

SAILPLANE

J U L Y
1936
Vol. 7 No. 7

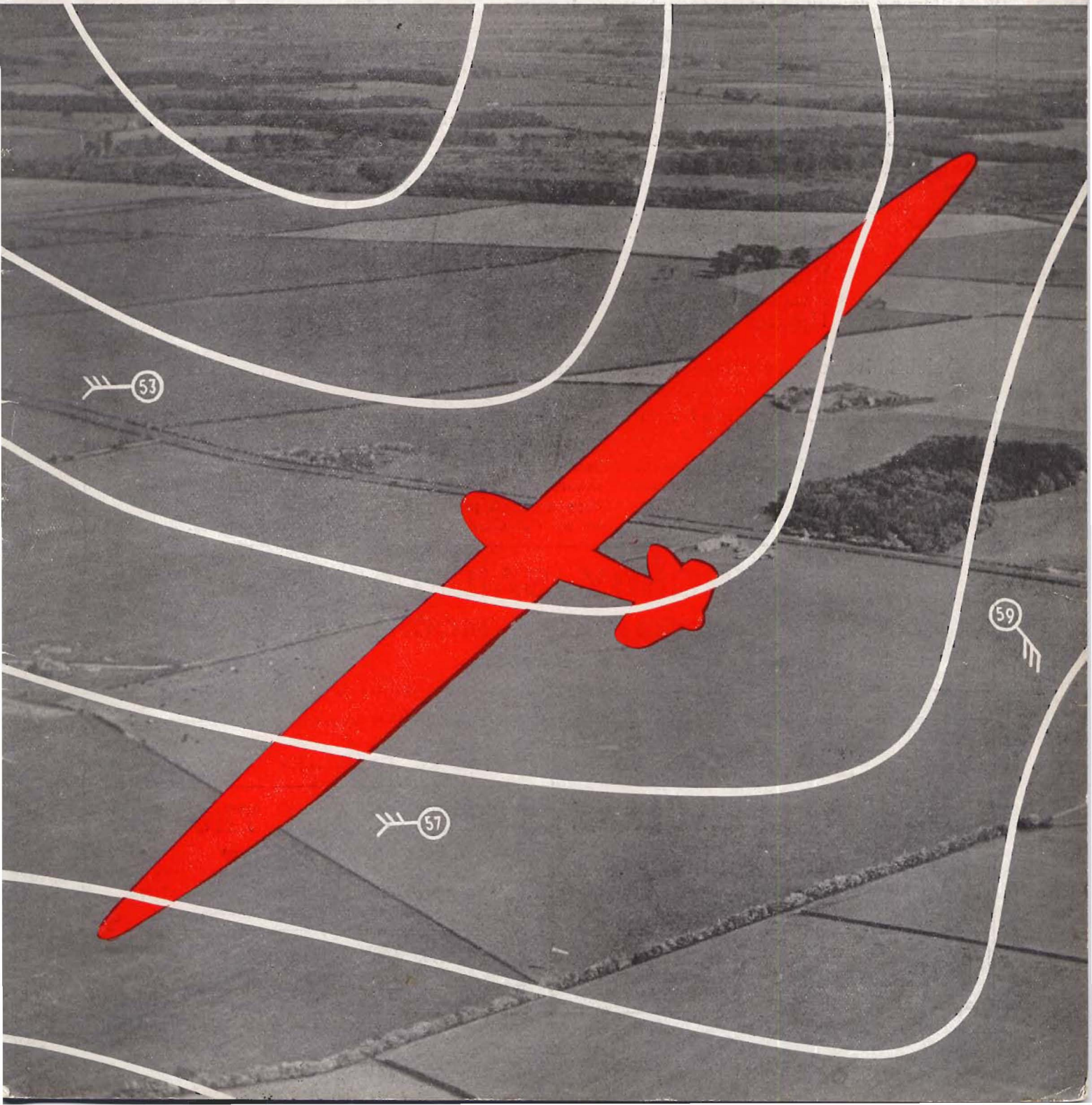
AND GLIDER

PUBLISHED
MONTHLY

Editorial Offices:
13, Victoria St., S.W.1

Official Organ of the British Gliding Association

EDITED BY ALAN E. SLATER



SLINGSBY SAILPLANES

RECENT RESULTS!

Using our full range of training machines: Primary, Kadet, Falcon I, and Falcon III side-by-side dual two-seater, the Midland Gliding Club secured the following results in two consecutive week-ends:—

**14 members' qualified for "C" Certificates; and
9 for "B" Certificates.**

Using a Slingsby Sailplane, Flight-Lieut. Watt, of the Yorkshire Gliding Club, qualified for the Silver "C" Certificate, with a flight of 45 miles (maximum height above start 5,200 ft.), and carried out the 5 hours duration test two days later.

PRIMARY	£52	10s.	} With C. of A. Ex Works
KIRBY KADET	....	....	....	£85	0s.
FALCON I	....	....	....	£130	0s.
G.B. TYPE	....	....	....	£125	0s.
KIRBY KITE...	....	....	....	£145	0s.
FALCON III (Two-seater)....	....	....	....	£200	0s.
HJORDIS	£190	0s.	

Quick deliveries; several machines in stock; large stocks of materials, fittings and spares.

FREE ADVICE on Club formation, choice of sites, training methods and equipment.

AERO PLYWOOD—Specially manufactured with damp resisting cement film, and to give maximum torsional strength. Both surfaces sanded to a high finish.

1.0 mm. and 1.5 mm. thicknesses, 4½d. per sq. ft.

2.0 mm. thickness, 4¾d. per sq. ft. Carriage forward. Write for samples.

SLINGSBY SAILPLANES

Office and Works: **KIRBYMOORSIDE, YORKS.**

Telegrams: **Sailplanes, Kirbymoorside.**

Telephone: **5.**

FOR SALE

"SCUD II" SAILPLANE

New late 1934. Flying hours about 45.
In excellent condition. Owner taking
delivery of a new and larger machine.

Price £70

Apply—
L. H. BARKER,
66, Highgate Hill
London, N.

FOR SALE : £35

"HOLS DER TEUFEL" SAILPLANE

Recently overhauled and fitted with reflex ailerons,
giving excellent lateral control.

S. B. BAKER, London Gliding Club,
Dunstable Downs, Beds.

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. 7 No. 7

JULY, 1936

Published Monthly

Coming Events

B.G.A. Competitions, 1936

The Annual Competitions of the British Gliding Association will be held from **Saturday, August 29th, to Sunday, September 6th**, inclusive, on the site of the Derbyshire and Lancashire Gliding Club at Bradwell Edge, Great Hucklow, Derbyshire.

All competing machines must carry a current Certificate of Airworthiness, and be insured for competition flying against Third Party risks to a minimum of £1,000.

Competitors' barographs must have been calibrated during 1936. This can be done through the British Gliding Association at a specially low charge.

Entry forms, obtainable from club secretaries, or from the B.G.A., at 119, Piccadilly, W.1, should be filled up and sent in as soon as possible.

Sutton Bank Annual Competitions

These Competitions will take place from **Saturday, August 15th, to Sunday, August 23rd**, inclusive.

In the early months of the year these Competitions were advertised for the last fortnight in August, but, rather than cause any interference with the B.G.A. Competitions, the last week of the Sutton Bank Competitions has been cancelled and the prize money which would have been offered for that week has been added to the first week's prize money.

It is not expected that these Competitions will interfere in any way with the B.G.A. Competitions which take place at a later date at Camp Hill on Bradwell Edge.

Substantial Prizes and trophies will be offered for outstanding flights, and there is a possibility of a Big Sur-Prize in this line; so Keep This Date Open. It may be well worth your while.

All pilots, machines and members of visiting clubs will be heartily welcomed in our usual Sutton Bank manner.

The new hangar, with ample accommodation for ten machines, will be completed, and there are three resident two-seaters at Sutton Bank for those who wish to have dual instruction.

Next month's issue of THE SAILPLANE will include final details of the prizes and trophies to be offered during this competition week. A special feature will be prizes for less experienced pilots.

Bank Holiday Week-end

The Southdown Gliding Club's postponed opening ceremony for the new buildings (see News from the Clubs) is now to be held on Saturday, August 1st, at 4 p.m. The Mayor and Mayoress of Brighton will perform the ceremony, after which there will be demonstrations in which Herr Robert Kronfeld will take part. A two-day series of inter-club competitions will follow; prizes for these include three cups, two tankards and money prizes up to £5.

The Yorkshire Gliding Club's social flying meeting with members of other clubs and private owners will take place from August 1st to 3rd inclusive.

The "Silver C" Certificate

For this international certificate three test flights must be made: Duration (5 hours), Altitude (1,000 metres above start), and Distance (50 kilometres). The British Gliding Association holds a number of records of flights made by pilots who have done part, but not all, of the required tests. For the guidance of these, and other prospective "Silver C" pilots, the Association has issued the following particulars of what is required by it in support of an application for a "Silver C" certificate:—

DURATION FLIGHT.

1. At least one certificate signed by an Official Observer and a second witness of the time of take-off and of landing, and certifying that no intermediate landing was made.

2. If a cross-country flight lasts for more than five hours a certificate of the start and landing would be required, also the barograph record.

ALTITUDE FLIGHT.

1. A certificate of the take-off signed by an Official Observer and a witness.

2. A barograph record.

DISTANCE FLIGHT.

1. A certificate of the start signed by an Official Observer and a witness.

2. Certificate of landing signed by two local witnesses.

3. A barograph chart.

All these documents should be forwarded in complete form to the Secretary of the B.G.A.

The distance and altitude requirements may be complied with in a single flight, but duration must be separate.

From Here and There

Charge for "Silver C."—Starting from No. 201, a charge of RM. 3, to cover expenses, will in future be made by the International Commission for the Study of Motorless Flight in respect of each "Silver C" certificate granted.

* * *

The Lowe-Wylde Fund.—Donations to this fund totalled £866 11s. at the end of June. The fund is to provide for the children of the late C. H. Lowe-Wylde, pioneer of gliders and ultra-light aircraft. £1,100 is required, and further donations should be sent to Mr. E. C. Gordon England at London Air Park, Feltham, Middlesex.

* * *

Gliders and Game.—Owners of shooting rights, who contend that gliders disturb game, will have difficulty in explaining how it is that a silver pheasant has seen fit to make her nest within 25 yards of the entrance to the Midland Gliding Club's hangar on Long Mynd. The club chairman, Mr. C. Espin Hardwick, who writes to *Country Life* describing the occurrence, states that the bird is sitting on a clutch of 15 eggs, and appears to show no sign of distress, in spite of the fact that landing machines pass a few feet over her head.

* * *

Sinking Speed of the "Condor II."—Last November we published a report that actual measurements had shown the sinking speed of the CONDOR II. sailplane to be half a metre per second when flying at 55 km. an hour, and two metres per second flying at 140 km. an hour. One or two readers have pointed out to us that the latter figure would be theoretically impossible in still air, and now the German Research Institute for Soaring Flight has published the following statement: "The sinking speed values given are for a solitary occasion, so that no generalisations can be made from the measurements, on account of the uncertainty of the atmospheric conditions prevailing at the time. Consequently the values obtained are not to be regarded as finally valid for an estimation of the aerodynamic efficiency of the sailplane."

* * *

Out of Control.—Somebody calling himself "Waterman," who writes to the *Western Gazette*, had the shock of his life when he visited Maiden Newton to inspect Yeovil's water supply. "My first surprise," he says, "was that there was a few stalwarts lugging a glider about the field with a car, and the second and greater surprise that the Yeovil Corporation had no objection to this machine being flown by all and sundry, from the top of the hill, near to, or even over the top of the pump house. Gliding is a sport—water supply a necessity, and it is unimportant what happens to the so-called pilot should he put the machine through the top of the pump house. But what about the debris fouling the running machinery?" Without waiting to explain whether he means the debris of the machine or of the pilot, the writer demands peremptorily that the City Fathers "should look into the matter before it is too late!"

A Barograph for Models.—The instrument described on page 111 of our last issue was stated to contain a barometric cell which, by elongating, "removes" the barograph chart. Actually it moves it along—displaces it. We had only an English translation, but have now seen the original German text, in which the word is *verschiebt*.

* * *

A Light-weight Parachute.—The firm of Joachim Richter, Neue Ansbacher Strasse 9, Berlin W 50/33, sends particulars of a new parachute suitable for sailplane pilots, known as the "Fleck-Fallschirm," selling at RM. 625 *ex works*. It weighs only 7½ kgs. (16½ lbs.), inclusive of packing and harness, and packs into a space 14 x 14 x 7 inches; one man can repack it in 15 minutes. The sinking speed is 5 to 6½ metres per second.

The First Channel Glider

The regrettable aeroplane fatality at Reading on June 2nd, whereby Mr. Lissant Beardmore, once well known as a sailplane pilot, lost his life, brings to memory an exciting series of incidents which took place five years ago in connection with the offer of a £1,000 prize by the *Daily Mail* for the first out-and-return crossing of the English Channel by a glider, aero-towed starts being allowed.

On June 20th, 1931, the opening day of the competition, it was won by Herr Robert Kronfeld.

But on the previous day, with the co-operation of the *Daily Express*, Mr. Beardmore had crossed the Channel in a PROFESSOR, in order, he said, to secure for Britain the honour of the first crossing (he was a Canadian by birth). According to Press reports, he started from Lympne aerodrome in tow of an Avro 504K aeroplane at 4.20 p.m., climbed to 12,000 or 14,000 feet, cast off over Folkestone, and glided down to St. Inglevert aerodrome, where he landed just after six o'clock. The machine was, however, according to THE SAILPLANE, not cleared from Lympne till 5.30, yet it was reported from St. Inglevert at 6.3. Consequently the exact point of release from the towing cable has always remained a subject of controversy, especially as the flight was not officially observed and no barograph was carried.

But there was no doubt of the stoutness of the effort, for Mr. Beardmore had at that time had very little experience of flying, and was, moreover, in his fifties.

Stop Press

A new British Distance Record for soaring flight has been set up, as we go to press, by Mr. P. A. Wills, who flew the HJORDIS from Dunstable Downs to Pakefield, near Lowestoft, on July 6th. The distance is about 105 miles. A full description of the flight will appear in our next issue.

This Sailplane Weighs Ninety Pounds



We do not know whether the low weight claimed for the "Merlin," illustrated above, is obtained by spring balance or by "guesstimation." But it can fly. Mr. W. E. Hick, of the Newcastle Gliding Club, its principal builder and designer, is seen in the cockpit. The span is 34 ft. 4 in., area 80 square feet, and wing section Göttingen 652.

Adding a Little Engine

The experiment of combining light aeroplane flying, gliding, and soaring, all in the same club, is about to be made by the Preston and District Gliding Club, as we reported last month. In a letter to *THE SAILPLANE*, Mr. Leonard E. Falla, hon. secretary of the club, explains the reasons which have induced his club to make the change. He writes:

"With reference to the paragraph under 'News from the Clubs' in the June issue of *THE SAILPLANE AND GLIDER*, the Press report that we are installing small power units in our sailplanes is quite correct.

"There are many members of the Preston Club, the Lancaster and Morecambe Aero Club, and enthusiastic people in this district who wish to fly ultra-light aircraft at a cheap rate. In equipping some of our machines with engines we are meeting the persistent demand of those people who are adverse to journeying to distant soaring sites with an 'odds on chance' that when they arrive weather conditions will not permit of sufficient good flying commensurate with the expense and time involved. With ultra-light aircraft we can operate on our own door-step and fly under weather conditions that entail sailplanes being limited to 'hopping' or remaining in the hangar.

"Further, the cost to members of flying ultra-light aircraft compares very favourably to that of flying sailplanes. To some it will be cheaper, bearing in mind the expenses of transport, hotel or other accommodation, and as already pointed out, short of raging gales and definitely bad weather, small powered craft can be flying from dawn till dusk.

"This does not mean that the Preston Club will cease to operate in gliding and soaring. Our activities will still continue in this direction. In the acquisition of ultra-light aircraft we feel we are taking a step in the right direction, opening up a wider field of scope and realising more fully the success at which we aimed with the inauguration of the club six years ago."

The National Soaring Competition in Poland

This annual event, which is being held this year from June 28th to July 12th, is being run on slightly different lines from those of previous years.

Participation is very restricted. Candidates for participation have to be qualified by a special commission. They must at least have done 15 hours' soaring, including one flight of not less than two hours, and must also have been trained in flying in tow of an aeroplane. It is expected that only about 30 contestants will be allowed to take part, and there are to be teams, which is an innovation. The L.O.P.P. (League of Aerial Defence), which is organising the competition, is putting up the largest team, and other clubs will make up the numbers.

Points awarded for each performance will decide the issue of the contest.

Special prizes are reserved for those who may improve on the records of last year, which were:—

Duration, Olenski: 20 hrs. 13 mins.

Altitude above start, Wlodarkiewicz: 2,630 metres (8,628 ft.).

Distance, Offierski: 210 km. (130 miles).

Distance with return to starting point, Brzezina: 27 km. (17 miles).

It appears likely that the prizes for the four principal records will not remain unawarded.

The direction of the competition is in the hands of Major Bajan, winner of the International Touring Competition of 1934. Only Polish designed sailplanes are competing, with the S.G.3, the Mosquito and the C.W.5, known from last year's competition, and the S.G.3 bis together with the "Gull" two-seater designed by Mr. Kocjan, which are making their first official appearances. Only sailplanes stressed for aeroplane towing are allowed by the regulations.

Exhibitions of aerobatics on sailplanes will complete the show.

A. T. LUTOSLAWSKI.

Soaring in Michigan

"**F**ORTY Years On" might well serve as the title for this article, for it was in the summer of 1896 that Octave Chanute set out from Chicago with what must have been the world's first "gliding group," to glide over the sand dunes on the shores of Lake Michigan.

And now, at the other end of the lake, there is again a gliding group operating, and gliders are once more being flown over the dunes that border the lake shore.

The A.B.C. Glider Club of Detroit, Michigan, have been reading in *THE SAILPLANE AND GLIDER* of the activities of the Ulster Gliding Club, and they were so struck by the similarity in terrain of the two clubs that one of their leading members, Arthur Schultz, has written to the secretary of the Ulster Club suggesting that the two should compare notes.

"Sleeping Bear Terrain," as the A.B.C. Club call the site, is named after the largest of the sand dunes which run along the coast. As the prevailing wind is from the west, the soaring possibilities are much influenced by the fact that such a wind comes to it over some 70 miles of water. During the spring and summer months, Mr. Schultz believes there is a very decided temperature inversion (warm air above cold), which makes for poor soaring. The inversion is due to the warm winds from the western plains passing over Lake Michigan, which, he says, never gets warm. The cold, heavy air banks up under the bluffs while the warm upper air slides over. The adiabatic cooling up the 500 ft. bluff would be 3 degrees, while, he is sure, the inversion would add another 5 degrees. This requires a wind of 12 to 15 miles per hour for soaring to be possible in spring and summer, this wind being necessary to overcome the inversion effects; even then only a few hundred feet of height above the ridge can be attained.

In the fall, however, the lake is warmer and the upper air relatively cold. This condition, combined with the added inducement of the ridges, permits of soaring 500 to 1,000 feet above the top in winds of less than 10 miles an hour.

Although these observations are the result of only one year's experimentation on the site, Mr. Schultz believes that his explanation will be confirmed by subsequent experience. In fact, he thinks that in the fall the flying is mostly done on thermals off the warm water rather than the direct effect of the slope winds. In October, for instance, it has been possible to soar in winds of less than three miles an hour, and this not in a "high efficiency" sailplane, but in a Franklin UTILITY, a sort of general purpose secondary machine which has been very popular in America for some years, and which has an aspect ratio of only 7 to 1.

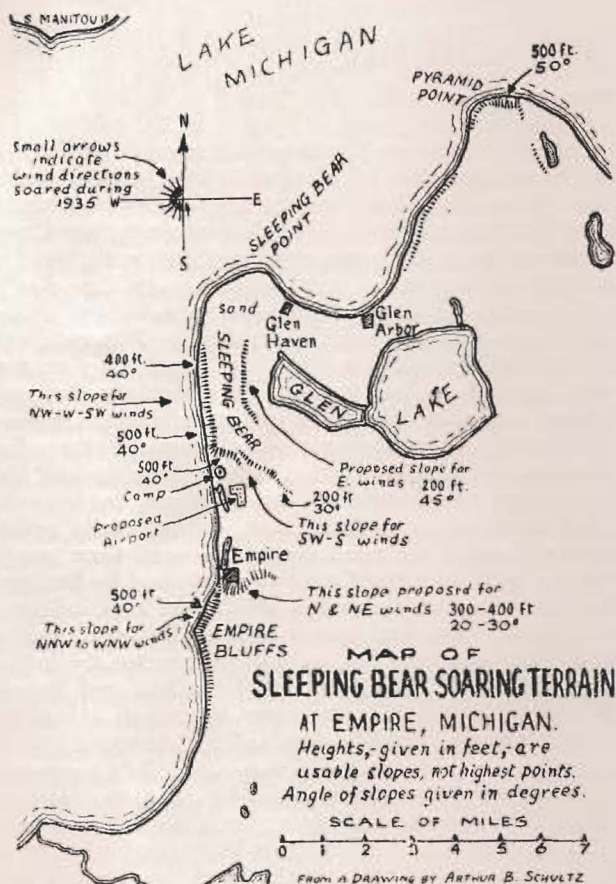
The beach from which machines are launched is about 100 feet wide and, except adjacent to the water, is composed of dry, loose beach sand. Along it runs the launching car, a standard 1929 model "A" Ford roadster, whose balloon tyres are well deflated. The car is seen in the photograph alongside of the one-wheeled standard Franklin PS-2 UTILITY, which it tows into the air at the end of a 0.075-in. diameter wire,

seen in the upper picture. The white object hanging on the wire is a tiny parachute, the object of which is to keep the wire straight as it falls down from the glider; if this is not done, the wire will kink, and to help in keeping it straight the car has to be driven fast after the release. The parachute is a foot square; on aerodromes, however, where the run of the car is limited, a 4½-ft. parachute has to be used.



Scenes at Sleeping Bear soaring terrain on the shores of Lake Michigan. Above, standing in front of the "Franklin Utility" glider, are (from left to right): Professor R. E. Franklin (its designer), Art Schultz (who sent the accompanying account), Bob Auburn and Johnny Novak. The aerial view below shows, in the left foreground, the wooded south-west slopes of Sleeping Bear, and at the end of the beach, four miles away, Empire Bluffs with their sandy face reflected in the water; they rise to 500 feet, as does also the "Sleeping Bear" over which the photographer is flying.

[Photos sent by Arthur B. Schultz.]



"We can tow for several miles without a stop," writes Mr. Schultz, "but usually tow with either 700 feet of 5/16-in. rope or 1,200 feet of wire, in which case we rarely tow more than a mile at a time. The wire is the nicest tow line; being light, it stays on top of the sand, whereas rope cuts down in the sand several inches while being dragged along.

"In cross winds we release the wire opposite the face of the bluff as it is easily retrieved. When we tow away from the bluff we use rope, for it does not tangle in the trees like the wire; the rope also drops straighter and does not so often get into the trees or lake. When there is a crowd on the beach the people cannot see the wire (and all its dangerous splices), hence we use rope which they can easily dodge, and which won't cut them. The longest wire we have tried to use was 2,700 feet, which gave an altitude of 1,350 feet on the tow (calm weather)."

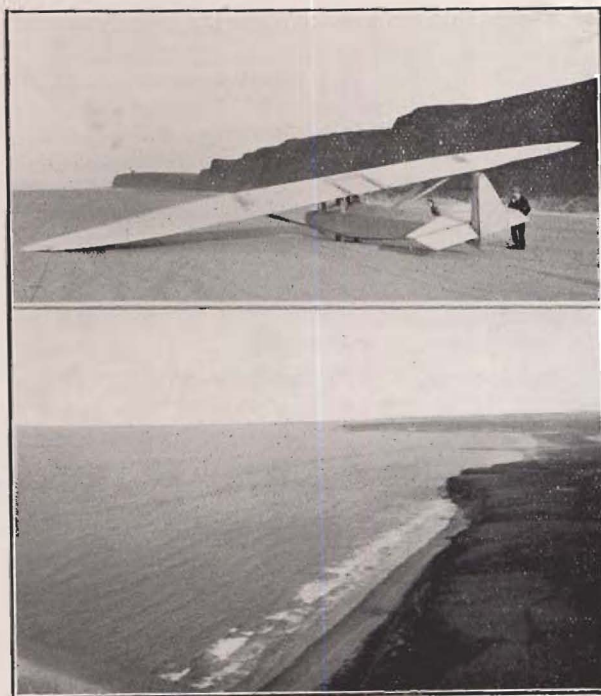
An unusual site for towing is used by a gliding club at Toledo, where the A.B.C. group were invited early this year. They were using a four-mile stretch of ice on the frozen Maumee River, driving along it a 1936 Ford V-8 (probably equipped with chains), towing 3,700 feet of wire, which pulled their glider up to 2,600 feet without any trouble.

The same height (by calibrated altimeter) is claimed to have been reached on only 3,200 feet of wire by a gliding group at Akron, Ohio. But their methods are somewhat drastic. They don't slow up the car until the pull on the cable lifts its hind wheels off the ground—and sometimes they even load it with sandbags to prevent this happening!

Further activities at Sleeping Bear Soaring Terrain this year are reported in the Bulletin of the Soaring Society of America. During the first week-end in April the usual party was joined by a group from the Lawrence Institute of Technology, bringing a two-seater of their own design. Ten flights totalling 5½ hours were put in, mostly in falling snow, with the air frightfully cold but "as smooth as silk." Heights of nearly 1,000 feet were reached, but a curious circumstance was that, later in the day, when the snow for some reason became damp and the air apparently warmer, both gliders dropped about 750 feet. Those present attributed the reduced lift to the onset of an "inversion."

Another meeting was fixed for the first week-end in May, and this time, in addition to the two-seater, a German ex-war pilot named Rahm, of the Rahm Soaring Society, turned up with a WESTPREUSSEN sailplane in which he intended to get his "C" certificate. But at the first launch he slid into the water and hit a submerged rock. However, 7¾ hours' flying were put in by the others.

And how far do Mr. Art Schultz and his friends have to go for their week-end soaring? From Detroit to Sleeping Bear is just under 300 miles. But they have the advantage of us in the British Isles in that their Airways Weather Bureau can definitely predict the winds at least two days in advance. Another advantage is that they appear to have no speed restrictions on trailers. For they do the 300-mile journey in six hours.



For comparison with the photographs on the opposite page: The Ulster Gliding Club's two-seater "Falcon III" on the beach below Magilligan cliffs; and a view from its cockpit of Magilligan Strand and the North Irish coast beyond. The A.B.C. Gliding Club of Detroit, Michigan, want to know how the site compares with their own; how the difficulties of launching off the beach are overcome, and how the meteorological conditions on a coastal site affect the soaring.

[Photos by C. A. Beck.

On Blind-Flying Blindly

By P. A. WILLS

THESE may be a few who are born blind flyers, there must be some who will achieve blind flying, but there already are several pilots now who have had blind flying suddenly thrust upon them. Since the results of this may be considerably more drastic than some of us realise, and since the subject is full of interest, it is hoped that the following notes will be useful. Always bearing in mind that the writer is no "number 7" technical hat, but merely an enthusiastic amateur.

I.

In the first place, at a recent meeting of the British Gliding Association a small sub-committee was set up to consider the creation of a "Golden C" badge, involving the mastery of blind-flying technique.

There are, it appears, varying opinions amongst gliding enthusiasts on the desirability of such a test; no doubt there were similar divisions when the "Silver C" was created.

Anyway, we first wrote to Dr. Georgii enquiring whether anything of the sort was at present being considered by the "Istus." His reply was of such interest that I copy it here in full:--

"Your propositions regarding the creation of a new award to soaring pilots, especially for cloud flying, have been of great interest for me. To my mind, the sporting as well as the scientific point of view makes it very desirable to give a particular encouragement to cloud flying by the creation of a new badge.

"Therefore I intend to suggest a discussion on your proposition at the occasion of the coming 'Istus' meeting. At the same time the special difficulties could be treated which are met by cloud flying. You certainly know that the types of gliders used until now could not endure all the stress to which they were exposed in cloud flying. The numerous accidents happening by this reason have caused, for example in Germany, a revision of the resistance regulation for gliders.

"Therefore at the 'Istus' meeting a particular large space will be devoted to this question. I think that on account of the near connection of the resistance regulation with cloud flying your proposition will be of special interest for the conference."

II.

The second chapter of this account involves the writer much more personally. Having at last a machine equipped for cloud flying, I have for some time rather nervously been nibbling at clouds. I employed the technique of circling into a cloud as near as possible to one edge, so that when and if I had had enough I could come out in quite a short time by straightening up and steering a compass course for the adjacent edge. I found that in any turbulence the best I could do was from five to ten minutes, after which one's mental resistance seems exhausted. In smooth cloud, however, it is easier, and on one occasion I circled quite happily for perhaps 15 minutes and nearly 2,000 feet until I decided to come out on account of heavy snow.

This experience no doubt produced over confidence, so that on June 7th, at Bradwell Edge, after a rather abortive week's holiday failing to glide in bitter northeasterly winds and rain, I circled into a rather amorphous and large mass of grey cloud at about 2,500 feet without locating an adjacent edge or anything else.

It was mildly, but not excessively, turbulent inside; the lift also was only mild, from 2 ft. to 7 ft./sec., and in a gay and youthful spirit I straightened up once or twice and went searching for better patches, started circling again, and behaved generally like a Dittmar.

Suddenly the instruments went completely haywire. I worked out afterwards that I must have stalled: the nose drops, speed goes up; one corrects, but there is a lag in the air speed indicator, so one stalls again, more violently; the nose drops a second time, speed goes up higher; a third stall was followed by Bedlam. The turn indicator jammed hard left; the bank indicator hard right. The variometer showed its maximum of 25 ft./sec. descent, but as we were certainly losing height at over 150 ft./sec., maybe it had gone round six times. The A.S.I., however, exercised in me the greatest and most baleful fascination. It was registering a seemingly innocuous 40 m.p.h., but I had watched it with popping eyes achieve this by going twice round the dial. HJORDIS, feeling as tight as a drum, was bellowing like a bull in considerable pain, and perhaps the most dominant of my kaleidoscopic emotions was a desire to move nothing more than half an inch at a time.

It can be imagined that few actual seconds of this elapsed before I burst out of the cloud-base in a dive rather over the vertical, and in full view of a number of people on the ground. From this I gradually extricated her, and with the last of my excess speed zoomed back into the cloud. There was at that moment no spot in three-dimensional space which I would not have preferred; fortunately the Maw failed this time to Clutch, and shortly afterwards we got clear.

The heroes of this story are (a) Buxton (designer), and (b) Slingsby (constructor). I fill the role of the Foolish Virgin. For, spurred by this experience, I started to read up the subject.

I discovered that the entertainment sprung on me is the High-speed Spiral Dive, and is a standard experience of blind-flying learners in their early stages.

No machine can, in such a plight, stand up to forceful movements of the controls, nor can they be relied on if they are dived at these speeds into any rapid horizontal or vertical acceleration of the air.

The next section gives a few points which seemed to apply particularly to the sailplane pilot.

III.

Part of the difficulty in obtaining accurate information regarding the difficulties of blind flight lies in most pilots' fear that an admission implies lack of skill in their capabilities as a pilot. Most pilots have on occasion flown for considerable periods in smooth cloud without getting into trouble, though they will probably admit that on those occasions the machine has really been left to fly itself.

The basic need for training is easily shown by putting blindfolded pilots in a revolving chair and spinning it to and fro, and getting them to describe their sensations. The victim will soon come to realise the positively misleading ideas which his remaining senses give under these conditions.

Even birds are unable to fly blind; pigeons have been blindfolded and released from aeroplanes, and in every case have proved helpless, doing spins and spiral dives.

The average training time of 30 power pilots of over 1,000 hours' experience was 5 hours 54 minutes. Whilst this included blind take-offs and landings, the glider pilot will always be flying blind in the most difficult conditions (i.e. unstable cloud), and will be required to do one of the most difficult evolutions, a constant and fairly steep turn. He must also be capable of getting out of a high-speed spiral dive, which will develop far more quickly than in an aeroplane, due to the cleaner lines of his machine. So his training must probably be to a fairly advanced standard. Also he will be unlikely to have so comprehensive a range of instruments. The artificial horizon, e.g., is a valuable saver of mental energy, but extremely expensive, and requires a high airspeed to operate.

All this may sound like an attempt to put people off; in fact, however, the thing appears to be to abolish the pilot's erroneous confidence in his senses, and then build up an *instinctive* confidence in his instruments. Blind flying is a state of mind.

IV.

The moral of all this will no doubt be drawn by everyone according to his own taste. Some will say (some do say) the moral is "DON'T." Yet the subject has enormous possibilities for enhanced technique, enjoyment and beauty.

What is definitely wrong is to go on happily flying into clouds and mist without adequate equipment and without a full knowledge of what is involved. For the deductions are:—

(1) That no machine built is strong enough to stand up to what *may* be inflicted upon it in clouds; although the chances of a break-up may no doubt be reduced to a minimum, the *risk* is unavoidable. (Moral: parachute.)

(2) That no human pilot can fly blind for long without instruments, although one may get away with it the first few times. (Moral: instruments.)

(3) That the successful use of blind flying instruments is a difficult art. (Moral: lessons?)

When, however, someone comes down and airily confesses to having flown the club's ten-year-old moth-eaten WOBLING intentionally into a cloud, he should be at once sent off to choose his site in the local cemetery.

I think most pilots will agree that the reaction to this cloud-flying business must be "Go ahead, but first realise fully *what it involves*, and take the necessary precautions."

Correspondence

Parachutes for Cloud Flying

SIR,

I write to suggest that no pilot should enter a cloud unless he is wearing a parachute, except possibly one who has experience of blind flying and is flying a sailplane equipped with blind flying instruments and built to acrobatic factors.

All types of sailplanes have shown their ability to make contact with the up-currents under clouds.

Schools of blind flying have found that pilots are not able to fly blind with certainty unless equipped with blind flying instruments and practised in their use. Other pilots who have tried in sailplanes seem to share the writer's experience of the soundness of this view.

It seems unlikely that sailplanes are strong enough to withstand all the manoeuvres that a pilot may execute in a cloud if he is confused. And abroad there have been structural failures in clouds such as that of the AUSTRIA, from which Herr Kronfeld escaped by parachute, and the recent failure of so strong a machine as a GRUNAU BABY, from which the pilot also escaped by parachute.

Thus it seems that the sensible pilot should wear a parachute if he is going to go anywhere near clouds.

In Germany, I believe, the use of parachutes has been compulsory for competitions for some years, and a rule of this kind might be considered for use in the British Isles.

G. M. BUXTON.

Sailplane Weights

SIR,

I have read Mr. Slingsby's letter, and note the weights which he thinks "cannot be disputed." I can and do dispute that either of the KITES at Dunstable weighs 252 lbs., or anything like it.

I will wager him £5 (five pounds) that the correct figure is nearer to 300. Moreover, I will arrange for the machine to be weighed to the reasonable satisfaction of any technically qualified person he cares to nominate. I suggest Mr. Bolton, of the London Gliding Club, and that the weighing be done before as many witnesses as possible.

It is a pleasure to find that others are taking a practical interest in this subject. To pilots of the "weight doesn't matter" school I commend a spot of soaring with 100 lbs. of lead aboard. They *may* notice something.

Apologising, Mr. Editor, for occupying space for a dispute that should have been settled long since,

LLEWELLYN H. BARKER, M.A., A.M.I.Mech.E.,
Chartered Mechanical Engineer.

[Mr. Slingsby had the machines weighed by the London and North Eastern Railway at Kirbymoorside Station, and sent us the actual weighing machine ticket for the KIRBY KITE, showing it to weigh 2 cwt. 1 qr. —ED.]

Some German Cross-Country Flights



The Hornberg Gliding School, near Stuttgart, inaugurated three years ago as a training centre for advanced soaring, has become famous both as a starting and a finishing point for cross-country soaring flights. The immense horse-shoe, facing west, is reminiscent of the Yorkshire Gliding Club's site at Sutton Bank.

THERE was a time, not so many years ago, when every cross-country motorless flight was a "milestone" on the road of progress in soaring technique, and every millimetre of the barograph record would be eagerly scanned by scientists in search of new knowledge. Now, as then, Germany still takes the lead in cross-country flying, but with that country turning out "Silver C" pilots at the rate of over a hundred a year, it is doubtful if many of the new lessons learned on these flights ever get much further nowadays than the pilot's immediate circle of friends.

During the past year, however, several soaring pilots have been describing their past experiences in the German aviation Press, particularly in *Segelflieger* and *Luftwelt*, and many points of interest have thus been revealed which are worth picking out and passing on to our readers.

A 200-Mile Goal Flight

To announce that one is going to soar to a place 330 kilometres (205 miles) away, with the wind blowing almost at right angles to the proposed course, to wait until nearly noon before starting and to succeed in reaching the goal before the thermals die out in the evening, is a feat that needs the right man and the right sailplane. The man was Erwin Kraft, aged 21,

"Silver C" No. 67, instructor at the Hornberg Gliding School. The sailplane was a RHÖNSPERBER, specially designed for long-distance flying, capable of a large range of speeds without much change in gliding angle. This property is useful not merely, as some think, for scooting along under cloud streets with a tail-wind blowing half a gale, but equally on calm days, for dashing across quickly from one thermal to the next.

On August 21st last year it was the latter technique that Erwin Kraft had to use, for though he says the day began locally with a wind of 18 miles an hour from the east, weather maps show it to have been blowing generally at only 2 to 5 m.p.h., from E.N.E., across the whole of western Germany. Kraft's flight was in a direction N.N.W. from the Hornberg to Cologne, following mainly the course of two rivers, first the Neckar and then the Rhine.

Although the first cumulus clouds appeared between 10.30 and 11, he waited until 11.45, when they had got bigger, before starting. An aero-tow took him to 660 feet and a thermal to 3,300 feet above the Hornberg (itself 2,240 feet above sea level), and off he went to the N.W. on a compass course, pushing the speed up to 62 m.p.h., which made his variometer show 2 to 2½ metres per second fall. Six miles of this brought him to an area of lift which took him to the cloud base at 7,200 feet above sea level (to which all subsequent

flights are referred), on into the cloud, and out near its top at 8,200 feet. After converting all this height into distance, he got lifted to the cloud base again, this time finding it at 8,500 feet. His next long glide, over Heidelberg, took him through some small thermals which he ignored, for, he says, "the modern technique of distance flying attaches the greatest value to a saving of time wherever possible."

Time had indeed been saved, for he arrived over Mannheim at 1.20, having covered over 80 miles in an hour and a half. Here the Rhine sweeps away to the right, and he cut across the bend towards Bingen. But from now on he was beset by troubles, and in the next two hours covered only 44 miles. He no longer charged proudly through the smaller thermals, but carefully investigated every one he could find. More than once, when things seemed hopeless, a sudden bumpiness in the air would indicate their presence.

Before reaching Bingen, Kraft was let down badly by a fine-looking mass of clouds that began to break up as soon as he reached them; all seemed lost, but when he finally got thermals they took him up to 6,500 feet in a completely cloudless sky. (This suggests that the ground began to warm up again as soon as the first lot of clouds had melted.) After Bingen, where the Rhine cuts its way through hills, there was nowhere to land safely but in the river. Just beyond Boppard, where it bends sharply to the right, he tried unsuccessfully to use slope lift; the saving bumpiness on this occasion was so violent as to bend his wings visibly.

Round about Bonn the valley widens; "here and there warm air still rose, though with a reduced rate of climb," and at last he arrived at Cologne. But, with the houses only 800 feet below, he couldn't find the aerodrome—until a climbing aeroplane gave him the clue, and he flew to where it had come from. The RHÖNSPERBER glided over the last obstruction with only two metres to spare, and landed in front of the Reception Buildings at 5.35, after nearly six hours in the air. A world's record goal flight had been achieved.

A "Grunau Baby" Record

Hermann Döbler ("Silver C" No. 47) confesses to having been a mountaineer, a "rock and ice man," a navigator of wild torrents, and a ski runner in the High Alps, but he thinks there is nothing to compare with soaring flight. Having got his "Silver C," he decided not to rest on his laurels (*nicht auf den Lorbeeren auszuruhen*) but to carry on and get even with the Big Guns (*den grossen Kanonen gleichzutun*).

As a beginning, he set himself the task of starting from the Hornberg and dropping in on his friends at Hesselberg, 37 miles away to the north-east, while the Bavarian gliding competitions were being held there. He tried three times, and even the third time only got half way to it. Then, on August 20th (1935), the opportunity came. It came with a vengeance, for, having got within easy reach of Hesselberg, what should Döbler see but cumulus on cumulus stretching away in a long line to the east. This was too much; the intended goal was put out of mind, the call of the cumulus obeyed, and the flight prolonged to a distance of just on 100 miles from the start, with a duration of

4 $\frac{3}{4}$ hours. Two unofficial records were set up; longest flight from the Hornberg, and longest flight in a GRUNAU BABY II.

The pilot's account of the flight shows in a remarkable way how the land underneath behaved strictly according to text-book throughout. After the change of plan, he saw below him the towns of Bopfingen, Nördlingen, and Wemding, each of which he visited, and each sent him up a strong, though disturbed, current of warm air. Wörnitzgrund, with its many water-courses, pulled him down; but soon he came over rising ground, where the thermals were at their best, and he reached 4,600 feet above starting level—the day's highest climb—by noting where a pair of buzzards were circling.

Height was lost over damp meadows in the Altmühl valley, gained over cornfields to the north of Ingoldstadt, lost again over the wet plains on either side of the Danube, gained when he had pushed the nose down to reach more corn; and over a hop-growing area he was lifted to 4,100 feet. Finally a large cloudless region was entered, so there was nothing left to do but glide down to land.

The first part of the flight had been none too easy, and Döbler deliberately made for one large town, Aalen, in the knowledge that its many factories would produce some uplift. Just before it, his variometer went down to minus 3, but he cheered up on remembering the words of Karl Baur: "Three metres down-current always gives me joy, because immediately afterwards, in most cases, the good up-current begins." And sure enough it did.

Trees are reputed to give down-currents, but does it depend on the type of tree? From an article by Döbler describing a previous flight, it is evident that he expects to find lift over "needlewood" (English conifers), though he does not seem too certain about it. Having got down to 800 feet, he saw a large wooded area containing this type of tree, and took a nibble at it to see what it would produce. It at least raised his variometer needle from a minus quantity to zero.

To and From Hamburg

As Peter Riedel, "Silver C" No. 7, gliding pioneer turned Luft Hansa pilot, flew commercial machines to and fro between Hamburg and Berlin, he noted that the River Elbe took an almost straight course (ignoring minor bends) over the greater part of the distance between the two towns. And he formed a theory; that whenever the wind blows parallel to this course it has time to develop such a down-current over the river valley that there must be a continuous line of compensating up-current on either side.

So he decided that at the first opportunity he would take out the Luft Hansa Group's CONDOR (imagine Imperial Airways pilots clubbing together to buy a sailplane!) and put the matter to the test. It worked—but only just.

At 10.25 a.m. on July 1st, 1935, in a light E.S.E. wind, Riedel was acro-towed off the Tempelhof aerodrome at Berlin, cast off at 800 feet, messed around for half an hour before being able to reach cloud base at 5,600 feet, and then set off for Hamburg. At Nauen, the last built-up area to provide up-current, he was up to 6,500 feet, and then had to face a long glide across

marshes and lakes to Havelberg, losing height most of the way.

So far he had only come 50 miles in three hours, but here the route was joined by the Elbe valley. However, the wind had to blow along it for 20 miles before building up a well-developed cloud street, the first cloud of which was reached at Wittenberge.

Things went well for a time, but as the afternoon wore on the sun got lower and the clouds became thinner owing to the proximity of the sea (Riedel's explanation). Then the pilot caught flashes of sunlight reflected from the windows in Hamburg 20 miles away. From 4,600 feet he dropped inexorably to 800 feet, when suddenly a thermal was found over a group of thatched roofs, under a completely clear sky. He could just keep height by circling in it, and with each circle drifted nearer his destination, the Fuhlsbüttel aerodrome. He arrived over this at 3,000 feet, owing to a final patch of strong up-draught, at 4.40 p.m.

Well pleased, Riedel played about in lift above the airport offices, until it struck him that he was knocking spots off his *Durchschnittsgeschwindigkeit*, or average speed for the trip. So he hurriedly landed. The time was five minutes past five.

"Welcome to Hamburg, Herr Riedel," said the chief aerodrome officer. "I presume the pilot of your towing aeroplane will shortly be landing too."

"No, Herr Schiller," replied Riedel, "he is staying behind in Berlin."

This flight had a sequel seven weeks later, when on August 18th Heinz Huth ("Silver C" No. 40) thought he would soar over the same route in the opposite direction. But after consulting the meteorologists, Huth announced Hanover, nearly 80 miles to the south, as his goal. (It isn't a "goal flight" unless you say where you are going to *before* you start.)

After a preliminary try with no result, the pilot was towed off in a RHÖNADLER at 10.15 a.m. Casting off at 1,600 feet, this time he had the luck to observe five storks diligently soaring 300 feet higher up. Of course he joined them, got strong lift and, he says, "soon overhauled the stork family." The birds were so annoyed at this gate-crashery that they shot off and left him in possession of their thermal.

At the very outset of the flight there were nine miles of the wet valley of the Elbe to cross, but the thermal which Huth had annexed from the storks took him to no more than 2,600 feet, of which the last 300 feet were inside cloud. From this height he only just did it, reaching the hills on the further side of the valley with less than 600 feet to spare. The rest was plain sailing, and a landing was made at Hanover at 2 p.m.

Next morning they rang him up from Hamburg to ask what time he wanted the towing aeroplane to come and fetch him. Huth replied that he would let them know later. He never did. He had another plan in mind. This was no less than to soar all the way back northwards to Hamburg, and in spite of a light N.E. wind.

At 11 o'clock, therefore, he was off once more, having secured a towing aeroplane to take him up the first 1,600 feet. Getting a thermal to 3,000 feet, he set out for home, and before long got into the clouds, in which he continued to fly blind for five miles straight ahead. Thereafter all went well; he secured 5,600 feet of height with which to get through the down-currents of the Elbe valley, and was back in Hamburg at 2.55.

Catching the Thermals

It was Wolf Hirth who invented the theory that thermal currents go up in the form of isolated bubbles; that warm air does not break away from the ground until enough of it has collected to overcome the air's viscosity, whereupon it all goes up in a body. German sailplane pilots have now coined the word "Ablösung"—literally a "loosening-off," to describe both the phenomenon itself and the thermal "bubble" after it has begun to rise.

In the past we have suggested that the problem of getting away in a thermal when there is insufficient other lift about might be solved by discovering signs that thermals are about to break away, or observing the intervals at which they are doing so. And in last month's *SAILPLANE* a correspondent proposed the use of smoke machines to show where air is drifting in to fill the place of a rising thermal.

On July 13th last year two German pilots succeeded in getting away from the Hesselberg gliding school by deliberately catching thermals as they came up the hill. The Hesselberg is an isolated hill 500 feet high, with north and south slopes each five furlongs long. On the day in question there was only a light north-easterly wind of four or five miles an hour, but at intervals of three to five minutes a thermal, lasting one to two minutes, would blow up the north slope at about 12 miles an hour.

The pilots were Eugen Wagner, leader of the school, and Dr. H. Hagen, "Silver C" aspirant. This thermal-catching was the doctor's own idea, and he went forward to the brow of the hill with a pair of field glasses, while Herr Wagner got ready to start from further back in a RHÖNBUSSARD. It was 1.45 p.m. Some trees down in the valley were watched through the glasses, and as soon as the leaves began to rustle and the twigs to shake it was assumed that an *Ablösung* had taken off and was coming up the hill, although nothing could yet be felt at the top. A sign was given, Wagner was launched, and by manœuvring in a narrow figure-of-eight climbed slowly about 160 feet.

So Dr. Hagen got into a RHÖNADLER, and at the first sign of a thermal he also gave the command to the launching team, but just then the wind got up to over 20 m.p.h., so he needn't have bothered about thermals at all.

The two pilots went on soaring in the slope wind and getting thermals, but could rise to little more than a thousand feet. Then at three o'clock there was a lull, which lasted three-quarters of an hour. At 3.45, however, just as the wind got up again, a cloud of dust could be seen whirling high along the road at the bottom of the hill. So both pilots flew out over the valley and secured a really good thermal to 3,300 feet, which enabled them to set off across country.

Dr. Hagen, the scientist, was, of course, ready with an explanation. At first, he says, the thermal bubbles had been so small that the sailplanes fell out of the bottom of them every time. Then came the lull, during which larger masses of warm air had time to collect down below. Finally the freshening wind broke these masses away, with the result that, as he puts it, they were furnished with long "beards."

Before long the doctor crossed more high ground—the Rauher Alb. Two or three minutes afterwards he got excellent lift up to 5,600 feet, which he explains



"German Air Sport is calling you" is the message of this propaganda poster, exhibited all over Germany. Many German boys start gliding at the age of fifteen, and last year a pilot of sixteen years obtained the international "Silver C" certificate.

as being "probably due to an *Ablösung* sucked off the lee (southward) slope of the hill by the slope wind" (i.e., by the wind blowing up the northward side).

The town of Aalen has been already mentioned; like Döbler, Hagen got a good thermal over it, though a gusty one (is the air always rough in thermals off buildings?); this was as late as 5 p.m., and it took him up at two metres per second to over 5,000 feet. Then he saw a large cloud directly above, and immediately stopped circling so as not to be drawn into it because (a) his RHÖNADLER was four years old, and (b) he hadn't a parachute.

Both pilots landed at Hornberg, Hagen arriving 3,000 feet up at 5.30 p.m. Wolf Hirth told them that the thermals there had been quite paltry and few pilots could use them.

The Youngest Silver "C"

Seventeen-year-old Albert Pahl went to Laucha, the gliding centre west of Leipzig, for a fortnight last September and tried to get his "Silver C" in a RHÖNADLER, a type he had never flown before. Going up for the duration test, he got so high that he went off to do the distance test instead, but missed it by barely a mile, so he should have stayed where he was after all. Still, he passed all the tests before the fortnight was up. The most critical time on the distance flight, which was 47 miles, was when he had to spend half an hour soaring at 160 feet over a coal dump 700

yards long before picking up another thermal to take him on his way.

Der Segelflieger called him the youngest possessor of "this still rare badge," but in the very next issue published an account of how sixteen-year-old Rolf Ziskoven became the youngest holder of the badge in the world, together with a reproduction of the actual certificate, which shows him to have been awarded it (No. 97) on August 31st, 1935.

Ziskoven's flying career is an interesting example of what "air-minded youth" can do in Germany. He joined the Hitler Youth in 1932, started making sailplane models in 1933, and won first prize at a competition for models early in 1934 against 100 competitors. By this time he was itching to fly himself, but his parents, although both keen National-Socialists, tried to stop him on the ground that it was dangerous. They didn't succeed. At the age of fifteen their son joined an aviation course for Hitler Youth in Cologne, learned to build gliders, got his "A" locally, his "B" and "C" at the Wasserkuppe, and early the following year (1935) his "Official C" (five flights totalling half an hour and an oral examination). That summer he went to Hornberg, "the High School of soaring flight," and, under Wolf Hirth, did a course of aerobatics and finally obtained his "Silver C" at the age of 16. And now he wants to become an aeroplane pilot.

We will close this account with a mention of two unusual flights from Grunau.

During the "Fourth Annual Silesian Soaring Competitions" last year, a sailplane disappeared from view on June 6th and was not heard of for the next three days. On the fourth day news came that the pilot Mandetzky had landed in Poland, in the Moschim district, 106 miles from Grunau.

And on April 21st this year Herr v. Husen was soaring a two-seater at 2,300 feet, with a pupil aboard, when some dirty weather blew up and he had to choose between landing at once or flying away before the storm. So he flew away, first along the River Oder and then in a wide curve to Breslau, where he landed, 51 miles from the starting point.

Blind-Flying in Germany

A correspondent has passed on to us the following information extracted from a letter received by Professor W. Georgii, president of the "Istus" (International Commission for the Study of Motorless Flight):—

At this year's meeting of the Istus in Budapest, a committee was set up to examine the question of stress requirements for sailplanes, including those for blind flying. The committee is meeting in Berlin on August 3rd, during the Olympic Games.

The D.F.S. (German Research Institute for Soaring Flight) is at present occupied with this subject, and investigations are being made regarding the velocity of vertical currents inside clouds.

At present no sailplane is allowed to indulge in cloud-flying unless equipped with wireless transmitter and receiver, in order to avoid risk of collision with powered machines. This somewhat drastic requirement means that, in general, no serious blind flying is at present being done in Germany.

News from the Clubs

Ulster Gliding Club

April 26th.—For those who like to emulate the poise of a Kestrel hawk, no soaring site could be better expected to please than Magilligan, with a breeze of 30 m.p.h. from anywhere between west and north-east. The machine can be held at any height from 600 ft. upwards with no ground speed, and the country surveyed with equanimity from the cockpit (should one rather say "bridge"? of that stable old battleship, FALCON III).

To-day was one of such conditions with a wind about due west and quite without viciousness. On the tow the machine left the ground at the first yard, and on several occasions attempted to take along with her those who were supporting wing tips.

A grand afternoon, with seven training flights for dual at about 1,700 ft. On one flight she was coaxed up to the cloud base at 2,800 ft. over flat country to the N.W. of the Umbra, and equally roughly pushed down out of the ensuing mistiness. What the pupil thought about it was not uttered aloud, but it would appear that a FALCON in full flight (*sic*) has a very definite shriek of protest which is quite in keeping with her bulk.

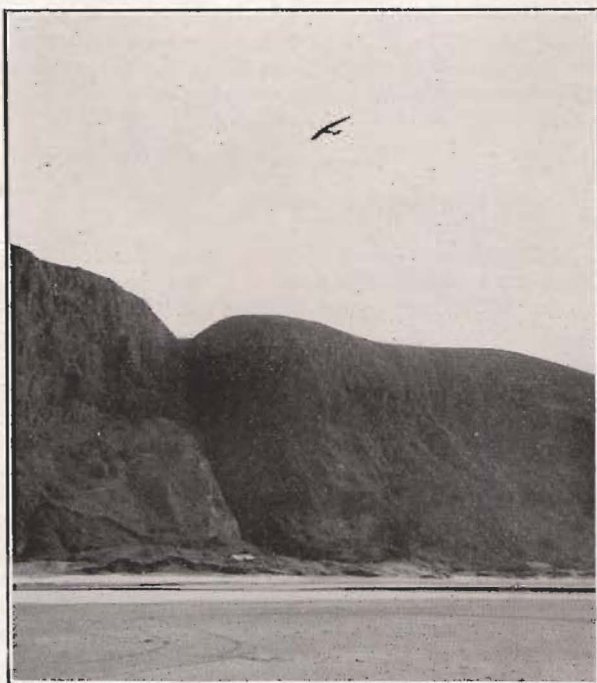
Papa Raven again in evidence. Flying time, 2½ hours.

May 2nd.—A nice south-easterly breeze in certain spots can be extremely pleasant to fly in, but Magilligan is definitely not one of them. The wind comes curling and eddying down over the cliffs and its effect can be felt for miles from them down the beach.

FALCON III. was launched five times before being put away (with a sigh of relief from the instructors). On the tow the air speed indicator showed nil-60 m.p.h. without the slightest warning. Instruction as such was impossible.

May 9th.—Numerous towed flights with pupils at Magilligan. No soaring was possible, although the rate of descent was at times reduced to a very small figure by thermal action off the hot sand. Time in the air, about 1 hour.

May 30th.—Wind 35 m.p.h. from north. Liddell got going after one abortive attempt owing to the difficult cross-wind launch. He apparently had to fly fast and far out to avoid the clouds at about 2,000 ft. and had an hour's very bumpy ride before calling it a day.



The Ulster Club's two-seater "Falcon III" soaring with difficulty in an E.N.E. wind near the Umbra, where the Magilligan Cliffs face north.

[Photo by C. A. Beck.]

May 31st.—A better day with less wind and some weak thermals up to about 1,600 ft. Liddell enjoyed himself thoroughly for two and a half hours in the morning and again in the afternoon for an hour. During the latter flight the wind had much increased, as had the lift, and odd hail showers came over.

It was a pity the clouds were so low down or something might have been done about it. One hesitates to start off with but 600-800 ft. of height above the cliffs, which was all it was possible to reach without being immersed. Inland, about 50 miles south, they had formed into huge active streets at about 4,000 ft. and looked perfect.

June 6th.—Unsuitable tide conditions prevented much flying to-day, only four launches being possible in FALCON III. A fairly stiff westerly wind made soaring easy once the cliffs were reached, but several moments of acute anxiety were experienced (one envies one's passenger's blissful trust!) until the more westerly face was reached. It is sometimes just difficult enough to judge whether to cut and run for the beach or plod on and risk an ignominious descent among the haystacks.

A little cloud influence, but the strong breeze appeared to break up the lift when below 1,600 ft. Time, 1 hour.

June 7th.—A better day than yesterday, although the tide was still unfavourable. Six passenger training flights were made in FALCON III., and one pupil put her up to 2,800 ft. in a good thermal with very little help from the instructor. True, he has flown aeroplanes, but it was his first soaring flight. He has since joined the club.

Liddell, meantime, was wrestling with many difficulties on top of the Umbra, the main one being a hole in the GRUNAU's wing, caused by some helper's heel. He eventually got going and made up for lost time by putting her up to 3,600 ft. (almost cloud base), and doing a round tour of the district—Portistewart, half-way to Coleraine, and back home again—a good show.

Flying time, about 6 hours.

Yorkshire Gliding Club

May 30th.—An east wind and showers of rain. Neilan made himself favourite for the cup to be presented for the most meritorious performance over the holiday by reaching 15 ft. (up one of the new hangar scaffolding poles). HJORDIS arrived behind WILLS, but remained in the trailer. Barker and Dewsbery were also among those present.

May 31st.—Wind N.N.W. Wordsworth was first away in FALCON and two pairs of trousers, but was back again in four minutes. Neilan then took GRUNAU up and he too descended after four minutes. Later in the morning Sharpe's new FALCON III. had its aerial baptism, Slingsby and Holdsworth taking it up to 1,350 ft. Sproule reached 1,000 ft. in GRUNAU and looped and then the rain came down.

When the rain ceased so did the wind and conditions became tantalising. Some just soared and others just didn't. Slingsby, with the lightest passenger he could find, remained in the air for six minutes in the new FALCON III.

FALCON, GRUNAU BABY, and FALCON III. circuted throughout the day.

Total time in the air, 2 hours 3 minutes.

June 1st.—A light wind, varying from N.E. to S.E., made conditions disappointing, and it was not expected that there would be any soaring. Neilan, however, in GRUNAU went up on the winch and, ignoring what bit of hill lift there was, searched for and found a thermal. In a flight of 14 minutes he reached 550 ft.

Members of the Ryedale Club hopped their nacelled DAGLING and Smith qualified for his "B" in HOLS.

GRUNAU BABY, FALCON, and CITY OF LEEDS circuted.

A few "C" pilots have joined the camp for a soaring holiday. Congenial company, no flying fees, and excellent catering should make it both enjoyable and inexpensive.

June 2nd.—One party toured the immediate district in search of sites for an east and north-east wind. We understand that a suitable site has been found and that negotiations are now in progress. Another party set about the gorse with fire and axe and cleared a good area.



The Yorkshire Club's fleet on the ground—"Dagling," "Hols," "Falcon I," "Falcon III," and "Grunau Baby"—as seen from the "City of Leeds" two-seater.

[Photo by J. W. Smith.]

The Whitsun Cup goes to J. C. Neilan for his thermal flight on Monday, although a strong body of opinion considers it should go to the Watson family, who put on first class meals at ridiculously reasonable prices. Mrs. Watson and her entourage have offered to cater for the August Instruction Camp and also for the Sutton Bank Annual Competitions during the following week.

June 6th.—Wind W. Flying commenced at 2 p.m., when Neilan took GRUNAU up for 1½ hours. He reached 4,400 ft. and reported that the lift was very steady. He was followed into the air by Slingsby in Sharpe's FALCON III., and on GRUNAU's return Holdsworth took her up for over two hours, reaching 2,000 ft. Wordsworth and Woolcock took turns on FALCON I., Woolcock achieving 1,000 ft. Later Neilan, with a passenger, reached 3,000 ft. in Sharpe's FALCON III., and Heath flew for an hour in GRUNAU.

Slingsby's FALCON III. was also in the air on four occasions, giving dual instruction and carrying passengers. One of Slingsby's passengers, Bailey, later qualified for his "A" in FALCON with a flight of 35 minutes. The CITY OF LEEDS also flew three times, with passengers.

In the waning evening wind Cox flew HOLS for 17 minutes before he was obliged to come in.

Total flying time, 12 hours 6 minutes.

June 7th.—The events of the day were undoubtedly Bailey's "B" and "C" flights. He was launched in FALCON I. for his "B," for which he qualified with a flight of 48 minutes, reaching 2,000 ft. Apparently he liked being up there, for when he took his "C" on GRUNAU later in the day he touched 2,500 ft. and cruised round the immediate district for 1½ hours.

Conditions were rather tricky, lulls lasting about 15 minutes each arrived at odd times. One arrived when Bailey was taking his "C" and reduced him to groveling about the edge at 30 ft. for a time.

Both Slingsby's and Sharpe's FALCON III.'s were constantly in the air putting in 13 flights (mostly dual instruction) between them in the hands of Slingsby, Neilan, and Sharpe, Slingsby reaching 2,100 ft. on one occasion. CITY OF LEEDS in Stedman's hands also flew on three occasions giving dual instruction.

FALCON I. was flown by Wordsworth, Bailey (twice each), Woolcock and Dr. Neilan, who flew her for the first time. At the end of the day Neilan went up in GRUNAU and looped six times in succession to relieve his feelings after piloting a staid FALCON III. all day.

Flying time for the day, 10 hours 29 minutes.

June 8th.—Watt arrived and took GRUNAU for a ride, but he couldn't persuade her to exceed 600 ft., so after half an hour he came in.

June 13th.—A variable south wind of about 10 m.p.h. made conditions rather difficult. Both the beat over the White Horse and that at the northern end of the bay over Whitestone Cliff were in use.

Neilan started the day in GRUNAU over Whitestone Cliff and did his usual loops; he was followed by Sproule. Maximum height for the day was achieved by Sharpe with passenger in his FALCON III. at slightly over 1,000 ft., also over Whitestone Cliff. Stedman confined his three flights in CITY OF LEEDS to the White Horse beat. Slingsby's FALCON III. also flew, and Bailey and Heath exercised GRUNAU.

Total flying time, 4 hours 48 minutes.

June 17th.—Our two "Silver C's" each had half an hour in GRUNAU, Neilan's maximum height being 600 ft. Watt, who flew later when the wind had dropped, could only reach 500 ft.

London Gliding Club

Saturday, June 6th.—There were 47 launches off the hill, with a total flying time of 22 hours 49 minutes. This sounds, and is, a lot, but the only detail that has reached us is that Hiscox, who is now club chairman, did a flight of over five hours in his KIRBY KITE. Briscoe (brother of W. W.) and Wilkinson qualified for "C" certificates, whilst Hiscox, of course, has done part of the "Silver C."

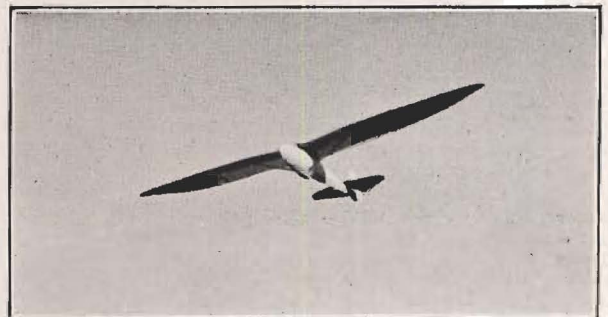
Car launching was used for instructional ground-hops, which totalled 62.

Sunday, June 7th.—A west wind, but too light for most people; one or two GRUNAUS could occasionally keep up; so could the RÜNSPERBER, which was flown not only by Dewsbury, but by Sproule, who was over from Yorkshire for the day.

Total flying time was 5 hours 15 minutes, with 68 launches off the top. There were also 74 ground-hops. Mrs. Kinlock and Russell qualified for "A" certificates.

Week ending June 14th.—When members, not content with week-ends and the traditional Wednesday evenings, come rolling up for flights any day of the week, the old-fashioned method of writing up the club news flight by flight becomes a thing of the past. This is what comes of having a full-time professional instructor, but for this very reason it is at least possible to give the week's doings in statistical form.

Ground-hops: 4 on Monday, 30 on Wednesday, 2 on Saturday, 49 on Sunday. Launches off the hill top, with total flying times: 13 on Monday (2 hours 46 minutes), 4 on Tuesday (28 minutes), 3 on Wednesday (2½ minutes), 9 on Saturday (8 minutes), 73 on Sunday (30 hours 16 minutes). Certificate flights: "A," Major Cooper; "B," Seth Smith, Wilkinson; "C," Robertson and H. Adeock. Total launches: 187; flying time: 33 hours 41 minutes.



The latest arrival at the London Club: a "Kirby Kite" acquired by J. S. Fox, J. C. Dent and T. G. Armstrong. The woodwork is painted a light grey.

Sunday, June 14th.—Excellent soaring throughout the day. Thermals were chiefly in evidence between 11 and 2 o'clock (Summer Time), although a sheet of alto-cumulus covered the sky after 12.30. There were some isolated cumulus (1-10th of sky) below it. The thermals were described as "fluky," with stable air between.

Buxton in HJORDIS got up to 1,700 ft. and went for a tour to Luton and back. Nicholson in RHÖNBUSSARD reached the same height, while 900 ft. was attained by Ivanoff in the Desouter GRUNAU and Hiscox in KIRBY KITE. Nearly every machine on the premises did some flying.

Major Arthur Cooper, who built and flew a glider in pre-war days and became a power pilot in 1909, turned up to-day as a visitor, joined the club and, after four hops, took his "A" off the hill top.

Week ending June 21st.—Ground hops: 17 on the 17th, 39 on 20th, 55 on 21st. Hill top launches: 12 on 17th (21 minutes). Winch launches: 3 on 20th (6½ minutes), 11 on 21st (19 minutes 50 seconds). Total: 187 launches; 19 minutes 50 seconds recorded flying time. Johnson obtained his "B" on the 17th.

Week ending June 28th.—Ground hops: 19 on 22nd, 14 on 23rd, 23 on 24th, 1 on 26th, 55 on 27th, 157 on 28th. Hill top launches: 5 on 22nd (GRUNAU and DAGLING, 7 minutes 20 seconds), 4 on 23rd (CAMBRIDGE, GRUNAU and KADET, 24 minutes), 24 on 24th (3 DAGLINGS, CAMBRIDGE, KIRBY KITE and KADET, 56½ minutes), 4 on 26th (2 minutes 51 seconds). Winch launches: 24 on 28th (FALCON III., KIRBY KITE, RHÖNBUSSARD, CAMBRIDGE, 1 hour 2½ minutes); also some of those on the 24th were by winch. Total for week: 335 launches; flying time 2 hours 33 minutes.

Turning up on Wednesday, the 24th, to try the KADET (which is delightful), we found the secret of all these week-day launches off the hill: car launching is employed, the rope going round a pulley so that the car can be driven at right angles away from the glider's line of flight. Thus a launching team is dispensed with.

The KADET, by the way, hit a kite string; there was a fierce whistling noise from the right until it slid off the wing tip, clattered against the tail, and shook itself free. G. E. Collins once hit a kite string with the Poppenhausen, and it was the string which broke. On June 6th this year a French military aeroplane flew into the cable of a kite balloon, cut it in half, and went on flying; the balloon also landed safely 40 miles away.

On this day Cooper (brother of R. P.) and Miss Arland qualified for "A," and Mrs. Kinlock for "B" certificates.

On Sunday, June 28th, Edgar Dittmar was our chief visitor. He and his younger brother Heini designed and built the first CONDOR, and flew it in the Rhön Competitions of 1932. Heini is now well known to fame, but his brother Edgar once held the world's height record, which he put up on August 8th, 1928, climbing to 2,543 feet in the sailplane ALBERG; we saw him, and photographed him doing it. Edgar has the "Silver C"; but although he was awarded it comparatively recently he claims to have fulfilled all the requisite conditions as early as 1930. In 1934 he performed the feat of picking up a thermal off a winch launch to only 330 feet, rising to 6,500 feet and flying to Würzburg from his home town of Schweinfurt. Although there was no soaring to show him at Dunstable, he was truly amazed by all he saw.

Telephone.—The telephone booth on the first floor is at last fulfilling the purpose for which it was designed; number is Dunstable 419.

Midland Gliding Club

May.—This has been a disappointing month from the point of view of soaring, as the wind has persisted in blowing from the north and east almost continuously.

As regards primary and intermediate training we are more fortunate, as the Austin branch operate on the Longbridge Aerodrome, where flying is possible in every direction. We have ceased operations at Handsworth until such time as our landlord considers the hay ripe for cutting. The nacelled DAGLING has, therefore, been transferred to Longbridge and the two branches are co-operating as regards primary instruction.

We feel deeply indebted to Commander Williams for the whole-hearted way in which he has tackled the management of our club. Everything, both from the flying and the domestic points of view, is run with the greatest efficiency.

We hear that Barnes and Oliver have made great strides with "H17," and that the machine should be in the air before the thermal season is over. By the way, they tell us that zinc templates have been made for every metal fitting, and they will be pleased to loan them to anyone who is building one of these little machines. [The type was described in our issue of July, 1935.—Ed.]

May 31st found a good muster at the Long Mynd kicking their heels and muttering invective at the weather clerk. During the afternoon the wind swung round to N.W., so Thomas took off in FALCON I. and had an exhilarating ride in the hailstorm which followed. He landed after about 15 minutes, and Wynn followed with a short soaring flight in the falling wind. Later in the afternoon the wind freshened from the N.W., but not sufficiently to support Mr. Hardwick in FALCON I., who made a nicely-judged landing in a friendly farmer's field below. After

he had been retrieved in the record time of 1½ hours from the time of his take-off, Oliver and Davies flew FALCON I. for about 15 minutes each.

June 1st.—The same band of optimists gathered together regarding the sock which indicated a light (very) N.W. wind. Thomas and Wynn again flew in the freshening breeze preceding another hailstorm. Later, Hardwick in FALCON II. took off in a breeze which looked promising and immediately commenced to gain height. Oliver, who was sitting ready in FALCON I., followed immediately, and had the humiliating experience of losing height while the FALCON II. above him continued to rise to 1,500 ft. in presumably cloud lift. Oliver worked hard for 10 minutes, but gave it best when 400 ft. below the ridge and made for the field where the machine had landed the previous day.

Saturday, June 6th.—Flying commenced in a freshening westerly wind at 3.24 p.m., when Horrell was launched in FALCON I. The clouds were very low and there were times when he could not be seen from the hangar, which worried those on the ground not a little, but it was learnt later that he had been able to avoid the clouds and landed after a flight of 1 hour 8 minutes.

Thomas followed Horrell in FALCON II. Afterwards the two-seater was launched with Testar as pilot, and several people enjoyed a dual instruction for half an hour each.

Riley demanded a KADET, as he has reached the stage where he no longer appreciates the self-flying FALCONS. Horrell followed his example in a subsequent flight.

Although in last month's SAILPLANE there was a short note of congratulation to Dugdale on taking his "C" certificate, we too, would say how very pleased we are that at last this long awaited opportunity arrived. He had missed several previous chances through sticking so conscientiously to his "nursery" at Hereford.

During the afternoon Thwaite had the very unpleasant experience of finding himself lifted into a cloud about 15 seconds after being launched. He managed the machine in a masterly fashion, made a circuit semi-blind and landed to await clearer conditions.

Flying times: Horrell, 1 hr. 43 mins.; Thomas, 1 hr. 9 mins.; Wynne, 1 hr. 59 mins.; Thwaite, 1 hr. 16 mins.; Dugdale, 27 mins.; Testar, 1 h. 52 mins. Total, 8 hrs. 19 mins.

[Thomas is Dr. Brian Thomas, formerly of the London Club.—Ed.]

Sunday, June 7th.—The wind of the previous day had died away to a breath. Test flights by Hardwick and Thomas resulted in landings at the bottom.

Sunday, June 14th.—Wind S.W. by S., at approximately 20 m.p.h. Testar tried the very short beat over the Asterton Gully and delighted a large gathering of visitors by his skilful manoeuvring. Flying conditions were distinctly tricky. Testar's display could not go unchallenged by Riley, and he too took the air in the restricted lift, but he was not so fortunate. After trying hard for several minutes to keep within the short beat he was forced to land below.

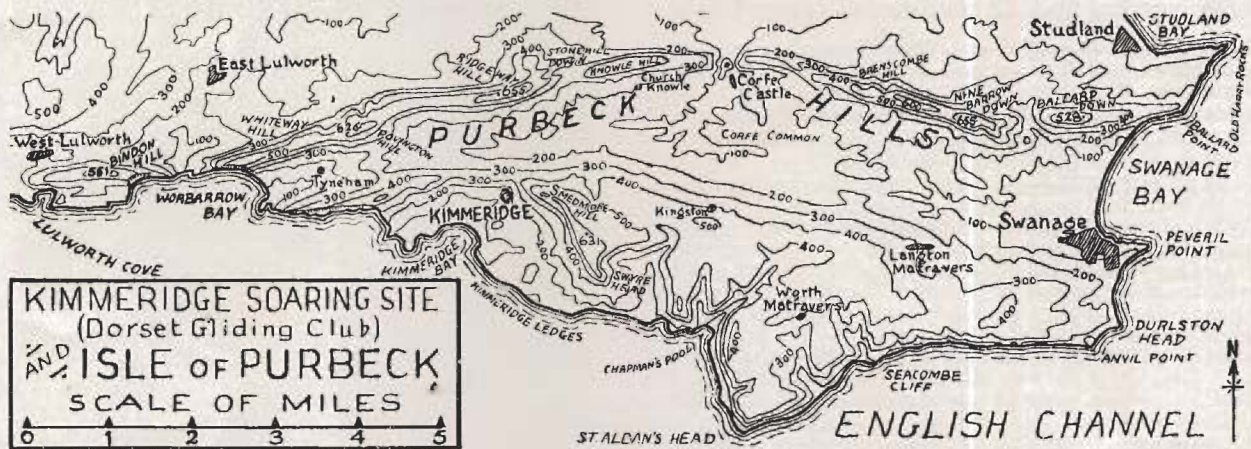
The wind veered more westerly in the evening and flights were made by Meeke and Healey, but later a cloud settled over the hill from the valley and cut short further flying.

Total flying time, 38 minutes.

Flying conditions were so poor during the subsequent weekends that we were quite unable to indulge in soaring.



A part of the Long Mynd, Church Stretton, looking south from near the Midland Club's hangar. "Asterton Gully" is just round the first corner.



Dorset Gliding Club

Sunday, May 17th.—Nacelled DAGLING flown twice from south-west brow, but as the wind was too oblique a halt was made for dinner, after which, launches were made from the top of the Cottage Slope. The wind was then sufficient to allow quite spectacular flights to be made, many pilots going well over the hedge on the left, and making lengthy excursions into the next field before returning into the valley bottom. Clewlow had his first flight in the nacelle, followed by Penrose, who had not flown a DAGLING for years. After tea the wind then increased so much that Lansdown made two attempts at soaring, though, as was expected, that slope was quite unsuitable, but the flights were interesting to watch.

The number of members turning out might be larger, but this is probably due to the fact that some of them are busy building machines of their own. Otherwise enthusiasm very great in spite of the almost complete absence of south-west winds.

Sunday, May 24th.—The week-end was spent at Maiden Newton getting the launching gear, etc., ready for the Whitsun Camp at Kimmeridge.

Kimmeridge. Whitsun Week-end.—Some of the members arrived on the Friday night, but the majority were not able to get there till Saturday afternoon. Penrose's PEGASUS arrived that evening in its new trailer.

Whit Sunday.—The machines were being erected when a photographer from Fleet Street arrived; he had hoped to get some photos of PEGASUS in the air, but the wind was still N.E. However, just before 1 p.m. it had backed sufficiently for Penrose to get off in PEGASUS; he stayed up about 45 minutes, landing nicely on top just in time to dodge a storm (or was it dinner?).

Laver then went up to try the DAGLING with its nacelle fitted, but unfortunately the wind had dropped so much that he could only go to the bottom. Then Penrose tried in PEGASUS, and though he worked very hard to keep height it was soon obvious that he would ultimately follow Laver. This flight lasted 25 minutes, and during the latter stages the hill-side wing tip of PEGASUS was never more than a few feet from the low wall which runs the whole length of the ridge, so those members with cameras used them to some purpose. By the time the two machines were retrieved the wind had dropped still more, and no more flights were made that day.

Whit Monday.—The wind had increased, and had backed, so that it was blowing dead up the slope. Lansdown went off in the nacelled DAGLING to try to get his "C," and was soon doing beats the length of the ridge, but after about six minutes his lack of height worried him a bit, and not liking the look of the bushes, which are higher at the southern end of the ridge, he swung in over the top, and very nearly brought off a "normal" landing; but though he dodged a car and some spectators, landing fast (down wind) on rough ground, the machine bounced and one wing had an argument with a "tough" gorse bush. This unfortunate mishap left PEGASUS without any opposition.

Immediately after this Penrose went up and was soon exploring the surrounding country at nearly 1,000 feet. The clouds looked useful, but though PEGASUS occasionally went up a bit, cloud contact seemed elusive, so after nearly three hours he returned to the ridge to ask the time and soon after landed. Later in the day he made another two and a half hours' flight.

"Pegasus" Tours the Countryside.

Tuesday, June 2nd.—About 10 a.m. Penrose was launched in a nice S.W. wind. He gained about 1,500 feet and then dived from the northern end of Kimmeridge across to the Purbeck Hills (which run along the coast), with the idea of getting to Weymouth, but after having arrived at Lulworth he changed his mind (perhaps a mistake?) and returned along the Purbecks till over Corfe Castle, where he circled a bit. He then set off S.S.E. till over Swanage, and worked his way along the coast till he was at the eastern end of the hills. He dived over these and got into a strong down draught, and though he found some more lift out to sea, he soon returned, and just after 1.30 p.m. landed on the beach at Studland Bay where he had difficulty in getting through the intense thermal activity going on at that spot.

Of course, it was more in the nature of an exploration than cross country flight, and we realise that we shall have to become acquainted with the possibilities of this site before we can use them to the best advantage. As soon as the DAGLING is ready again it will be flown here, and no doubt Penrose will soon be using the site as a jumping-off ground for other more extended cross country trips.

We were pleased to have as visitors to the camp a member of the Cambridge Gliding Club and his wife.

This was the last time we shall see Aldridge with us for some time, but he, with a friend from Cambridge, did the "catering" so successfully that, in addition to satisfying everyone, he made quite a good profit for the club.

Southdown Gliding Club

The opening of the new hangar, club house, workshop, etc., which was to have taken place this month, has had to be postponed owing to the unfortunate illness of Mr. York Bramble, the club's very energetic secretary. (A Press notice states that the buildings have been erected in Atlingworth Valley, to the north of Portsade, and that they may be approached either from Foredown Road, Portsade, or from the downland track which turns off the main road just beyond the Dyke Railway Station. Flying is conducted under leases from the Brighton Corporation.)

Norfolk Gliding Club

Flying is, unfortunately, still at a standstill, while the principal occupation of members of the club appears to be that of site-hunting.

With regard to the winching site at Hevingham, referred to in last month's notes, negotiations appear to be at a standstill, but, happily, this does not greatly damp our spirits, as the feature of the month has been the discovery of a good soaring site at Mundesley. This site favours beginners in that the drop is not so fierce as that of the site we originally proposed to use, but gives abundance of lift, as far as can be determined by observation of air currents from the ground. The demolition of a low bank or two on top should provide an ideal primary training ground when the wind is in an unsoarable direction, and winching would be possible in most directions.

Derbyshire and Lancashire Gliding Club

Sunday, May 24th.—Wind east, 10 to 15 m.p.h. Intermittent rain and low cloud. Training with the NACELLE and PRIMARY between showers.

Saturday, May 30th.—Wind N.E., 10 m.p.h. Training with the PRIMARY. Several ground hoppers introduced to the winch for the first time.

Sunday, May 31st.—Wind north, backing to north-west. Variable strength, average probably about 10 m.p.h.

Wills had arrived overnight with HJORDIS, and we were very pleased to see Cooper and his brother with the RHÖNBUSSARD. In the morning when the wind was still north, Wills went off to the Peveril launching ground at Castleton, but the wind was not kind and he had a struggle before picking up enough thermal to bring him back to Camphill. In the meantime the BUSSARD and GOLDEN WREN groups had decided to wait until the wind should back sufficiently to fly over the home slope. After lunch this seemed just possible, so Smith was launched in the GOLDEN WREN, but after five minutes he had to make use of the emergency landing ground on the very edge of the hill. The rest of the afternoon was therefore devoted to serious winch training with the NACELLE, while a PRIMARY school was also working with the bungy. The NACELLE was able to take advantage of hill lift, and by this means Booth and Dickson completed their "B" certificates, while Buckler, Forman, and Leech took one or both of their "45's."

After tea Wills was launched into a wind only just strong enough to support him, but after a beat or two he picked up a thermal, and in an incredibly short time was up to 3,000 ft. or so. The BUSSARD also took off, but was a little too late and the flight ended with a prolonged circuit.

Winch training proceeded till dusk, and Dickson's new telephones thoroughly proved themselves. The instructor's feeling of loneliness when a dog bites the wire has to be experienced to be believed.

Monday, June 1st.—Wind W.S.W., 5 to 20 m.p.h., i.e., anything from a nice soaring wind to a flat calm.

Wills had the first launch in HJORDIS, right into one of the said calm periods. Some 10 minutes later, when Wills was about half-way down the hill, the wind sprang up again, and so did Wills; only to bump his nose on a stone when landing and put HJORDIS temporarily out of action. Smith made two bad choices of time to launch in the GOLDEN WREN and went to the bottom both times (loud laughter); while Cooper had two short soaring flights in the BUSSARD.

Training conditions were, however, ideal, and we were able to launch prospective "B's" over the edge to do one beat and land. By this means Buckler, Leech, and Forman soon polished off their "B" certificates. This "semi-soaring" above the hill top seems the ideal way of taking a "B," as the shock of real soaring will not then come so suddenly. One super-optimist tried to soar the NACELLE and of course went to the bottom, while Godson held up the PRÜFLING for two beats.

Tuesday, June 2nd.—Wind east, 10 to 15 m.p.h. Rain most of the day.

One spectator sat huddled under a wall for an hour watching us do primary training in increasing heavy rain, and then came up and asked for the secretary as he thought he would like to join.

Wednesday, June 3rd.—Wind north, 15 to 20 m.p.h. Very low cloud, down to 100 ft. at times. Winch training resulted in two "A" certificates, Upton and Thompson. Launching high enough for an "A" meant going right up to the cloud base, and sometimes further. Upton wisely put his nose down when it became unpleasant, but Thompson found himself enveloped and had quite a sticky time before the ground appeared again. Strange ground it was too, when it did appear, a proverbial postage stamp of a ledge half way down the hill, entirely surrounded by quite impossible hazards. However, a postage stamp is enough for any glider pilot, so Thompson made a normal landing thereon and everyone was happy.

Friday, June 5th.—Wind north, 10 to 15 m.p.h. Ferguson and Shepherd, who had not had a chance on Wednesday owing to Thompson's "cross-country flight," proceeded to get their "A's" in rather more favourable circumstances. Wills appeared again with HJORDIS, complete with a new nose. Quick work, Sling!

Saturday, June 6th.—Wind west, 20 to 25 m.p.h. Wills went up in HJORDIS and watched the rest of the day's proceedings from a great height. These were as follows:—

First, our four new "A's" were given a hop each in the NACELLE in a strong wind to take some of the bounce out of them, but this object was not attained in every case. Then Kaye was hand-



A scene at the Derbyshire and Lancashire Gliding Club: a nacelled "Dagling" is climbing on the winch cable, while in the background is Camphill Farm with the clubhouse.

launched over the edge in the same machine for a very steady flight of three-quarters of an hour.

In the meantime the PRÜFLING was rigged and Godson took off while Kaye was still flying. Here was the much talked of comparison between the NACELLE and PRÜFLING; the NACELLE winning by a narrow margin.

Robertson took off in the GOLDEN WREN to watch the rest of the proceedings from not quite so great a height. Leech was launched in the NACELLE for his "C," which he took comfortably with a quarter of an hour. Brown was next in the PRÜFLING, and the contrast was startling. He must have been learning that song about Wild Mustangs, as it was always in doubt whether he or the PRÜFLING was in charge.

The instructors of the day now made a mistake in launching Forman for his "C" while Brown was still in the air. To use Forman's own words: "Everywhere I turned that damned PRÜFLING was just in front of me!" The effect of this on the mental poise of a man taking his "C" may well be imagined, and when Brown eventually turned over on his back in attempting a cross-wind landing the process was complete, Forman in his turn making a very heavy landing indeed—two very heavy landings, in fact. Unfortunately, by no stretch of the imagination could his landing be called normal, so that in spite of half an hour's flying his "C" will have to wait till another day.

Flying time for the day, approximately 7½ hours.

Sunday, June 7th.—Wind west. Not quite so strong—say 20 m.p.h.

Smith and Wills enjoyed themselves in the GOLDEN WREN and HJORDIS respectively. Thermals were about, but one could not be sure of connecting with a good one more often than once every half hour, so no one went away. Wills essayed the inside of a cloud, and came out on his ear, turn-and-bank indicator

and all; so all those who want to try cloud flying without a turn-and-bank or a parachute are welcome to do so; but not at this site, please.

Coleman did an hour or so in his GRUNAU, and after having been worried to death about the turbulence over the landing ground, made the prettiest landing of the day. Robertson worked really hard with the B.A.C. VII., soaring it repeatedly with two up, while Meads rigged the club's new KIRBY KADET and gave it half an hour's try out. It certainly looks very nice and he says it behaves perfectly.

Flying time for the day, approximately 10½ hours.

Sunday, June 14th.—Wind S.S.W., 20 to 25 m.p.h. Training with the PRIMARY and a new NACELLE DAGLING delivered by Slingsby yesterday. Robertson made the test flight in the new machine and soared it for 20 minutes. Hardy then completed his "B" certificate and Davies, Dickson, and Buckler tried to soar, the last two being "C" aspirants. It would have been a very well earned "C" to-day, however, as the GOLDEN WREN was at 300 to 400 ft. only and that on a beat of about 300 yards.

Wednesday, June 17th.—Wind east, 5 to 10 m.p.h. PRIMARY training with winch and hungy.

Saturday, June 20th.—Wind east, about 10 m.p.h. A full afternoon and evening of training with the PRIMARY and NACELLE. The instructors have recently issued a recommendation that after taking his "B" a man shall do at least one circuit before attempting his "C." Everyone took advantage of to-day's conditions to get their official circuit over.

Sunday, June 21st.—Wind east, 15 to 20 m.p.h. Training proceeded all day at the club, including PRIMARY beginners, PRIMARY winners, NACELLE straight winners and NACELLE circuiters. THE RED (or CRESTED) and GOLDEN WRENS flew at Mam Tor, putting in a total of about four hours.

Wednesday, June 24th.—Wind west, 5 to 10 m.p.h. Just not strong enough to soar the NACELLE. Thompson made all three flights for his "B."

In view of the probable popularity of our sites the committee have decided to ask "approved visiting pilots flying their own machines" to pay 10s. 6d., for which they will be entitled to Associate Membership and use of the club sites and equipment for two consecutive week-ends.

Cornwall Gliding Club

At the first General Annual Meeting, held in St. Austell on May 7th, the name of the club was changed from "St. Austell and South Cornwall Gliding Club" to "Cornwall Gliding Club." Officials and a committee were elected.

May 3rd.—A total of 27 slides and 6 hops. The wind was blowing straight down the slope, so that we had to launch up over the crest. Two of the hops were test hops, two were for the benefit of the Press, and the other two involuntary. Huxtable has never looked back from that fateful moment when he nearly landed on a wing tip and burst his way through the side of the nacelle, and is now as steady as anyone. The pressman must have been the Jonah. We fairly heaved the KEEBLING up the hill for his benefit, and then he tripped over the launching rope.

May 10.—A much better wind, resulting in 22 slides and 16 hops. The KEEBLING had a busy day. The ground training machine lived up to its reputation as the comic turn. It was "flown," or "run," on an even keel for the first time and consequently, instead of stopping after 100 yards or so, went faster and faster and finally charged the hedge at the bottom, the pilot having deemed it wiser to abandon ship a few seconds before.

May 17th.—18 slides and 7 hops. What may be the first mouse to take up gliding had its initial hops in the starboard wing. Tiring of instruction, it hopped out and departed across the flying field with members in full cry. [There is a case on record of a mouse trying to bring up a whole family in a glider's wing.—Ed.]

June 1st.—A few slides and hops before rain set in for the rest of the day.

June 7th.—Not enough members for a launching team, so we placed a "Flying Flea" man in the ground training machine. He had told us what an engine could do for the KEEBLING, so we showed him what a catapult could do. He looked worried as he shot by and pump-handled so hard that he ripped the tail-skid off.

June 14th.—The proportion of hops to slides now grows better. The trailer was ready at last and we moved to Newlyn Downs, but the wind was in the worst quarter, with drizzle. The flying was remarkably steady in the bad conditions, and as soon as the wind is right we should be able to report a few "A's."

Bath Gliding Club

The club is reported to have had its first flying meeting on June 21st, when its newly-acquired glider was assembled at Claverton Down. After unsuccessful attempts to get it off the ground with a bungee which was alleged to have perished, a large car was brought into action and the pilot, Mr. F. C. Smith, was lifted a few feet.

The statement in our last issue that a glider was expected "in the course of the next week or so" (which words were taken from the *Bath Chronicle*) has drawn a letter from "Lavinia" Light Aircraft, of 55, High Street, West Lavington, Wilts., who supplied the machine to the club. The firm considers that the words may cause some to think that they kept the club waiting delivery, and would therefore like us to make it known that they supplied the machine (from a stock of three offered) within three days of receiving confirmation of order.

Correspondence about the club has also been received by the *Bath Chronicle*, as the result of a petition got up by Admiral Sir Richard Peirse, protesting against the selection of Claverton Down for an aeroplane and glider club site. "Two Sane People" write to inform the Admiral that gliding is entirely silent, that no trees will have to be cut down, and that "the sooner it is realised that Bath is a modern city, and not a hibernating place for retired Colonels and dyspeptic Generals the better."

Other Gliding Clubs

Beacon Hill.—The "Beacon Hill Gliding and Aero Club" has secured a "gliding site and aerodrome" at Canewdon, near Burnham-on-Crouch. The Construction Committee is building a training glider. On June 21st the club visited the site and were given a lecture by Mr. Norman L. Derham, the club instructor; after which they went to watch the South-East Essex Gliding Club at Langdon Hills.

Pwllheli.—A member of this club, Mr. Bryniog Davies, described by the *Liverpool Post* as "an air-minded young quarryman," has spent all his savings building a glider in a disused school at Blaenau Festiniog. He is a member of the Young Wales League, whose president has helped him with a donation. He is going to try the machine out at Black Rock beach, 20 miles away, but must first save up enough money to get there.

Swansea.—The *Western Mail* describes the efforts of Mr. Harry Knott, of Swansea, to "lead the way in West Wales in the art of gliding." Having built a glider of German design, he "took the air shortly after 2 p.m." on a recent Sunday, and "was sustained in mid-air for half a minute, mainly through the pilot's enthusiasm." After which period, this novel source of power appears to have let him down badly, as he stalled and crashed on to the "soft grassland on the wilds of Mynyddygwair in Swansea Valley." When they had unstrapped him from whatever bits he was still attached to, he was found to be not only unscathed but undaunted, for he said: "When I have repaired this mess I will have another go at gliding."



A new pair of wings under construction for the Kent Gliding Club's nacelled "B.A.C. I." In the trailer is the "B.A.C. VI."

[Photo by L. C. Dugdale.]

PIONEERS 10 YEARS AGO

Right from the earliest days of Civil Aviation, Manufacturers, Operators and Owners of Aircraft realised the necessity of Insurance protection.

In 1924 this organization was formed to specialise solely in AVIATION INSURANCE and to meet the vital demand for adequate and reliable Insurance cover of British needs the world over.

Valuable pioneer work was carried out, and now it is recognised that the security of sound insurance has contributed a very great deal to achieve the stability that the British Aircraft Industry now enjoys.

The British Aviation Insurance Co., Ltd., after over 10 years of successful operation, can justly proclaim

RECOGNISED LEADERSHIP TO-DAY

Over 90% of the leading British Aircraft Manufacturing and Air Line operating Companies entrust their Insurance business to the Company.

In ever increasing numbers, private owners and those hiring Aircraft are realising the advantages of the sound Policies and technical appreciation of their needs.

Experience counts—the pioneer work of yesterday has been the foundation on which has been built the unrivalled leadership achieved by the Company in the Aviation World to-day.

THE

BRITISH AVIATION INSURANCE CO., LTD.

3-4, LIME STREET, LONDON, E.C.3.

Telegrams :
Aviacoy, Lime, London.

Telephone :
MANsion House 0444 (5 lines).

Underwriter and Principal Surveyor :
CAPT. A. G. LAMPLUGH, F.R.Ae.S., M.I.Ae.E., F.R.G.S.

GLIDERS!

This publication is the only journal to give exclusive news of the Clubs and details of the sport of Sailplaning and Gliding. The Publisher wants to make the issues *fatter*. More subscribers are first needed to increase circulation.

**DO WHAT!
YOU CAN!**

H. O. DAVIES

13, Victoria St., London, S.W.1

The HOUNSFIELD CAMP BED

This bed is ideal for comfort, compactness and lightness.

The sheet of khaki coloured rot-proofed canvas is stretched on springy steel side rods, held apart by four W-shaped supports with solid brass fittings, rubber feet and adjustable end flaps for pillow and feet. Folds into small neat roll.



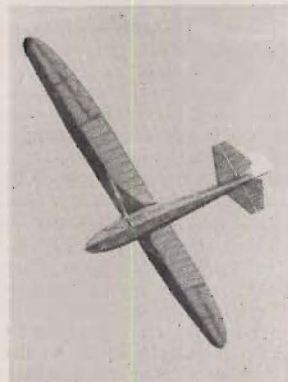
COMFORT - FLEXIBILITY - LIGHTNESS - PORTABILITY

The steel is rust-proofed and no wood is used. The illustration shows how the four supports enable the bed to conform to the irregular shape of the human figure.

In six sizes from 12/6 to 26/6. Weight 5 to 9½ lbs.
Send for leaflet B.5.X.

**HOUNSFIELD & Co., Ltd., 81, Morland Road
CROYDON**
Telephone: ADDiscombe 3696

GRUNAU BABY II



THE WORLD'S MOST WIDELY FLOWN SAILPLANE.

Weight	-	-	125 kg.	Span	-	-	13.50 m.
Loading capacity	-	-	90 kg.	Total length	-	-	5.975 m.
Max. speed on tow	-	-	75 m.p.h.	Gliding angle	-	-	1.18
Sinking speed	-	-	-	-	-	-	0.85 m/sec.

**Primary GRUNAU 9
Two-Seater GRUNAU 8
"LA FALDA" Motor Sailplane**

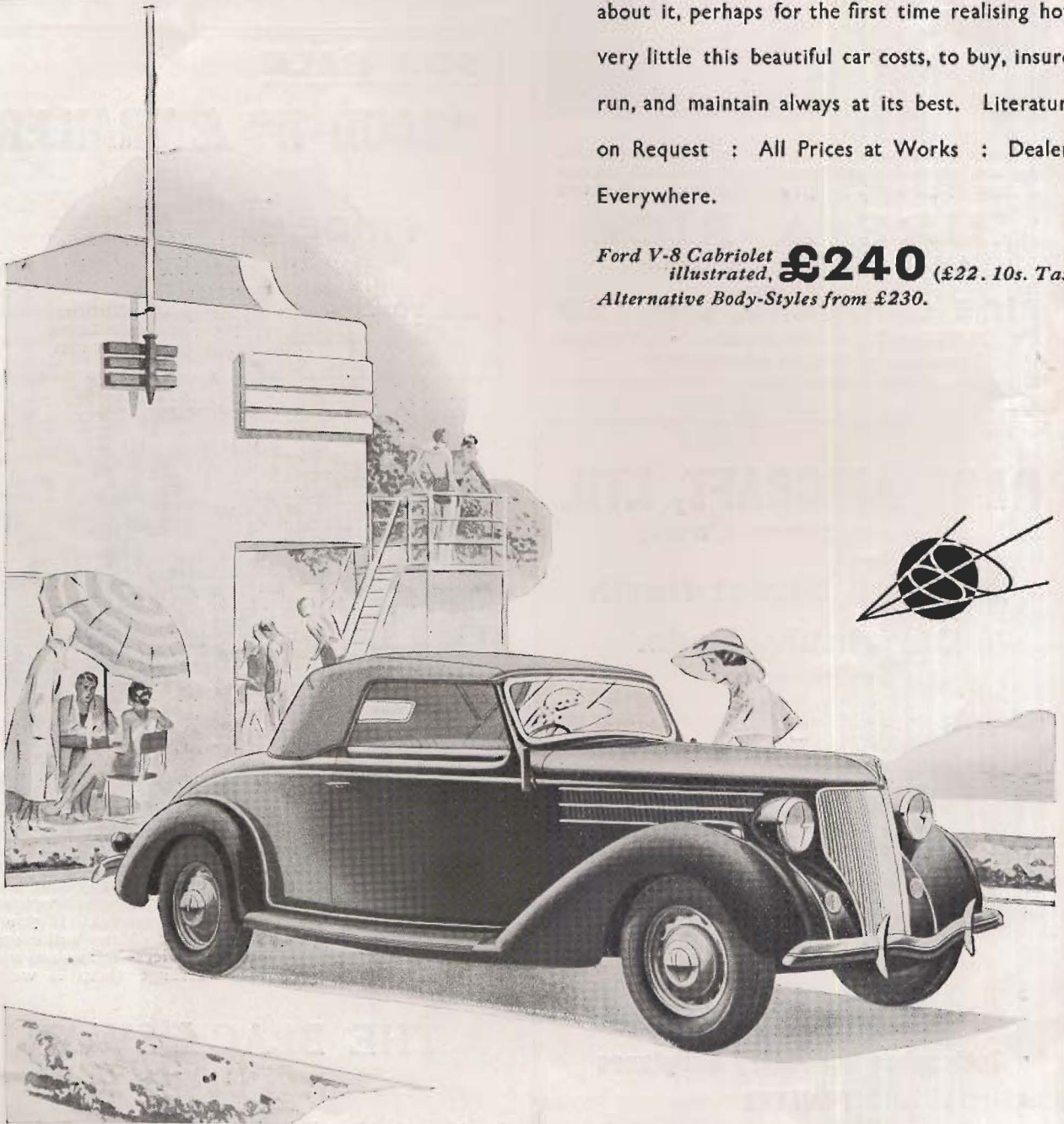
Quotations for these and other machines and board instruments through exclusive Export Agent:

**WALTER EXNER, ALA ANZEIGEN A.G.
BERLIN W 35, GERMANY.**

Ford V-8

To or from the swimming-pool, there's only one way to travel "de luxe," in the luxury-car for the economically-inclined, the FORD V-8, that does so much, so easily, so well, and so inexpensively! The Local Ford Dealer invites you to know all about it, perhaps for the first time realising how very little this beautiful car costs, to buy, insure, run, and maintain always at its best. Literature on Request : All Prices at Works : Dealers Everywhere.

Ford V-8 Cabriolet **£240** (£22. 10s. Tax)
illustrated,
Alternative Body-Styles from £230.



CARAVANS *for*

Bradwell Edge Meeting & Sutton Bank Camp



A two or three berth caravan provides really comfortable quarters, just the food you like and when you want it, at a cost of about 30/- per week. A day's gliding demands a night's rest

HIRE A RICE

And take the family for a pleasant week

RICE CARAVANS, LIMITED

26, GARGRAVE · SKIPTON · YORKS.

Makers of TRAILER COMPONENTS

FOR SALE NEAR SUTTON BANK

DETACHED BUNGALOW

Attractive situation, garage, well-kept garden, modern sanitation, hot water, negligible rates.

HALL, SUTTON, THIRSK

FOR SALE

"SCUD II" & TRAILER

NEW JULY, 1935

PRICE - - £85

(Without Trailer)

J. S. FOX - - Rookery Wood House
Loudwater Lane
Rickmansworth

DART AIRCRAFT, LTD.

(Formerly ZANDER & WEYL)

29, High Street North
Dunstable, Beds.

TELEPHONE 429



MANUFACTURERS
of
LIGHT AIRCRAFT



Cambridge Sailplanes
Totterhoe Secondary Sailplanes
TRAILERS



At home to Gliders

THE BLACK SWAN HOTEL is at Helmsley—only seven miles from Sutton Bank. It is a Trust House, which means comfort, good food and quick service. And we are happy to say that we have made special arrangements for gliders. You can have a 3/6 or 4/6 dinner—or bacon and eggs at odd hours if you prefer.

Bed, bath and breakfast cost 9/- a day. We will gladly take phone messages from cross-country gliders—ring up Helmsley 3. We can accommodate cars and trailers. You may have parcels and things sent here to await your arrival. If you can think of any other special services—tell us and we will arrange them if we can.

THE BLACK SWAN HELMSLEY

Proprietors - Trust Houses Ltd., 53, Short's Gardens, London, W.C.2



KING'S CUP AIR RACE

SATURDAY, JULY 11

WON BY

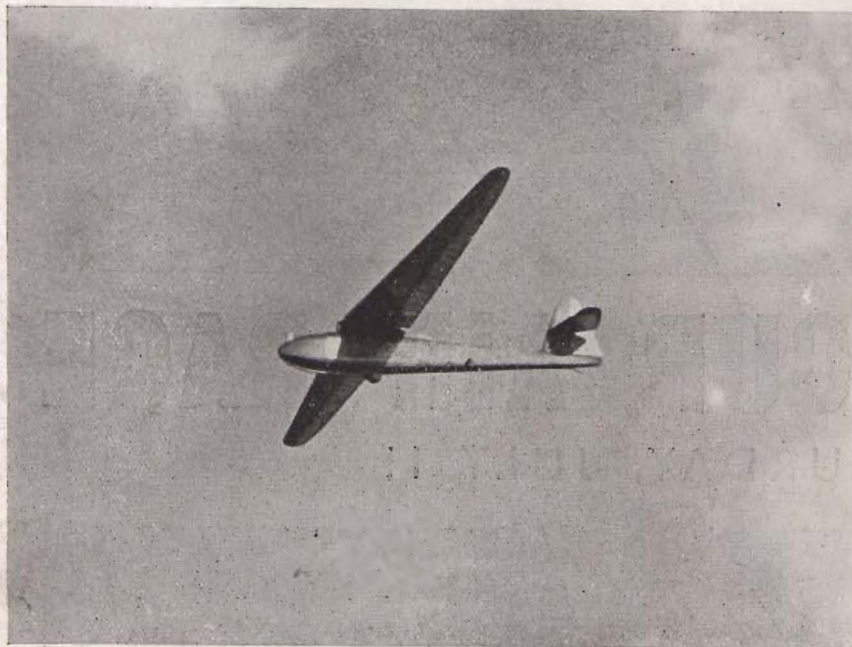
C. Gardner

**PERCIVAL VEGA GULL
(GIPSY ENGINE)**

USING

WAKEFIELD **PATENT**
Castrol
XXL

Adkinson 32 Wensley Green



THE CARDEN-BAYNES AUXILIARY
(Engine Retracted)

Patents applied for

SCUD II

The most successful sailplane in the 1933 and 1934 B.G.A. annual contests, and holder of British altitude record of 8,323 ft. A light and efficient 40 ft. span sailplane designed for the private owner. Easy to erect and launch.

Price £125, at Works

SCUD III

A new highly efficient design of greater span and refinement. Even easier to erect and operate. Quickly detachable cantilever wings and tail planes. Wheel undercarriage to assist take off and ground handling. Ball-bearing controls. The most practical sailplane ever designed.

Price £175, at Works

GARDEN-BAYNES AUXILIARY

Identical with Scud III but fitted with a small retractable auxiliary motor to enable the machine to operate from aerodromes or flat fields and climb to sufficient altitude for thermal or cloud soaring. Engine or air-screw may then be retracted into the neck of the fuselage; restoring the gliding angle to that of Scud III.

Provisional Price £250

TRAILERS PARTS MATERIALS

ABBOTT-BAYNES SAILPLANES

(Branch of E. D. ABBOTT, LTD.)

FARNHAM, SURREY

Phone—Farnham, Surrey 682, 683

FIRST AGAIN

On April 18, 1936, A. L. SLATER flew from Gt. Hucklow to Gosberton, a distance of approximately

75 MILES
and thus obtained the

DISTANCE RECORD

for a British Sailplane (height 4,500 ft.)

THE MACHINE USED WAS A HOME-BUILT "WREN," THE IDEAL SAILPLANE FOR AMATEUR CONSTRUCTION

Constructional Drawings of the "KESTREL" or Improved "WREN," £6 6s. Od., obtainable from:

THE DUNSTABLE SAILPLANE CO.
LUTON AERODROME, BARTON, BEDS.

ELLIS'S HANGAR

(No. A7)—As supplied to Gliding Clubs for the housing of Sailplanes, Gliders & Small Airplanes. Carr. paid within 100 miles of works. Easy terms arranged.

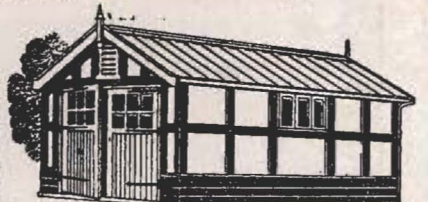
£89/17/6



SPECIFICATION 50 ft. long, 30 ft. wide, 8 ft. to eaves, 15 ft. 6 in. to ridge. In complete sections for easy erection. Walls 3 in. T. & G. Stormlock weatherboards on 3 in. x 2 in. framing. Iron-bound roof principals 7 in. x 3 in. on 5 in. loose studs. Iron tie rods and brackets 10 ft. apart. Purlins 4 in. x 2 in. covered 3/4 in. T. & G. matching one-ply bitumen roofing felt, finished barge boards. Three windows each side 21 oz. glass. Each end single hinged doors. Light removable shutters. Two 5 in. x 4 in. raking struts as wind braces. At reasonable extra cost the Ellis Hangar can be covered with "PLYBESTOS" unbreakable fireproof board which will revolutionize sectional buildings.

The 'RAINHAM'

Strong framing with 1 in. weatherboards to strin course. Upper portion of asbestos sheets with broad wood overlays. Roof framed of principals and purlins with covering of Italian Pattern Galvanised Iron. Half glass doors strongly framed and braced. Despatched in sections, all nuts and bolts supplied.



12'x 8'x6'x 8' £11 15 0 | 16'x 9'x7'x 9' £16 17 6
14'x 8'x6'x 8' £13 2 6 | 20'x10'x7'x10' £21 5 0

Available on Easy Terms. Carriage paid in England and Wales.

STANDARD GREENHOUSE M.110.C

Complete sections for erection on framework—double corner posts—wood base 3/4 in. V-jointed boards—roof framed in complete sections—21 oz. glass cut to size.

7' x 5' x 7' x 4' £6 10 9
9' x 6' x 7' x 4' £8 12 6



Send for FREE CATALOGUE

G. ELLIS & CO. Coombe Wharf, Gainsborough London, E.9

"MALLITE" AND "APPCO"

GLIDER

PLYWOOD

RECOGNISED THROUGHOUT THE WORLD AS BEING THE BEST OBTAINABLE

Manufactured by the

AERONAUTICAL & PANEL PLYWOOD CO., LTD.

218-226, KINGSLAND ROAD, LONDON, E.2.

TELEPHONE BISHOPSGATE 5641

193