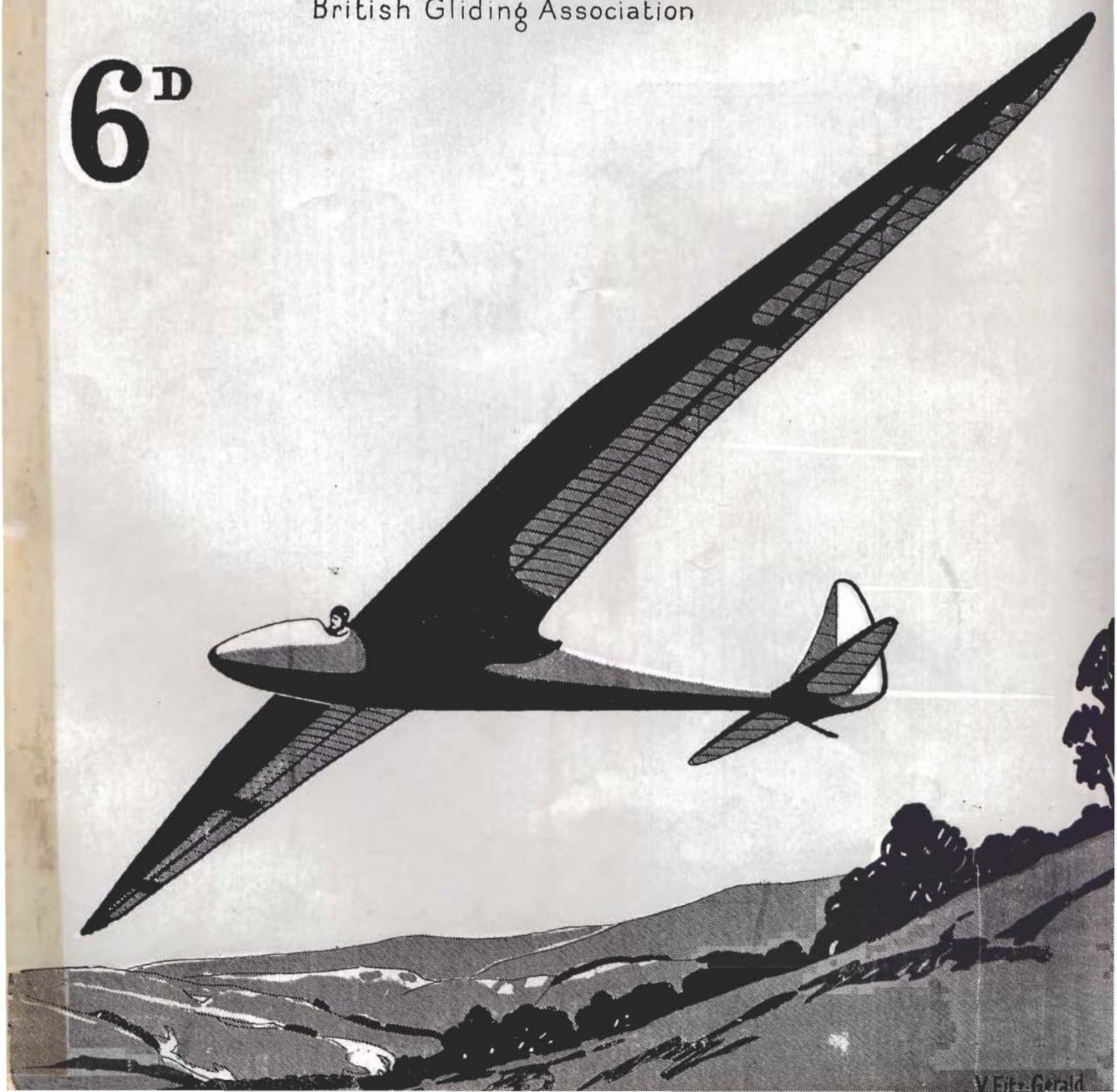
March 31st, 1933. Vol. 4, No. 6.

THE SAILPLANE & GLIDER

Official Organ of the
British Gliding Association

6D



THE SAILPLANE & GLIDER

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

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

OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION.

Editor: ALAN E. SLATER.

Editorial Offices: 43, CHANCERY LANE, W.C. 2. *Telephone:* HOLBORN 0309.

Subscription Rates (Post Free): Annual 15s. 0d.; Half-Yearly, 7s. 6d.; Quarterly, 3s. 9d.

Vol. 4. No. 6 March 31, 1933. **Published fortnightly on alternate Fridays. Price 6d.**

The Offices of the SAILPLANE *viewed from the historic XVIth Century gateway of Lincoln's Inn.*

CONTENTS.

What are you building?

It is some time now since THE SAILPLANE published anything much on the subject of detailed design and construction, and there are signs that some of our readers who are specially interested in the subject will soon be getting restive. The suggestion which has been frequently made in the past is that we should publish full working drawings for the construction of a particular type of glider. The question then arises: what type? There is not much use in publishing, in issue after issue, full instructions for building a high-performance SPOTTED PIPCHAT if not one of our readers has the slightest intention of constructing a PIPCHAT or anything remotely resembling one.

So we would welcome any information which would enable us to get a comprehensive view of what is being done in the way of glider construction in this country, and what particular difficulties have arisen here and there due to lack of expert advice. Then we shall know better what to give you.

Incidentally, one correspondent pleads for more information about *design* and the stressing of the various parts. It is a big subject, and one on which the Editor is every bit as thirsty for knowledge as his readers.

Over the Hills and Far Away.

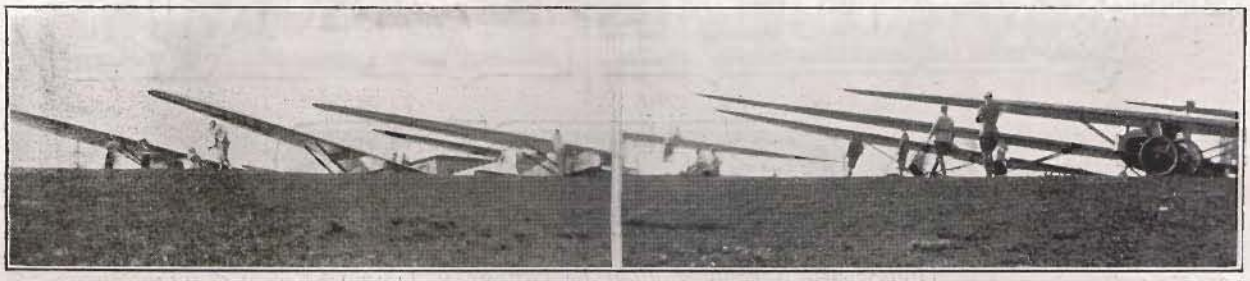
The adventures of the party which went up to the Lake District and indulged in a soaring exploration of the peaks around Black Combe, are such as we would like to see repeated over every hill and mountain in the country. In the South there are the many ridges of chalk Downs, all running more or less East and West for miles at a stretch, simply asking to be soared over. And in the North there are the mountains. There must be few people who have climbed a mountain-top without feeling prepared to "give anything" for a pair of wings with which to take off and soar over the valleys spread at their feet.

And *it can be done.*

But, as the Black Combe expedition has shown, it is not such a simple thing as might first appear. The difficulties were such as needed the generous help of an entire gliding club to surmount.

Perhaps, in time, we may evolve something after the manner of the Camping Club, with their long list of camping sites all over the country, all with the landowner's approval already obtained. But we shall not build up a similar collection of launching sites and landing grounds until there have been many such expeditions as the one

WILL YOU BE THERE THIS YEAR?



Rapier-like wings of competing Sailplanes lined up on the Wasserkuppe summit. Volunteers are wanted to join the British contingent at the International Competitions to be held there from August 13th to 20th, this year. Write to the Secretary, British Gliding Association, 19, Berkeley Street., W.1.

just made. Not until the landowners, and the public generally, have come to look on gliding and soaring as a normal feature of our social life, will they cease to regard it, as they appear to at present, as something which must be hampered in every way and, if possible, prevented altogether.

OBITUARY.

It is with regret that we have to record the death of Mr. Max Sellers, on the 10th inst. from tuberculosis.

It will be remembered by many that Max Sellers gave considerable thought and attention to the Gliding Movement in the North, having founded the Cononley and District Gliding Club in June, 1930. Before founding the Club he had been a keen enthusiast of motor-cycle racing.

It is interesting to note at this time that he purchased a WREN light 'plane, which he intended to overhaul and use as a motor-assisted glider. His experiments were advanced when he was advised by his doctor to discontinue them.

He was 29 years of age, and was educated at Keighley Grammar School and Oundle. He had only been married two years and had one daughter aged four months.

He held a commission in the 6th Battalion, Duke of Wellington's (Territorials).

May we take this opportunity of expressing our sincere sympathy to his wife. J. L. R. W.

THREE YEARS' PROGRESS AT THE LONDON GLIDING CLUB.

ABOVE:—March 16th, 1930. The Club's first out-door meeting at Guildford, showing one of the two Primaries with which activities were begun. BELOW:—March 19th, 1933. The Club House and three hangars at Dunstable.

THE NEW "SAILPLANE" COMPETITION

Entrants for this Competition are asked to send a short article of not less than 250 words, accompanied by either a photograph or a sketch illustrative of the article. The subject-matter must be related to motorless flight. More than one illustration may be sent, or verse (minimum five lines) may be substituted for the article. No part of the entry may have been published elsewhere.

Competitiors should state that they are entering for the Competition, and give name, address and gliding club (if any). These will not be published if so desired. The best entry received during any one month will entitle the winner to receive THE SAILPLANE free for six months. In addition, the sender of any entry published, whether a winner or not, will receive two extra copies of the issue in which it is published.

The Editor's decision is final.

THE FIRST GLIDING MAIL.

It has been widely stated in the Press that Kronfeld's flight from Vienna to Semmering on January 27th was the first occasion on which mails were carried in a glider. This is incorrect. In the first place, mails were carried in a FALKE from the Wasserkuppe to Gersfeld several times during last year's Rhön Competitions. This was claimed to be the first *regular* gliding mail.

But in the issue of *Flugsport* for September 16th, 1925, appeared the following paragraph:

"The first glider post service from Wasserkuppe to Gersfeld was flown by Espenlaub on the 31st of August. For this glider post the Rhön-Rossitten Gesellschaft had produced special stamps, which, as they were only produced in small quantity, will soon attain a high value for collectors."

A photograph was given showing one of the letters carried, complete with stamp and postmarks, addressed to "Familie Ursinus."

It is to be noted that, when carrying this first gliding mail, he actually *flew* all the way, for aeroplane-towing had not then been invented.

SOARING IN CALIFORNIA.

The above photograph, which has been sent by Mr Jay Buxton, of Hawthorne, California, wins THE SAILPLANE Photographic Competition for February. He sends the following description of it:—

"Formation flying along bluffs of Pacific coast from Hollywood Riviera Glider Field in Southern California as variety during a glider meet held there. The glider PEAPOD on the left was brought from Detroit, Michigan, on a trailer, a distance by the southern route of 3,100 miles, for this meet by the pilot-owners, M. Stoughton and B. Wilson, of Detroit Glider Club.

"The SLOANLO on the right, with pilot J. Buxton, has made a 7 hour 15 minute flight, gaining an altitude of 3,600 feet. He has also been up with a passenger 1 hour 35 minutes, the glider being a two-place, dual control, cabin job with two large airwheels for landing gear.

"LA AGULA ("The Eagle"), in the centre, is piloted by G. Rowell, 14 years of age—his second year of flying, too. He later deliberately landed in the ocean to satisfy a newsreel cameraman. Rowell and Buxton are members of the South Bay Glider Club—a wet name for a club, but the field is located in the south of the Santa Monica Bay."

SCHOOLING IN POLAND.

The Lwow, or Lemberg, Aero Club run a gliding school at Bezmiechowa, in Poland. During 1932 five courses were held.

The instructional groups carried out 1,632 launches and 58 hours' 16 minutes' flying time, and 22 "A," 22 "B," and 28 "C" tests were passed, the longest soaring flight being 4 hours 53 minutes.

In the advanced group 532 flights were made, adding up to 238 hours 34 minutes. The greatest height attained was 840 m. (2,756 ft.) above starting-point, and greatest distance 20 km. (12.4 miles).

At another school, in Ustjanova, 9 "C" tickets were obtained, and the total flying time was 41 hours 44 minutes.

In Poland they don't "estimate" their total flying time: they calculate it.

A QUOTATION.

"I took her in and landed. I was drunk with air. I was wild, and driving home sang and shouted, full of realisation that we have found a new freedom—a new Ocean. For thousands of years we have crawled or run on the earth, or paddled across the seas, and all the while there has been this great ocean just over our heads in which at last we sail with joy. The longing for the sea: the call of the sea, one has heard of that, and that was the natural adventure in the past. But now it is a longing for the air, to go up. The air is more marvellous than any sea; it holds more beauty, more joy than any Pacific swell or South Sea lagoon."

DAVID GARNETT *(A Rabbit in the Air).*

A ZOGLING IN SWITZERLAND.

On February 12th, Karl Flachsmann, instructor to the Baden gliding group in the canton of Argovie, took off in the Club's instructional ZÖGLING in a strong wind and soared up to 2,300 ft. Apart from fitting it with a speed indicator and something described as a "keel in front," the ZÖGLING was quite un-tampered with. The pilot landed after 67 minutes, having performed the first soaring flight of over an hour in Switzerland this year.

A TRIP TO BLACK COMBE

By ONE OF THE PILOTS.

All ready to set out from Dunstable.

When the Secretary of the Furness Gliding Club wrote, suggesting that we take the CRESTED WREN up to Barrow for a long week-end, and kindly putting all the resources of the Club at our disposal, the scheme appeared rather a wild idea: 500 miles for two days' flying, or even no flying at all. But the slopes of Black Combe and the Secretary's persuasive letter won, and on Thursday, March 9th, at about 1 p.m., we set off with the WREN on the 250-mile trip to Barrow-in-Furness.

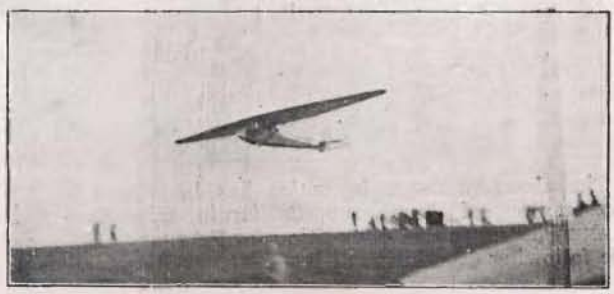
Ten miles out, the tow-bar broke and the trailer careered across from one side of the road to the other. But . . . there was no traffic in sight at the time, and it did not fall over sideways and smash a wing, and that was our first stroke of good luck. Three hours later, a new tow bar had been fitted and we were on our way again. After a night at Lichfield, we resumed our journey and, after a few minor mishaps, arrived at Barrow that evening, just in time for Mr. Humphries' lecture to the Institute of Barrow Engineers on "Motorless Flight."

The next day broke fine, and with a moderate east wind, and we made an early start for Black Combe. The make-shift towbar bent on the way, but we straightened it and continued, not to be cheated of some soaring after so long a journey. On the steep road up to the site the car nearly stalled, but we all got out and pushed, and so got up the worst of the hill. Nevertheless, our troubles were not yet over. Half a mile further on, the car blew a water joint, thus stopping us within a mile of our objective. But a member of the Furness Club was there with a motor-cycle and—not to waste words—we were on our way again in an hour with a new water-joint.

The "Wren" being rigged, with the assistance of the Furness Club members.

At last we reached the summit of the road. To the South lay the top of the Black Combe ridge, but a mile and a half away over moor, impassable for a car and trailer. So we decided to make the first launch from some unpromising looking slopes to the North side of the road. By this time, the Furness Club were here in numbers, and after helping us rig the machine, they carried it a mile along the ridge to the North. The fall of a coin decided that Humphries should fly first, and so, leaving him to put on his boiler-suit and fur cap—a costume familiar to London Club members—we picked a suitable launching-point on the rock-strewn hillside. But here we made our first mistake, in that we did not launch him from the top, and our second, in that the release was premature, and so the first flight on Black Combe made its inauspicious beginning. But he soared for 20 minutes, finally landing further down the slope, having only got up to 100 ft. at the best part of the flight. Indeed, we did not really expect much more as the ground here rises only gradually—about 1 in 12 on the average—and the wind was only blowing at about 15 m.p.h.

"Fighting a losing battle" was Humphries' first description of the flight, but later the following conclusions were reached: The ridge itself faces East but slopes upwards to the North towards Buck Barrow (see map) so that a pilot flying North along the ridge in a moderate wind would see the ground getting nearer to him and so presume he was losing height. A glance at his aneroid would have dispelled the illusion, but Humphries, at the time, thought that the best lift was at the South—i.e., the lower end of the ridge, and so he did not make much height above the starting-point. We also decided that it was essential to launch from the very top of the ridge.



The "Crested Wren."

The machine was then carried up—this time to the top—and Dewsbery was given a strong launch with four a-side. He immediately turned northwards and for about 10 minutes soared up and down a steep bit of the slope (marked A—A on the map) about 100 yards long and 70 ft. in height, keeping a height of 150 ft. Above this slope was a gentler slope about 100 yards across, and then, crowning the summit of the ridge, Buck Barrow itself—a rocky outcrop about 100—150 ft. high. Dewsbery then flew slantwise across the intervening slope and manœuvred himself into the up-currents over the Barrow itself and, after five or six beats, had reached a height of 400 ft. above starting-point. He then flew out to Plough Fell straight ahead, but lost height over this down to 100 ft. and returned to the original soaring slope with 50 ft. of height to spare and started all over again. Having got up to 400 ft. once more over the Barrow, he flew further North towards Burn Moor and on the way noticed a steep slope in Sele Bottom (B—B) and over this a height of 840 ft. was reached. He then set off in a north-easterly direction towards a conical hill (Pike Side), overlooking the Duddon Valley, and finally disappeared from sight in the haze. Owing to the upward trend of the ground all over this part of the flight, Pike Side was reached with scarcely any loss of height, and he was able to look down on to the floor of the Duddon Valley over 2,000 ft. below. He then returned to the launching point at a height of 500 ft. and landed, having been up 1 hour 20 minutes.

Major Petre was then launched and soared over the same slope as before (A—A), but it was getting late, and after a quarter of an hour he landed down at the road, by the trailer.

One may conclude that, although the eastern slopes here are, on the whole, not steep enough to soar away from directly, a little manœuvring from one local steepness to another makes it possible to reach a height where it is possible to soar anywhere, whether the slope below is steep or not. Were this not so, it would not have been possible to reach Pike Side without any loss of height, for the ground covered here only rises gradually. Furthermore, even with the quite gentle wind then blowing—

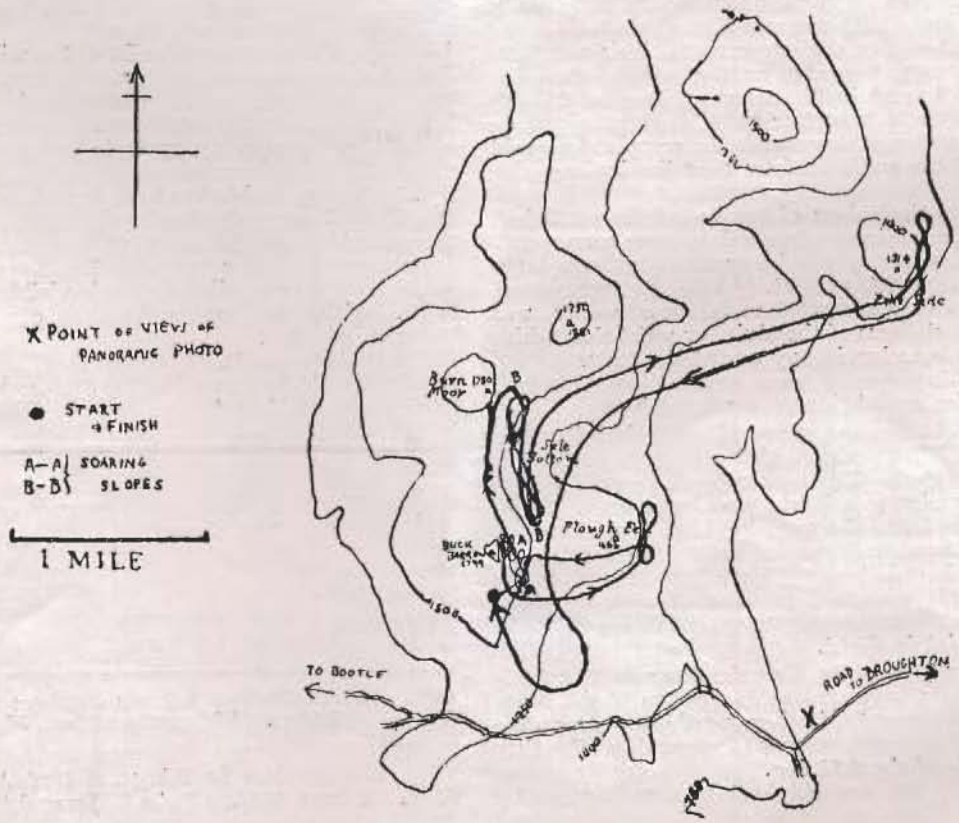
A PANORAMA. These photographs were taken from point x on the map and cover a sector from N.W. to N.

15 to 20 m.p.h.—it might have been possible to reach the soaring slopes of Black Combe itself, for the machine, by reason of its launch from a point 1,750 ft. above sea-level and a height of 800 ft. gained over that, was more than 1,000 ft. above the top of the Black Combe slopes, which were only two miles away, across wind and with rising ground intervening.

The next day the weather was the same—hot sun, cloudless sky, but the wind a little lighter. This time, the WREN was carried South towards the slopes of Black Combe itself, over bogs, across streams, up hills, a distance of a mile and a half, many of the Furness Club members working themselves to a shadow in the effort. Eventually, Swinside Fell was reached. A weak, fitful East wind was blowing. Dewsbery was launched and soared up and down the face of the Fell for about 10 minutes, at times below the starting-point. He then cut across the back of the next spur in the hope of finding a better slope but lost height steadily and finally landed, after 20 minutes, 800 ft. below the starting-point.

By this time the wind had all but vanished and a thin haze drifted up the Duddon Estuary. Above all this the sun blazed down from a cloudless sky—typical anti-cyclone conditions. The weather, which up till now had been kind to us, had overdone itself in misplaced generosity. We waited a couple of hours for a wind that did not come and finally launched Major Petre from the hillside. He made a long straight glide of over a mile and landed in a field 600 ft. below at the side of the main road. It was fascinating, in this flight, to watch the machine flying straight away from one for so long, gradually getting smaller and smaller, yet scarcely seeming to lose any height. It is rare flights like this that make one realise what a gliding angle even a moderately efficient sailplane has.

The trip was now finished and, putting the machine back in the trailer, we returned to Barrow to make our preparations for the next day's journey back to Dunstable, having learnt as much about the technique of transporting gliders as of soaring them. Indeed, this was partly the purpose of the trip—a dress-rehearsal of many more such trips we hope to make during the coming summer to various big sites in England: Ingleby, perhaps Itford, perhaps even Crossfell, and certainly Black Combe, if the Furness Club will stand for it again. This brings us to the pleasurable duty of thanking the members of the Furness Gliding Club for the resources they placed at our disposal. Their Secretary's promises were fulfilled to the letter; nothing was too much trouble, nothing was impossible. Our only complaint was that we could not watch them flying. However, if the flights showed them the soaring potentialities of their district, we shall feel that we have, in part at any rate, fulfilled our side of the bargain.



BIRD FLIGHT IX

WIND TUNNEL TESTS WITH BIRDS' WINGS.

By

C. H. LATIMER-NEEDHAM, M.Sc.(Eng.), F.R.Ae.S.

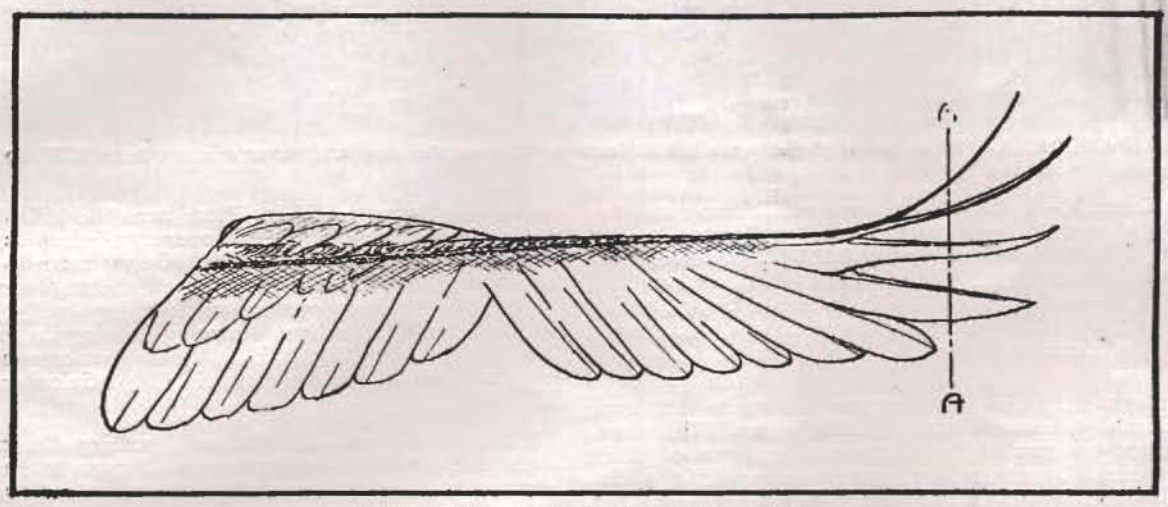


Fig. 25. Wind-Tunnel Tests of Bird's Wing.

These tests were carried out in a wind-tunnel of 4 sq ft. cross-section and, in consequence of the small size, wings of small birds were selected for the tests. The species tested were the Chaffinch, Great Tit and Blackbird with wing areas (one wing) of 6.6, 6.8 and 22 sq. ins. respectively.

Good coefficient values were neither anticipated, nor were they obtained, on account chiefly of the wash-out from root to tip of the wings, which gave varying degrees of incidence along the span, of as much as 30 deg. in one instance. Other upsetting factors were due to the presence of the supporting rod, which extended for some distance along the span, and a certain amount of unevenness of the wing surface where the rod was attached.

In order to obtain a proper support for the wing under test, the end 2 ins. of the rod was filed thin, flat on one side with the other face slightly curved. This was then placed under the leading-edge of the wing (below the radius and ulna bones), with the curved face on the outside curvature. The actual attachment was carefully made by sewing, but it was impossible to completely avoid displacement of the small feathers over the leading-edge portion.

Not only were the values of maximum lift coefficient low, but also the minimum drag values were correspondingly high, which was only to be expected with the large amount of wing twist present. Still another factor, which undoubtedly contributed to the poor results, was provided by the stiffness of the alula, or wrist slot, which did not come into action in any one of the tests.

Some interesting results were nevertheless obtained, and some particulars of these are set out below.

1. In Fig. 25 is shown a view of the Blackbird's wing from the front. The position of the primary feathers is of particular interest. The upward and forward deflection of the primaries, previously mentioned on p. 3, Vol. IV., No. 1, has been observed by Mouillard, Hankin, Graham and others, and can be noticed by careful ob- such as the Rook and Crow. This is best seen when the servation of birds with well-pronounced wing-tip slots, observer is able to stand on a prominence so as to be level with the bird in flight.

The angle of attack at the time the diagram was made was + 20 deg., as measured at the centre of the span, but deflection of the main feathers would tend to reduce this and, in fact, a rough measurement made at the time showed an angle of about 18 deg.

The maximum lift was obtained at a rather greater angle of attack, roughly 25—30 deg., but may have been about 20 deg., by taking upward deflection of the trailing-edge into account.

From Fig. 25 and the true measurements of the wing under normal conditions (see Fig. 14), it is possible to construct a cross-section through the primary feathers, such as at "AA" of Fig. 25. The result is shown in Fig. 26, the amount of forward deflection of each primary, however, having been estimated. The similarity between this and Fig. 13 is at once recognised, and this confirms, to some extent, the theory put forward in Part V., in explanation of the method by which full thrust is obtained by birds with short, well-slotted wings.

2. The lift curve, or lift coefficient plotted against incidence, in each case showed the absence of a sharp peak at the maximum value, although this was undoubtedly due in part to the natural twist of the wing.

3. In two different tests, when a large angle of attack had been reached, the top covert feathers were seen to flap up and down, that is, to break away from the outline of the wing by curving upwards and forwards. Similar conditions have been observed by Graham,* to whom Fig. 27 is due, which has been reproduced from a photograph of a Montagu's Harrier about to alight on its nest, the coverts near the roots of both wings having the appearance of being ruffled. In the outer two-thirds of the wing no such disturbance is visible, due, no doubt, to the wrist-slot effect, as the alula can be discerned in the open position.

The explanation is, of course, that, at large angles of attack, the air flow over the top surface is no longer able to conform itself to the contour of the wing, with the

Fig. 26. Position of Primary Feathers during Flight. Section "AA" produced from Fig. 25.

*"Safety Devices in Wings of Birds," Lieut.-Comdr. R. R. Graham, R.N., "R.Ae.S. Journal," January, 1932.

result that air flows round from below the trailing-edge and down from above the wing, and hence eddies are set up. The small covert feathers shape themselves to the eddies as they form and are thus in a state of instability.

The true incidence of the wing at which the phenomenon described commenced to show itself was in the neighbourhood of 45 deg., and from an inspection of Fig. 27 it would appear that a fairly similar angle obtained in that case. The figure is also of interest on account of the conformation of the primary feathers at the wing-tip, which bears a close resemblance to Fig. 25.

4. The only sure method of determining the flight characteristics of birds' wings is to fashion models, free from twist, to the correct sectional shape. For preference, these should possess flexible trailing-edges to resemble the wing as far as practicable and with a similar degree of resilience.

Instead of keeping the air speed constant throughout the test, the loading should remain unaltered, this being of similar intensity to the normal loading for the particular species, and the speed of flow should then be adjusted for each incidence so as to just balance the predetermined load.

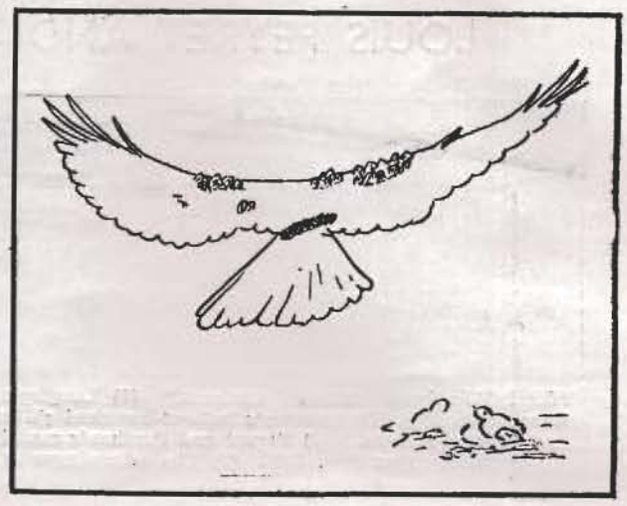
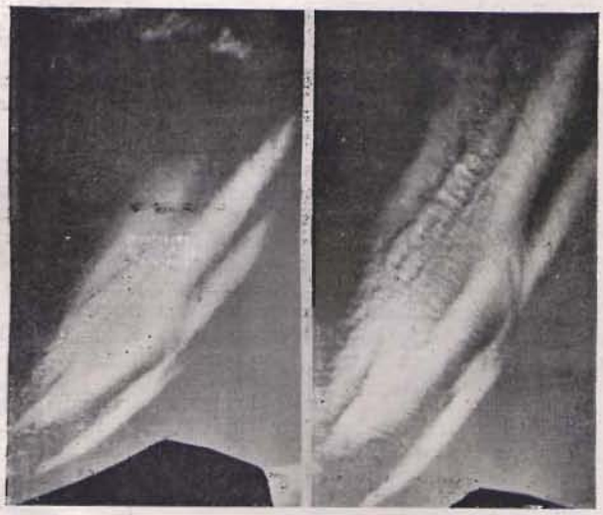


Fig. 27. Montague's Harrier alighting on nest.

The issues of THE SAILPLANE *in which previous articles in this series appeared can be obtained from the Publishers 4s. 6d. for eight issues or 7d. each for single issues, post free.*

SPIRAL MOTION IN CLOUDS



"Transverse roll" clouds.

These two photographs were taken at Dunstable, looking S.W. by S., on October 20th, 1932, at 2.5 and 2.6 p.m., the interval being almost exactly a minute. The "trough," or cold front, of a secondary depression had passed shortly before, and rain clouds given way to clear sky, with a slight veering of the wind.

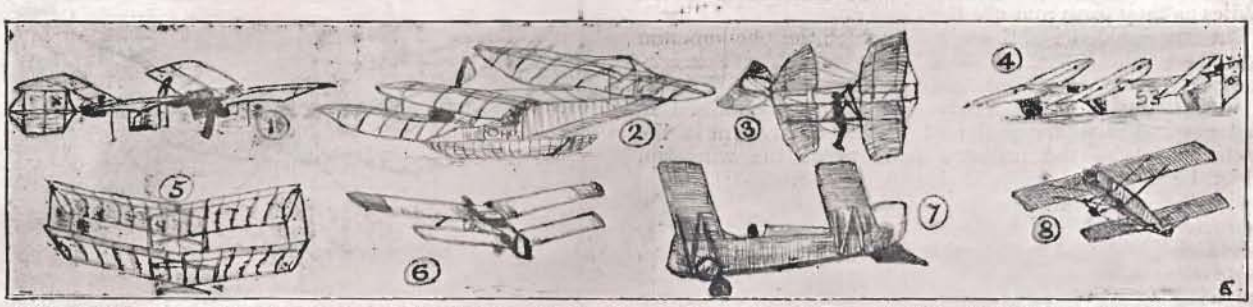
The rolls of cloud are roughly transverse to the wind direction (approaching from the right), and may be taken to illustrate the first part of Sir Gilbert Walker's lecture reported in our last issue.

The "ribbed" texture of the rolls is clearly seen; in fact it has actually become more distinct during the interval between the photographs. But there is one roll, that which points towards the top right-hand corner, which seems to show a spiral structure, and the same is true of the extreme right-hand roll.

It is a good rule, when photographing clouds that are believed to be undergoing change, never to take just a single photograph, but to take at least two. It is a rule that is almost completely disregarded by all the best-known authorities on the subject. But remember, when comparing photographs like these, that you are living in a three-dimensional world, and do not attribute to a change of form what is merely due to a changed perspective.

A. E. S.

LOUIS PEYRET AND THE TANDEM PRINCIPLE



TOP ROW: Some historic "tandems." (1) Langley's steam-driven "aerodrome," 1896. (2) Wilhelm Kress's water-plane, 1901. (3) Montgomery's balloon-launched glider, 1905. (4) The "Maikäfer" glider, 1923. BOTTOM ROW: Some Peyret designs. (5) Peyret and Paulhan's model of about 10 ft. span, 1904. (6) The "Libellule" in which Blériot first flew, 1907. (7) The prizewinner at Itford, 1922. (8) The latest tandem monoplane, 1930.

Louis Peyret, who died on February 24th of heart failure, will always be remembered in this country as the designer of the tandem monoplane which won the Itford Gliding Competition of October, 1922, and set up a new World's record for duration in soaring flight.

The tandem principle has a distinguished ancestry. In 1896 Professor Langley, the American astronomer, made a large steam-driven model (1 h.p.) keep up for 1 minute 45 secs., and travel for nearly a mile. It was the first really successful model aeroplane, and had a very similar appearance to Peyret's glider except for the addition of cruciform stabilising surfaces at the rear. Later, in 1903, a full-size man-carrying machine was built, but was twice damaged while being launched. This happened on Oct. 7th and Dec. 8th, and it may be remembered that the Wright Brothers first flew their aeroplane on Dec. 17th of the same year.

An Austrian named Wilhelm Kress was another early devotee of the tandem arrangement. After making a number of flying models as a spare-time hobby, he got so keen on the subject that, at the age of 57, he gave up his job of piano-maker and entered the Vienna Polytechnic School as a pupil, and studied engineering. Then, armed with his new knowledge, he proceeded in 1898 to build a flying boat, with three wings arranged in tandem (stepped, like a very much "staggered" triplane), and a couple of pontoons of aluminium sheet. In 1901 he was able to fit it with a Mercedes engine, and with this he charged at full speed across the Tullnerbuch Lake. He was unable to get into the air, and, as soon as he shut off the engine, the machine plunged its nose into the water and overturned. The old gentleman (he was now 68) was in the water for 20 minutes before being picked up none the worse for his adventure.

Next we have Professor Montgomery, of Santa Clara, California. He made a most successful tandem monoplane, with which his pilots would go up to a prodigious height suspended from a hot-air balloon, and then cast loose and glide down again. This was the first glider, in fact the first flying machine of any sort, to perform aerobatics. The pilot would execute such hair-raising turns and dives that the Professor got thoroughly unnerved and altered the controls to render them less sensitive. In 1911 Montgomery died suddenly, a few minutes after an apparently harmless crash in one of his gliders.

The MAIKÄFER was entered for the Rhön Competitions of 1923 by one Maikemper. It had three pairs (right and left) of planes arranged in tandem, all six with ailerons, or whatever is their correct designation. The Technical Committee gave it a "conditional" C. of A., but they needn't have bothered, for it is not recorded in the official report to have flown at all.

Louis Peyret, the most persistent and successful of the tandem designers, was born in 1881. He began his military service with the Engineers in Algeria, then, on returning to France, was soon drafted into the "Establishment of Aerostation," where he joined the aviation section just being formed by the famous Capt. Ferber at Chalais-Meudon. Here, in 1904, he met Louis Paulhan, who was afterwards to win fame and £10,000 from the *Daily Mail* for the first flight from London to Manchester. (Who will offer a prize for the first *soaring* flight in the opposite direction?) Private Peyret and Sergeant Paulhan became firm friends, and together constructed a number of large-size model gliders. At the Paris Competition in 1905 Peyret's tandem models competed with the Weiss tailless ones from England.

On finishing his military service Peyret joined Gabriel Voisin, inventor of the box-kite type of aeroplane, which was the first to fly successfully in Europe. Then, in 1907, he transferred his services to Blériot, two years before the latter made himself famous by flying the Channel.

Here again, Peyret's hand showed itself, for, after smashing up a tail-first machine in the spring of that year, Blériot turned his attention to the tandem type. It was, in fact, in a tandem monoplane, the LIBELLE, that Blériot first successfully flew, making a short hop in July and a flight of about 200 yards in September, rising to 60 ft. The odd thing about this machine was that it had no elevator, and longtitudinal control was effected by the pilot shifting himself to and fro on a sliding seat.

When the Morane-Saulnier firm was formed, Peyret joined them and continued in their service many years as designer. But he went on with his models, and never deserted the tandem idea.

His chance came in 1922, with the revival of gliding interest everywhere. The famous tandem monoplane was made for his friend Maneyrol to fly at the glider meeting at Combegrasse. But the weather was bad, and the most that could be achieved was a straight glide of 53 seconds from the summit of the Puy de Combegrasse.

Then to Itford. The machine was not even brought up the hill at all till the very last day of the meeting. Even then, almost the whole day was spent in making the final adjustments. At last, a couple of hours before sunset, the machine was catapulted off the north-east side of Firle Beacon and immediately rose in the strong updraught. Shortly afterwards another machine, the BROKKER (remains of BRISTOL plus remains of FOKKER) went up and soared further along the ridge. The sight was memorable for its colour scheme, for on the north-east horizon a great dark cumulo-nimbus cloud rose up, complete with a fine rainbow, it being opposite the sun. Against this dark background both machines were shining brightly in the sunlight, one the colour of an autumn leaf, the other with wings of silver. Two months before, Martens, in Germany, had raised the duration record to

3 hours 10 minutes. Maneyrol stayed up for 3 hours 22 minutes and landed in the dark. This remained the record in Britain until 1931, when Major Petre beat it in the London Club's PROFESSOR.

A year after Itford, Peyret designed a light aeroplane of ordinary monoplane type for the Lympne trials. Maneyrol was again the pilot. The present writer had his camera poised ready to photograph the machine coming in to land, when there was a loud crack and the wings came off. The camera was, of course, forgotten, or it might have been able to shed light on the cause of the accident. The machine fell from about 200 feet without its wings and Maneyrol was killed.

In the last few years Peyret had turned his attention again to a power plane of tandem type. It was of much the same design as the glider, with the centre of gravity in the same place, but the front wings had to be enlarged to carry the extra weight of the motor in front, their span being increased to 8.4 m. (27.6 ft.). The rear wing-span was 6.5 m. (21.3 ft.), the chord in both cases being 4.9 ft., and the ailerons-cum-elevators went right along each wing and occupied about a third of the chord. (Incidentally, one newspaper correspondent at the Itford meeting, in trying to explain how such a machine is controlled laterally, described how, when the left front and right rear ailerons go up, the other two move down, and *vice-versa*, not realising that the chief effect of such an action on the machine would be to wring its neck.)

Louis Peyret had flown aeroplanes himself in 1910, but hardly ever since, and not at all since 1922, so, having in 1930 completed this new tandem monoplane, he set to work to teach himself to fly on it. This occupied him for most of 1931, flying at week-ends and practising, first straight flights, then turns. Finally he obtained his brevet (which he had never till then possessed) before the proper authorities, taking the machine to 5,000 ft. with one aileron disconnected (but it didn't seem to make any difference).

Maurice Victor, writing in *Les Ailes*, gave recently an interesting description of the machine and of the advantages of the tandem type. The machine possesses very great controllability, and is, in fact, perfectly controllable at large angles of incidence, without seeming to fall out of the pilot's hands. The position of the pilot, near the centre, makes for increased safety in a crash. Then the position of the centre of gravity can be moved considerably without the machine becoming uncontrollable; a movement of 95 per cent. of the wing chord is mentioned as possible. These qualities would seem just those which would be desirable in the sort of machine, aeroplane or glider, on which an inexperienced pupil could be turned loose to learn to fly by himself.

Louis Peyret had lately been getting out plans for a new tandem monoplane, embodying improvements on the present one, and to sell at 25,000 frs. if a cheap enough engine could be obtained. Also he was thinking of a two-seater, with low wings in front, high wings behind. But his death has cut these experiments short, or we might have seen some interesting developments.

A. E. S.

CORRESPONDENCE

IN PRAISE OF PULLEY LAUNCHING.

Fearing that the remarks of the London Gliding Club anent our pulley-launching adventures will give a bad name to this delightful method of launching, I haste to give some justification for our reasons for preferring it.

Firstly, of course, any form of mechanical launching reduces hard labour to a minimum, a point which is very much in its favour; also it enables a large number of flights to be got in during a given time, the only thing which gets tired being the motor—ours does.

For training, pulley-launching is admirable; the instructors should be in pairs, one in the car and the other at the glider; between them they have an almost foolproof control of the beginner, the car driver having the power of giving the exact launch required.

All *ab initios* pronounce it "delightful" and other similar expressions of pleasure; they find it smoother and far less disconcerting than having a lot of stampeding and shouting plus-foured figures in front of the glider, which the *ab initio* feels compelled to chase in small circles (it's really rather fun doing it).

Another point in its favour is that it permits gliding to be performed comfortably by four people—just think of the large number of hops they can get in, and with hardly any waiting.

The only point which is against it is the tendency to kite in winds of 10 m.p.h. and over. If this is realised and the correct manner adopted there is *no danger at all*: all that is necessary is to keep the stick well forward and the nose down until the ring has come off.

In the flights in question the two pilots were featherweights (about 9 stone), and due allowance was not made by the instructor for this fact—the instructor should have known better. The glider kited up, and before it had time to get far the ring came off and left the glider partly stalled, with a resulting pancake. Both cases should have been avoided, especially as the wind was high for a DAGLING and only pilots with "A" certificates were flying.

The "rather frail tow-cord," which has always worried the L.G.C., did not break until we attempted to pull the ring through the pulley; it seldom does break unless worn out. This one was brand new; it's undoubtedly thin, but we find it very satisfactory and cheap.

The rubber industry does well out of pulley-launching, as we use three strands of elastic rope—50 per cent. more than for hand-launching.

Any form of mechanical launching requires care, and pulley-launching requires close co-operation between the glider crew and the car crew; we have, however, used it for the last year and a half on all types of sites in Sussex, Dorset and Beds, and have no hesitation in recommending it as the best type of launching we've met; if you know a better, let's hear of it.

On behalf of the Imperial College Gliding Club,

J. B. E. KEEBLE, Capt.

THE NYBORG SAILPLANE.

Dear Sir,

May I as a regular reader of THE SAILPLANE write you on the above subject?

For months articles have appeared describing the machine—proving it could fly—deciding that it could not—until it seems as mysterious a ship as the "Flying Dutchman."

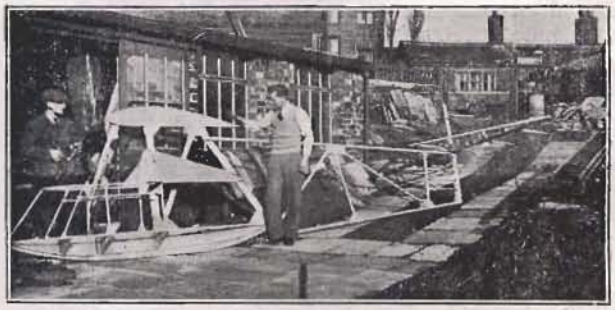
Many times I have been on the point of asking the supporters of the design to try flying it, but have waited patiently for some person with courage to make the attempt.

Now are we to understand that the machine has actually been in the air, and that you have had sent you a photograph showing it in flight? May we perhaps agree with Mr. Nyborg that, no matter how indistinct, it should have been published? Even a blur would have been something to go on until such times as we can see a real pukka picture of the machine in soaring flight. This would be much more satisfactory to the average reader than screeds of higher mathematics.

Hoping the man or woman with enough courage will soon be found.

J. P. M.

NEWS FROM THE CLUBS.



The Bradford Club's "Hol's der Teufel" under construction.

BRADFORD AND COUNTY GLIDING CLUB.

March 19th, 1933.—Wind East: 5 m.p.h. Twenty members arrived at the hangar by 10.30 a.m., and three machines were rigged—REYNARD, DICKSON Intermediate and HOLDSWORTH Sailplane. Cox took REYNARD over the East slope for test, but with little help from the wind could only hold her off for 41 seconds. Then Robertson took her down again for 38 seconds, and after that Alderson gave us 35 seconds of "falling leaf" display.

All this "up-and-down" work was very tiring, so REYNARD was taken to the plateau where Elliott, Armstrong and Christian—three new members, look you!—were given slides for an hour or two, each making satisfactory progress.

Meanwhile, DICKSON, on the East slope, was struggling to keep off the ground a little longer than REYNARD. Sharpe took her over for test and turned along the ridge, but finding no lift, had to land on the golf course fairway with a mere 55 secs. Tillett managed to equal this, but DICKSON did not improve at any time during the afternoon.

The weather was excellent, apart from the lack of wind, and an exceptionally large gathering of spectators evinced considerable interest.

Sunday, March 19th.—Wind South: 5 m.p.h. With the wind coming from South along our low west ridge, Verity attempted to take REYNARD off for test, but was not even lifted into the air. He was then given a downwind, double-rope launch, and made a flight of 20 seconds. Jowett, a promising "lad," was launched likewise, and flew for 15 seconds.

The wind was rapidly creeping to the East, so the machine was taken over the top of Hope Hill where the training of Jowett continued most satisfactorily.

The clouds, which had been gathering ominously for an hour or more, now burst with a fiendish vehemence, and we were obliged to crowd under the machine for shelter for an hour and a half, after which we "called it a day," and went back to the farm to dry ourselves and enjoy a good tea.

Progress on our HOL's is very encouraging. The planes are ready for assembly, and Holdsworth is making a workmanlike job of the fuselage, as will be seen from the accompanying photograph.

We were pleased to welcome R. F. Stedman to-day, his first time out, since his serious illness. He hopes to be in the air again by Easter.

CARMEL GLIDING CLUB.

Corporal B. G. Mumby, who acted as Instructor to the Club while stationed with the British Police at Haifa, in Palestine, is reported to have been appointed Inspector-General of Police in the Seychelles Islands, Indian Ocean. Let us hope he will start a gliding club when he gets there. He was formerly an officer in the R.A.F., India.

DORSET GLIDING CLUB.

The Club's DORSLING, according to the local Press, is undergoing thorough overhaul at Dorchester. Their DAGLING, however, was brought out at a recent week-end and given a testing.

FURNESS GLIDING CLUB.

February 26th.—Snow, Rain, Sleet, Slush. The day was spent in the club workshop.

March 5th.—Wind W.S.W. to S.W.: 5-10 m.p.h. Primary training was undertaken in the B.A.C. II., and we finished the day in a heavy shower after 32 flights.

Friday, March 10th.—The Club turned out to hear Mr. Humphries' lecture on "Motorless Flight" at the Barrow and District Association of Engineers. The lecture was voted a great success, and we enjoyed a large number of excellent slides. Time passed so quickly that the technicians, who were straining at the leash, were not given time for any discussion. A cunning move on the part of the lecturer. We would like a whole series of lectures by him. Major Petre and Dewsbery had arrived by road with the CRESTED WREN after tow-bar troubles, and on Saturday proceeded to the Fells on the northern slopes of Black Combe.

After a good deal of negotiation we have obtained licence over this territory, and it is hoped to reap great benefit thereby.

The CRESTED WREN had been delayed on the way up, owing to a burst radiator connection. The result was that it was in the neighbourhood of 3 p.m. when she was ready to take off. The wind was moderate—about 15 m.p.h. from E.S.E. Humphries, having "lost" the toss, was sent off as pioneer. Unfortunately, the machine got away from the anchor men, and he got a very poor take-off. As a result he could not gain the best lift, and landed below after a battle of 20 minutes.

The machine was then taken higher up the ridge, and Dewsbery got a good launch. After gaining height he set off on exploration bent. The hazy conditions made observation difficult, and we lost sight of him for a long time—and wondered—and wondered. However, a red bird presently appeared and landed on the ridge after a flight of 1 hour 20 mins. It was getting dusk, so Major Petre landed by the trailer after 20 minutes. The machine was packed away in a sheep-fold—the weather being very settled, and left for the night.

Sunday found us on the spot, rigging in glorious sunshine, but the wind was very light—hardly 10 m.p.h. from S.E. It was decided to take the machine up on to Swinside—the northern spur of Black Combe.

The secretary, having found the wettest way across the swamp at the foot of the ridge, persuaded the carrying party to follow through. This was managed with halts for the people who lost shoes in the bog. The secretary, having been there before, wore boots.

The ridge, when gained, showed a grand drop to the East, with good landings on top and down below. Dewsbery was sent off, and soared along the ridge, but did not gain much height in the slight breeze. Presently he disappeared from sight round two ridges which jut out from the main ridge towards the East. The breeze was dying, and Dewsbery, when next discovered, had landed down below. The party then basked in the sun and waited for a breeze which failed to arrive.

After discussion as to how far towards the main road

it would be possible to glide, Major Petre was sent off at about 4 p.m., and to our great surprise passed far beyond the spot decided on as the maximum possible. Indeed he appeared to lose no height at all, and having crossed the main road he had to slip off his height to land in a field at the roadside.

On returning to the top of the hill, a lighted match, held above the head, burned out without a flicker! A truly unusual state of affairs in this situation. It was a great pity that the wind failed us so badly. The matter is being taken up with the makers.

Anyhow, we had a very pleasant week-end, and hope our visitors will come up again.

The WREN and party left on Monday with a tow-bar which inspired confidence.

March 18th.—The B.A.C. II. was taken up to Ireleth. It looks very smart after the labour expended on it, and now has a small fairing behind the pilot. It is now known as the "Crested B.A.C."

Messrs. Todd and Gross made "A" ticket flights with 30 and 42 seconds respectively. After some seven flights, a perfect example of a line squall passed over, and the subsequent deluge caused a hasty pack-up.

March 19th.—Wind S.W.-S.-S.E.-E.-N.E.: 10 m.p.h.—to nil—to 10 m.p.h. After four flights—best 57 seconds—the wind got round to N.E. and freshened. The machine was stowed just in time to miss another deluge.

ILKLEY GLIDING CLUB.

At the Annual Meeting, as reported in the local Press, the Club was stated to have a balance in hand of £50.

Mr. E. Waddilove, of Ilkley, was appointed President in succession to Mr. H. P. Price, and Messrs. J. K. Watson and N. Hodgson were elected joint hon. secretaries in succession to Mr. J. H. Allen. Mr. Price and Mr. Allen, whose resignations were accepted with regret, were unanimously made life members. Mr. W. E. Dinsdale continued as Chairman and Mr. J. B. Boden as Treasurer.

LONDON GLIDING CLUB.

Sunday, March 12th.—The Club, having progressed so far with the development of the man-carrying glider, is now turning its attention to the problem of the man-lifting kite, having found that the same machine can be conveniently used for both purposes. In other words, we have taken a leaf out of the book of Messrs. Hiscox and Bolton, who have long roused our envy at the prodigious heights to which they kite up their HOL'S DER TEUFEL with a plain auto-launch. It needs but the application of a file to the inside of the hook, a smooth enough run for the car, a long enough rope, a stout enough will to pull back the stick and keep it there when there is nothing in sight but the blue heavens, and lo! when you flatten out again the towing car has dwindled to a speck at the bottom of a vast aerial ocean, through which the rope is now falling. Or should be falling, though Mr. Mole found it needed a little coaxing.

If all this can be done in the Club's DAGLING on a non-soaring day, what are the possibilities with the other machines and a soaring wind? The following Saturday was to show.

Saturday, March 18th.—Another milestone. Using a long, light, hemp rope, the Club's Dodge car towed the KASSEL 20 off the flat to such a height that Collins was able to soar indefinitely and land on the top, whence the machine was re-launched four times, with Buxton and Dewsbery and Collins, until the final landing outside the hangars at nightfall. Eventually the HOL's succeeded in following suit, the owner repeatedly landing on and re-launching from the hill-top. It now becomes possible for three men to set a machine soaring without other assistance, and brings the time appreciably closer when soaring practice can take place on any day in the week when the wind is reasonable.

When the haulage-tackle up the hill-side had been rigged, the PROFESSOR, PRÜFLING and WATSON-R.F.D. were launched by orthodox means. Robertson soared the PROFESSOR beautifully for an hour, hovering for considerable spells at 27 m.p.h. air-speed. Morland followed with about 20 minutes. In the PRÜFLING Hedges pottered about confidently; Scott, from Tasmania, also kept Australia on the map by flying his "C" with 8 minutes, and later by a second flight of 25 minutes.

Two or three flights in the R.F.D. ended all ends up, cross-wind, in the ploughed land, and so on, but the only damage was a distinct breach in the nacelle caused by the passage of a heavy body (further details are not pertinent). That is why elementary machines are made of teak, mahogany and Sussex oak.

Sunday, March 19th.—Storm upon storm. Belching rain, hail, squalls, cold-fronts, mammato-cumulus clouds, rainbows. Wind swinging to and fro through at least 90 degrees. Bailing water out of the cockpits. KASSEL 20 flung over on her back again, with breakage of ribs and a nasty look about her wing-roots; also a bashed rudder. Poor old Collins. The value of the work that he has already done on her is conservatively estimated at £50.

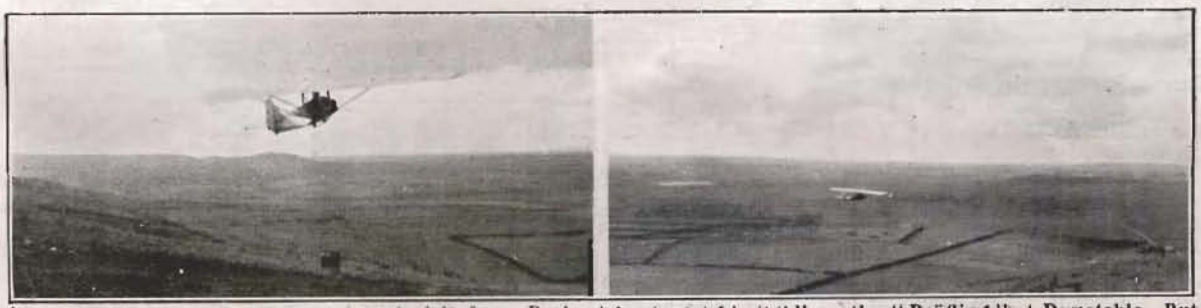
But in between the aerial uproars Dewsbery soared the KASSEL 2-seater with a passenger, and the KASSEL 20 with a ply-wood wing-root fairing blown adrift and wrapped round his tail. Collins soared the "20," seeming from the ground to obtain a large heave from a flying cloud. Cornell flew her down. Humphries was prised loose from six months of CRESTED WREN monogamy and cast adrift in that Teutonic anachronism, the PROFESSOR, spending therein seven profane minutes wrestling with the combination of an elevator that has the beef of a steam-shovel and a lateral control that, after the WREN, seems to be made of chewed string, wet flannel and lead weights. (Fortunately the rudder works, so that you can *kick* your low wing up. But the discovery of these things is trying—and indubitably an excellent form of mental gymnastics for the young.)

On the flat the WATSON-R.F.D and the PRÜFLING were hopped excitingly. A FOX-MOTH took off and climbed like a rocket to infinite heights. The mud grew deeper and deeper. Two new members joined. There is a subdued chattering among the syndicates, who are again casting their thoughts toward the North.

SOUTHDOWN GLIDING CLUB.

This club has at last awoken from its hibernation, and resumed active flying on Sunday, March 12th. Hibernation is hardly the word to use concerning the club's winter activities. Perhaps the "chrysalis" stage is more apt, as we emerge on a new ground, as a limited company, and with reconditioned machines and auxiliaries.

Sunday being a day of gentle, southerly wins, only the two-seater was brought out. The new ground is best



Monsieur Girod, over on a week-end visit from Paris, tries to get his "C" on the "Prüfling" at Dunstable. But the wind was gradually dropping, and so was M. Girod.

suited for easterly and northerly winds (all these Southdown sites are; there doesn't appear to be a usable westerly site). But it is an excellent auto-towing site, with good soaring in easterly and northerly winds.

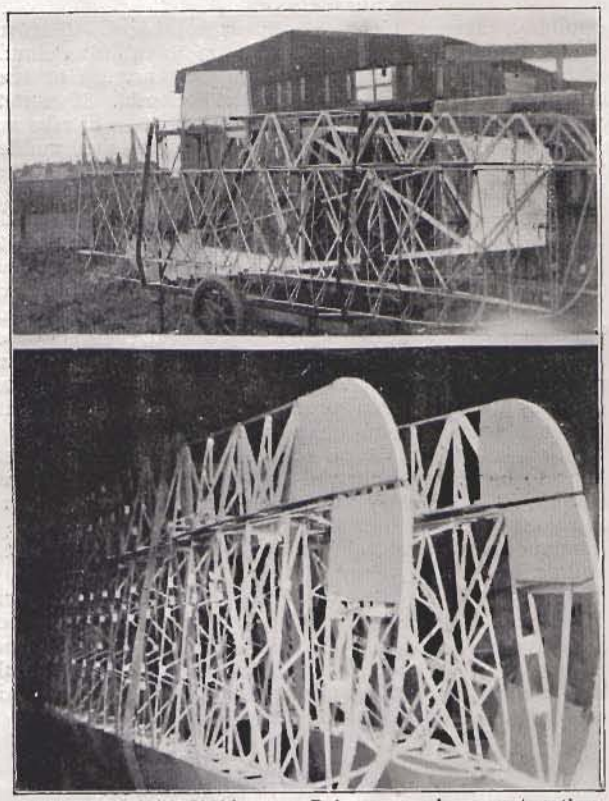
The first flights on Sunday were by way of being experimental, both car and site being new to the pastime. When a satisfactory run had been discovered, we settled down to a steady afternoon's work, instruction and passenger flights being the order of the day.

After a somewhat heavy landing it was observed that the axle was bending, so it was turned round, and we carried on till, about 4 p.m., the release gear on the machine failed. The shaft, carrying the operating lever, sheared at the pin *before* the cable had been unhooked. Therefore and thereby proving the wisdom of having the cable rapidly detachable from the car.

Repairs being out of the question on the spot, we had to call it a day, and put things away.

In future we shall be operating every Sunday at the new ground: Steep Down, near Lancing.

ROCHDALE GLIDING CLUB.



The Rochdale Club's new Primary under construction.

We have been in existence about two years.

Our biggest membership was 14, but it has dropped to five.

Our first machine was a fuselage type, 30 ft. span, and on two unsprung wheels. When we finished the machine, we started saving up for a rubber rope; in the meantime using cotton rope. It broke our hearts, and a concealed ditch broke two longerons. Bad grounds damaged the machine to such an extent that we burned it, and built a Primary. The latter is now nearly finished, as is a trailer which we hope will save damage in transit.

Our subscription is One Guinea a Year and Hard Work Secretary: Mr. J. McLaughlin, 7, Clovelly Street, Marland, Rochdale.

ULSTER GLIDING CLUB.

This Club is reported in the Belfast Press to have recently held its annual meeting. A film was shown which included, among other features, shots of the KASSEL 20 soaring at 1,500 ft. This machine is (or was) privately owned by some of the Club members.

The Annual Report contained the following suggestion: "There is a definite need for a permanent central school of gliding, such as are in existence at Wasserkuppe and the Rhön in Germany [Which is which?—ED.] where instruction may be obtained at all prices. We suggest that the British Gliding Association should start a gliding school as a business proposition capable of yielding a fair return on capital invested, and by way of filling a pressing need."

Annual General Meeting.—The third Annual General Meeting of the members of the London Gliding Club will be held in the Library of the Royal Aeronautical Society, 7, Albemarle Street, W.1, on Wednesday, April 5th, at 6.30 p.m.

Printed & Published in Great Britain for the BRITISH GLIDING ASSOCIATION, by COMMONWEAL PRESS LTD 43 Chancery Lane, London, WC.2

Make your ball glide over the net with one of these fine Tennis Racquets

1. **Royal Star.** A hand made British Racquet, three-ply ash-beech-ash frame strengthened with special overlay; white wedge, three blue bindings, English blue spiral gut, blue tracings, mahogany and white handle. A first-class 3-guinea racquet for - - - - **50/-**

2. **Winner.** Hand-made rent ash rounded frame strengthened on shoulders in novel style, white wedge, red and white over surgical bindings, strung best English white gut, red tracings, mahogany handle. A 42/- racquet for - - - - - - **30/-**

3. **Derby.** Hand-made three-ply ash-beech-ash rounded frame, white wedge, blue over surgical bindings, strung English white gut, mahogany handle. Usually sold at 30/-. Offered here at - - **21/-**

Best Quality Ash Racquet Presses, with nickel-plated thumb screw fittings - - - - - - - - **2/-**

With patent fittings - - - - - - **2/6**

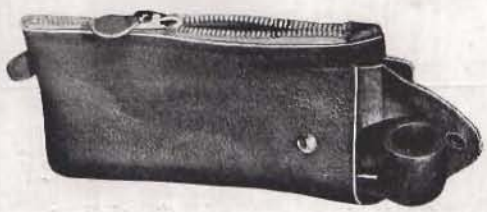
Tennis Balls. L.T.A. Size, weight and bound

"Tournament" **12/9** doz.

"Services" - **10/-** doz.

A GIFT FOR A SPORTSMAN

This handsome Combination Tobacco Pouch and Pipe Case, lined throughout with best quality rubber, real morocco case, lightning fastener. Complete with a fine quality London-made Briar Pipe - - - 5/9



All goods sent carriage paid and carefully packed.

LINCOLN TRADING CO., . . . 43, Chancery Lane, London, W.C.2.

BOOKS ON MOTORLESS FLYING.

Kronfeld on Gliding and Soaring

by Robert Kronfeld.

The most interesting and informative book on the subject that has yet appeared in English. In addition to detailed accounts of famous flights, including those by the author, it contains chapters on elementary schooling; high performance flights; distance, cloud and thunderstorm soaring; auto- and aero-towing; and the design and construction of high efficiency sailplanes. A book that will appeal alike to beginners and to the advanced. 21/9 post free.

Sailplanes

By C. H. Latimer Needham.

A comprehensive treatise dealing with the design, construction and pilotage of Sailplanes. Indispensable to everyone who intends to take up gliding seriously. 15/9 post free.

Motorless Flying

Edited by J. R. Ashwell-Cooke.

A comprehensive handbook written by authors well qualified to deal with their respective subjects. It includes chapters on elementary and advanced flight instruction; construction, repair and maintenance; auto- and aero-towing; elementary aerodynamics; and meteorology. 8/- post free.

Gliding and Sailplaning

By F. Stamer and A. Lippisch.

An excellent handbook for the beginner. It represents the collective results of the writers' experiences since 1921, related in a clear and simple manner, and is admirably illustrated.

5/6 post free.

Gliding and Motorless Flight

By L. Howard-Flanders and C. F. Carr.

A practical up-to-date handbook giving expert information regarding training of pilots, organization of gliding clubs, construction and repairs, meteorology, etc.; with interesting facts regarding past achievements and pilots, and official information regarding Certificates. Second edition.

8/- post free.

Henley's A.B.C. of Gliding and Sailflying

By Major Victor W. Page.

A simple and practical treatise on modern Gliding. It describes the construction, launching and control of the leading types of gliders and sailplanes and gives instructions for building a strong, yet simple, primary glider, including working drawings. 11- post free.

Obtainable from the SAILPLANE OFFICES: 43, Chancery Lane, London, W.C.2.