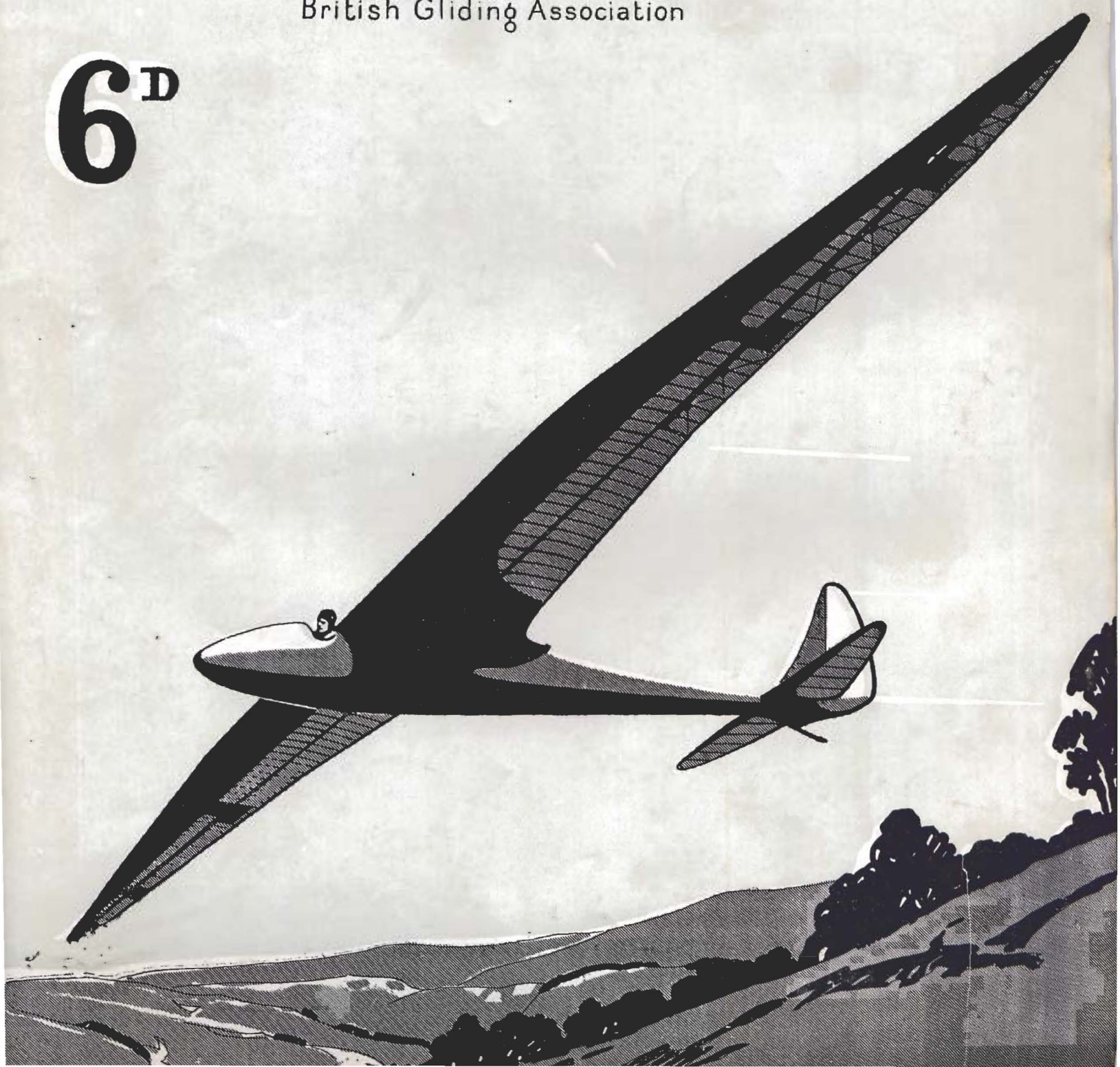
March 3rd, 1933. Vol. 4, No. 4.

THE SAILPLANE & GLIDER

Official Organ of the
British Gliding Association

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THE SAILPLANE & GLIDER

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

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

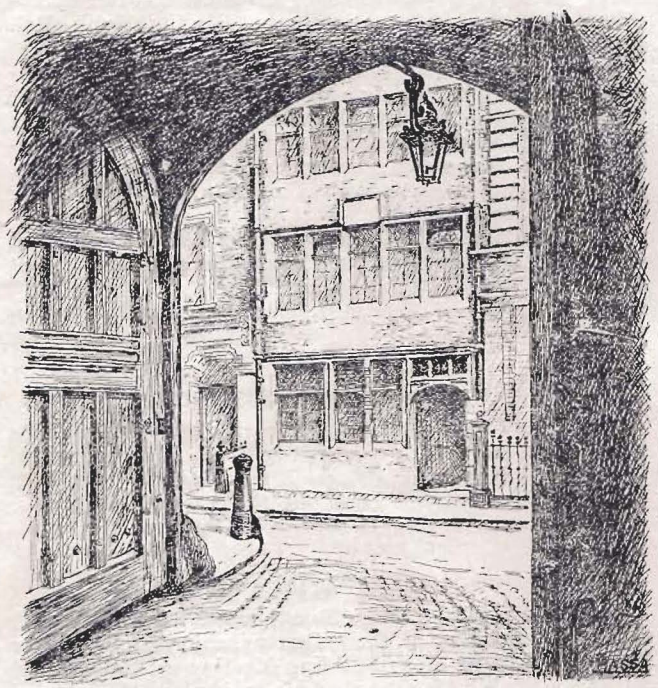
OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION.

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

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EDITORIAL COMMENTS

New Clouds to Conquer.

When the possibility of soaring over hilly country became an accomplished fact in 1922, first enthusiasms were before long tempered by a realisation of its geographical limitations, and, after a year or two of exploiting the possibilities, things seemed to have reached a dead-point and enthusiasm showed signs of waning, even in Germany.

Then in 1926 the first "cold front" flight was made; in 1928 cumulus clouds began to be used, and in 1930 thermal-current soaring in the absence of clouds was shown to be possible.

Thus every two years some new possibility was opened up. But in 1932 nothing new was added to the list of known methods of soaring; the performances at the Rhön Contest were even inferior to those of the year before. Things seemed to have reached a "dead-point" again, and all that remained to be done by those who fly was to make themselves more proficient at known methods by following what had almost become conventional rules.

What Clouds?

The lecture given by Sir Gilbert Walker on February 16th may prove to have been an event of historical importance in the development of the art of soaring.

Anyone who has interested himself in the clouds must have been struck by the way in which they will sometimes arrange themselves in regular patterns; a sheet of cloud, instead of being uniform in texture, will be divided into cloudlets in the form of flakes, globules, ripples, rolls, or into longitudinal lines, transverse waves, or, in the case of the lower clouds, large cumulus-like masses with a certain degree of regularity in their arrangement.

Sir Gilbert Walker has made a special study of clouds of this type, which are generally attributed to the existence of a "cellular" arrangement in which the distribution of the up and down and other motions of the air repeats itself in a more or less regular manner in each "cell." Recently Sir Gilbert Walker decided to investigate the possibilities of using these air movements for motorless flight (and, conversely, of course, in using motorless flight to learn more about such air currents). The importance of his lecture is that in it he stated his belief that in certain cases the rising currents associated

with these "cells" are sufficiently strong to support a sailplane in flight; and not only that, but the cell formation sometimes extends down to ground level, in which case there is reason to believe that vertical currents may be met with, at quite a low height, which are two or three times as great as would be needed to keep up a sailplane.

And Next?

And when (and if) this new technique is mastered, what then? One answer can be given already, among a possible many that are not yet even suspected, and that is "dynamic soaring"—making use of gusts and other irregularities of the winds. The albatross does it, so why shouldn't we?

"Points," not "Prizes."

In the first paragraph of our "Comments" in the last issue, we talked of the possibility of the British team at the ISTUS Competitions winning some of the "prizes." The word should, of course, have been "points," but we were unable to get at the final proofs in time to make the correction.

Prizes are given in the ordinary Rhön Competitions, and in no mean quantity. Last year the Poles succeeded in getting away with one for "total height." In fact, the possibility should always be borne in mind, in case the British team for the ISTUS should for any reason not materialise, of going to the Rhön as a private owner-pilot and joining in the ordinary meeting as a competitor. At the ISTUS Competitions there is bound to be an undercurrent of international jealousy, however hard everyone tries to prevent it. But the Rhön contests have a tradition behind them that is wholly delightful, and makes for friendliness and mutual help, for their sequence goes back unbroken to those wonderful days a dozen years ago when soaring first began.

Who is Responsible for This?

The following sentences are taken from a couple of paragraphs in a Sunday journal:—

"The feat of Willy Farner, the Swiss aviator who has been towed over the Alps in a glider, is an illustration of the way in which motorless aeroplanes are developing. . . . On the Continent they take the problems of soaring flight far more seriously than we do here. Plans are even being developed for the institution of glider-trains—four or five gliders laden with goods and towed in single file behind an aeroplane. . . . Most people in this country are allowed, almost encouraged, to regard gliding merely as a sport."

It is hard to believe that even a gossip-writer could have produced anything quite so fatuous out of his own head. Where did he get it from? It looks as though someone is trying to sneer at those poor boobs who imagine that they can further the art of soaring by actually going so far as to soar.

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THE BRITISH GLIDING ASSOCIATION
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SAILPLANE PHOTOGRAPHIC COMPETITION.

Owing to the fact that at present a large proportion of the photographs we publish are the Editor's own, we do not feel justified in continuing the Photographic Competition in its previous form. Instead

A New Competition

will be inaugurated, of a combined literary and artistic nature.

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

Competitors should state that they are entering for the competition and give name, address, and gliding club (if any). These will not be published if so desired. The best entry received during any one month will entitle the winner to receive THE SAILPLANE free for six months, together with two extra copies of the issue in which the entry is published. The Editor's decision is final, even on the poetry.

The Competition will start at once (i.e., from March, 1933, inclusive).

Previous Winners.

For October: Capt. Yates (Palestine), for the photograph of "Lunch hour at the Carmel Gliding Club" (Vol. 3, No. 19, p. 219).

For November: Zygmunt Laskowski, for the photograph of the LWOW flying over the Wasserkuppe (Vol. 3, No. 21, p. 244). Mr. Laskowski unfortunately lost his life before the photograph was published. In the circumstances, the award is being made to his mother, who, we understand, is continuing to interest herself in gliding matters in Poland.

For December: G. Bell (Bedford), for the photograph of the tail of the POPPENHAUSEN from the passenger's seat during flight (Vol. 4, No. 1, p. 10).

The January and February awards have still to be announced.

GLIDING CLUBS WANTED.

"Airenaut," of South Shields, writing in the "Shields Daily Gazette," and "Prüfling," of Middlesbrough, writing in the "North Eastern Daily Gazette," are both keen to form gliding clubs in their respective towns, and would like to hear from anyone interested.

GLIDING CELEBRATIONS IN RUSSIA

On January 14th, a Grand Reunion was held in Moscow, under the auspices of the "Ossoaviachim," to celebrate the achievements of the Gliding Meeting of October 3rd to November 9th last year, which took place at Koktebel in the Crimea.

At this meeting 40 pilots turned up, with 22 machines, and 760 hours were flown in all. A report appeared in THE SAILPLANE of December 9th (p. 261), giving some of the achievements, but fuller figures are now available. The height records were 2,230 m. (7,316 ft.) solo, by Gavrisch, and 1,945 m. (6,381 ft.) with a passenger, by Pleskoff. Golowin kept up for 10 hours 56 mins. with a passenger, and Borodine for 4 hours 1 min. with two passengers. But the life and soul of the party appears to have been one Stepantschenok, who had himself towed by aeroplane all the way from Moscow, 1,060 miles, in just over 19 flying hours, and, when he got there, proceeded to pile up a total of 115 loops during the meeting, 29 of which were consecutive, not to speak of a flight of 1 min. 8 secs. on his back.

During the celebrations certain statistics were made public. There were 60 gliding schools in the country in 1932, and the figure is expected to reach 100 this year. The number of young people who actually glide is put at 100,000, but this is not considered enough, and they won't be satisfied in Russia until every factory has its gliding club.

A NEW FRENCH SAILPLANE.



The "Chapeaux Ch. 23"

The CHAPEAUX CH. 23 is a high performance sailplane built by Messrs. Emile Chapeaux at Villefranche in the Rhône valley. It has recently been undergoing test flights at the Lyon-Bron aerodrome, some of the launches being made by winch, while in other cases it has been towed up by aeroplane. During January the pilot Georges Burlaton had himself aero-towed in it from Lyon-Brun to Mont Verdun, where he proceeded to look for up-currents. However, he found none, and landed after a glide of 21 mins.

The dimensions of the machine are:—

Span 18.50 m. (60.70 ft.).

Wing area, 19 sq. m. (204.5 sq. ft.).

Wing loading with 75 kg. (12 st.) pilot, 13.9 kg. per sq. m. (2.85 lbs. per sq. ft.).

Sinking speed V_S., 0.60 m. (1 ft. 11.6 in.) per second.

Weight empty, 184 kg. (406 lbs.).

All-up weight, with pilot, instruments and parachute, 276 kg. (608 lbs.).

RUGBY GLIDING CLUB.

[A British-built Two-seater.]

Mr. A. C. T. Isaac, of Hillmorton Paddox, has built a two-seater sailplane of 42 ft. span at Hillmorton Garage. It was put through its first test flight at Langford Heath, and lately has been launched by an auto-tow to 100 ft. in a field near the Blue Boar corner on the Coventry-Dunchurch road. His wife is among the many passengers who have been taken up, and he intends to teach her to fly.

A QUOTATION.

I will shape me a bird
that will be the envy of all creatures
said the Lord.
I will give them wings
whose property it shall be
to use wind and storm as things
for weaving patterns in the air,
figuring swift and white
as for a second they are traced there
then lost for evermore.
. . . . . .

G. S. COLLIS.

FORTHCOMING FEATURES.

Among several items of interest ready for publication or in course of preparation, the following will appear either in our next issue or as soon as we have space available:—

A report of Sir Gilbert Walker's lecture on "Cloud Formation and its Effect upon Gliding," and of the ensuing discussion.

The Flight over Mount Everest and the extent to which the problems of soaring flight concern it.

Reports of the German gliding schools (Wasserkuppe, Rossitten, Grunau and Cassel) for 1932, and their programmes for this year.

The new Land Utilisation map of Great Britain and its possible uses in gliding and soaring.

A description of the THERMIKUS, the new German sailplane with warping-wing control, which has already been successfully flown by Bachem, its designer.

The new B.G.A. regulations on auto- and aero-towing.

Captain C. H. Latimer-Needham is also continuing his series of studies of Bird Flight, which have already aroused much interest outside the Gliding Movement as well as within it. The next article will deal with the "alula" or bastard wing, whose action is believed to be similar to that of the Handley-Page slot.

CELLON DOPE

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SAILPLANES and GLIDERS

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B.G.A.: THE PRESIDENT'S REPORT FOR 1932

Introductory.

In my address last year, I mentioned that we were about to register the British Gliding Association as a limited liability company under the Industrial and Provident Societies Act. This is now an accomplished fact, and we meet to-day for the first time under the new conditions.

I should like to take this opportunity of urging all our Affiliated Clubs to avail themselves of the opportunity now offered to obtain for their members, too, the many advantages of limited liability. This can be secured through the British Gliding Association for the inclusive sum of £10, the Association undertaking the whole of the work.

The year through which we have just passed has been a difficult one for most of the world, and the British Gliding Movement and the Association have come in for their share of the troubles abroad.

As the Hon. Treasurer points out in his report, the Association has passed through a period of extreme financial pressure, and it is only bare justice to state that the Association has been more than fortunate in its Treasurer. Largely due to his skill and care, catastrophe has been avoided. Unfortunately under the rules he has to retire, having served the maximum period of three years. I am sure you will wish me on your behalf to offer him our most cordial and sincere thanks for his great efforts on our behalf, and we must count ourselves most fortunate to have such unstinted labour in our case.

The Year's Work.

Turning to the year's work, for the past twelve months the following gliding pilots' certificates have been issued: 65 "A," 50 "B" and 30 "C."

It is estimated that the total number of hours flown during the year is 3,000.

The Competition held under the auspices of the British Gliding Association at Barrow from August 27th to Sept. 4th, although organised at short notice, produced some of the best soaring flights seen in this country to date, and had we been more fortunate in the weather, much more might have been achieved. Our thanks are due to Commander Craven, Capt. Fisher and Mr. Whidborne, who very generously enabled us to organise the Meeting by giving substantial guarantees against the cost of organising the Meeting.

It is satisfactory to be able to report that the takings were sufficient to cover the guarantors and leave a small margin of profit over for division between the competing Clubs and the Association.

The outstanding feature this year was the use of three aeroplane-towed B.A.C. VII. sailplanes for a demonstration at the R.A.F. Pageant. It is interesting to note that these machines have since been converted into light aeroplanes by the addition of 6 h.p. motor-cycle engines, and have been giving excellent account of themselves in this new sphere of activity. In my view, this matter is of great significance as it shows that the Gliding Movement can, and does, contribute substantially to the technical and scientific advancement of aviation.

Mr. Lowe-Wylde's demonstrations with Sir Alan Cobham's tour of Great Britain were excellent propaganda for Gliding; during the tour no less than 7,400 passengers were carried in B.A.C. two-seaters by Mr. Lowe-Wylde and his assistants. In all, some 150 towns were visited.

The Council and the Staff.

The Council have held 11 meetings, and the fact that the Finance and General Purposes Committee have held no less than 48 meetings shows the attention that has been paid to the conduct of the affairs of the Association. The Technical Committee has met four times, Contest Committee 10 times, Rules Committee once, and THE SAILPLANE Management Committee six.

I must refer here to the whole-hearted and untiring zeal with which Capt. C. H. Latimer-Needham devotes himself to the many, and sometimes difficult, technical aspects of the Movement. His knowledge and ability are recognised not only in this country but abroad, and our thanks are due to him and his Committee for the service they render the Association.

I should like at this point to pay a tribute to our salaried staff, Miss Cooper and Mr. Waplington; they have worked during a particularly hard time with splendid courage and cheerfulness, and the Association is greatly indebted to them for having offered to accept a substantial reduction of their already meagre salaries at a time when it has been vital to reduce every line of expenditure.

Donations to the Funds.

Once again we have to thank Lord Wakefield for coming to our rescue by a further typically generous donation of £250, and a number of others who have done their share in contributing to our funds.

"The Sailplane."

I regret to have to announce that Capt. Entwistle has retired from the Editorship of THE SAILPLANE owing to pressure of business, and I know it would be the wish of everybody that I should convey our gratitude for his untiring work. Through Capt. Entwistle's efforts THE SAILPLANE has been vastly improved, and probably few realise what an immense amount of time an honorary editor has to give to such an activity.

Fortunately we have been able to prevail upon Dr. Slater to take on the Editorship, and he has thrown himself into the work with great enthusiasm which augurs extremely well for THE SAILPLANE in future.

THE SAILPLANE is the only paper in the world devoted exclusively to Motorless Flight, and under the circumstances I do feel that every member of the Association, and every reader of the paper, should make great efforts to get new subscribers and to help raise our advertising revenue. The paper is being run at a small loss at the present time, but it is felt that it is of essential service to the Movement.

The "Istus" Competitions.

You will have noted that the Council propose to enter a team of three British sailplanes and pilots for the Istus Competitions 1933, and to contribute £100 towards the expenses of entry, carriage and other charges, and in connection with the selection of the best team, it is at present proposed that a Competition on an ambitious and unique scale shall be held in this country.

There is every reason to believe that this action will give a much needed stimulus to the Movement in this country.

Relations with Outside Bodies.

We have to thank the Royal Aeronautical Society for their unfailing support, and we are indeed grateful to them for having placed at our disposal their library for the purposes of our meetings.

Our relations with the Royal Aero Club have remained on the most pleasant and helpful footing, and we are grateful to the Air League, for it is due to their kindly offer of improved office accommodation at a reduced figure which made us change from Dover Street to 19, Berkeley Street. The change has been most welcome to our staff and Executive Officers, and we trust that the Air League have been pleased with the arrangements, too.

Our relations with the Government offices remain most cordial, and we believe that they are satisfied with our government of the Movement.

Retirements.

Your Chairman retires under the three-year rule, and it will be a fitting occasion to pay a tribute to him for his ceaseless energy during the past three years. Very few people can have any notion of the immense amount of time he as given to the task. The fact that I am able to

GLIDING — AND — SOARING



The Kassel 2-seater slips over the edge of Dunstable Downs (left) into the rising current (right) and proceeds to soar.

assure you to-day that the Association's funds are in such an excellent condition is very largely due to his determination and untiring activity in the Association's interests.

When I accepted the Presidency, it was on the distinct understanding that it should only be for a short period, and I now find that the calls on my time make it imperative for me to resign this honour. You may rest assured that this does not mean any loss of interest on my part, and I shall perhaps be able to be of even greater assistance than hitherto.

You will no doubt be delighted to know that we have prevailed upon Colonel The Master of Sempill to accept the Presidency, and it needs no words of mine to assure you that you will have a live, resourceful and ever hard-working President in the Master of Sempill. His services to aviation are so well known, and with the record behind him of his great achievement as President of the Royal Aeronautical Society I think the British Gliding Association is to be congratulated on having secured his help in so practical a manner.

The need for a strong, healthy Gliding Movement was never greater than it is to-day, nor the opportunity for useful constructive work for a central body more important or offered greater scope than now. What we need to ensure success is a little more energy, a little more enthusiasm, a little more business ability and a little more loyalty. Given these, the whole Movement can go forward with strength in the certainty of the future.

THE TREASURER'S REPORT FOR 1932

Early this year the Association was registered as a Society under the Industrial and Provident Societies Acts. This will have the effect of protecting the members from liability in the same way that shareholders are protected in companies registered under the Companies' Acts. The present rules provide that each member of the Association shall hold a share of 1s. in the Society, but such shares shall not carry any right to dividend or participation in the funds of the Association. The share may be considered as evidence of title to membership. The payment of the shares of existing members has been provided by appropriation of 1s. from each subscription received during this year.

Apart from the limiting of liability of members, registration under the Industrial and Provident Societies Acts has the advantage of enabling the Association to take legal action as a corporate body so that members of Committees and others do not have to lend their names before the Association can institute legal proceedings for, say, the recovery of a debt. To quote from the introductory chapter in the Industrial and Provident Societies Handbook: ". . . registration affords, to the sensible and honest, valuable help towards good management in many ways, and it also brings to bear upon the incapable and the dishonest, various checks which are wholly wanting in respect of unregistered bodies."

The Association has made arrangements so that any Affiliated Club can register under the same Acts upon special terms, and for a comparatively small fee, inclusive of disbursements, will carry out the registration on the Clubs' behalf. It is probable that with the coming financial recovery, Clubs will avail themselves of the facility.

The year under review has been a very difficult one, and it is only because of the further generosity of Lord Wakefield and the other subscribers to THE SAILPLANE Fund that the Association has been able to survive. This Fund was opened by THE SAILPLANE last June, and has the following objects:—

1. To enable the Association to carry on its work for the Movement as a whole.
2. The establishment of a central technical, scientific, research centre and instructional school.
3. Ability to provide loans to Clubs so that they may start with the essential equipment.

So far, unfortunately, the whole Fund has had to be appropriated to the first object.

THE SAILPLANE this year has not been financially self-supporting, and as will be seen from the accounts has cost the Association over £100. This is almost entirely due to the falling off in advertisement revenue, which is, I understand, general throughout the country. Every effort should be made to maintain the journal until the return of better times.

The receipts from the Competitions at Furness only exceeded the expenses by a few pounds. If there had been more time in which to make the arrangements, and if the weather had been more tempting to the public, it is probable that the B.G.A. and Club funds would have benefited considerably in spite of the somewhat inaccessable position of the site at Askam

During the year the Finance and General Purposes Committee has laboured unceasingly to arrange economies without injury to the effectiveness of the Association, and the Secretary and his assistant have continued to give full measure of service in spite of the necessity of wage cuts and other economies which tend to make the work of the office more difficult.

The Association is heavily indebted to the retiring Chairman, Mr. Gordon England, who has worked untiringly for the last three years, in its interest, and for the unfailing optimism and encouragement with which he has inspired his officers and committees.

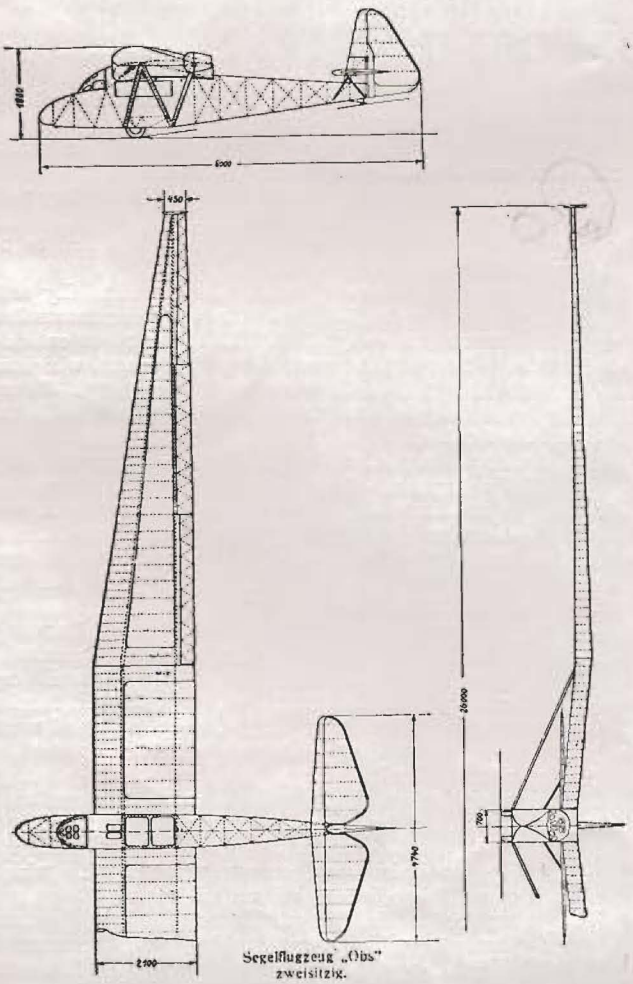
Thanks are due to Mr. Bloor, of Messrs. Smart, Son and Bloor, for acting as Honorary Auditor and Accountant, and to Mr. A. I. Logette, of Messrs. Logette and Bonnett, for his services as Honorary Solicitor during the past year.

A TWO-SEATER SAILPLANE FOR RESEARCH

(Translated from "Flugsport.")

The two-seater OBS of the Research Institute of the Rhön-Rossitten Gesellschaft was designed by A. Lippisch. The aircraft is intended in the first place for the investigation of thermal up-current regions. In the summer of 1932 the Research Institute decided, on account of the thermal currents at the Griesheim aerodrome near Darmstadt, that temperature records should be made over larger areas and at different height levels, and that regions of upward and downward currents should be traced out from the distribution of regions of warm and cold air in the free atmosphere. These records have shown that, at aerodromes which are specially "thermically" suitable, frequent and almost stationary regions of rising currents develop, which even in the absence of any tell-tale clouds can be easily sought out by a sailplane. The charting of these stationary up-current regions will make it possible in the future to make more use than hitherto of auto-towing for advanced soaring flight.

These temperature observations for the charting of stationary upwind areas will be carried out over an extended range by the sailplane OBS in the coming spring. The observer's cabin of the OBS has therefore been given such roomy proportions that, in addition to the meteorological observer, an extensive range of instruments can be included for carrying out the desired observations. Further, the OBS will be used in the further development of the aerological observation service. Now that aeroplane-towed flight of gliders has been successfully developed, the entry of the sailplane into the field of aerological research is made possible over an extensive range.



The "Obs."

It has been planned to have the sailplane OBS towed by an aeroplane of the meteorological service to a height of 5,000 to 6,000 m. (16,000 to 20,000 ft.). After having cast off at this height, it is possible for the sailplane, even without the help of up-currents, to remain in the air for about another three hours. By this means it will be possible for the OBS, undisturbed by engine vibrations or exhaust gases, to carry out aerological observations to a far more extended degree than has hitherto been possible with the meteorological service's aeroplanes.

Above all, this sailplane is specially suitable for researches into atmospheric electricity, which are rendered very difficult in a power plane owing to the exhaust gases.

The wings, which are strutted, have a span of 26 m. (85.3 ft.) and a surface of 38 sq. m. (409 sq. ft.). The weight empty is 390 kg. (860 lbs.) and all-up weight 540 kg. (1,190 lbs.), giving a wing-loading of 14.2 kg. per sq. m. (2.85 lbs. per sq. ft.). The aircraft is in consequence comparatively slow in flight. The wings are tapered, and, as the trailing edge is straight, this results in a slightly V-shaped plan form.

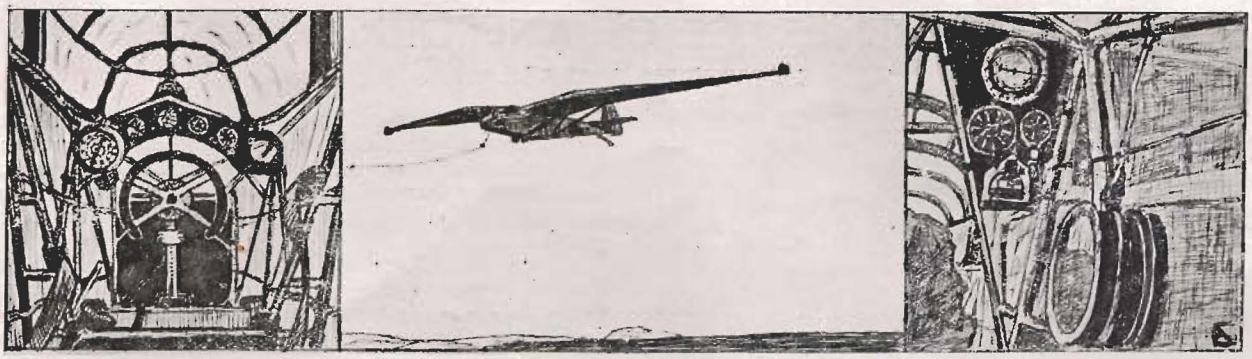
In order to obtain sufficient aileron efficiency with such a large span, the wing has a slight twist (*"ist in sich verwunden"*). The aileron on either side is divided into three sections, each with differently-formed slots. [If our memory is correct, the outer aileron slots would only let the air through from below to above, i.e., with aileron raised, while the action of the inner ones was the exact contrary. It was also stated that the outer ailerons worked differentially, and that the middle and inner ones could be used to increase the camber, presumably by pulling all four down together.—ED.] The trial flights so far undertaken have shown that the desired aileron efficiency has been attained.

The fuselage is built up of welded steel tubing with wire cross-bracing in the hinder part. The enclosed pilot's cockpit is entered through the detachable hood and the observer's door. The central section of the wing is covered with cellon where it adjoins the fuselage, in order to provide an upward view for radiation observations. The observer's cabin is of such large dimensions that a table can be fitted for writing down notes and observations during flight.

The elevator is of pendulum type, balanced as regards its weight. [We were informed that the C.P. of the wing was stationary and so the elevator was theoretically superfluous in normal flight.—ED.] The rudder adjoins a small fixed fin. For assisting the action of the rudder, small end-panel rudders are attached to the wing-tips in such a way that one or other of them moves simultaneously with a movement of the rudder at the tail. These end-panels have proved their worth in tailless aircraft, and they allow of the fuselage being kept short.

In place of the sprung skid which is usually to be found on sailplanes, two wheels are provided, capable of being braked. As the OBS, on account of its great span, has a very low sinking rate, an air brake cannot be dispensed with. Immediately behind the strut connection in the inner part of the wing are two braking flaps immediately in front of the spar, in a similar manner to those of the DRESDEN NO. 9 two-seater. These brakes, when put into action, cause a powerful disturbance of the lift distribution and with it an increase of the induced drag. By this means the gliding angle is adversely affected while a high lift figure is retained. Air and wheel brakes are worked by the same hand-lever; the air brakes by pushing it forward, and the wheels by pulling it back.

Since the OBS carried out a short-towed flight during the Rhön competitions [Short's the word—the towing aeroplane was unable to get off and crashed into some trees. ED.] it has been brought out again in the last few weeks



CENTRE: The "Obs" on its first towed flight. LEFT: Pilot's cockpit seen from observer's seat. Instruments (left to right); altimeter, variometer, compass, turn indicator, air speed indicator. RIGHT: view inside the observer's compartment, from left rear.

by F. Stamer and its flying qualities tested. The OBS, with either one or two up, can be launched with a double launching rope and a team of about 20 men.

In the coming spring it will be installed at the Griesheim aerodrome near Darmstadt for its first introduction to the research programme already mentioned.

BLIND FLYING INSTRUCTION IN SAILPLANES.

The Wasserkuppe Gliding School is organising a blind flying course, to take place from March 15th to 27th at the Griesheim Aerodrome, near Darmstadt, where aero-towing courses have been held in the past.

A two-seater sailplane will be used for the purpose, and the course will be open to possessors of the "Official C" certificate who have already acquitted themselves satisfactorily at a course of aeroplane-towing.

The charge for foreigners is 300 RM. for the course plus 2.50 RM per day for board. Applications can be made to the R.R.G. at the Wasserkuppe up to March 5th, and pupils are expected to turn up on March 14th.

"RECENT GERMAN SAILPLANES."

In the article under the above title in our last issue, a rough calculation of the flying speed of some of the machines was made from the given sinking speed and gliding angle. It should be explained that this is not strictly a correct procedure, because the speed at which a sailplane will achieve its best gliding angle is not the same as that required for producing the least possible rate of fall. For the latter, the speed should be only a little above stalling point, whereas the best gliding angle is usually got by flying a few miles an hour faster. To calculate the speed by combining the best gliding angle with the minimum sinking rate gives a figure which is somewhere between these two values, and is purely fictitious, though it is probably not far off the *average* flying speed of the machine.

Fatality at Marburg.—Robert Saym, a student at Marburg University, Germany, crashed in a glider from a height of 30 feet, near the town. He sustained a fractured skull, and died later in hospital.

GLIDING MAILS

Switzerland to Italy.

Oberlt, Willi Farner, flying a small sailplane, was towed from Zurich to Milan on February 13th by the Swiss pilot Robert Fretz, flying a PUSS MOTH. He carried seven mailbags containing 2,700 registered letters, most of which were empty envelopes sent by stamp collectors in order to obtain the special "Glider Post" obliteration of the stamp.

The pair set off at 2.55 p.m., connected by a 460-foot cable. Herr Farner honestly intended to soar for as much of the way as possible, but on arrival over St. Gothard at 10,000 ft. he decided, owing to the weather conditions, to remain in tow for the rest of the journey. He cast off at about 6,500 ft. over Milan, and took 10 minutes to glide down to the Taliedo Aerodrome. The journey had taken a little over 2 hours.

Next day he started at 2.20 on the return journey, intending again to unhook over the St. Gothard Pass and glide for the remainder of the distance. However, on getting up to 9,000 ft. he found such a gale blowing that he decided to cast off and land, which he did at Bellinzona, south of the Alps.

An accompanying aeroplane, with a cargo of photographers and journalists, got into trouble in the heavy gale and crashed at Croic, near Graubunden. As it fell among shrubs, the passengers were not seriously hurt, but the aeroplane was destroyed.

The glider, of course, landed safely.

Kronfeld's Mail Flights.

As regards R. Kronfeld's first sailplane mail flight from Vienna to Semmering on January 27th, and the question of whether he was towed all the way or did any soaring, we now have more reliable particulars to hand.

The start was made at 11.18 a.m. from the Aspern aerodrome, towed by a B.F.W. machine piloted by Henkelmann. Ninety kg. of mails were carried and the all-up weight was 368 kg. (811 lbs.). Kronfeld cast off 15 km. (9 miles) before his destination, and arrived there at 12.45. The machine, the AUSTRIA II., is the large two-seater whose parts were on view at the Wasserkuppe last year. The dimensions then given were: Span 30 m. (98.4 ft.), length 9 m., and wing area 35 sq. m. (376 sq. ft.).

On January 31st the same journey was attempted, starting at 1.30 p.m., with 40 kg. of mails. The pilot cast off above Neustadt (some way from Vienna), and soared for the rest of the journey in ascending currents over mountains, till finally, after a half-hour's soar above Semmering, he landed at the same spot as before.

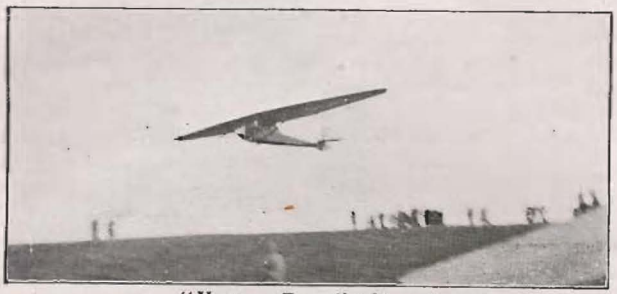
Three hours afterwards a gale had sprung up, and it wrenched the AUSTRIA out of the hands of those who were holding it, blew the machine up into the air, and finally flung it against a fence 300 yards away after it had hit the ground again several times on the way. One wing was completely destroyed, the other badly injured, and the tail surfaces also damaged.

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IN PRAISE OF ANEROIDS

By "VENTRE A TERRE."



"Ventre a Terre" taking-off

In his lectures to the London Club at Christmas, Herr Hirth insisted on the indispensability of a variometer. Such an instrument costs 180 marks in Germany. Add to this price the effect of rate of exchange, and then add duty and postage. The answer, in the vernacular, is a complete lemon.

"Vol au Vent," in his recent article, gives a good summary of the possibilities of a Jug-and-Bottle variometer. An amiable lab-boy had created such an instrument for us, wasting a considerable proportion of the firm's glass tubing while so doing. It works well in a car, though far more crude than "Vol au Vent's" version. It bubbles for a rise or fall of about 20 feet, checked on long hills against an accredited aneroid. It moves, without bubbling, for about 10 feet. Yet, somehow or another, it has been left lying in a cupboard at the club-house ever since, although there have been many soaring flights in the meantime. The instrument is so brittle and unwieldy; the Thermos takes up so much space; one has a horror of things coming adrift in a bump; suppose the rubber tube took a couple of half-hitches round the stick; the idea of spoiling the naked beauty of the fuselage's red nose, by adding a wart-like erection of wood, rubber and glass, is entirely repulsive.

One therefore perseveres with the aneroid-complex.

Baird and Tatlock supply an aneroid of Italian origin for £3 10s. It is about the size of a railway guard's watch, it is fitted with a strap for arm or wrist and with a movable ring graduated in twenties of feet. Being essentially a weather-glass, it reads up to 3,000 feet. Two of us, on foot, tested it by carrying it up to 3,000 feet in the Lake District. Checking it against the map on three climbs, we could detect no discrepancy. At the end of the day it returned to the zero of our starting-point; this, of course, was a pure fluke, the overall barometric pressure having remained constant all day. But such behaviour was encouraging. It has been checked by minor height-changes, in a car and on foot, with equally satisfying results. Its lag in a diving sailplane is slight—apparently one or two seconds—while its movement under stress takes the form of 20-foot jerks; we were able to study these things in a stormy 25-minute flight when passenger in a two-seater sailplane.

Its areonautical career is already quite long. At Barrow it was taken to 1,700 feet above the starting-point, returning to zero. (This flight could not be accepted as an official record, since the *official* barograph refused to function.) It has gone to 750 feet once, 600 feet once, and fairly frequently to 400 feet. It makes a flight infinitely more interesting, causing the pilot to temper his optimism with truth, and enabling him to leave the hill behind his back with confidence until the recorded height warns him that it is time to turn back to the ridge.

After practising with it in a car, glancing at it on every hill, a pilot can read it easily enough in the air, even though he may be thinking hard about something else. The best place to wear it is on the left forearm, or on the back of the left hand. It is as well to fit it with unbreakable glass. Boys will be boys, and are liable to go wrestling in their spare time, forgetting all about the unfortunate aneroid wedged in a hip-pocket. Otherwise it does not seem to mind any amount of bumping about.

One cannot help feeling that such an instrument would be a great deal better than nothing in an attempt to chase a cold-front or thermal current, especially when the watching of the aneroid has become sub-conscious through long practice.

A more sensitive and larger instrument is sold by Negretti and Zambra for £6 10s. It is graduated in tens of feet and is a really handsome affair. In the absence of a dash-board this aneroid can be hung round one's neck on a piece of string, and held in the left hand when in use. One of these instruments has just started soaring, but on its only flight the weather was so wild that the aneroid refused to hang down on the pilot's chest, preferring to lash him on the ear. As his head was simultaneously being banged on the centre-section he was not able to read the instrument meticulously, although he was flying for about half an hour. Provided that its works are not too delicate to stand this kind of treatment, it ought to be thoroughly useful. (P.S.—By "it" is meant the aneroid and not the pilot's head.)



The flight in a high wind, described in this article, during which the pilot banged his head 3 times on the leading edge and his aneroid flew up and hit him on the ear.

In Baird and Tatlock's new catalogue, Section XV., 2nd Edition, Meteorological Apparatus, there is an aneroid which fairly makes the old mouth water. It is based on the design of G. Paulin, a Swedish engineer; by this design changes of height as small as three *inches* can be recorded, using the best pattern of the instrument. The temperature coefficient is about ten times better than in the ordinary aneroid, and elastic hysteresis is practically nil.

The obvious innovation is the inclusion of an extra pointer, termed a "tendency pointer." The term is self-explanatory. This hand works either way, to plus or minus, from a central zero. It is re-set to zero by a knob which protrudes from the glass in the centre of the dial. Presumably a pilot would have to spend his spare time in re-setting the pointer to zero in order to obtain the effect of a variometer. This sounds a little laborious, but there are definite possibilities.

For £6 one can buy a model which is graduated in tens of feet from minus 1,000 feet to plus 4,000 on the first revolution of the hand, and up to plus 9,700 feet on the second revolution; total 10,700 feet. Its diameter is 3¼ inches. There are various alternative casings, and the "text" (sic) can be supplied in "English, French or German." If this instrument could be mounted handily in the cockpit it would take all the monotony out of long easy soaring flights. In no time at all the pilot could regard it as a particularly intelligent passenger-companion, to be addressed as "Alf" or "Joe," and greatly to be preferred to the kind of wretched fellow who insists on singing in order to show the pilot that he is enjoying himself.

SOARING IN HIGH WINDS

By "STAYSAIL."

The exhilaration of flying in a high wind is not to be compared with ballooning, or light-wind soaring, and it is hoped to explain a few incidents below, in order to open up the proverbial reticence, attached to wisdom, of our more experienced soaring pilots, so that we might hear of events such as that, tersely related by a club member, of the capsizing in an 80 m.p.h. gale of his small yacht in mid-Atlantic.

In what follows, asterisks are placed after statements which deal with actual crashes (one asterisk for each crash), from which in all cases the pilot has escaped with very superficial, if any, injuries.

On the ground, the risks of damaging the machine are as great as in the air. A short tow-rope, securely attached to the machine, will prevent blowing over.***

When the pilot is in the machine, do not hold the tail, for if the wings are released and the tail held, the machine may rear up and be blown over backwards*, or obtain an unsatisfactory start; it is sufficient to hold back on the wings, but a tail rope automatically released by the pilot is a safe method.

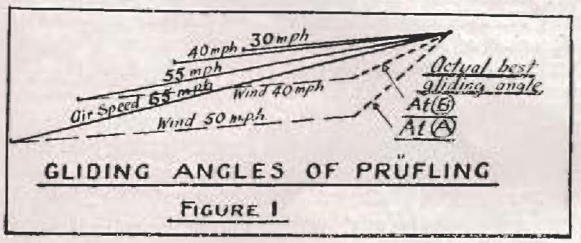
In the accompanying photographs, the launches shown have taken place over a slope roughly equal to the gliding angle in calm weather, but considerably less than the gliding angle at the wind speeds—of up to 50 m.p.h.—prevailing overhead at the time.

The importance of the relation of the slope of the ground and the gliding angle at the wind speed blowing, when this is greater than the flying speed, is shown in Fig. 1. This shows the gliding angle of the PRÜFLING at different speeds, and the best actual angle obtainable in the winds shown, from which Fig. 2 is constructed, to indicate the optimism possible course, if a launch has been carried out to point A, in the wind distribution shown.

It is clear that, unless the machine travels backwards, it must come down in a few seconds to a level at which it can fly parallel to the ground. This is the level beyond which it is useless to rise, and is the answer to the problem set out under the same photographs in the previous issue. (No prizes; but the ground does look as if it wants to get away from you.)

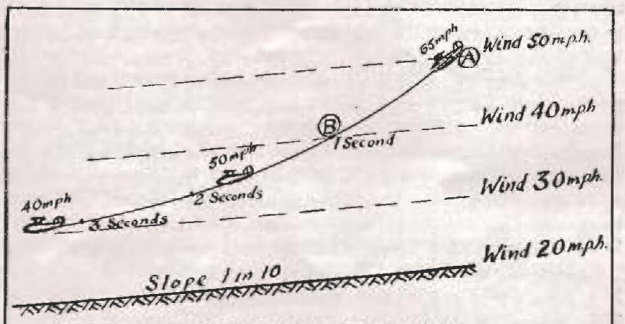
By taking off near the brow of the hill (beyond which the slope is steeper), and delaying the start until the beginning of a lull, a safer start can be expected.

The rapid fall in wind-speed as the ground is approached, known as "velocity gradient," is the cause of some unexpected results; this is greatest near the crest of a hill, and is one cause of the curious side-stepping often seen when machines are in this region. The machine will be tilted by turbulence, the higher wing will be in faster moving air, and a sideslip will begin which may end in



GLIDING ANGLES OF PRÜFLING

FIGURE 1



OPTIMUM COURSE FROM 'A'.

FIGURE 2

Note: Machine drawn 1/3rd scale size for diagrammatic purposes.

the ground unless the rudder is promptly applied in the right direction*, and is sufficiently powerful to hold the machine into wind.

A more curious result, when near the ground, is that, after flying downwind, a turn into wind must be made with more speed in hand than in the reverse case* (first-hand report); and a more obvious one, often demonstrated, that a machine may drop from quite a respectable height, with much useless flapping of the controls, when landing straight ahead into such a wind.

If forced to land cross-wind, it has appeared best to "fly on to the ground," as more power can then be obtained from the rudder, and more definite lateral control maintained, than if the machine is held off; but the amount of side-slip it is possible to put on is limited.**

The above would seem dry reading if compared with the full story, which some of our well-known pilots could tell, of soaring in high winds.

And * and** and***, see paragraph 2.



[These photographs appeared in our last issue, and readers were asked to decide which was the best take-off, given that the wind was blowing faster than the normal gliding speed. The answer is given by "Staysail" in his article, and depends chiefly upon the conformation of the ground, which in this case slopes gently down at first and then becomes suddenly steeper. The "Prufling" (on the right) has had its tail held too long, and is kiting up too high; i could then make hardly any forward progresss, and only a timely lull enabled it to reach the brow of the hill before returning to earth. The pilot of the "Crested Wren" (on the left) avoided such trouble by keeping low where the wind was less, and he used similar tactics in piloting the 2-seater (see photographs on p. 41, which were taken same day). Note spectators holding their hats on.

CORRESPONDENCE

THE PRIMARY AND THE TWO-SEATER.

[*Some time back* THE SAILPLANE *published a lengthy correspondence on the subject of dual versus solo instruction. That debate has petred out for the moment, but, at the risk of stirring the dying embers, we publish the following communication, as the writer puts forward a point of view which has not yet been heard.*]

Sir,—

We have heard and read much recently concerning the vexed question of training methods. From all this discussion one voice has been absent, to wit, the poor victim himself, the *ab initio*. He may, of course, be considered too inexperienced to pass a useful opinion on the question, but I wonder? . . . He is close to the actual experiences, and recent impressions are clear and strong upon him—so here goes.

Firstly, it is definitely unpleasant for one's first experience in the air—albeit full of enthusiasm and excitement—to be shot, be it ever so gently, from a faithful bungy into void full of bumps, whirls and terrors unknown! How different would the mental and actual approach to the first solo flight be, after ten minutes or so of actual soaring experience, in a stout two-seater, with a competent instructor at the "stick."

Who would dream of installing a fellow being, who previously had never been in one, in a motor car (existence doubtful), and expect him to drive alone down the main highway at rush-hour? And yet this is virtually what we have been doing in gliding since its commencement in this country.

So I would say: relieve your new candidate of his subscription, and then consign him red-hot to the two-seater for his first soaring flight, and let him *feel* and test the medium in which he must do his stuff! After that, by all means send him down to the bottom, and consign him to as many ZÖGLING hops as are necessary to bring him to "A" standard.

But then, I pray, have mercy on him again, and give him another ten minutes' dual immediately prior to doing his "A," thereby filling him with confidence and enthusiasm. This, I feel sure, would save many smashings, and also moments of keen apprehension to the victim. And why not? He is doing it for pleasure!

And the moral surely is, that both your fervent correspondents were right in their constructive arguments, but both were wrong when they ruled each other out.

In other words, to this *ab initio*, the ideal appears to be—two-thirds ZÖGLING and one-third two-seater, and, Oh, Boy! the joy of those first hours of gliding!

COCK ROBIN.

[*The two-seater referred to is shown on p. 41.*]

TAILLESS AIRCRAFT.

Sir,

Two very interesting letters have appeared recently in THE SAILPLANE on tailless aircraft. Can you find place for a few random comments from an amateur designer who can speak from practical experience of flying his own semi-tailless aircraft?

In the first place, Capt. Needham observes that sweep-back is not essential to this type. This is no doubt true; nevertheless, I think that a certain amount of sweep-back is very desirable. From a report in THE SAILPLANE of August 26th last, it seems that a tailless glider with as much sweep-back even as the STORCH took a pilot of Groenhoff's exceptional skill to fly smoothly.

This may be due partly to lack of fore and aft stability and partly to the method of control. The wing of a tailless aircraft must have as nearly as possible a stationary centre of pressure. This is obtained by the use of a special section usually having a reflexed trailing edge. When a trailing edge flap is moved on such a section, it not only moves the C.P. in accordance with the pilot's wishes, but also, by deforming the profile, renders the wing unstable, so that as the attitude changes, the C.P. moves farther, requiring a reversal of control for correction. In designing aircraft it is no good sacrificing stability and controllability on the altar of efficiency to such an extent that only an exceptional pilot can fly the machine.

Capt. Needham then turns to bird form to show how in dispensing with a tail we depart from the invariable practice of our safest guide. I think that here he has passed over an important feature in which normal, as well as tailless, aircraft depart from bird form. The bird has one lifting and one tail surface; what it does not have is any pair of aerofoils set at a sharp angle to each other. In this, the tailless aircraft with its fins and rudders set upon its wings is as much at fault as the normal aircraft with its cruciform tail. I think that on these grounds the semi-tailless aeroplane, of which the ARCHÆOPTERYX is perhaps a rather crude example, is undoubtedly the nearest approach to nature. As compared with the tailless machine it has to carry the extra weight of the extension to the nacelle carrying the fin and rudder. (In the ARCHÆOPTERYX this is 5 lt.) This, however, is lightly stressed and the additional weight is a very small percentage of the total loaded weight. Incidentally, it saves the weight of one rudder and fin. As compared with the normal machine, the fuselage is lighter and not only is the interference drag of the cruciform tail avoided, but also the vicious mutual interference of these two surfaces in their functions as controls.

Whether or not the reduction of interference drag in this way is of great importance, it is difficult to say. The fact remains that the performance of the ARCHÆOPTERYX, even in its present crude form, seems sufficiently high to justify further experiment on these lines.

The engine used is a 29 h.p. Series 1 Bristol Cherub. Previous to our obtaining it, this same engine was used on a small racing monoplane (like the archaeopteryx, high wing), with a wing area of 70 sq. ft. This machine could barely reach 90 m.p.h. The ARCHÆOPTERYX, with a wing area of *120 sq. feet*, does 90 m.p.h. quite comfortably, and will climb at 35 m.p.h.

Besides this it is as stable as a normal light aeroplane and shows not the least tendency to hunt in any plane. It has been flown with perfect smoothness and without any difficulty by a pilot of negligible experience.

Incidentally, I have performed turns on it with some 30 deg. bank at a speed some 3 or 4 m.p.h. below the landing speed.

R. F. T. GRANGER.

"FLYING PROPER."

Sir,

Re your remarks on "Gliding and Flying Proper," I should also be pleased to know if you would consider a public school education improper as against that of finishing off at a university.

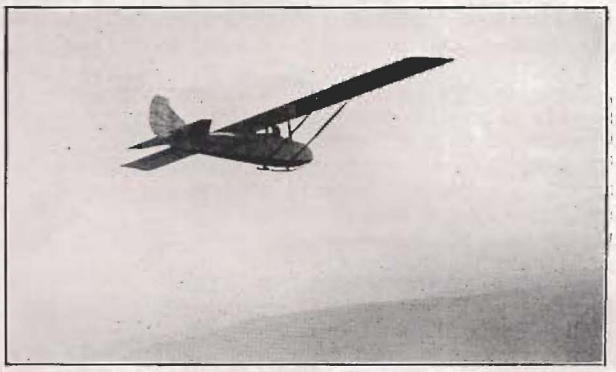
Could you as a matter of interest enumerate holders of "C" soaring certificates, giving name, date and place, and offer a prize for the hundredth if not already taken?

J. B. G. GRICE.

[We would compare the average motor pilot to the man who goes out into the world incompletely educated; the motor pilot with soaring experience to a man with a university education, and the advanced soaring enthusiast to one who devotes himself wholly to the pursuit of learning, believing that life has better things to offer than mere worldly success, and caring little whether any of his discoveries may be turned to commercial advantage by others.

As regards "C" certificates, the latest Royal Aero Club returns show 60, the total number of "A's" being 317. We will give a list of them as soon as we have space available. And if someone *else* will offer a handsome prize for the 100th, he can have all the necessary publicity here.—ED.]

NEWS FROM THE CLUBS.



Miss Churchill ("C" pilot) flying the "Prufling" at Dunstable.

BRADFORD AND COUNTY GLIDING CLUB.

Sunday, February 12th.—Wind W.N.W., 10-15 m.p.h. Conditions being almost ideal, two machines were out early and a third was on the "tarmac," being hastily fitted with a new skid.

REYNARD II. carried out, in succession, every stage of training up to and including the "B" certificate. After being launched repeatedly on the flat and on a slight 15 seconds slope for the benefit of Watson, Flather and Elliot, who all performed creditably, the machine was flown down from the top of the beacon by Alderson and Jowett. REYNARD was then taken to the long west slope for longer flights and "B" certificate work, where Holdsworth flew a "45" with several seconds to spare and Hastwell got his "B" at the second attempt with a well-judged flight of 65 seconds.

Throughout the day DICKSON Intermediate was flown on the long west slope by various pilots, but 15 m.p.h. is the very least wind speed required for soaring such a machine on this site, and the longest flight of the day was two minutes. Valuable practice in holding the correct position over the ridge was, however, obtained, and it was found possible to complete three beats along the steepest part of the ridge before being forced to depart to the appointed landing ground near the road.

Tillett, on his second attempt, took the fullest advantage of every available foot of lift, and almost managed the return journey to starting-point without loss of height. At the last minute, however, he decided it couldn't be done, and, as hillside landings are strictly *verboten* on this site, he turned sharply away from the hill and made a perfect landing in the valley.

Altogether it was the sort of day that made us wish our HOL's was ready, and our retrieving horse was kept so busy that it really must have thought that summer was here again.

Sunday, February 19th made *us* realise that it wasn't. Eight of us struggled through terrific snowdrifts to Dobrudden. After a thaw-out and a warm, still feeling somewhat "Arctish," we ventured out in two parties and, with intermittent snowfights, explored a southerly slope on our site which has never been flown over owing to landing difficulties in the valley. We decided that this slope would prove very useful for the few who are approaching the "start-point landing" stage.

After a relapse, R. F. Stedman now continues to make satisfactory progress towards convalescence and hopes to attend our Easter Camp at Dobrudden Farm on Baildon Moor.

THE FURNESS GLIDING CLUB.

In spite of the lack of news from the Furness Gliding Club, we have been by no means idle during the past few months.

Gliding has been hopeless for many weeks. Through November and December we were treated to gales from all quarters—and/or rain. However, on December 26th, we snatched a day, and all members present had from two to five flights each. We were then treated to another dose of those "Unsettled Conditions" which the B.B.C. invariably serves up for the "North-West."

January 12th. A crisp, frosty day, with a gentle S.E. breeze, gave us encouragement, and we had from three to five flights per member.

January 29th.—The frost still held, and the faithful again had a good day; only a few members succumbed to the temptation of skating.

A 10-15 m.p.h. breeze was blowing from the S.E. and there was quite an amount of "lift" about. One or two members attempted to indulge in a little "tent-pegging" at the expense of the launching party. The agility of the crew proving greater than the manœuvrability of the machine, no hits were scored. We finished the day with 32 flights and the machine intact.

February 5th.—A westerly gale proved too strong for any attempt at soaring at Ireleth, so a primary was rigged, as the wind speed was considerably less at lower levels. However, after four flights, the wind discovered our position, and gusts of over 40 miles an hour caused a hasty "pack up."

We were pleased to see Winder on the field, just out of hospital (where he had been since August, and following umpteen operations); he then managed to break a wrist in starting his car engine—this after only two days out of hospital! His bandaged appearance following the trailer gave rise to a rumour that the Gliding Club had had a N'orrible Crash!

February 12th.—Wind direction and speed perfect for Ireleth. Accordingly the nacelled R.F.D. was rigged and Stevens was launched. A bad attack of "indicatoritis" resulted in a landing down below without having gained any height. Result—gloom! By the time the machine was returned to the top of the hill, the wind had moderated somewhat. Stevens was again launched, and this time, ignoring his indicator, a tremendous improvement was noticed, the flight being very steady after the previous "rodeo." However, he again failed to soar and landed after an extended glide of 6½ minutes. It rained.

February 19th.—A biting northerly wind allowed us to erect the primary, and then promptly freshened to a young gale. After two somewhat anxious flights it was decided in favour of discretion, so we returned to the club-room to the work which is always waiting.

Obituary.—It it with sincere regret that we report the death, on February 1st, of Mr. H. B. MacLaren, treasurer of the Furness Gliding Club.

Mr. MacLaren had been ill for many weeks, but after great suffering the end came peacefully. He was only 47 years old, and our deepest sympathy goes out to Mrs. MacLaren and his two children. His death is a great blow to the Furness Club, and we shall miss greatly his gentle humour and kindly disposition. His was a great example of service to others.

KENT GLIDING CLUB.

February 23rd, 1933.—Great news! To-day is the Club's birthday, and our anonymous "well-wisher" has for the second time appeared out of the blue with a generous gift towards our funds! The only clue we have is the postmark "S.W.3," but if this should catch his/her eye, will he/she please accept our very best thanks? The Club is now on a firmer footing than ever before, thanks

to the determination of our members to carry on during the last two years in spite of all difficulties, and this welcome donation will help us to consolidate our position. We hope that our gratitude will to some extent repay the donor for his generosity. Can we induce him to emerge from his anonymity and accept a Vice-Presidency of the Club?

It is proposed to hold the K.G.C. **Annual Dinner** on March 16th. We will be very glad to see any of our friends who care to come. Further information may be obtained from the Assistant Secretary, Miss R. H. Sinclair, Wateringbury, Kent.

LONDON GLIDING CLUB.

On Friday, February 10th, a magnificent cold-front travelled down England from the north, changing the weather from spring back to winter, and the wind from west to north. In the Thames Valley its arrival was announced by a loud thunder. Its advance was marked by a perfect line of roll-cloud, so long that perspective gave it the appearance of an arch. The mountainous masses of clouds eventually deposited rain until wood-block paving in Kingston was afloat. A first-class (German) sailplane pilot could have cruised ahead of the roll-cloud from John o'Groats to Brighton.

On Sunday, February 12th, the forecasted north-easterly breeze turned out to be a trifling westerly air, with brilliant sunshine.

WATSON-R.F.D. Ground-hops and hill-top launches until dark. Young Sproule and Eisenstädter were last seen waving pink forms, the former having completed his "B" and the latter his "A," thus crossing the minor Rubicon which lies between hops and flights.

PRÜFLING. Hops and flights. Scott, a "B" pilot from Tasmania, made a start in her from the hill, and many others also flew her down.

KASSEL 20. Six members of the syndicate flew her down in six different styles.

HOL'S DER TEUFEL reached the Bowl in the very feeble lift, but had to land on the return beat.

Club PROFESSOR. Flown down three times. It is now necessary to work the quick-release in order to free the ring of the launching-rope from the hook. One pilot carried the rope away with him, landing with it, thus emphasising the power of the elevator. The gliding-angle was pretty grim! What does the rope weigh? (In another machine a pilot tries to put the centre of gravity in the right position by wearing bedroom slippers instead of shoes.) Another PROFESSOR-launch was also rendered stirring in the same way; the pilot eventually dropped the rope from mid-air, hitting nothing. At best the machine reached the Bowl, but owing to her huge turning-circle was forced to land at the end of the return beat.

POPPENHAUSEN two-seater. Was exhumed and flown down twice, with passenger.

CRESTED WREN. Manuel must be a genius. Last Sunday the WREN was flitting about in a gale; in this Sunday's faint draught she once took nine minutes to come down. Her light weight and slight drag enable her to reach a good height from a launch; her ability to turn, which would do credit to a London taxi, enables her to get back into a narrow belt of lift with minimum delay after each about-turn. In oceanic lift, large-span machines may be desirable, but for really good fun these nimble light machines are infinitely preferable in all weathers.

Imperial College. Worked like horses with their R.F.D., ground-hops and hill-top flights, obtaining an "A" and a "B." Their pertinacity fills one with admiration.

London Club.—Saturday, February 18th. HOL'S, KASSEL 20, and PRÜFLING were got out and flown down by Hiscox, Bolton, Collins, Morland, Robertson and Richardson, the wind blowing from the north along the ridge.

By and by a snow squall blew up, causing the wind not to change direction but to increase in strength during and after. When visibility had been reduced below 100 yards, and all pilots were sheltering under their wings at the top of the hill, they were horrified to hear an aeroplane buzzing about *below*. It turned out to be a member of the Lancashire Club flying south from Manchester, lost in the blizzard, who caught a glimpse of our hangars just in time to realise where he was and make a safe landing.

The HOL's then flew down with one wing covered with snow, the other with its normal high-lift wing-section, the stick hard over, and a much mystified pilot expecting the worst any moment.

OFFICIAL NOTICES

ANNUAL GENERAL MEETING.

The Annual General Meeting of the British Gliding Association was held on February 20th at 7.30 p.m.

Colonel the Master of Sempill was elected President in succession to Lieut.-Col. F. C. Shelmerdine, Director of Civil Aviation. The Master of Sempill will combine this office with that of Chairman of the Association, Mr. E. C. Gordon England having retired automatically from the chairmanship at the end of three years.

Mr. Claude Grahame-White was elected Hon. Treasurer.

The following were elected to the Council:—

Representatives of Founder and Ordinary members: Messrs. D. C. Culver, F. Entwistle, L. Howard-Flanders, C. H. Latimer-Needham, A. I. Logette, C. H. Lowe-Wylde, D. Morland, G. R. Paling, F. Pilling, G. T. Richards, A. E. Slater. Representing the Royal Aeronautical Society: Mr. W. O. Manning; Royal Aero Club: Major H. Petre; Royal Meteorological Society: Sir Gilbert Walker; and the Guild of Air Pilots and Navigators: Mr. E. H. Fielden. The Club representatives have still to be appointed by their Clubs.

COUNCIL MEETING.

At the subsequent meeting of the new Council, the following Committees were appointed:—

Finance and General Purposes: Messrs. Whidborne, Entwistle, Culver, Logette, Gordon England (ex-officio), Slater (ex-officio), Grahame-White.

Technical: Capt. Needham, Capt. Pritchard, Mr. Manning, Capt. F. T. Hill, Capt. Max Findley, Mr. Lowe-Wylde, Mr. Howard-Flanders, Mr. E. H. Lewitt, Dr. Thurston, Mr. Richards.

Contest: Mr. Pilling, Capt. Needham, Mr. Robertson, Mr. Culver, Mr. Little, Mr. Entwistle, Mr. England (ex-officio), Sir Gilbert Walker, Dr. Slater.

The next Council Meeting will be held on Monday, **March 27th, 1933**, at 6.30 p.m. (instead of March 20th as formerly announced), at the Library of the Royal Aeronautical Society, 7, Albemarle Street, W.1.

NEWCASTLE GLIDING CLUB.

Saturday, February 11th, 1933. Wind N.W. The wind was considered rather weak for launching the CRAMCRAFT, and the ground was exceedingly slippy as a result of heavy rain. However, it was decided to give new members a few ground slides. A test flight, made by Hick, confirmed that there was insufficient wind for the machine to rise. J. A. Allan completed his ground slides and balancing tests.

Saturday, February 18th, 1933.—An extract from the local Press of this date reads as follows: "Snow, hail and sunshine alternated in Newcastle to-day; at Sunderland there was thunder and lightning, and South Shields had squalls." Nevertheless, a small party ploughed through the three inches of snow to Killingworth, and would have flown the CRAMCRAFT, had not our secretary shirked getting wet feet, and insisted on progressing with inside work on the hangar extensions—although for most time he worked alone. The party was not large enough to make a launch without his assistance.

During the week the following new committees were appointed: Ground Committee—H. C. Miller (Flying Field Manager), R. C. Sinclair (Equipment Supervisor), and G. L. Batty (Tools and Stores Supervisor). Technical Committee—W. R. Hunter, H. Little, A. H. Bell, W. E. Hick and R. C. Sinclair Flight Committee—A. H. Bell (Chief Instructor), W. E. Hick, W. R. Hunter and T. S. Mewes.

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