Crocker are noted for their ability to "get away", and the air over Rufforth at weekends is seldom glider-less.

Wilf Taylor, followed closely by Bob Bowhill, leads the ladder competition.

All our aircraft have had their C. of A. and the AGM was well-attended, most of the members putting forward excellent suggestions for improving our efficiency; the chairman and committee were re-elected unanimously for another 12 months hard labour. We are already looking forward to our annual dinner in November, when the guest of honour will be Major-General Tony Deane-Drummond.

A. H. S.

OXFORD

WITH two Ka-13's, there is a keen atmosphere of affluence about the place this season. The new aircraft *Redfin* — with basic instruments — is utilized for *ab-initio* training, while *Elfin* — the elder, with added instrumentation and successor to our venerable Olympia — is carrying early solo pilots and post solo pilots on advanced dual training.

The AGM accepted with great regret the resignation of our Hon. Secretary, Arthur Speechley, after 12 years of hard slogging. He managed the club most successfully to bring it to the standard it has today and as no member of the new committee felt able to emulate Arthur in this responsible position, he is kindly continuing as caretaker secretary until the next committee meeting.

Dave Roberts is our new CFI and very keen to implement the new coloured card Pilot Rating System he and John Gibbons have formulated during last winter. Stan Green was presented with the Simpson Cup for his meritorious local wave flight last year.

C. J. T.

PERKINS

THE syndicate formed to purchase the much needed high-performance two-seat sailplane for club operation decided to purchase a new Bocian. Its arrival, on 16th May, has certainly boosted flight tuition training times, as on its first full operational weekend, over Whitsun, it was airborne for 12 hours 26 minutes from 32 aero-tow launches. By virtue of its CG position and winch belly hook, a fantastic climb angle is achieved, doubling the heights previously obtained and its performance characteristics practically treble previous circuit times.

J. V. L.

SOUTHDOWN

AFTER the north-easterlies of Easter weekend, which gave us bunjy launches, ridge soaring and Silver durations and distance, the weather deteriorated for the Easter course to our standard south-easterlies for which, on our field, there is no really satisfactory launch run.

Several club members — with the Ka-13, Swallow and syndicate EoN 460 — spent an enjoyable weekend on 19th-20th April at Redhill Aerodrome, getting aero-towing experience with the Tiger Club, while, during the same weekend at Firle, John Lovell attained his Silver height.

Our Tutor has returned, following its recent back injury, but, unfortunately, has been followed to Lasham by the syndicate Olympia and our T-21, both damaged in one weekend. Even the long-awaited syndicate Pirat is there under repair, having had its fuselage holed in transit from Poland.

We have made use of our unflyable days in getting through C and Bronze C papers and in viewing slides of Peter Henderson's flight to Eastbourne and Denis Hoad's parachuting experiences. The much-postponed dinner/dance finally took place at King's Motel, Eastbourne, at the end of Easter week.

Owing to illness, George Constable, our CFI, has recently delegated his duties to our Deputy CFI, Jim Tucker, whom we congratulate on recently completing his full rating.

K. M.



Dennis Bryan-Jones, Chairman, South Wales G.C.

SOUTH WALES

AFTER a poor May, we have made a start with three Silver C cross-country flights by Lyn Ballard, Earl Duffin and Huw Evans. Huw's flight was interesting because it took place almost entirely in a sea-breeze front which gave lift to 9,000 ft. asl. Our best day this year so far was in April, when 22 hours were logged with four aircraft. Competition is keen now between the Ka-6E and the 3F; Silver legs are in favour of the Ka-6 but the Skylark has both the height record of 9,000 ft. asl and this year's wave height of 8,000 ft. asl in an easterly wind.

We should like to thank Dennis Bryan-Jones, who has kept the three club aircraft serviced and in current C. of A. almost unaided; we hope that he will take some time off to get his Silver.

I. H. S.

SURREY AND HANTS

OUR heartiest congratulations to Gerry Paddick for his fine performance in the Nationals, in which he was the highest-placed Dart pilot, as he came 9th in the Open Class and 5th on Handicap.

To add to the excitement of a 9,000 ft. cloudbase on Easter Monday, on 13th April Bill Dean took a high tow and climbed from 4,000 ft. to 8,500 ft. in

wave and on 16th April, again in wave, Alan Purnell gained 6,000 ft. — from 5,000 ft. to 11,000 ft. — some of it at 6 knots after circling in cumulus. Both flights were local trips within a couple of miles of Lasham and it seems as though wave occurs quite often over cumulus forming in a strong north-westerly gradient.

On 19th April over 5,000 km. were flown from Lasham, with only two away landings. Alan Purnell broke the UK 400 km. triangle record by going around Lasham - Shobdon - Daventry - Lasham at 66.9 kph, to beat the old record by 35 minutes, or 5.5 kph. Norman Elliott and John Barrows gained their Diamond goals, both flying to Leicester East and back in Skylark 4s. Excluding Nationals flying, we have completed 20 closed-circuit 300 km. flights this year, with several near to 400 km. — most trips having been pre-declared.

C. L.

THAMES VALLEY

IN the July S & G we recorded that we had regained the Wycombe/Swindon pot. On 19th April a Swindon member flew in and took it away. Bunjy Baker was immediately launched and landed at Swindon some few hours later, so it is still with us on 7th June. Ian Hobday's name should have been included with the Thames Valley Committee members listed in the last issue, as he has taken over responsibility for all machines and equipment. Thanks to him and John Astley, we now have two serviceable Skylark trailers.



The Thames Valley club's Ka-13 at the Westcott Open Day. A young visitor is about to enjoy his first-ever flight. (Photo: D. M. Sawyer)

On 31st May Westcott held an open day and offered a crate to the first man to fly in from Booker. The following flew in — Harold Fletcher and John Wood in a Ka-13, Justin Wills in a Dart, Steve White in a Ka-6E, Pete Jeffers in a Motor Falke and Roger Neaves and Richard Wade in a Tiger Moth. Justin won the crate of light ales and wisely chose a road retrieve, Harold engaged in aerobatics for the spectators and later the Ka-13 sampled its first motor car launch.

We wish Bill Reed good luck on his return to the USA; he has made excellent progress with us, converting to the Skylark 3 and gaining a Bronze C in a few months.

J. W.

TRENT VALLEY

OUR hangar building project is proceeding under the supervision of Ray Snowden; when complete it will be 60 ft. x 100 ft., which will be adequate to house our present fleet of aircraft and vehicles. We also intend to use a small area for a clubroom when and as funds allow.

On 24th May we were pleased to entertain a group from the Ouse Gliding Club, who were hoping to change to our pulley launch in the near future and brought along their Capstan and Skylark 2 to try out the system.

Ray Parkin had a crack at his Silver duration recently at Sutton Bank, but the hill lift shut off when he was at the 4-hour mark. A good effort, as it was Ray's first flight at a ridge site.

Our next project on the MT side is to build a diesel engine launch vehicle and Alan Marlow, our MT member, is busy with plans based on a P.6 engine. When this becomes operational we hope to cut our fuel costing per launch by approximately $\frac{1}{3}$ of the present figure.

G. F. B.

WEST WALES

GIL Phillips, our CFI, was elected Mayor of Tenby on Whit-Sunday and the Capstan flew past on tow in his honour. Wave showed up over the airfield twice during the spring, when winds were between North and East. On one occasion the Capstan climbed from 1,000 ft. to 4,500 ft. and on another — after an 8,000 ft. tow — it climbed back to 7,000 ft. from 6,000 ft. During June we were visited by the Porthcawl Club, with their Ka-7 and winch.

The courses started at the beginning of June, with John Harris instructing and with Clayton Thomas, besides organizing bookings, as before, looking after the catering and the tow-cars.

YORKSHIRE

ALTHOUGH still lacking in the westerlies we long for, we've had some above-average thermals and several good gains of height have been recorded. Among them, Nick Gaunt, in a Skylark 4, gained 9,000 ft., David Lilburn — also in a Skylark 4 — got to 9,500 ft. and Geof. Crawshaw, in the Olympia 463, 9,800 ft.

Cross-country attempts have been popular, too, among them being those of J. Blundell, who did 190 km. in a Ka-6CR, and I. Smith, with 175 km. (Skylark 2).

The HP-14, built by Joe Provins, has now arrived at the field; it looks fine and flies beautifully. Also just arrived is the long awaited SF-21B Falke. It is proving extremely successful for pupil training and the waiting list for flights is quite formidable. Mike Howe will be hard put to it to satisfy everyone.

P. M.

SERVICE NEWS

CHILTERNS

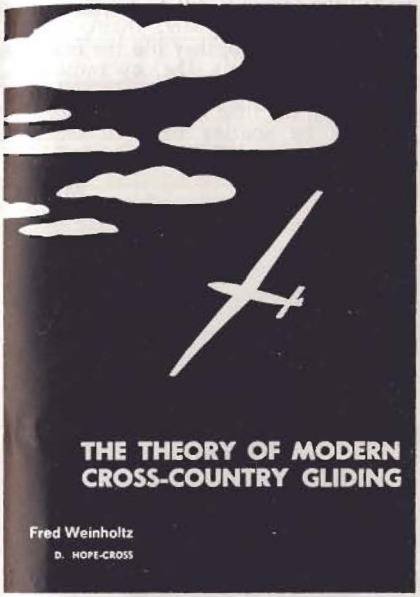
AFTER a spell of sunny but very windy weather over Easter, with strong easterlies on most days, some 20 members set off for Sutton Bank just after Easter, taking the Ka-6, the Bocian and the Olympia. We were joined there by Ian Smith, of Bannerdown, with his own Skylark, and by Heather and Charlie Slack, of Fenlands, who brought another Olympia.

To our delight, the easterlies were replaced by strong westerlies on the Tuesday and they lasted on and off for the next ten days. On the Wednesday, Tony Bond completed his Bronze in the Olympia and was followed immediately by Dick Amor, who put in his five-hour stint towards his Silver C and on the following day Tony Bond completed his five hours. Sunday was one of our best days ever. Everyone was up at 6.15 a.m. on the strength of a good forecast and we had four aircraft on the ridge by 8.15 a.m. The last aircraft landed at 19.45 as the sun was setting, some 31 hours flying was achieved in the one day.

The following Wednesday brought another good day of flying, 27 hours in all, with the two Olympias alone completing 14 hours. Our Chairman, John Whitlock, did his five hours, during which he survived a violent hailstorm for 20 minutes sitting on the ridge at 200 ft.

On the Thursday the wind went round to North and Sutton Bank was not working, so an expedition was made to Carlton Moor, where the ridge faces north. We set off with the Olympias and the Ka-6 in trailers and flying started at about 1 p.m., to continue until 8.30 p.m., by which time the temperature was only 6 degrees above freezing! The following day Carlton was again working but not Sutton Bank, so this time the two Olympias were aero-towed from Sutton to Carlton and Heather Slack and Geoff Newman completed their five hours on the ridge at Carlton. On the same day Jim Blundell, in the Ka-6, and Ian Smith, in his Skylark, set off on Gold distance attempts. Jim got as far as Corby — 197 km. — and Ian to near Leicester — 187 km. — where, unfortunately, "the clutching hand" was too strong. Altogether in 11 days some 169 hours flying was achieved.

After a long search for a suitable building to use as a clubroom, we set out somewhat dubiously this year to try to convert the weaning shed of the disused station pig farm. Traces of the previous occupants having been removed, work was started in February and results have exceeded all expectations, thanks largely to much hard work



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by Jock Manson and Les Manley, and we now have a clubroom to be proud of, complete with bar, formally opened in early April by Group Captain Godwin, the Station Commander.

K. W.

FENLAND

DESPITE the interruptions of the Victors refuelling the Harriers, flying has continued very much as usual. Although we have been hampered by strong winds, we have four new Bronze Cs and several C certificates. Charles Collier, our treasurer, did his Silver distance and Heather Slack her five hours — both in the Olympia.

We have several new members, one of whom is Chris Watson — an ex-Centre member of staff; this has provided us with another much-needed full-category instructor. Following the departure of Ben Bennett, to whom we are very grateful for all of the support which he has given us, Jim Pignot has now taken over the post of deputy CFI.

C. C. W.

FULMAR

WAVE — which had been non-existent in winter — paid us a welcome visit on 24th May and the four club aircraft logged over 23 hours flying. Even the Capstan was making contact from auto-tow and climbing to 7,500 ft. Tony Wray just missed his Gold height when he went to 12,000 ft. in the Skylark 3. Perhaps the Skylark was still suffering from the after effects of a climb to 18,300 ft. earlier in the day for a Diamond gain.

Membership is good at the moment and there is talk of buying a Bocian to help with advanced training and to relieve the pressure on the solo list.

H. D.

CRUSADERS

A SUCCESSFUL gliding course was recently completed at Kingsfield airstrip, when seven *ab-initios* went solo. On the last afternoon of the course a blustery cross-wind grounded the new pilots but they put their time to good use by taking the Land Rover and trailer to retrieve Max Malinson and the Swallow

from Galatia — on the Panhandle — after his 5-hour cross-country flight. Congratulations to them all, and to Fg. Off. John Dennis — one of the course members — who achieved his Silver height over the spring holiday. That weekend also produced three Bronze C legs.

CFI Tim Oulds, Treasurer Gordon Camp and Instructor George Brindle trailed the Olympia 401 to Nicosia International Airport, where, thanks to the Cyprus Aero Club, they did the first ever aero-tows in Cyprus. The new radio came into its own, as Nicosia Tower had to be worked all the time and Tim rounded off the day by soaring back to Dhekelia under amicable Air Traffic Control.

M. I. O.

OVERSEAS NEWS



We would be pleased to receive news for this section from every country in the world where soaring is done—A. E. SLATER, *Overseas News Editor.*

AUSTRALIA

DISCUSSION ON LESZNO. — After the Nationals, three of the Leszno pilots and several crew members held a "seminar" and answered questions. "Tommy" Thompson, team manager, said his policy was "to leave each crew as a unit under the control of the crew chief". A good crew chief could add 50% to a pilot's performance. Their preliminary week in Germany "helped to weld the team together". To a question: "Is it worthwhile going to World Championships?" he replied that it enabled them "to gain experience, to learn and to keep up with the world. We must see where our shortcomings are and must have a standard of comparison." The competitors who did well were outstanding in every department; "it was just general attention to detail".

The Australian pilots were "surprised how far other competition pilots were prepared to go off course to get better conditions and better lift", whereas in previous World Championships "the trend was towards flying directly on course". "Wally" Wallington said: "It looked as though pair-flying didn't pay off." However, the weather conditions were not good, on average, and the fact that the Poles did not do as well as usual "indicated that it was not normal Polish weather".

John Rowe said that, whereas in Australia "we always have heavy sink, in Europe you seldom meet excessive 'down'."

SAFETY IN GAGGLES. — From an article by Moss Potter: "Several aircraft in a thermal should try to maintain fixed relative positions . . . Have you ever noticed how beautifully several dozen pelicans maintain fixed relative positions as they soar?

"Beware of multi-cored thermals. These provide eccentric circles which can so easily overlap and provide a head-on approach." (This was the cause of a collision at the German Nationals of 1955.—ED.)

Australian Gliding

AUSTRIA

WITH a goal-and-return flight of 500 km. from Aigen to Imst and back, Herbert Müller, of Guttenbrunn, became the 39th Austrian pilot with three Diamonds. *Austroflug*

We are sorry to report that Johann Fritz, 44, well known for his flying in World Championships since 1960, had a fatal accident on the first contest day in the Austrian Nationals, 24th May-7th June, at Maria Zell.

Dr. Alf Schubert and Harro Wödl were placed 1st and 2nd in the Open Class (12 entries), both flying the new German FK-3s. Franz Ulbing was 3rd in a Cirrus.

BELGIUM

AT twenty-one gliding clubs, 1,031 members put up 10,436 flying hours in 1968 — 1,023 less than in 1967. The centres put up 2,124 hours. C certificates, 58, have dropped from 156, and Silver C's to 17 from 69 in 1967.

La Conquête de l'Air

CANADA

THIS column has been skipped for an issue or two in the hope that another writer would rise to the occasion. It seems, though, that Canadian pilots are no more eager to reach for the pen than those of other countries, so here we go again.

At the time of writing, the most important news concerns the Canadian Nationals, to be held at Innisfail, Alberta, from 1st to 10th July, and a good contest it promises to be.

Innisfail aerodrome is an ex-Air Force base, and the Alberta Soaring Council, comprising three area clubs, has done wonders in putting it back into serviceable condition. A headquarters trailer has been secured, equipped with radios, telephones, teleprinters and even a facsimile machine. Each day's results will be calculated by remote computer — simply feeding in the map ordinates of each pilot and the take-off and landing times of returned pilots, and signal "run", and about three seconds later the teleprinter starts up and prints out a table of results, speeds, distances and points scored. All this thanks to the co-operation of Canadian General Electric Company.

Also for the first time in Canada, the contest receives direct Government support in the form of grants to competitors and crews from the Directorate of Fitness and Amateur Sport, who have allocated a total of more than 4,000 dollars to that purpose, the idea being to partly offset the travelling expenses. It does not add up to a lot when divided among 37 pilots and 37 crew chiefs, but is a welcome relief, and an indication that official recognition of what the sport does to foster airmindedness is forthcoming.

Other assistance comes from the Alberta Provincial Government and Alberta Youth Council in the form of grants toward organizational expenses, from Imperial Oil in the form of fuel for the towplanes, from local merchants in the form of equipment loans, and last, but certainly not least, from the Canadian Armed Forces in the form of the use of two Cessna L-19E observation aircraft complete with ground and flight crews, for use as towplanes. The L-19 makes a superb towplane, being capable of relatively slow flight and having ample power. A tow climb rate of some 800 feet pet minute is not uncommon. Incidentally, the Armed Forces are the Canadian integrated forces — Canada must be one of the first countries in the world, if not the first, to have integrated all its armed forces to save energies otherwise spent in inter-service rivalries.

So far the organization. On the entrants' side, entry closing date was set rather early (1st June) to allow time for formalities, and at that time 22 entries had been received, including three from the US. No doubt there will be some late entries to fly along with the field; but even if there were none, an entry of some 10% of a country's total sailplane population is good by any standards. Types and makes are well represented. Our top place World Contest man, Charles Yeates, will not be able to fly, but has generously loaned his Cirrus to a past Canadian champion, Dave Webb.

All we need now to make a good contest is good weather and some co-opera-

tion from the Man Upstairs — in the past the first half of July has usually been good in the prairies.

Elsewhere on the soaring scene, club flying has been quite active, with a good influx of ab-initio trainees and a few recently inactive old-timers returning to active participation — welcome aboard to the former, and good to see you again to the latter. One or two minor incidents have marred the safety record, but no serious injuries and certainly no fatalities. A new club exists in the Sherbrooke, Quebec, area, and another is being planned in the Sault Ste. Marie, Ontario, area — good luck to both, and keep 'em flying. Air Cadet squadrons are occasionally acquiring a two-seater or two for their own operation, independent from the Soaring Association of Canada, and one or two RCAFA (ex-service personnel organization) Wings are taking a close look at soaring as a means of keeping their hand in.

It is painful to close this report on a sad note, but a good man's loss cannot be passed over, and there are few better than the one the Canadian movement has just lost. Norm Tucker, of Ottawa, was a mainstay of the Gatineau Gliding Club, one of the largest in Eastern Canada, and an enthusiast of many years' standing. Word has just been received that he was involved in a fatal road accident. His absence will be sadly felt on the national level as well as at the local club.

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FRANCE

IN the Coupe d'Europe, successor to the famous "Huit Jours d'Angers", being flown as this issue is in the Press, British participants are George Burton, Wally Kahn, Anne Burns and Bill Malpas. Other countries represented are: Belgium, 10 pilots, W. Germany 9, France 7, Switzerland 3, Holland 1, Spain 1.

DENMARK

NATIONAL CHAMPIONSHIPS. — These were held in May, with contest days on the 19th, 21st, 22nd, 23rd and 24th, and 34 competitors.

Leading Results

1.	Gerhard Stich	SB-8	4724
2.	Niels Seistrup	SH-1	4148
3.	Leif Corydon	SHK	3943
4.	Carsten Thomasen	Zugv. 3B	3590
5.	Holger Lindhardt	Ka-6E	3473
6.	B. S. Sorensen	SHK	3378
7.	P. V. Franzen	SHK-1	3235
8.	J. M. Jensen	Ka-6E	3160
9.	Ib Jensen	Ka-6CR	3063
10.	Ib Braes	SHK	2824
			Flyv

ITALY

NEW SAILPLANES. — The Caproni firm, founded in 1910, has now decided to produce a series of sailplane types ranging from Standard Class to high-performance aircraft, including a couple of two-seaters "of outstanding performance". The single-seaters, named Calif A-10, -11, -12 and -14, have spans of 15, 17, 18 and 20 metres respectively; the two-seaters, Calif A-20 and -21, have spans of 18 and 20 metres. Best gliding ratios are 38, 41, 45 and 49 (single-seaters); 42 and 45 (two-seaters). Speeds in km/h. for a sink of 2 m/s. are, respectively, 158, 159, 180 and 173; 164 and 170. Minimum speeds 60 km/h. for all the single-seaters; 65 and 62 for the two-

seaters. Minimum sink in m/s. (at speeds in brackets): 0.60 (70), 0.55 (73), 0.50 (79), 0.40 (80), and (two-seaters) 0.55 (78), 0.50 (80).

Three of the machines are shown in outline. All have T-tails and swept-back fins. The A-14 and A-21 have three-piece wings, with a narrow flap along the whole trailing edge out to the ailerons, which are themselves divided.

All are of similar construction. The main box-spar and lower fuselage are of metal; unstressed parts are mainly of glass fibre. This method of construction, it is claimed, gives better protection against flutter than with all-fibreglass machines (but it is not actually stated what the wings are made of). Wortmann laminar profiles are used with a lift coefficient of 0.2 to 1.4.

Aerokurier

NEW ZEALAND

SOUTH ISLAND REGIONALS. — Bad weather and a day of low inversion during the Easter period meant that only two out of six days were contestable. This was insufficient to declare a champion, although Dick Georgeson, the New Zealand champion, did emerge as the winner.

The first task, on Good Friday, was a 102-km. out-and-return, which was not completed because of over-development and rain; however, all seven aircraft scored. The greatest distance was notched up by Gerald Westenra in a Dart 17R, but Bruce Drake, flying a Skylark 4, was near enough to win on handicap.

Saturday, 5th April, was cloudless, but expected strong thermals did not appear; an inversion at 2,000 ft. above the airfield didn't let convection develop, and only two gliders reached X — insufficient to call this a scoring day.

The next day it rained: no task.

Monday, 7th April, saw strong winds and turbulence, but thermals were also quite strong. The task was free distance after a turning-point at Rai Valley, making 92 km.; this was not a usual task with a strong wind, but, because of its location, the greatest distance possible would be across wind or into wind after the turn point. Piloting an SHK, Dick Georgeson waited for a long time for wave to develop until, from 18,000 ft., he set off, and ended up some miles down the east coast at Kekerengu, a total distance of about 180 km. Gerald Westenra had enough height from wave and thermal to reach Blenheim, 150 km. away. Dick's flight gave him sufficient advantage to put him ahead in both Open and Handicap Class, and he was declared the winner next day, when heavy showers cancelled all flying.

Results		*Open*	*H'cap*
S. H. Georgeson	SHK	1577	1498
G. Westenra	Dart 17R	1484	1438
B. Drake	Skylark 4	952	997
R. Sharland	Ka-7	588	813
T. Barrow	Ka-6	566	603
D. Roxburgh	Ka-6	434	444
D. Waters	Skylark 4	433	433

ROSS MACINTYRE

NORWAY

NORSK Aero Club has written to the BGA to say that they would welcome British pilots at their Gliding Centre at Notodden during the summer. (Notodden is on high ground 80 miles WSW of Oslo.—ED.)

RHODESIA

OBITUARY : CHARLES BRYDGES

MANY of you will have read accounts of our Rhodesian National Gliding Championships over the past three years in which the name of Chic Brydges was prominent. Last year he became Rhodesian National Champion, flying a Libelle, and it is with the deepest regret that we have to report that Chic lost his life on 19th April, when the aircraft in which he was a passenger crashed into the sea on a ferry flight from America to South Africa.

A real friend to one and all — full of fun and with a ready wit — he endeared himself to every one of us, being generous to a fault, as any Rhodesian who stayed with him and his wife in Johannesburg will tell. Achieving much, with not an inkling of one-upmanship, his very modesty was marked to see. Chic was a gifted pilot and highly qualified in all aspects of aviation, as well as being a brilliant sailplane pilot, but — above all — he was a true honest-to-goodness South African. No words are good



enough to describe Chic. His passing will leave an empty place in the hearts of all those who had the privilege of meeting him. To his wife, Anne, and to his two small sons, Pierre and Glen, we extend our heartfelt sorrow.

It is hoped to have a Chic Brydges Memorial Trophy, to be competed for each year in Rhodesia. That is the type of chap he was. MIKE MCGEORGE

SWITZERLAND

NATIONAL CONTESTS, 1969. — These were held at Grenchen Airport in the north-western part of Switzerland. No competition day was favoured with the so-called "Jura weather", with its strong thermals along Switzerland's northern mountain chain. The pilots had to fight rather weak pre-frontal conditions.

Once more, the pilots with international competition experience were the top scorers. Due to the poor weather conditions, only four tasks were completed, all of them with speed scoring. The scoring was done with the new rules, which will also be used next year at the Internationals at Marfa.

In the Open Class (11 competitors), Emil Ehrat was able to reach the maximum of 4,000 points in his well-known AN-66, designed by Albert Neukom.

In the Standard Class (15 competitors), the former participants at Leszno, Hans Nietlispach and Urs Bloch, took the first two places. They both had new sailplanes: Hans flew a Standard Libelle and Urs the new ASW-15. These three pilots will probably represent Switzerland in 1970 at Marfa.

We hope Albert Neukom will have his new 23-metre wingspan machine ready this autumn for practising.

Leading Results : Open Class

E. Ehrat	An-66	4000
F. Wenzenried	Elfe MN	3238
K. Baumgartner	Cirrus	3095
R. Wetli	SHK	2852
W. Spychiger	Cirrus	2428

Standard Class

H. Nietlispach	Std. Libelle	3903
U. Bloch	ASW-15	3893
W. Lüthi	LS-1	2730
T. Ruch	Elfe S3	2407
E. Lehmann	Elfe S3	2331

WELL-DESERVED DIPLOMA. — The FAI has awarded the Tissandier Diploma to Jacob Spahlinger, aged 66, a pioneer of Swiss soaring, designer of many sailplanes and other aircraft, who has devoted his life to aviation.

NEW COACH. — Markus Ritzi, runner-up in World Championships and several times Swiss Champion, has been appointed Coach to the national team, in succession to Karl Ruckstuhl.

Aviasport

UNITED STATES

THE National Championships were held from 24th June to 3rd July at Marfa, Texas — one of the toughest contests ever held, with 82 entries. Tasks flown :—

Day 1 — 262.5-mile triangle. Fastest, George Moffat (Cirrus B), 64.8 mph.

Day 2 — 238.5-mile triangle. Fastest, Wally Scott (ASW-12), 58.8 mph.

Day 3 — 155-mile out-and-return. Fastest, Wally Scott, 62.3 mph.

Day 4 — Free distance. Furthest, Wroblewski, Poland (HP-14), 527.5 mls. Furthest American, E. Enevoldson (Phoebus A), 523 mls.

Day 5 — Cat's cradle. Furthest, George Moffatt, 482 mls.

Day 6 — 274.5-mile triangle. Fastest, Wally Scott, 65.7 mph.

Day 7 — Cat's cradle. Furthest, George Moffatt, 475 mls.

Day 8 — 344-mile triangle. Fastest, George Moffatt, 69.7 mph.

Total miles flown approx. 160,000 mls. (more than six times round the Earth).

Final Leading Results	Sailplane	Pts.
Moffat, G.	Cirrus B	7413
Scott, W.	ASW-12	7321
Brittingham, J.	Cirrus	7073
Allemann, R.	Libelle ?	7063
Mears, C.	Libelle ?	7014
Briegleb, R.	Diamant ?	6986
Smith, A. J.	Sisu 1A	6976
Wroblewski, J. (Pol.)	HP-14	6621
Semans, R.	Phoebus ?	6558
Wödl, H. (Austria)	FK-3	6547
Conn, J.	Cirrus	6535
Johnson, R. H.	HP-13	6520
Jackson, M. (S.A.)	BJ-4	6465

Foreign entries and visitors

AUSTRIA: Harro Wödl (FK-3), Otto Funk ,Dr. Robert Kipa.

AUSTRALIA: John Rowe (Diam.), Peter Hanneman.

BELGIUM: Henri Stouffs (Libelle?), Bert Zegels, Chris Grandjean.

CANADA: Wolfram Mix (SH-1).

DENMARK: Harald Jensen (Phoebus?).

FRANCE: Michael Mercier (Edelweis), Jean-Claude Gombert, René Hersen.

GERMANY: Seff Kunz, Klaus Holighaus.

GT. BRITAIN: George Burton (3 days), Ann Welch.

JAPAN: Saburo Fujikura (HP-11), Miss Michiko Hyuga.

NEW ZEALAND: Peter Heginbotham (SH-1).

SOUTH AFRICA: "Bomber" Jackson (BJ-4), Boet Dommisse, Hugh Keartland.

SWITZERLAND: René Comté (Diam.).

We hope to publish more about this championships in our next issue.

WEST GERMANY

NATIONAL CONTESTS. — These were held at Roth, near Nürnberg.

Day 1, 27th May. — Triangle via Rothenburg (Teck) and Hornberg: won by W. Gross (BS-1) in the Open Class; 2nd, H. W. Grosse (ASW-12). In the Standard Class: 1st, Hillenbrand (Std. Cirrus); 2nd, Dr. Bulang (ASW-15).

Day 2, 28th May. — Standard Class had 128.8-km. Out-and-return: won by R. Lindner (Phoebus); 2nd, Schäuble (Std. Cirrus). Open Class: 168.2-km. Out-and-return, won by K. Holighaus (Nimbus); 2nd Neubert (Kestrel).

Day 3, 29th May. — 195.5-km. Triangle: won in the Open Class by Holighaus (Nimbus); 2nd, Neubert (Kestrel). Standard Class: 1st, Reichmann (FS-25); 2nd, Lindner (Phoebus).

Day 4, 2nd June. — 150.1-km. Triangle, won in the Open Class by H. W. Grosse (ASW-12); 2nd, Neubert (Kestrel). Standard Class: Peter (LS-1); equal 2nd, Reichmann (FS-25) and Memmert (LS-1).

Leading overall results: Open

1.	Neubert	Kestrel
2.	Holighaus	Nimbus
3	H. W. Grosse	ASW-12

Standard

1.	Peter	LS-1
2.	Schäuble	Standard Cirrus
3.	Memmert	LS-1
4.	Reichmann	FS-25

The entry list given in *Aerokurier* shows 18 pilots in the Open Class and 46 in the Standard.

The German National Team (according to our informant) consists of: Walter Neubert, Helmuth Reichmann, Hans Werner Grosse, Gerhard Waibel, Dieter Memmert.

HAHNWEIDE CONTEST. — Foreign visitors are always invited to this event, and this year there came Hans Nietlispach from Switzerland, Bert Zegels from Belgium, Heinz Weber from Austria and Egon Andreasson from Sweden; all flew in the Standard Class.

The first task was an Out-and-return. The second was a "Double Triangle" — a different one for each Class — with the turning-points taken in any order like a "cat's cradle", according to the not very clear account in *Aerokurier*. The third contest day was a 260-km. out-and-return, Open Class, and 188-km. for the Standard Class. The fourh and last contest day was again an out-and-return — 154-km. for the Open Class and a different one for the Standard Class.

Leading Results: Standard Class

1.	K. Hillenbrand	Std. Cirrus	3581
2.	H. Nietlispach	Std. Libelle	3328
3.	E. G. Peter	LS-1	3275
4.	K. Fischer	LS-1	3173
5.	B. Zegels	Ka-6	2984

Open Class

1. K. Holighaus	Nimbus	3512
2. O. Schäuble	BS-1	3164
3. R. von Podewils,	BS-1	2885

Two-seater Class

1. K. Bezler and H. Hirth*	ASK-13	2400
2. G. Dietz and W. Beck	Ka-7	1641

*Helmuth Hirth is the son of the late Wolf Hirth. Hahnweide is in the neighbourhood of the Schempp-Hirth factory.

DECENTRALIZED CONTEST. — This annual event, which lasts throughout the greater part of the year, will in future be known as the "German Soaring Contest" *(Deutscher Segelflugwettbewerb)*, and this year, for the first time, it will include a Club Class. Post-war single-seater types entered in this Class must cost no more than 12,000 DM (£1,260), and two-seaters no more than 18,000 DM (£1,890); but any types produced in series before 1st May, 1945, may be entered. *Aerokurier*

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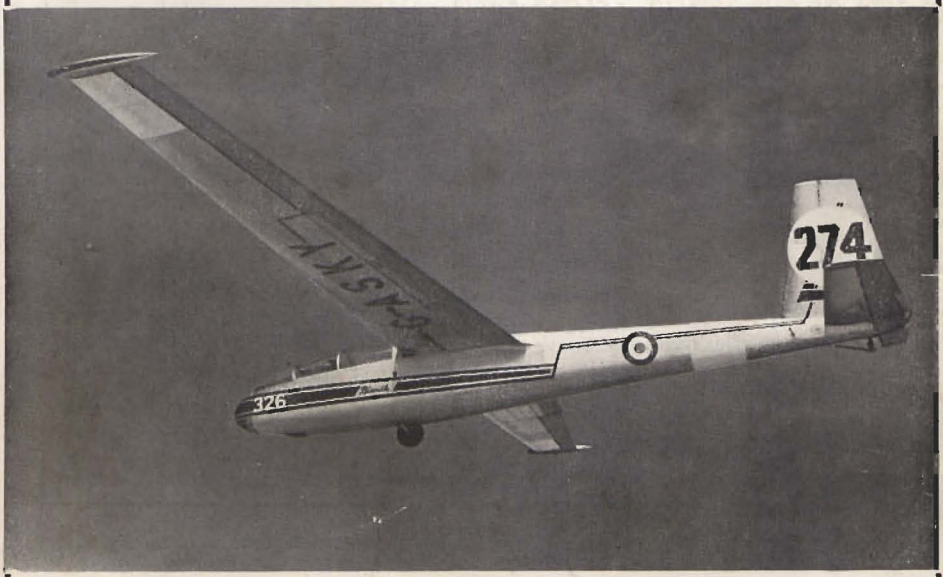
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