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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Subscription Rates [Post Free]: Annual 10s. 0d.; Half-Yearly, 5s. 6d., Single Copies 1s.

Vol. 5. No. 6. June 1934. **Published on the 2nd Tuesday of Each Month**

PRINCIPAL CONTENTS

UP FOR EIGHT HOURS.

The "British Falcon," in which Flying Officer E. L. Mole stayed up for 8 hours and 8 minutes on May 14th, putting up a new British Duration Record for sailplanes. At 3.50 p.m. he returned to earth for his breakfast, which he had not yet had. The machine is the property of the London Gliding Club and was built by Messrs. Slingsby of Scarborough.

THE SAILPLANE AND GLIDER

43, CHANCERY LANE, W.C.2. JUNE, 1934

Here, there and everywhere.

News of the progress of soaring flight, both quantitatively and qualitatively, and of increasing interest therein, comes crowding in so thick and fast that it is becoming none to easy to fit it all in to this journal, let alone sift it and prepare it for publication. A little over a year ago we got all worked up because a few people had taken one machine up to the Lake District and done two soars and a glide before coming home again. This year, at Whitsun, Dorset members went off to soar in the Isle of Purbeck, some London members soared in North Wales, a galaxy of northern clubs went to Sutton Bank, and the Ulster Club—well, with them any chasing round after new sites is merely part of the normal club routine. But the public at last are getting genuinely interested and amazingly intelligent about it all. And, in spite of an increase in the number printed, the last two issues of THE SAILPLANE have sold out.

Accidents will happen

It can be justifiably claimed that motorless flying is one of the safest of sports. But we must be under no delusion as to what is meant by the phrase. To describe any pursuit as "safe" can mean one of two things: either that, whatever you do, you can't hurt yourself, or that, although there are risks, practically all the risks are not only known, but means of avoiding them are also known. There is the world of difference between these two kinds of "safety," and it is in the latter category most emphatically that flying comes. In the past month we have had, not only the regrettable accident on the South Downs, but a very similar occurrence (happily not fatal) at Sutton Bank, which has been somewhat glossed over in the Yorkshire Club News. There also, a machine went into excessive bank and came down on its wing-tip, due, we understand, to a sudden change of direction in the rather strong wind, probably caused by eddying round a near-by promontary. What is more, two spectators were injured in addition to Mr. J. C. Dent, the pilot. Occurrences such as these can only be avoided in future if everyone makes the effort of learning all he can from the experience of others, not merely confining himself to learning from his own.

FORTHCOMING SOARING MEETINGS.

Great Britain.—The Annual Competitions held by the British Gliding Association will take place at Sutton Bank, near Thirsk, Yorkshire, from September 1st and 9th inclusive.

Germany.—The annual meeting held at the Wasserkuppe in the Rhön Mountains, near Frankfurt-am-Main, has been fixed for July 22nd to August 5th.

Russia.—The annual meeting at Koktebel, near Feodosia in the Crimea, has been definitely fixed for September.

United States.—The Annual National Soaring Contest, held by the Soaring Society of America, takes place at Elmira, N.Y., from June 23rd to July 8th inclusive. An additional meeting is being held at Big Meadows, in the Shenandoah National Park, from September 15th to 30th.

Model Soaring.

We are informed that a competition for model gliders is to be held at Ivinghoe Beacon (a few miles from the London Gliding Club's ground) on Sunday, June 24th, starting at 3 p.m.

THE SUTTON BANK COMPETITIONS

A suggestion has been made that in the coming Competitions at Sutton Bank, the height and distance competitions be divided into two classes each: one for machines of unlimited span and a second for machines of span up to say, 46 feet.

This idea seems well worth examining, as it will add greatly to the interest alike of competitors and spectators. Cash prizes would, if possible, be given to the winner in each class.

The Contest Committee of the British Gliding Association would be glad to get the views of possible entrants to the Competitions on this suggestion (or they could write to THE SAILPLANE about it).

A R.Ae.S. AWARD.

The Royal Aeronautical Society has awarded the Simms Gold Medal to Sir Gilbert Walker, Member of Council of the British Gliding Association, for his paper on cloud formation.

NEW BRITISH DURATION RECORD

Flying Officer R. L. Mole raised the British duration record to 8 hours 8 minutes on May 14th. He flew the London Club's FALCON at Dunstable Downs, starting at 7.43 a.m. and reaching 2,000 feet above starting level in the course of the flight. He stated that on four occasions he made use of clouds to gain height; also that he could have stayed up longer, but came down because he was hungry, having had no breakfast or lunch.

The flight was officially observed.

The previous British duration record was 7hrs. 22mins., set up by Mr. J. Laver, of the Dorset Club, on October 9th last at Sutton Bank. He described the flight in our November issue. Previous to that the record was Mr. Mole's (6hrs. 55mins., on July 30th, 1933, at Dunstable in the WILLOW WREN). An account of that and of all previous British duration records was given in our issue of August 11th, 1933.

"SILVER C" NO. 26.

We have already announced that Mr. G. R. Collins, of the London Gliding Club, is the first (and, so far, the only) British pilot to complete the necessary flights for obtaining the "Silver C" badge, the highest award a soaring pilot can earn. The badge has now been officially granted by the International Committee for the Study of Motorless Flight (the "Istus"), and Mr. Collins has received from Berlin the actual badge, numbered "26" on the back, for his button-hole, together with a beautiful certificate suitable for framing, printed in best copper-plate and signed by Prof. Georgii, the President, and Graf v. Ysenburg, General Secretary, of the "Istus." We understand that the evidence sent by the British Gliding Association was accepted, confirmation by the Royal Aero Club not being required. (This is important, because the R.Ae.C. will not accept a height record, at any rate, unless the *sealed* barograph is delivered to them with the seal unbroken.)

THE "SILVER C" BADGE

To gain this certificate, Mr. Collins did a flight of over 5 hours' duration on April 20th, and one of over 50 kilometres' distance (actually about 53 miles) and over 1,000 metres' climb above the starting-point, on April 22nd. With regard to the actual height reached on that flight, we printed a copy of the barograph tracing on page 68 of last month's issue, adding a height scale drawn on the assumption that the record started at the height of the launching point, 750 feet above sea-level. It will be seen, however, that the landing place was only 250 feet lower than the start, whereas the map shows it to have been below the 200-foot contour line. This discrepancy might be explained if the barograph record had been started at the bottom of Dunstable Downs before going up to the top (Mr. Collins, interviewed, could not remember, but thought it possible).

But it can be said that he reached a height of round about 5,000 feet above the starting level, and in any case that he set up a new British height record, a fact that was omitted from mention in our last issue.

We have already given the names of the first 20 "Silver C" pilots. The identity of the next five is unknown to us yet, but several good cross-country soaring flights have recently been made in Germany, of which we hope to give details next month.

Mr. Collins, by the way, is now attending a course at the Hornberg School, near Stuttgart. We hear that he has already looped the loop four times in a sailplane during his first day's flying.

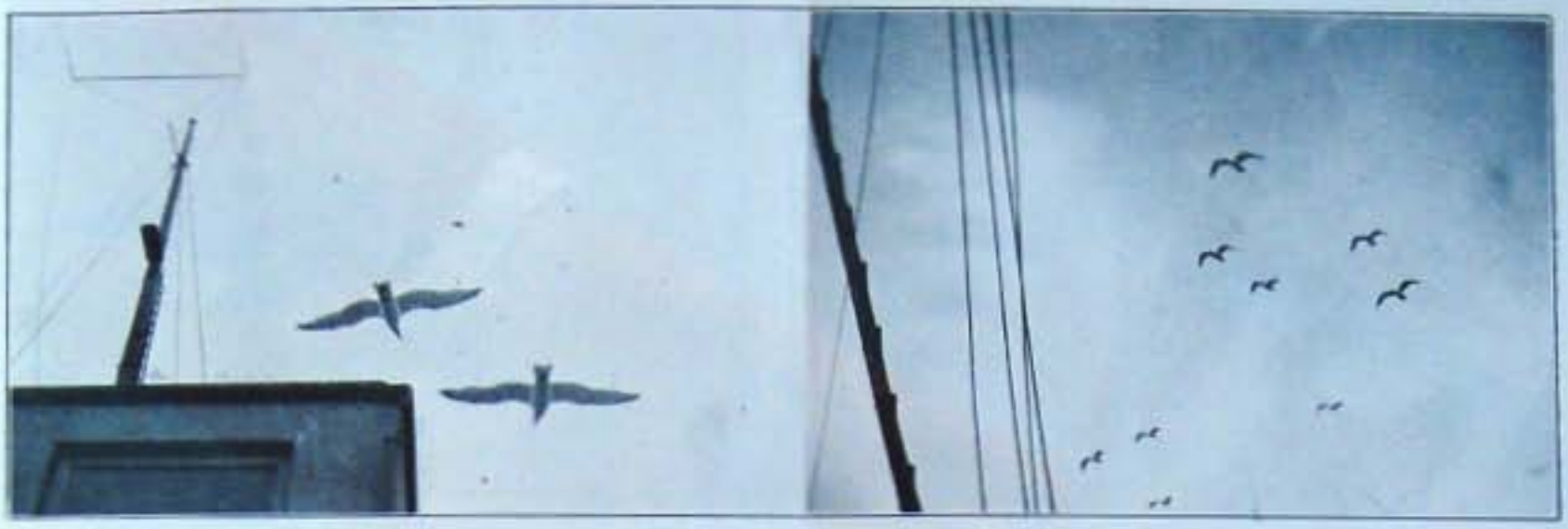
THE BRITISH DISTANCE RECORD

The Committee of the Royal Aero Club has now officially accepted the following as a British Record for distance in soaring flight: Philip A. Wills in PROFESSOR sailplane, March 18th, 1934; Dunstable Downs to Latchingdon Essex; distance, 56½ miles.

CROWDED OUT

Owing to pressure on our space, we have had to hold over Peter Riedel's story of soaring at Rio, much news from Russia, Germany, Poland, America and Australia, accounts of the Air Post Exhibition (*re* mails carried by gliders), of a soaring expedition to North Wales, and of the Editor's visit to the Ulster Club.

HOW THE SEAGULLS DO IT.



Gulls soaring alongside of an L.M.S. steamer crossing between Holyhead and Ireland. On the left, they are in the rising current immediately to windward of the ship; on the right, in a stronger wind, they have found a patch of lift to leeward of the stern. The photos were taken on different days under different conditions. Note that the wings are held differently in each picture; gulls always use one or other of these positions when soaring, the choice probably depending on the air speed desired. The soaring flight of the Albatross, world famous for its manner of soaring around a ship, is described by Capt. Latimer-Needham in an article beginning on this page.

Photos by A. E. Slater.

BIRD FLIGHT XIV.

THE SOARING FLIGHT OF BIRDS

By C. H. Latimer-Needham, M.Sc., (Eng.), F.R.Ae.S., F.Z.S.

Dynamic Soaring.

(Continued.)

Albatross Flight.

The Albatross is perhaps the second heaviest bird capable of flight, the largest being the Condor, of the Andes, a bird of 36 lbs. weight. The Albatross weighs up to 26½ lbs. and has a wing span of 15 feet. It is incapable of sustained flapping flight, and, although it flies continuously for several days, and in fact spends most of its life on the wing, flapping is resorted to only for initiating flight or for an occasional gain of thrust. And even their take-off is very laboured and is accomplished by continuous striking of the surface of the sea by their webbed feet in unison with the wing beats.

Two methods of soaring flight are available to the Albatross, viz., wind deflection and dynamic soaring, but it is on the latter that it depends for its livelihood. Since they nest, in some instances at least, on the higher parts of oceanic islands, at very considerable heights above the sea, to which climbing by the method of dynamic soaring about to be described would be impossible, it is fairly evident that ordinary hill-deflection currents are utilised for the purpose. Similarly, it is doubtful whether the nesting site is departed from on the rare event of there being no strong wind blowing.

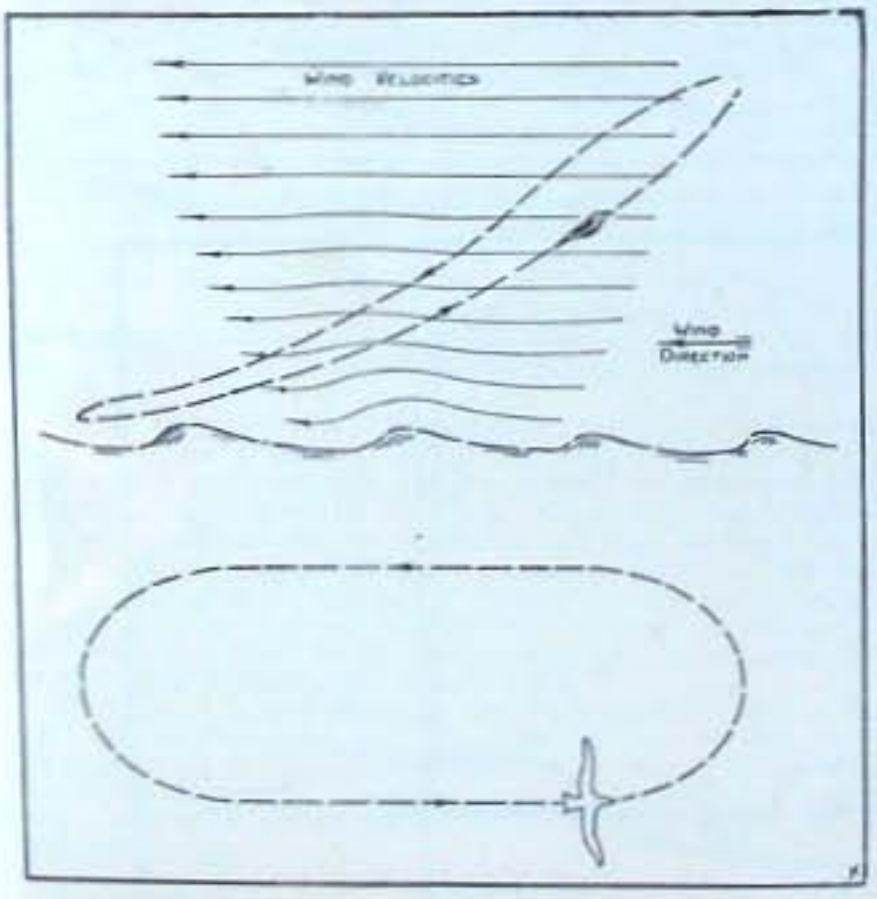


Fig. 1.—Dynamic Soaring Flight of Albatross.

If gusty wind conditions were relied upon entirely for flight it is more than probable that the Albatross would starve, but such is happily not the case, for an ingenious alternative has been evolved by this and certain other species. It is well known that the wind speed close to the ground is slowed down on account of the friction caused by roughness of the surface, or waves in the case of water. Thus there is considerable difference between the wind speed just above the surface and at a height of about 50 feet, and it is this variation that is turned to such good account by these birds.

Their procedure of flight is as follows: A high speed of flight, roughly 50 m.p.h., is first obtained, and then the bird turns into wind and climbs. The loss of speed accompanying the climb is made good by the increasing wind velocity, in the same way as has been seen to be possible with gust soaring, until a height of about 40-50 feet is reached, where the wind velocity gradient is insufficient to compensate for further loss of flying speed. At this point the bird banks steeply in the execution of a rapid turn and glides steeply down wind, which relative to the bird is increasing again. This relative increase is not made use of for gain of height, but instead is converted into gain of air speed, so that by making another quick turn into wind a second climb is carried out and the process is repeated.

It is thus seen that the path followed is oval in plan. See Fig. 1. Progression in any desired direction may be made by extending one side of each loop in the required direction, so that a connected series of loops results.

Obviously a fairly high wind is essential, and for this reason the Albatross is to be found only in the Southern Seas, where the "Westerlies" or "Roaring Forties" blow almost unceasingly throughout the year. The Tropic of Capricorn forms roughly the northern limit of their habitat.

According to Prof. Idrac* a minimum speed close to the water of 17 ft. per sec., or about 12 m.p.h., is required by the Albatross, which speed would probably be nearly doubled at about 50 feet altitude.

From the above it is seen that these birds are restrained to spend the greater part of their lives in the lower stratum of air, of about 50 feet depth. A. H. Laurie, of the "Discovery" expedition, 1932-33, states that the Albatross appears to appreciate the presence of a ship, since the deflection currents are then utilized in conjunction with dynamic soaring and thus enable a height of about 80-100 feet to be attained.

* "Nature," 1925 (p. 532).

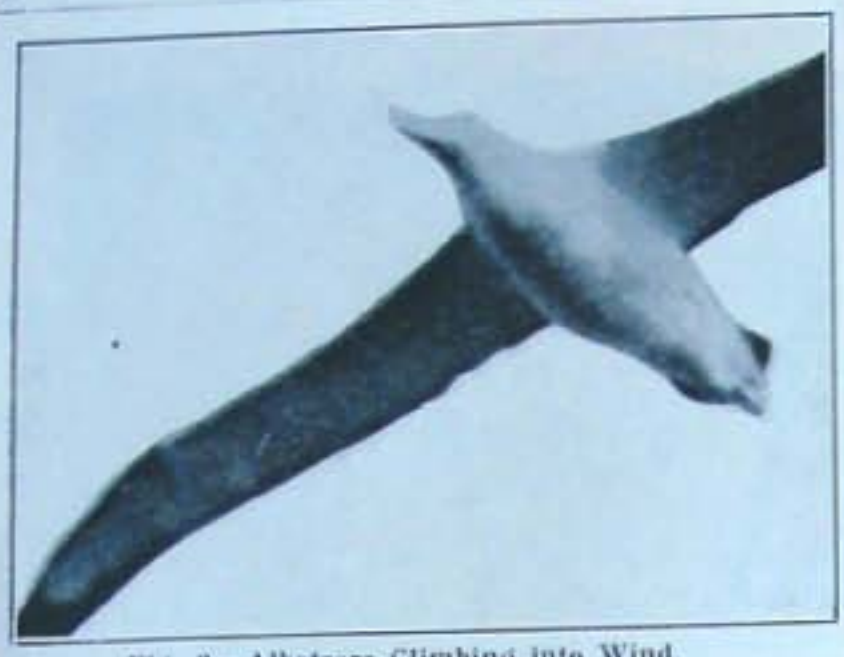


Fig. 2.—Albatross Climbing into Wind.

Fig. 3.—Albatross at top of the Climb.

The accompanying photographs, Figs. 2-5, have been enlarged from frames selected from a length of 16 m.m. ciné film, taken by Mr. Laurie, and show the various phases of dynamic flight. They are reproduced by kind permission of the "Discovery" Committee.

Certain species of sea-gull also make use of a slight modification of this method of flight, in which the leeward side of a ship is made to serve for the decreased wind velocity region. Gulls following a ship remain more or less stationary (relative to the ship), over the stern, in the absence of wind, or when the wind is light, but in stronger winds they may be seen in circling flight on the leeward side of the ship. In the former case soarability is produced by the forcing up of the air by the passage of the boat, whereas in the latter the shelter of the boat provides the wind of small velocity, from which the gulls climb into the increasing velocity above.

Do Dragon Flies Soar Dynamically?

Certain entries in "Animal Flight" appear to show that even dragon-flies indulge in dynamic soaring. For instance, references are made to the effect that dragon flies were seen soaring to the leeward of trees, passing to one side, i.e., into the open, on the up-wind side of their course. An entry dated 7/9/12 states: "2.45.—Dragon flies were gliding in groups to leeward of trees, below the leeward crest of the hill. They generally carried the abdomen horizontally, but it was slightly elevated when they got to one side out of the shelter of the tree and as speed through the air probably increased.

"3.2.—A lull in the wind. Dragon flies left the trees and were seen in fast flapping flight."

In a succeeding entry the dragon flies are said to have left the leeward side of a hill as the wind velocity decreased and to pass to the windward side, where wind deflection flight was continued.

Winds with Vertical Oscillation or Wave Motion—Katzmayr Effect.

Another type of dynamic soaring has been shown to be theoretically possible, when the wind possesses an "up and down" motion. Prof. Koller, of Vienna, has demonstrated mathematically, and Von R. Katzmayr,* in 1922, verified experimentally, that it is possible for the resistance of an aerofoil to be reduced, and even changed to negative, in a wind with periodic vertical oscillations. This was confirmed by French tests,† in which it was found that by imparting to the wind stream, in a wind tunnel, an oscillation with a 20 deg. amplitude, i.e., with the air flow changing from 10 deg. above to 10 deg. below the horizontal, the minimum drag coefficient of an ordinary aerofoil changed from about 0.008 to −0.009, that is the horizontal component became a positive thrust. See Fig. 6.

The explanation of this is as follows: Consider the two

* "Effect of Periodic Changes of Angle of Attack on the Behaviour of an Aerofoil," R. Katzmayr, Zeit Flugtechnic und Motorluftschiffahrt, 1922.

† "Experimental Investigation of the Effect of an Oscillating Airstream (Katzmayr Effect) on the Characteristics of Airfoils," Toussaint, Kerneis and Givault. (Translated as N.A.C.A. Technical Note 202.)

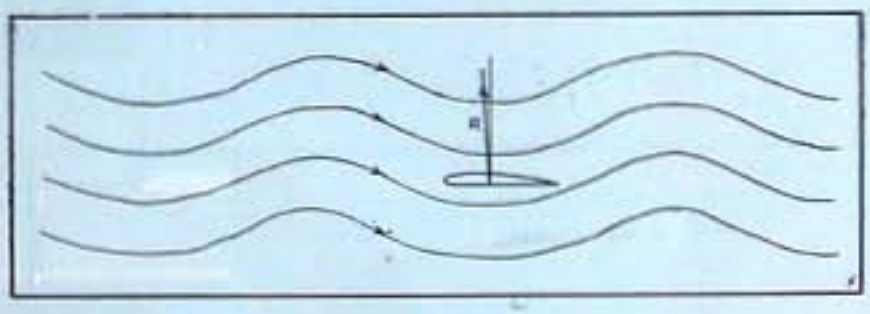


Fig. 6.—Aerofoil in Oscillating Airstream.

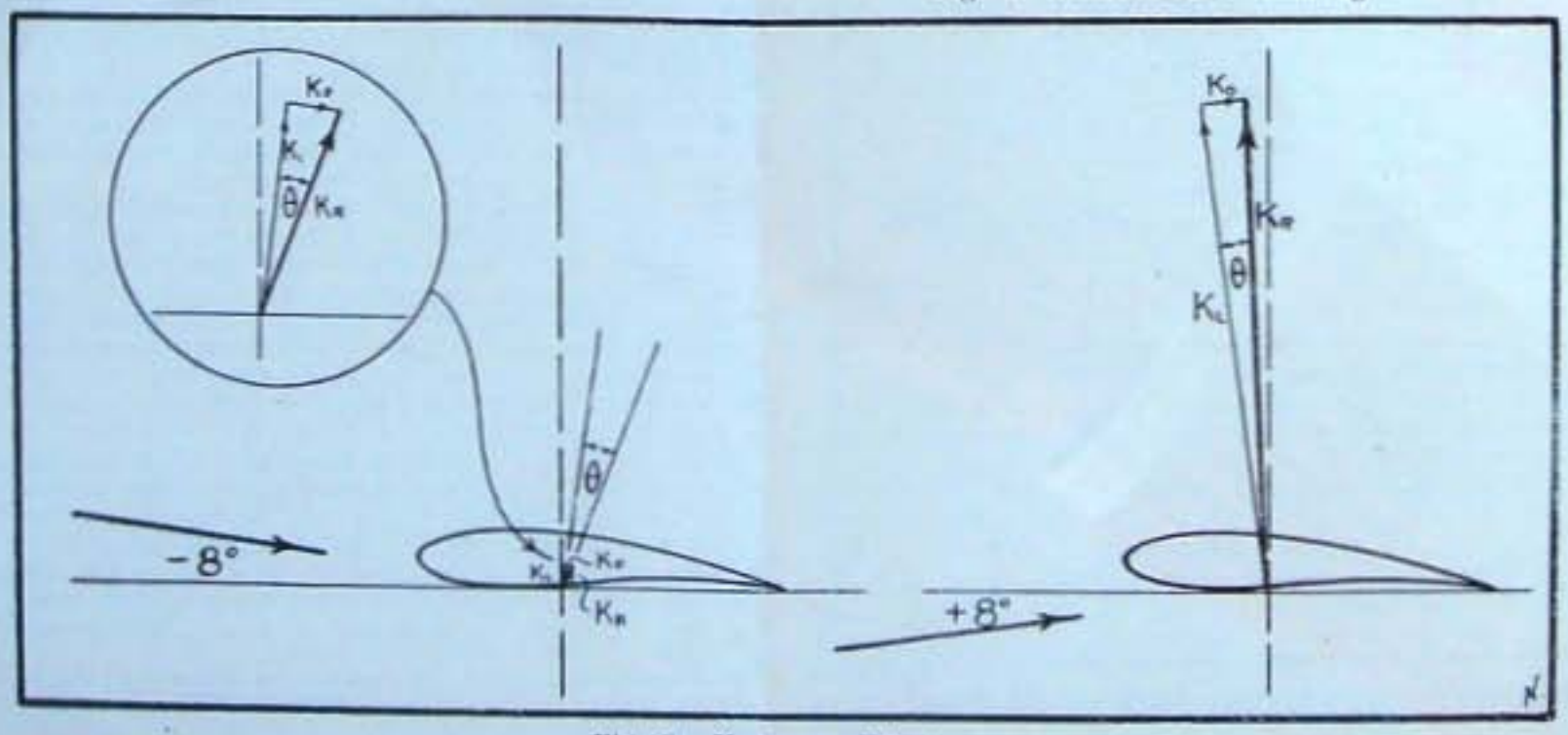


Fig. 7.—Katzmayr Effect.

Fig. 4.—The Steep Turn Down-wind.

extreme positions of the oscillating wind, as illustrated in Fig. 7. The resultant force on the aerofoil is inclined forward of the vertical when the air stream is directed upwards and is inclined backwards when the air stream in downwards. The forward inclination in the first case is less than the backward inclination in the latter but the magnitude is much greater in the former, being roughly proportional to the effective angle of attack, with the result that the sum of the horizontal components may give a negative, or forward, value. By integrating, and averaging, the forces acting throughout one complete oscillation* it can easily be shown that there is a residual forward horizontal component.

A simple calculated example may help to make this clear. Assume the air stream to oscillate about the 0° incidence angle and so find the values for the horizontal force in two equiangular positions, such as $+8^\circ$ and -8°.

Aerofoil Göttingen 535, Refer to Fig. 7.

If $\alpha = -8^\circ$, $K_L/K_D = 4$, or Cot. $\theta = 4$, and $\theta = 14^\circ$ approximately so that R acts $14 - 8 = 22^\circ$ behind the vertical.

If $\alpha = +8^\circ$, $K_L/K_D = 11 = \text{Cot. } \theta$, whence $\theta = 5^\circ$. Here R is 3° forward of the vertical.

But $K_R = .025$ at -8°, and .6 at $+8^\circ$,

Hence horizontal components are .025 sin 22° and .6 sin 3°, or $.025 \times .375$ and $.6 \times .025$, or the average horizontal force coefficient for the two positions is $-\frac{.0312 - .0094}{2} = -.0109$, the negative sign indicating a forward thrust. The average K_R for -8° and $+8^\circ$ differs very little from the K_R value at 0° so that little appreciable increase of the mean angle of attack is necessary in order to obtain the requisite lift.

Various rates of oscillation, from 27 to 106 per minute, were tried during the experimental work, but without appreciable difference in the effects, from which it was concluded that the rate of variation in direction does not materially affect the results. On the other hand it was found that the tendency for the minimum drag to decrease was greater as the amplitude of the airstream increased.

Further, it was found that by combining a periodically oscillating airstream with simultaneous change of angle of the aerofoil to the horizontal, a still greater improvement is obtainable.

In the case of the wind blowing over sea waves it is inevitable that some wave motion should be imparted to the air, see Fig. 1, and it is therefore only reasonable to assume that the Albatross and other sea birds do benefit to some extent by this effect. It should be noted that the path followed by the wind near the surface does not resemble closely the form of the waves, since the air is moving across an undulatory surface, which is itself moving in the same direction at a lower speed. Thus the air waves are flatter and the amplitude is less than might be at first expected.

This may explain also how the Manx Shearwater is able to soar continuously just over the surface of the water, skimming the wave crests and at times sinking below them, whilst the possibility of certain species extracting energy from the air by this means, as an aid to flapping flight, will be alluded to later.

*"A Note on the Katzmayr Effect, that is the Effect on the Characteristics of an Aerofoil Produced by an Oscillating Airstream," W. L. Cowley, R. & M. 969, March, 1925.

Fig. 5.—Turning into Wind just above the Waves.

THE INTERNATIONAL ORNITHOLOGICAL CONGRESS.

This year's Congress is being held at Oxford from July 2nd to 7th. An excursion to Whipsnade has been arranged for July 3rd. In view of the fact that many ornithologists pose, without the slightest justification, as experts upon bird flight, it would not be a bad idea for some member of the London Gliding Club to soar along to Whipsnade while the delegates are there, though probably few of them would have the wit to see any connection between ornithology and a sailplane.

From July 7th to 9th there is to be a long excursion to the islands off the coast of Pembrokeshire, in order to see some of the rich colonies of sea birds there. Means of transit from Pembroke Dock to the islands is to be provided by the Admiralty. (It was at Skomer, one of these islands, that Capt. Latimer-Needham made the observations recorded in his article on the Soaring Flight of Birds, published in our January issue). Provisional programmes, it is announced, can be obtained from the Rev. F. C. R. Jourdain, of Whitekirk, Southbourne, Bournemouth, who is Secretary of this year's Congress.

THE LONDON GLIDING CLUB DINNER

This event, the first of its kind in the club's history, was held on May 17th at St. Ermin's Hotel immediately after the Annual General Meeting. Capt. A. G. Lamplugh, the Club President, was in the chair.

The affair was a tremendous success. Members turned up in force, bringing their friends; many well-known figures from other branches of aviation could be seen, and the aeronautical and daily press were well represented. (We hope the Editor of *Popular Flying* heard enough to revise his estimate of the amount of gliding that goes on in this country.)

Capt. Lamplugh proposed the health of the Club. Major Petre, responding, referred to recent events in its history, and mentioned especially the flights of Mr. Collins, Mr. Wills, Mr. Humphries and Mr. Mole. He also referred to the good work done for the club by the late Mr. D. F. Dent, and to the generosity of Mrs. Dent in presenting a cup in memory of her husband. She desired the committee to use this as they thought best, and they had decided to make it a challenge cup, to be awarded each year to the member who, in the committee's opinion, had made the most meritorious flights of the year.

Mr. Sebert Humphries entertained the company by saying exactly what he thought of everything. In particular he was anxious about the future. The past had been happy enough, but now, when such good things were beginning to be done, where was it going to lead us? He appealed to those with influence on the future of gliding and soaring to "keep it clean."

Mr. Dudley Hiscox proposed the toast of "The Visitors," and Sir Gilbert Walker, in replying, expressed the gratitude of the Imperial College Gliding Club, who use the London Club's ground, for the assistance given them on many occasions by members of the latter club.

The official conclusion of the dinner did not stop the evening's proceedings. Groups of various sizes stood and sat about, all talking hard, till well towards midnight. On one thing at least there was unanimous agreement—that the dinner must in future be an annual event. Mr. H. O. Davies, the Club Secretary, who was its chief organiser, is to be congratulated on its success.

LES VELIVOLANTS

FROM A CORRESPONDENT.

We must start this history by asking the reader's forbearance in enduring our proposed habit of inserting the French translation here and there after the English word. We know how tiresome this is for the reader, but it is frightful fun for the writer; so there!

Anyway, we feel the time has come when it is no longer possible to keep from readers of THE SAILPLANE the exciting fact that, when they are tired of being mere "brave Gliders," they have only got to pop over to France to become "INTRÉPIDE VÉLIVOLENTS." The revelation of this hitherto closely guarded secret is confidently expected to bring thousands flocking into the movement. A new branch can be added to courses of instruction, in the form of classes on how to pronounce the magic words: there are so many different ways in which they can be enunciated.

On May 9th, two I.V.s and their wives left in a MONOSPAR for Cannes, and the following is an account of their experiences as regards gliding abroad.

On reaching Avignon, which is in the Rhône valley, and has a bridge (*pont*), we were told that the next week-end was a flying fête there, and Kronfeld was arriving with his glider (*planeur*); incidentally, here we learnt our New Word for the trip: he travelled behind his "*remorqueur*." His machine was called the AUSTRIA III., which sounded rather exciting; when we saw a picture of it, however, we were rather dashed, as it looked a cross between a KASSEL 20 and the SORGENKIND. Ultimately we heard that he has two sets of wings, one with which he arrives behind his *remorqueur* (hope you remembered that?) and one which he then puts on for business.

We then went on to Cannes, and after being there a day or so were asked to go to a meeting in the mountains of the *Section vol-a-voile* of the Nice Aero Club. We were unable to go, but our regrets were tempered the next morning by one of the most resounding descriptions of a gliding meeting, in the local paper, which it has ever been our joy to read. It describes fifty second's flying on a ZOGLING type machine, and an unpolished translation follows.

* * *

"La sortie de l'Aero-Club de Nice et de la Côte-d'Azur.

"The Aero Club of Nice, etc., made an expedition to Caille on Sunday to visit its Sailplane Section, whose training ground is in this picturesque region.

"This visit also had as an object, to go and thank the Mayor, the Municipality, and the population of Caille for the well-wishing amiability (*la bienveillante aimabilité*) with which the section had been received and for the way in which it had been offered on their part the greatest possible facilities to enable them to organise usefully the training of their members.

"The caravan arrived at Caille at 11 hrs. 15. . . .

"At 12 hrs. 15 an aperitif was offered to the Mayor and the Municipality. M. Francis Teisseire, the President of the administrative Commission, in the name of the Club and of the Sailplane Section, uttered in well-chosen words a charming speech which was much applauded (*prononça une charmante élocution très applaudie*) and thanked the Mayor, the Municipality and the population of Caille for the precious assistance and help offered by them towards the accomplishment and pursuit of the work to which the Aero Club of Nice and its Motorless Secion was so irrevocably attached (*inlassablement attachés*).

"At 12 hrs. 45 the members set themselves to lunch. We noticed (here follows a long list of irrevocable members, mayors, corporations, and population of Caille).

"At dessert, the *doyen* of the pilot aviators, the Capitaine Pugnetti, rose to thank the Committee of organisation of these so united and agreable festivities; which he did with his usual gusto.

"In a delicate gesture, M. Paul Scoffier gave to the ladies some magnificent carnations.

"The feast over, the delegation repaired to the training ground of the Sailplane section, to help at the trials which had been organised.

"In spite of great difficulties on account of a recent accident, the courageous party of sailplaners (*La courageuse équipe de vélivolants*) had not hesitated to spend part of the night effecting the necessary repairs. This work accomplished, the machine was installed in its trailer (*l'appareil fut installer sur sa remorque*) and the party in full order launched itself towards Caille. The *appareil* and its *personnel* arrived at 3 o'clock in the morning.

"On the following morning the party proceeded to the assembly of the glider, and in the presence of the delegation and the local authorities, the machine landed the first time in an impeccable manner (??) at the end of a trial flight made by the director, Robert Guillot.

"Then, the excellent pilot Coli, member of the section, executed a magnificent flight, and held the air during several seconds (*fint l'air pendant quelques seconds*), from about one hundred metres, to the repeated applause of all the spectators, demonstrating at once the *cran* (?) and the finesse of the pilot, the quality of the machine, and the numerous attractions, both of utility and of a seductive sport, which is Gliding.

"After having congratulated M. Guillot, director of the sailplane section, and all the young sportsmen composing it . . . who were drilled and disciplined around their chief and attentive to his orders, for their perseverance and the technical skill of each of them, the members of the delegation quitted with regret the picturesque village of Caille, silent and dreaming, hidden in the midst of grandiose mountains which dominate and encircle it like a rampart jealous that it should not be discovered."

After that, writers of club news ought to have a sinecure.

* * *

We set off for home on May 20th; it was the usual hot and perfect day; and it was interesting, and a trifle alarming, to meet numbers of swallows, at great heights, soaring in the thermal currents. We met quite a number, singly and in pairs at 3,000 feet, and sometimes one could spot them some way ahead (the MONOSPAR being what it is) and get ready for the bump as one entered their rising current.

We spent the night at Lyons aerodrome hotel, and on getting up at 6.45 a.m. the first thing that met our eyes was the surprising sight of a ZOGLING, 200 feet up over the middle of the aerodrome without visible means of support. Ultimately we discovered a hidden *remorqueur* (we expect everyone got it right that time . . . except, perhaps, little Gwladys Wilkins at the bottom of the class, and she we fear is not *quite* . . . .); but this only partly explained the mystery,

Robert Kronfeld's "Austria III." sailplane at Le Bourget, wearing the larger of its alternative pairs of wings.

as after the release the angle of glide seemed to us about the same as a 40 footer.

The last excitement before our safe arrival at Heston was the discovery at Le Bourget of Kronfeld's AUSTRIA III. (having been towed the 500 miles from Avignon in the interval) complete with full-size wings. We got a photo of this, and learnt without envy that Kronfeld had just given a display on it including 15 loops.

It has rather a dim-looking second seat in a tiny cabin under the wing.

We peered excitedly at the instruments in the front cockpit, and goggled enviously at the terrific array, including an electric rate-of-climb indicator which looked very neat.

However, we don't think it sounds much of a life.

A NEW "WREN"

By DIE-HARD.

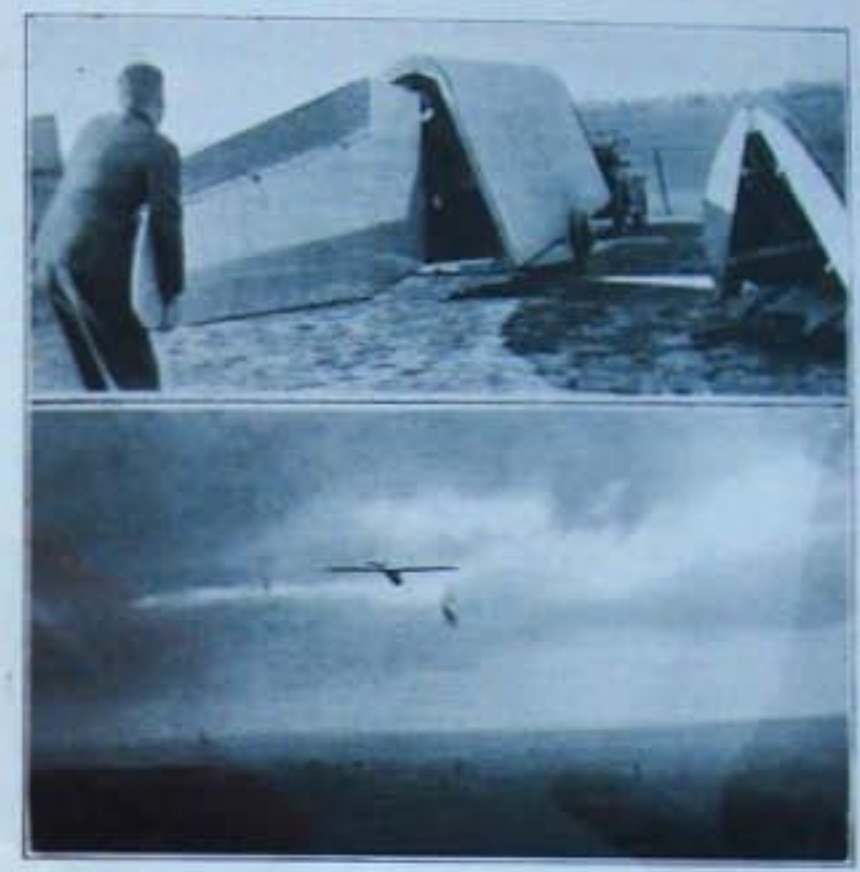
The trailer is a miniature wooden hangar of triangular cross-section with wooden ends which are completely detachable, being secured by four cleats each. The undercarriage is an aero-axle with aero-wheels, plain bearings. The whole job is simple, rugged yet light, weather-proof, and entirely adequate, navigating excellently. Maintenance is limited to an occasional coat of paint on the ply-wood and a shot of grease in the wheels.

The machine is a sturdy WILLOW WREN, in which the elevator and ailerons have been geared down, the ailerons covered with oak-veneer, wash-out (½ inch per yard) introduced, and the torsion-box carried out one rib further. The skid-gear has been given a better shape. The metal fittings throughout the machine are stouter. The drag-wires are fitted to the strut-ends instead of to the strut-fittings, so that pins can be used instead of bolts. The woodwork has been painted a delightful shade of blue which makes one feel good inside. Ease of assembly, good.

Accommodation was obviously designed by a man who flies. It is so comfortable that the pilot's morale is at its peak all the time. A detachable lid, i.e. dicky, makes access easy. The pilot is well protected but retains a good view. The dickey carries the airspeed indicator and pitot tubes. The harness is comfortable, but adequate for sticky loops. Another practical point which the theoretical man misses is that the stick-grip and length of stick are natural, which counts for a lot in a long flight. Altogether, the pilot is in clover, with cushions behind and beneath him, a slightly reclining position, and comfortably bent knees. The curve of the seat and back is positively Harley-Street. Braces-buttons no longer imprint themselves in one's flesh, nor do contusions appear on certain bones.

These things being noted, we caused ourself to be flung, straightway and with maximum violence, from Dunstable Downs. Cutting a potentially long story short, the following hour and ten minutes were pure joy. She hopped along comfortably at 40 m.p.h., flew dead-steadily at 30 m.p.h., came out of steep dives without a murmer, steered and balanced with benevolent decision, side-slipped neatly, and in fact tickled the pilot to death. Signs of stalling became obvious at about 25 m.p.h., but at this speed the indicator was erratic, the pitot tubes possibly being immersed in a burble. Lack of height prevented the stall from being pursued into a slap-up spin. But recovery from a partial stall was immediate, following a flick of the elevator and rudder.

In the past the same pilot in the CRESTED WREN has had battles with the FALKE and has been beaten in a straight fight for height under simple conditions. Flying against the FALKE with several pilots, one of whom was a Swiss with substantial experience of these machines, the BLUE WREN beat her after a struggle into which no tricks nor brains were introduced. The FALKE led the way and the WREN followed precisely in her wake at precisely the same speeds. Finally the WREN went to the Zoo, scraped home and continued soaring, while the FALKE, after a change of pilot, forced-landed. The FALKE is an exceptionally good standard against which to measure other machines. The FALKE being automatically stable, the intelligent pilot permits the designer to take charge of the lateral and fore-and-aft attitudes, so that she retains, near enough, her theoretical optimum sinking-speed throughout a simple soaring flight. In other machines the height attained is governed mainly, under simple conditions, by the pilot's own idea of air-speed, which may have as much as a ten m.p.h. variation. Hence, for instance, the historic day on which the CRESTED WREN cavorted at 3,000 feet while the PROFESSOR galloped madly to and fro below the level of the hill-top.



"Die-hard" soaring in the "Blue Wren." Above: the machine being unpacked from its trailer; the "Scud" trailer is seen on the right.

The BLUE WREN is for sale* unless her owner unexpectedly returns from abroad. Although we have no shares in the WREN factory, we conscientiously recommend her as a giver of infinite joy to any fairly sound and methodical pilot. If she gets into bad hands we shall sharpen up the ancestral battle-axe, or, more peacefully, call in the assistance of the R.S.P.C.A. Financial stringency is the only consideration that prevents the obvious alternative, in which case she would be name "Blaine" and confidently given as many chances for mild exploits as presented themselves.

*It has now been bought by the Editor.

THE MACROBERTSON RACE.

Wolf Hirth, the German soaring pilot, is reported to have entered for the forthcoming England-Australia race with a MESSERSCHMITT aeroplane. When he visited America some years ago to give soaring demonstrations, Herr Hirth attempted to fly all the way there in his KLEMM; we believe he got as far as Greenland, but was then forbidden by the authorities to do the next stage of the journey by air.

CORRESPONDENCE

THE AMOUNT OF GUST SOARABILITY.

Sir,

When writing in the May issue (page 73), upon the subject of the gust acceleration soaring made prominent by Captain Latimer-Needham's articles on "The Soaring Flight of Birds," an acceleration of only 1.1 miles an hour per second was discovered necessary to keep replenishing the headway of a slow bird of gliding angle as gentle as 1 in 20. But as there remain questions like whether the average acceleration of any wind can in fact be shown to equal that, it was a happy foresight of Captain Needham to enrich his article by the wind record of Fig. 6 (page 60, April issue). As evidently intended, it is the very help needed to go into several such questions. For instance, in that record of the wind the line starts at 24 miles an hour and, thereafter, proceeds to sink and rise. With the aid of a large pair of compass dividers the common arithmetical (not algebraical, for the glider keeps turning) total of all such sinkings and risings is found to be about 270 units of length on the marked miles-per-hour scale; and that divided by the whole 207 seconds of the time scale gives 1.30 miles an hour as the average rate of alteration of wind velocity in each second. But even that is only for gusts in the line of the wind and for none across the wind. If these could be taken into account too, as by using a complete polar diagram of the wind, the available gust acceleration might be expected to approach $(\pi/2) \times$ the 1.30, or 2.05 miles an hour per second. That considerably exceeds the 1.10 miles an hour per second which was all the glider was found

to require. Moreover, it may be noted that the velocity of this wind is little more than twenty miles an hour, and there are likely to be proportionally stronger accelerations in stronger winds.

But now comes the question of what the acceleration of 2.05 miles an hour per second, or 3.00 feet per second per second, is able to do. If it were continuously faced by a substantially frictionless bird glider, the glider, as if propeller driven, would turn up a slope at which the back pull of gravity would annul the increase of headway, which is, according to the principles involved and previously described, an uphill slope of 3.00 in *g*, which is 1 in 10.72. But the bird is not frictionless, and subtracting the usual gliding angle of 1 in *n*, assumed to be 1 in 20, or 1.61 in 32.2 in this case, we have of course a *net uphill slope* of the net acceleration of (3.00—1.61) in 32.2, or 1.39 in 32.2, which is 1 in 23.1, all relative to the air. If the headway of the bird is over 20 miles an hour, or over 29.3 feet per second, the corresponding rate of gain of height must then be over 1/23.1 of 29.3, or over 1.27 feet per second, or over 15.2 inches per second—a sort of anti-sinking speed in the accelerating air. And, it may be noticed, the bird will at least be kept level, provided its mean effective gliding angle or drag/lift ratio is no worse than the mere 1 in 10.72. The bird has to wheel about more sharply than a full-sized manned glider may perhaps find possible, so perhaps a manned glider might not be able to collect a larger proportion of the soarability than it could by proceeding across the wind, and only swerving left and right, to face the gusts in moderate although not in full degree. Some birds may often be observed to swerve left and right in an inconsequential *looking* manner, when on journeys, and it may not be that they do not know their own minds, but that they are diligently collecting a judicious amount of soaring headway to economise their own muscular efforts, while always going towards their destinations.

And so we seem able to conclude, that the amount of acceleration gust soarability revealed by a wind record is often both ample and definitely ascertainable; although we may also need to conclude, that the proportion of it obtainable by a bird, and especially by a large and fast glider, usually depends on additional factors that require to be taken into consideration.

S. L. Walkden.

MISS MEAKIN'S DEMONSTRATIONS.

Sir,

I had the pleasure of seeing the National Aviation Day display which took place at Barrow on April 29th last, under the direction of Sir Alan Cobham.

I would like, if I may, through the medium of The Sailplane, to heartily endorse the opinion of hundreds of spectators, by expressing appreciation of the display, particularly the exhibition of aero-towed flight carried out by two very capable pilots: namely, Miss Joan Meakin and Captain Phillips.

Miss Meakin was towed in a Rhönbussard sailplane to a height of approximately 1,500 feet; casting-off, she proceeded to tour the district in a very sedate manner, whilst we listened to an intelligent broadcast description by an announcer who evidently knew his job.

Unfortunately time did not permit of a prolonged exhibition or a cross-country trip. It is hoped that, in the near future, the organisers will permit Miss Meakin to take advantage of suitable conditions which may arise and so demonstrate still further to an appreciative public the charms of motorless flying.

The loops were the neatest thing yet seen in this district and the sideslips, necessary to land in a small field, were admirably carried out. This cannot be classed as "stunting." It was just a demonstration of what a good pilot should be capable of doing on any flight. The machine alone should be of the greatest interest to all sailing fans.

But why not a British machine? Nevertheless the machine used is a perfect picture with a perfect performance.

Northerner.

Miss Joan Meakin about to start on a flight in her "Rhönbussard" at Barrow.

MR. CUSS AND THE WILTS CLUB.

Sir,

On page 77 of The Sailplane, May, 1934, it is reported that I was "elected a Vice-President of the Wilts Aviation and Glider Club." This office I was happy to accept in furtherance of the extremely interesting scientific and sporting aspects of civil aviation in Wiltshire. In consequence of matters which have recently come to my knowledge, I have resigned this office and completely severed my connection with this organisation as at present constituted. I have also refused to accept any liability whatever incurred by or on its behalf.

C. T. Cuss.

FATAL ACCIDENT AT LANCING.

We regret to record the death, on May 21st, of Mr. John A. Lawford, of the Southdown Gliding Club, as a result of a gliding accident on the previous day. Mr. Lawford, who was aged 34, lived at Heron's Dale Manor, Waldron, Sussex, and was well-known locally as a farmer and stockbreeder. When the accident happened, he was flying a glider built by Mr. H. J. Dunning, of Worthing. The machine went into a steeply-banked turn soon after the take-off and hit the ground with the lower wing-tip. Mr. Lawford suffered multiple injuries in the resulting crash, and was found unconscious; he was removed by ambulance to Southlands Hospital, Shoreham, but died the next day. We tender our sympathy on behalf of our readers to his relatives and to the Southdown Club.

A fellow club member of Mr. Lawford's writes:—

"John Lawford joined the original Southdown Skysailing Club as a founder member in 1930. He also joined the later-formed Southern Soarers' Club and continued his membership in the Southern Counties' Soaring Club and the present Southdown Gliding Club, Ltd., of which he was the Flight Secretary. He had gained "A," "B" and "C" certificates. He was a steady pilot, a man of action, and a most loyal club worker. He attended the B.G.A. meetings in different parts of the country, and was always ready and willing to help in any way that he could. He has done the movement much service even in the amount of towing of gliders about the country that he has done with his various cars. He was one of the most regularly attending members of the Club and came nearly thirty miles to the site nearly every Sunday throughout the year.

"He was interested in aviation in a broad sense too. He had taken lessons in power flying with the Southern Aero Club, and had chartered aeroplanes at times to get about the country in connection with his visits to famous agricultural shows, where he was a frequent prize-winner with pedigree stock. He was an expert with the small "Trojan" cars used in the Club for auto-launching and retrieving of gliders and sailplanes, and could get a marvellous performance out of these machines when they refused to budge for anyone else. He took a keen interest in club organisation and in propaganda, and was meticulously careful with the club accounts such as he had to handle as Flight Secretary. His loss to the movement in general is considerable, but to his Club it is immeasurable."

A Technical Report on the accident was prepared by Capt. C. H. Latimer-Needham, Chairman of the Technical Committee of the British Gliding Association, and was read at the inquest. It states that the slope on which the crash took place was shielded by the larger ridge to windward (Steep Down), and somewhat turbulent air conditions were likely on that account. The pilot, after an auto-launch, turned to the left along the brow of the slope in an attempt to soar, but shortly afterwards the machine made another left-hand turn down wind from which attitude it did not recover. The left wing struck the ground, causing the machine to swing rapidly and crash on its nose. It then skidded about eight yards further. The wind was about 15 to 20 m.p.h. and rather gusty.

An important point is that no certificate of airworthiness had been obtained from the B.G.A. The machine was a modification of the Dickson elementary training type; the amateur construction was "not particularly good" but this did not appear to have contributed to the accident. The nacelle cockpit was narrow, thus restricting the aileron control. The probable cause of the crash is summed up as follows:—

"It appears that the pilot overbanked shortly after the take-off under difficult wind conditions and that his cramped position restricted the control movement and thus added to the difficulty of recovering from an awkward position. It may be mentioned that similar accidents are by no means uncommon in soaring flight, but the results are seldom of a serious nature."

NEWS FROM THE CLUBS.

G. E. Collins in his "Rhönadler" picks up a thermal and starts circling. Note the cumulus clouds.

YORKSHIRE GLIDING CLUB.
Bradford and County Gliding Club.

May 13th.—After waiting several hours for calmer conditions, the PROFESSOR went off and lurched about in a strong S.W. wind, R. G. Robertson doing his best to moderate her antics, but he soon decided that it was too uncomfortable, and landed.

Watson's PRÜFLING was not so fortunate. Watson himself helped to launch her and then watched the wind blow her back over the edge of the bank. He picked up the bits and took them home. I believe he has decided that he can stick them together again. That's tenacity!

On **May 17th**, at a General Meeting of the Club it was decided that the Club shall, in future, be known as THE YORKSHIRE GLIDING CLUB. Particulars of membership fees and of gliding training and soaring facilities may be obtained from the Hon. Secretary, Mr. Arthur Cox, Overdale, Boston Avenue, Kirkstall, Leeds, 5 (please enclose 1½d. stamp).

At **Whitsuntide** we were hopeful of having a long week-end at Sutton Bank, but a half gale continued and it was deemed inadvisable to launch. The Manchester PRÜFLING made one attempt to soar, but the pilot gave in to the bumpiness and landed below. Monday was as bad and Sharpe and Robertson contented themselves by fitting a new front bulkhead in PROFESSOR.

May 27th was a regular gala day. Four machines nipping up and down and round about made the business look too easy. One could hardly reproach the Knowing Fellow who, seeing gliding for the first time, was heard to remark to his companion, "I tell you there's nothing in it."

R. G. Robertson was first off in PROFESSOR and he came back after touring the bay for 20 minutes and reported on the best areas of lift in the N.W. wind. By the time a strut fitting had been replaced on the port wing of HOLS, the wind had freshened a little and PROFESSOR was again launched with Robertson, who seems to be adding hours and hours to his total flying time. It was noticed that his ceiling appeared to fluctuate frequently, and on landing he reported that lift was considerably better during the "bright periods" when the sun shone strongly between the scattered clouds. This was between 5 and 7 in the afternoon when the sun was at an angle of less than 45 degrees, and it seems to me that the improved conditions can be explained in this way:—

The clouds were moving from the direction of the sun, towards the Bank, and the sun was at a low angle, so that, as the cloud moved, the sun's rays would be warming successive areas of ground, and therefore air, immediately below the cloud. This would stimulate the thermal activity which was producing the cloud, and this again would be accentuated when the bank was reached, so that the cumulative effect would be appreciated by the pilot whilst he was still actually below the cloud, but owing to the obliqueness of the sun's rays, he would be flying in brilliant sunshine.

Whilst Robertson remained aloft Sharpe took off HOL's for a test flight. The air was so comfortable that he must have dozed off to sleep, for he landed after 5 minutes, thinking he had done 15.

HOL's was then flown in turn by Hastwell, Holdsworth and Jowett, all of whom showed marked improvement in the handling of the machine. The Manchester Club had a good day with their PRÜFLING. After a somewhat disappointing start the Manchester pilots appeared to become thoroughly at ease. We imagine that this kind of gliding will give them much more satisfaction than auto-towing on a flat aerodrome.

Much interest was shown both by the gliding fraternity and the public in the new smart summer turn-out of the Preston Club. This was the B.A.C. 2-seater tastefully decorated in green and cream. This colour scheme will, no doubt, prove an added attraction if the Preston Club have passenger flights in view. After a few ground hops—this was the machine's initiation—Falla resolved that there were only two ways to go, either up or down, so he went up and played with that B.A.C. for half-an-hour or so, and, judging from his whoops of delight, he was completely happy. With her tail well up the machine gave the appearance of being very lightly loaded, and the additional weight of a passenger will do much to steady her in the air. Falla and the Preston Club deserve sincere congratulations on the construction of this smart and efficient machine and also on the staunch and spacious enclosed trailer with which they are equipped.

The preliminary arrangements for the hangar and club-house of the Yorkshire Gliding Club are now complete and these will be under construction almost immediately. Soaring will take place every week-end, weather permitting, during the summer and visiting clubs and interested friends may be assured of a hearty welcome.

THE AIRCRAFT CLUB, HARROGATE.

At **Whitesuntide** some of the members went to Sutton Bank and saw the Manchester Club's PRÜFLING fly to the bottom (fine 3s.). Bradford were sticking bits on their PROFESSOR and the wind was too strong for their HOLS. In the end Richardson and Addyman went to Leeming and got the MILES HAWK for half-an-hour each and contoured the range from Black Hambleton to Sutton Bank with engine throttled down, and found it much easier than gliding or soaring. Flying round the "Dress Circle" at Sutton at 90 m.p.h. required considerable bank.

Yorkshire Air Services have very kindly agreed to give dual instruction to members of the Aircraft Club at 30s. per hour at their Newton House Aerodrome, and later when the grass is mown the experiment of picking up members at a field on the outskirts of Harrogate is to be tried. Members taking the special low rate should produce the club badge or a letter from the Secretary. Newton House is an extremely fine aerodrome and situated in very beautiful country about 23 miles from Harrogate.

The club training glider being nearly completed and dual instruction on aeroplanes being available, the committee have decided to reintroduce the old subscription rates: flying members (either aeroplane or glider), £1; constructional flying, 10s.; ordinary, 5s. The flying rates on the training glider will be 6d. per launch for flying members, 3d. constructional members. Three slides to count as one launch.

The Committee is on the look-out for a low-powered aeroplane at a low price.

FURNESS GLIDING CLUB.

April 21st and 22nd.—Conditions at Ireleth were ideal; wind veered to N.W.

All members had primary flights and showed great promise. In the late afternoon Stevens soared the B.A.C. IV. Although he has often flown better, his landings on top were perfect examples of approach work.

MADE IN THE DRAWING-ROOM.

The fuselage of the "Grunau Baby II." which Mr. L. A. Dessoutter, of the London Gliding Club, is building in his own home. He has added a transparent cockpit-cover of his own design and can be seen inside it in the right-hand picture. There should shortly be several "Grunau Babies" in the air over the British Isles, since another is being built at Accrington, and Mr. Liddell of the Ulster Club has bought one direct from the Schneider works, Silesia. There are also rumours of others. The machine is a popular one in Germany, and full details of the design were given in our issue of last October.

LONDON GLIDING CLUB.

On **Saturday, March 5th**, the wind in the afternoon blew viciously along the ridge. The PRÜFLING descended without delay and the CRESTED WREN spent twelve uncomfortable minutes in the breakers before going in to tea. Meanwhile the RHÖNADLER, from an earlier wind-launch, was pirouetting for 2½ hours at heights reaching 900 feet; but even Collins allowed that conditions were rough, which is saying something.

At about six o'clock all the vice went out of the wind, and the HOL's, KASSEL 2-SEATER and FALKE joined the others, all soaring with vigour, Ivanoff in the PRÜFLING obtaining an excellent "C," and the CRESTED WREN going some way past the Zoo. Finally Corporal Manuel produced his beautiful new BLUE WREN straight out of its tissue paper. Humphries took her straight off the hill-top and spent an exhilarated period of 70 minutes in putting her through her tricks, which included all normal manœuvres, and some immoral ones as well. Measured in a long battle with several pilots in the FALKE, the BLUE WREN has a definitely better performance than the CRESTED, but retains the sweet controls of the latter. Flying finished when the wind dropped at sunset.

On **Sunday** a gale howled down the hill, but hoardes of visitors attended.

Saturday, May 12th.—Eleven learners had three ground-hops each in DAGLING. In the same machine Bassett and O'Brien did 41 and 31 seconds respectively from only half-way up the hill; later both tried the PRÜFLING for the first time.

Sunday, May 13th.—An excellent soaring wind with good thermals about. We hear that Collins did two flights of 2 hours each in his RHÖNADLER, reaching 3,000 feet, Bergel circled up to 1,700 feet in the FALCON. Dessoutter also flew the FALCON twice, Dewsbery the CRESTED WREN, and Richardson the PROFESSOR.

"C" Tests were passed by Bell and Sproule in the PRÜFLING and by Noble in the HOL'S. (Bell flew for half-an-hour.) Scott King in the PRÜFLING did two flights totalling 1 hour 20 minutes. Hiscox flew the HOL'S twice. Major Petre took up passengers in the two-seater. Total flying time for the day, 15 hours.

Wednesday, May 16th.—Collins had received a message from Bell that "cold fronts" were to be expected, so he went up in his RHÖNADLER and, sure enough, encountered two or three. He found a definite belt of lift as each arrived, but it was only very narrow.

Wednesday evenings are now in full swing, several new members turning up each week to get on with their instruction.

LONDON GLIDING CLUB.

Whitsun. Saturday was an impossible day. A gusty wind blew along the ridge from the S.S.W., with sharp showers of rain. The same wind persisted on Sunday, without rain, moderating in the late afternoon. Consequently the CRESTED PRUNE (once known as the WREN, but our correspondent had just received his copy of the May SAILPLANE.—ED.), the FALKE, and the KASSEL 20 and TWO-SEATER had plenty of fun, the first two using the hill while the wind was still brisk, playing about *ad libitum*, and going for considerable tours up-wind. The air was full of queer spasmodic lift, one big piece of lift apparently leaping like Protens out of Well End, which is half way to Totternhoe, and reaching occasionally to the Bowl. The FALKE specialised in orthodox height-making over the ridge, but the old PRUNE used the ridge only as a spring-board for up-wind prowls, their length governed by the aneroid, and stalked minor protuberances in the plain for these queer lifts. It would seem that with a stiff lapse-rate an erratic lift does start on the knobs in the foot-hills, as has often been thought. The skies offered no explanation, being covered with amorphous Tomato-Cumulus, or some-such.

On the ground-floor the POPPENHAUSEN was winch-launched, to the everlasting credit of the instructor who sat in the back seat. Late in the day she made many trips from the hill-top, and still came to no harm. Finally even the most ancient primary machine was leaping about on the ground, as was the PRÜFLING, until she had a nasty bang on the nose. The Imperial College machine flew steadily until a pilot became filled with a passion for a quick landing. So passionate was he that he even tried to dig a hole in the ground, but he failed to do this, the earth being too hard. He emerged without physical blemish, damage to the machine being apparently confined to the landing wires.

On Whit Monday the wind became lusty, being 30 to 35 m.p.h. clear of the ridge, along which it rumbled in grand gusts. The supreme effort was the 6½ hours of passenger-carrying and dual-instruction (yes, really!) in the two-seater by Dewsbery who one day, according to impeccable authority (Major Cordes), will come down covered in feathers and with a cock-pit full of bright blue eggs. After much thought it would seem that this is the best day's work ever done by a club-pilot. The resultant revenue was brought home in a lorry.

The FALKE'S initial launch took her straight up to 300 feet (by aneroid) above the lip of the hill, where she hovered for two minutes by the clock. Her behaviour reminded one more than ever of a balloon. Fidgeting at the ailerons only annoyed her, whereupon she would twitch angrily and frighten the pilot. So one simply sat under the kindly wing, with the clouds invisible overhead, and waggled the rudder for fun, a liberty which she permits. The approach for landing was spoilt by a gigantic upward heave from the south bank of the hangar ridge, which is about forty feet high, the height of the heave being variously estimated as from one to two hundred feet. So the pilot had to start all over again, drifting away over the club-house, and gradually losing height there until it was possible to dive under the wave and land as requisite.

Thereafter she flew scathelessly all day, reaching a maximum of six hundred feet, sitting over the back of the Bowl, going for short strolls upwind, and generally behaving like an Efficient Mother of Nine. Even an odd circle was made. The Impeccable Authority, flying calmly at great heights, obtained cause for hilarity from a lark which flew along with him, singing tremendously. Altogether the FALKE gave great happiness.

The PRUNE did her stuff as usual, trying to lee-loop the gusts like a cheel and snooping about far and wide for 1½ hours, including a sustained squat over the Chalk Lion at the Zoo, where immense crowds gazed open-mouthed (at the polar bears).

Full marks are handed out unhesitatingly to the MILES HAWK owner who landed perfectly by the hangars, in a machine which he had owned for a week, with a wife and

infant for passengers, on a ground which he had never seen before.

Total flying-time for the two days was between 19 and 20 hours. A very congenial week-end.

On **Saturday, May 26th,** a fickle draught wavered from up-hill to down-hill. Generous people man-handled the senior WREN to the hill-top, but anaemic down-currents limited her to the satisfaction of pulling up inside the hangar-gate, a piece of frivolity made safe by the enormous coefficient of friction of the gritty surface there.

Sunday, however, was infinitely satisfying. A ten-mile-per-hour breeze blew variably up the hill. Strong sunshine and in consequence a stiff lapse-rate. Occasionally whirls of dust flicked up off the track at the foot of the bastion and shot up the hill-side. A clear sky except for wisps of high cloud.

FALKE.—Soared all day without harm. Bergel circled her up to a height of at least 1,500 feet, as gauged by the RHÖNADLER's aneroid, and was reluctant to come down. She certainly is a Child of Joy, especially when one watches, from the cock-pit, her nose gently and automatically rising to each puff.

RHÖNADLER.—Took Collins twice to more than 3,000 feet, enabling him to tour out to Ivinghoe Beacon and to practically all other points within a five-mile radius. Eventually he took to looping round a vertical axis, completing whole sets of circles in six seconds each. Putting it mildly, an incredible sight. A charming person called Peter Riedel—yes, the Man Himself—soared her exquisitely in the evening and was delighted.

SCUD II.—Wills, having arrived from Sutton Bank in that engine of wrath, his MONOSPAR, took the SCUD II. to a colossal height, in the order of 3,000 feet, and travelled over several counties before returning to harbour. Mr. Baynes watched.

CRESTED WREN.—Her only pilot present being condemned to passenger-carrying in the KASSEL, her flights were confined to a couple of modest runs by her designer-builder.

TERN.—Reffell and McGlashan flew her up and down the ridge.

R.F.D.—A new pair of wings from Slingsby, a beautiful job, were fitted to a nacelled unit during the day, and the machine launched in the late evening. She showed signs of being every bit as efficient as the PRÜFLING, far too efficient for those whose method of landing is to dive from 200 feet and hope for the best.

HOL'S DER TEUFEL.—Unemotional trundling along the ridge (see TERN, *supra*).

KASSEL 2-SEATER.—Carried sixteen passengers, most of whom would otherwise have been earth-bound owing to recent shocking casualties among primary machines. In the hands of a commercially-minded pilot she limited her antics to legitimate heaves of possibly as much as 200 feet, but her slow turns prevented her from building up a big height. Her tantalised pilot begged Herr Riedel to take over, so that these phenomena might be more nimbly tested with that aerial bicycle, the WREN; but Collins mercifully diverted Herr Riedel to the RHÖNADLER.

A perfectly delightful day, entirely without grief. It is laughable to think, now, how unemotionally we watched three dots in the sky, machines which had worked their way up to a height six and fourteen times as great as that of the spring-board ridge.

Flying-time for the day, seventeen hours. Visitors legion. Crowds countless. Good humour infinite. Much writing in the Club's pilots'-log-book, known variously as the Bible, or Apocrypha, or Æsop's Fables.

Correction.—The news for April 7th and 8th was mislaid and the brief note given by us in the last issue was inaccurate. We give the original version, now found, for the benefit of those who use these notes to write up their log-books and diaries :—

April 7th and 8th.—A very gentle week-end, with the usual damage to a primary machine, and a ton-of-bricks effect from an Imperial College machine. No wind worth mentioning. Quiet thermal up-currents in Sunday's bright sunshine, the FALKE floating to the Zoo boundary, and to the hangars, thereon. Many flights with the PRÜFLING and KASSEL 2-seater. Trial hops with Roy Scott's machine.

Annual General Meeting.—This was held at St. Ermin's Hotel, London, S.W., on May 17th.

Major H. Petre read his Chairman's Report. He said that in the past 12 months two events of outstanding importance in the history of the club had taken place: the purchase of the club flying ground and the commencement of real cross-country flying by members of the club. The purchase of the ground had been made possible by the generous action of Mr. C. Espin Hardwick in buying the land outright and contracting to sell it to the club for the price he paid for it, giving them 15 years in which to pay. A start had been made by the public-spirited action of Lord Wakefield of Hythe, whose donation to the club of £200 had already materially reduced the total amount required, which originally stood at £950. The club had hitherto been in a very precarious position with regard to its tenure of the land.

In cross-country flying, Mr. Collins had already given the lead last year with his flight to South Mimms, and this had been followed in recent months by the flights of Mr. Humphries to Hertford, Mr. Wills to Latchingdon (55 miles), and Mr. Collins to Chelmsford with a passenger in the club two-seater and to Rayleigh (near Southend) in his own machine. Mr. Collins and Mr. Humphries had both been taught to fly by the club and had done no aeroplane flying.

In addition, club members had shown the flag of the London Gliding Club in soaring flight up and down the country at Huish, Barrow-in-Furness, Sutton Bank, Ingleby Greenhow, the South Downs and the North Pennine Range. He (Major Petre) was one of those who consider that there is no finer sport than can be got by a party of two or three enthusiasts who pack up their sailplane in its trailer and go off for a week-end, or a week, or perhaps a fortnight, to some new soaring site in beautiful moorland country right away from the crowd.

Reference to the training of new members, which had gone on steadily throughout the year, was a reminder of the hard work and self-sacrifice necessary on the part of the small band of voluntary instructors. It is on such hard work and self-sacrifice that the whole of the success of the club had been built.

The club had had the privilege of being heard in evidence by the Gorrell Committee on the Control of Private Flying.

The following members were then elected to serve on the General Committee for the year :—Major Petre (Chairman), Messrs. H. A. Abdallah, H. E. Bolton, G. E. Collins, L. A. Dessoutter, J. P. Dewsbery, G. Grice, D. Hiscox, S. Humphries, R. G. Robertson.

"David Dent Cup."—A special vote of thanks was accorded by the Members to Mrs. Dent for her extremely generous gift of a silver mounted trophy to be known as the "David Dent Cup," presented in memory of her husband's interest in gliding, and to be awarded for the most meritorious gliding performance during each year.

DORSET GLIDING CLUB.

Sunday, April 29th.—A light wind from N.N.E. found the trusty DAGLING once more in the air, the wing damaged on April 8th having been repaired with commendable speed, thanks to the enthusiasm of the repair squad. With a new spar, about a dozen new ribs, and new fabric, this wing is now as good as new (and long may it remain so, touch wood!).

After a test flight by R. L. Rolfe (team captain), B. V. Leak flew her twice from the top, showing good form; after which beginners were given instruction from the lower slopes.

Saturday, May 5th.—A fresh S.W. breeze of about 15 to 20 m.p.h. Owing to trouble with the club car, we made rather a late start, but eventually Rolfe took the DAGLING off at 6.30 p.m., making a good flight in his usual rock-steady form.

Laver was next launched in the DORSLING and cruised aloft for 16 minutes, after which, time being short, all hands adjourned to the lower slopes for our usual training work with the DAGLING.

We extend a hearty welcome to our old friend A. J. Solomon. After a good spell off, Solly took a couple of flips by way of refreshers, and demonstrated that he has not forgotten much of the gentle art of "skimming the daisies."

The club car jibbed again before we'd finished the day's work.

Sunday, May 6th.—Strong southerly gale. No gliding this day, the afternoon being spent investigating the "innards" of the car for the cause of jibbing.

Saturday, May 12th.—Heat wave. Hardly any wind. The DAGLING squad, however, got in useful training under the able captaining of B. V. Leak, using auto-cum-bungy-cum-pulley launching, which method obviates much perspiration on a day such as this.

Sunday, May 13th.—A light wind from N.N.W., about 6 m.p.h. Twenty-nine launches this day (DAGLING). Leak made several good flights from the top of the Cottage Slope, getting in some useful practice on turns. Laver took a refresher of 45 seconds. On the lower slopes the *ab initios*, under the able instruction of R. L. Rolfe, showed great improvement, especially Stevens, Frayling and Clulow, the latter, however, nearly putting his foot in it on one occasion when he zoomed up to about 15 feet off a false landing but realised the situation instantly and got out of it very creditably, effecting the landing proper in the most approved style. Grey made three fairly good flights from a little way up the slope, but took a wallop on the fourth when he flew the DAGLING hard to the ground. Shelton, whom we were pleased to see in the seat again after a long rest, showed very good form and should soon be past the "A" stage.

An incident which happened to-day, when the DAGLING got turned over on her back at the moment that she was being hitched up to the retrieving car, renders it necessary to draw the attention of team captains and members to Rule 6 in the Flying Regulations with a view to avoiding a repetition.

At the end of the day, winch launching was given a trial, with Wright at the winch and Laver in the machine. It was found that second gear did not give sufficient speed on the cable, but using top gear ample speed was obtained and good launches effected, the acceleration, however, being sluggish until the skid leaves the ground.

Week-end Camp at Kimmeridge with the "Dorsling." May 19th to 22nd inclusive.

Six members, including two ladies, spent a most enjoyable Whitsun under canvas at this site, while several non-camping members attended daily to support the meeting.

Saturday, May 19th.—The DORSLING, which had been taken to Kimmeridge the previous Thursday evening in readiness, was taken to the hilltop and rigged, but hill-fog formed, getting thicker and thicker, so she was sheeted down in a sheltered spot for the night. An excellent wind of strength about 20 m.p.h. from the S.W. was blowing.

Sunday, May 20th.—Wind W.S.W., about 20 m.p.h. A fine clear day. Laver was launched from Smedmore Hill at 1.25 p.m. and explored a beat about a mile and a half in length at a height of 200-250 feet. After a while, finding consistently good lift at the southerly end of the hill (Swyre Head) near the coast, he confined his attention to that end, making beats of a quarter- to half-mile or so over Swyre Head where he attained 450 feet (above starting point). DORSLING's movements, as she sailed smoothly aloft, appeared graceful and effortless to the interested watchers (and certainly felt so to the pilot).

At one stage of the flight the pilot, being apparently tired of doing nothing but a succession of right- and left-hand turns, described a circle, and in doing so got caught in the down-tow over the hill-top and threw off a couple of hundred feet during the second half of the manœuvre. Motto: get *well* up-wind before practising circling, or a forced landing behind the hill-top may result.

Landing eventually near the starting-point at 4.25 p.m., after a flight of exactly three hours, Laver reported the conditions as being excellent and the lift as smooth as a mill-pond. Someone, apparently not realising that one can have enough of a good thing, asked him why he had come down, to which he replied that, noticing the people below sloping off in ones and twos, like Brown's cows, and obviously with but one thought in their minds, viz., TEA, he saw no good reason for going without *his*, and so made tracks for home.

Well, of our other DORSLING pilots only Davis was able to be present on this day, and as he was still recovering from the effects of an argument he had with a circular saw several weeks ago, he was not feeling fit enough to take a turn aloft. So we found ourselves in the—to us—rather unique position of being on a fine site, with an excellent wind, and the DORSLING going begging for someone to fly her. So we all had tea, and wondered if Haslam, who was expected this day, would turn up in time for a flip. Actually, he did not, so we made the DORSLING snug for the night under tarpaulins.

Monday, May 21st.—Wind W.S.W., 20/25 m.p.h. Thick hill-fog enveloped the whole site this day, and though we stood by in the hope that it would lift, it failed to do so.

Tuesday, May 22nd.—Wind W.S.W., 10/15 m.p.h. Thick hill-fog in the morning, but thinning patchily about midday, and clearing altogether about 4 p.m., by which time, however, the wind had dropped to a faint zephyr and veered to the west. DORSLING was flown down to Mr. Budden's barn about three-quarters of a mile away, where she was de-rigged and stowed away in the rafters; after which we struck camp, and made tracks for our various homes.

Thus ended a very pleasant event. This is the first gliding to be done over this hill, and though the weather beat us on three days out of four, the one good day provided excellent flying conditions and promises well for further trials, which it is hoped to arrange.

The Club is grateful to the landowners, Sir Ernest Scott and Major R. C. Mansell, and to the farmers, Mr. F. Budden and Mr. Howard, for their kindness in permitting the use of their land. Our thanks are also due to Mr. N. W. Wright and Mr. Ralph Channon for loan of tents, etc.

Sutton Bank Competitions.—It is hoped, by concentrating on the construction of the two-seater sailplane, to put her through her trials in August, and take her up to Yorkshire to participate in this Meeting.

Gliding Meetings will be held until further notice, and in the absence of any special arrangements otherwise, at Maiden Newton as follows: Saturdays, at 2.30 p.m.; Sundays, at 11.0 a.m.; Wednesdays, at 6.30 p.m.

Constructional Meetings (working on the two-seater) on Tuesday and Thursday evenings at 7 p.m., at Marsh and Wright's Workshop, at Victoria Street, Weymouth, and at Mr. W. H. Davis's Workshop, at 46, High East Street, Dorchester.

Gliding Certificates.— Mr. B. V. Leak recently qualified for his "A" Glider Pilot's Certificate.

KENT GLIDING CLUB.

The lack of any news from this Club of late is due to the uprooting of the Secretary's home and its removal some hundred miles away, with the resultant complete disorganisation. She herewith tenders her apologies to all concerned.

The chief items to report are a sudden influx of new members and a vast increase in the local interest in gliding, and the discovery of what we hope will prove to be a soaring site about 12 miles away, on the North Downs, beyond Wye.

Week-end weather conditions have been very bad during the last few months, and no flights of much interest have been made. On April 15th, Weeks flew the B.A.C.I. from the Cross site in a moderate wind which just failed to keep the Secondary up. The flights showed, however, that this machine will soar when given a suitable site and a good wind.

Construction has been going ahead, and COLUMBUS, now converted to struts, is in the air once more for training. On May 27th, Miller, Richards and Dobson (all new members) were given ground-slides and short hops under Dugdale's tuition. The wind, as usual these days, was all wrong, and although Nightingale was launched two or three times from the top of the hill the result was merely "aerial tobogganning."

At the Annual General Meeting, held in April, the Treasurer was able to report a balance of £12 5s. 10d.—more than double that of last year. Miss Sinclair and Mr. Ross were re-elected as Secretary and Treasurer respectively, and the following were elected to the Committee:—Messrs. Dugdale, Nightingale, Sanguinetti and Weeks. Mr. Richards has since been co-opted to serve on the Committee.

ULSTER GLIDING CLUB.

Saturday, April 28th.—Site, Magilligan; machines, KASSEL 25 and SCUD II. Conditions were tranquil with a 5 m.p.h. N.N.E. wind. Mackie and Mrs. Mackie put in 5½ hours between them; the former 2 hours in K.25, and the latter two flights of 35 minutes and 3 hours in the SCUD. She has now a greatly enhanced opinion of the German endurance record holder!

The greatest height reached was 850 feet by both machines, i.e., some 350 feet above release. K.25 was admittedly carrying some 30lbs. more than the SCUD, which may account for the latter's almost consistently greater altitude of about 200 feet.

Sunday, April 29th.—Conditions as yesterday, but less wind. SCUD was played with on and off, and a mild form of spot-landing indulged in. One found the "spot" decidedly elusive and pilots who had quite an opinion of their proficiency went home in a suitably chastened state of mind. SCUD enjoyed herself immensely, poking her wing tips into holes in the cliff face and seeking out odd bits of lift therefrom. The more one flies this little machine the better one likes her, and now that the pedal reach on ours has been shortened and the ailerons made free, she is perfection. ("Die-hard" please note.)

Saturday, May 12th.—Harris flew K.25 for 35 mins. in a nice northerly breeze of about 15 m.p.h. at Magilligan. He reached about 1,000 feet (we forget the exact figure) and then had to land and hurry home. Metcalf was towed up in SCUD II. and joined by Mackie in K.25, just in time as it turned out, for the flood tide prevented Liddell getting into the air in his GRUNAU BABY II. This was extremely unfortunate as it precluded an early comparison of the three machines under identical conditions.

As it was, SCUD took the honours with a flight of 3¼ hours and a maximum height of 2,500 feet (2,350 above release). K.25 was not far behind with 2½ hours and 2,400 feet maximum.

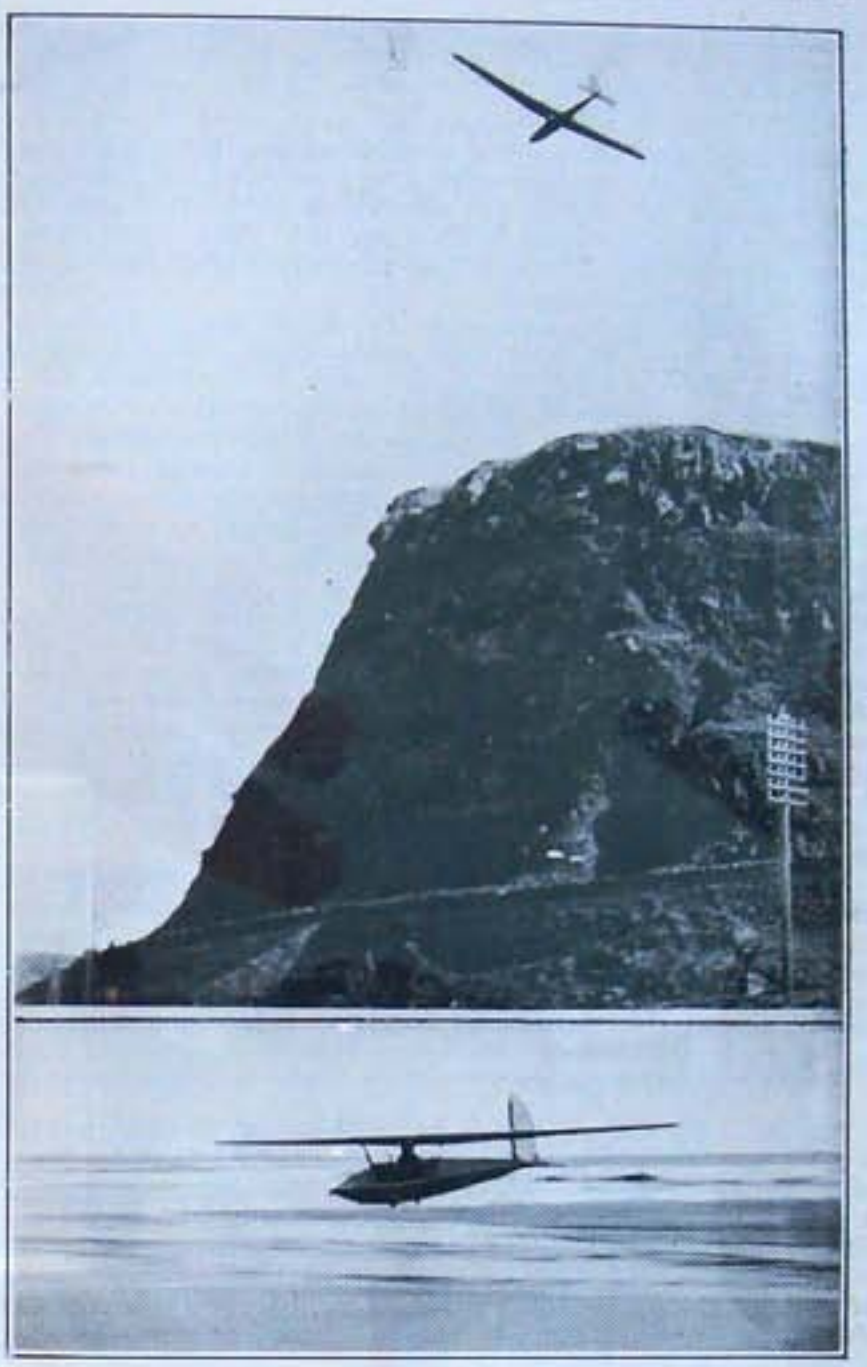
These quite respectable heights were gained over Binevenagh 5 miles away; the journey thither being well worth the odd qualms which a pilot may feel while crossing the gap from Hell's Hole. The terrific surge encountered as one crosses into the influence of the up-currents against the towering cliffs, has to be experienced to be realised fully.

Leaving Hell's Hole at 1,200 ft. or so, one loses some 200-300 feet and then when well below the crest of the mountain comes the exhilerating "whoosh." One short beat usually boosts the machine up to around 1,800 feet and the rest is only a matter of patience. What a really good breeze would give us here, is so far conjecture.

A remarkable feature of this day's flying was the comparatively poor performance of K.25 as against SCUD II. Never once when the two machines were flying in the same region could the bigger machine come within 400 feet of the SCUD. The latter was carrying at least a stone more of adipose tissue, and the difference in the respective abilities of the two pilots is negligable. The SCUD's pilot swears it is the new coat of varnish applied recently; the KASSEL's pilot says nothing, but his expression takes on a very creditable tinge of respect when this wonderful little machine is mentioned.

At last we fly in circles and are intrigued with the technicalities thereof—that is, some of us.

Liddel managed to get two flights in his GRUNAU BABY II.



The Ulster Club's "Scud II." Above: approaching Downhill. Below: floating on for 100 yards after trying to make a spot landing.

when the tide ebbed sufficiently, and had one fast downwind landing. Everything seemed to function perfectly and he is delighted with her. From an inspection of the machine one is struck by her tremendous solidity and strength. Her fairly low aspect ratio (12.8 to 1), and her large stabiliser and tail area generally give an altogether erroneous impression of weight, which at 246 lbs. is not excessive. A further report on her soaring qualities will no doubt follow shortly.

Liddell, by the way, was acclaimed by the Press recently as having come from California to Belfast, via Plymouth, in eight days. Be this or not as it may, he has this week repeated the hustle by having had a trailer built for his "Baby" in four days—painted and all complete with tarpaulin cover, and, one is almost tempted to add, h. and c. laid on, so good a job is it. Flying time 6¼ hours.

Sunday, May 13th.—Three towed flights into a 25 m.p.h. westerly wind were made by K.25 and SCUD but conditions were so bad that the machines were put away again, full of sand and altogether in a deplorable-looking state. The advantages of hill sites are at times like this obvious.

Wednesday, May 16th.—Liddell and Harris took a day off and arrived at Magilligan to find a good breeze of about 20 m.p.h. Liddell took off first in the GRUNAU BABY II. and after reaching 1,950 feet began slowly to freeze. This height seems to promise well for the future as it was gained above the Downhill section where anything over 1,500 or 1,700 was difficult to get in KASSEL 20. He came down after three-quarters of an hour, but slightly damaged the nose of the machine. These cross-wind landings require a certain amount of practice (especially if it happens to be gusty).

It is unfortunate that K.25 was not ready in time to fly with the GRUNAU BABY so that a comparison is still impossible. Liddell, however, is terribly pleased with the latter's performance and certainly it appears possible to throw her about with impunity—and then some.

Harris in K.25 visited Binevenagh and reached 2,500 feet. A cruising VIRGINIA from Aldergrove came along and circled

above him long enough to have its photograph taken. Those who have flown KASSELS will appreciate the feat of camera manipulation with the "horse collar" on.

Flying time, 2 hours.

Saturday, May 26th.—We were honoured by a visit from Dr. Slater, who had given up a week-end of his holiday to see how we did things over here. The wind, which had blown steadily for the preceding few days from S.W., obligingly veered to N.W., and the Magilligan site did its stuff in its usual manner.

Mrs. Mackie was launched in the SCUD, got to 1,500 feet, stayed up forty minutes and came down complaining of bumps.

Metcalf was launched, followed shortly by Baster in K.25. Conditions were certainly lumpy over the Downhill beat, there being rather more west than north in the wind, but from Hell's Hole onwards, comparative tranquility reigned. SCUD was flown straight to Binevenagh, height actually being gained the whole way. 2,600 feet was the best reached there, but 1,000 feet of it was soon shed in a down-wind run to Keady Mountain, a bad down-draught being encountered the whole way. At Keady the pilot's courage forsook him and the nearest telephone seemed infinitely more desirable than an extra mile or two, with little more to offer than a barren moorland. A two miles' glide up wind towards Limavady, which included one circle in a mild thermal and a consequent gain of 100 feet, ended safely in a field full of cattle, but "tell it not in Gath—" there remains to this day the mark of the SCUD's landing.

Baster meanwhile had enjoyed himself in K.25, reaching 950 feet and coming down after half-an-hour or so. Mackie then flew it off to Binevenagh in a flight of 2½ hours, remaining there for most of the time. He reached 2,300 feet and arrived home again at precisely the same time as the SCUD relief party. The cravings of the "inner man" stopped any more flying.

Total time, 4¼ hours.

Sunday, May 27th.—Mackie had one launch in K.25, but the wind, although strong enough, was too far west, and a series of convulsions near the cliffs soon chased him outwards to a position from which it was impossible to get round the Umbra and soar. The rest of the afternoon was given up to an inspection of some of our soaring sites in the vicinity of Sallagh Braes, and the evening finished up with a cinema show, giving, we hope, an amusing record of our activities since 1931, to Dr. Slater.

Personally, every time we see the contortions portrayed in these films, we feel a chill shiver run down our spines, and wonder if we really were as bad as the camera would have us believe

WILTS AVIATION AND GLIDER CLUB.

At the first general meeting of the above Club, held at "The Green Dragon Hotel," Market Lavington, on May 1st, the following officers were elected:—

Vice-Presidents: Mrs. M. A. Cairnes and C. T. Cuss, Esq.*
Chairman: Capt. A. W. Kimber, R.N.
Secretary: F. C. Smith, Esq. (55, High Street, W. Lavington, Wilts.).
Treasurer: P. G. Bullock.

The Club enrolled further members, and it was recorded that they now have taken possession of a Primary Glider, Towing Car, and all necessary small gear. Permission to use various sites has already been obtained, and the Club is in a position to commence activities at once.

It was unanimously agreed that the Club should affiliate with the British Gliding Association as soon as possible, and it was decided that they should cover their liabilities by insurance. After payment for goods purchased, the Club is left with cash in hand, in addition to £5 kindly given by Mrs. Cairnes for the purpose of affiliation fees and insurance.

The Chairman, in his remarks, paid tribute to the excellent preliminary organisation which had been carried out, which, together with the prompt payment of subscriptions and donations, had made it possible for the Club to find itself in such an advanced stage, after only six days since its inauguration.

[*See letter from Mr. Cuss in Correspondence Columns.—ED.]

LEICESTERSHIRE AIR SPORTS CLUB.

Training and practices are carried out every Sunday at Six Hills. Several new members have been enrolled. The Flying and Maintainance Committee made short work of the repairs necessary to the B.A.C.II. (it had been blown over by the wind).

In the immediate future, an intensive search for a site suitable for soaring will be made throughout the county.

Dr. Millard, aged 63, who is Leicester's Medical Officer of Health, is reported to have been elected chairman of the club and to have begun training as a glider pilot. He already has the "A" aeroplane pilot's certificate.

PORTSMOUTH AND SOUTHSEA GLIDING CLUB.

Mr. Ronald Clear is reported to have made two soaring flights of 36 and 42 minutes respectively in the club's primary glider on May 6th, at Portsdown Hill. This is claimed as a British record for a primary. Longer flights have occasionally been made on primaries with nacelles, but such machines count as secondaries. Mr. Clear, who is now 17, took his "A" gliding certificate at the age of 14¼ and "A" aeroplane certificate on his 17th birthday, the latter after only 2½ hours' dual instruction.

The previous British record for an open primary is probably that of about 25 minues set up by Capt. Latimer-Needham at Itford in 1930.

GLIDING IN JERSEY.

The name of the club mentioned in our last issue has not yet been decided on. The present membership is 33, and the founder members all belong to the staff of the J.M.T. bus company. A primary has been ordered from Messrs. Slingsby and an option has been obtained on three or four possible sites. It is proposed that the actual operations should be an inducement to obtaining the right type of members, rather than that attempts should be made to persuade them.

The *Jersey Evening Post* publishes a letter from Mr. C. Chapman, of 17, Duhamel Place, St. Helier, Platoon Officer of the Imperial Fascist League, asking that any persons interested on the establishment of a gliding and flying club in the island should communicate with him.

AGENT WANTED.

A German sailplane manufacturing firm requires an experienced agent for the sale of sailplanes in England and the Colonies; must be able to conduct correspondence in English and German. Applicants who can prove the necessary technical knowledge are requested to communicate with Box 102, THE SAILPLANE AND GLIDER, 43, Chancery Lane, London, W.C.2.

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EVER

BY AEROPLANE

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