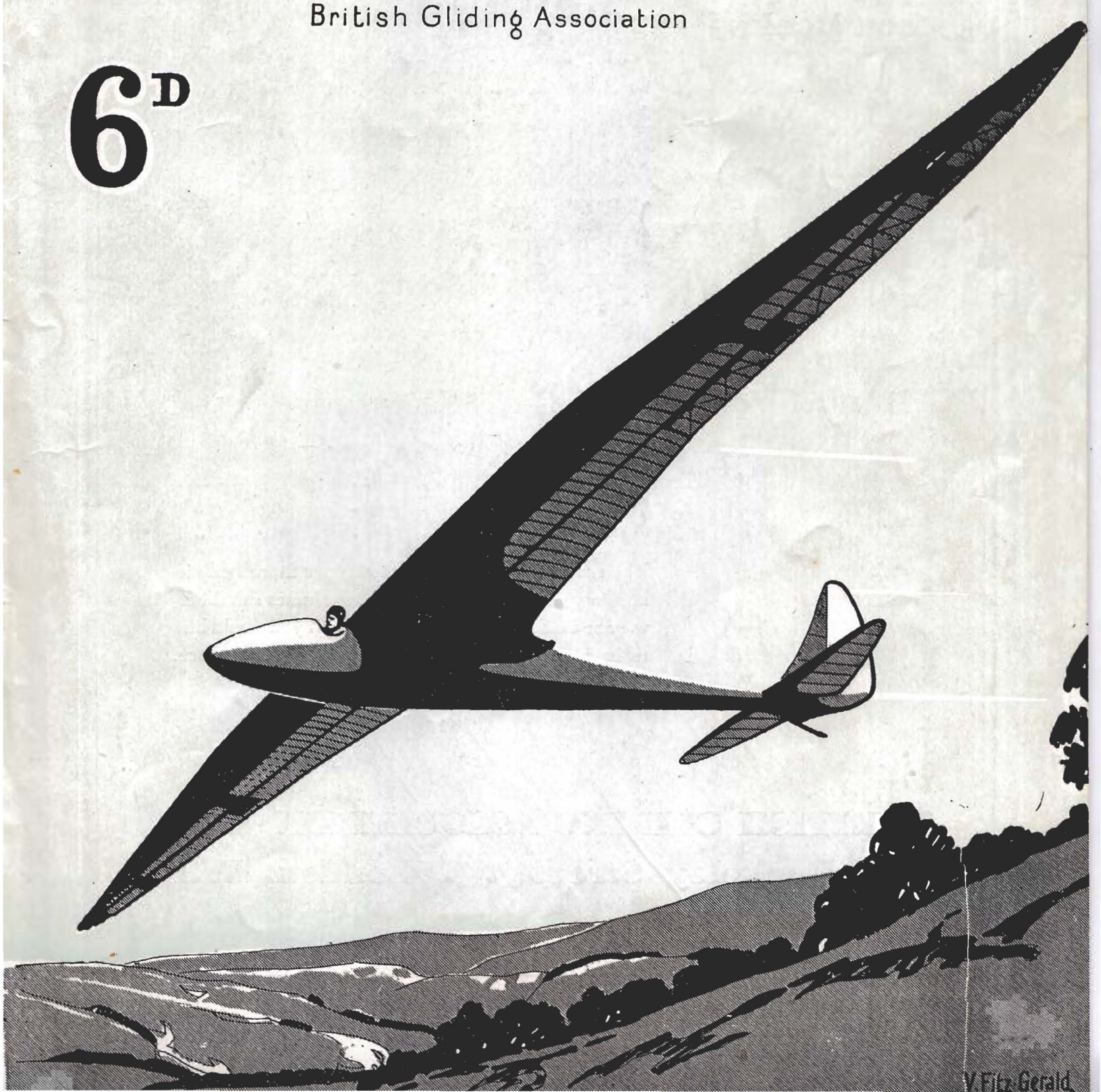
May 12th 1933. Vol. 4, No. 9.

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 XVIth Century gateway of Lincoln's Inn.*

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A Gliding Conference.

An extract from the proceedings of the last B.G.A. Council Meeting will be found on another page. This concerns the proposal to hold a conference of gliding clubs, the date suggested being September 16th. There are many questions which could be profitably discussed, and suggestions as to what subjects should be included in the agenda will be welcomed. Perhaps it would be best if the matter were aired in the correspondence columns of THE SAILPLANE. Another question is the place of meeting: whether in the North (e.g., Harrogate, Ilkley, Bradford, Leeds), London, or the South (Brighton, Weymouth, Folkestone). So write to THE SAILPLANE about it.

An Instructional Circus.

A correspondent has been asking what are the prospects of a professional pilot with a 2-seater dual machine touring the clubs in this country during summer months, giving finishing instruction to those club members who are struggling between the "B" and "C" stages. There is not only the question of what the pupil would be prepared to pay and what the instructor would be satisfied to receive, but of what competent instructor is not already fully occupied in earning his living at some other job.

It so happens that we have lately heard a first-hand account of a touring "circus" of the kind in Germany, from Hans Deutschmann, who piloted the SCHLESIEN IN NOT in the last two Rhön Competitions, and won a prize in the form of a trip to England, of which he has just taken advantage. He toured the German gliding clubs and groups with an ambitious "circus" consisting of a GRUNAU 8 three-seater (adaptable also for dual instruction), an aeroplane to pull it, a car for auto-towing, one or two single-seater gliders, and all the necessary paraphernalia. He had a great time of it, and evidently the circus supplied a "long-felt want."

Writing for the Press.

Herr Deutschmann turned up for an afternoon's sightseeing at Dunstable and stopped three whole days. He discovered many unexpected things, not the least of which was the conspicuous dearth of "young blood"; we all seemed to him to be gliding staidly into middle age. It appears that the German clubs and groups rely mainly, in collecting new recruits, on putting notices *regularly* in

their local papers. A report is sent in of every flying meeting, giving an actual list of the flights made, or at least the more outstanding ones. Of course, a certain amount of this publicity work goes on here; we see occasional news of the provincial clubs in cuttings from their local papers, but they can consider themselves lucky if the report is not handed over to someone on the staff to "write up," as in an example which has just come to hand. "No timid ones need apply," begins the paragraphist. "That would appear to be the motto of the A—— Gliding Club. . . Throwing oneself off a hill-top in a contraption of wood and canvas. . . ." and so forth. And do you remember the case of the press photographer who found a glider being dismantled in a field, with its wings and parts strewn about—took a photograph, and sent it in to his paper as "a crashed glider"?

Bert Hinkler and Clouds.

In reading of the fate of Bert Hinkler, which has become known at last, one is reminded of something he told a newspaper correspondent just after completing his flight in a PUSS MOTH across the South Atlantic. Hinkler asserted that he could often recognise a change of wind direction when out of sight of the ground, by noting the changing forms of the clouds around him. It may be recollected that, after having spent a large part of the flight in or above the clouds, he made his landfall on the African coast not more than ten miles, we believe, from the spot he had aimed for. So it is evident that he knew what he was talking about, as the wind did change during the flight.

Hinkler, one imagines, would have made a good sailplane pilot; he found out things for himself instead of waiting to be told. We have met many aeroplane pilots who are capable of being thrilled with the beauties of Cloudland, but never one who has taken the trouble to study the clouds as they should be studied, or made any attempt to understand the details of their forms.

"Mention it in Your Leader."

In other parts of this journal, expressions of opinion, or, if you will, prejudice, may often be found peeping out from behind apparently innocuous items of news. As in so-called "programme music," which must be written round a set subject, the writer's individuality may persist in showing through. But here in this column you will find only the so-called "absolute music." We can express opinions here for the simple joy of expressing them, and choose our own themes.

You may inform your composer that you would like certain words set to music, and he will do it. But you cannot tell him to include a specified tune (your own) in his next symphony. "You might be good enough to include a leader on the subject," "Perhaps you would refer to the matter in your Editorial," ". . . hope that you will discharge a broadside in your leader about it"—all these exhortations, and more, have reached us in the past week or two, and each on a different theme. If you want to say something, write an article or send a letter. But you can't come in here.

The B.G.A. Competitions.

The site at Huish faces south; a mile of it, by the launching-ground, is perfectly straight; and soaring there should be easy in either S.W. or S.E. winds. A mile away to the east is a shorter slope facing south-west, where launching is also possible from the top. With a fair height to start with, plain hill-soaring should be possible to a point eight miles away to the west, and for a lesser distance to the east. There is flat ground at the top of the hill where elementary training and auto-towing can be done. There are also low slopes in the neighbourhood which have been inspected and can probably be obtained. Four miles to the south-east is Pewsey Hill, with steep slopes facing various directions between north and west. Steps are at present being taken to obtain the use of it.

Criticism.

The site will, of course, be criticised. Many and diverse qualities go to make a good competition site. In particular, there are two requirements which, in this country at least appear to be mutually exclusive. One is, accessibility to the public; the other, suitability for high-performance soaring. The latter, by which is meant height and distance flights (*not* duration), involves the use of thermal currents, contact with which is most readily obtained in mountainous districts, which, however, are not usually to be found near centres of population. And, if the public never see the high-performance work, they will remain as ignorant as ever of the possibilities of motorless flight.

Which of these two considerations should be given most weight in the choice of a site? It is a matter of policy on which we could discourse at length (and with heat), to the possible unsettlement of the minds of many who propose to attend the Competitions. There are six hours in which to do so before THE SAILPLANE goes to press. Instead, we propose to spend those six hours in bed.

—·—

THE NEW "SAILPLANE" COMPETITION

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

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. In addition, the sender of any entry published, whether a winner or not, will receive two extra copies of the issue in which it is published.

The Editor's decision is final.

———

Previous Winners.—The competition for March was won by the writer of the article: "A Trip to Black Combe," which appeared in our issue of March 31st (p. 64). The April winner is Mr. C. A. Beck, of the Ulster Gliding and Aviation Club, for the article "Gliding in Ireland," published in our last issue (p. 87).

THE GLIDER-LESS PILOT.

When a cow has sat upon
And broken up an aileron,
And some stout fellow's mending it,
A pilot ought to go and sit
Out in a corner, with a map
All spread out neatly on his lap,
And dream he's in a sailplane, scouring
All the hills for winds for soaring.

SKYWRITER.

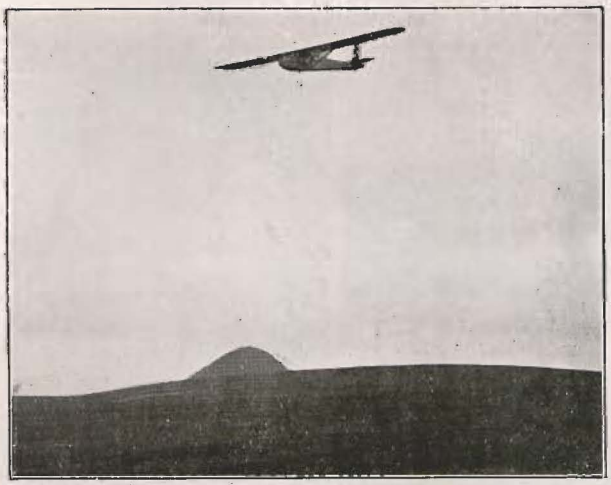
A BRITISH HEIGHT RECORD.

One of Mr. Buxton's recent flights at Ingleby Greenhow, during the Harrogate Club's camp there at Easter, constitutes a new British height record, in that he climbed to 2,350 feet above his starting-point. The machine was the SCUD II., designed by Mr. L. E. Baynes and constructed by Messrs. E. D. Abbott, Ltd., of Farnham, Surrey.

MR. GORDON ENGLAND.

Mr. E. C. Gordon-England, who was Chairman of The British Gliding Association during the first three years of its existence, has become a Director of the Vacuum Oil Company.

THE DARING ONE.



This photograph has been sent us anonymously, with the description: "That 'Daring young Ulsterman' soaring 'Kassel 20' on the slopes near Slemish Mountain where St. Patrick once herded his pigs."

TO TOUR THE ALPS.

An Austrian glider has been fitted with a 7 h.p. auxiliary motor and entered for the forthcoming Circuit of the Alps, which has been organised by the Aero-Club of Austria, and is to take place from May 16th to 21st. If it is to be flown by an experienced sailplane pilot and not by a mere power pilot, it will be interesting to see what sort of a show it can put up in comparison with the aeroplanes—or perhaps we should say, the *other* aeroplanes.

A Long Cable.—The gliding section of the Touraine Aero Club (France) have begun to use a cable 1,000 metres (3,300 feet) long for launching by winch. So far, a two-seater with pilot and passenger has got up to 710 feet, and a single-seater to 790 feet, which is the record up to the present.

Gliding Off the Water.—The Milan firm of Bonomi, whose productions were illustrated and described in THE SAILPLANE, Vol. III., No. 18 (p. 216), are now modifying their secondary type glider BIANCONE for towed flight over water. A trial was recently made on Lake Como, when one of these modified gliders was towed behind a motor boat and rose to 300 feet.

To Cross the Black Sea.—It is announced in the Press that a glider is to take off from Sebastopol in July in an attempt to fly over the Black Sea to Turkish territory.

A Blind Climb through Cloud.—Hanna Reitsch, flying a sailplane at Grunau, was recently aero-towed up to 2,300 feet, cast loose, entered a cloud, and climbed to 5,250 feet, flying blind all the time inside the cloud.

Belgian Gliding Meeting.—The week's gliding camp at Hébronval was unlucky with the meteorological conditions; owing to unfavourable winds, no really good performances could be put up.

CORRECTIONS.

In the last issue of THE SAILPLANE, p. 91, 10 lines from bottom of first column: for "fictional eddies" read "frictional eddies."

In caption to photograph at top of page 94: for "auto-tour" read "auto-tow." Mr. Raddings "toured" in the glider, not in the auto.

THE R.R.G. REORGANISED.

The Rhön-Rossitten Gesellschaft, the chief governing body for motorless flying in Germany, has undergone far-reaching changes in its constitution after some nine years of useful existence. Its work is being taken over by the D.L.V., the national flying organisation, which has itself undergone many changes under the present political régime. The Research Institute of the R.R.G., which has done a great deal of very useful technical and scientific work, is to become the "German Research Institute for Soaring Flight," with Prof. Georgii at its head. Dr. Georgii will also take over the general direction of the gliding activities of the D.L.V. Count Ysenburg, who was formerly Chief Secretary to the R.R.G., is to go to Berlin, there to look after the central section concerned with motorless flight.

This news comes from the foreign press; we have not, so far, received any official information from the authorities concerned.

It is sad to think that an organisation which has had such a romantic career has had to undergo dissolution. It is the R.R.G. which saved German gliding from falling into oblivion, gained for it the respect of the world, and developed the art of soaring to a pitch which would have appeared unbelievable ten years ago, so opening up a whole new world of adventure, most of which it still waiting to be explored.

A BRITISH "KLEMM."

The time may soon come when, in the interests of further research into cloud-flying, the towing of sailplanes up to cloud level behind power machines will have to be practised on a much more extensive scale in this country, where practically nothing has been done since the sporadic outburst of aeroplane-towing in connection with the *Daily Mail's* cross-Channel prize. In fact, we know of one power pilot who is building himself a GRUNAU BABY (in his dining-room, or is it his drawing-room—or both?) with the express object of getting his friends repeatedly to tow him up to cloud level and leave him there to try his luck.

Since the well-known KLEMM low-wing monoplane has proved itself on many occasions particularly suitable for towing sailplanes, on account of its slow minimum speed, low running costs, and low price (there's no money in gliding!), we are interested to hear that a new company, the British Klemm Aeroplane Co., has been formed to construct and market the type in this country. The works are to be at Hanworth, and the first machines are expected to be ready in June.

But we are sorry to see that nothing less powerful than a 75 h.p. POBJOY is to be fitted, even to the two-seater model. In fact, the history of the KLEMM's development, as set out in the Company's circular, should be a lesson to those who continually hanker after "fitting a little engine" into every glider that they see, and think to rebut any accusation of sacrilege by insisting that it will be "only a little one."

The KLEMM, as is generally admitted, appeared on the scene as a direct result of German experience in the design of gliders. In 1925, when it first came out, it was fitted with a 20 h.p. engine; so equipped, it went into production and was being flown throughout Europe, including, we are told, flights over the Alps at altitudes of over 12,000 feet. Then somebody thought it would perform more satisfactorily with a stronger engine, so one of 40 h.p., we believe, was fitted. Finally, last year, it was found that a 75 h.p. POBJOY gave it an even better "performance." Of course it did. Its performance could be still further improved by fitting it with a Napier LION or a Rolls-Royce "R," provided its structure were made three times as strong and ten times as expensive. But in 1925 the owner of a KLEMM had to learn to *fly* it; he couldn't just open the throttle wide and gate-crash into the sky.

THE "SCUD" AT INGLEBY GREENHOW



EASTER AT INGLEBY. LEFT:—Buxton in the "Scud," taken during the flight which broke the height record. RIGHT:—Dewsbury soaring in the "Scud." BOTTOM CE NTRE:—Rigging the "Scud." TOP CENTRE:—"Slingsby said they couldn't cook him some bacon and eggs, so they did just to show him." (Photographs by Mr. Noble.)

J. P. Dewsbery and G. M. Buxton were invited by Messrs. Slingsby and Addyman to go to Ingleby Greenhow for Easter, and took the SCUD II. The Ingleby Greenhow site consists of a huge bowl facing N.W. The eastern side of this bowl extends considerably further out than the other side, and, as its slope runs north and south, it can be used in a west wind.

The SCUD arrived on the Thursday, but not in time to use a short period of favourable wind at mid-day; which was unfortunate, as there appeared to be very favourable cloud conditions. On Good Friday the wind was light and in the wrong direction, but the rest of the party arrived, and Messrs. Noble, Solomon and Sproule pitched their tents on the top of the hill, about 200 ft. above the patch of snow, so as to be on the spot to help. The less hardy Southerners pitched their "base camp" in a wood about 700 ft. lower.

On Saturday a fine west wind blew, and the SCUD was launched with G. M. Buxton from about half-way along the east side of the bowl. Wind west at 25-30 m.p.h. on the ground.

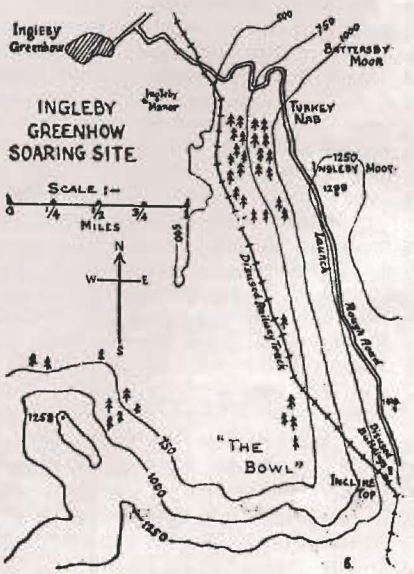
The up-current was extraordinary; the SCUD immediately climbed about 1,700 ft. and there began to meet wisps of cloud which were forming on the hill. For some time it was possible to fly among them, as the sky and the ground were alternately visible, but later a thick patch came up, so that the pilot, being without blind flying equipment, immediately started a steady dive and came below. But he found it possible to fly forward away from the hill until in front of the position where the clouds were forming, and there he rose to 2,360ft., which appeared to be the ceiling.

The SCUD then landed, and pilots were changed; unfortunately the clouds cleared, but without their help the SCUD (J. P. Dewsbery) climbed to 1,740 ft. The pilot then began an investigation of the bowl and found that there was an up-current right up to the end, in spite of the fact that the wind was blowing straight over its west side. Apparently the east side of the bowl projects far enough into the plain to divert a powerful stream of air right into the bowl when the wind is west.

G. M. Buxton took off for the third flight and repeated the flight of the previous pilot with the same results; he then attempted a flight across the bowl and found he was gaining height. Finally a maximum height of 1,810 ft. was reached in the middle of the bowl, where one would expect up-currents and down-currents to be contending. This is difficult to account for, and various theories of a continuous corkscrew vortex existing in the bowl were advanced. The pilot then tried to use a bank running N.E. from the end of Turkey Nab, but finding his sinking speed to be greater than that of the SCUD in still air, he returned with haste.

For the fourth flight conditions were worse; the wind had dropped considerably and there were no clouds. Dewsbery tried flying forward from the hill, and on one occasion appeared to have crossed the bowl completely. He was more cautious than the previous pilot, who nearly failed to regain the hill on one occasion. During this flight, Slingsby (who unfortunately had to go to business in Scarborough that morning) arrived and rigged the FALCON, and did a flight of about 20 minutes, during which he gained a considerable height, in spite of an exciting time when he lost height after the launch during a lull in the wind.

The SCUD then landed with Dewsbery and was taken off by Buxton, after which the FALCON landed and was taken off by Dewsbery. The ceiling then was 800—1,000 ft. without clouds, but later some clouds again began to form on the hill, and the SCUD rose about 600 ft. more.



These were the last flights of the day, as it was dusk and all agreed that they were tired enough to stop. The "advanced camp" had produced an excellent meal for cold pilots during the afternoon.

Extract from Log Book of "Scud."

Date.	Place.	Take-off at	Duration h.m.	Height (feet).	Pilot.
15.4.33.	Ingleby	11.35	—.45	2,360	G.M.B.
		12.40	—.55	1,740	J.P.D.
		2.50	1.55	1,810	G.M.B.
		4.55	2. 0	1,520	J.P.D.
		7.10	—.20	(1,500?)	G.M.B.

The wind during this day was not in the best direction for the site, so the possibilities of the place can be judged. It was interesting to be able to get a good idea of the effect of clouds forming on a hill, and it seems that they increase the upwind decidedly, but, when they are thin, do not have any independent usefulness of their own.

There were no more soaring winds on Sunday or Monday.

The "advanced camp" of Sproule, Solomon and Noble had spent their holiday there in order to help with our machines; Mr. Addyman had come over from Harrogate with a son, and Watson drove over from York. This made it possible to launch and handle machines, as the moors are otherwise lonely, and we can only express our deepest gratitude for their kindness and say how much we enjoyed their company. G. M.B.

AEROBATICS AND MOTORLESS FLIGHT

By ROBERT KRONFELD.

[*The following is a report of a lecture given in Dresden on March 19th, 1933, before a meeting of the D.M.S.V. (German Model and Soaring Flight Association), by Robert Kronfeld, who is now Director of the Aircraft Construction Workshops in Weimar Engineering School. The translation is from the account given in "Flugsport."*]

Beginning with soaring over slopes, present-day soaring flight has developed to the stage of soaring under clouds, and further, through thunderstorm flying, to thermal-current soaring. These four methods of flying can, with proper precaution, be carried out with all high-performance aircraft hitherto in use, whose structural strength, however, is almost throughout none too great. Many times one has been driven to the conclusion that practised pilots—and only they should fly high-performance aircraft—must be in a position to avoid, by careful piloting, subjecting the structure of the machine to too great overloads.

In this respect thunderstorm flying is already a borderline case, for according to my experience it would seem to be not *always* possible to get through without at least occasional blind flying, as the fact must be reckoned with that clouds may form unexpectedly in front of the thunderstorm without one being able to circumvent them. It goes without saying that soaring flights *in* thunderstorms involves, as in those which Kegel and Groenhoff have carried out, the most dangerous and difficult achievements in the whole of flying, and are, in my opinion, to be avoided in all circumstances, just as soaring *in front of* a thunderstorm front can be recommended as a comparatively easy problem.

The newest development of cloud soaring, which for some years has been carried out only *underneath* cumulus clouds (though in recent times they have more often been approached and deliberately flown into with the intention of climbing up through them) makes blind flying absolutely necessary. For this reason the systematic training of sailplane pilots in blind flying, such as is now being tried out by the Rhön-Rossitten Gesellschaft, is especially desirable and gratifying. But while one is occupied with blind flying, at the same time one must not forget aerobatic flying in the flying education of a soaring pilot.

In the special art of blind flying in soaring flight, in which the cloud is nearly always of great thickness, a pilot untrained in blind flying who is *au fait* with aerobatics, and has a machine that will stand up to aerobatic stresses, will always be safer than a pilot trained in blind flying but lacking all but one of these essentials.

In the past Rhön meetings one noticed various cases in which otherwise very good pilots completely lost control of the machine, and even knowledge of their position in space, as a result of getting "aerobatic" flying attitudes, chiefly through attempts to fly in clouds. This especially concerns the inability to get a machine out of a spin, which has already led to very regrettable accidents. Again, there was a case in which a pilot, on coming out of a cloud, unintentionally performed three complete turns before he had the machine once more under control. Also the immediate recognition of the attitude of the machine during a steep spiral, or on going into a dive, is of importance in this connection. A pilot who has been trained in aerobatics will in every case regain control of his machine with much less loss of height than one to whom all these flying attitudes are unknown. Here the same argument applies as for instance in the aerobatic training of commercial aeroplane pilots. For this reason dangerous flying positions can be attained much more suddenly in motorless flight, *in spite of blind flying training,* than in powered flight. In the same way, in critical situations such as ice deposition, hail and even heavy rain, the failure of the blind flying equipment has to be reckoned with.

Apart from these demands for aerobatic flying, yet another development leads in the same direction, namely, the technical. Already the demands of thunderstorm flying and cloud-flying make an increase necessary in all four load factors for high-performance machines. For the practice-machines the same requirements are made for auto-towing and aeroplane-towing. A construction which will stand up to every extreme demand upon it in auto- and aeroplane-towing is *a priori* suitable for aerobatic flying, at least as far as concerns strength factor requirements. The special towed-flight types developed by Wolf Hirth in Grunau and my many-purpose sailplane evolved in Weimar will serve as examples; the latter was tested systematically with the smaller wing in all the simple aerobatic positions. Aerobatic flying with sailplanes which do not permit of easy escape from the cockpit with a parachute is unconditionally to be condemned. The carrying of a parachute must be made obligatory for stunt-flying attempts in a sailplane. This applies specially to a case which has received all too little attention, namely, flying backwards as a result of abortive attempts at such evolutions as looping, etc. Otherwise machines, even when suited for every aerobatic manœuvre, can fall to pieces as a result of the breaking away of tails, control attachments, and so on.

The low sinking rate and the small loss of height when "falling out" of an aerobatic manœuvre render the sailplane specially well suited for training in aerobatics. I have more than once established the fact that loss of height when looping (in a sailplane) is not greater than with the aeroplanes at present used for aerobatics when carrying out a not more perfect performance of the same evolution. Starting at a height of 1,000 m. (3,300 feet), a complete programme of stunt flying can be carried out in a sailplane. The absence of the disturbing influence of the engine, just as the bringing of it into use, possesses certain advantages.

It also follows that, from the point of view of giving the pupil the most comprehensive flying training possible, aerobatic flying is desirable in motorless flight. This is especially the case, in that motorless flight is also looked on as a preparation for powered flying. A pilot trained in high-performance soaring, blind flying and aerobatics in sailplanes is surely to be regarded, from a sporting point of view, as standing in no way inferior to an aeroplane pilot. The possibility of attaining the highest peak of a flying education in motorless flight must give new encouragement to even the youngest of its devotees.

SOARING MAPS

By KENTIGERN.

The soaring possibilities of a number of sites in England are known to a few people who have tried them, but it is difficult for others to choose where to go because of the lack of any kind of soaring map.

The only definite scheme that I have seen suggested is that by Captain Latimer-Needham, in which a large number of qualities, terrestial and aerial, are given marks (as in an examination) and the value of the site is assessed by the total number of marks. Though this method may be useful for some purposes, it suffers from the disadvantage that, for special choices, actual information about specific points is required, and this is not given.

The very necessary facts about a site are:—

(1) Whether it may be used.
(2) Accessibility by road.
(3) Surface for landing.
(4) Safety for flying.
(5) Possibility of soaring.

Of these, Nos. 1 and 3 may be stated in words; No. 2 can be seen from the 1in. Ordinance Survey; No. 4 can usually be resolved into particular danger spots which can be marked on the 1in. O.S. with, I suggest, a cross; or, in the case of obstacles like high tension wires, the obstacle should be shown on the map.

The problem of showing the fifth fact is the most difficult, but the information can easily be got, recorded and made use of, if the following practical method is used. A more scientific method might be better in the end, but is too elaborate for the usual poor and busy club to follow at present.

For some years we may expect a large class of efficient soaring training machines such as KASSEL 20, GRUNAU BABY, FALKE, and Kassel two-seater SORGENKIND (when on big sites). The HOL'S DER TEUFEL is purposely omitted as having special characteristics. It could be assumed that the machines given would soar in—say—6/5 of the wind speed necessary for PROFESSOR, SCUD or WREN.

The information wanted for No. 5 is

(a) the minimum speed for soaring;
(b) the wind direction;
(c) the soaring slope affected.

(c) is shown by lines running into the plain with a bracket to show the end of the best beat; (b) is shown by the wind direction being given in letters at the end of the lines:

N.W. means winds from N. to W. (90 deg.),

n.w. means winds from N.N.W. to W.N.W. (45 deg.),

and (a) is shown by a figure under the wind direction which gives the minimum wind speed (in miles an hour) in which a "soaring training" machine will soar when the wind is in the direction given. It is possible to soar when the wind strength in the extreme directions (i.e., N. or W. on a "N.W." slope, N.N.W. or W.N.W. on a "n.w." slope) is 3/2 of this speed.

On a complicated site it would be sufficient to show only the best slope in each direction.

In order to avoid misleading results due to "thermals," a slope would only be marked as suitable for these machines in a given wind speed, if the flight lasts half an hour and the altitude does not vary greatly.

The sketch shows a map marked as suggested. Roads, etc., would, of course, already be shown as well as the contours that are sketched. The additions are:

High-tension line—self-evident.

Cross—N.W. Danger here (eddy probably) in winds between N. and W.

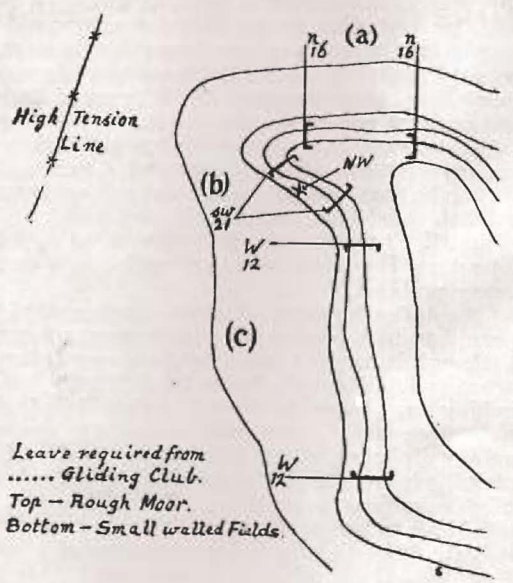
Bracket (a) means:
soarable in wind of 16 m.p.h. N.,
" " " " 24 m.p.h. N.N.W. or N.N.E.

Bracket (b):
soarable in wind of 12 m.p.h. S.W.
" " " " 31 m.p.h. S.S.W. or W.S.W.

Bracket (c):
soarable in wind of 12 m.p.h. W.,
" " " " 18 m.p.h. N.W. or S.W.

The comments at the bottom are also self-evident.

If this scheme were considered suitable, it might be possible to print a page of such maps (made by keen gliding clubs of their own sites) in THE SAILPLANE occasionally, and have reprints of the page available for sale at a low price so that gliding clubs and groups would be able to collect all the information about sites.



SOME GERMAN DISTANCE FLIGHTS

DARMSTADT TO NECKARZIMMERN.

On March 31st, at 10.25 a.m., Heinrich Dittmar started off from the Griesheim aerodrome, Darmstadt, towed by the KLEMM aeroplane belonging to the R.R.G. He flew the CONDOR, the machine which was designed and built by himself and his elder brother Edgar, and flown by them both in last year's Rhön Competitions. In the towing aeroplane was Peter Riedel, who, before starting, had given Dittmar advice as to what to do. The pair proceeded southwards to Eberstadt, where the sailplane cast off under a cumulus cloud, circled up under it, and climbed thus from 1,400 ft. to 2,000 ft. Dittmar then proceeded along the "Bergstrasse," a range of hills and mountains bordering the east side of the Rhine valley, which has been used several times before for long-distance soaring flights. Making use of further cumulus clouds, he passed over Heidelberg, 30 miles from the casting-off point, at 4,100 feet. He then turned east and flew along the Neckar valley, with the help of more clouds, until, when over Eberbach, he reached a maximum height of 4,950 feet. From there he flew on, in a long glide, to Neckarzimmern, landing in a meadow at 1.10 p.m.

This flight earned Heinrich Dittmar the right to wear

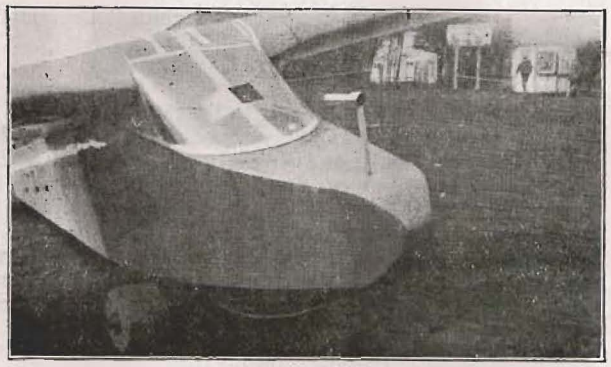
the high-performance badge, and he is now the youngest pilot to do so.

While this flight was being carried out, Krebs (an instructor at the Wasserkuppe) was towed up, likewise by Riedel, from the Griesheim aerodrome in a FALKE, cast off, and in seven minutes rose from about 2,000 feet to 6,100 feet; but unfortunately he was not carrying a barograph, so no official record could be established.

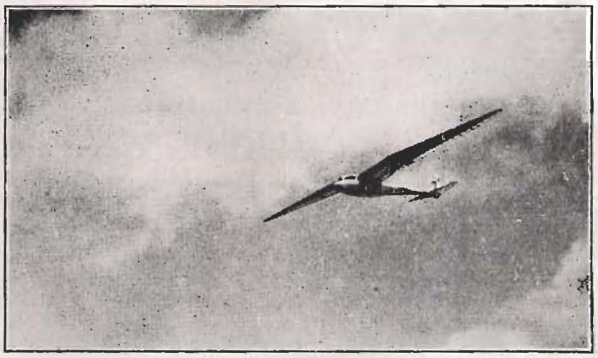
We hear, from one who was present on the aerodrome at the time, that it was a day of unusually active cumulus formation; also that Krebs, when he found himself going up in this extraordinary way, and without a barograph, came back to earth as fast as he could to get one. He was then towed up again, but it was too late; the best part of the up-current had vanished, although the cloud was still there.

DRESDEN TO GORLITZ.

On the 1st of April a flight was carried out from Dresden to Görlitz, about 60 miles, by Muschik in the sailplane D-B 10, designed by and belonging to the Dresden Academic Flying Group. This machine took part in last year's Rhön Competitions, and was remarkable for its enormous transparent cowling (of cellophane or similar substance) covering the cockpit.



The "D-B 10."



The "Condor."

Muschik was towed by an aeroplane up to 3,600 feet, and then cast off. He reached a height of about 5,000 ft. on three successive occasions, and landed on the Görlitz aerodrome after 2½ hours in the air. The direction of the flight was east by north, and there was a west wind.

DARMSTADT TO MIMBACH.

Peter Riedel's flight of 74 miles, mentioned in our last issue, was carried out in a south-westerly direction. Starting from the Griesheim aerodrome on April 19th, shortly before 1 p.m., he was towed up behind an aeroplane, cast off, and immediately crossed the Rhine. After 40 miles he passed over the Donnersberg (2,254 ft. high), then over Kaiserslautern, and finally landed at 4.30 p.m. at Mimbach, near Blieskastel in the Saar Territory, close by the French frontier.

This flight was also carried out in the CONDOR.

BACK TO CHANUTE

Early last year there fell the centenary of the birth of Octave Chanute, the French-born American engineer, who started experimenting with gliders on the shores of Lake Michigan shortly after Lilienthal began gliding operations in Germany. A short account of his work appeared in THE SAILPLANE, Vol. 3, No 6, and it was there pointed out that, although his machines were so lightly built (the finally-evolved biplane weighed only 22 lbs.), they were flown repeatedly in winds up to 30 m.p.h. without accident either to the glider or to the pilot, whose own legs formed the under-carriage. It is only fair to mention, however, that the later types were fitted with elevator and rudder controls; the pilot was even provided with a seat, though the flights never lasted long enough for him to use it.

A recently-built glider of "Chanute" type, controlled by movements of the body, is described in *Les Ailes* by M. Jaques Fage, who constructed it himself in five working days. The framework is built entirely of poplar, well dried and of straight grain; the wings are covered with unbleached cotton fabric, and the tail surfaces with what he calls "schirting." The glider, which is a biplane, has a span of 15 ft. 1 in., length 9 ft. 7 ins., height 3 ft. 11 ins., and wing chord 3 ft. 1½ ins. Its weight is 37½ lbs.

M. Fage found that, for keeping the glider in its proper attitude in flight, it was necessary to place the hands just at the machine's centre of gravity. The disadvantage, compared with the normally-controlled glider, of the clumsy method of control by body shifting, he found to be largely offset by the fact that, in a CHANUTE glider, one feels the slightest movement of the machine and can thus take immediate steps to counteract it. Of course, he was soon tempted to try it out in a really strong breeze, with the result that, on one occasion, a sudden change in the wind direction nearly swept him into a pond, and he just managed to land in time among the rushes at the brink. On another occasion, a sudden squall lifted him on high and then left him stalled 30 feet up; he and the glider both received a severe shock on coming to earth, but neither were damaged.

A short time ago, at Gossau, near Zurich, a glider meeting was held which was confined entirely to machines of CHANUTE type. According to a Swiss correspondent of *Les Ailes*, 16 competitors entered with seven machines, and the awarding of points took into account not only the duration but the quality of the flights. Most of the competitors were beginners who had constructed their machines after the plans of one M. Aecheli, who has been specialising in CHANUTE gliders since 1915. This designer has produced nine different models, of which the last, the HAFA-9, is characterised by great simplicity of construction and is very cheap to build.

We would suggest that there is room for gliders of this type. With all this excitement over the improving technique of high-performance soaring, the other end of the scale is apt to be forgotten. Yet one of the chief attractions of plain gliding, as distinguished from the high-performance stuff, is that it enables people to get into the air who otherwise could not afford to fly at all. Some time back we received a letter from three enthusiastic young people who wanted to build a glider. They had neither the experience nor the funds to construct a complicated and heavy thing such as the usual primary trainer, nor could they have relied on collecting a team to launch it. So they submitted a design of their own. It was impossible to advise them to go on with it; the wings would have broken up as soon as it got into the air. What such people want is something of type evolved by M. Aecheli. And as they cannot get it, these three enthusiasts have probably by now turned to wireless or motor-bikes. Aviation has lost them.

CORRESPONDENCE

THE "SCUD": A DISCLAIMER.

Sir,

We notice that in the Newcastle Gliding Club report in the issue of THE SAILPLANE of April 14th, it is stated: "The test flight of a 'SCUD type' machine resulted in the collapse of the seat, which locked the control gears and burst the side of the cockpit."

We wish to point out that this machine is not a SCUD and has not been made from SCUD drawings; it is presumably an attempt to copy the SCUD by amateur construction without drawings, as neither a SCUD nor a set of drawings has ever been supplied to this Club.

We wish to protest most strongly against the type name "Scud" being used for a machine the design or construction of which we cannot be responsible for in any way.

In view of the shortcomings the machine has already experienced, it is hardly fair to use the type name and bring real SCUD machines into discredit.

We have noticed that this has occurred with other type machines not constructed to the correct designs, and feel the practice should be severely discouraged. We trust THE SAILPLANE will assist in this matter in future.

E. D. Abbott, Ltd.
EDWARD D. ABBOTT, Governing Director.

THE B.G.A. STRENGTH FACTOR REQUIREMENTS.

Sir,

Mr. L. E. Baynes, by his letter in the last issue of THE SAILPLANE, has earned the gratitude of the B.G.A. and of other thinking members of the gliding movement for placing the benefit of his experience at their disposal. Constructive views are not often offered, and for this reason they are all the more welcome.

In commenting on the various points raised in Mr. Baynes's letter, it is apposite that a brief outline of the history relating to load factors for gliders should be given. At the commencement of the British gliding movement, in 1929, it was necessary to decide on provisional factors so that the design of machines that would meet with the B.G.A.'s approval could proceed. The late Sir Sefton Brancker, our first President, persuaded the Air Ministry to delegate control of gliders to the B.G.A., but it was agreed that the airworthiness regulations should be approved by the Air Ministry before final adoption.

The original load factors were 5.0, 3.75 and 1.0, for C.P.F., C.P.B. and L.N.D. respectively, and it was decided to keep the method of stressing similar to that employed for power aircraft in this country, so that designers should not be confronted with greater difficulties than could be helped. After some time, experience indicated the desirability of increasing the factors to some extent and, after considerable discussion, the B.G.A. caused their modification to 6.0, 4.0 and 1.0, not, it may be mentioned, without provoking certain adverse criticism!

During 1932, the question of raising the factors further was again considered, together with a proposal to adopt the German method of stressing, but eventually it was decided to make no change. About the same time, similar suggestions had been made in Germany, and, in fact, sailplanes had been designed to a C.P.F. factor as high as 10. During my visit to the R.R.G. Competitions in the summer of that year, therefore, I particularly sought for information on this point, and was informed that it had been decided that a C.P.F. factor of 6 was considered sufficient for all flying, including aeroplane towing within a certain limiting speed to be determined for each type of machine, according to its strength qualities. Nevertheless, there is no reason, either here or in Germany, why sailplanes designed specifically for strenuous flight conditions, such as may be encountered in clouds, should not be constructed to give higher strength figures than the minimum as laid down.

The C.P.B. case, referred to by Mr. Baynes, relates to a forward speed of twice stalling, since this appeared fairly consistent with the equivalent condition for powered craft. The same criterion is employed in the U.S.A., although this was not known until after the case had been determined by the B.G.A.

Lastly, the B.G.A. is in full agreement with the view expressed regarding the carrying of parachutes and a recommendation to this effect has already been issued. Unfortunately this is an expensive item, but the importance of its provision for flights in clouds, high, gusty winds and turbulent conditions, cannot be too highly stressed. The growing list of sailplane "caterpillars" and the number of casualties that has already taken place provide sufficient proof of the essentiality of this measure of safety. It is believed that parachutes are to be compulsory in this year's competitions at the Wasserkuppe and also for aero-towed flight.

In again thanking Mr. Baynes for all the trouble he has taken, he may be assured that his views will be given careful consideration by the Technical Committee.

C. H. LATIMER-NEEDHAM,
Chairman, Technical Committee.

HUISH CRITICISED.

Sir,

I have written to the B.G.A. to let them know that all the private owners that I have met think that the hill at Huish is too small; and in reply the Secretary writes that the 1-in. Ordnance Survey map might give the impression that it is, but that there are possibilities for some good duration flights.

It seems necessary to state that duration flights are a form of training for distance and height flights, which are the ambition of good soaring pilots and the criterion of progress.

As no one can hope to learn these latter without a suitable ground, it seems that any pilot who desires real soaring or values national prestige should go to a good site this year and practise them, rather than spend his time at Huish.

G. M. BUXTON.

[The second paragraph of Mr. Buxton's letter is, of course, only too true, and cannot too often be insisted on. But for hill-soaring at least the Huish site, which we have seen, is an improvement on what most Clubs have to put up with.—ED.]

THE "TERN."

Sir,

Your recent Editorial, in the issue of the 14th ult., *re* what some one else has done in some other country, has set me thinking.

In a subsequent issue appears the mention of the forthcoming G.A.P.A.N. Civil Air Display at Brooklands.

I have recently acquired an interest in the TERN sailplane, which has now been completely repaired here at Guildford. This machine, as you may know, has been stressed to withstand aero-towing up to 90 m.p.h.

I do not know if you are aware I was aero-towed in the R.F.D. sailplane over the Schneider course in 1931, and incidentally had the most hectic 100 minutes of piloting any man could wish, or rather not wish to have. This was due, however, to a pronounced warp in the port wing and is in itself another story.

Briefly, my idea in writing you now is to suggest that the TERN be aero-towed at the above display and, if there are any suitable clouds about, show what a British pilot can do on a British machine.

I am one of those miserable people who have slope-soared almost enough, and long for that "joggling feeling" with a white patch over one's head.

Would you care to take this matter up with the G.A.P.A.N and see what they say? The machine we used in 1931 was a 504 LYNX AVRO belonging to a Mr. Roach, and, I think, he kept it at Chichester. It was fitted with special towing gear, but it struck me at the time as being rather superfluous.

A. H. REFFELL.

THE HUMAN EAR AS VARIOMETER.

The possibility of the ear-drums of birds serving the purpose of a variometer and enabling them to find up-currents has been suggested more than once by theorists.

An article in THE SAILPLANE of December 30th, 1932 (p. 270), discussed the possibility of the human ear-drum being made use of in the same way.

Wolf Hirth, who has already written to express his interest in that particular article (he having long believed that birds do use their ear-drums in the way described), now writes to say that on March 29th last he was able to put the matter to test as regards his own ears. He was towed up in a sailplane behind his own KLEMM, cast loose at 650 ft., and lost about 150 ft. of height. He then, he says, *heard another sound in his ears*, began circling immediately, and in the course of 20 circles gained about 1,800 ft. more height. Twice more the same thing happened, and he was able to regain height which he had lost. The flight lasted 46 minutes; he says definitely that "thermic bubbles" were made use of in order to climb, and, apart from a barograph which was out of sight, he carried *no instruments at all* except his own ears. He does not know what the sensation was, but knows definitely that it was something. The flight was witnessed with much astonishment by the towing instructor and seven sudents at Grunau.

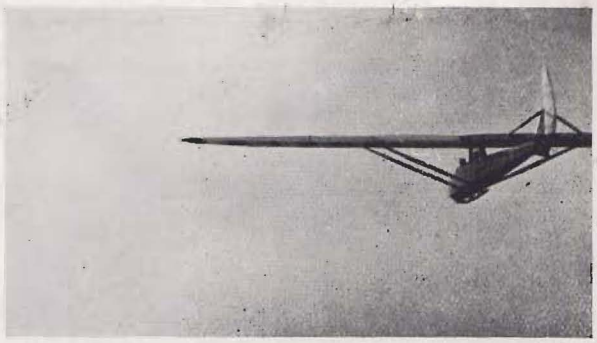
THERMALS AT MANGALORE.

Mr. M. V. Laurie, who wishes to be remembered to his fellow-members of the London Gliding Club, turns green with envy at the arrival of each issue of THE SAILPLANE, and his only consolation is to watch the vultures soaring in "thermals."

There are 34 Europeans at Mangalore—quite enough to form a gliding club, if they didn't prefer golf and tennis. But there are marvellous soaring sites all along the Western Ghats, where the hills rise 2,000 feet straight out of the plains, and face the prevailing S.W. wind. At this time of year one could soar from the border of the Bombay Presidency to Calicut (560 miles) contour-soaring the whole way. Then, after crossing the Palghat gap by "thermals," it would be possible to carry on down the Travancore coast to the top of India (another 250 miles). The chief difficulty, he says, is landing grounds. All the country that is not dense forest is cut up into paddy fields, all terraced with "bunds" round them, about a foot high, to keep the water in. In the dry weather (up to June) the best places to land would be the wide, sandy river-beds, of which there are plenty.

So, next time Mr. Laurie comes on leave, we shall not be surprised to find him enquiring whether anyone has a glider for sale.

NEWS FROM THE CLUBS.



The London Club's "Kassel" Two-seater.

GOOD WORK EVERYWHERE AT EASTER

BRADFORD AND COUNTY GLIDING CLUB.

EASTER CAMP: Good Friday, April 14th.—Wind W.S.W., 3 m.p.h.. Seven or eight early arrivals rigged REYNARD and DICKSON Intermediate and trimmed them up in the hope that the wind strength would increase, but after lunch, as there was no improvement, the novices were given "a day" on Dobrudden Flat and Hope Hill. Christian attempted his "A"—his fifth day's flying—but with no assistance from the wind; his best was only 26 secs. Jones made a masterly 60 secs. on the Eldwick slope, thereby gaining his "A" after an enforced break of nearly eighteen months in his gliding activities. Then our machines were ballasted in a sheltered corner for the night.

Saturday, April 15th.—Wind W., 35 m.p.h. The next morning a gale howled around us, casting handfuls of rain derisively in our faces and shrieking, at spasmodic intervals, "Yesterday, you prayed for wind! Now, you've got it!" We had, and it was 7 o'clock in the evening before it blew itself out to an erratic 15 m.p.h.

Then Christian again attempted his "A," but the gustiness was more than he could manage, and his best was 27 secs., so Holdsworth and Hastwell were given "revivers" before the cookhouse whistle called us off the field.

Sunday, April 16th.—Wind W., 10—12 m.p.h. Things looked promising for an ideal day. We were no sooner on the field than we had the pleasure of welcoming members of the Nottingham Gliding Club, including Messrs. Button (chairman) and Bullivant (hon. sec.). During the day we were able to show them all stages of our training, and in the afternoon Stedman did the day's best in DICKSON with 1 min. 47 secs., while Sharpe came a good second with 1 min. 45 secs. Holdsworth did his second qualifying flight for the "B" with 60 secs. on REYNARD, and after all our novices had been lifted clear of the ground—even our "man of lead"—he finished up the day by achieving his "B" with 1 min. 8 secs.

Monday, April 17th.—Wind E., 5 m.p.h. It was cloudy and cold to-day, though with little wind, and after a delayed start owing to rain our novices were in for another good day. By evening four of them had been brought up to the Hope Hill stage.

Tuesday, April 18th.—Wind E., 10—15 m.p.h. The last day was bitterly cold, and we did our flying between showers of hail and sleet. Christian was first off the Reservoir slope, with 31 secs., for his "A," after which we set about our "man of lead" and lifted him clear of the ground seven times in succession with the help of the strong breeze, giving him a total actual flying time of 60 secs.

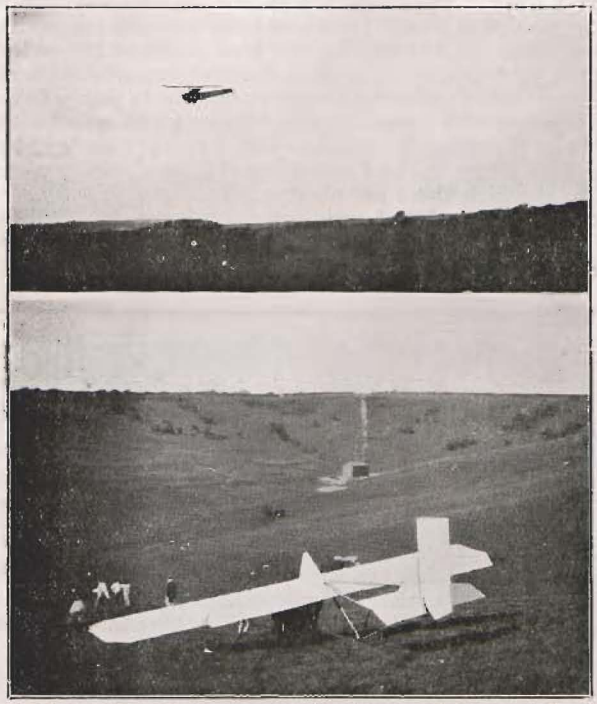
The more recent of our "B" pilots were then given training on the DICKSON Intermediate. Hastwell failed to make his turn at the start and landed on the hill crest, breaking two starboard landing wires, and Cox, misjudging his landing, came in too fast and struck a half-buried rock. Believe me, he will feel that bump for days. I know it. He was also responsible for the repair of two port landing wires. Both Robertson and Holdsworth performed excellently, the latter no doubt having benefited from his experience with his own machine, showing us how to make sharp turns and land without damaging even a blade of grass.

So ended our Easter Camp after much good fun, and

with many regrets that Easter's "bungy" will only stretch for five days. It has been a splendid holiday, with lots of good flying in spite of curtailments owing to spells of unsuitable weather; two "A" certificates and a "B," plenty of excellent meals from the hands of Mrs. Cox, the wife of our hon. secretary, and no end of hearty "chin-wag" between dinner and bedtime (which was always early—the next morning).

From Friday to Tuesday we accomplished a total of 73 launches, and our only mishaps consisted of a few broken landing wires. Roll on Whitsuntide!

DORSET GLIDING CLUB.



ABOVE:—Mr. Wells soaring the Club's "Dorsling." It is a modified "Prüfling," not a new tailess type. The tail happens to match the sky. BELOW:—The Club's site, and the "Dagling" being rigged.

SOUTHDOWN GLIDING CLUB.

Sunday, April 16th.—The reconditioned super-DAGLING, formerly known as the TWIN (from its dual use as trainer and also a secondary machine with the detachable fitments in place) has now a permanently-fixed nacelle of attractive and, it has proved, highly efficient lines. Short test-flights were made by Hatcher, Lawford and Jameson, and the machine was pronounced to be a "star performer." Further good work was done with the two-seater, Dr. McGlashan taking his turn as pilot for several trips, and demonstrating that his recent accident *off* the gliding field has not affected his skill *on* it! Reffell met a mysterious down-draught, but by superb piloting lifted himself and his passenger over a fence with nothing more than a scratched wing-tip.

Easter Monday, April 17th.—This was a day of days! Wind, N.E.; at ground level 15 m.p.h. and at 250 ft. 25 m.p.h. The NAGLING (the machine just mentioned) was soared by all who were launched in it, and another "C" was gained, by J. A. Lawford, who put up a very pretty show with good flat turns and an evenly-maintained altitude. Reffell was auto-launched from the plain below, and, doubling back, made contact with the hill-range and soared *ad lib.* in the two-seater, hovering, apparently at will, at almost any spot along the crest, and some two hundred feet above it. These performances he repeated with passengers, giving instruction in the art of soaring for a quarter of an hour at a time. Hatcher, in the NAGLING, tested the rigidity of a fence with the tail of his machine, and lost the latter!

FURNESS GLIDING CLUB.

Easter.—It had been hoped to get the B.A.C. II. and R.F.D. up to our site on Black Combe on Thursday evening. However, the driver of the towing car had a slight accident, and was unable to do the job until Friday morning—a glorious, sunny day. As a result it was 2 p.m. before the B.A.C. was rigged and ready. A light S.W. wind led us to use "Stoneside" hill. Britton made his second "B" qualifying flight with 2 mins. 5 secs. Redshaw gained his "B" with a beautiful flight of 1 min. 7 secs. Gross made a "B" qualifying flight of 55 secs.

April 15th.—Strong S.W. wind and mist prevented flying.

April 16th.—Wind 5-10 m.p.h.; N.W. The R.F.D. was rigged and Redshaw made a flight of over 1 minute. Britton flew a beautiful "B" of 1 minute 25 seconds. Foster unfortunately made a heavy landing, and it was deemed advisable to dismantle the machine for a thorough examination.

April 17th.—Rain in the morning damped our hopes, and the machines were packed on the trailer for home. The new site has proved its merits, and should assist progress very materially in the future.

KENT GLIDING CLUB.

The Club has been flying at Lenham practically every Sunday during the last few months, the Old Racecourse being used for training when the wind has been unsuitable on the hill.

March 19th. (Wind strong and gusty).—It was decided that Weekes should try to soar COLUMBUS in an attempt to get his "C," but on his second flight the machine suddenly got into a down-draught and dropped some 30 feet, one wing touched the ground, and COLUMBUS did a slow somersault. Result—a broken spar and rudder, and two Sundays on repairs.

April 9th. (Gentle breeze across the hill).—Weekes flew COLUMBUS over the hedge into the next field along the ridge, which proves to be very suitable for training and also for longer flights in a westerly wind. The launching car followed up through numerous gates, and great amusement was caused by a party of hikers on the Pilgrims' Way who informed the crew that the glider was "only another half-mile farther on"! (Our Weekes flew all the way from Canterbury, he did!)

Among the many successful flights were two of over 45 seconds by Nightingale towards his "B," and then with a hefty launch and a crab-wise sideslip over the hedge Weekes got the machine back to the original site again, the day ending with ground-slides for two enthusiastic prospective members—Messrs. Camp and Preston.

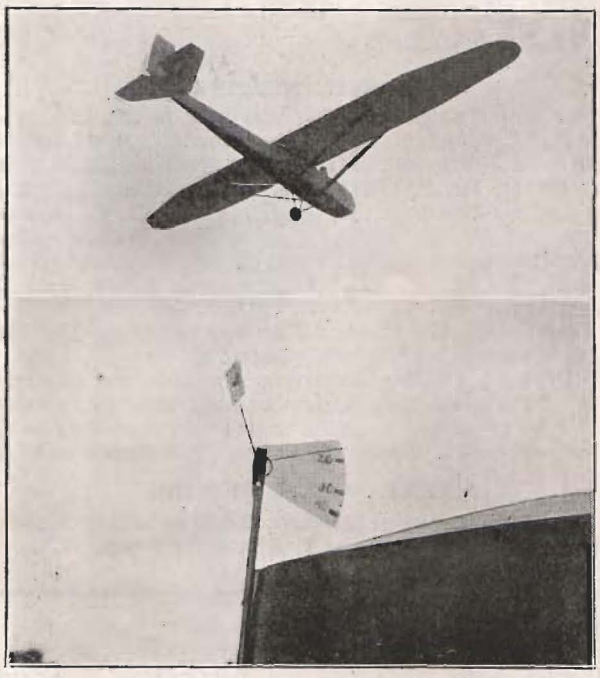
April 23rd. (Steady S.W. wind).—After two trial launches Nightingale qualified for his "B" with an amazingly good flight for a primary. He gained plenty of height on the launch, turned along the ridge, and then flew out from the hill and back along the Pilgrims' Way, maintaining his height remarkably well. At the end of the field he turned back towards the hill and contemplated a down-wind landing, but with plenty of height in hand he disappeared into an adjoining field to land, his time in sight being 71 seconds.

Weekes, Dugdale and Nightingale are now ready to try for their "C's," and the construction team is hard at work making a nacelle for our second machine, which we hope will give them a chance of soaring.

LONDON GLIDING CLUB.

Owing to slight indisposition of the usual Club Note writer we will have to try and fill the gap from memory.

Good work was done during the Easter Holidays upon such machines as had not yet been put out of action. G. Bell got his "A." He push-bikes over regularly from Bedford, 20 miles away; on arrival he can always tell you the wind's strength and direction without having to look up at the sock. And Mr. Hardwick got his "A" on the Saturday evening; an almost perfect flight, and he, too, an *ab initio*. Mr. Hardwick comes over regularly from Streetly in Warwickshire, 80 miles distant, and often



Mr. Isaac's "B.A.C. VII.," built by himself, flying at Dunstable. BELOW:—The home-made air-speed indicator.

with a caravan-trailer. There are rumours that one of these days it will be a trailer of a different kind.

Mr. A. C. T. Isaac paid a week-end visit from the Midlands with his home-built two-seater, which has been mentioned already in THE SAILPLANE; it turned out to be of B.A.C. type, the parts having been obtained from the firm and put together in a garage. It was revealed that Mr. Isaac flew BLERIOTS and things in 1911.

Another visitor, from much further off, was Herr Hans Deutschmann, known to fame in the Rhön. He came down to have a look at us (there was by this time little besides the old DAGLING left to look at), stayed on three days, helped with the launching, slept on the premises, browsed in the library, and altogether felt thoroughly at home.

The CRESTED WREN just managed to soar until its pilot (who had just been talking about our Mount Everest article) flew into the down-current at the Bowl and was pushed by it half-way back to earth. The POPPENHAUSEN took passengers until the end of its skid was twisted off. (Moral: when turning a machine on the ground, the skid should rest on *one* molehill, not on two.)

The following Sunday was devoted to elementary instruction.

ULSTER GLIDING AND AVIATION CLUB.

April 8th.—Auto-towing at Tyrella, Co. Down. Machine, KASSEL 20; total flights, 19. The only feature of the day's flying was a curious upheaval in the meteorological conditions at about 6 p.m., resulting in a sudden lapse in ground wind and the formation of cloud over the sea at a very low altitude, about 500 feet. This enabled one pilot to traverse the length of the strand, about 1 mile, with a gain in height of about 30 feet, the height at the end of the tow being some 620 feet and rising to 650 feet when surrounded with thin wisps of cloud at the other end. There was a sharp difference in wind speed at about 150 feet, the airspeed indicator while on the tow going from 55 km. per hour to 75 km. per hour quite suddenly.

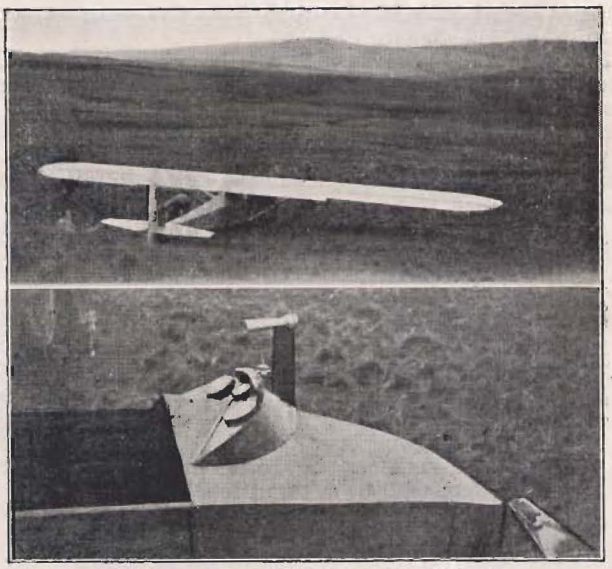
April 15th.—The KASSEL was taken up to a short ridge with available drop (down a rather gentle slope—average gradient 1 in 6) of about 250 feet, and launched into a very strong breeze blowing from due West. Ground speed at 250 feet above the start was nil at 55 km. per hour airspeed, i.e., wind velocity of 35 m.p.h. = force 7—moderate gale. The wind moderated later, but on the last flight a height of 400 feet above the start was obtained. We were somewhat surprised at the height obtainable over such a short slope, and we hope to find some more places of this sort; the site being inland, with rough ground everywhere, the conditions were bumpy in the extreme, but withal highly educative.

April 17th-18th.—On Easter Monday soaring was impossible owing to entire lack of wind and a general thick mist, so no flying was done.

In our first struggles with geography we are taught that Ireland resembles a pudding basin, i.e., the majority of the high ground is near the sea. This generalisation is fairly applicable to that part of Co. Antrim which forms the extreme north-east seaboard of Ireland, and from a point about five miles N. of Larne there is an almost unbroken ridge up to Torr Head; the slopes of this ridge, on the seaward side, are mostly steep.

On Tuesday the wind blew a moderate breeze from S.E. and the KASSEL was taken to a point on this ridge, above Ballygally, selected chiefly on the score of accessibility. (On a line drawn from Belfast through Knockagh and produced to meet the coast: see last issue of THE SAILPLANE, p. 87.)

At the beginning of operations the wind was inclined to drop off, and on the first two flights height was lost slowly but steadily. About 5 p.m. the wind freshened, and by the middle of the third flight was up to force 5, enabling a height of over 750 feet to be reached, followed by a landing on the top. On the last flight Harris followed the ridge northwards towards Glenarm for about two miles, and was also able to reach over 700 feet above the start.



The Ulster Club's "Kassel 20."
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OFFICIAL NOTICES

B.G.A. 1933 GLIDING AND SOARING COMPETITIONS. EVENTS.

Class 1. For Secondary Machines. (Machines with a span of 40 ft. or under, or aspect ratio not greater than 10, pilots in fuselage or partly streamlined.)

Event 1 ... ... Distance Contest.
2 ... ... Altitude Contest.
3 ... ... Duration Contest.

15, 10 and 5 marks will be awarded daily for the best performances in each event in this class, the first, second and third machines with the highest aggregate marks to be the winners.

For "B" and "C" Pilots.

Class 2.—For Sailplanes (including two-seaters).

Event 1 ... ... Distance.
2 ... ... Altitude.
3 ... ... Duration.

15, 10 and 5 marks will be awarded for the best three performances in each event in this class, the first, second and third machines with the highest aggregate marks to be the winners.

For "B" and "C" Pilots.

Note.—(a) The major awards will be made for the best individual flight in each class.

(b) Additional events may be organised as circumstances permit, and will be announced before or during the Competitions.

To All Clubs.—The Soaring and Training Sites are now to be at Huish, near Marlborough (1 in. Ordnance Survey Map, Sheet 112, Square F7).

Entry forms and details of events have been circulated, and those who have not received them can obtain copies from the B.G.A.

Should anyone wish to camp out or bring a caravan, a place is reserved for the purpose. In all probability, tents will be provided at a small fee for those who want them.

As in previous years, clubs helping with the organisation or entering machines and flying them will be entitled to a share of the profits.

The following information is required as soon as possible:—

1. Number of entries.
2. Number of members to be present.
3. If B.G.A. assistance is required to obtain accommodation in:
   (a) Tent—number per tent;
   (b) House—number of rooms required (single, double; with or without food).
   (c) Hotel—number of rooms required (single, double; with or without food).
   (d) Names of those willing to assist.

J. L. WAPLINGTON,
Secretary.

COUNCIL MEETING.

The 48th Council Meeting was held in the Library of the Royal Aeronautical Society, Monday, April 24th, at 6.30 p.m. Present: Mr. E. C. Gordon England (Vice-President), Mr. S. Whidborne (Vice-President), Capt. C. H. Latimer-Needham, Mr. D. E. Culver, Mr. L. Howard-Flanders, Mr. F. Pilling, Sir Gilbert Walker (Royal Meteorological Society), Capt. A. N. Stratton (Southdown), Mr. E. R. Ellingham (North Kent), and the Secretary.

Conference.—Mr. Howard-Flanders proposed, Mr England seconded, and it was resolved:

"That a Gliding Conference of clubs and others be held on the 16th September next, that the Secretary be requested to make suitable enquiries as to the views of all concerned as to where it should be held."

NEXT COUNCIL MEETING.

The next meeting of the Council will be held on Monday, May 22nd, at 6.30 p.m., at 7, Albemarle Street, W.1.

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