

THE SAILPLANE & GLIDER

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

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

OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION.

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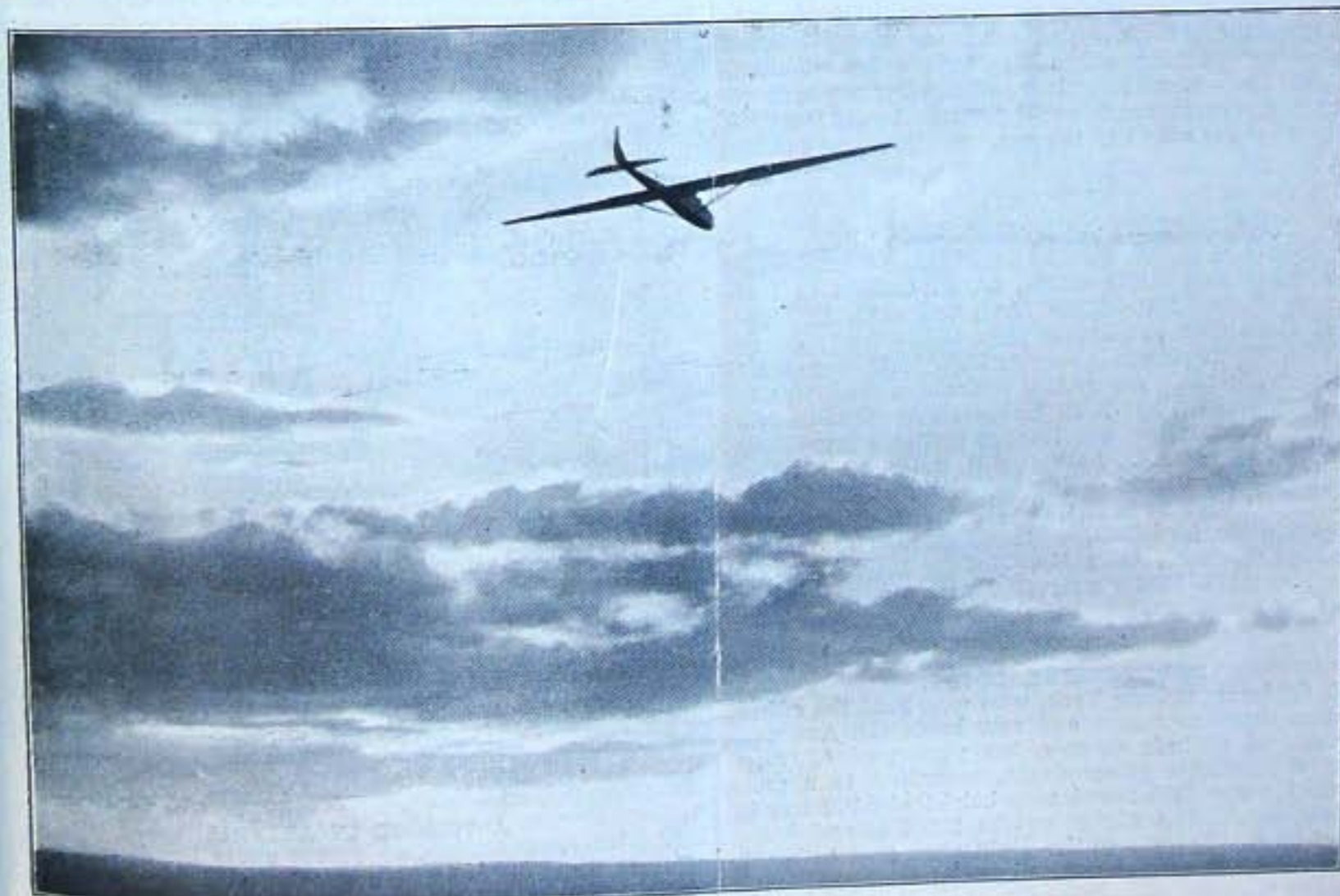
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CONTENTS.

	PAGE		PAGE
Editorial Comments	194	The Rise and Fall of a Northern Club. <i>Northern</i>	
The Sutton Bank Meeting	194	<i>Nomad</i>	198
A Note on the "Falcon II." <i>Die-hard</i>	195	The "Grunau Baby II."	199
French Gliding Meeting	195	Correspondence	200
The Rhön Competitions. <i>The Editor</i>	195	News from the Clubs	202
		Official Notices	206

THE RECORD-HOLDER



G. E. Collins soaring in the London Gliding Club's "Professor."

EDITORIAL COMMENTS

The Clubs.

The Club News in this issue establishes a new record for quantity, principally owing to our change over from fortnightly to monthly publication. But it sets up a record for quality too, which is vastly more important. The Newcastle Club have at last moved off to a soaring site, and, if their membership consists of people who have put up with the Killingworth field all this time without losing enthusiasm, things promise well for the future. The Bradford Club have taken a sudden jump forward in the quality of their machines; we hope it will lead to a sudden jump upwards as soon as they get to the Sutton Bank meeting. Ulster have surpassed themselves, but it is nothing to what we may expect of them in the future when their new SCUD has got into its stride. The news from Dunstable includes the club's own account of Mr. Collins's 22-mile flight, and records some astonishing work by Mr. Wills. We imagine the Moth pilot from Hatfield is still trying to convince his friends that he really did encounter a sailplane at 1,500 feet. We hear that he had to take a good many photographs to convince even himself.

Our Incomprehensible Ways.

A correspondent has complained that we are "incomprehensibly silent" about the politics of the gliding movement. If we have not communicated to our readers anybody's views on such topics, it is because nobody has sent us any views to communicate. Our correspondent's letter is the first of the kind we have received this year, barring one which was withdrawn before publication. It is also the first and only letter we have received in which the writer, having complained of the omission from this journal of some feature he would like to see included, proceeds to supply the deficiency himself.

"The Sailplane" Competition.

The award for the best illustrated article of the month, now discontinued, has rarely produced more than one entry per month, and only in July were there actually more than two entrants. The competition for that month was won by Capt. C. H. Latimer Needham for his article on "The Aerodynamics of the Flight of Flying Fishes." This and his previous articles on Bird Flight have been of great scientific interest. Too much of past literature published on the subject has been written by ornithologists with little or no knowledge of aerodynamics at all. The August competition is won by "Segelflieger" for the article "Thunder over the 'Kuppe,'" published in our last issue.

THE BRITISH ALTITUDE RECORD.

The flights of G. M. Buxton at Ingleby Greenhow at Easter (2,350 feet above start), G. E. Collins at Dunstable on August 19th (2,450 feet), and of J. P. Dewsbury at Dunstable on August 20th (3,000 feet), do not constitute official records, since no barograph was carried on these occasions. An official altitude record was set up on August 19th by G. E. Collins, who climbed 1,750 feet above the start on the London's Club's PROFESSOR, with sealed barograph. As we go to press, we see from the Belfast "Newsletter" that the Ulster Club made a successful attempt to beat this record during the week-end, September 23rd-24th, at Magilligan. Mrs. Mackie achieved 1,650 feet, then Mr. Mackie 1,670 feet, and finally Mr. P. H. Baster succeeded with a climb of 1,820 feet. Congratulations!

FORTY-THREE LOOPS.

Jack O'Meara, of New York, who once held the official American duration record and now holds the American distance and altitude records, has performed 43 loops during a 31-minute glider flight, according to a press report. He was first towed to a height of 6,700 feet by an aeroplane. His glider weighs 200 lbs. and has a span of 38 ft. Records of the flight were sent to Washington to obtain official recognition.

THE SUTTON BANK MEETING

The Competition at Sutton Bank, Yorkshire, which is to take place on October 7th and 8th, is open to any type of motorless aircraft other than open primary machines. All machines will, therefore, compete with each other.

Among the rules are the following: Awards will take the form of trophies and prizes; pilots, not machines, shall be entered for the Competition, but the trophies and prizes shall be handed to the entrant; not more than one trophy and one prize may be won on any flight. Auto-towing will be allowed, but not provided for.

Events and Awards.

(1) **Distance.**—Lord Wakefield's trophy will be awarded for the longest distance flown; minimum to qualify, 15 miles. £5 to pilot who flies any distance up to 10 miles, or £10 over 10 miles. If the minimum distance is not reached, the trophy will be awarded to the pilot who has flown the longest distance in any single flight during the 12 months prior to the B.G.A.'s Annual Competition.

(2) **Altitude.**—Capt. Geoffrey De Havilland's Cup will be awarded for the best altitude flight; minimum to qualify 2,000 ft. £3 to pilot who makes the best flight. Similar conditions obtain in regard to the Cup as for Distance, but for the best altitude flight.

(3) **Out and Home.**—Mrs. Manio's Cup will be awarded for the best out and home flight; minimum to qualify, 5 miles each way. £4 to pilot putting up the best performance in this event.

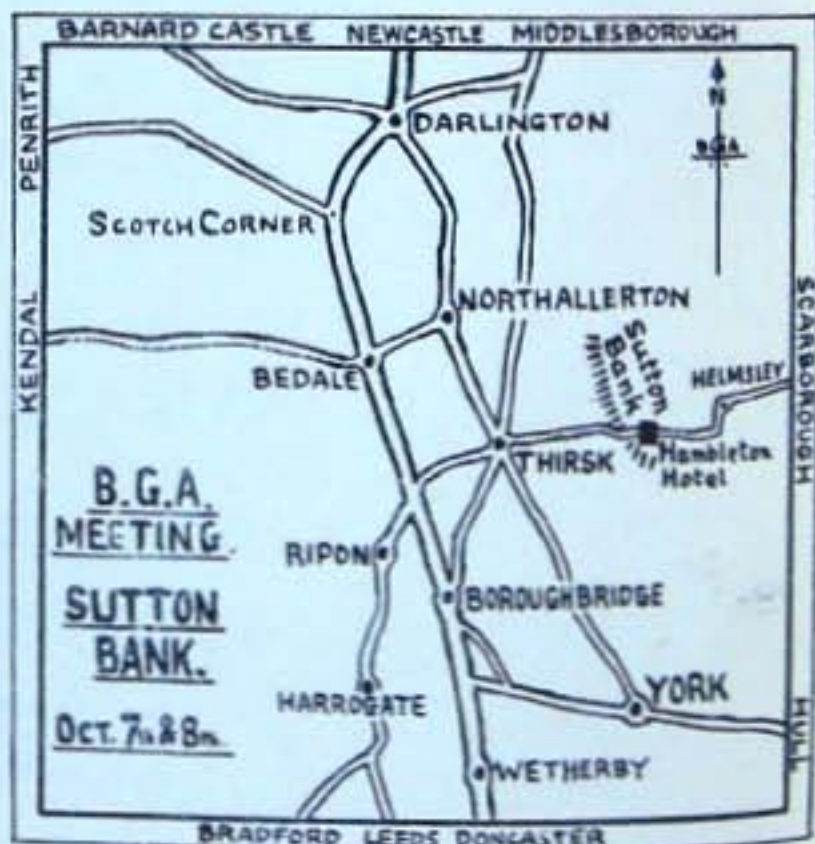
(4) **Duration.**—The "Volk" Cup will be awarded for the best out and home flight; minimum to qualify, 5 hours. £3 to the pilot who makes the best flight. Similar conditions obtain in regard to this Cup as for distance and altitude, but for the best duration flight.

Where to Stay.

Bed and breakfast is obtainable at "Lee's Fleece" Hotel, Thirsk (single b. and b. 7s., double 14s.), and the "Three Tuns" Hotel, Thirsk (single b. and b. 6s. 6d., double 13s.). The "Fleece" is the largest hotel in Thirsk. Write to the proprietors direct, not to the B.G.A.

In addition there is sleeping accommodation on the floor of the tea room at the Hambleton Hotel, Sutton Bank, but own bedding must be taken.

[We understand that, in the event of the weather being unsuitable, it may be possible to extend the Competition to the following week-end, but this is uncertain.—ED.]

**A SCHOOL IN AUSTRIA.**

An international gliding school under the direction of Robert Kronfeld is to be opened shortly near the Gaisberg, Salzburg, according to *Flight*.

A NOTE ON THE FALCON II

BY DIE-HARD.

The FALCON II, FALKE design with extensions on the wings, a ply-covered fuselage, and simplified erection-detail, was magnificently built by Slingsby for Hardwick. One's first reaction is to walk round and round and purr like a tabby-cat. She is beautiful all the way through, and immensely sturdy.

The seat, back-rest and instrument board are padded with thick soft rubber covered with a good imitation of lizard-skin. She is fitted with clock, aneroid and air-speed indicator. Even collapsible elbow-rests are provided. The rubber blocks in the landing-gear are faired off with rubber sheet. Every pin has been burished and is kept in an oily envelope when not in use; in consequence, erection and dismantling are made much quicker than usual.

Hardwick, who is almost too benevolent for dwelling this side of Jordan, caused your correspondent to be launched from the hill-top. Hence our chronic sobs of joy.

Actually, tram-driving on a level straight road is downright difficult compared with flying the FALCON, which has not even got a bell to be rung. *She flies herself.* To go round a corner you press the appropriate pedal. Stability in all dimensions is infinite. Bank comes on and off according to rudder. It is free-ballooning with a nice roof to keep the sun off and no nasty smell of coal-gas. It took us about 15 seconds to tumble to the completeness of the joke, and then we had a hearty laugh and said "S'truth!"

By this time the machine had settled herself down to a dead-steady 30 m.p.h. Appreciable movement of the stick caused 33 m.p.h. Full rudder put on a steady, perfectly banked, about-turn. Neutral rudder and a touch of ailerons straightened her up instantaneously.

We then discovered that we were going to overshoot pretty badly, in the complete absence of breeze and in the presence of a gliding-angle that was astonishingly flat. We were told afterwards that the proper solution in a FALKE is to dive hard; she does not pick up an excessive speed, and certainly would never break up. But we put on a nasty rough-handed left slip, and she slipped beautifully with her nose well up, the rudder being really manful. Then, with equal vulgarity, we yanked her over into a low right-angle turn right, picked off an extra large harvest-bug with the right wing-tip, slammed her over on to an even keel, and promptly landed well and truly.

Let it therefore be noted that:—

- (a) The FALCON *flies herself*, but
- (b) Her controls are first-class and perfectly balanced, and inspire enormous confidence. The elevator is comfortably lenient.

From the foregoing it might be hastily assumed that she is a perfect machine for club use. But there are some snags.

- (a) She is not cheap, or easy to build. The wing-plan is weird and wonderful and could easily be beyond the scope or patience of the average amateur builder or repairer.

- (b) Even with Slingsby's improvements the job of erection and dismantling is pretty severe.

- (c) The pilot's position, right under the wing, may be all very fine and safety-first in a turn-over crash but the upward view of clouds and other machines is negligible. It is not every pilot who would half-roll her in order to increase his field of vision.

- (d) She is gorgeously easy to fly—too easy for instructional purposes. The effect is at least fourfold. The pupil can so easily attain a dangerously optimistic idea of his own abilities as a pilot. His over-confidence may with equal ease get him into a horrid mess. The occasional need for mental agility in a sudden spot-landing may take him entirely by surprise. He may receive



C. E. Hardwick flying his "Falcon" built by F. Slingsby.

another nasty jar when he tries to fly a less automatically-stable machine.

But some of us are so-air-minded that we only want to have a Lovely Time in Mid-Air, regardless of how. For us the FALCON would be a Perfect Peach.

FRENCH GLIDING MEETING

The chief gliding event of the year in France is the meeting at the Banne d'Ordanche, the "French Wasserkuppe," about 15 to 20 miles S.W. of Clermont-Ferrand in Auvergne.

This year's meeting took place from August 27th to September 3rd. A number of prizes had been offered, including prizes of 15,000 fr. for a flight to the Puy de Dôme mountain, 14 miles away, 15,000 fr. and 5,000 fr. for the greatest distance, 5,000 fr. and 2,000 fr. for longest duration, and, for greatest height, an *objet d'art* worth 10,000 fr. and a most appropriate *Prix des Eaux Thermals de la Bourboule*, worth 2,000 francs. There were 70,000 francs' worth of prizes in all.

Unfortunately there was a lack of wind throughout the meeting, and no really good performances could be put up.

On August 27th and 28th there was no wind at all. On the 29th a feeble wind sprang up; Kronfeld kept up for 12 minutes, and a gradual descent of 5 minutes was achieved by M. Lumière, a manufacturer of photographic plates and films, to whom Kronfeld sold his WIEN in June or July this year, and who flew it at the meeting. M. Lumière is President of The Aero Club of the Rhône and South-West. He is somewhat handicapped in his flying of the WIEN by the fact that he has not Kronfeld's figure, and finds the machine rather a tight fit.

On August 30th, in a wind of 11 miles an hour, Kronfeld soared for 22 mins., then for 1 hr. 30 mins., but, in landing at sunset, slid into a concealed ditch and wrote off the front part of his fuselage. Other pilots made flights of half-an-hour or less.

The next two days there was no wind to speak of, and nobody flew. On Sept. 2nd, the wind being again feeble, Lumière in the WIEN was the only one who could keep up, which he did for 17 minutes. On the following day he flew for 48, 8 and 30 minutes, and Bouvier for 8 minutes, but several others who tried could not soar at all.

To keep things moving during the meeting, visitors were allowed to take training courses on some machines which were available. There were also trials of two experimental gliders, one tailless and the other a biplane.

There was probably no lack of thermal currents in the higher reaches of the atmosphere, but no towing facilities were available. Better luck next time!

THE 1933 RHON COMPETITIONS

By THE EDITOR.



The Darmstadt "Windspiel," which weighs only 119 lbs.

This first section is one which readers can skip, since it does not deal with the Rhön Competitions at all, but with an unsuccessful attempt to secure three days' holiday free from all thoughts of sailplanning, from August 7th to August 10th. After THE SAILPLANE had been got off to press and the Airways 'bus caught with 50 seconds to spare, there seemed a chance to forget such things at last. But the sky was full of cumulus, it was nearly noon, there was a heat wave, and, the moment our ARGOSY got off the ground at Croydon, the bumps began. Thereafter they continued with an astonishing conformity to text-book rules all the way to Cologne. Across England they were violent, continuing violent for a mile out to sea (we were flying downwind) and then gradually fading until, at 3 miles out, they had gone. Over the sea, of course, there were neither bumps or clouds (so don't try and soar across the Channel on thermal currents!), but, rather surprisingly, there were still no bumps at first over Belgium. The only explanation seemed to be the uniform nature of the ground, which was flat, and all cut up into small cultivated plots, differing in detail, but all much alike in general ensemble. Then there was a bump, and, looking down, one saw a large river with a half-mile strip of meadows on either side. There were more bumps till the meadows had gone. After Brussels we got another shaking over a wood, but the worst bumps of all came during the glide down to Brussels and Cologne aerodromes, both of which are on the very edge of their respective towns. But, probably, that was not all due to thermal effects from the buildings, since I have never met an aeroplane pilot who could fly smoothly with his engine off, with the single exception of one on the German air lines, who, presumably, had had gliding experience.

Next day was spent canoeing down the Moselle, and, as the Moselle bends about in a narrow and deep valley, none but the gliding fraternity can understand the vagaries of its wind flow. At one point, the wind, which should have blown from the left, curled over some hills on our left and blew at us from the right. Just ahead, the river took a sharp turn to the right, and my companion began to get alarmed at the prospect of paddling for a mile or more against the wind. But I promised that, as soon as we had turned the corner, the wind would

switch round and blow us along from behind, and sure enough it did.

The following day, the party went up to the Erbeskopf, 2,700 feet, where there is a high tower sticking up out of some square miles of forest. From its top we threw out small elongated triangles of paper, which have a lower sinking speed than any paper glider. The very first one got into a thermal current and vanished into the sky. We subsequently found that, roughly, out of every 10 bits of paper, one went up to the sky, one hovered for a time, and the rest fell to earth. And it is surely more than a coincidence that, on the very same day, out of some 10 sailplanes which were pushed over the west slope of the Wasserkuppe to try their luck, one soared to the prescribed goal and back again, one got there, but couldn't get back, and the rest could find no thermal currents at all.

To the Rhön.

And now to the Wasserkuppe, the highest of the Rhön mountains, 3,100 feet up.

On Sunday, August 6th, the first day of the meeting, 44 machines had arrived out of 62 entered. Little was done in the air. There was no wind, and, although the hot weather raised hopes of thermal currents, none of the 13 machines which went up (presumably aero-towed) could find any.

The next day nothing much was done until a light breeze sprang up shortly before 6 p.m., whereupon the WINDSPIEL, the Darmstadt group's ultra-light machine, soared for 50 minutes with all eyes on it, and, later a few of the more expert pilots stayed up for about 1½ hours. So did the experimental MARABU, which had no tail at all last year, but has now grown an elevator.

The third day, August 8th, saw the first performance of really Big Stuff. About noon the wind got up and cumulous clouds appeared in the sky. They were of large size, and at one time 15 to 20 machines were all collected under the same cloud. An unprecedented sight was the spectacle of 25 sailplanes all visible in the air simultaneously; actually there were 36 up, and no doubt there would have been more but for the fact that only 36 had yet been passed by the Technical Commission.

Steinig, a Grunan Instructor and Silver "C." holder, flew 71 miles to Kronach in the Bavarian Forest, on a GRUNAU BABY II. Riedel did 53 miles in the FAFNIR, and two RHÖNADLERS did 31 and 25 miles, flown by Frenz and Schleicher respectively.

Some good duration flights were put up. Richter soared the POMMERLAND (Achen M.S. II. type) for 8 hrs. 6 mins., and Fischer, on the light-weight WINDSPIEL, got himself accustomed to its feel during a flight of 7 hrs. 22 mins. Hirth tried out his new MOAZAGOTL for nearly 3 hours—its first appearance at the Rhön.

August 9th was the day already referred to, when competitors were set the task of an out and return flight to the Kissinger Hütte (or rather, vertically over it) situated on the "Black Mountain," 12 miles to the south. There was a wind of only 2 m.p.h. blowing up the west



The once-tail-less "Marabu."

slope, so that pilots had to be pretty nippy in picking up thermal currents before losing too much height. Out of ten triers, only two succeeded in getting up and away: Heinrich Dittmar on the CONDOR and Fischer in the WINDSPIEL. They soared to the distant goal in company. Dittmar got back to the Wasserkuppe after 2 hrs. 20 mins., but Fischer had to land on the way home.

The Best Day.

Thursday, the 10th, was the high spot of the meeting. Peter Riedel pulled off a "double" with his FARNIR. In the morning he did the Kissinger Hütte flight—out and return, thus gaining a share of the prize. Then, after a short rest, he got into the air again and flew by the use of thermic currents to Gera, 99 miles distant.

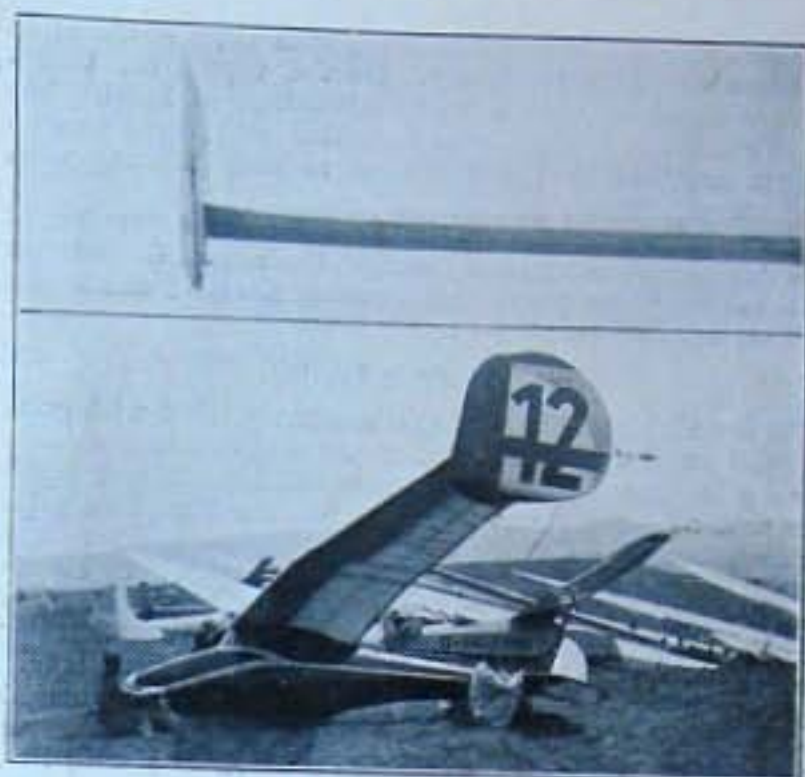
Wolf Hirth showed what his MOZAGOTL can do; he flew it to Zwickau, a distance of 109 miles. This machine represents Hirth's ideal of what a sailplane should be, and, considering that it was he who introduced the technique of circling in thermal currents and that so many people say you must have a small machine for that sort of thing, it is surprising that he should have given it a span of 66 feet. It has the look of having been modelled on the seagull (when you have got a good way off, and can include the whole machine on your retina). The wing-tips bend so much under their own weight that they are always propped up when the machine is in its hangar.

Another unexpected performance on this day was a flight of 71 miles by the FLEDERMAUS, an experimental type from Stuttgart, with vertical panels and rudders at the wing-tips, rather like the MARABU except that its wings are not swept back. Like the latter, it has just an elevator behind, and one of the team told me that it flew quite well and performed excellently in thermal currents with that arrangement; in fact, it would perform its turns without the attention of the pilot at all. The Technical Commission, however, wouldn't allow it to compete until a fixed vertical fin had been added to the tail. They made the same stipulation, many years ago, when the late Ferdinand Schulz brought his home-made machine to the Wasserkuppe, Schulz being a believer in copying the birds, and asserting that such vertical surfaces were quite unnecessary (and he certainly could fly without any).

"The Freaks."

Every year at the Rhön sees one or two "freak" machines included in the list of entries. They have always lent a pleasantly amateurish tone to the meetings, reminiscent of the early days, but no one ever expects them to do anything, even if they turn up. This year people have been taken by surprise. The behaviour of the warping-winged THERMIKUS has been exemplary, and both the "end-panel" types have done extraordinarily well. Ernst Phillip's MARABU could be seen cavorting in thermal currents like all the best of them, and even did some cross-country work.

A romance about this machine is disclosed in an article in the German weekly. One day Ernst Phillip ran away from home, or rather, pedalled away. Nothing was heard of him for four days, at the end of which time he had arrived at the Wasserkuppe, 500 kilometres distant, on his push-bike. He refused to return home until he had passed his "A," "B" and "C" tests. When he did,



The Stuttgart "Fledermaus." Above, a wing-end seen from the rear.

he became somehow fired with the idea that the tailless design is the key to the future of flying, so he designed and built the MARABU, got a little advice from Lippisch, messed about with it until it could fly, and now here he is up in the thermal currents among the élite.

I arrived that evening when flying was done, to find the U.F.A. Film Company sprawled all over one end of the aerodrome, encamped in tents of assorted sizes. They were reported to be making a film in which gliding and love interest were combined. So far as could be seen from the hotel window, the two things were being kept strictly apart (and quite right, too), and the stage had not yet been reached at which they could be combined in the same "shot."

Next morning (the 11th) there was scarcely any wind, so thermal soaring (with aeroplane-towed launch) was indulged in. Not many machines went up, and at 2.30, after an hour or so of flying, all thermal activity died out. But, while it lasted, there was a very interesting example of a stationary thermal current just north of the Wasserkuppe (the lee side), in which the CONDOR and a RHÖNADLER circled for a long time without either gaining or losing much height.

That evening a sheet of queer-looking cirro-stratus came over from the west, and in the night a terrific thunderstorm broke upon us. There was such a row that some swamped-out campers from the woods nearby battered the hotel door to bits in trying to make themselves heard.

On Saturday, the 12th, there was slope-soaring over the South Slope. In spite of what seemed a healthy wind, very few machines could keep up. In fact, one got the impression that the standard of soaring, among all but the acknowledged experts, was no better than that of the less experienced of British "C" pilots, probably because of a similar lack of experience. The WINDSPIEL, THERMIKUS and OZITE (last year's duration record holder),



Wolf Hirth's new sailplane, the "Moazgotl."

however, did well, and there was little to choose between the performance of the first two, with their spans of 40 feet and 66 feet respectively. On the whole, the WIND-SPIEL seemed to have a slight advantage in height, but the THERMIKUS looked most dignified, and there was no suggestion that the pilot needed to keep fiddling with his lateral control.

It should be mentioned that, early in the morning of this day, a ceremony took place on the site of Grönhoff's fatal accident last year, and a commemorative oak tablet was set up on a tree near by.

Good Thermal Soaring.

On the 13th there was a light northerly wind with good thermal conditions and moderate-sized cumulus clouds. Each pilot was allowed one aero-towed launch, and Hirth was first off. Unfortunately for him, his aeroplane pilot chose to take him away from the mountain, where the best "thermals" appeared to be, to a patch of cloudless sky to the north-west. All he could do was to glide back to the aerodrome, and from there watch Dittmar and the rest unhook themselves under the most lovely clouds and soar away out of sight. The casting-off height was fixed at 350 m. (1,150 ft.), but it appears that, if a pilot finds himself flying through a patch of strong lift, he will cast off at once without waiting to reach the maximum height allowed.



The "Thermikus," which has warping wings.

What was specially noteworthy about this day's flying was the general advance in the technique of thermal soaring. Last year very few pilots circled at all; those who did, with the exception of Hirth, usually took about 35 seconds to get round. This year numbers of them were doing all their circles in 20 seconds or so, and there was no doubt of their improved skill in finding such currents.

The chief distance flights on this day were: Riedel, 101 miles to the Rhine; Dittmar, 60 miles to Frankfurt; Krekel on the warping-winged THERMIKUS, 54 miles, nearly to Frankfurt, but not quite.

In the evening there occurred the storm described by "Segelfliger" in the last issue.

During the second week, after I had left, there appear to have been better winds and more slope-soaring.

On the 14th, Schleicher, in avoiding a collision with another machine, stalled his OZITE and crashed rather badly, but was not much hurt, apart from a shaking.

Shortly after this, however, there were two actual collisions, albeit slight ones. This is the first time such a thing has happened among gliders, probably in the world's history. Luckily all the machines involved made a safe landing. Mr. Richardson, who was there but missed seeing the collisions, found a machine landed on the steep part of the slope with its nose pointing downhill, and the top of its centre-section looking as if it had been hit by a skid.

No further distance records were broken, but it is of interest that, of the experimental types, the THERMIKUS is reported to have made 4 flights totalling 160 miles, and the FLIEDERMAUS 4 flights totalling 144 miles. The MARABU did a flight of 32 miles on the 19th.

A new Rhön duration record was set up on August 18th, when Hakenjos on the LORE kept up for 13 hrs. 32 mins., starting at 6 a.m.

Fuller details of the machines themselves will be given in the next and subsequent issues.

THE RISE AND FALL OF A NORTHERN CLUB

TRIPE AND TRUTH.

By NORTHERN NOMAD.

Many years ago a Man stood on the top of an exceedingly high hill, and, stretching out his arms as a bird does its wings, cried in a loud voice "Lo! I will ride the wind." And had he not lifted up his voice for all to hear, his fellows would never have known his thoughts.

His sorrowing Companions, pondering deeply on the Man's failure to fly like a bird, were much intrigued with the problem; and they gathered together divers pieces of wood and fine cloth to fashion for themselves a device likened to the wings of a bird, saying one to the other, "If it looks alright, lo! it is O.K."

Having cast lots for the honour of making the first venture, they firmly fixed the Chosen One to the device with eagerness and haste, for the other Companions were strangely happy, even though they had not been favoured in the drawing of lots.

The strange device and its burden was hurled with force from the high hill, for the Companions had use of a rope with the power of increasing its length according to the strength of men.

As the Chosen One was still possessed of the strength to sit erect when found in the woods below the hill, the Companions rejoiced, saying: "Surely we are great! The power is ours; we can fly as do the birds!" And there was much drinking of wine and voices were lifted up in song, and each man patted his own back in accordance with the custom. Scribes came from near and far to record these wonders, weaving their own dreams in the tidings so that all the people marvelled.

Season followed season, and strange were the devices made and eagerly were they hurled from the hill tops; and counts up to an hundred could be made before the breaking.

Then it came to pass, when the Companions were gathered together, that one of their number having a loud voice said, "Let us buy for ourselves a device so cunningly contrived that two may be hurled forth instead of one." And the others praised the man for his wisdom, for he was well respected, being the owner of an inn.

Great feasts were held to enthuse the multitude and lighten their purses, for much money was required for the making of this machine; and had not the Merchants demanded gold for accounts yet unpaid—even the maker of balloons. Moreover, there were certain Powerful Ones who lived in a fine palace in the mighty city, and they also demanded payment of many gold pieces; for they had enlightened the Companions on many matters, and being full of wisdom, did not desire for themselves the joy of being hurled from hill-tops.

But it came to pass, that after many tribulations, the Companions possessed a machine in which two could be carried; yet their numbers had melted like the snow in sunshine, so great had been their labours.

Now the Powerful Ones in the great city became restless, and after many murmurings descended on the few remaining workers, and, scattering them with threats of legal vengeance, carried off the machine for which so much gold had been paid. "For," they said, "we must have something." And they sold the machine in a strange market for a few coins.

From that day the Companions were so routed that not two came together again, and they remember, with bitterness in their hearts, never again to seek wisdom in a loud voice, even though the speaker be the owner of an inn.

But a man still roams the mountains, seeking to soar like a bird, even unto this day.

THE GRUNAU BABY II

[The GRUNAU BABY has become one of the most popular machines in Germany for training in the several varieties of soaring flight. In its original form it was described and illustrated in our issue of February 15th, 1932. An improved version, the GRUNAU BABY II, has been brought out this year, and several examples of the new type were to be seen at the Rhön Competitions. The following article, which is reproduced from "Flugsport," has been translated by Mr. G. L. Bell.—Ed.]

This year's Rhön contest brought for the first time a remarkable selection of machines of small span. The advantages of a small span are known, and have been repeatedly discussed by *Flugsport*, so that any further reference is unnecessary. "Flugzeugbau Schneider" of Grunau had already used these ideas in the type GRUNAU BABY.

The remarkable success which the GRUNAU BABY II had to its credit, furnished the incentive to develop this type further.

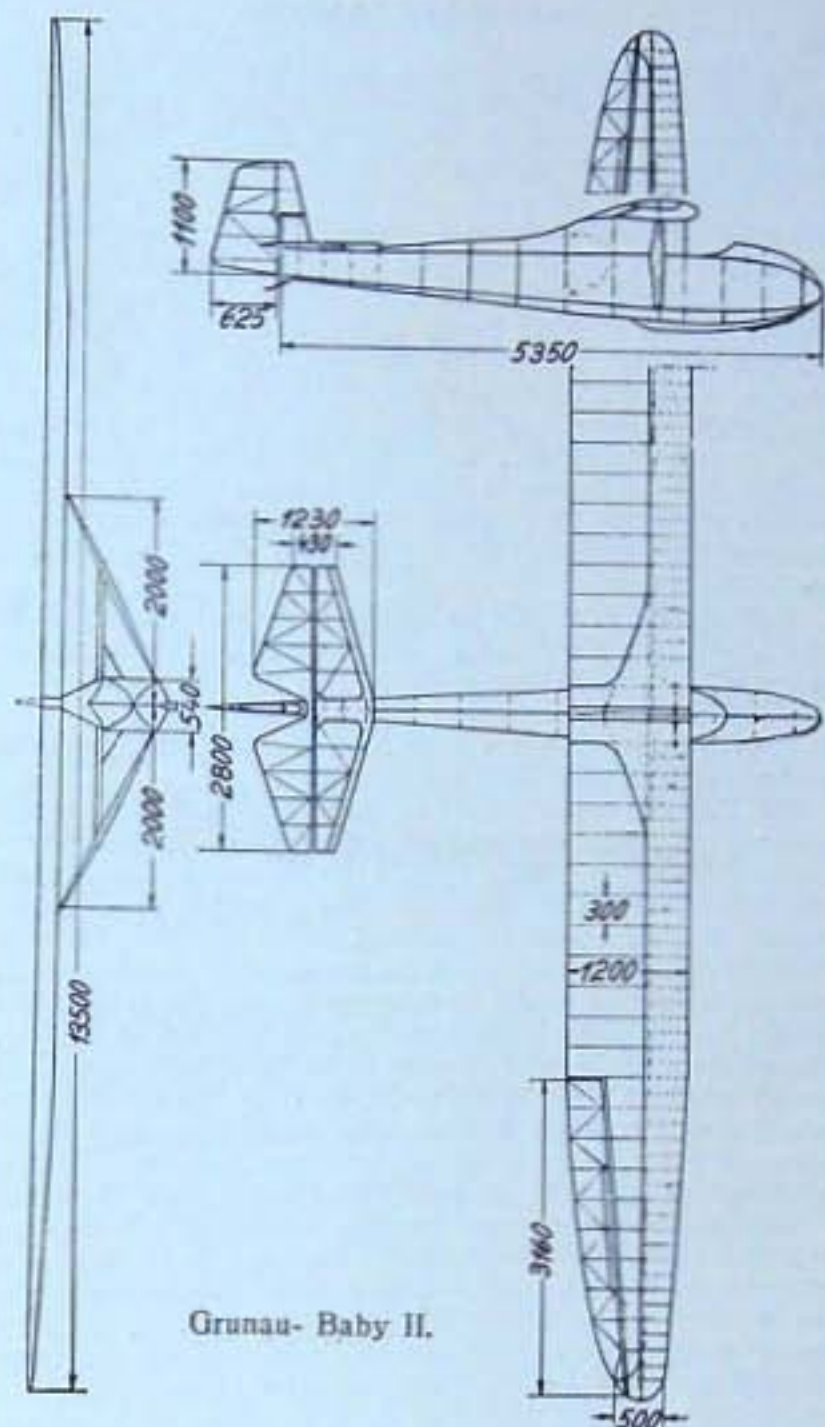
Especially, an improvement of the flying performance and gliding angle was desired. As a consequence of the further development of this type, for towed flight with thermic sailing to follow, increased importance was laid upon great controllability, and it seemed necessary to set the permissible towed-flight speed at 115 km. per hr. [72 m.p.h.]

The basic ideas, certainly well-proved in the old GRUNAU BABY, of cheapness, simplicity and ease of repair, are, in the prototype GRUNAU BABY II also, carefully regarded and applied.

The single strutted wing is in two parts, single-sparred, with torsion-resisting ply-wood nose, and it has a 13.5m. span with a surface of 14.2 sq. metres. The employment of a single strut instead of "V" or "A" strut has proved itself successful in the old BABY and in the STANAVO and is also retained on aerodynamical grounds. For safety considerations (with respect to club-building of machines), the wing is attached to the fuselage, for the purpose of taking distorting strains, at three points. In order to attain the desired controllability, the wing profile is flattened at the extremities about 3 per cent., becoming at the end symmetrical. The ailerons are held rigid mainly by a plywood box and "space-diagonals." The wing has an incidence of 2½ deg. The wing tips are made especially light, in order to diminish the moment of inertia about the longitudinal axis.

The fuselage is hexagonal in section and is constructed in the well-known way, with plywood. Parachute space and quick-release hook for towed flight are fitted.

The first machine of this type was tested in flight by Wolf Hirth and other well-known pilots. Compared to the old BABY, a real improvement in gliding angle and manoeuvrability were shown. Flight Instructor Steinig carried out the first loopings and other aerobatics upon this machine. Deutschmann showed that the machine can only with difficulty be put into a spin. The hours



Grunau-Baby II.

of thermic and cloud-sailing flights undertaken frequently and easily in the GRUNAU BABY II, up to 1400m. above the start, give proof of the especial fitness of the foregoing methods.

Span: 13.5m. (44.3 feet).
Area: 14.2 sq. m. (153 sq. feet).
Weight empty: 112 kg. (245 lbs.).
Aspect ratio: 12.8
Safety factor: 8.

In the absence of suitable measuring methods, practical performance data are omitted.

A DISTINGUISHED LADY PILOT.



Hanna Reitsch in her "Grunau Baby II." at this year's Rhön Meeting.

CORRESPONDENCE

ALBATROSS SOARING.

Sir,

On page 150 of your issue of July 14th there are absorbing references to a "Discovery" Expedition's cinema film of a soaring albatross, in which film the bird is evidently seen to rise rapidly against the wind, wheel sharply round with steep banking, glide back to sea level with the wind behind it (presumably), wheel sharply round to face again the wind, and so be prepared to repeat the whole clever cyclic performance as often as it pleases. Because of the higher layers of wind being faster than those nearer the friction-making surface of the sea, the bird must, of course, receive a continual gift of fresh air-speed or headway, both on the rising up-wind glide and on the descending down-wind glide; and that all being sufficient to compensate for losses of headway by head resistance, the bird is well able to dispense with any speed-maintaining devices like flapping or a propeller, although keeping above the water.

That should evidently be regarded as one standard form of soaring by the increasing velocities of the higher layers of the wind, but because of its greater travel with the wind the bird may generally find difficulty in holding its place in the seascape. It tends to be carried away like a balloon, and sometimes that does not suit it.

But there is observable one other standard form of the soaring, to which the present writer drew detailed attention in *Nature*, in 1925. In this the bird may rise against the wind just as before, but then, instead of wheeling round it dips again to the surface of the sea, at least sharply enough to maintain its air-speed or headway. Of course, it is now ready to soar up again, and repeat this whole simple up-and-down manoeuvre as often as it likes. Seen from a distance it appears to be doing little more than lazily rise and sink in its place, as if to the swell of the passing seas. When a slow wind offers the small differences of layer velocity needed by a fast and very efficient gliding bird, the bird can easily progress against the wind.

This second form of the soaring (continually facing the wind) seems likely to prove the one more easy of accomplishment by a full-sized manned glider, though the glider might need to be a specially stumpy one, like the albatross, both to secure prompt and sufficient up-and-down manoeuvrability and to have the large dipped glider not confusedly dealing with too thick or many layers of air. The soaring manoeuvre needed is only a steep down and up swoop from a height of about fifty feet above the sea, continually repeated about every half dozen seconds. There are no exacting gust periods to comply with. The albatross gives a lazy flap or two as often as the soarability conditions are at fault, so, of course, the human pilot and his glider might have to prepare for frequent duckings. But the muscles of a man, no less than of an albatross, are capable of such great overloads for a few moments now and then, that it is reasonable to consider whether a light pedal-driven propeller might not avert at least a great many of the duckings.

S. L. WALKER.

LAUNCHING WITHOUT A CREW.

Sir,

In the last issue of *THE SAILPLANE* I see that the Bradford Club has been experiencing a lack of launching crews. For the last three years we have been auto-launching with three men only, and have always found it very easy and pleasant. The tail of the machine is held by a quick-release operated by the man on the wing-tip, who is the instructor when primary hops are being given, so that he has complete control over the strength of the launch.

We have lately been flying a DAGLING with only two men, one in the car and one in the machine. The release

is operated by the pilot, who holds the cord in his left hand well clear of the flying wires. The wing is propped up on boxes, and we have found this method satisfactory in winds up to 10 m.p.h. blowing at an angle of 45 deg. to the line of launch.

Incidentally, the elastic launching rope can be used for auto-launching long after it has ceased to be any use for hand launching.

G. P. HERDEN.

Imperial College Gliding Club.

[The rope from the glider is passed through a pulley on the ground, and the car moves at an angle to the direction of launch. The bungy is incorporated at the end nearest the car.—Ed.]

POLITICS.

Sir,

THE SAILPLANE very adequately reports on one half of the gliding movement, but it is incomprehensibly silent on the other half—I refer to politics. In this important and interesting realm the angels—ably represented by such as Messrs. Waplington and Ashwell-Cooke—resolutely refuse to tread. May I, therefore, rush in and ask that the light of day should at length be projected into those frightful caverns from which darkly issue laws, roars and rumours of wars in a sort of confused "macédoine de bruits."

After all, the two main executives—the British Gliding Association and London Gliding Club Committees—are elected by us to work in our interests, and not to have Fun and Games on their own. Surely, therefore, they should keep us constantly in touch with the march of events, so that we can keep them constantly in touch with our wishes.

Very well, I will now be a cad.

(1) Everybody knows that the L.G.C. and the B.G.A. have been at loggerheads for years. No one knows the details. Dark stories circulate of personal antagonisms and sectional disagreements.

(2) The L.G.C. have now disaffiliated. And yet in *THE SAILPLANE*'s report of the last meeting of the B.G.A. this (presumably the most important) section of the news was, obviously deliberately, suppressed. *THE SAILPLANE* labels itself as The Official Organ of the B.G.A. Are the B.G.A. afraid to turn the handle? Or are they ashamed of what might come out? We do not want these OGPU methods.

I suggest:

(1) *THE SAILPLANE* gives the history of the struggle.

(2) The B.G.A. write giving their side.

(3) The L.G.C. reply.

(4) The L.G.C. further tell us what we stand to gain and lose by this disaffiliation. Also if there are any terms on which they would re-affiliate. (There must be, obviously.)

(5) The B.G.A. says why they won't accept them.

(6) 1999 letters from your readers (your circ. is 2,000, I believe?) saying what they want.

(7) The mandate thus obtained to be carried out.

There is a remarkable contrast at present between the sudden jump forward which has occurred on the practical side of the movement, co-incident with the practical bankruptcy of the political side. If we do not hurry up and put our own nursery in order there is an uncomfortable feeling that we may all get spanked. So let's to it.

A MEMBER OF THE LONDON GLIDING CLUB.

[Our correspondent's complaint No. 2 would not apply to the B.G.A. Council Meeting reported in our last issue, which took place on July 31st, before the disaffiliation referred to; it is, however, applicable to the Council Meeting Report published in the present issue. Our

practice in these matters, we should explain, is to publish the report circulated to members of the Council, omitting such items as are confidential or not of general interest. In case of doubt as to what is confidential, we consult the R.G.A. Office.

The figure 2000 is probably an under-estimate of the number of our readers. But only a small proportion of them buy their own copies of *THE SAILPLANE*. Hence the price.

Having settled these small details, may we now say that we are delighted with our correspondent's letter?—Ed.]

SOARING FLIGHT OF CROWS.

Sir,

I wonder how many people take notice of the humble crow. My office window overlooks Farnborough aerodrome where crows congregate in their hundreds. What the attraction is I have not yet discovered. Whether a diet of 2BA nuts and castor oil suits these birds is not the subject of this letter. On several occasions I have seen these birds soaring apparently in rising air and it is a common occurrence to see them soaring over the balloon shed.

On September 20th, 12.30 p.m., wind S.S.W. and patches of medium cumulus passing, these birds suddenly ceased their banquet on the aforesaid nuts, rose into the air and immediately began circling to the left hand. Up to about 300 feet they were all flapping, but by ones and twos these ceased until about 20 to 30 of them were in perfect soaring flight.

I studied the sky above for any prominent cumulus, but, beyond the usual patches of small cloud, there seemed nothing to get excited about. Many of the birds gave up the business of circling and descended to their feeding, but about 20 continued upwards until I noticed a pronounced darkening of the cloud above which, as it receded from me, I noticed was quite a well-formed cumulus.

Five minutes from the time the birds had left the ground, they had disappeared. Whether they were too high to see or had disappeared into the cloud base, I would not like to swear, but believe myself that the cloud had swallowed them. Two other people witnessed these proceedings. I later obtained the following figures from the Meteorological Office: height of cloud base, 3000 feet; speed of wind at 1000 feet, 12 m.p.h. As the birds covered about a mile over the ground and the time was about five minutes, there are two checks on their rate of climb which works out 600 feet per minute.

What or who told these birds, serenely feeding on the ground, to suddenly indulge in a spot of perfect thermal soaring?

E. BRAME.

[Living on a hill overlooking the Darent valley, we are familiar enough with the soaring of crows. In a south-west wind they indulge in slope-soaring and pick up an occasional small "thermal," usually getting only a little way down wind before it fades out. They find better thermals over the fields below. Here we recently saw four crows going round in very tight circles and gaining height unusually fast; a minute or two afterwards a turbulent wisp of cloud appeared overhead, and melted away almost at once. This was odd, because the rest of the clouds in the sky were flattened and inactive. But it is the only time we have been able to connect soaring crows with the presence of a cloud. It should be remembered that one cannot be sure that any particular birds are under a cloud without knowing the relative distance of both birds and cloud, unless the cloud is directly overhead. We always know when our crows have picked up a really good thermal current, by the simultaneous sound of cawing up in the sky and a rustling of wind in the trees, which is as it should be, since the wind ought by theory to increase just after a "thermal bubble" has broken loose. But how the birds know when a "thermal" is coming (as they evidently do), is a puzzle

which our sailplane pilots would give a lot to see solved.—Ed.]

FLYING FISH.

Mr. R. Robinson, writing from Portsmouth, sends a quotation from an article written in 1835 by one G.H. in "Pinnock's Guide to Knowledge": "This animal (Flying Fish) might at first be supposed to be the peculiar favourite of Providence. . . . Its wings are but the breast fins, and being of a most unusual length, enable it to fly some time in the air. But their flight is very short; whether their wings cease to be pliable when dry, or that the creature is soon wearied, it is difficult to say, but they soon return to the water."

Mr. Robinson continues: "And now for my own observation. Having sailed more than 200,000 miles in tropical seas, I have seen much of flying fishes. The 'sculling' with the long lower lobe of the tail gives him a 'bungy' launch. If there is little wind, he goes into a long flat glide, flipping at the water now and then with the tail. When there is a breeze, he soars over the wave crests. His 'landing' is nearly always a *dive* into a wave, not a stall down. Why must he return to the water after a few moments? For the same reason that a whale returns to the surface—they both, after the manner of their kind, have to breathe."

He adds that not a few of them will land on the deck, owing to their unfortunate ignorance of the effect of up-currents caused by the ship.

(An article on "The aerodynamics of the flight of flying fishes," by C. H. Latimer-Needham, appeared in our issue of August 11th.)

THE DUNSTABLE TO BARNET FLIGHT.

Mr. G. L. Bell, who was staying on the London Gliding Club's site during that week, sends some interesting particulars of the weather on August 23rd, the day of Mr. Collins's 22-mile flight in the Club's PROFESSOR:

"The actual flight was performed in the ideal 'polar air' behind a depression. We had the cold front cloud over at 9.0 a.m. that day (with the warm front beginning the preceding afternoon). Collins took off about 11.0 and began to get nice lift, obviously with a high lapse rate. Soon, however, so much cumulus was formed as to overshadow the whole sky, and the sun could not shine through. The result was a marked loss of lift, presumably due to stabilising of the atmosphere below the cloud. PRUFLING could not soar, and PROFESSOR was flying about 100-200 ft. About 1.30 however the sun came out again (the clouds dispersed to about 5 tenths), and all was well."

[Mr. Bell encloses three photos (which we do not reproduce, as the detail would be lost in the process), showing portions of a belt of massive cumulus clouds stretched right across the sky from N.N.W. to S.S.E. This was the cold front cloud referred to, and, as it passed over, a drop in temperature of 1 deg. Fahr. was experienced. The weather maps of that date show that, in the early hours of the morning, Dunstable was near the centre of a small secondary depression which had come in rapidly from the Atlantic. From this centre there stretched southwards a "warm front" (doubtless the one whose advanced portion could be seen high in the sky the previous afternoon), followed by a "cold front", both moving east. Another front (an "occluded" one) followed behind these. But the cold front of 9 a.m. is not shown on the map; it must have been a minor affair, such as one often gets in north-westerly winds behind a depression. In fact, we have sometimes seen a series of such minor fronts pass over at intervals of an hour or so, each accompanied by a sharp shower or even thunder, with a drop in temperature and a slight change of wind. Such "fronts" should be of special interest to sailplane pilots, and, we imagine, would be of more use than the main cold front of a depression, with its low cloud and heavy rain and no clear air in front in which to soar.—Ed.]

NEWS FROM THE CLUBS.

The Central Scotland Air Yachting Club's Dickson Primary, with club-designed nacelle.



ULSTER GLIDING AND AVIATION CLUB.

Sunday, Aug. 20th.—On Saturday evening Aldergrove had given us a forecast of moderate to fresh westerly winds, and we decided to take the KASSEL to Benbradagh, near Dungiven, Co. Londonderry. Slopes, broken by valleys running eastwards, extend from this mountain, northwards, to Binevenagh Mountain and Macgilligan Strand, some 15 miles to the north. All these slopes face west; the ground in front of them is level, and runs down to Lough Foyle.

Benbradagh is a handy spot as a road runs obliquely up the face, and is just not too steep for the trailer to be towed up to the top. We tried auto-towing on the road at the top, but it was too rough. We had no trouble with elastic launching, however, though the landing was rather rough.

All our six "C" pilots had good flights of about half-an-hour each, and the best height was a little under 1,000 ft. above the start. Metcalfe's barograph is proving an excellent investment, and provides an interesting history of each flight.

In a fresh S.W. wind it should be possible to fly from here up to Binevenagh Mountain. On the last flight of the day Wynne reached the next mound in the range, Donald's Hill, at a height of about 350 ft. below the summit, and in the falling W.N.W. wind it was impossible to gain any height here. He landed at the foot of the hill, in a field distant about five miles from the start. The ground organisation was not very good and the trailer, which had been optimistically driven on to Macgilligan, had to be hastily recalled in the falling darkness.

Incidentally we have now soared over eight different sites. But we have only explored a fraction of the possibilities of slope soaring here alone, quite apart from the immense potentialities of thermal flying.

On August 28th the syndicate-owned SCUD II arrived and was duly erected and admired. The finish of the machine is excellent, and the seating arrangement seems to suit long pilots and short ones equally well. The trailer also is well made and compact; it is, however, appreciably heavier to tow than the KASSEL trailer, which was constructed here to Harris's designs and has given nearly 18 months' excellent service. During that period it has conveyed the KASSEL nearly 3,000 miles in all.

Wednesday, Aug. 30th.—The new SCUD was tested by auto-towing at Tyrella and the six "C" pilots all had

flights. No positive quick-release is fitted yet, but an obstruction was fitted to the launching hook and a hand rope led back from the ring, into the cockpit, clear of the struts. This arrangement worked satisfactorily.

Sunday, Sept. 3rd.—Both KASSEL and SCUD were towed to Macgilligan. On the sands the wind was some 3 to 4 m.p.h. from N.W. Sky overcast; Hell's Hole at 850 ft. above sea level was entirely covered with low, damp cloud. The SCUD was towed up to the usual height and rather unexpectedly stayed up for some 30 mins. in the hands of Wynne, at a height of 500-600 feet. At that height the wind was estimated to be 7 m.p.h., and at one end of the beat there was a steady drizzle of rain. Metcalfe and Mrs. Mackie soared the SCUD, and Baster gave the KASSEL a test flight. Liddell had three short flights in the KASSEL—the first time he has flown this machine. Mackie then flew the SCUD and Wynne joined him with the KASSEL, both machines flying between 500 and 650 feet. We are somewhat loth to admit that this is the first time we have had two machines soaring at the same time.

The SCUD is a delightful machine to fly; one cannot understand anyone's criticising it as over-sensitive.

[We only heard this criticism made against the original SCUD of 1931, which was a secondary, and a different design from the SCUD II.—Ed.]

The ailerons on our machine are at present very stiff and she likes a little left rudder to fly straight. The rudder is delightfully sensitive even at low speeds, and it is creditable to the designer to have adopted interchangeable rudder and elevators without making the latter very harsh. In spite of the small moment of inertia in the looping plane the elevator control is only just firm even at high speeds. The sensitive rudder is a great aid to side-slipping; on the KASSEL the rudder area seems to be inadequate for side-slipping as she puts her nose into the "bank" even with full opposite rudder, in anything over 15 deg. bank. The most surprising thing is that the machine is under perfect control at 27 m.p.h., the official stalling speed!

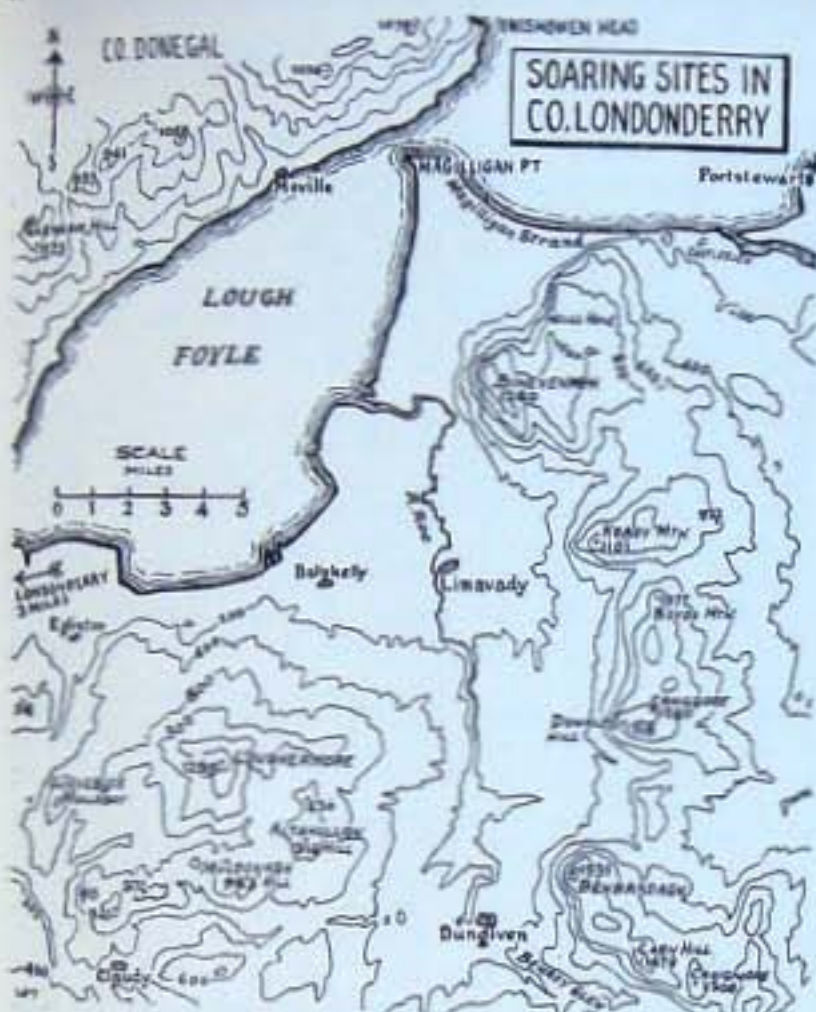
Saturday, Sept. 9th.—About an hour's soaring was put in by Baster and Metcalfe with the SCUD at the Knockagh. Wind 10-15 m.p.h. blowing obliquely to the face from the east. Nothing much in the way of a spectacular performance was put up, 280 ft. being the maximum height gained. Conditions were bumpy, but exhilarating, and SCUD behaved like a little thorough-



The Ulster Club's newly-acquired "Scud II." before a test flight at Tyrella. On the right, Harris about to start.

bred. The most delightful thing about this machine is that she can be put just where required, a decided advantage when landing in a narrow field dotted with haystacks! Baster was unfortunate enough to lose contact with his rudder pedals and floated serenely off into space and out of sight over Greenisland. He was retrieved intact.

Sunday, Sept. 10th.—KASSEL was towed to Macgilligan, where the afternoon was usefully put in by bringing on Liddell, who flies MOTHS and things. His "A" and "B" test, passed with ease, would have been followed by his "C" had not the east wind, blowing straight along the cliffs, precluded any soaring. Baster amused himself by gracefully descending from the top of the tow.



Saturday, Sept. 16th.—R.F.D. primary towed up and down at Tyrella for the purpose of training two newcomers. A finish was put to the day by one of them taking to the air by mistake and hurriedly coming down again, two landing wires getting considerably the worst of it.

Sunday, Sept. 17th.—An overcast angry sky with low mist and clouds scudding before a 30 m.p.h. south wind greeted us at Magilligan. KASSEL was incontinentally blown over in her trailer when a start was being made for the Sperrin Mountains. The damage was practically nil to the machine, but the trailer took on a decidedly bedraggled appearance.

Scud was towed up to a hill under the lee of, and across the valley from, Keady Mountain (1,100 ft. high, some five miles south of Binevenagh), and for want of a more suitable place erected and launched from half way up, out into the valley. The result was quite alarming. Scud climbed (with her nose well down) 200-250 feet in about 15 seconds. Low cloud was encountered which kept continually hiding the summit of the hill, and the pilot, being anything but desirous of entering it, and maybe trying conclusions with the said hill-top, put his nose down some more and fled out into the valley at an air speed of around 60 m.p.h. The bumps were continuous "wallops" from start to finish, and these being added to his already fast pace produced a style of flight which can be imagined. Continued contact between pilot's head and the centre section was varied with swipes in the face from a pocket aneroid tied round his neck. A safe landing, followed by another launch to bring the machine near a road, resulted in an equally tumultuous glide to an adjacent field and tranquility!

There is no doubt that this site has possibilities of an infinite nature but a higher cloud ceiling is desirable before these can be exploited.

NEWCASTLE GLIDING CLUB.

Flying has been held up for the last few weeks as a result of our removal from Killingworth to Mootlaw, where we have taken a 1,000-acre site.

Mootlaw is 20 miles north-west of Newcastle, and is 900 ft. above sea level. The site was considered good by the late Herr Krause when he inspected it in March, 1931. There are two launching hills, one above the other. The lower one is a sheer drop of almost 100 ft., and the upper one is about 50 ft. at an angle of about 50 degrees. The two hills total a drop of some 200 ft. in about a quarter of a mile. The lower hill faces south and south-west, but the upper one faces principally south-west. The inclination to north and east is very gradual. The site is only two fields from the road, and cars can run to the launching point without any difficulty.

The main disadvantage is a poor 'bus service, which only goes within two miles of the site, and operates at unsuitable times.

Time has been spent erecting and doubling the size of the hangar, in which we will instal sleeping bunks to enable members to remain over the week-end. The hangar has now a floor space of over 500 sq. ft., and, in addition, a barn is available for part of the year.

Allen has been spending his vacation, before going to Cambridge, by making and fitting a nacelle to the CRAMCRAFT, which will be in commission as soon as the buildings are ready to house it.

Hick filled one of his weeks with Mr. Addyman and the ZEPHYR, during which he made a flight of about one mile. Prior to this, the maximum distance by one of our members was a quarter of a mile. Hick is also making good progress with his MERLIN, having now assembled the fuselage.

A DICKSON training machine, built by the Grosvenor Gliding Club, together with all their equipment, including a 20 ft. trailer, will shortly be received by us, and we look forward to some good flying on our new site in October.



A group of members of the Newcastle Club on their old Killingworth site with the "Cramcraft."

DORSET GLIDING CLUB.

The following is a list of donations from the Dorset Gliding Club to the widow of the late Mr. Lowe-Wylde:

R. A. Bruce (President) ...	£1	0s.	0d.
N. W. Wright (Chairman) ...	£1	0s.	0d.
G. T. R. Hill ...	£1	0s.	0d.
V. S. Gaunt ...	10s.	0d.	
W. G. Gibson ...	10s.	0d.	
F. G. W. Digby ...	10s.	0d.	
G. Laver ...	10s.	0d.	
R. M. Rolfe ...	10s.	0d.	
W. H. Davis ...	5s.	0d.	
B. V. Leak ...	5s.	0d.	
A. L. Haslam ...	5s.	0d.	
J. A. Penrose (being sent direct) ...	10s.	0d.	

Total ... £6 15s. 0d.

LONDON GLIDING CLUB.

The good times have continued for another week, Collins, Smith and Slater from Derby, Wills, Noble, Robertson, Hedges and Bell having gone on day by day according to their several abilities.

On Monday, Aug. 21st, Robertson gave the PROFESSOR a long run up and down while the PRÜFLING was exercised by Hedges (20 min.) and Slater (10 min.). The wind then dropped.

On Tuesday the PROFESSOR was launched by the winch and flown by Collins (1 hr.) and Wills (2 hrs. and ½ hr.). The PRÜFLING was hand-launched and flown by Slater (½ hr. and ¼ hr.) and Smith (1 hr.). In the KASSEL 2-seater Collins gave a press photographer a ride for 1¼ hrs., so that pictures could be taken of the other two machines in mid-air.

On Wednesday Slater and Smith continued with the PRÜFLING (¼ hr. each). Buxton flew the SCUD twice, once for 2 hrs., up to 1,000 ft., and once for 20 min. for photographs from the ground. Smith and Slater tested the DIXON primary which Slater has presented to the club, whereafter Bell made three nimble flights, obtaining his "B."

Collins laid his magic hands on the PROFESSOR—and how! He visited Totternhoe village. He potted off to Ivinghoe Beacon, where he climbed thermally to 2,300 ft. He fled away downwind up the Whipsnade Valley until he had dropped to 450 ft. over the Hemel Hempstead basin. Here he hitched up with a set of thermals and rose to 1,200 ft., then setting off toward London. By the aid of odd clouds he prolonged the flight to Watling Street (22 miles) south of South Mimms, landing intact in a virtually impossible field.

[A map of the route appeared in our last issue.—Ed.]

On Thursday the poor man was chased up by photographers and duly pilloried, on the ground and in the air. Bell flew the SLATER-DIXON down twice. Our Walker, and Waghorn (age 15½), ground-hopped nicely.

On Friday Bell hopped in the PRÜFLING, and Noble in the DIXON. But a dog bit the DIXON's flying wires just as the machine took off. A rear spar broke. The dog took off in a westerly direction and was sighted over Cardiff early next morning.

On Saturday the old original R.F.D. and the PRÜFLING hopped and hopped, while Dent flew the KASSEL 20 over the hedge per dud winch-launch.

On Sunday, lovely weather but easterly wind. The KASSEL 20 was winch-launched to 300 feet three times. The few primary learners who turned out were given



P. A. Wills starting in the "Scud II."

seven consecutive hand-launched hops each in the R.F.D. This is technically known as a BELL-LIFFOOL, and works marvels. The dripping launching-team, having finally done their best to break the grateful instructor's neck by a princely launch, then went in to tea. No doubt there were more hops after tea, but your correspondent went home—about seven hours earlier than usual.

We were frightfully pleased to see Scott-Hall's Gibraltar-like dial again, fresh from a trip in "Shamrock"—not on the day when she was dismayed.

Monday, Aug. 28th.—Wind down the hill.

Tuesday, Aug. 29th.—Fair wind from S.W. Wills in SCUD did 2 hrs. 45 mins. and two other flights. Collins in PROFESSOR, 1 hr. 15 mins. A few thermals. Both machines carried barographs. The PROFESSOR registered 1,300 feet.

Wednesday, Aug. 30th.—A light wind early, but good cumuli. The SCUD was in the air early, but after half an hour a lull brought it down. Was up again at 11.30; only a light wind, but above 1,000 feet lots of thermal lift. After half an hour the SCUD struggled up to 1,000 feet and then the fun commenced. Thermals came thick and fast, and by constant circling the SCUD soon got to 1,800 feet. At this stage a Hatfield MOTH appeared from the north at about 1,000 feet. On getting to ½ mile away, it gave a visible jump and circled up to see if it really was true. This rather went to the SCUD's head, and it made off for Ivinghoe, finding lift all the way, which however vanished over Ivinghoe Beacon. It came down to the Beacon and traversed several times, when the wind dropped and the SCUD with it. Oaths from rescue party. The Club is getting blasé.

Thursday, Aug. 31st.—Little wind. No thermals. SCUD tried twice, but failed to stay up more than 10 mins. each time.

A record: Wills arrives at Club 8.10 a.m. Finds there two men and a boy. Doors down, SCUD out, wings on, towed out, winch wire towed over, winch started, and SCUD in the air by 8.50.

Friday, Sept. 1st.—Early on, good clouds but little wind (S.W.), and inversion near ground. SCUD up at 9.10, and an hour produced a lot of daisy-cutting and one or two good thermals. Then a lull brought her down. Up again at 11.15. Thermals were good until about 12.30, when Collins came up in the PROFESSOR; they then gradually died down. About 2 o'clock, the PROFESSOR was seen to strike a good thermal. The SCUD scudded over into it and both machines circled like mad, PROFESSOR 200 feet above SCUD. The PROFESSOR was sensible and finally left the thermal and returned to the hill. The SCUD after three hours was getting impatient again and went on. About half way to Markyate it got left at 900 feet, tried to get back but failed, and landed east of the Dunstable-St. Albans road. Result: Wills set up a new record by walking 2½ miles in socks. Even louder oaths from rescue party; more fervid apologies from Wills.

Saturday, Sept. 2nd.—Almost no wind. SCUD just soared. Hedges crashed PROFESSOR; Ince crashed Wills's Fox MOTH; Burgle passed "A" test; Heston worked until



2 a.m. removing Fox Moth.

Sunday, Sept. 3rd.—Light airs from W. and N. later N.E. Bolton glided down in the HOL'S; Wills in the SCUD and Dewsbury in the CRESTED WREN did prolonged glides. The PRÜFLING was busy all day, except for an interval for bathing (the pilots bathed, not the PRÜFLING). Burgle and Ivanoff did their "B" tests on it.

Sept. 9th and 10th.—Strong east wind crashing down the hill. To appease two genuine triers, one of whom had bicycled forty miles, the R.F.D.I. was offered up as a willing sacrifice; she escaped with a broken landing-wire after thirteen hops. Finding a relatively calm spot on such a day is a subtle business, whirligig gusts alternating with lulls.

But the sun shone, and we had five "hearty" (to borrow a famous word from the B.G.A. official notices) nibbles from prospective new members, all beginners, one R.N.

Week-end, Sept. 16th and 17th.—Elementary training. Wind unsuitable for soaring.

Sunday, Sept. 24th.—After a dreadfully wet day yesterday, a good forecast for to-day brought out many people, including the TERN party from Guildford. But the wind refused to wake up, and at best there was only a faint air up the hill, allowing the CRESTED WREN to make a run to the Bowl, back to the winch, and back to the hangar ridge.

The TERN made four eminently stately descents (one would like to see Brother Collins get mad with her in mid-air and put her into a vertical bank). The SCUD II sprinted round repeatedly, and finished up with a teetotum landing distinctly adjacent to the hangar fence. The Hardwick-Slingsby FALCON II sailed down perfectly beautifully half-a-dozen times, Tester taking 1 min. 24 secs. over his "A". Her constructional work induces ungovernable mouth-watering, and elevates Slingsby into the limited ranks of Great Men (although perhaps he has actually been there for many years).

The PRÜFLING descended with varied degrees of fury. The Imperial College WHAT-NOT (Query: R.F.D.?) sank with determination, one Brave Young Pilot displaying his verve through loud song in mid-air. (Note: Song is permitted, or excused, when a pilot is very cold after some hours).

Collins conducted beginner's instruction by means of the winch and R.F.D.I. Nothing was broken, occasional hideous misbehaviour by pilots being sufficiently counteracted by wizardry on the winch.

Will Slingsby and Travers please note that they will always be as immensely welcome as they were to-day.

KENT GLIDING CLUB.

After endless setbacks and disappointments and an incredible number of week-ends spent entirely on construction, our new Secondary machine (late B.A.C.I. Primary) was successfully launched on Sunday, September 10th.

In its old form the machine had been repeatedly un-

lucky, partaking in all the Club's more destructive mishaps (including the tragic occasion when the newly-erected hangar collapsed on it), while our other primary emerged more or less unscathed from various perilous positions. Now, however, we hope the "hoodoo" has departed—the machine certainly looks as though it can and will fly as a Secondary should.

In the old days the pilot sat exposed to all the elements (and also to any hedges, shrubs or livestock that happened to be in his line of flight) with his feet balanced precariously on a slippery rudder-bar, but all this has been changed. He can now sit encased in a nice solid-looking ply-wood "nacelle" with fabric streamlining behind him, and his feet can rest firmly on the floor while operating the hinged rudder pedals. Balance wires have been added to the ailerons, which should make lateral control more positive than it used to be; the whole fuselage has been lengthened, the rudder rebuilt with a slightly larger area, while the rest of the tail-unit has been strengthened and re-covered.

The design of the nacelle and alterations is the work of Mr. Sanguinetti, while he and Messrs. Weekes and Bolton were responsible for the greater part of the construction, the other members all doing their bit in one way or another.

This B.A.C. I. was the first glider built by the B.A.C., and was the only one of that type they produced. It is the direct successor of COLUMBUS, the first British primary, who is still his venerable self.

FURNESS GLIDING CLUB

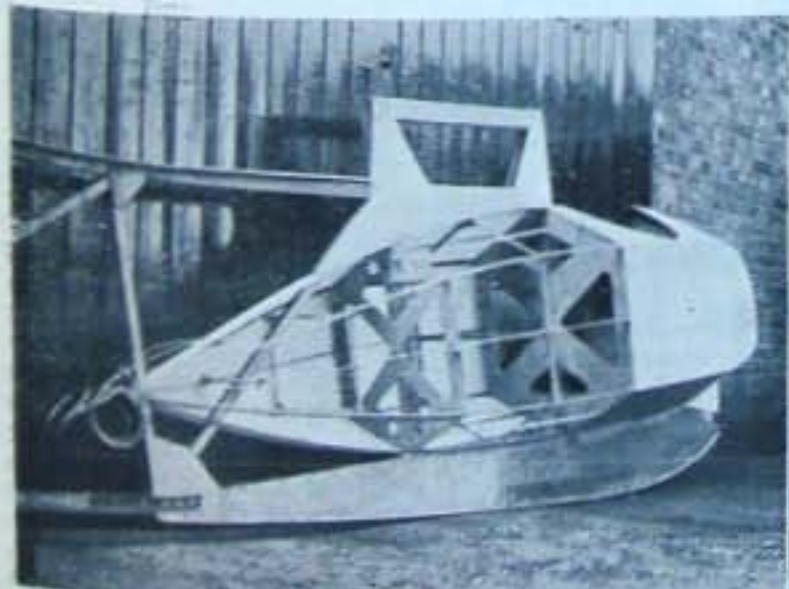
Saturday, August 19th.—Wind S.W., 12 m.p.h., ideal for trying out the B.A.C. VI. on our Ireth site. Stevens was launched and promised to, at least, land the machine in an accessible spot, and to soar if possible. He made a valiant attempt, fighting a losing battle for six minutes; he then turned away from the hill and made for the Dunnerholme beach; failing to reach the appointed spot by a plane's length, he landed bang in the middle of the fairway on the adjacent golf course.

Sunday, August 20th.—On this day Stevens soared the B.A.C. IV. for an hour, during which time he made beats as far north as Kirby, maintaining a steady height of 1,700 feet above sea level.

The wind strength was 20-25 m.p.h. and dead W., and he seemed to have no difficulty in cruising about up wind or down wind and was often well over the adjacent moorland.

This machine was built under the supervision of our Ground Engineer, Mr. C. A. Britton, from B.A.C. components, with differential aileron controls, designed by Messrs Redshaw and Stevens. Well done, Stevens!

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The Kent Club's "B.A.C.I." in process of conversion to a Secondary.

SOUTH SHIELDS GLIDING CLUB.

This club is composed entirely of *ab initio*. They fly a glider built by Mr. Renault, the Club instructor, from designs in an American magazine. The type is known over there as the RHON RANGER. It has a wing section which is flat underneath and highly cambered on top. The performance is good; the machine answers to its controls very well indeed, but not so much as to drive a beginner to violent "pump-hamling." The glider weighs a little over 100 lbs., which is unusually light for a primary. Its span is 30 ft., 2 ft. less than the American prototype, the reason being the dimensions of the shed it was built in.

The club is thriving on a subscription of 6d. per head per week, which gives a balance in hand of about 2s. per week after paying for the use of field and "hangar."

A few more keen members are wanted. Flying takes place at Simonside, South Shields, every week-end, weather, etc., permitting.

We are indebted to Mr. J. C. Neilan, who recently visited the club, for the above particulars; also for the photograph.



Mr. Renault flying the glider he made for the South Shields Club.

BRADFORD AND COUNTY GLIDING CLUB.

Due to the fact that the Club's official log-book has been sent to the B.G.A. for certain information required, the writer has not full particulars of all happenings since the last notes were written.

Sharpe had the PROFESSOR out one Saturday, and made a splendid glide from the top of Hope Hill, right across the "flat" and on over our long west slope. Here he encountered some rather hefty "bumps" which lifted the PROFESSOR with the speed of an American elevator. Sharpe turned to starboard, and made a neat landing at the foot of the hill. The wind was only about 10 m.p.h., and hardly enough for soaring on our ridge, which is, by the way, exceedingly difficult to operate.

Sunday, Aug. 20th.—Sharpe took off in the HOL's and remained up for nearly five minutes, making two double beats of the ridge at a good height. He then got too far out and lost the lift, and had to land on the South "flat." It was hard luck as it nearly added another "C" to our pilots' list. Flights were then made by Verity and Holdsworth in the REYNARD, Holdsworth twisting and turning about for over a minute before making a spot landing well within the prescribed area.

Sunday, Aug. 27th.—REYNARD rigged and tested by Christian. The wind was south, and this makes our training hill rather awkward as we have to launch diagonally across it. We then concentrated on Elliot, who is known either as our "man of lead" or Mercury. The last name is not because we think he has wings on his feet, but we are sure he makes meals off the stuff. Up to to-day we have not succeeded in prising him more than an inch or two above the ground, but to-day we really "had at him," and after a slide and four short hops, we dispatched him from half way up, and actually

OFFICIAL NOTICES**COUNCIL MEETING.**

The 52nd Meeting of the Council of the British Gliding Association was held in the Library of the Royal Aeronautical Society on Tuesday, September 12th, 1933, at 6.30 p.m.

Present: Mr. E. C. Gordon England, Capt. A. N. Stratton, Capt. C. H. Latimer-Neeham, Mr. W. O. Manning, Mr. S. Whidborne, Mr. D. M. Morland, Mr. E. R. Ellingham, Mr. L. O. Keckwick, and the secretary.

In the absence of the chairman, Mr. Gordon England was elected to the chair.

Among the business transacted was the reading by Mr. Whidborne of the Report and Recommendations respecting the financial position. A statement on the Report was read by the secretary, in which he offered to carry on in an honorary capacity so far as it was practical.

Membership.—The election of Mrs. M. M. A. Cairnes to membership was approved.

Next Meeting.—It was resolved to hold the next meeting of the Council on Friday, October 20th, at the same time and place.

got him into the air for 10, 12 and 11 seconds respectively. This was really a tremendous effort on behalf of the members, and we retired exhausted for light refreshment. (It was *not* yet opening time!) After this we sent him off from as near the top as we could with a South wind, and he made two good flights. Once we can overcome the earth's strange attraction for his body, he should make a good pilot.

Sunday, Sept. 3rd.—Though the wind was only about 8 m.p.h., the HOL's was rigged for practice work in landings. Stedman tested from Hope Hill, and had to put her down quickly to save going over the west slope. There was not enough wind to soar, and he was terrified of being torn to pieces by the unfortunates who had to haul the kite up from the bottom. (The car is not yet *working*!) Holdsworth and Cox then made flights of 28 and 30 seconds with good landings, and that finished the day's proceedings.

Sunday, Sept. 10th.—Quite a useful day. REYNARD out and flown by Alderson, Jowett and Elliott. Then came a great event. Elliott was sent off with a mighty launch, and amidst frantic cheers and yells defied the uncanny pull the earth seems to have for his body, and made a fine flight of 35 seconds, with a splendid landing, thus obtaining his "A." After this exciting exhibition, Sharpe felt compelled to have out the PROFESSOR. He said that if he landed in one piece, Stedman could have a trip, but he sailed off towards the village, then turned, crossed a main road and landed on an apparently deserted part of the moor. When, however, we got down there a huge crowd had come up out of rabbit holes and from the nearby towns of Bradford and Leeds, and Stedman was done out of his flight.

The Third Annual General Meeting of the Bradford and County Gliding Club was held on Friday, August 24th, in the Midland Hotel, Bradford. Mr. J. Hepworth, M.P., J.P., was in the chair. In his speech, Mr. Hepworth said that he was often asked what was the purpose of gliding. He always replied that it developed the sense of air-mindedness which was so essential in these days of progress. Mr. Arthur Cox, the Hon. Secretary, in his report called attention to the fact that during the past year, ending on July 31st, members had qualified for 13 "A" licences and 8 "B" licences, and that throughout the year there had not been a single accident involving injury to the pilot. (It was noticed that many members held tightly to their chair backs when this was mentioned.) It was also pointed out that the Club had developed to such an extent that it was now foremost among the provincial Clubs as regards equipment, regularity of flying training, and number of active members.

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