

# SAILPLAN

M A Y  
1937  
Vol. 8 No. 5

## AND GLIDER

Published Monthly

PRICE - -

Editorial Office

13, Victoria St., S.W.

*Official Organ of the British Gliding Association*

EDITED BY ALAN E. SLATER





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# THE SAILPLANE and GLIDER

*Official Organ of The British Gliding Association*

Editorial Offices: 13, VICTORIA STREET, LONDON, S.W.1 Telephone: ABBey 2615-6-7

Vol. 8 No. 5

MAY, 1937

Published Monthly—Price 1/-

## Preparing for the Wasserkuppe

THE team to represent this country at the International Competitions in July has now been chosen. This is the list, together with the machines they are to fly:—

J. C. Neilan and P. M. Watt ...	...	KING KITE
P. A. Wills and G. M. Buxton ...	...	KING KITE
D. G. Hiscox and Mrs. Price ...	...	KING KITE
R. G. Robertson and G. O. Smith ...	...	HJORDIS I.
W. B. Murray and J. P. Dewsbery ...	...	FALCON III.

It may be of interest to tabulate the number of hours' flying experience which each pilot has had, both in sailplanes and in aeroplanes:—

	Sailplanes	Aeroplanes
J. C. Neilan ...	85	600
P. M. Watt ...	20	2,600
P. A. Wills ...	110	510
G. M. Buxton ...	100	700
D. G. Hiscox ...	100	20
Mrs. Price ...	183	167
R. G. Robertson ...	114	90
G. O. Smith ...	95½	nil
W. B. Murray ...	50	700
J. P. Dewsbery ...	150	200
Total hours ...	907½	5,580

It is to be expected that this combined experience will produce results!

The first HJORDIS II., or KING KITE, has now been in the air, and appears to have come well up to expectations. A number of the team went to Yorkshire at the beginning of this month to try it, but unfortunately it got damaged on its first flight, so they all came south again. However, by the time this is in print there should be two KING KITES flying, one at Sutton Bank and the other at Dunstable.

There is speculation as to the sort of reception the FALCON III. two-seater will get abroad. Will it be looked on as a joke—until it gets into the air? It may find its best role as a piler-up of points for duration flying.

A useful talk to the team (or such as turned up) was most generously given on April 22nd by Robert Kronfeld, who achieved fame through his successes at the Wasserkuppe meetings some years ago, and

for his introduction of advanced methods of soaring. What he said about competing at the Wasserkuppe was unexpected, but nevertheless very sound. His audience expected that, at the beginning of the lecture, Kronfeld would produce a large map, and would then proceed to mark with a blue pencil all the best soaring areas, and the routes from one to the other.

Instead, we were told that 60 per cent. of the success at such a competition is due to good organisation, and only 40 per cent. to the piloting! A careful study of the rules is the first essential. It is annoying to do a fine flight and then find that some essential condition has been overlooked, so that the whole effort has been wasted.

One of the matters in which organisation counts especially is the getting of pilots and machines back from long distance flights. The pilot, when he lands, must not immediately accept the invitation of the local Mayor; he must go straight to the telephone and say where he is. His transport team must not find, when they set out to fetch him back, that car or trailer is unworkable owing to some small defect which might have been set right if discovered earlier. He must not find himself, on landing in another country, put under arrest through having forgotten to carry the necessary documents. And so on.

Finally, in the final and shorter part of the lecture, Kronfeld gave some useful advice on the geography of the region from the soaring point of view, but it would be no good reproducing it here without a map, which we hope to include in the next issue.

Returning to the matter of documents, it might be as well to give a list of what are required. These are they:—

**PILOT:** Passport; current pilot's licence, with certificate that it is valid for cross-country flying; F.A.I. sports licence; completed entry form in duplicate; current aero-towing certificate.

**MACHINE:** Current certificate of airworthiness; carnet; insurance certificate; calibrated barograph with certified correction chart; completed entry form in duplicate.

**ASSISTANTS:** Passport; international driving licence; international car registration and carnet.

It will be seen that, at least in the preliminary stages, the typewriter may well be mightier than the joystick.



## Coming Events

Whitsuntide. May 15th to 17th: Soaring Competition between Midland Gliding Club and Derbyshire and Lancashire Gliding Club, on the latter's ground. May 15th to 18th: Open Meeting and Informal Competitions at Yorkshire Gliding Club. May 5th to 17th: International Gliding Meeting at Toulouse, France.

May 24th to 31st: "Istus" Meeting in Vienna and Salzburg.

June 4th to 6th: Yorkshire International Air Rally, including visit to Sutton Bank on 6th.

July 4th to 18th: International Soaring Competitions at Wasserkuppe, Germany.

August 28th to September 25th: Annual Competitions of British Gliding Association at Great Hucklow, Derbyshire.

## Where to See "Plane Sailing"

"Plane Sailing," the film of soaring flight, has been booked at the following cinema theatres:—

May	16	7 days	Futurist, Scarborough.
"	17	6 "	Corona, Liverpool.
"	17	6 "	Casino, Liverpool.
"	17	6 "	Palladium, Southport.
"	17	6 "	Plaza, Liverpool.
"	17	6 "	Gaumont Palace, Egremont.
"	31	3 "	Gaumont Palace, Liverpool.
"	31	3 "	Empress, Liverpool.
June	3	3 "	Trocadero, New Brighton.
"	3	3 "	Borough Theatre, Wallsend.
"	7	6 "	Princes, North Shields.
"	7	6 "	News Theatre, Newcastle-on-Tyne.
"	10	3 "	Empire, Glossop.
"	14	3 "	Picture House, Bellshill.
"	17	3 "	Bedford, Liverpool.
"	21	3 "	Playhouse, Inverness.
"	24	3 "	Rock Picture House, Mansfield.
"	28	6 "	Regent, Swindon.

In addition, an indefinite run of the full length film has been booked at the Marble Arch Pavilion, London.

The distributors for the film are Messrs. Kinograph Distributors, Ltd., 191, Wardour Street, London, W.1.

## In Short

**Two-seater Record.**—A record distance flight for a two-seater sailplane is claimed by the German pilots Knies and Beck, who soared 124 miles from the Hornberg to Bingen.

**A Novel Caravan.**—A novel but practical caravan known as the "Bampton," advertised in this issue, will appeal specially to owners of small cars. It avoids the usual drawbacks of other types.



H. L. Richardson flying his "White Wren."

("Sailplane" photograph.)

## Correspondence

### "Just What is Wanted"

SIR,

We were very interested to read "Resurgam's" letter in the last issue of THE SAILPLANE AND GLIDER (under the heading "Just What is Wanted"), and to note his reference to the good flying qualities of the WREN sailplane.

As sole proprietors of the WREN designs, we are prepared to build four of these machines for £120 each to a definite order, and if "Resurgam" knows of sufficient potential purchasers to guarantee this number we shall be pleased to meet with their requirements. We may also take this opportunity of mentioning that arrangements have been entered into whereby Messrs. Slingsby Sailplanes are authorised to build this design under licence, and we understand that they also are prepared to build four WRENS to order at the price mentioned.

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## Hjordis II

### Or, A Midsummer Kite's Dream

By CORUNUS

**L**ET there be no doubt about it, this sailplane is going to become both popular and famous.

Her first flight took place in peculiar circumstances. Buxton and I had made plans for cautiously trying out first one control, then another, in gentle ground hops, then taking her up to a vast height and trying the flap gear, another vast height and the stall, and so on.

In the event, Slingsby took her to Welburn aerodrome, the winch wire was attached, and off she went; the link jammed in the quick release tunnel, and by the time it fortunately unjammed itself he was 60 feet up and no distance from the further hedge. There was nothing for it but to put on all the controls and flaps at once, and hope they all worked; they did—the first major tests were all over in fifteen breathless seconds.

On April 17th the writer found her being rigged on Welburn aerodrome before the placid gaze of Pegasus, a large carthorse which had been hired for the day in view of the heavy rain which had been falling since Christmas which has turned the district into a primeval swamp. Pegasus was almost as great a success as the HJORDIS II.; she plodded smoothly on under perfect control irrespective of surface conditions and without churning up the ground and leaving it ten times worse, as do all forms of motor traction. I seriously recommend the addition of a carthorse to the fleet of all our major clubs.

Getting back from this nature worship, the first thing that overjoys one with this machine is her looks; the second is the comfort and view she gives her pilot. She is the first advanced sailplane I have seen which is as easy to enter as a motor car. The bathroom method suffices; you simply put in one foot, then the other, then you sit down. One variation from the bath; I flew her in top boots, and exceed 6ft. 3ins. without. She has a most ingenious system of rudder pedals which can be adjusted in a moment for all sizes of pilots.

The cockpit cover fits—not like the cellophane wrapper to a toothbrush, but encloses a fair space in which one can live and breathe as comfortably as in a saloon car. And the view out is peerless—far better than any machine I have flown before, open or closed.



The wing root of "Hjordis II" showing the bi-convex wing section. By looking along it from one end, the reader will see that it is not symmetrical.

In the air the controls are precise; more active than in a slower machine, yet not jumpy. She flew comfortably at 40 m.p.h. on the clock, and I should say her sinking speed will not vary much between flying speeds of 40 and 50 m.p.h. The stall comes gently, with flaps up at around 36 m.p.h. On the following day I soared her for two periods of around 20 minutes each at Sutton Bank, in the abominably rough air which a north wind, rolling over the point by Gormire Lake, always brings. She handled beautifully, and on my second landing I found myself about to settle in one of the bottomless bogs which miraculously occur in the winter at Sutton on the edge of a 700-ft. cliff. It looked like a big splash, so I pushed the flap lever to the half-way position just before she stalled. Immediately all the controls smoothly cut in again and we ballooned up gently about 15 feet, carried the hazard and settled on the further shore, the A.S.I. showing 32 m.p.h.

Her ailerons are effective below the stall. A long grind across the ground on a sluggish winch launch fails to produce any signs of a wing dropping. This will be very useful for aeroplane towing, when the take-off sometimes produces anxious moments. She is extremely silent in flight.

If I am expected to make suggestions, the only thing I can think up is that in a machine of this luxury I should be prepared to pay and carry an extra five pounds to have a doughnut wheel to lessen landing shocks. I have been carrying an accelerometer recently to determine vertical accelerations on a sailplane. The maximum reading I obtained in clear air was 0.6G. On a good landing on hard dry ground 3G is common. A bad landing, no breakage, showed 5G. It would be worth a great deal to reduce these by even 20 per cent. Maybe I am getting fussy; if so it is a measure of the excellence of this advanced sailplane that criticism should have to go to such lengths.



The "Hjordis II" photographed on the occasion of its first trials. The skid has since been faired in.



## Queer Soaring at Dunstable

(Continued from Vol. 8, No. 2, Page 38)

IN the February issue of THE SAILPLANE a description was given of some soaring flights in a wind which reached the London Gliding Club's ground by blowing down a hill. The ground wind was strong, from a direction S. by E., and the best lift was found throughout the afternoon of January 10th at a point between the clubhouse and the "Bowl" (see Fig. 1), where soaring was possible at all heights from 250 ft. (above launching level) up to 1,400 ft. at 3 p.m., and up to 2,250 ft. at 3.30 p.m. This point was at the centre of an area about half a mile square in which sailplanes flying at between 500 and 1,400 feet could climb at about 2 ft. per second; while for another half mile or more to the west and to the south of this area a sailplane could just, or almost, maintain height.

The way to tackle the problem of an explanation is, I suggest, first to trace the various portions of air, in which the soaring was done, backwards to the point at which they probably left the ground. There are enough records of the wind speed and direction at different heights, and of the rising rate of the air, to enable this to be done within certain limits of accuracy, especially as the wind observations are confirmed by meteorological reports from south-east England.

In Fig. 2 I have taken the point over which the best soaring was done, and traced back the course of the air which arrived at various heights above this point. The crosses mark the positions where these various bodies of air probably left the ground, and even allowing for a certain amount of guesswork, the crosses cannot be more than a few hundred yards from their correct position.

One very striking result is at once apparent. It is shown that air was leaving the ground along a line two miles long, which lay obliquely across the surface-wind direction, and that the marked change of wind direction with height has had the effect of concentrating all this air vertically above one spot.

The next question is: Why did the air leave the ground along this line? It will be seen that the line very nearly coincides with the top of the ridge of Dunstable Downs. Had the Downs anything to do with it?

Now, it will be remembered that the pilots all noticed the warmth of the air in which they soared, as compared with that at ground level. It may be taken as practically certain that the soaring air had been in contact with warmed ground. Where? The sun-heated slopes of Dunstable Downs? I explored a small part of the northern end of the Downs between 3 and 4 p.m. on the day in question, and found that air was rising slowly up the slopes all round the "Bowl," but that in one of the indentations in the adjacent west-facing slope there was actually a slight drift downwards. Moreover, the north-west slope, near which some of the soaring air took off, was receiving no more of the sun's heat than level ground, as will presently be shown.

The rising air need not have been warmed just where it left the ground. The warming process might have happened some way back. To find the most likely place for the air to have been warmed, we must examine a

map for some distance up-wind, noting particularly the sloping ground.

And here it is necessary to explain what is known as the "reduction factor."

Other things being equal, the amount of warmth a piece of ground receives from the sun depends on the angle at which the sun's rays strike it. It receives most warmth when the sun's rays strike it perpendicularly; if they don't, it receives only a proportion of the maximum possible amount. This proportion is the "reduction factor." A formula for calculating it is given in G. Seligman's *Snow Structure and Ski Fields*, page 535.

In Fig 6 the reduction factors have been inserted for various steep slopes facing the sun—assuming the sun to be in the south-west, 5 degrees above the horizon, as it was shortly before 3.30 p.m. The most noticeable feature on the map is a long slope facing south-west, stretching for 8 miles from Dagnall to Hemel Hempstead, bordering the valley of the River Gade, and carrying big reduction factors (0.19 to 0.42), compared to that for flat ground (0.09).

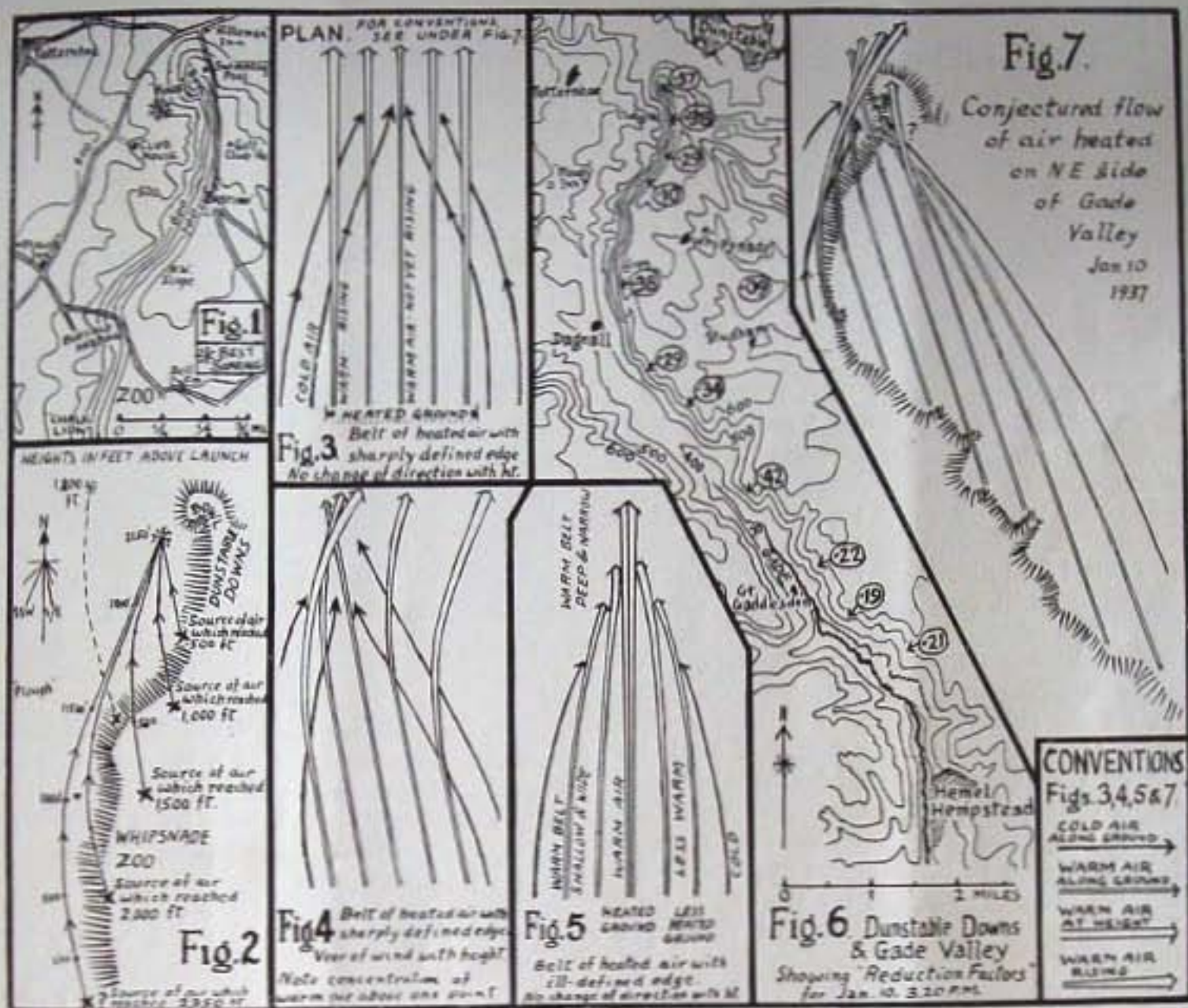
I am convinced that it is here that the greater part of the soaring air was originally heated up. It is all grass-covered chalk downs, except for one or two small tree-covered areas.

The question now is: Why did not this heated air rise at once, instead of "taxi-ing" along the ground to



The haze horizon on January 10th, as seen from the air: a photograph taken by J. E. Simpson from the two-seater "Falcon III" shortly after releasing from the winch cable. The haze top is seen to be disturbed, probably by the rising currents in which the soaring was done.





Dunstable Downs before "taking off"? The answer, I think, is that warm air can't rise until cold air gets in underneath it, and that a wide belt of warm air may travel several miles before this can happen.

How does it happen? If no scientist can tell us, we must guess. Figs. 3, 4 and 5, which explain themselves, are admittedly guesses. Fig. 3 shows a wide belt of warm air; on each side is cold air which cuts in underneath it, with the result that the *edges* of the warm belt are lifted first, and the centre last. In Fig. 4 a veer of wind with height is assumed, and it will at once be seen that the left half of the diagram, as far as the warm air is concerned, is almost an exact reproduction of Fig. 2.

But what if the warm belt has not a sharp boundary, and the reduction factor of the warming slope gradually tails off to that for flat ground, as it does towards Hemel Hempstead? Then, I suggest, each tract of air will try to get under its neighbour, as in Fig. 5, with the result that the *centre* of the warm belt rises first.

Finally, Fig. 7 shows my hypothesis to account for the presence of warm rising air over one spot at all heights from 500 ft. to 2,250 ft. It is really a combination of the left half of Fig. 4 with the right half of Fig. 5.

It would crowd the diagram too much to account for the whole width of the soaring area. There was rising air out towards Totternhoe also, and the dotted line in Fig. 2 shows that this probably rose from the Downs by Whipsnade. It is significant that, as the sun got

round and gave more heat to this west-facing slope, the area of lift extended, according to one pilot (G. B. Baker), who was actually able to soar as far south as opposite the Chalk Lion at Whipsnade.

To sum up, I should attribute the "queer soaring" to:—

- (1) The presence of a long south-west facing slope over which the wind approached;
- (2) The veer of wind with height, concentrating the rising air from a wide source over one spot;
- (3) Possibly, the lee slope of Dunstable Downs causing the belt of warm air to "come unstuck" from the ground, in such a way as to bring cause (2) into action;
- (4) The low altitude of the sun, causing a big difference in heating capacity between flat ground and sun-facing slopes;
- (5) The absence of cloud shadows, thus ensuring an unbroken stream of rising air.

A. E. SLATER.

**As with Gliding.**—"It was characteristic of him that, when asked what was the practical value of the attempt to climb Mount Everest, he replied that it had no practical value whatever, but it was worth doing; for, he added, all the things in this world really worth doing had no practical value. A society concerned solely with things of practical value would be like bees, whose whole business was to produce another generation of bees and provide it with food."—From *The Times* obituary notice on Lord Conway of Allington.



# Experiments in Radio Transmission and Reception in Sailplanes

By G. BERNARD BAKER

**D**URING the past few years there has occasionally been talk within the Gliding Movement of using wireless receivers in sailplanes, and an early experiment of this sort was carried out by Eric Collins during the summer of 1935. On that occasion a section of the Radio Society of Great Britain was holding a "five metre" field day on Ivinghoe Beacon, and one of their number installed a receiver in the RHÖNADLER. During a short soaring flight evidence that messages were being received was given by the obedience of the machine to instructions from the ground.

Previous to this I had discussed with Collins the possible uses of wireless in connection with gliding, and he seemed to think they might be considerable. In particular he considered that wireless might be of use for instructional purposes. This led me to do a little serious work on the subject, and later in that summer a few ground tests were done by myself and Mr. Moxon, both on the research staff of Murphy Radio; but, due mainly to laziness, no further work was done. Very little more happened during the next year, as my time was fully occupied in learning to fly, and it was only two or three months ago that we started again in earnest. In fairness, I must add that a rumour of action in this direction by the Yorkshire Club was a contributory cause of our renewed activity!

In addition to myself and Mr. Moxon, Mr. Marshall, also from Murphy Radio and a member of the London Gliding Club, has been responsible for the work.

When I was asked to write this article for *THE SAILPLANE*, I unthinkingly agreed, and it was only on further reflection that I realised that, in order to be of any value to those really interested, any such article must be highly technical, and hence of interest mainly to the wireless enthusiast. Before digging our teeth into technicalities, however, it is worth discussing the applications that radio can have to gliding; and these are, of course, of general interest to the gliding movement as a whole.

Taking instruction first, it would obviously be useful for the instructor to be able to tell a pupil of his mistakes. How many "C" Certificates have been unduly delayed because the pilot flew too far out from the hill, and, worse still, how many machines have been needlessly smashed by flying too close without sufficient height! Naturally, the success of wireless instruction rests on at least two assumptions; firstly, that the words of the instructor shall be easily audible to the pilot—and in this connection it must be remembered that the use of headphones is probably undesirable as they would prevent the pilot from hearing the characteristic noise of the machine, which is his only air-speed indicator; secondly, the pilot must have sufficient attention to spare from flying to be able to take in what is being said to him. It remains to be seen whether these assumptions are justifiable.

For more advanced pilots the possibilities are far greater. Duration flights might become quite tolerable if the pilot could exchange back-chat with his friends—



The author of this article testing his apparatus in the cockpit of his "Grunau Baby."

surely an improvement on Norman Sharpe's midget receiver, with which, and a two-seater, he did his five hours. The man hanging from his straps in a cloud might receive helpful advice from the "bar pilots"; as vulture calls to vulture one pilot could signal to another that he had found a thermal where there was room for more than one; and the cross-country fiend would no longer need to consign his wife to a dull afternoon by the telephone. Moreover, those on the ground might be able to help a lost pilot to find his position by "direction-finding" his machine, and hence giving him his bearing from the Club House.

The design and construction of the necessary apparatus calls for no very advanced knowledge, but, rather, a lot of ingenuity, while access to a laboratory is a decided help. Before actually describing the circuit arrangements we used, it is worth while examining what are the properties we wish the apparatus to have. Obviously it must be light and compact; it must be easy for the pilot to handle, and the fewer adjustments he has to make during flight, the better. As only small electrical power is available the efficiency of the apparatus must be as high as possible, while the receiver must be very sensitive; obviously, interference from other stations must be made negligible.

By using a "super-regenerative" detector for the receiver all these requirements are met as if by magic. Such a circuit is extremely sensitive and works well on very short wave-lengths, such as five metres, where interference from other stations can be forgotten. The tuning is very broad, and needs no critical adjustment. Finally, we also are given for nothing a very perfect form of automatic volume-control, so that the volume output from the receiver remains practically constant even though the input signal changes enormously.

For the initial tests we decided to use a "transceiver" for the sailplane station, since this more than halves the amount of apparatus required. As the name implies, a transceiver is a combined transmitter and receiver, so designed that the majority of the parts are used for both purposes. Suitable switch-gear is then provided to alter the connections from one circuit to







The Americans appear to find this, too, as is shown by an article in the U.S.A. *Gliding and Soaring Bulletin* for February, 1936, in which was described apparatus very similar to ours. We were agreeably surprised to find that, in one or two respects, and our circuit was superior to theirs, and that their apparatus was far larger and weighed about 25 lbs. A diagrammatic sketch showed it mounted on what looked like an open DAGLING, with a four-foot section of a "fish pole" as an aerial stuck up in front of the pilot's face!

The American wireless amateur is, however, considerably ahead of us. In a paper called "QST" for September, 1933, is a description of some miniature transmitting and receiving apparatus specially designed for use during the National Soaring Competitions at Elmira. Their circuits are identical with ours, and even the mechanical design is very similar. It seems a pity that we in England know so little of what other soaring enthusiasts are, or rather have been, doing!

Of course, a lot more development work remains to be done, and the first big job is to try duplex working (i.e., simultaneous transmission and reception). This would relieve the pilot of having to waggle a change-over switch, so that he could clutch the seat with his spare hand as usual! We have, as yet, very little idea as to the range which can be expected. On the ground the range of five-metre transmissions is usually small, due to the screening effect of hills and buildings, but quite large distances have been covered from the top of one hill to another. The effective height of an aerial in a sailplane at 3,000 feet is so great that quite abnormal results may be obtained, and good signals up to 30 miles are to be expected.

The interest of being able to communicate with people while flying is so obvious that it needs no stressing. If, as seems to be the case, really satisfactory results can be obtained with the addition of only 16 lbs. weight, the loss of aerodynamic efficiency is so slight that it can surely be neglected in comparison with the advantages it brings.

## Gliding Instruction

**A**T the London Gliding Club camps are being held from May 14th to 23rd, June 8th to 17th, July 6th to 15th, August 7th to 16th, and September 7th to 16th. Particulars are obtainable from the Manager, London Gliding Club, Dunstable, Beds.

The August course, we are pleased to be able to announce, will be run in connection with an Anglo-German camp. Last year an Anglo-German gliding camp was held at Siegen, in Germany, and it is hoped that some of those, from both countries, who attended that camp will come again to the present one, and repeat the enjoyable time they had.

The Yorkshire Gliding Club is holding an instruction course at Sutton Bank from August 1st to 14th. Application should be made (quickly, as places are nearly all booked) to Mr. H. T. Blakeston, Spellowgate, Driffield, Yorks.

The Midland Gliding Club is to hold two instruction camps at Long Mynd, near Church Stretton. They are from July 30th to August 8th, and from September 6th to 12th. Both soaring and primary training are



Friends of Wolf Hirth will be delighted to hear he is able to get about again, though they may not recognise him easily in his big black beard—the result of a long stay in hospital. Though unable to walk yet without crutches, he can nevertheless drive a car and fly an aeroplane.

Wolf Hirth was the founder of the famous "University of soaring flight" at the Hornberg, which has now again been thrown open to foreigners.

[Photo sent by Mlle. Lippens.]

available, and pilots with their own machines are also welcomed. Particulars are obtainable from Mr. D. C. Timings, 32, Bunbury Road, Northfield, Birmingham. (Tel.: Priory 1457.)

In Austria there are gliding courses, both elementary and advanced, on the Gaisberg mountain, overlooking Salzburg. The Anglo-Continental Express Co., Ltd., 177, Regent Street, London, W.1, will supply particulars and will also make all arrangements for participants.

The proposed aero-towing course in Poland for British pilots can only be held if at least 15 applications are received. Mr. E. H. Collins, who was collecting names, has now left for a six months' walking tour of continental gliding centres. Those interested can, however, write instead to Mr. Barry Bucknell, 61, King Henry's Road, London, N.W.3. Apart from this, the gliding school at Bezmiechova is usually prepared to take foreign pupils in its ordinary gliding and soaring courses.

The Hornberg School for high performance soaring is now once more admitting foreign pupils, including women pilots. Special courses are held for obtaining, or attempting to obtain, the "Silver C" certificate; these last a fortnight, and the charge for foreigners is RM. 280 (RM. 130 for each subsequent week), plus RM. 3 per day for board and lodging. These courses start on May 26th, June 10th and 27th, July 14th and 31st, August 17th, September 3rd and 20th, October 7th and 24th, and November 10th and 27th. Winch-towing and aeroplane-towing courses are also held. Fuller particulars will be given next month. The address is: Reichssegelflug- Schlepp- und Leistungsfugschule, Hornberg b. Schwäb. Gmünd, Germany.



## Cross-Country Flying

**T**HIS month we record an unusual amount of cross-country flying. Mr. Frank Charles has been wandering from hill to hill over the southern Lake District; Mr. Filmer has picked up cloud lift from the Southdown Club's site; and five cross-country flights were made during April from Dunstable, two of them being from winch launches in the absence of soaring wind.

### Across the Furness Hills

**FEBRUARY 6TH.**—Wind N.W.; bright sunshine; scudding clouds. Launched at Moorside, Ireleth, at 1.52 p.m.; made height quickly to 2,700 ft.; wisps of cloud passing beneath; decided to dash off to Grange-over-Sands on the fringe of Morecambe Bay.

Forced the pace over Ulverston Channel and lost 1,000 ft. The tide was receding when I reached Holker Estate; made a little height and continued to Humphrey Head, a rocky promontory about 150 ft. high and

a terrific hailstorm bit into my cheeks. Left Ireleth for home (Roose) at 1,500 ft. and landed on the beach half-way to Barrow at 4.30 p.m.

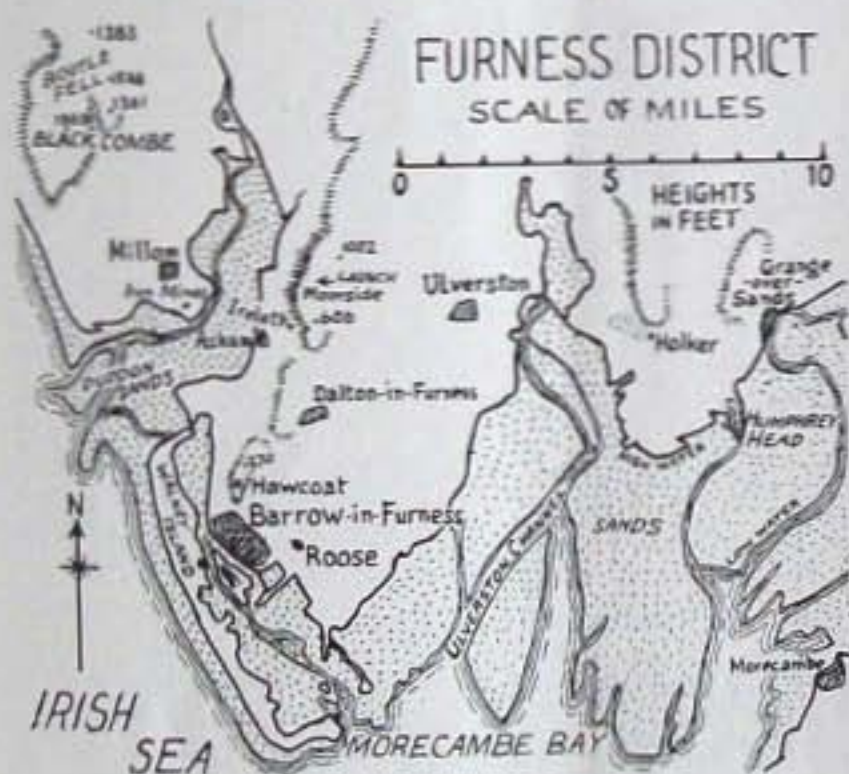
**MARCH 26TH (Good Friday).**—Persuaded Mr. and Mrs. Stevens to accompany me to Black Combe. Reached a point about half-way to summit on Bootle Fells, N.W. face; had to use car as a "Tank" to charge snow drifts. Launched at 3.15 p.m.; got 2,000 ft. above start, and made off to Ireleth across the Estuary. Passed over Millom Ironworks but felt no "kick" from the Molten Pig Beds below. Arrived Ireleth at 800 ft. above S.L.; made height here and left at 1,800 ft., arriving at Roose with 700 ft. to spare; circled down and landed at 5.5 p.m. This felt like real cross-country stuff; distance 14 miles.

F. CHARLES.

### Cloud Flights from South Downs

On Friday, March 26th, W. E. Filmer, of the Southdown Gliding Club, was launched from in front of the Devil's Dyke Hotel in a N.W. wind of 15 to 20 m.p.h., at 1.30 p.m. After a time he noticed some birds circling; so he circled too, finding lift at 3 ft. per second, which increased to 6 ft. per second by the time he was up to 2,000 ft. Meanwhile he drifted towards the east end of Brighton, where he reached 3,300 ft., but refused to be tempted by widespread clouds to the east, being unprepared for a long flight. On the way back, he got further lift about a quarter of a mile to leeward of the front edge of a large cumulus about 1,000 feet above him.

Next day the clouds were flatter, but Mr. Filmer, starting at 1.45, soon got thermal lift to 1,200 feet, soon after which he noticed a cloud street, circled up under it at 3 ft. per second to 2,000 feet, and then flew up-wind under the street till he was 3,000 feet over Henfield. He then returned to the starting-point and maintained this height as long as the cloud street was passing over.



300 yds. long. Could not get more than 700 ft. above sands; beat about here for a long time, had some fun with youngsters on the beach; they answered my queries by scratching replies in the sand.

Landed at 4.20 p.m. and so ended a down-wind dash of 11 miles as the crow flies—but the KITE flew much further.

**FEBRUARY 21ST.**—Decided to try and fly from Hawcoat to Ireleth. Hawcoat is perhaps 200 ft. above sea level; Ireleth is 800 ft. above S.L. Wind from west, strong. Launched at 2 p.m. Could sit over Romney's Quarry, with ground speed nil, but lost height whenever I strayed. Left at 300 ft. and climbed by the "saw tooth" method, nursing all the little hills on the way to Ireleth; arrived just as high as the soaring breast, when up we went and I thought: "this is heavenly"—but soon reversed my opinion, for





## Dunstable to Cornish Hall End

It was the end of the first week of the Imperial College Camp, and peeping at the wind sock at about 6 a.m. we were surprised to see the wind almost so-able. Breakfasting with speed, we proceeded to the hangars and extracted our new KITE and a couple of GRUNAUS, by which time the wind had veered to W.S.W. At 10.20 I was launched by winch to 500 feet, getting hill lift to 800 (above start), from where I saw Rattray launched.

By 11 o'clock the sky had partially cleared, there being patches, and short streets of cumulus, which didn't seem to be trying very hard. Occasionally, however, a patch of lift would be felt, and at 11.30 the big chance came. I saw Rattray, out from the hill and climbing slowly, so, chasing after him, found fairly steady lift of about 1 foot a second, apparently from a short "street" above. Coming to an especially good patch, I started circling and rose steadily at 3 to 5 feet a second until entering the bottom of the cloud at 2,400 feet.

Straightening out, I dived back towards the club, being nearly over Dunstable, but discovered that the lift extended, with varying strength, for some distance along the cloud, so finally decided that an attempt at a cross-country flight was indicated. On turning down-wind, the sinking speed was reduced by cloud lift to 1 foot per second, but a good patch was soon encountered and I circled up to cloud base again.

From thenceforward everything was simple, and after watching Dunstable and Luton pass beneath I became completely lost, and so set about exploring the cloud. Outside its boundaries there appeared to be unbroken down-current, so I scuttled back to its friendly blackness and tried to find a defined region of lift. It was apparently a short street, about one to two miles long and quarter to half mile broad, but edges and centre seemed to give the same sort of lift, which was patchy and showed one to two feet per second on the Slater-Cobb variometer. Interspersed were regions of negligible or no lift, so choosing a good spot at the down-wind end, I circled again and rose slowly to 3,100 feet, at which I again found cloud base.

This, I decided, was real flying, and I blessed the cloud which had so taken me to its bosom, watching the flat country beneath and keeping a wary eye on altimeter and variometer, the faint swish of the passing air and a squeak from the rudder being the only noise.

My wrist-watch informed me that it was 12.30, and lift was steadily growing weaker, but by circling for long periods in six-inches-a-second up-current, an altitude of 2,000 feet or more was maintained for some time. This was finally lost, and although now on the look-out for any lift, the altimeter dropped inexorably to 2,000 and then 1,500 without any saving bump being encountered. Now, flying down-wind to get as much distance as possible, I began to wonder about a landing field, wanting, of course, one with telephone, inn, water h. and c., within a short distance.

The Lord again provided, and right ahead I spotted a small village, smoke indicator, inns and field complete, being the first I had seen for the last 20 miles. Arriving over the field with about 600 feet, I gave it the once-over, circled to lose height, and landed (thanking my stars that Hervey was not there to see it). Time, 1.5 p.m.; sky becoming covered with stratus cloud at about 4,000 feet; lift seemingly all gone.

With the help of some of the forty or so villagers who had miraculously sprung from an apparently sleeping village, the KITE was parked under the lee of a hedge and tied down. An offer of dinner from a friendly farmer was gladly accepted, and after 'phoning the club, a pleasant afternoon was spent shooting rabbits.

Meanwhile, noble work was being done at Dunstable. A car (thanks due to Mr. Simpson) and trailer (thanks due to owners of GREY KITE) were borrowed, materials purchased from a Luton scrap heap were converted to a towing fixture, and the retrieve party set out. The KITE was dismantled and packed at 12 o'clock (midnight), and a tired but happy party returned to Dunstable at 4.30 a.m. the next morning.

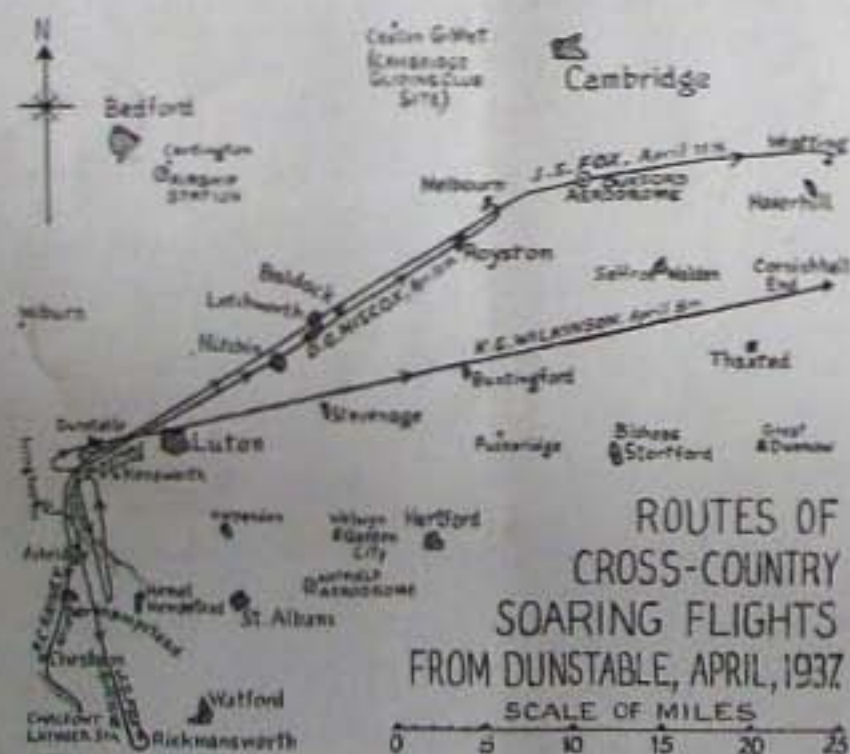
K. G. WILKINSON.

## Dunstable to Great Wratting

[By the flight about to be described, Mr. Fox passed the final test for his "Silver C" certificate, becoming the 11th British holder of this international badge.—Ed.]

Gliding is developing so rapidly in this country that the percentage of people who remember the almost weekly spectacle of the late Eric Collins (first British "Silver C") miles high in his RHÖNADLER is rapidly becoming smaller and smaller. Those, however, who do remember, will be glad with me to hear that I was lucky enough on April 11th to be able to celebrate his birthday in finally qualifying for my "Silver C" by flying his old RHÖNADLER from Dunstable to a delightful little village 46 miles away in Suffolk.

Having been asked by the ADLER's present owner if I would like to come into partnership with him, there could be only one possible answer to such a question: so off we went at Easter for a most enjoyable week-end at the Long Mynd (thank you, Midland Club); but there was no flying. Two more dud week-ends followed at Dunstable, and my patience was nearly exhausted.





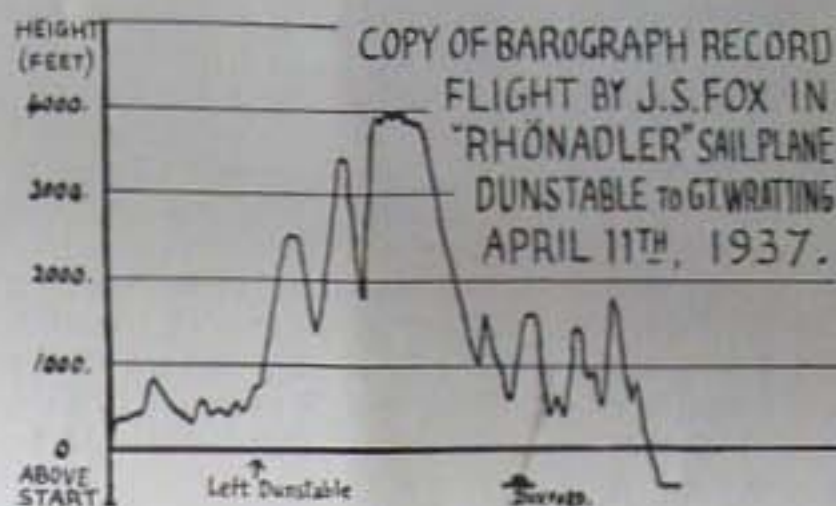
On April 11th I was just recuperating after a day and a half in bed, but a sunny morning and a west wind prevented any mercury at all from showing in the clinical thermometer, and I was up in the ADLER at last for my first trial flight at 11.20 a.m.

I spent some time looking up at KITES and FALCONS, and found that although the ADLER was a lovely thing to fly, it needed a very much better pilot than I to fly it as it should be flown.

It was a day when thermals were about, but they were mostly small and rather weak; and as my first circles in her were enormous, and very badly flown, we didn't get much further, and I failed miserably more than once. However, I very slowly improved and soon was lucky enough to find myself in the clouds at 2-3,000 feet. I still seemed to be almost over the Club, as the upper wind was very small and carried one nowhere, and I had no intention of going away my first time up in such a valuable machine. So with 80 km. on the clock I flew up wind to say how-do-you-do to another skittish little cloud about a mile away, which I had been watching out of the corner of my eye for some time. It seemed quite pleased to see me and gave me a good 2,000 feet lift.

Cloud observations seem to me to be much easier from the ground than when you are up amongst them; but to-day the sun was shining, and away towards Cambridge there stretched a long dark shadow on the ground. That was too much for the old experienced ADLER, and she was round before I could stop her. Back under my first cloud again I circled up to its base at 4,000 feet; then off we went. The clock said 40, 50, 60, 70, 80, 90, 95, and even then we were still going up. (Who said it's quicker by rail?). Here I had reached my first cloud again, which had grown up a good deal while I had been away.

The street had been originally composed of four main thermals, forming four clouds which had enlarged so much that they had practically joined up into one long cloud. It is probably correct to assume in the majority of such cases that the thermals all originate from the same place on the ground. On a nicely unstable morning

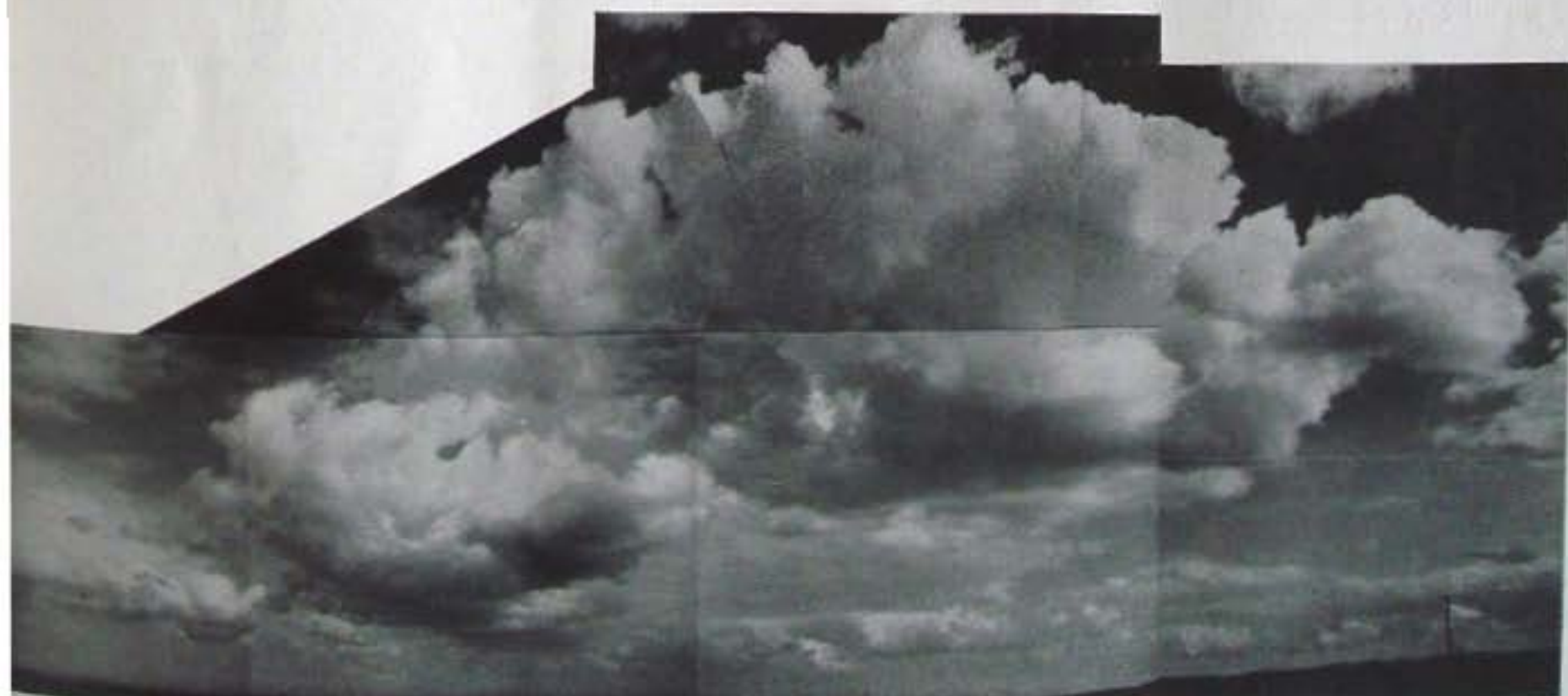


I have often timed the periodicity of cloudlets as they form and float on overhead, and I have usually found their frequency to average about four to six minutes on what would be a good soaring day.

It was a wonderful ride underneath those clouds, with the cloud-base whistling past about ten feet up; but when at one moment it was about ten feet down I began very heartily to wish that my new parachute had arrived. The barograph chart for this period shows a wobbly horizontal line lasting for about 12 minutes, which must have represented about as many miles.

The cloud shadows were going at lover's walking pace over the ground, so I realised that circling would get me nowhere. I wanted to have another joy ride and come back to Dunstable, as the street ended here over Hitchin, and ahead of me was only a huge expanse of clear blue heaven. I then circled round, and to my enormous joy found that I was not alone, and coming up below me was Hiscox in his Kite. I had always hoped that the opportunity would one day come of being able to do a cross-country flight in good company.

A panoramic view of the clouds at Dunstable at 1.45 p.m. on April 11th, looking down-wind. At this time J. S. Fox and D. G. Hiscox were disappearing into the distance under the cloud street seen just left of the centre, half to three-quarter inch above the horizon.





so I waited at the corner of the street. But as bad luck would have it, he was too far out from the best area of lift, and he just couldn't make it. We flew along together, however, as far as Royston, where I saw him go down to land. From then on it was work, not play. Here I was down to 600 feet, and I worked my way, painfully slowly, up to 1,100 feet again.

I left the Cambridge road, and flew by compass (just N. of E.) to find the R.A.F. aerodrome at Duxford, which I had never seen before. It was here that I nearly spun, in my effort to open a huge map in the minute ADLER cockpit; of course Duxford would be just over the fold of the map.

There were four planes up over the aerodrome, and as I approached at 650 feet they all immediately landed; people ran to and fro; the aerodrome was cleared, and everything was ready for my reception. But I had found some gently rising air, and I set my teeth to it once more. My circles, according to my new Cobb-Slater variometer, which works very well, varied between plus 6 to minus 6 inches per second at first; but a quarter of an hour later I left Duxford 1,500 feet below me, and flew away.

Thermals were getting very weak by this time. The barograph chart shows five further peaks, but none of them goes very much above 1,000 feet. Finally, at 3.10 p.m., I saw a little hamlet 400 feet below me. There was a nice grassy field with a gate at the top on to a road, a little white cottage at the bottom with a smoking wind-sock (there wasn't any wind), and a little trout stream by the cottage (there weren't any trout), but I thought that cottage looked just too nice—and it was! The field wasn't so nice, though, as two wire fences, which I hadn't seen, divided my landing area by four; but the old ADLER was feeling like a good horse that had had no hunting for a couple of years and was at last on a cross-country chase again. She laughed, and swished her tail, and sat down gently in the grass. Then I laughed too!

Three very good fellows came and dragged me away from that delightful spot and those charming people, and we all arrived back at Dunstable at 3 a.m.

J. S. Fox.

### Dunstable to Melbourn

The flight of D. G. Hiscox, mentioned above, ended at Melbourn, 27 miles from the start. He flew a little to the south of Mr. Fox, where the lift was less good, and was trying to keep to the line, ruled on his map, which would have taken him the furthest possible distance into East Anglia. He landed in a dead calm.

### Cross-Country off the Winch

On April 25th the wind at Dunstable was from N.N.E. and therefore not "soarable." Nevertheless J. S. Fox, in the RHÖNADLER, and R. C. Rainey, in the Imperial College Club's KIRBY KITE, made cross-country flights by picking up thermals after a winch launch.



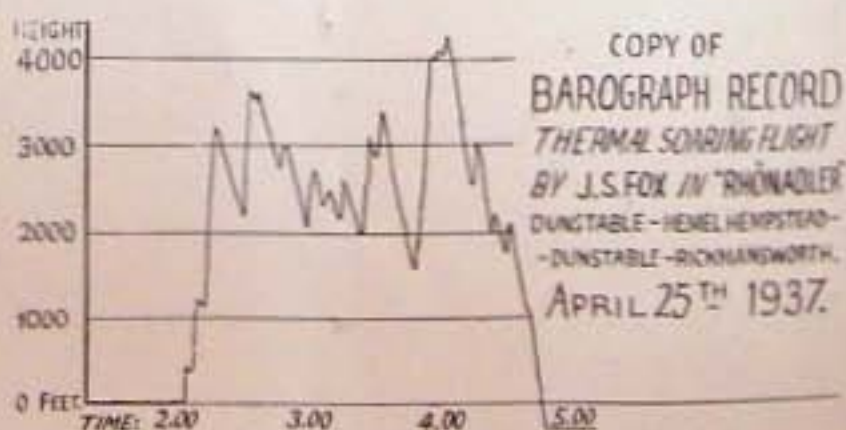
The actual clouds under which J. S. Fox, in the "Rhönadler," got away on a cross-country flight after picking up a thermal off a winch launch. In the original print the "Rhönadler" can just be made out at the bottom of the picture.

Mr. Fox was launched at 2.10 p.m., and slowly rose until at 2.20 he had reached 3,200 ft. At 2.35 he was eight miles down-wind, at 3,800 ft., between Hemel Hempstead and Berkhamstead.

From there he fought his way back to Dunstable, taking nearly an hour over it, and at 3.30 suddenly snooped up behind the hill from Kensworth. Next, he politely showed a lady (Mrs. Price) the way up in a thermal to 3,000 ft. or so; then hopped off to another little cloud.

At 3.45, sinking rapidly and already down to 1,600 ft., he saw Mr. Rainey going up like a rocket; went to join him, circled below him, drew level and then climbed above him. At 4 o'clock the RHÖNADLER was up to cloud level at 4,200 ft. over Ashridge; from there the pilot flew to his home at Rickmansworth, and from 2,300 ft. saw the family having tea in the garden. The sight was too much for him, and he decided to come down, landing in the grounds of a girls' school. But the school holidays were not yet over!

Mr. Rainey reached 2,000 ft. in a thermal over the power-cable slope, then made for Berkhamstead in the hope of finding another thermal, which he did; it took him from 1,500 to 2,000 ft. again. Chesham, however, failed to provide a thermal, so he slope-soared a few miles further and landed by Chalfont and Latimer Station, 14 miles from the start.





## News from the Clubs

### Ulster Gliding Club

The present year's prospects would appear to necessitate a review and modification of our old (and perhaps bad) habit of—more or less—closing down activities for the winter. Increase of membership, which is without doubt due to the two-seater, will, we hope, produce enough keen members to justify flying all the year round. Those who have had to operate machines short-handed will, without doubt, sympathise with the frozen two or three trying to hold down a 57-foot span machine in a 35 m.p.h. wind. Not that we have tried to do this lately, but bitter experience with smaller machines has shown us our limitations.

We dislike being *too* optimistic, but to be truthful we are rather looking forward to pushing off some half dozen *ab initio*s in a secondary machine without any solo training whatever. It may be an expensive experiment, but we have faith in our theory that, for our site at Magilligan, dual instruction will be sufficient introduction to the controls and that landing will hold no terrors with five miles of "billiard table" surface upon which to put down a machine.

However, we fear we waste good space, which might be used to better purpose informing the expectant world how *So and So* on a *SUCH AND SUCH* took a very meritorious "A" with a perfectly flown 30 seconds—!

The autumn months of 1936 produced little of interest except a flight of Liddell's from Binevenagh to Portrush. We have no map convenient, but rumour gives the distance as about 16 miles. A height of 3,700 feet at Binevenagh fairly late on in the afternoon is surprisingly good, but the long glide was free of excitement and he had 1,000 feet in hand when he arrived over Portrush with nothing down-wind except the "salt sea water." Liddell by now has the enviable reputation of knowing all about the only useable landing fields within miles of Magilligan. He has reached the 50 hours mark.

FALCON III. keeps plodding away and has made over 100 training flights this season since Easter.

### Derbyshire and Lancashire Gliding Club

**April.**—Weather during the month has been mixed with conditions on the whole more favourable to primary training than to soaring. Four new "B" licences were obtained, but this is only a foretaste as the number of prospective "A's" and "B's" is now exceptionally large.

The FALCON III. two-seater was first flown on April 4th. This is an improved model with full instrument equipment, and is generally considered to be the best of its type produced so far. It has proved tremendously popular for instructional purposes, and has been kept hard at work every week-end. So far the detachable undercarriage has been used only for retrieving, and has not been found necessary for launching.

The hangar extension, doubling the existing floor space, is now completed, and enables earlier starts to be made in the morning. The additional space is also much appreciated by the various KIRBY KITE, GRUNAU BABY, SCUD, and other private owner syndicates.

Mr. J. Noble has been appointed full time ground engineer as from May 3rd: a bold step from a financial point of view, but one which is expected to justify itself to the full.

The new winch will be ready for the Whitsuntide meeting, and 1,000-foot launches are confidently expected.

From now onwards throughout the summer flying facilities will be available every evening except Monday. Wednesday evening will be devoted specially to primary training.

#### This month's good stories:—

SCENE I.: Winch launch of the NACELLE DAGLING; spectator asked if he would help to hold back the tail. "Yes," says he, "with pleasure, but I've never been up before."

SCENE II.: Circuit of the KIRBY KITE, piloted by Kaye, whose head only just appears out of the cockpit. Old lady, seeing him for the first time as he comes into land, remarks: "Oh look, George, there's someone in it!"

### Midland Gliding Club

**April 18th.**—A light W.N.W. wind made soaring smoothly unexciting with no incident to stir the blood or raise a cheer. But then, perhaps it is better to record 12 hours of orderly flying than the stuff that is known as "news."

Keeble, of the London Club, arrived to make a most hurried visit, but just had time to view the Mynd from FALCON III. before dashing back to Dunstable. We gather that he liked the place, and we were equally pleased to see him.

Griffiths, of the Hereford branch, took an "A" certificate with a flight of thirty minutes—not seconds. This is another interesting example of a pilot trained to soar mainly by dual instruction. Apart from extensive ground-hopping of the 20 seconds variety, Griffiths has learned to fly in the FALCON III. Confidence in this method of training is growing, and other members of the ground-hopping squad should note and be thankful.

**April 24th and 25th.**—Surely no week promised fairer. No west wind blew steadier. Each cloud, piled proudly high, challenged us in passing by. What plans of anticipation! What flights of imagination! Came Saturday's expectation—anti-cyclone and damnation!

Wynne, Hannay, and Everall have purchased the Brooklands GRUNAU BABY II. We mention this in case any member of the club has not been informed. Reilly and Edwards have bought the remains of the club PROFESSOR and intend to improve its lateral control by "bowing" the ailerons. At the present moment the tail is a bit "bowed," but we understand that this will soon be rectified. FALCON II. has arrived back from Slingsby's works. This early and most delightful product of his looks new again and thoroughly inviting for its owner, Bill Hardwick. These three machines, together with TIDDLER (H17) and the rather broody DAGLING, form a fairly imposing fleet of privately owned sailplanes. Given good weather they will probably spread themselves a bit this summer.

### Hereford Branch.

The worst winter for gliding within the writer's experience prevented this branch from flying till Easter week-end. On Easter Monday Mr. Bolton, on behalf of the B.G.A., visited the club and inspected the R.F.D. machine. He complimented the club on its condition after a year's use and 1,200 launches. The branch has operated every week-end since, and even until 9 p.m. on a Thursday evening (and that in April!).

According to programme, the club ground has now been opened up to the top of the hill for regular use. It is hoped that this will make possible many more "A's." In its new form the site is excellent for training to "A" certificate and "B" standard.

Three new members, Picker, Goodwin, and Eades, have started training. In spite of the weather early in the year, members of the branch achieved some notable successes: R. F. James is understood to have obtained his "C" at the Long Mynd, while on February 21st J. Whalley made a most masterly first solo of 16 minutes. On April 18th N. Griffiths also did a first solo of half an hour at the Long Mynd, and his flight, it was reported, was a model of what a first solo should be. Altogether the branch is pleased with itself.

Launches at Hereford from March 28th to April 25th were 207.

### Yorkshire Gliding Club

**Sunday, March 21st.**—Wind N., 20 m.p.h. No hill lift. Shaw circuted the KIRBY KITE, Lingford and Wordsworth the G.B. Later in the day Watson and Holdsworth hopped the FALCON, at the same time testing the new winch.

**Thursday, March 25th.**—Wind N.W., 15 m.p.h. Lingford did 1½ hours in the G.B. Very little lift, but he managed to reach 700 feet.

### Easter Meeting.

**Saturday, March 27th.**—Wind N.N.W., light to 15 m.p.h., turbulent; little lift. Nicholson, Dewsbery, and Bell had arrived with the RHÖSSPERNER. Buxton, Wills, and Doc. Slater were also welcome visitors.



Buxton was first in the air, doing 41 minutes in the HJORDIS. Nicholson and Dewsbury flew the RHÖNSPERER and Wordsworth, Neilan, and Stedman took up the G.B., but conditions were not too good.

**Sunday, March 28th.**—Wind N.N.W., rough. Snowstorms also added to our discomfort. Nicholson soared the RHÖNSPERER, Wordsworth and Lingford the G.B., Barker his SCUD III. The longest flight of the day was seven minutes. A spot-landing competition was organised and was won by Barker.

**Monday, March 29th.**—Poor N.W. wind, practically nil. The KADET was circuted by Hastwell, Fisher, and Dr. Neilan. Hastwell, when flying the G.B., dropped below the edge but, much to everyone's surprise, put the machine safely down on the top. Neilan, flying the HJORDIS for the first time, reached 1,400 feet in a thermal.

**Tuesday, March 30th.**—Wind east. Visitors and members went to Kirbymoorside and were shown round Slingsby's works.

**Saturday, April 3rd.**—Wind N.E., light. Training was the order of the day. Miss McMurdo and Hinchcliffe hopped the DAGLING, whilst later Wordsworth and Sproule circuted the G.B.

**Sunday, April 4th.**—Rain.

**Saturday, April 10th.**—Wind N.W., very light. Wordsworth was launched in the G.B., finding just sufficient lift to soar, but landed after 12 minutes. Verdon-Roe flew the KADET.

**Sunday, April 11th.**—Light variable wind. Rain at times. Training went forward again; Hinchcliffe in the DAGLING, Wareing and Hartness in the HOTS. Heath, Hastwell, and Wordsworth circuted the G.B., and Fisher and Currie the KADET.

## London Gliding Club

The total flying time for the four weeks under review was 124½ hours. For this large amount the new winch is partly responsible. Nowadays, when a soaring wind blows, about half the sailplanes are launched by winch from the bottom; this relieves the congestion at the hilltop and enables more launches in primaries to be made from there; it also reduces the queue waiting at the bottom for a haul up the hill. All this, it might be thought, merely transfers the congestion from the ground to the air, but fortunately more and more pilots are making use of thermal lift and so leave the hill free for others.

**Saturday, April 3rd.**—The Imperial College Club have taken delivery of their new KIRBY KITE just in time for the beginning of their fortnight's camp. Envious London Club members, who have to be content with GRUNAUS, were heard asking about terms of subscription, but were sternly told they must first enrol as students of the college.

Unforeseen snags continue to crop up occasionally in winch-launching. To-day the winch crew watched a car tow a primary machine across their cable and then, when it was safely over, started up the winch. But they hadn't seen that, behind the primary, the auto-launching gear was also being dragged along the ground. The shackle on the end of this caught on the winch cable just as Murray was being winch-launched. Before long Murray found himself being pulled downwards instead of forwards, and hurriedly cast off just as he was beginning to lift the primary's tail off the ground.

On the following day the grey KIRBY KITE undershot on landing after a winch-launch; it caught its wing-tip in the hedge and cartwheeled.

**Thursday, April 8th.**—K. G. Wilkinson, of the Imperial College group, took up the group's KIRBY KITE for its first soaring flight, and celebrated the occasion by landing 43 miles away near Braintree in Essex. The flight is described elsewhere. Just a year and two days before this, Wilkinson, an *ab initio* pilot, got his "A," his "B" followed 13 days later, but we can find no record of his ever having got his "C" at all. However, it couldn't have been his first soaring flight (as well as the KITE's) because we reported last month on an out-and-return flight to a spot five miles up-wind, which he made on March 15th. As to that flight, it should have been stated that it was made under a cloud street, and for some curious reason there was so much smoke being drawn up into the cloud that the presence of lift could actually be seen.

**Sunday, April 11th.**—A terrific day, with a record total flying time of over 47½ hours—and this in spite of the fact that by tea time the wind had dropped and was no longer soarable. It was little more than just soarable even before that, and the air just above the hilltop was sometimes crowded with machines of all degrees of efficiency at much the same level, while others had found thermals and were well up towards the clouds.

There was a lot of cumulus about, all rather irregular except for an occasional cloud street. Between 1 and 2 p.m. cloud lift



Above: six sailplanes helping to pile up the record total of 47 hours' flying put up at Dunstable on April 11th. Below: what happened to them all during a lull.

became pronounced. Fox in the RHÖNADLER and Hiscox in his KITE were seen going off into the distance under a street of massive clouds. This street was immediately followed by another, a little to the south; the units of cloud were seen to be quite separate from each other as they passed overhead. It then became ill-defined, but the FALCON III, two-seater (Wills or Ivanoff) got up quite high under it, and K. G. Wilkinson, in the Imperial College KITE, rose to 2,900 feet.

At 2.15 p.m. there was a lull as a large area of blue sky went over, and nearly everybody came to earth, one after another. Within about three minutes the almost empty landing ground became littered with sailplanes.

Lull or no lull, open primary machines descended from the hilltop throughout the day, 46 descents being made, including one "A," five legs towards "B," and seven "B" tests. Of the 86 launches in soaring (or soarable) machines, 31 were from the hilltop and 55 by winch from the bottom.

"Bonzo" Heath brought his new home-built GRUNAU BABY from Chatham, and flew it, we believe, for the first time. Humphries also tried it, and his verdict was: "Very sweet."

Baker carried out more trials with his two-way wireless set, and with great success, during flights of an hour and half an hour. When flying over the Zoo, two miles away, he talked continuously with people at the ground station, which, being at the clubhouse, could this time employ a mains-fed transmitter and receiver. He turned this way and that in search of thermals, meanwhile telling those below exactly what he was doing, and why, so that they could follow the whole flight and learn how to do likewise when (and if) they get the chance.

In spite of the unprecedented amount of flying, there were no breakages, and hardly any excitement. Once the FALCON III, having been launched too weakly to get off, had to do a ground loop to avoid tobogganing down the hill; and once Briscoe, flying his SCUD below the hilltop during a lull, rounded the Bastion to find that a primary had just been launched from the top and was bearing down on him. He gave a pretty demonstration of the manoeuvrability of the SCUD and its quick response to controls.

By 6 p.m. the wind had veered right round to N.N.E.; yet the clouds, both low and high, were still drifting by slowly from S.W.

After tea, news came of Hiscox's landing near Cambridge, and Fox's at Haverhill, to be quickly followed by Hiscox himself (ovation); but Fox didn't get back till early next morning (ovation by post later). Their flights are described elsewhere in this issue.



Among to-day's visitors was Frank Charles, of the Furness Club, who promised some welcome help for the international competitions.

We have long ago had to give up recording every flight in these columns, but as this was a special occasion, it may be of interest to show how the total of 132 launches and 47½ hours' flying was built up. In what follows, the figures in brackets show the total number of minutes flown by each pilot during the day from one or more launches on the machine named.

RHONADLER.—Fox (180).  
 HISCOX'S KIRBY KITE.—Hiscox (180).  
 DAVIS'S SCUD II.—Davis (98).  
 BRISCOE'S SCUD II.—Briscoe (17).  
 GREEN SCUD II.—Woods (60).  
 WHITE WREN.—Morland (20), Richardson (66).  
 RÜNSPERRE.—Nicholson (130).  
 CAMBRIDGE I.—Turner (125), Simpson (60).  
 CAMBRIDGE II.—Rattray (110), Furlong (165).  
 HEATH'S GRUNAU BABY II.—Heath (25), Humphries (?).  
 BAKER'S GRUNAU BABY II.—Baker (105), Mrs. Baker (23).  
 IMPERIAL COLLEGE KIRBY KITE.—Wilkinson (137), Rainey (123).  
 THREE CLUB GRUNAU BABIES.—Wilkinson (43), A. B. Wilkinson (60), Dent (75), Greig (31), Keeble (64), Burnett (100), Humphries (93, including flight in Heath's), Mrs. Price (26), Ruffle (41), Passold (33), Bucknell (23), Grant (30), Bergel (56), Ellis (4), Hervey (7), Stephenson (40).  
 FALCON III, two-seater.—Wills (71), Ivanoff (50).  
 FALCON I.—Chirgwin (30), H. Adcock (44), W. Adcock (31), Lacey (34), Jones (40), Briscoe (22), McGlashan (3), Slater (14).  
 KIRBY KADET.—Passold (9), Kendall (16), Marshall (4), Jackson (5), Bullwinkle (54), Bolton (2), Holt (2), Price (3), Smith (3), Thomas (1).

NACELLED DAGLING.—Descents from hilltop by Holt, Koch, Crease, Read, D. M. Read, Rutherford, Leak, 2 each; Robinson, Matthews, Bolton, 1 each. Ground-hops: by Matthews, Sellar, Lassam, West, Radcliffe, Royds.

OPEN DAGLINGS (number unspecified).—Descents from hilltop: Cowley, West, Hunter, Wigg, Radcliffe, Lassam, Sellar, 3 each; Miller, Miss Searle, Konreid, 2 each; McGlashan, Widger, 1 each. Ground-hops: Smith, Forester.

**Saturday, April 17th.**—A strong soarable wind from W.N.W. Rain almost incessant. A sky covered with alto-stratus and nimbo-stratus both to-day and Sunday, and a depression with a complicated system of occluded fronts moving from the North Sea to North Germany. What sector were we in? The warm sector, from the appearance of the sky; but the cold sector, from the feel of things on the ground, and from the existence of minor "fronts" which, hidden by the low cloud layer, could only be diagnosed by the local concentrations of heavy rain, and by the heights which some people got. Rattray, in his CAMBRIDGE II., flew towards one of these patches where the rain was heavier and the sky darker than elsewhere, and got up to 1,000 feet at a mile up-wind from the hill. GRUNAU BABIES sometimes got to 800 feet.

The nacelled DAGLING distinguished itself by soaring well above the KADET on two occasions, the pilots being Koch, who got his "C" in a flight of 12 minutes, and Leak (a member of the Dorset Club as well as London), who flew at this height for 25 minutes.

**Sunday, April 18th.**—Yesterday's rain still going strong till the middle of the afternoon. Nevertheless, over 20 hours' flying was done.

The pilot who performed such an excellent "C" flight yesterday, no doubt by flying commendably slowly, to-day flew the same DAGLING slower still, and finished a stalled turn by landing on the golf course, bringing down a high-tension cable on the way. One end of the broken cable was wrapped round his nacelle; the other end, lying on the grass, was still "alive," as somebody discovered who trod on it. It so happened that this cable supplied the golf club house, where all cooking is done by electricity, and that the time of the occurrence was half an hour before lunch. The result was, a few days later, a solicitor's letter on behalf of the golf club on the theme of cold Sunday dinners, and pointing out that the London Gliding Club had already been requested to inform their flying members of the presence of the cable (gliding men being assumed to be blind as well as daft). An incipient law-suit was finally nipped in the bud by the tact of our chairman and manager, who paid a personal call on the golf club secretary.

To-day we were honoured with a visit by a party of five French gliding men. One of them, E. Spire, holds "Silver C" certificate No. 307. He was given a winch launch in Baker's GRUNAU, and soared for 25 minutes in style, holding a good height except when he flew slap into the down-current by the Bowl.

They told us of a forthcoming international gliding competition near Toulouse, but unfortunately we can only attend to one international meeting at a time.

**Monday, April 19th.**—An example of good "staff work": Greig and Stephenson arrived at 6.5 (p.m.); argued till 6.10, got out the winch and the Slingsby GRUNAU, and Greig was soaring by 6.30. Each had half an hour's flight, and everything was put away and hangar shut by 8.15. A contrast: on Friday, two members arrived at 2.15, got two sailplanes to the hilltop by 3.45; wind dropped, each did a glide down of two minutes and then spent over an hour trying to fit the two machines, and one other, into a space too small to hold them. Hangar doors shut by 5.45.

**Wednesday, April 21st.**—A good W.N.W. wind and much excellent soaring, with thermals and cumulus clouds, though nobody reached the clouds—and perhaps it was as well. Rattray, in his CAMBRIDGE II., tried to get up to them in the morning, in the hope of doing something towards a "Silver C." But the Air Ministry's report from the meteorological ascent at Mildenhall at 11 a.m. was "ice accretion in cumulus from 6,000 to 8,000 feet," the cumulus base being at 3,800 feet. While he and Hervey were soaring a big shower came along, followed by a flat calm which brought them both down—curiously enough, the only lull in the wind throughout the day.

In the afternoon the best thermal lift seemed to be over the club ground, and worst over the Zoo, but sometimes these conditions were reversed. A party of members from Cambridge added to the gaiety, and six machines were in action, including the two-seater.

**Machines.**—The Briscoe brothers have bought the Armstrong-Fox-Dent SCUD II.; the Adcock brothers, of Leicester, have sold their PRÜFLING to Dorset, and Seth Smith is keeping his SCAUP (TOTTERHOE type) with the same club; the Brooklands GRUNAU has been sold to Mr. Everall of the Midland Club.

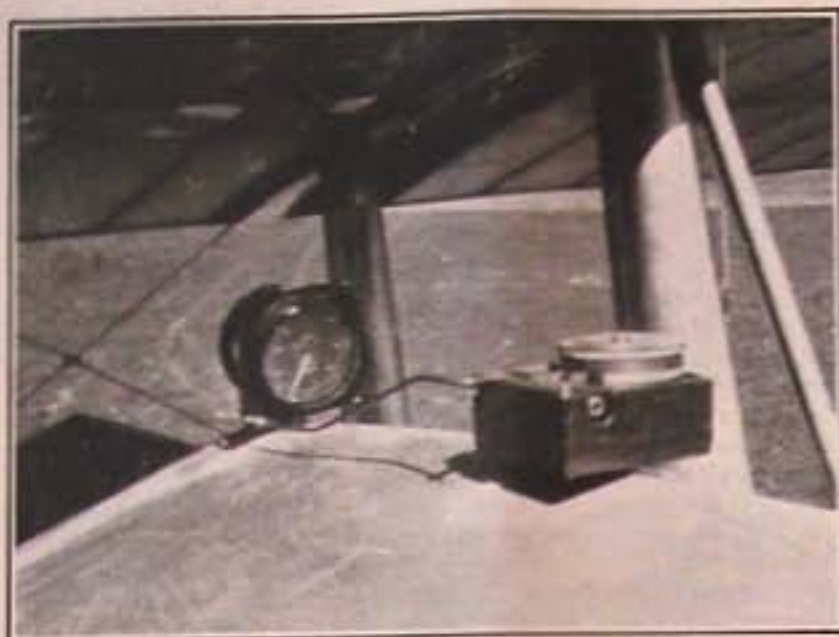
**Correction.**—The strength of the aero-towing cable used on March 21st was 20 cwt., not tons, and the weak link 10 cwt.

**Held Over.**—News for April 25th, when several soaring flights were done in thermals from a winch launch; and an account of the Annual General Meeting on April 30th.



A group of French gliding men who visited the London Gliding Club on April 18th. One of their number, E. Spire, is a "Silver C" pilot, and is seen on the right in the cockpit of G. B. Baker's "Grunau Baby," which he flew.





Meteorological research: an apparatus fixed on the London Club's "Falcon III" by Professor Brunt. It consists of a cinema camera which, when switched on by the pilot, proceeds to take a photo of a sensitive altimeter every half second.

### Summary of Flying.

Date.	Ground-hops.	Winch launches.	Hilltop launches.	Flying Time.
Mar. 29, Monday	86	57	—	2 25 30
" 30, Tuesday	16	—	—	— — —
Apr. 2, Friday	61	—	—	— — —
" 3, Saturday	79	9	—	22 30
" 4, Sunday	78	35	14	1 47 0
Apr. 5, Monday	72	9	—	27 0
" 6, Tuesday	63	5	—	11 30
" 7, Wednesday	21	—	—	— — —
" 8, Thursday	35	6	—	11 34 0
" 9, Friday	77	6	—	12 30
" 10, Saturday	52	14	1	44 18
" 11, Sunday	12	55	77	47 39 8
Apr. 12, Monday	37	—	—	— — —
" 13, Tuesday	52	8	—	20 0
" 16, Friday	—	—	1	2 0
" 17, Saturday	—	5	15	12 6 30
" 18, Sunday	34	33	61	20 26 41
Apr. 19, Monday	—	4	—	5 30 0
" 21, Wednesday	—	24	—	11 30 50
" 23, Friday	—	—	4	1 51 0
" 24, Saturday	57	2	—	5 0
" 25, Sunday	98	44	—	7 3 30

### Certificate Flights.

April 4th.—Widger, "A."  
 April 10th.—Hunter, "A."  
 April 11th.—Wigg, "A"; Cowley, "B"; West, "B"; Hunter, "B"; Radcliffe, "B"; Scler, "B"; Lassam, "B"; Robinson, "B"; Fox, part "Silver C."  
 April 17th.—Koch, "C."  
 April 18th.—Wigg, "B"; Beasley, "B"; Millar, "B."

### Totals.

Week ending	Launches	Flying Time	Certificates
April 4th	435	4 hrs. 35 mins.	1
April 11th	505	60 hrs. 48 mins.	10
April 18th	246	32 hrs. 55 mins.	4
April 25th	233	26 hrs. 9 mins.	—

From January 1st to the last week-end in April, 1937, the total number of launches was 2,548, and total flying time (excluding ground-hops) 303 hours 16 minutes.

### Furness Gliding Club

Owing to the indisposition of our recognised correspondent, our contributions to these columns seem to have lapsed since about August last year. Meanwhile, good sport and valuable training has been enjoyed whenever conditions permitted.

Auto-towing, suggested years ago, and now made possible by Charles and Allen providing the motive power, has proved a great success. The B.A.C. II, has proved a robust mount on the short towing wire, beginners having been towed air-borne for a mile or more along the beach. Smith, Allen, and L. Redshaw are now making circuits in the Hots after towing with a 1,800 foot wire. All three have sufficient flights to their credit to qualify for "A" and "B" certificates, but evidently prefer to spend their money in flying fees instead of certificates.

Mr. and Mrs. W. A. Stevens have spent more time than they care to record building a new sailplane of GRUNAU Baby class, the workmanship and finish being truly magnificent.

Heavy rains and snow caused the approaches to the Ireth Site to become very treacherous. Frank Charles, with characteristic ingenuity, has overcome the difficulty, and flies from Barrow to the site and vice versa. It is easy to fly six miles downstairs in the KIRBY KITE and quite possible to do the upstairs journey as well.

Charles has flown home to Roose at least eight times; three of his recent flights are worthy of special mention and are best related in his own words. (See elsewhere in this issue.)

**Sunday, April 11th.**—Perfectly calm day, so concentrated on giving the new members some experience of catapult launching. Skirrow's put an end to the day's proceedings with a perfect pancake landing.

**Sunday, April 18th.**—Wind north and too weak for soaring. Charles once more proved that the rather ancient looking Hots is still structurally perfect by two flights which involved voluntary corkscrew turns.

**Sunday, April 25th.**—An excellent day with a very gentle south-west wind in the morning, strengthening and veering to the west in the afternoon. Smith, Allen, and L. Redshaw had their first experience of a launch from the top of the site. All made creditable flights, showing the value of the experience from auto-towing. To finish the day Smith took off in the Hots, and after an excellent and partly successful effort at soaring in the dying wind, landed the machine on the Askam sands. This five-minute slip earned him his "B" certificate. Charles took off in the KITE, but a calm spell compelled him to land half way down the breast. After a pause of ten minutes he re-launched and soared without any trouble. This flight was for the benefit of testing a newly-acquired compass, and for those in doubt the procedure is, according to Charles, a mixture of stalled turns, violent side-slips, and a "falling leaf." The same pilot has just become the proud owner of a parachute, and as we are making an effort to purchase a two-seater, he will, no doubt, be seriously considering making a trial drop to see if it is up to specification.

Within a fortnight Steven's GRUNAU will be flying, and that means the start of the competition between him and Charles for the honour of being the first to fly to Sutton Bank.

**Annual General Meeting.**—This meeting, held on April 4th, and presided over by Captain John Fisher, marked the conclusion of the club's first year as a private limited liability company.

In opening the meeting, the chairman apologised for the absence of the president, Commander Sir Charles Craven, who was away on business. Captain Fisher pointed out that the club had been continuously active since October, 1930. Although the past year was one beset with vicissitudes, he thought the club had emerged with credit, and referred with some pride to the cross-country flights of the more advanced members.

The secretary, Mr. L. Redshaw, in making his annual report, reminded members that the company provided all the equipment necessary to give efficient training in motorless flying, and also soaring facilities for advanced members, with limited hangar accommodation for machines privately owned. The club possesses one B.A.C. II trainer, one HOLS DER TEUFEL and a KIRBY KADET, all in airworthy condition; also a B.A.C. IV, which needs extensive repairs. Training by means of auto-towing had become very popular; thanks to F. Charles and his mid-week squad, the system had become well developed and comparatively safe.

A special appeal was made asking all members with qualifying flights to their credit to apply for their Royal Aero Club certificates. Good attendances are essential to better progress, and all information regarding flying arrangements is available any Sunday up to 11 a.m. at the Workshop, Hawcoat.

The following officials were duly elected: President, Commander Sir Charles Craven; chairman, Captain John Fisher; vice-chairman, J. S. Redshaw; hon. secretary, L. Redshaw; joint instructors and ground engineers, W. A. Stevenson, F. Charles. Committee: R. Cuthell, S. Burnett, B. Winder, W. Smith, Lieut. Bruce Kingsmill, R.N.



### Southdown Gliding Club

During the Easter training period the following certificates were gained: "A's", Stevens, King, Cox, Gadd, Parker and Smith; "B" and "C," Stevens.

Two thermal flights by Filmer in his GRUNAU BABY are described elsewhere; they may prove interesting from the point of view of an apparent contradiction of previously-stated theories that such flights near the coast in this country are scarcely possible. As a result of these two flights and of several thermal-soaring flights which he has previously made in this district, the pilot has formed the opinion that conditions locally for such thermal soaring are of quite normal occurrence, and fairly pronounced in character.

### Newcastle Gliding Club

Cramlington has proved an extremely convenient training ground, and its use has enabled us to maintain good attendances and satisfactory progress throughout the winter. We are therefore pleased to be able to report that we have succeeded in negotiating the lease for this site, including hangar and club rooms. Our secretary appears to be enjoying himself in the centre of a sea of wallpaper samples, colour schemes, and devices for extracting money from members to pay for redecorations. We have also to record our gratitude to Geo. Coates for presenting us with his Morris as a retrieving car.

**Easter.**—We had a very good attendance of members and visitors, and were able to get in plenty of training except on Saturday when there was rain and a strong north wind. On Good Friday the GRUNAU BABY was delivered from Kirbymoorside and on Monday a new DAGLING arrived. On Sunday we were very pleased to welcome Mr. A. L. George, the "Father" of flying in our area. After watching the training he decided to join the club and took his "A" certificate on the same afternoon. On Sunday also W. E. Gore, T. Richardson, J. G. Boss and N. J. Massey took "A" certificates, and on Monday, March 29th, Richardson qualified for his "B."

Total launches for the week-end: 129. Certificates taken: five "A" and one "B."

**Week ending April 4th.**—The weather was damp and at times very foggy, but a reasonable amount of primary training was done, a total of 71 launches being made.

**Week ending April 11th.**—No flying on Wednesday this week, but we had a really sunny week-end. Bill Taylor decided to remove the front panel from the DAGLING nacelle, presumably to modify the shape of the hook. Total launches, 42.

**Week ending April 18th.**—Weather rather showery, but 72 launches were made over the week-end, Philip Taylor taking his "A" certificate and Burningham his "B."

**Week ending April 25th.**—Wood put up a nice performance in the Nacelled DAGLING and was promoted to the GRUNAU. "A" certificates were taken by Roberts and V. Green, while Massey comfortably passed his "B" tests, bringing our total for the month to eight "A" and three "B" certificates.

### Rochdale Gliding Club

Previous to Easter no flying was done for six months, as the club, whilst obtaining a good site, lost several members owing to the increased distance, and the site needed much preparation. Flying, however, has started in earnest since Easter, and flights up to "A" certificate standard are at present being done.

The new site is at Shuttleworth, about five miles from Rochdale. The club keeps a nacelled DAGLING and auto-launching gear in a small hangar on the site.

### Dorset Gliding Club

**Easter.**—Several members and friends spent this holiday on the site. Weather conditions precluded any flying until late on Easter Monday, but those present filled in the time with odd jobs and quite enjoyed the holiday.

**Sunday, April 4th.**—A good assembly of members welcomed the newly-acquired PRÜFLING, which arrived in its trailer early in the morning. The Nacelled DAGLING was flown from the hangar slope and later in the valley below.

**Sunday, April 11th.**—"B" pilots flew the DAGLING from the top with its nacelle, which was then removed for training beginners.

**Sunday, April 18th.**—Wind too much in the west. Laver, whom we were very pleased to have with us again, was rather literally "let down" owing to the wind backing more than he expected, giving those who knew anything about it a few moments of anxiety. Later, he very nearly soared. We might

have tried out the new PRÜFLING in the conditions, but two new members turned up to be trained down below.

**Saturday, April 24th.**—Wind not strong but annoyingly variable. After useful work with the open DAGLING it was tethered in the lee of the hedge, the evening being calm, ready for an early start next morning.

### Portsmouth and South Hants Gliding Club

This new club is directed by a syndicate who were all members of the former Portsmouth and Airspeed Gliding Clubs. We have been successful in obtaining and rebuilding the premises of these two former clubs.

The machine we have in service is a nacelled DAGLING which stands up to a lot of hard work. Also R. E. Clear, the club secretary, has a FALCON I, which is at present undergoing repairs.

Flying commenced on Good Friday afternoon and six flights were made from the top of the hill. Next day R. Kirton ("Blondie") came in on one wing and "lent" both spars.

On Sunday, April 11th, the machine was ready to fly again and training continued all day. On the following Sunday the car got stuck out in the pouring rain. Sunday, April 25th, was a fine day, when Clear, Lympsey, Parslow, and Lane enjoyed themselves on the northern slope of the hill.



A group of members of the Portsmouth and South Hants Gliding Club, photographed at Easter.

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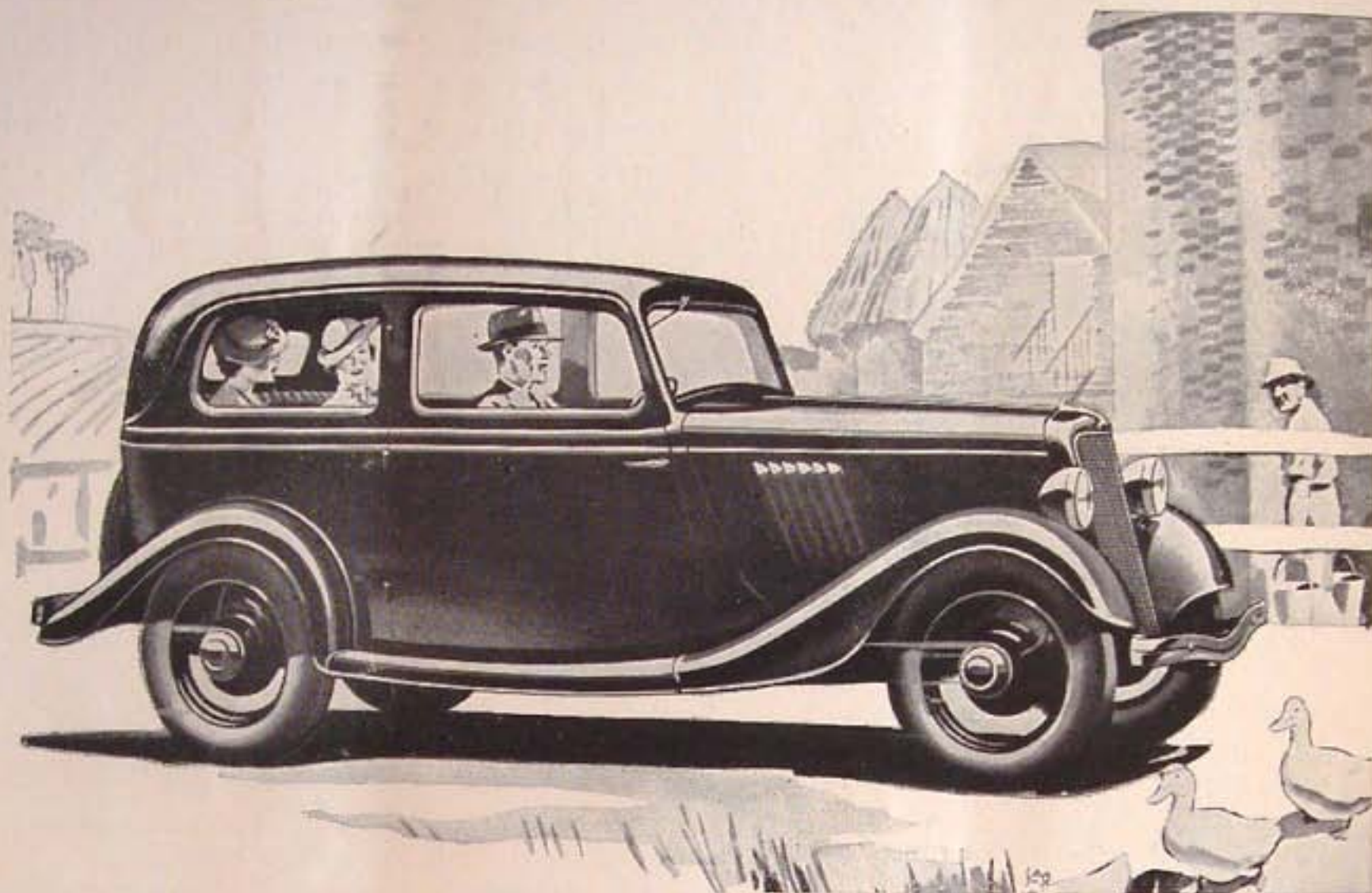
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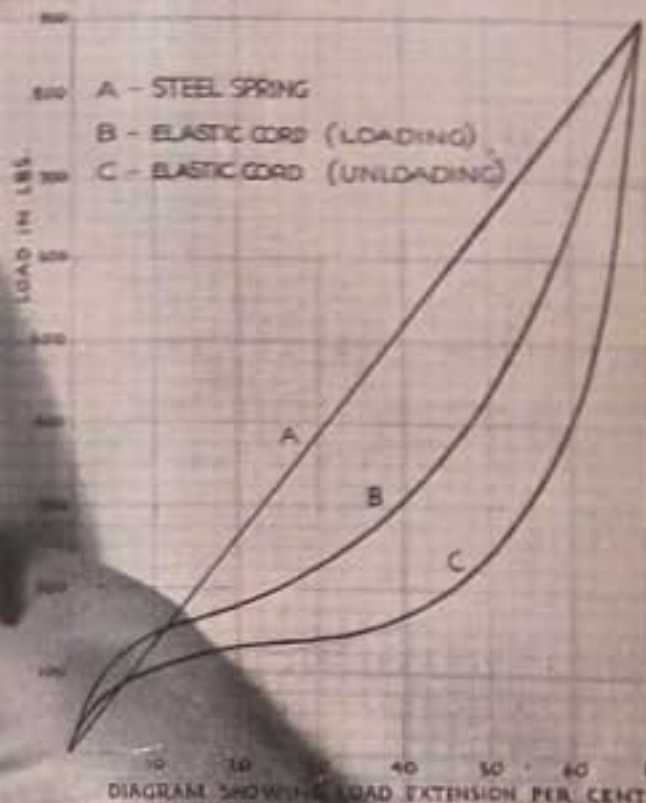
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