THE SAILPLANE & GLIDER

(*Founded in September, 1930, by* THURSTAN JAMES)

The only Journal in the World devoted solely to Motorless Flight.

OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION.

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FINANCIAL ASSISTANCE FOR THE GLIDING MOVEMENT

AT the present time when rigid economy is the order of the day it is of more than ephemeral interest to note that the German Air Estimates in the Budget of the Ministry for Communications include a subsidy of 345,000 marks (approximately £22,600) for the support of gliding. This subsidy is allotted on the ground that gliding offers valuable opportunities for aerodynamic research, and that it affords the cheapest method of allowing German youths to take part in aviation. At the same time, we learn that a sum of 1,000,000 francs (approximately £8,000) is to be spent shortly on the development of gliding in France. Of this sum, 100,000 francs are to be granted to the Federation Nationale Aéronautique for the purchase of gliders to be distributed among the associated clubs; 550,000 francs are to be allotted to the *Avia*, the technical organ of the Air Ministry, and the remainder, approximately 350,000 francs, is to be distributed in the form of various subsidies for the encouragement of experiments.

And what of British Gliding? It is no exaggeration to say that it has subsisted largely, during the past two years, on a donation of £1,000 made by Lord Wakefield and other smaller donations. For the rest, the Movement has been entirely self-supporting, and that through an exceedingly difficult period. There is no question that the fact that the Movement has been able to carry on through this period with relatively meagre resources is due entirely to sound financial control by the Governing Body.

But wise finance has its limits. It is only of use so long as there are funds to administer. We are not giving away any secret in stating that the British Gliding Association is nearing the end of its financial resources. In fact, the present position is extremely critical. There can only be two solutions to this state of affairs. Either the Association must close down or funds must be found to enable it to continue.

It would be idle to take up space reiterating the reasons why the Association should not be allowed to die. The Gliding Movement generally has never been in a healthier state than it is at present. The past year, in particular, has been marked by steady progress, and there is no doubt that, given favourable conditions, we are on the eve of big developments.

Where, then, is the money to be found? If Germany and France can find support from public funds for a Movement, not, we may be certain, without very good reasons, why cannot similar support be forthcoming in this country? The answer to this question is obvious. We believe that the Government is extremely sympathetic towards the Gliding Movement and probably, in normal times, it would be prepared to extend financial assistance to it. But the present times are far from normal as we know only too well. With the present necessity for rigid national economy, nobody who rightly appreciates the situation can expect money to be found from public funds for any but urgent services of the first national importance. It remains, therefore, for those who believe in the Gliding Movement and who have its interests at heart to come to its assistance at this critical juncture.

Nothing would be more delightful than to see a "Patron Saint of Gliding" come forward at this moment. He (or she) would, within a very short time, we are convinced, see ample return for his (or her) investment in a flourishing Gliding Movement which would become the wonder of the world. We have the pilots, we are slowly acquiring the equipment, and we have a country second to none in the facilities which it affords for soaring flight.

But to-day is a day of small things and as such must not be despised. The urgent need for economy is felt individually as well as nationally. We believe that the solution to the present difficulty will be found, not perhaps in a large donation or donations, welcome as these would be, but in a series of smaller subscriptions from well-wishers of the Movement.

THE SAILPLANE has decided, therefore, to open an Endowment Fund for the benefit of the British Gliding Movement. No amount will be too large; no amount will be too small. All donations, whether large or small, will be received most gratefully and will be acknowledged in THE SAILPLANE. Contributions should be addressed: "The Secretary, British Gliding Association, 19, Berkeley Street, London, W.1."

We hope and believe that this appeal will meet with a big response. Those who contribute will have the satisfaction of knowing that they are helping a national movement which is playing no small part in helping to build up and make pre-eminent British Aviation.

LONG DISTANCE FLIGHTS

So far as information is available, the exact location of the site for the forthcoming competitions has not yet been fixed. It is safe, however, to assume that the site will be in the North of England, or, possibly, North Wales, and that it will be of such a nature as to permit of some long-distance flying. It is in this branch of the science that we in this country seem, unfortunately, to be backward.

When it is considered that the British Gliding Movement is now nearly three years old; that hundreds of *ab initios* have obtained "A's," scores have "B's," and a dozen or more "C's"; that soaring has been going on steadily in several parts of the country ever since the Itford meeting; and that duration flights of up to 6¼ hours have been made; it certainly seems disappointing that the only cloud flight so far recorded (except for Herr Kronfeld's efforts) is Buxton's flight from Dunstable to Luton Hoo Park, via Ivinghoe Beacon.

In many ways, this flight was a remarkably fine performance. To begin with, the PROFESSOR, although certainly the most efficient machine in this country at the present time, has a poor performance compared with the latest German types. Secondly, the only instruments carried were an air-speed indicator and an aneroid, which was balanced on the pilot's knee. Thirdly, Dunstable, although excellent for training in soaring and for duration work, is not a good site from which to embark on a long-distance attempt. It is only 200 feet above the surrounding country, and it is only on very rare occasions that cloud contact can be made there. Unfortunately, Buxton's flight did not rank as a British record, as no barograph was carried. It did, however, prove that, given a good site and a good machine, properly equipped with instruments, a great deal more can be done in the way of long-distance flights than has been accomplished up to date.

Perhaps in some ways it is unfortunate that the London Gliding Club has settled down so completely at Dunstable, for there is no doubt that, from the point of view of equipment, this club is in a better position to achieve the "big stuff" than any of the others. It would not be fair to suggest that they have the best pilots; as other clubs, with really good sites, have been hampered by lack of soaring machines to use on them, consequently, their good pilots have been unable to obtain any practice on high-efficiency machines. On the other hand, although there are large numbers of pilots in the L.G.C. who have done several hours' soaring on the PROFESSORS, it has almost all been done on the Dunstable site, and it is doubtful if there are half a dozen, including perhaps one *ab initio*, who could, if planted on the top of a really good site and with a nice breeze blowing and plenty of cumulus about, set out with any hope of hanging on to those clouds and flying away out of sight. Had they had the regular use of, say, Firle Beacon, I believe we should by now have had several flights of upwards of forty or fifty miles to the credit of the London Club.

Do not let it be imagined that I am decrying the Dunstable site. On the contrary, I believe it to be the perfect club ground, owing to its safety, convenience and ease of working. It is merely its lack of stature from the long-distance point of view that I am criticising.

After all, although we know it is very pleasant to float about silently, up and down a ridge, it can also be very boring, especially if the ridge is only a mile or so long.

It is the distance flight that is the aim and object of all good sailplane pilots. So let us hope to be able to say to the Contest Committee after the show this year, "You did your job properly and picked the right spot."

Everybody wants to see the Wakefield Trophy won this time with a flight of not less than twenty-five miles. Such flights are done repeatedly just across the North Sea, so why not here? I feel certain that the reasons are lack of opportunity and poor equipment. British pilots can and will do long distances when they have both these assets at the same time and place. Let us hope that the time and place will be found at the 1932 competitions.

D. C.

THE NATIONAL AVIATION DAY CAMPAIGN

Below we give details of the programme for Sir Alan Cobham's display during the latter part of June and July.

Mr. Lowe-Wylde is accompanying Sir Alan and gives daily demonstrations of auto-towed and aeroplane-towed gliding, including passenger flights. Working in conjunction with Mr. Lowe-Wylde is a representative of the British Gliding Association, who will supply any information desired with regard to the Gliding Movement.

Clubs are advised to note the date on which the Display will be given in their locality and to take full advantage of the campaign to stimulate local interest in their activities.

June 22. —Ripon: The Race-course.
" 23. —Preston: Mete House Farm, Walton Bridge, Fishwick.
" 24-25. —Lancaster: Scale Hall, Morecambe Road.
" 26-27. —Blackpool: The Municipal Aerodrome, Stanley Park.
" 28. —Fleetwood: The Foreshore.
" 29. —Kendal: The Agricultural Show Field.
" 30. —Carlisle: Orton Grange, Wigton Road.
July 1. —Alnwick: Greenfield Moor Farm, Morpeth Road.
" 2-3. —Newcastle: Cramlington Aerodrome.
" 4. —West Hartlepool: The Old Seaton Aerodrome.
" 5. —Middlesbrough: The Flying Field, Cargo Fleet Lane.
" 6. —Bridlington: East Leys Farm.
" 7. —Scarborough: The Old Race-course.
" 8-9. —Sheffield: Coal Aston Aerodrome.
" 10. —Barnsley: The Old Wombwell Aerodrome.
" 11. —Goole: The Old Race-course.
" 12. —Skegness: The Aerodrome.
" 13. —Kettering: The Flying Ground.
" 14. —Leicester: Desford Aerodrome.
" 15. —Leamington: The Flying Field, Cubbington Road.
" 16. —Bletchley: Fountain Hotel Aerodrome, Loughton.
" 17. —Coventry: Whitley Abbey Aerodrome.
" 18. —Market Harborough: Cote Hill Aerodrome, Husbands Bosworth.
" 19. —Peterborough: Castor Hill.
" 20. —Hunstanton: Church Farm, Ringstead Road, Heacham.
" 21. —Thetford: Lodge Farm, Croxton Road.
" 22. —Cromer: Laurel Farm, North Repps.
" 23. —Norwich: Mousehold Aerodrome.
" 24. —Great Yarmouth: Wheatcroft Farm, Gorleston.
" 25. —Ipswich: Municipal Airport, Nacton Road.
" 26. —Clacton-on-Sea: The Flying Ground, Alton Park Road.

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NOTES ON RECENT ACCIDENTS

By CAPT. C. H. LATIMER NEEDHAM
(Chairman of the Technical Committee, British Gliding Association).

The Preston Club Accident.

This accident resulted in the death of A. W. Graham.

The club was operating on the Middleton Sands, near Morecambe, by means of auto-towing. Several flights had been made prior to the accident, during which heights of about 150 feet were reached. The machine was in good order, had been inspected on the day in question, and flew well on all the previous flights.

The glider was a B.A.C.III, and as such a C. of A. had been issued, but conversion for towing had been made by the addition of a wheel landing gear. The C. of A. had not been endorsed to cover towing.

The launch into wind was quite normal, and the towing cable was cast loose at a height of 150 feet, after which the machine continued in flight for a distance of from 100 to 150 yards. At this point the pilot appears to have lost flying speed and stalled, from which the machine got into an almost vertical dive. It continued in this position, without flattening out, and crashed into the sands.

The exact cause of the accident has not yet been decided upon, but a full inquiry is being made, the results of which will be available shortly.

North Kent Club Accident.

Particulars and cause of this accident were published in the last issue of THE SAILPLANE. It has since been ascertained that death was caused by the impact of the leading edge with the back of the pilot's head.

The accident was really of a minor nature and it must be considered exceptionally bad luck to have been attended with fatal results. Many accidents have taken place at least as serious, and even more so, in which the pilot has escaped unhurt, or at most with a few bruises.

The lessons to be learnt from the accident are as follows:

(a) Those learning to glide should not confuse the action of the rudder-bar with the handlebars of a bicycle. This is a common fault. The difference is that the bicycle is steered by the wheel *in front*, whereas the glider is steered with a rudder *behind*. The correct instruction is, of course, to push forward the foot on the side to which the turn is to be made. It is suggested that the substitution of pedals in place of a rudder-bar would be beneficial in this respect.

(b) There should be no protruding parts, such as the leading-edge of the wing, in the vicinity of the pilot's head, and where any such parts exist they should be carefully padded. This applies also to the fuselage both in front of and behind the pilot. Many serious accidents have occurred in aviation through neglect in this respect.

(c) There are two schools of thought regarding the strength of the pilot's safety-belt. One is that it should be strong enough only to break the force with which the pilot is thrown out in the case of an accident. It is considered advisable that the pilot should be thrown clear of the wreckage, and it is argued that too strong a belt is liable to do serious internal damage.

The alternative is to have a belt that will not break so that in the case of contact being made with hard ground, rocks, etc., there will be no chance of the pilot sustaining injury by being flung out. In this case the belt should be of considerable depth, say, from 8 to 12 inches, so as to distribute the force over as large an area as possible, and furthermore it should be attached to the machine by means of some strong shock-absorbing device.

In the present case the belt broke, and it was at first believed that if it had held the pilot's life would have been saved. However, the reverse seems more probable in view of the latest information, that is, if the belt had been of weaker material, the blow on the back of the head by the leading-edge might have been much less severe, so that it cannot really be said that the evidence is sufficiently conclusive to be able to make a recommendation on this point.

A CORRECTION.

In the article "An Estimate of the Performance of a Vulture," on page 116 of the previous issue of THE SAILPLANE corrections should be made to the formulæ for *induced drag coefficient* and *profile drag coefficient* as follows:—

Induced drag coefficient $K_{di} = \frac{2K_L^2}{\pi A}$

Profile drag coefficient

$K_{DP} = K_P \times \frac{2S + (\text{surface area of body and tail} = 3{\cdot}25)}{S}$

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THE REWARD OF STICKING TO IT

FOR BEGINNERS ONLY.



Soaring in Belgium. The "Kassel 12" belonging to the "Section Gantoise de Vol sans Moteur."

This article must be blamed upon the Editor who demanded it, and upon the pilot of twenty years' experience who, knowing all the facts, suggested the subject. The net result, I fear, will be an account of personal experiences cloaked all too thinly, owing to the smallness of the Gliding Movement, by anonymity. But, if any beginner should be encouraged thereby, I will willingly chance the odium of egotism, conceit and general bad form.

To see the point, let there be a clear understanding of the salient facts of the author's record.

After the first three months, crashed a primary machine by an utterly ridiculous stall from a hand-launch. After five months, a crash by the same easy method, this time in an auto-towed machine. After eight months, an "A." After ten months, a "B." After thirteen and a half months, a "C." After eighteen months, a long soar in an easy machine, with a voluntary and scatheless landing on the hilltop. And now, at nineteen months . . . Eureka! . . . the flight of all one's dreams.

Just read the above twice before going any farther; and, if you as a beginner are losing or have lost heart in your gliding, *cheer up!*

My dear brother-pilgrims, it was all too hally miraculous. There was a smart breeze blowing diagonally up the hill. The machine was launched into the eye of the wind. As she met the full force of the wind she lifted up, up, up, and then swung away, 135 degrees, down the ridge, with a ground-speed of at least 50 m.p.h., but with the air-speed indicator showing a steady 32.

Swing her back into wind and see what happens. Near enough stationary. Down the ridge farther, and into wind again. Still all right. Make a bolt for the bowl at the end of the ridge, and then swing her back and hope for the best. A surge of huge lift just before turning, and then round she comes into wind as sweetly as a well-rigged sailing dinghy. Clock steady at 30. Hold her at that. Don't monkey with the stick; just two fingers and a thumb.

The ground is practically stationary. Who cares? All the less turning to do. Bump, BUMP, and a creak from the port wing. No harm done, bless your heart; all the best ships creak and groan, and Kipling says so. Another lift. Hold her steady. Clock 31; make it 30. That's just nice. Starboard wing tending to rise. It must be the sharp fronts of the gusts hitting her from that side. Hold it down gently. Just a gentle stroke with the stick and down it comes.

Must be a lull in the wind. We are creeping forward again. What-ho! R.F.D. shooting by below. He won't get up this high, so I shan't be in his way. Somebody out for his "C" . . . crossing the Rubicon. Good luck to him. Gosh! I'll never forget when PROFESSOR scared me hollow the other time, barging in underneath when by rights he should have been a couple of hundred feet above. Never no more, please God!

Stationary again. This is utterly priceless. Must have done five hundred yards in the last five minutes. Clock still 30. I'd like to buy a whole barrel of beer for the man who designed this machine. It is absolute child's-play. Now we are moving again, foot by foot. Better swing back. Now for it.

Rudder and bank . . . gently, gently! She is banking *herself!* All right, then; go to it, old girl. Round, and . . . saints preserve us, what a ground-speed! Well, what else do you expect if you insist on doing your stuff in a 30-m.p.h. wind? Ride her, cowboy! Rudder and bank. Round she comes into wind.

Bumpety-BUMP. Get away from over this bowl. All

kinds of nasty things must be happening down in that witch's cauldron. Put her up to 33 and creep away. That's better; nice and smooth now. Back to 30. Not 28, you ass. I said 30.

Hovering again. Yoicks! Quelle vie!

There's the PRÜFLING on the ground. I never saw him go by. He said he would wait till we came down, but I guess he wanted a share of this wizard lift. Bad luck! Where is the PROFESSOR now? Being towed back to the hill. We shall have to get out of the way when she pushes off. Once bit, twice shy. But she will be some time yet.

Where is the R.F.D.? Haven't seen her for a long time. Can't see her anywhere. Blown to kingdom-come? Surely not; there is nothing like so much wind down there on his level. Bank over a bit and have a look below.

There she is. What? Busted? Must be. On the grass half-way up the hill, nose up-hill, people running. Pilot seems all right. Walking round the machine; and feeling like a darned idiot, I'll bet. Wings look all right. Tail looks all right. Perhaps he has got away with it.

Now then, thick-head, pay attention. You will get off your course if you are not more careful. Clock 30; must have got a bit of chewing-gum in the works. Some kite-balloon, this! Another lull in the wind; we are moving forward again. Swing her gently from side to side and mop up the odd bit of ground-speed. That's the idea.

Creak, creak from that wing again. Nice bump, that. If we get any more like that we shall want a pretty savage C. of A. to hold her together. Now then, stupid, don't get rattled. Steady the old nerves.

They are taking her away, so that's that. PROFESSOR is on her way up the hill. PRÜFLING is being towed back to the foot of the hill. We had better come down soon. Mustn't be a hog. Take her down to the far end again, and then bring her slowly back and pop her down on the top in a smart and soldierly manner.

That ground certainly does pay away when you go down-wind. Round for the last time. Make it tight, for a bit of fun. Nice bit of bank. Good fat rudder. Ease the stick back a trifle. Round she goes like a top. Meet her early. That's the stuff. Clock 28. Controls O.K., but make it 32. Filthy bumps here. Give her 33. Now we're off.

What about this landing? The hilltop will be an absolute gift. That car is moving, so there will be a clear run in. To put her down at the bottom would be a horrible job with all this lift about, and perfectly sickening. Right; the top, then. And you be jolly careful, my lad. It will take you five minutes to get there.

Looks like another storm coming up. Black as your hat. Very dark and smells of cheese, said Jorrocks. What-ho! Lightning. The middle of it will miss us, but I shouldn't be surprised if these marvellous conditions have been due to a cold-front (see text-book). I suppose some meteorological laddie will say I ought to have risen to ten thousand feet by using my wits. Fiddlesticks to him, anyway. It couldn't be done. I haven't even got an aneroid, let alone a statoscope; so how could I tell when the machine was in any belt of extra lift? I guess we have squeezed out the last foot of height, or at any rate we have had an honest shot at it.

Funny little tremble in the tail somewhere. What can it be? Nothing coming through to the stick or to the pedals, so it is probably perfectly harmless. Clock 31. Wouldn't it be horrid if one's tail started fooling about! Now, then, cut that out. Do you remember when you were swimming miles out of your depth in the Mediterranean and you started imagining sharks?—and what a spin you got into? The truth is that you want your tea.

It must be a weary game doing duration records, when this blinking horse-collar prevents you even from blowing your nose. The only amusement left is chewing this gum; a filthy habit, but it certainly keeps you happy. The only steady rhythmic thing left in a world of invisible support. I must learn to chew tobacco; then I can have the additional fun of spitting over the side.

Let's have one last hover. Here comes that uncanny good-spot. Yes, that's it. Swing her gently with tiny rudder and stick. I'll never forget this, even if I live to be ninety. It is hard to see why there should be such lift and wind-speed here. Lower down there is always a violent down-draught curling over the bastion with this wind-direction. There must be a tremendous shoot-up of air coming over from the far side at this height. When the old lady saw the giraffe for the first time, she said to her husband, "Henry, I don't believe it." Which all goes to show that an ounce of practice is worth a ton of theory.

Wake up. What about this affair of landing? You know the safe course. Wait a moment. Start at the right place, off the end of that point. Right. Let's go. Clock 35; hold her at that. Watch the pole in the hedge half a mile away; that's your leading mark. Any drift? Just a trifle. Gently lower your starboard wing a trifle, to meet it. Hold her steady, laddie . . . nearly there. You are out of the lift and coming down fast. Funny that there was no bump. Clock still 35. Keep her going. Now . . . gently back . . . no drift . . . up the slope . . . hold her off . . . off . . . off . . . the wind in your ears has gone . . . careful now . . . smooth long grass ahead . . . GOT IT.

Stopping . . . lower that starboard wing-tip . . . stopped. Off with the old horse-collar. Now about wiping that nose. Oh, Baby, what a Grand and Glorious Feeling! Something attempted, something done. After all these months of struggle.

Here comes the Great British Public. Isn't it funny how they run up when anything lands, no matter whether it be a balloon or a bomber.

Would you mind holding that wing-tip down, sir? No, sir, please don't sit on it. Just put your *hand* on it. And you, sir, would you be so good as to lean gently on the nose? I want to get out, and there is a tidy little breeze blowing. Yes, we want to use the machine again and it is so bad for it if it turns over on its back. Now, sir, just hang on for two minutes while I go and get a party to move her. Don't let anybody sit on the Pitot. Yes, it is for ventilating the cockpit. A very subtle instrument. That's frightfully nice of you.

No, sir, I am *not* a famous pilot . . . your little boy will *not* know my name, even though he does read THE SAILPLANE. Oh, all right; tell him that it is the bloke who writes all that stuff "For Beginners Only."

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NEWS FROM OVERSEAS

[It is regretted that Mr. Thurstan James is unable to contribute his regular series of Overseas News owing to indisposition. We hope, sincerely, that he will be well enough to resume his notes in the next issue. News suitable for inclusion in this series should be sent to Thurstan James, 24, Norland Square, London, W.11.]

GLIDING IN HUNGARY.

Interesting data on gliding in Hungary are now available from reports published in the March issue of the journal *Aviatika*, the official organ of the Hungarian Aeronautical Society.

There are five gliding clubs, who altogether own twelve primary and six secondary machines. Also one primary, one secondary and two PROFESSOR type of machines are under construction.

The following comparative figures will show some of the progress made during the past two years:—

	1930	1931
Number of Flights ...	1,902	3,942
"A" Certificates ...	23	67
"B" Certificates ...	9	25
"C" Certificates ...	2	5

The duration record has now been raised to 2½ hours. As the machines used for soaring are secondary machines, and the grounds are not very suitable, this is a good achievement.

It is interesting to note that one of the clubs is a Boy Scouts' club, while another is composed of railway employees.

The Boy Scouts are arranging for a gliding meeting to be held in connection with the 1933 Jamboree to be held in Hungary.

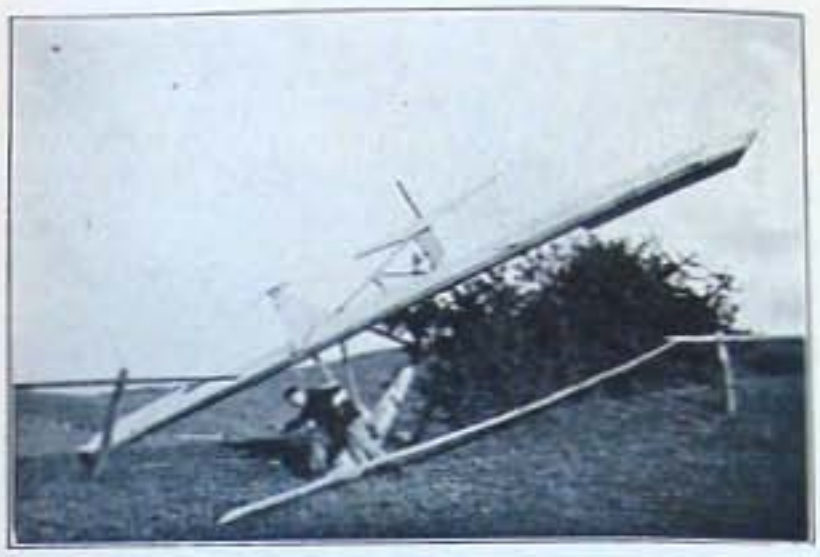
In order to encourage the improvements of records, several prizes have been offered. The latest is a prize for the altitude record (to be not less than 1,500 feet above starting-point). This prize consists of a 2-foot bronze statue of Icaras.

Some of the clubs have their own ground with hangars and school buildings.

The Hungarian Gliding Movement is fortunate to have the full support of the Hungarian Aeronautical Society, and it can be seen from the balance sheet of this Society that the grant to the Gliding Movement was about £600 during 1931. About £1,200 is budgeted for 1932.

Undoubtedly gliding is progressing favourably in Hungary.

P. A.



A "Zögling" in a spot of bother.

GLIDING PIONEER KILLED.

The death is announced of Herr Hans Krause, who, although only 26 years old, was one of the pioneers in the Gliding world.

It happened on Saturday, June 4th, 1932, during a propaganda meeting of the German Olympic Committee in the stadium at Berlin. Krause gave an exhibition of fancy flying. After some turns and loops, he tried to spin. Suddenly his motor stopped, and he was unable to bring the aeroplane back to normal.

The machine crashed, and he died at sunrise the next morning.

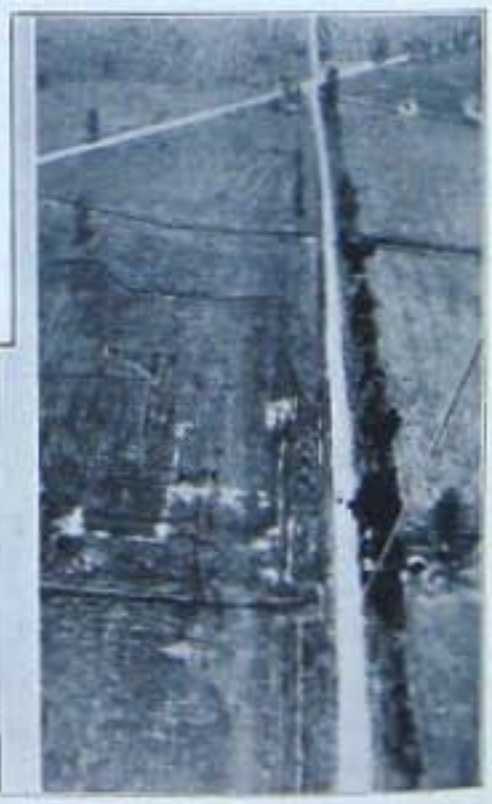
Krause spent last summer in England, when he piloted a glider belonging to Messrs. J. Lyons & Co., Ltd., and took part in the cross-Channel gliding attempt.

AUTO-TOWING IN CANADA.

The story of an auto-towed flight operating from a back-country road. (1) Ready for the start. (2) Climbing well above the car. (3) View from the glider showing tow-rope and tow-car on the road below. Over 150 flights have been made in this manner by members of the Galt Gliding Club, Ontario







CORRESPONDENCE

SIR,—After reading the account of the Kent gliding fatality, and its apparent cause, in THE SAILPLANE (No. 10, Vol. 3), I feel I must air my dislike of rudder-bars, which I would like to see abolished in favour of pedals.

I am only an "A" pilot myself and am one of those who have much difficulty in making up their minds to turn.

Whether the fact that I am a push-cyclist has anything to do with this or not I am not sure, but I know I feel much happier with pedal rudder-control than I do with a rudder-bar.

F. H. S. ROBINSON.

SIR,—One hates to criticise performance figures which one would like very much to believe; but a few simple calculations from the figures given for the LARK make one feel that somebody is being optimistic.

(1) Gliding angle, 17—1 at 34 m.p.h. presumably best G.A., seems quite reasonable. Maximum distance, 600 yards. Assuming maximum altitude will be reached at end of first 50 yards, this leaves 550 yards or 1,650 feet to be covered in a straight glide. Therefore, the altitude necessary 50 yards from the start will be 97 feet. It may be possible, but with a normal launch such as described it is about twice as good as I have ever seen.

(2) Sinking speed, 2.7 f.p.s. at 32 m.p.h. Once again assuming maximum altitude reached 50 yards from start, say, 5 seconds from start, leaves 50 seconds for the glide; $50 \times 2.7 = 135$ feet altitude necessary from a normal shock launch—a complete impossibility.

I have neglected the possibility of float due to cushioning, as with such a small span it is not likely that the effect will be very great. On the other hand, I have neglected the head wind, which would help the altitude but decrease the distance. I have also neglected the fact that the mean speed was only 22 m.p.h. (ground), as against the 32-34 which are the machine's best speeds. The speed at the launch would, of course, be in excess of the best speed, which would almost balance the slow-up for landing, so it would appear that the air speed was fairly constant at about 27 m.p.h.

Note.—With eight men on each side of a double rope, the PROFESSOR and the PHANTOM will each cover about 450 yards in 25-30 seconds, maximum distance and time; the KASSEL 20 rather less distance with about the same duration, and the PRÖFLING about 300 yards and 24-25 seconds.

D. C.

AN APOLOGY.

The offices of the B.G.A. and of the Publishers of THE SAILPLANE have been inundated during the past two weeks with demands for information as to why No. 11 did not appear on June 1st—the due date. For this omission we must express our profound apologies. Regular readers will realise that No. 9 was made possible only owing to the unselfish action of Mr. Thurstan James, Founder and first Editor of THE SAILPLANE, in stepping into the breach, at considerable personal inconvenience, and keeping the paper going during the unavoidable absence from London of the present Editor. They will realise also that all work put into THE SAILPLANE, whether contributions, illustrations or the more exacting task of editing, is done voluntarily and in an honorary capacity. The sterner demands of life have, naturally, to take first place, and during the past two months it has been found impossible, for various reasons, to keep the paper up to date.

It is realised, nevertheless, that subscribers to THE SAILPLANE rightly expect to receive their copies regularly on the advertised dates of publication. We hasten to assure them that immediate steps are being taken to ensure that there shall be no recurrence of the breakdown that occurred at the beginning of the present month.

SOLID ACHIEVEMENT

On August 24th, the 'Tern' set up an official British Distance Record of 8.3 miles, flown by Herr Magersuppe.

On September 27th the 'Tern' set up an official British altitude Record of 780 feet above the starting point, flown by Major H. Petre.

On October 4th the 'Tern' won the Rig and Fly contest at the International Gliding meeting in 3 minutes 36 seconds with a crew of five men. No previous practice had been made for this event.

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NEWS FROM THE CLUBS



An aerial view taken from a " Hols der Tuefel " at Dunstable. The launching of " Professor II " can be seen in the distance.

BRADFORD AND COUNTY GLIDING CLUB.

Whitsuntide Camp, Saturday, May 14th, to Tuesday, May 17th, 1932.

The Club's Whitsuntide training camp was an unqualified success. Fourteen members stayed in camp, and five more turned up daily. Mrs. Cox, the wife of our Leeds representative and Assistant Hon. Secretary, took complete charge of the commissariat, and in this she was ably assisted by Mrs. Stedman. The Club's sincerest thanks are due to these two ladies, who so organised everything as to leave the members nothing to do except eat, sleep and fly. Accommodation was in tents and caravans, the latter being skilfully converted from Corporation trams.

Robertson turned up with a tent of his own invention which he had manufactured overnight. Ignoring the ribald comments of certain members, who pointed out that its shape was suggestive of one of the less healthy dreams of a cubist after a surfeit of lobster and green cheese, he proceeded not only to erect the tent, but actually slept in it for the greater part of the camp. It is, in fact, a very creditable piece of work, and it is expected that C. of A. will be granted shortly.

The amount of flying done during the period of the camp was astonishing, as was the progress made. Reynard and Dickson were flown continually all Saturday, Sunday and Monday until late in the afternoon, when Reynard was put out of commission by a banked turn too close to the hill-side. Dickson lasted till Tuesday, the last day of the camp, when it, too, was declared *hors de combat* as a result of striking a rock with the flying wires on landing. A hard-worked horse was used for retrieving machines throughout the camp. The flying programme had been worked out so as to provide as complete a course as possible up to at least " B " certificate standard, and including start turns and practice in crabbing along a soaring ridge and making spot landings in the bottom of the valley. There were thus a definite object and aim for each day's flying.

Saturday was devoted to straight glides on both machines down a short slope, where flights up to 35 sec. were obtainable. On Sunday a longer slope was used and turns were practised. Every member had three or four flights down this slope, and landed at the appointed spot, which was close to a reservoir wall.

On Monday a gentle breeze of 10-15 m.p.h. was blowing up our best slope, facing west, and start turns were practised, including following the area of up-current along the ridge and spot landing in a flagged area below. Both Dickson and Reynard were used, and astonishing progress was made, particularly by some of the hitherto less advanced members. Flights of about 1½ min. were the order of the day, and landings were regularly made, by the aid of S-turns and sideslips, in the flagged area.

Robertson's first attempt down this slope ended in a down-wind landing *on the top* 300 yards from his launching-point, due to the fact that he failed to come out of his start turn. There was no damage, and he immediately took off again and did a most creditable flight of 1 min. 24 sec. This member did his first 30-sec. flight during the period of the camp. The best flying of the day was done by Stedman, who did two beats along the ridge in both Dickson and Reynard before being forced to make for his landing ground. The wind was at this time less than 10 m.p.h., and his flight in Dickson—the longest—was 2 min. 5 sec.

Flying was continued down the same slope on Tuesday, until Dickson was put out of action by a bad landing. Repairs are now proceeding on both machines, and it is hoped to have at least one in the air by May 22nd.

Mainly as a result of the camp, the *morale* of the Club is definitely much better than it has ever been before—even at the foundation in July, 1930. The enthusiasm created is most encouraging, and we recommend any club which is passing through a depressing time to organise a training camp. Eighteen months ago we started to train our members for soaring flight. Never since the Club's foundation have we been so confident of our ultimate success as we are now.

Sunday, May 22nd.

Wind W., 10-15 m.p.h. Repairs to Reynard were completed by 5 p.m. and flying down the long west slope was commenced at 5.30 p.m. Between that time and dark many successful flights were made, mostly of the order of 80 sec., and the longest for the day a minute and a half. Every member had two flights, each down the long slope, except Seager, who made two very good glides on the smaller slope used for " A " standard flying.

Saturday, May 28th, and Sunday, May 29th.

On Saturday the wind direction (S.) and doubtful weather conditions caused members to prefer repair work on Dickson to flying, and a good deal of work was put in on the rebuilding of the port wing, under the direction of Mr. Verity. This work was continued on the Sunday, but about half a dozen members also turned up on the flying ground, in spite of the bad conditions.

Fortunately, Ilkley chose this occasion to accept our invitation to visit us, and turned up with the Hols der Teufel in fine form. The wind was in the east, and a number of very fine glides were made in the intervals between torrential showers. However, in spite of the weather, it was a very enjoyable day and everyone went away happy.

Saturday, June 4th, and Sunday, June 5th.

Reynard was rigged on Saturday and found to have a nasty bend in the starboard wing. Mr. Jones declared the machine unairworthy and ordered immediate investigation, with the result that the wing was opened along half its length and a really nasty piece of work exposed to view. Repairs were at once commenced, and were completed on Sunday, when the machine was flown down the east slope in company with the Hols der Teufel and Huddersfield's Zögling.

We were also very glad to welcome members of the Preston Club, who had kindly come over to visit us and inspect the site. Their enthusiasm and energy impressed us all, and we hope to see more of them in the near future. Reynard, Zögling *and* Hols were flown repeatedly, the Hols performing particularly well in the hands of the Ilkley members.

Flying continued till dark with all three machines intact, when we repaired to the farm, where large quantities of ham and eggs were consumed, and a good deal of discussion took place.

Altogether a most enthusiastic meeting and successful day, thanks mainly to our visitors from Ilkley, Preston and Huddersfield, of whom we hope to see much more in the near future.



J. Keeble, of the Imperial College Gliding Club, soaring the "Dagling" during his "C" test at Dunstable.

GLASGOW GLIDING CLUB.

Gliding enthusiasts were glad to discover that time was found to include a short display of motorless flight in the Air Pageant at Renfrew on May 23rd.

We were all indebted to the Scottish Flying Club for their courtesy in this matter, and it is surely to be hoped that further friendliness and co-operation will be possible between power and motorless flight in the aeronautical development of Glasgow and its districts.

The Glasgow Gliding Club was able on this occasion to exhibit three distinct types of machines. These machines were interesting examples of primary, intermediate, and advanced craft, and the work of the constructional section was shown in the conversion of the R.F.D. primary to an intermediate, and in the uncompleted sailplane designed and built by Mr. T. Crawford, an enthusiastic member of the section, and one of the most promising *ab initio* pilots in the field.

In the display, nine launches in all were carried out, and somewhere in the middle portion of the performance the writer was carried off with a dislocated shoulder. He is still wondering how it all happened, as he was humbly acting as last man in the team on the launching rope. Dunlop, who was pilot on this occasion, "kited her up" rapidly in order to get as spectacular a flight as possible under the conditions. This let the catapult free itself, probably with rather more kick than usual, but it is difficult to see why one man only was affected. However, there it was, but hardly anyone seemed to notice the mishap.

We were glad to learn that the flights given on the B.A.C.III aroused much public interest, and one regrets that it had not been possible to arrange for a dual-control two-seater, so that the spectators would have been able to add to their various aerial experiences a "flip" in a motorless craft.

It is certain that this would have made an extremely welcome variation, it being very pleasant to "float" through the air undeafened by the roar of engines, and to exchange conversational remarks with the pilot.

Of course, on a flat terrain, such as that of the aerodrome, it would be necessary to resort to auto-towing in order to obtain sufficient height under these more difficult conditions of weight and increased initial resistances.

The possibilities of giving an auto-towing display on the machine available had been considered by the Committee; but, for various reasons, it was decided finally to use the shock cord or catapult method of launching, although it is somewhat more difficult to get spectacular results with this method on the flat 'drome.

However, Messrs. Anderson and Dunlop put up a very fine display, and the Club owe these gentlemen hearty thanks for the good work so expeditiously carried out.

KENT GLIDING CLUB.

Sunday, May 8th.

With the first favourable wind for some Sundays, and after a nice trial flight across the Pilgrim's Way, it was decided that Weekes and Dugdale, who had recently made their two qualifying flights, should attempt to obtain their "B's."

Weekes was launched first and made the most successful flight seen on this site. Availing himself of every possible ascending current, he achieved a duration of 1 min. 51 sec. Using our primary, G101, and climbing steeply to a nice height by car-launch from 100 yards behind the edge of the hill, he turned W. along the brow, holding his height remarkably well. Turning S., he headed down hill, and, bearing slightly W. again, he crossed the Pilgrim's Way and two hedges. Then he made a steady flight S.E. diagonally across a large field, cleared the boundary hedge between two trees, turned S. into wind and landed. A great flight and a landmark for the Kent Club as the first "B" on their site.

Dugdale then made two attempts, but the wind had dropped and flying was afterwards restricted to experimental ground slides for several members.

LONDON GLIDING CLUB.

Whitsun, 1932.

On Saturday, the first blazing-hot day this year, the direction of the wind prevented the using of the hill-top, so we left most of the launching to the Dodge, which gave all applicants four or five flights each in the DAGLING and PRÜFLING. The ZÖGLING was hand-launched for beginners.

On Sunday, rain at times and no wind; but descents from the top were pricelessly unemotioning in the absence of bumps. Such flights every now and then are heartening. The afternoon was entirely given up to hand-launching beginners in the ZÖGLING.

On Monday, a gentle irregular westerly draught brought out the DAGLING, PRÜFLING, KASSEL 20 and HOLS, and they, together with the Imperial College DAGLING, kept the winch boiling till dark. HOLS just failed to hold her height on the return beat, but Dewsbery, in the KASSEL 20, soared with exquisite skill for about ten minutes, exploring every possible source of up-current and at times almost grazing the hill-top. He credited the flight to the sweetness and balance of the controls.

The other feature of the week-end was R. E. Burton's "A," 44 seconds. When he arrived on Friday night his total air experience was an hour's dual, split between an Avro and a Klemm. After the three days, taking his turn in the ZÖGLING and DAGLING, he was launched from the hill. His flight was steady, he included a gentle turn right and left, and his landing was perfect. Some of us took nearly a year to do as much.

The Imperial College DAGLING worked hard every day, auto-launching at the foot and hand-launching from the top. Its flying-style improved all the time, until on Monday night it had given up its habit of standing still in mid-air and absent-mindedly scratching its ear . . . for which habit only a pardonable lust for duration and ticket-hunting need be blamed.

We much enjoyed Corporal Manuel's visit, even though he did not bring the CRESTED WREN. If all visitors lent a hand so whole-heartedly, club members would grow fat and lazy.

With regard to this ticket business: E. R. Desoutter flew his "A" and two "45's" in the DAGLING (54, 54 and 56 sec.), and then in HOLS obtained his "B" (75 sec.). C. L. Startup, in the DAGLING, flew his "A" and a "45" (52 and 60 sec.).

In the Imperial College machine: Robins, "A" (54 sec.); Kennedy, "A" (41 sec.); and two "45's" each for Dean (46 and 59 sec.), Houlder (54 and 52 sec.), and Barnes (54 and 49 sec.).

Saturday, May 21st.

A gentle breeze blowing up the hill, with the stratus cloud-level descending until the hill-top was wrapped in thick mist. The DAGLING, KASSEL 20, HOLS and PRÜFLING, and the Imperial College DAGLING kept going until the pilot's vision immediately after launching was limited to about fifty yards. No flight exceeded four minutes, the lift being a shade too weak.

Sunday, May 22nd.

Sheets of rain all night, and a voilent west wind early. During the day the wind worked round to the south-west, varying in strength from whole-hearted soaring conditions to worthless lulls. Thunderstorms were hanging about.

but only sent one smart shower. The result was three *ab initio* " C's " in three different machines, and many soaring flights. While three machines were soaring together, a South African power-plane of American origin, carrying British passengers, nosed its way through our flock in order to land. There were six new members.

PROFESSOR II. Major Petre made two trips round the corner to the neighbourhood of the Zoo. D. C. Smith and Culver soared locally. Symmons made three trips. The last flight of the day ended in a distant field. This is not a very good idea.

PRÜFLING. Collins obtained his " C " with half an hour of really clever flying, and later soared again for twenty minutes. It was interesting to see his style improve as time went on. Four and a half months ago he had never touched any form of aircraft. Thomas (with camera) soared for twenty minutes and Robertson for ten. Other efforts in this machine were spoilt by lulls in the wind or else by inaccurate flying: all except Grimston, who was launched just before sunset and told to stay up till the cows came home, while we all went off to retrieve the PROFESSOR. One hour and a quarter later he put the PRÜFLING down thirty yards from the hangar doors. We do not know how he filled in the time.

DAGLING. N. Stabb obtained his " C "; Laurie flew her down, having unluckily hit a lull; Muir spoilt an easy " C " by ramming the hill.

HOLS. The owners revelled in the conditions. Both landed on the top, and Hiscox soared for a long spell, deliberately lower than the hill-top, with two machines above him.

KASSEL 20. Cornell obtained his " C," landing on the hill-top after 17 min.; Dent and Humphries soared *ad limitum* and landed on the hill-top; but other pilots were less lucky with their wind-strengths.

The Imperial College machine worked like a navvy on both days.

Our ZÖGLING exercised new members on the flat, but earnt more scars of battle. Poor old ZÖGLING! The casualties to the machines in these times of real activity make us thank our stars for a first-class ground engineer, and even he has a struggle to keep up.

Sunday's soaring time totalled approximately six hours.

Sunday, May 29th.

Rain and repairs in the morning. In the afternoon a breeze along the ridge, so a party, which included seven " C " pilots, as well as beginners, attempted to fly the ZÖGLING from a low foot-hill. The best flights were made by beginners, who treated the stick with frightful energy. The coldest stall, the kind that removes divots with wing-tip and skid, was brought off by a pilot whom normally we try to imitate with infinitesimal success. All our hard-earnt delicacy of touch had to be thrown to the winds before we could handle her, since nothing but wild flappings of the elevator seems to touch ZÖGLING's heart. Preferably she should be sent a postcard overnight. On returning to more sensitive machines, someone or other of to-day's party is going to throw a tight little loop quite by accident. It is all very muddling, very good experience, and very conducive to hilarity on wet days.



A job of work at the London. Repairing a damaged skid.

ULSTER GLIDING AND AVIATION CLUB.

Saturday, April 16th.

The Club assembled at their usual flying ground, Tyrella Sands, and twenty flights were made by auto-towing. Wynne obtained his " B " with a flight of 1 min. 2 sec. He is the first member of this Club to do so, although on the same day both Mr. and Mrs. Mackie had longer flights, but had not got their two 45-second flights in. On this day Mrs. Mackie made a lovely flight and returned down the sands flying down-wind at a terrific speed, and landed about two yards off her luncheon basket; evidently she was thinking of the " Minister of the Interior."

Saturday, April 30th.

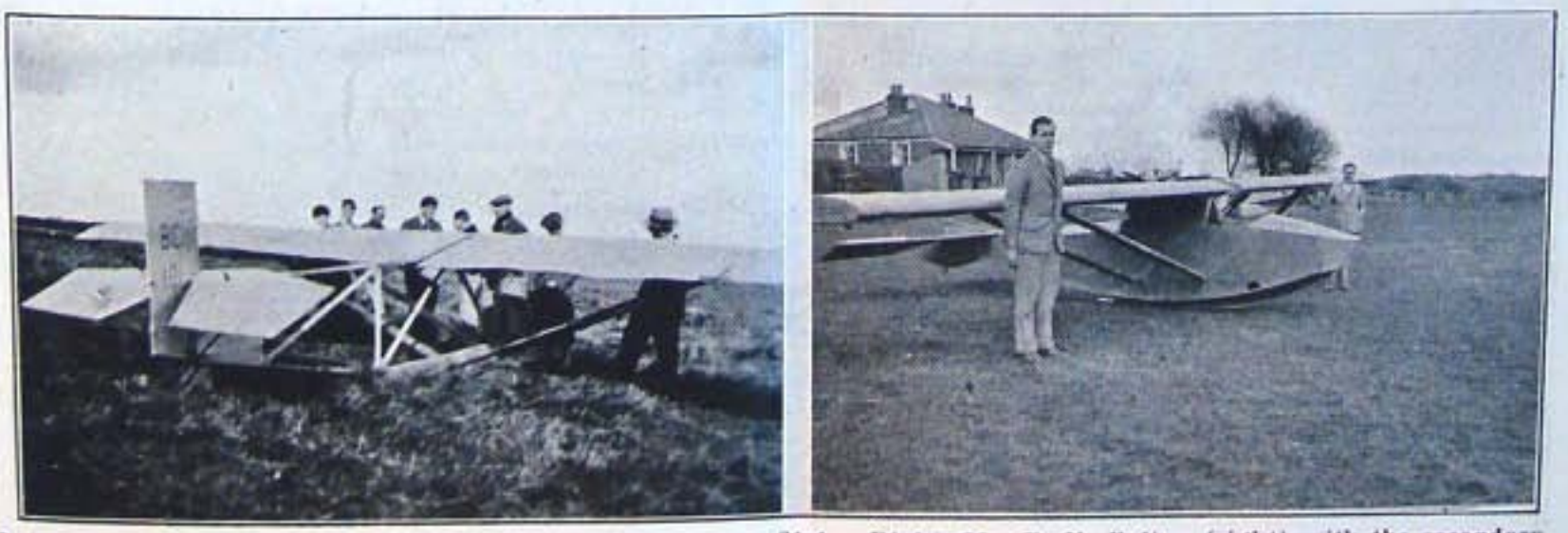
This day, twenty-eight flights were made and an " A " obtained by Harris, and a " B " by Mrs. Mackie. There were some very good turns and " S " bends made, showing that our members are becoming more accustomed to banking, which is necessary for turns.

Saturday, May 7th.

On this day we had a very light wind, varying in direction. We found we were able to auto-tow and obtain a good height from either end of the sands, which are facing south. Altogether, we had forty-six flights, the average flight for the day being 30 sec., and the best flight being made by Metcalfe with 57 sec. There was also an " A " obtained by Beck, who is a very hard worker and persevering member of our Club.

Saturday, May 14th.

When we arrived at the sands this day we wondered if it would be worth while to rig our R.F.D. machine, as there was a very strong wind, about 20 m.p.h., blowing directly across the beach from the south, but in the end we were not deterred, so we went on with the good work. We found that with a cross-wind blowing we could take off in a very short distance and soon climb to 500 or 600 feet, and then turn into wind and either hover over the same spot for some time or travel side-wind to the other end of the sands and turn again into wind for landing.



Left: the B.G.101 built by members of the Kent Gliding Club. Right: Mr. E. V. Bolton (right) with the secondary machine which he has designed and built.

This was done several times by Metcalfe, Wynne, Mackie and Mrs. Mackie, and certainly gave everyone a thrill. We had a good crop of certificates, including one "A" and four "B's," for this day's outing, and Baster put the Club's record up to 115 sec., during which flight he hovered practically stationary. The "A" was awarded to Bancroft, an ex-power pilot, for an excellent flight of 53 sec. The "B's" were obtained by Mackie with 64 sec., Harris with 64 sec., Metcalfe with 61½ sec., and Baster with 89 sec.

Saturday, May 28th.

Our activities this day were nil, as our R.F.D. was not considered airworthy by the ground engineers, owing to several minor faults, and our REYNARD was in McFall's workshop, kindly lent to us for the purpose of putting on a nacelle and fairing. This work was carried out chiefly by Metcalfe and McFall, and they certainly did show a great deal of ingenuity and skill in tackling the job. They were helped considerably by Beck, Bancroft and Wynne.

Saturday, June 4th.

We had our REYNARD out, wondering how the nacelle would affect our flying. Metcalfe took it up for its trial flight and made a lovely flight, sinking very slowly, and altogether putting up a good performance. He came down "full of beans" and said that there was certainly a great increase of efficiency, which was verified by other members, who afterwards had flights. Although we had no wind, some of our members were able to have flights of 2 minutes' duration, after having been cast off. Mackie raised the Club's record to 2 min. 7½ sec.

OFFICIAL NOTICE

DIARY OF FORTHCOMING EVENTS.

Monday, July 18th, at 6.30 p.m., in the Library of the Royal Aeronautical Society, Albemarle Street, W.1.—Council meeting, British Gliding Association.

TUITION

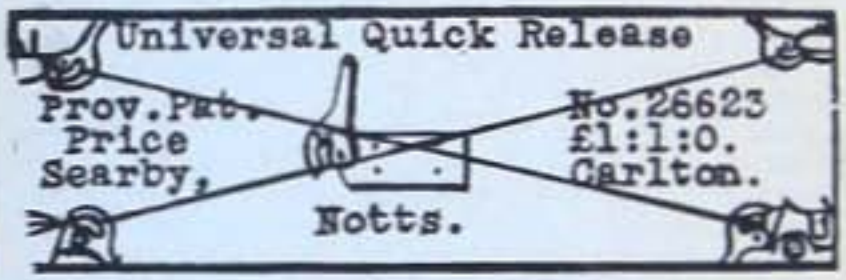
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